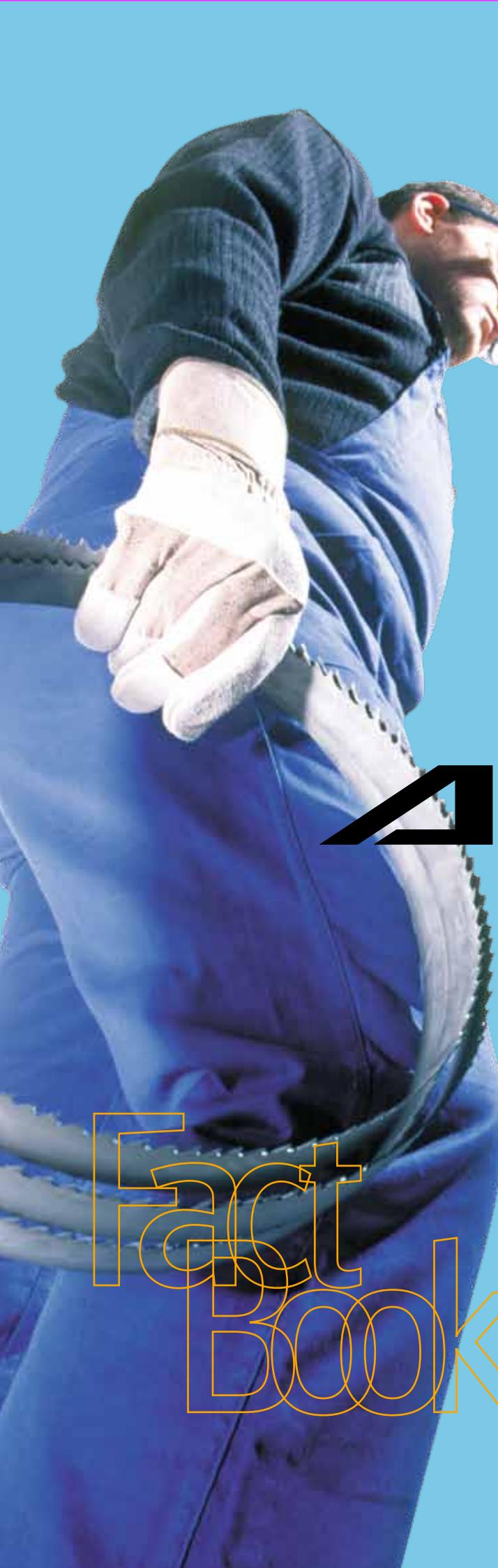


Edition 2012



Arntz

Band Saw Blades

Fact  
Book



**NEW**  
Diamond Band Saw Blades

# Welcome!

More than 200 years of experience in the tool production is quite a long time. The world of sawing metals has changed since then.

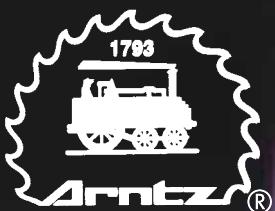
This refers to most bandsawing operations and to the high expectation on quality that ARNTZ sawblades meet today. That's why the world at ARNTZ spins around the technique of sawing metals - faster than ever!

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 in 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.

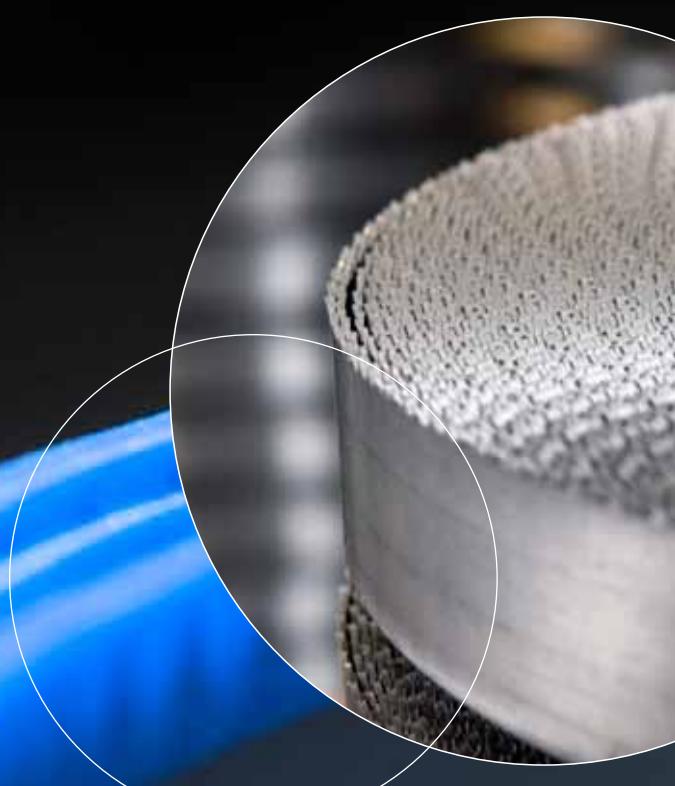
And: Additional tips will help to optimize the life of your tool. We solve your sawing problems!



That is what I stand for with my team.



Jan Wilhelm Arntz



# Now is the right time to make the cut!

	<b>Article-Group</b>	<b>Description</b>	<b>Page</b>
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<b><i>Carbide Tipped Band Saw Blades</i></b>	620	TC-BLACK-LINE (H+K) positive rake angle hook tooth (H) + variable tooth (K)	22
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	110	CS-2-PLUS hook tooth (H) + standard tooth (N) positive rake angle + rake angle 0°	28

# Bi-Metal

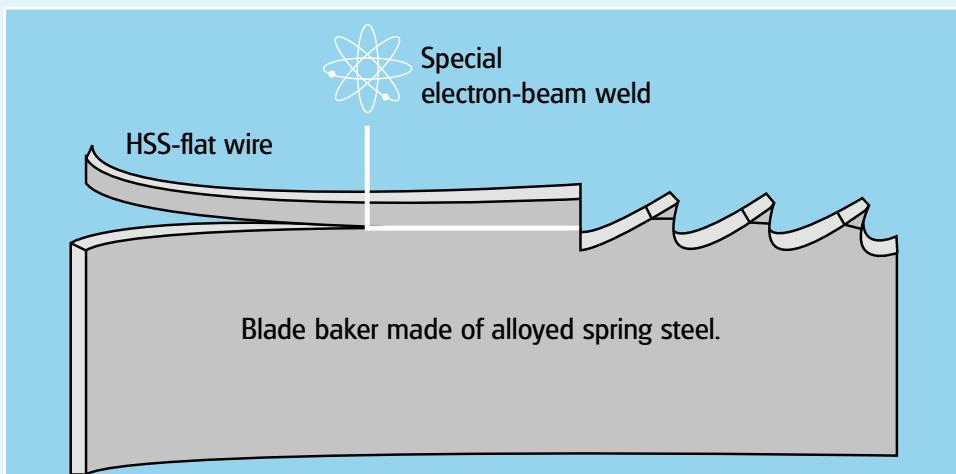
*Why so successful?*

## 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 fatigue 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:

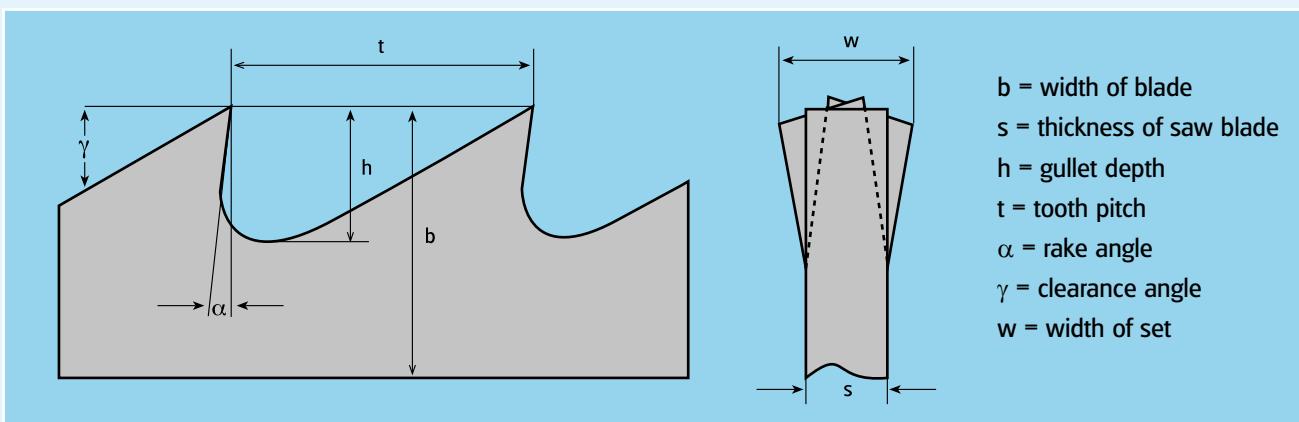
Both materials are undetachably welded together by special electron or laser beam.

### 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

alpha = rake angle

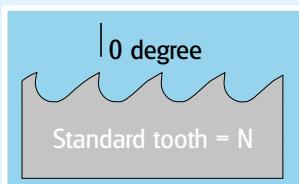
gamma = clearance angle

w = width of set

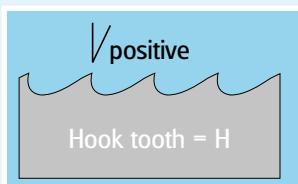
# Tooth Forms

*Where performs the right tooth?*

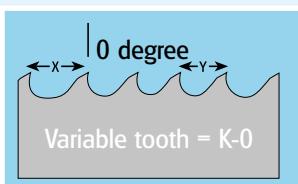
Only correct choice of tooth forms allows efficient cutting with low vibration. Four basic types are available:



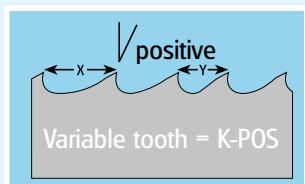
**Designed for:**  
 - short chipping materials  
 - light wall thickness  
**Data:**  
 - rake angle 0°  
 - 4 to 18 tpi  
**Article-groups:**  
 100, 110, 420



**Designed for:**  
 - long chipping materials  
 - large cross sections  
**Data:**  
 - positive rake angle  
 - 1,25 to 6 tpi  
**Article-groups:**  
 100, 110, 421, 426



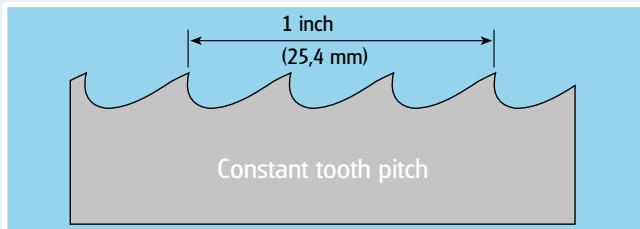
**Designed for:**  
 - low vibration cutting  
 - structurals  
**Data:**  
 - rake angle 0°  
 - variable tooth pitch of 3/4 to 10/14 tpi  
**Article-groups:**  
 430 (K-0)



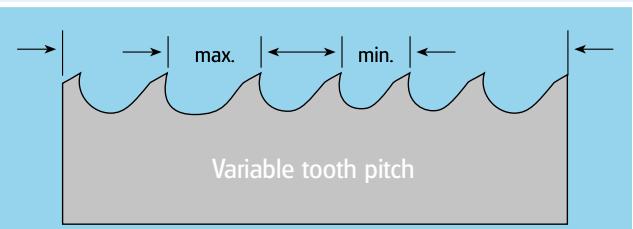
**Designed for:**  
 - low vibration cutting  
 - solid materials  
**Data:**  
 - positive rake angle  
 - variable tooth pitch of 0,75/1,25 to 4/6 tpi  
**Article-groups:**  
 433, 445 (K-V)  
 431, 436, 437 (K-POS)  
 434, 438, 531, 537, 544 (K-PLUS)

# 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

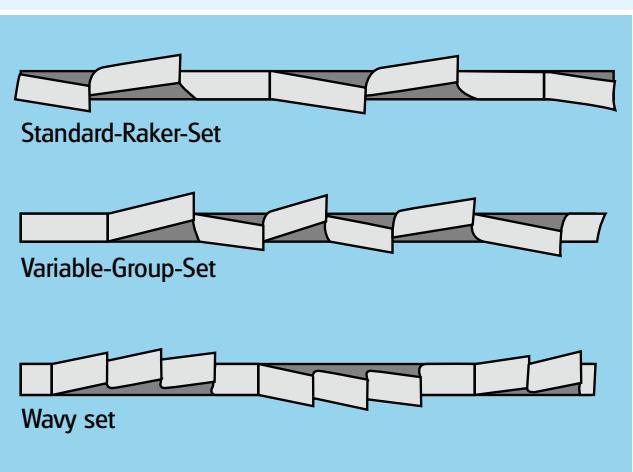
*What groups and waves can cause.*

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 mm	Teeth per inch tpi	Tooth shape
380 - 800	1,25	H
200 - 400	2	H
120 - 200	3	H
80 - 120	4	H/N
40 - 80	6	N
20 - 40	10	N
10 - 20	14	N
to 10	18	N

N = Standard tooth  
H = Hook tooth

Variable Tooth Pitch		
Cross section mm	Teeth per inch tpi	Tooth shape
of 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	5/8 (5/7)	K
30 - 60	6/10	K
20 - 40	8/12 (8/11)	K
to 25	10/14	K

K = Variable tooth

## Recommendation to cut tubes and structurals

Thin wall structurals (0° rake angle)							
Wall thickness (S) in mm	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	8/12
4	14	14	10/14	10/14	8/12	8/12	6/10
5	14	10/14	10/14	8/12	8/12	6/10	6/10
6	14	10/14	8/12	8/12	6/10	6/10	5/8
8	14	8/12	6/10	6/10	5/8	5/8	5/8
10	-	6/10	6/10	5/8	5/8	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 (S) in mm	80	100	120	150	200	300	500
10	-	-	-	4/6	4/6	4/6	3/4
15	4/6	4/6	4/6	4/6	4/6	3/4	2/3
20	4/6	4/6	4/6	4/6	3/4	3/4	2/3
30	4/6	4/6	4/6	3/4	3/4	2/3	2/3
50	-	-	3/4	3/4	2/3	2/3	2/3
80	-	-	-	-	2/3	2/3	1,4/2
100	-	-	-	-	-	2/3	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 lenght of approx. 30,5 + 76 m | 20 - 34 mm in lenght of approx. 100 m | 41 mm in lenght of approx. 80 m  
 54 - 67 mm in lenght of approx. 90 m | 80 mm in lenght 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
<b>Page of catalogue</b>		8	9	10	11	12	13	14	15	15	16	17	18	19	20	22	23	24	25
	<b>Material dimension (mm)</b>																		
- 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 steel	> 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																		
	> 350																		
- Red Brass	< 70																		
- Aluminium + Alloys	80 - 350																		
	> 350																		
- Aluminium alloys with silicon	< 70																		
	80 - 350																		
	> 350																		

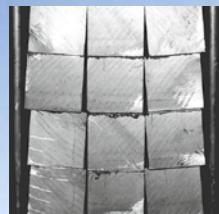
Qualification

■ = very good

■ = good

# M42-Star

*Multi purpose blade for small dimension solid steel.*



## **Engineered for:**

- Common steel qualities up to 1400 N/mm<sup>2</sup> 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	mm	inch	Teeth per 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
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	
34 x 1,10	1 1/4 x 0,042	N					
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<sup>2</sup> 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	
20 x 0,90	3/4 x 0,035		H		H	
27 x 0,90	1 x 0,035	H	H			

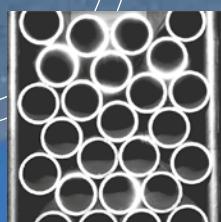
H = Hook tooth

# M42-Sprint

*The Structural-Professional  
for light and medium wall thicknesses.*

## Engineered for:

- Common steel qualities up to 1400 N/mm<sup>2</sup>
- Non ferrous structurals
- Single and bundle cuts
- Tubes and structurals with light or medium walls
- Sheet metal on vertical band saw machines



## 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.

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				

K = Variable tooth

# M42-Sprint-Plus

*Strong in workpieces of medium to large dimensions.*



## Engineered for:

- Common steel qualities up to 1400 N/mm<sup>2</sup>
- 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

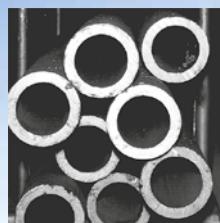
The variable tooth with a positive rake angle with a special group-set cuts solid materials as well as heavy wall structurals and tubing at fast cutting rates, with a smooth surface.

Dimension	Variable tooth					
	mm	inch	0,75/1,25	1,4/2	2/3	3/4
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/mm<sup>2</sup>
- Solid steel bars
- Light beams and profiles
- Single- and bundle cutting

## **Superior, because:**

Tooth tips of HSS M42 / material no. 1.3247

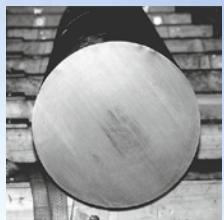
The new designed special HL variable tooth with a slightly positive rake angle combined with a special group set controls the chipping on lighter general purpose machines, increases blade life and grants smoothest cut surfaces.

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	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

# M42-Profiler-Sprint-VS

*Outstanding performance for Heavy Fabricators.*

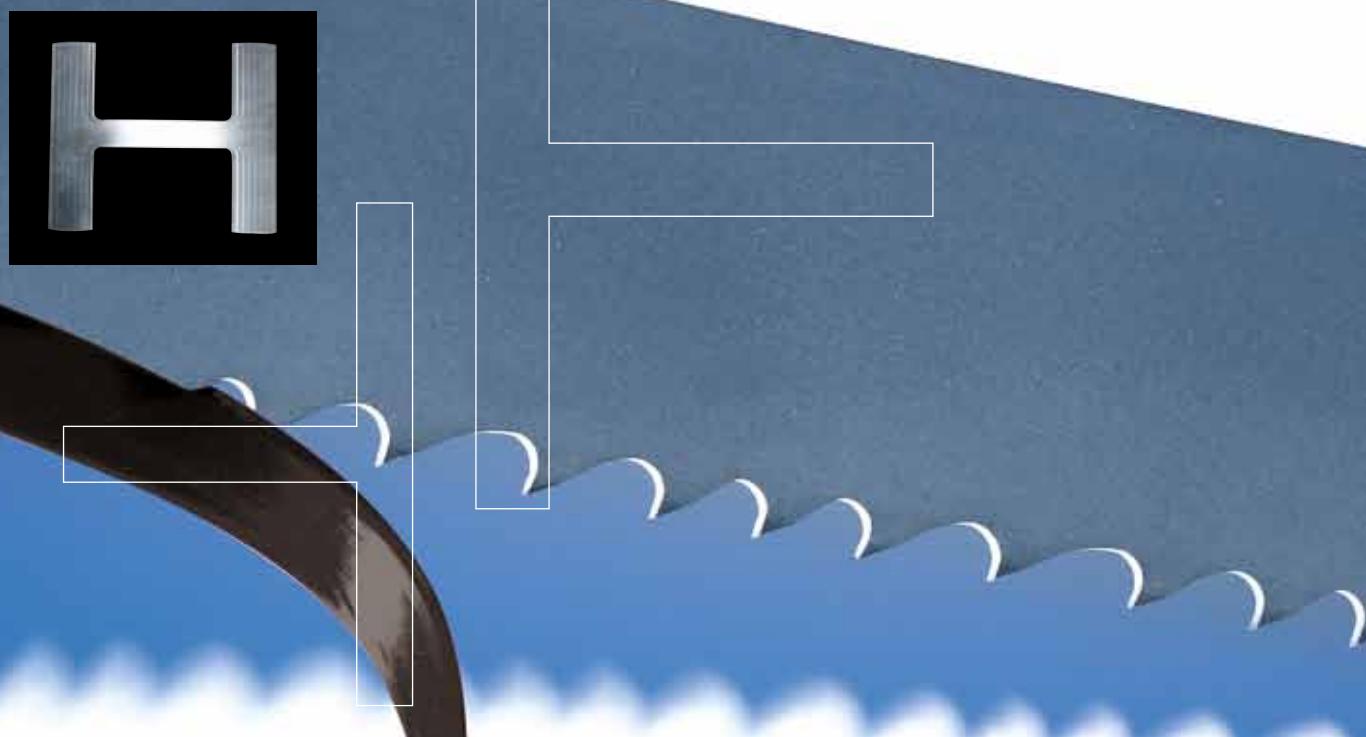
## Engineered for:

- 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 avoids pinching in beams with inside tension, or in poorly supported profiles. For 90° and miter cutting.



Dimension	mm	inch	Variable tooth	
			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



# 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.

# 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**

		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

**Dimension**

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

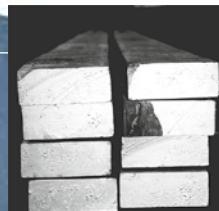
K = Variable tooth

# 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
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

# M51-Sprint-Plus

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

## *Engineered for:*

- Steels up to 1700 N/mm<sup>2</sup> tensile strength
- Austenitic 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.

Abmessung	Zoll	Variable Zahngruppen			
		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 = Kombizahn

# M51-Taifun-Maxima

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

**Engineered for:**

- Steels up to 1700 N/mm<sup>2</sup> tensile strength
- Austenitic stainless steels
- Nickel-based alloys
- Titanium und 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. Chamfered 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**

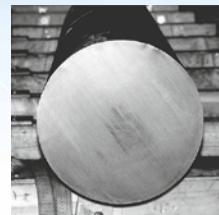
**Variable tooth**

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

# 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

## *Superior because:*

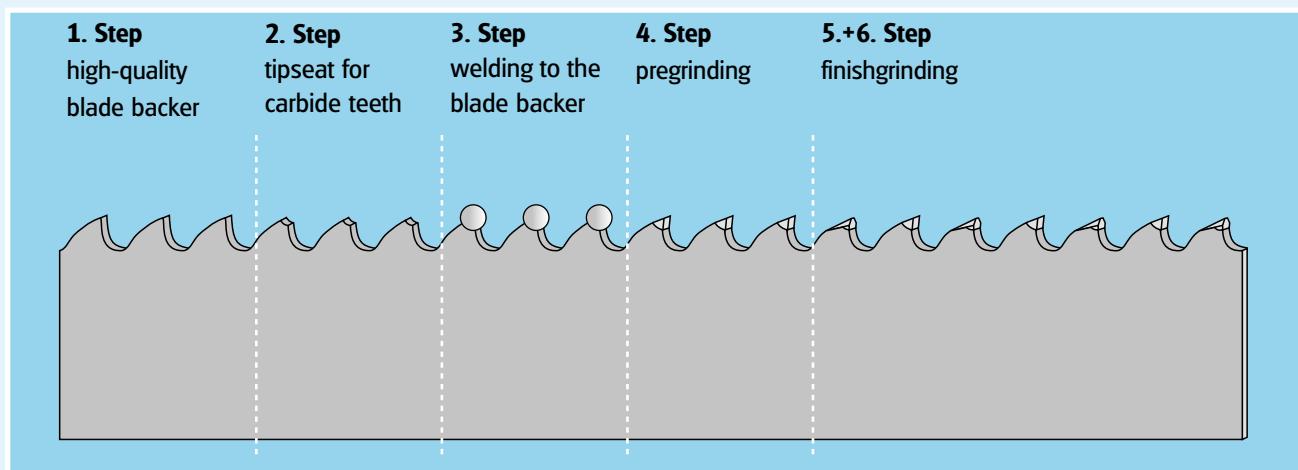
The precisely produced teeth in combination with an optimum hardness of tooth tips of 68-69 HRC. Extreme positive rake angle together with variable group-set lead to smooth and perfect cutting surface. Short cutting times and outstanding blade life are the benefits from BLIZZARD-SPRINT.

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

# Carbide

*Why so successful?*



**Flexible:**

The blade backer for Carbide Bandsaw 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. 100m; 41, 54, 67 and 80 mm in coil lenght of approx. 50 m

# TC-Black-Line

Carbide Tipped Bandsaw 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
27 x 0,90	1 x 0,035					K	H	
34 x 1,10	1 1/4 x 0,042					K	H	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 Bandsaw 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
27 x 0,90	1 x 0,035				K	H	
34 x 1,10	1 1/4 x 0,042				K	H	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

# VC-Silver-Line

Carbide Tipped Bandsaw 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/mm<sup>2</sup> 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		
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			
80 x 1,60	3 x 0,063	K		K			

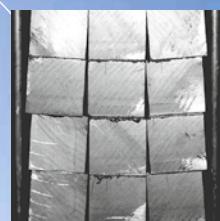
K = Variable tooth

Patent no. 102 53 711

# VC-Silver-Line-N

Carbide Tipped Bandsaw Blades with multi chip tooth geometry, negative rake

*For cutting extremely hard steels.*



## Engineered for:

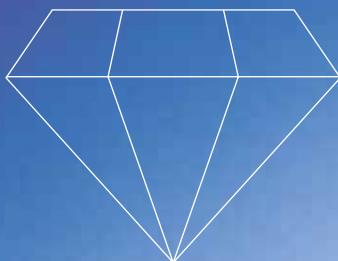
- Induction hardened piston rods
- Surface hardened steels
- Hardchromed materials
- Hardened steels up to HRC 62
- High manganese alloyed steels

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

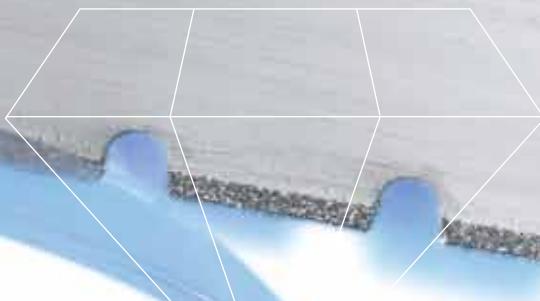
# Dia-Navy-Line

*The diamond electroplated solution*



## Engineered for:

- Silicon (Solar- and Electronic industry)
- Oxide ceramics
- Non oxide ceramics
- Silicon Carbides
- Silicon Nitrite
- Boron Carbides



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

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

## 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 continuous edge, for larger dimensions use segmented edge.

### 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) approx. = 500 - 3000 m/min

### available executions:

Article-Group 710	continuous edge	
Article-Group 711	segmented edge	
Article-Group 712	gulleted edge	

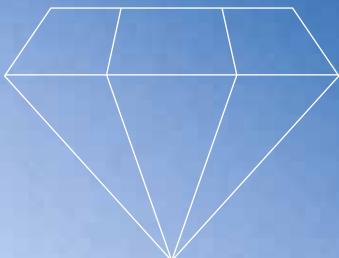


# Dia-Yellow-Line

*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

### available executions:

Article-Group 720	continuous edge	
Article-Group 721	segmented edge	
Article-Group 722	gulleted edge	

**NEW**



# 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
8 x 0,65	5/16 x 0,025				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)

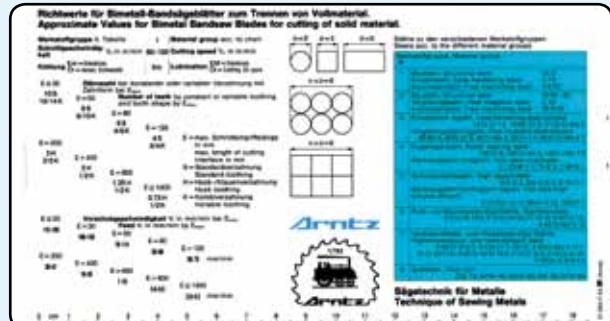
Dimension		Tooth per inch									
mm	inch	3	4	4	6	6	8	10	14	18	24
6 x 0,65	1/4 x 0,025			H	N	H	N	N	N	N	N
8 x 0,65	5/16 x 0,025			H	N	H	N	N	N	N	N
10 x 0,65	3/8 x 0,025	H		H	N	H	N	N	N	N	N
13 x 0,65	1/2 x 0,025	H	N	H	N	H	N	N	N	N	N
16 x 0,80	5/8 x 0,032	H	N	H	N	H	N	N	N	N	N
20 x 0,80	3/4 x 0,032	H	N	H	N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

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

## Professional Service

### Cutting data slide

Shows all technical guidelines for the use of band saw blades: Material groups, cutting speeds and feeds, tooth pitches, coolants and cutting rates. This simple table contains recommendations to cut solid steel & structurals.



**Available free of charge!**

## Which dimension of Band Saw Blade fits to your type of machine?

You will find under [www.arntz.de](http://www.arntz.de) link „products“ the right dimension of Band Saw Blade for your Band Saw machine.

## Technical recommendation:

You will find under [www.arntz.de](http://www.arntz.de) link „range council“ 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<sup>2</sup>. 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<sup>2</sup> 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 is cutting without any vibrations, cutting speed and feed can be increased step by step to the maximum. The Band Saw Blades is 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	
			CS1/CS2-Plus	Bi-Metal	Cutting oil	Emulsion
Structural steels	St 37 – 2	1.0037	30-50	80-100	x	
	St 50 – 2	1.0050	30-45	60-85	x	
	St 60 – 2	1.0060	30-40	50-70	x	
Case-hardening steels	C 10	1.0301	40-60	80-100	x	
	14 NiCr 14	1.5752	25-30	40-55	x	
	21 NiCrMo 2	1.6523	30-40	50-60	x	
	16 MnCr 5	1.7131	25-30	40-60	x	
Free-Machining steels	9 S 20	1.0711	40-60	80-120	x	
	45 S 20	1.0727	40-60	80-120	x	
Heat treatable steels	C 45	1.0503	35-50	60-70	x	
	40 Mn 4	1.1157	30-40	60-70	x	
	36 NiCr 6	1.5710	30-40	60-70	x	
	34 CrNiMo 6	1.6582	25-35	50-65	x	
	42 CrMo 4	1.7225	25-35	50-65	x	
Ball bearing steels	100 Cr 6	1.3505	20-30	35-50	x	
	100 CrMn 6	1.3520	20-30	35-50	x	
Spring steels	65 Si 7	1.5028	25-35	45-60	x	
	50 CrV 4	1.8159	25-35	45-60	x	
Unalloyed tool steels	C 125 W	1.1663	20-30	40-60	x	
	C 75 W	1.1750	20-30	40-60	x	
Cold-Work tool steels	125 Cr 1	1.2002	20-30	40-50	x	x
	X 210 Cr 12	1.2080	15-25	30-40	x	x
	X 155 CrMo 12 1	1.2379	15-25	30-40	dry	
	X 42 Cr 13	1.2083	20-25	35-45	x	x
	X 165 CrV 12	1.2201	15-25	30-45	x	x
	100 CrMo 5	1.2303	15-30	30-50	x	x
	X 32 CrMoV 3 3	1.2365	25-35	45-60	x	x
	45 WCrV 7	1.2542	20-30	40-50	x	x
Hot-Work tool steels	56 NiCrMoV 7	1.2714	20-30	40-50	x	x
	S 6-5-2-5 (E Mo5 Co5)	1.3243	20-30	35-45	x	
High Speed steels	S 2-10-1-8 (M 42)	1.3247	20-30	35-45	x	
	S 6-5-2 (DMo5)	1.3343	20-30	35-45	x	
	Valve Steels					
Valve Steels	X 45 CrSi 9 3	1.4718	-	30-45	x	x
	X 45 CrNiW 18 9	1.4873	-	30-40	x	x
High temperature steels	X 20 CrMoV 12 1	1.4922	-	10-30	x	x
	X 5 NiCrTi 26 15	1.4980	-	10-30	x	x
Heat resistant steels	X 10 CrSi 6	1.4712	-	15-25	x	x
	X 10 CrAl 18	1.4742	-	15-25	x	x
	X 15 CrNiSi 25 20	1.4841	-	15-25	x	x
Stainless steels	X 5 CrNi 18 10 (V2A)	1.4301	-	30-40	x	x
	X 6 CrNiMoTi 172 12 2 (V4A)	1.4571	-	30-40	x	x
Steel castings	GS-38	1.0420	20-30	40-60	x	
	GS-60	1.0558	20-30	40-60	x	
Cast irons	GG-15	0.6015	25-30	30-60	dry	
	GG-30	0.6030	25-30	30-60	dry	
	GGG-50	0.7050	25-30	30-60	dry	
	GTW-40	1.8040	25-30	30-60	dry	
	GTS-65	1.8165	25-30	30-60	dry	
Copper	KE-Cu	2.0050	100-250	100-400	x	x
	Elektrolyt-Copper		100-250	100-400	x	x
Brass (Copper-Zinc-Alloys)	CuZn 10	2.0230	100-300	100-400	x	
	CuZn 31 Si 1	2.0490	100-250	100-400	x	
Aluminium Bronze (Copper-Aluminium-Alloys)	CuAl 8	2.0920	20-30	35-50	x	
	CuAl 10 Fe 3 Mn 2	2.0936	20-30	35-50	x	
Bronze (Copper-TIN-Alloys)	CuSn 6	2.1020	80-100	80-150	x	
	CuSn 6 Zn 6	2.1080	80-100	80-150	x	
Red Brass (Copper-Cast-Alloys)	CuSn 10 Zn	2.1086	30-40	50-100	x	
	CuSn 5 ZnPb	2.1096	30-40	50-100	x	
Nickel Base Alloys	NiCr 20 TiAl	2.4631	-	10-25	x	x
	NiCr 22 FeMo	2.4972	-	10-25	x	x
Aluminium and Aluminium Alloys	Al 99.5	3.0255	80-300	80-800	x	
	AlMgSiPb	3.0615	80-300	80-800	x	
	G-AlSi 5 Mg	3.2341	80-300	80-800	x	
Titanium and Titanium Alloys	Ti Grade 1	3.7025	-	10-20	x	x
	TiAl 6 V 4	3.7164	-	10-20	x	x
Thermoplastic Plastics	PVC		100-400	100-400	dry	
	Teflon, Hostalen		100-400	100-400	dry	
Plastics with fibre inlays	Resitex		50-200	50-300	dry	
	Novotex		50-200	50-300	dry	

## For Carbide-Band Saw Blades

for cutting steel

Material Group	Material Specifications DIN	Material no.	Cutting Speed $V_c$ (m/min)	Recommended Tooth Pitch			
				75 - 140 mm	100 - 350 mm	300 - 550 mm	$\geq 540$ mm
Structural steels	St 37/42	1.0037/1.0042	100-130	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	St 52/60	1.0050/1.0060	90-120	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Case-hardening steels	C10/C15	1.0301/1.0401	110-140	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	16 MnCr 5	1.7131	80-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	20 CrMo 5	1.7264	80-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	21 NiCrMo 2	1.6523	70-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Nitrate steels	34 CrAlNi 7	1.8550	45-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	34 CrAlMo 5	1.8507	45-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Free-Machining steels	9 S 20	1.0711	100-160	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Heat treatable steels	C 35/45	1.0501/1.0503	90-120	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	42 CrMo 4	1.7225	70-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	34 CrNiMo 6	1.6582	70-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Ball bearing steels	100 Cr 6	1.3505	70-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	100 CrMo 7 3	1.3536	65-85	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Spring steels	65 Si 7	1.5028	65-85	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	50 CrV 4	1.8159	65-85	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Unalloyed tool steels	C 125 W	1.1663	65-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	C 80 W 1	1.1525	70-85	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Cold-Work tool steels	125 Cr 1	1.2002	65-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 210 Cr 12	1.2080	40-50	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 155 CrVMO 12 1	1.2379	40-50	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	90 MnCrV 8	1.2842	45-55	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Hot-Work tool steels	40 CrMnMo 7	1.2311	70-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 40 CrMoV 5 1	1.2344	60-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	56 NiCrMoV 7	1.2714	50-70	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	40 CrMnNiMo 8 6 4	1.2738	35-50	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
High speed steels	S 6-5-2	1.3343	50-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	S 3-3-2	1.3333	55-65	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	S 2-10-1-8	1.3247	45-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	S 10-4-3-10	1.3207	45-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	S 18-0-1	1.3355	45-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Stainless steels	X 5 CrNi 18 10	1.4301	70-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 6CrNiMoTi 17 122	1.4571	65-75	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 20 Cr 13	1.4021	80-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Valve Steels	X 45 CrSi 9 3	1.4718	50-60	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 45 CrNiW 18 9	1.4873	40-50	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
High temperature steels	X 12 CrCoNi 21 20	1.4971	30-40	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 20 CrMoWV 12 1	1.4935	80-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Heat resistant steels	X 15 CrNiSi 25 20	1.4841	30-40	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 12 NiCrSi 36 16	1.4864	30-40	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Special alloys	NiCr 19 NbMo	2.4668	20-30	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	NiMo 30	2.4810	22-35	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	NiCr 13 Mo 6 Ti 3	2.4662	20-30	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	NiCo 20 Cr 20 MoTi	2.4650	22-35	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	X 8 CrNiAlTi 20 20	1.4847	22-35	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Heat treated steels	1000 - 1200 N/mm <sup>2</sup>		35-50	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	1200 - 1400 N/mm <sup>2</sup>		30-45	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	1400 - 1600 N/mm <sup>2</sup>		25-35	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Hardened steels	50 HRC		15-20	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	55 HRC		10-15	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	60 HRC		8-12	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Steel castings	GS-38	1.0420	70-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	GS-60	1.0558	60-85	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Cast irons	GG-30	0.6030	60-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	GGG-50	0.7050	55-75	3/4 K	3 ZpZ 2/3K	1,4/2 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 $V_c$ (m/min)	Recommended Tooth Pitch			
				75 - 140 mm	100 - 350 mm	300 - 550 mm	$\geq 540$ mm
Aluminium and Aluminium Alloys	Al 99,5	3.0255	up to 3000 m/min.	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	Al/Mg 1	3.3315	up to 3000 m/min.	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	Al/Mg 3	3.3535	up to 3000 m/min.	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	Al/Mg 4,5Mn	3.3547	up to 3000 m/min.	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	Al/MgSi 1	3.2315	up to 3000 m/min.	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Copper	KE-Cu	2.0050	100-200	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	E-Cu	2.0060	100-200	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Brass (Copper-Zinc Alloys)	CuZn 39 Pb 3	2.0401	150-250	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	VuZn 31 Si	2.0230	150-250	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Bronze	CuSn 6	2.1020	90-130	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Red Brass	CuSn 5 ZnPb	2.1096	90-130	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	CuSn 10 Zn	2.1086	90-130	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Aluminium-Bronze	CuAl 8	2.0920	60-80	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	CuAl 8 Fe 38	2.0920,60	52-65	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	CuAl 10 Ni 5 Fe 4	2.0966	50-70	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
Titanium and Titanium Alloys	Ti Grade 1	3.7025	80-100	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K
	TiAl 6 V 4	3.7164	60-90	3/4 K	3 ZpZ 2/3K	1,4/2 K	0,75/1,25 K



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