Arntz

Passionate Cutting!

Edition 2021

FactBook

SIERRAS DE CINTA

Bi-Metal

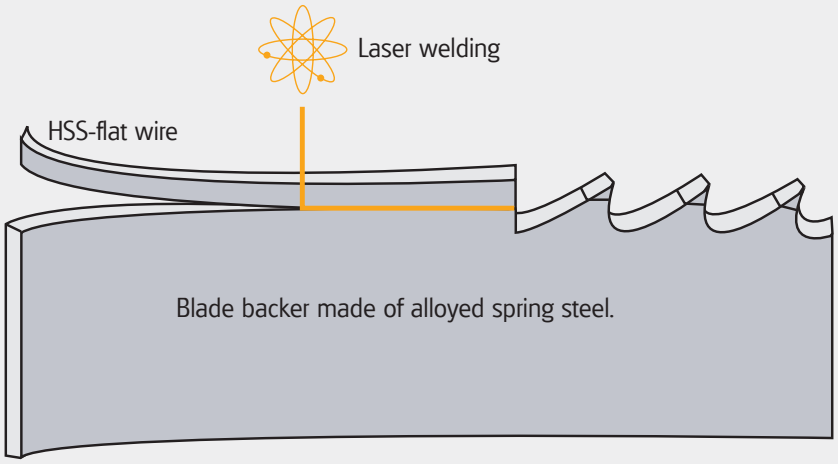
Why so successful?

M42

Material no. 1.3247
hardness approx.
68 - 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.

Perfectly joint:

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

Hard and wear resistant:

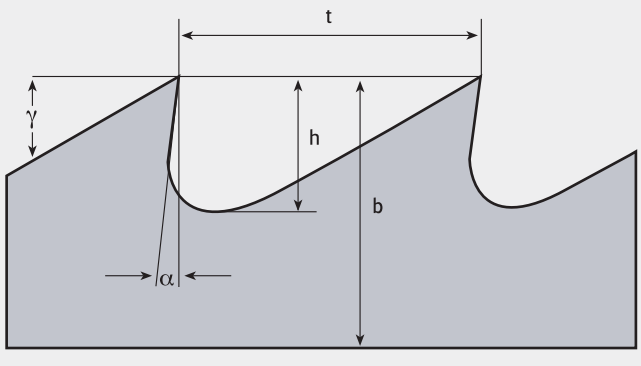
Tooth tips made of hardened HSS-Steel in M 42 or M 51 quality obtained due to well-balanced hardening and fixed structure resulting in high wear resistance.

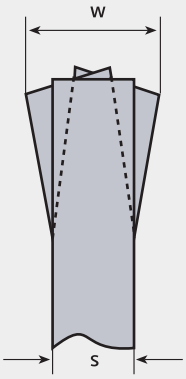
All advantages:

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

Band Saw geometry

Terminology



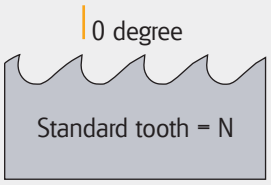


b = width of blade
s = thickness of saw blade
h = gullet depth
t = tooth pitch
α = rake angle
γ = clearance angle
w = width of set

Tooth forms

Where performs the right tooth?

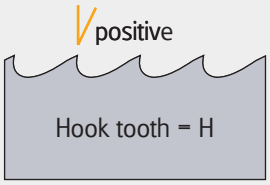
Only the correctly selected tooth form allows efficient cutting with low vibration. Four basic types are available:



Designed for:
- short chipping materials
- light wall thickness

Data:
- rake angle 0°
- constant tooth pitch of 4 to 18 tpi

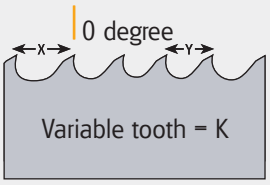
Article groups:
100, 110, 420



Designed for:
- long chipping materials
- large cross sections

Data:
- positive rake angle
- constant tooth pitch of 3 to 6 tpi

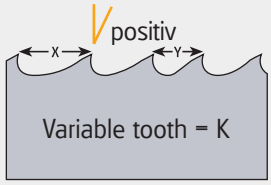
Article groups:
100, 110, 421, 426



Designed for:
- low vibration cutting
- structurals

Data:
- rake angle 0°
- variable tooth pitch of 3/4 to10/14 tpi

Article group:
430 (K-0)

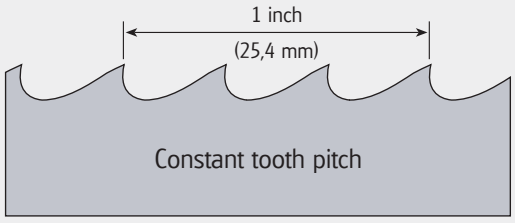


Designed for:
- low vibration cutting
- solid materials

Data:
- positive rake angle
- variable tooth pitch of 0,75/1,25 to 8/11 ZpZ

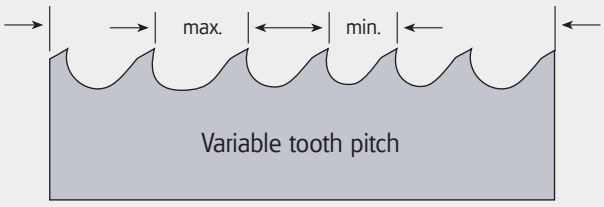
Article groups:
445, 457, 557 (K-VS, K-X)
431, 436, 437 (K-POS)
537, 544 (K-PLUS)

Tooth pitch



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

Constant or variable?



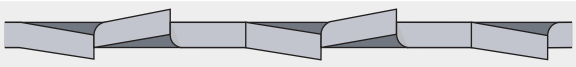
The tooth distances vary within a group of teeth. The smallest and the largest tooth pitch denote the variable toothing of the saw blade.

Tooth set

What groups and waves can cause.

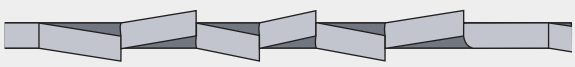
Beside the tooth pitch and the tooth form, the exact setting is essential for the performance of the sawblade. The correct clearance results from the corresponding setting. It avoids blade pinching, which is especially important in problematic steels. Width and type of set are precisely tailored to the cutting application.

Standard raker set



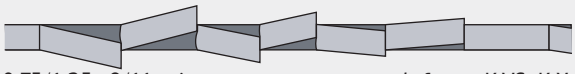
3 - 18 tpi — tooth forms N, H

Standard group set



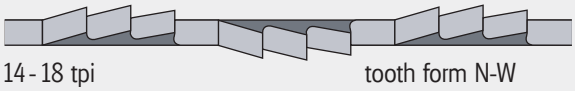
0,75/1,25 - 10/14 tpi — tooth form K

Variable group set



0,75/1,25 - 8/11 tpi — tooth forms K-VS, K-X

Wavy set



14 - 18 tpi — tooth form N-W

Correct tooth pitch – optimum performance.

The choice of the right tooth pitch is decisive to achieve the optimum performance. Choose between the standard tooth with constant tooth pitch or the combination tooth with variable tooth pitch. The varibale tooth is recommended for low-vibration sawing in problematic workpieces.

Recommendation to cut solid material

Variable tooth pitch		
Cross section mm	Teeth per inch tpi	Tooth shape
from 550	0,75/1,25	K
380 - 750	1/1,3	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° – 7° rake angle)							
Wall thickness (S) in mm	Diam. of structural (D) 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. The required tooth pitch is depending on the wall thickness and dimensions of the structurals. The recommendations shown here refer to single cuts. When two or more structurals are cut at the same time, double the wall thickness needs to be considered.

Heavy wall structurals (positive rake angle)								
Wall thickness (S) in mm	Diam. of structural (D) 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 band saw machines, 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 40 m

Bi-Metal and Carbide Tipped Band Saw Blades

For each cutting operation the right choice.

Art. gr.	430	431	457	445	557	420	421	426	436	544	437	537	620	622	643	650	651
Product name	M42-SPRINT	M42-SPRINT-PLUS	M42-X-FIT	M42-PROFILER	M51-X-PRO	M42-STAR	M42-STAR-PLUS	M42-ALUCUT-PLUS	M42-ALUCUT-SPRINT	M51-BLIZZARD	M42-TAIFUN-SPRINT	M51-TAIFUN-MAXIMA	BLACK-LINE	BLACK-LINE-S	BLUE-LINE	SILVER-LINE	SILVER-LINE-N
Page of catalogue	10	11	12	12	13	14	14	15	15	16	17	18	20	21	22	23	24
Material dimension (mm)																	
- Structural steels	‹ 70																
- Case-hardening steels	80 - 350																
- Free machining steels	› 350																
- Unalloyed tool steels	‹ 70																
- Spring steels	80 - 350																
- Ball 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 with silicon	80 - 350																
	› 350																

Qualification: ■ = very good ■ = good

Article group 430

Standard

M42-**SPRINT**

The fabrication professional for light and medium wall thicknesses.

Engineered for:

- structurals with light or medium walls
- short chipping materials
- sheet metal on vertical band saw machines

Dimensions mm	P.V.P metro	Sold.	inch	Tooth 5/8	6/10	8/12	10/14
6 x 0,90	19.51	9.16	1/4 x 0,035				K
10 x 0,90	19.51	9.16	3/8 x 0,035				K
13 x 0,65	16.58	9.16	1/2 x 0,025	K	K	K	K
13 x 0,90	16.58	9.16	1/2 x 0,035		K	K	K
20 x 0,90	18.33	9.16	3/4 x 0,035	K	K	K	K
27 x 0,90	19.08	8.49	1 x 0,035	K	K	K	K
34 x 1,10	22.98	9.88	1 1/4 x 0,042	K	K	K	
41 x 1,30	32.76	11.28	1 1/2 x 0,050	K	K		

K = Variable tooth

Article group 431

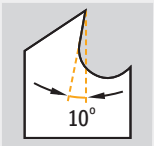
Standard

M42-**SPRINT-PLUS**

Perfect for materials of medium to large dimensions.

Engineered for:

- production band saw machines
- all-purpose use for steels and non-ferrous metals
- tensile strengths of up to 1400 N/mm²
- thick walled structurals



Dimensions mm	P.V.P metro	Sold.	inch	Tooth 0,75/1,25	1,4/2	2/3	3/4	4/6
20 x 0,90	18.33	9.16	3/4 x 0,035					K
27 x 0,90	19.08	8.49	1 x 0,035			K	K	K
34 x 1,10	22.98	9.88	1 1/4 x 0,042		K	K	K	K
41 x 1,30	32.76	11.28	1 1/2 x 0,050		K	K	K	K
54 x 1,30	43.35	17.64	2 x 0,050		K	K	K	K
54 x 1,60	43.35	17.64	2 x 0,063	K	K	K	K	K
67 x 1,60	67.98	38.17	2 5/8 x 0,063	K	K	K		
80 x 1,60	71.25	61.22	3 x 0,063	K	K			

K = Variable tooth

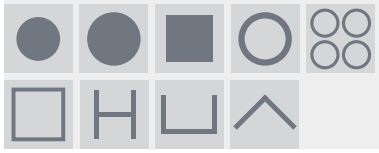
Article group 457 | Standard

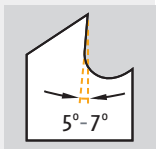
M42-**X-FIT**

The multi-purpose blade for small and medium cross-sections.

Engineered for:

- steel beams, profiles and tubes
- mixed materials





P.V.P	/ SOLD.	Dimensions mm	inch	Tooth 2/3	3/4	4/6	5/7	8/11
18.33	9.16	20 x 0,90	3/4 x 0,035			K	K	K
19.08	8.49	27 x 0,90	1 x 0,035		K	K	K	K
22.98	9.88	34 x 1,10	1 1/4 x 0,042	K	K	K	K	
32.76	11.28	41 x 1,30	1 1/2 x 0,050	K	K	K		
43.35	17.64	54 x 1,30	2 x 0,050		K	K		
43.35	17.64	54 x 1,60	2 x 0,063	K	K	K		
67.98	38.17	67 x 1,60	2 5/8 x 0,063	K	K			

K = Variable tooth

Article group 445 | 845 C-TEC | Professional

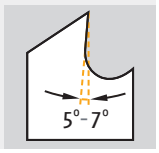
M42-**PROFILER**

Robust performance for steel construction.

Engineered for:

- large cross-section steel beams
- structurals with residual stress

Also coated available C-TEC for extremely increased feet rates, significantly reduced cutting times and maximized blade life.



Dimensions mm	inch	Tooth 2/3		3/4		P.V.P	/ SOLD.
34 x 1,10	1 1/4 x 0,042			K		22.98	9.88
41 x 1,30	1 1/2 x 0,050	K	C-TEC	K	C-TEC	32.76	11.28
54 x 1,60	2 x 0,063	K	C-TEC	K	C-TEC	43.35	17.64
67 x 1,60	2 5/8 x 0,063	K	C-TEC	K	C-TEC	67.98	38.17

K = Variable tooth

Article group 557 857 C-TEC

Professional

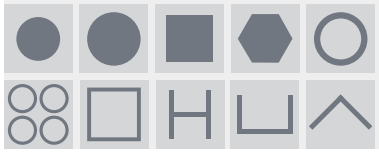
M51-**X-PRO**

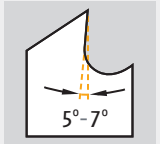
The pro with particularly wear-resistant teeth.
For sawing processes using minimal lubrication.
Powerful at high cutting speeds and feeds.

Also coated available C-TEC for extremely increased feet rates, significantly reduced cutting times and maximized blade life.

Engineered for:

- steel beams, profiles and pipes
- mixed cross-sections





Dimensions				Tooth				
mm	P.V.P	SOLD.	inch	2/3		3/4		4/6
34 x 1,10	22.98	9.88	1 1/4 x 0,042			K		K
41 x 1,30	32.76	11.28	1 1/2 x 0,050	K	C-TEC	K	C-TEC	
54 x 1,30	43.35	17.64	2 x 0,050			K	C-TEC	
54 x 1,60	43.35	17.64	2 x 0,063	K	C-TEC	K	C-TEC	
67 x 1,60	67.98	38.17	2 5/8 x 0,063	K	C-TEC	K	C-TEC	K

K = Variable tooth

Article group 420 Standard

M42-**STAR**

Allrounder for solid, small-dimensioned materials.

Engineered for:

- common steel qualities and non ferrous metals
- short-chipping materials
- small structurals with thin walls
- narrow cross sections up to approx. 100 mm (4")
- contour cutting operations

P.V.P	SOLD.	Dimensions mm	Dimensions inch	Tooth 4	6	10	14	18
19.51	9.16	6 x 0,90	1/4 x 0,035			N	N	
19.51	9.16	10 x 0,90	3/8 x 0,035			N	N	
16.58	9.16	13 x 0,65	1/2 x 0,025			N	N	N
16.58	9.16	13 x 0,90	1/2 x 0,035				N	
18.33	9.16	20 x 0,90	3/4 x 0,035				N-W	N-W
19.08	8.49	27 x 0,90	1 x 0,035	N	N		N-W	

N = Standard tooth W = Wavy set

Article group 421 Standard

M42-**STAR-PLUS**

The saw blade for medium sized solid materials.

Engineered for:

- small workshop bandsaws
- common steel qualities and non ferrous metals
- cross sections over approx. 100 mm (4")

Dimensions mm	Dimensions inch	Tooth 3	4	6	P.V.P	SOLD
6 x 0,90	1/4 x 0,035			H	19.51	9.16
10 x 0,90	3/8 x 0,035		H	H	19.51	9.16
13 x 0,65	1/2 x 0,025		H	H	16.58	9.16
13 x 0,90	1/2 x 0,035	H	H	H	16.58	9.16
20 x 0,90	3/4 x 0,035	H			18.33	9.16
27 x 0,90	1 x 0,035	H			19.08	8.49

H = Hook tooth

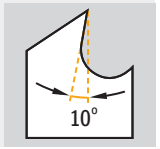
Article group 426 | Standard

M42-**ALUCUT-PLUS**

For cutting aluminium without pinching.

Engineered for:

- pure aluminium and aluminium alloys
- solid material and structurals
- materials with residual stress and a tendency to become pinched



P.V.P	SOLD.	Dimensions mm	Dimensions inch	Tooth 3	Tooth 4	Tooth 6
19.51	9.16	10 x 0,90	3/8 x 0,035		H	H
16.58	9.16	13 x 0,65	1/2 x 0,025		H	H
16.58	9.16	13 x 0,90	1/2 x 0,035	H	H	H
18.33	9.16	20 x 0,90	3/4 x 0,035	H		
19.08	8.49	27 x 0,90	1 x 0,035	H		

H = Hook tooth

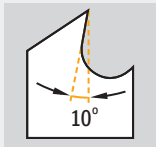
Article group 436 | Standard

M42-**ALUCUT-SPRINT**

Easy cutting of light-weight metals.

Engineered for:

- pure aluminium and aluminium alloys
- solid material and structurals



Dimensions mm	Dimensions inch	Tooth 2/3	Tooth 3/4	P.V.P /	SOLD.
27 x 0,90	1 x 0,035	K	K	19.08	8.49
34 x 1,10	1 1/4 x 0,042	K	K	22.98	9.88

K = Variable tooth

Article group 544

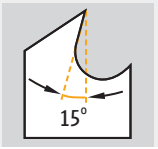
Professional

M51-**BLIZZARD**

Extra wear resistant teeth made of powder metallurgical HSS-steel

Engineered for:

- hard and tough materials up to 1700 N/mm²
- stainless steel
- copper and copper based alloys
- titanium and titanium based alloys
- thick walled structurals



Dimensions				Tooth						
mm	P.V.P	SOLD.	inch	0,75/1,25	1/1,3	1,4/2	2/3	3/4	4/6	5/8
27 x 0,90	21.94	8.49	1 x 0,035				K	K	K	K
34 x 1,10	26.42	9.88	1 1/4 x 0,042				K	K	K	
41 x 1,30	37.31	11.28	1 1/2 x 0,050			K	K	K		
54 x 1,60	49.80	17.64	2 x 0,063		K	K	K			
67 x 1,60	71.32	38.17	2 5/8 x 0,063	K	K	K	K			
80 x 1,60	87.99	61.22	3 x 0,063	K	K	K				

K = Variable tooth with special geometry

Article group 437 837 C-TEC

Professional Plus

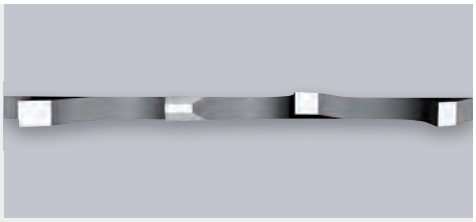
M42-TAIFUN-SPRINT

Excellent for use on high-performance band saw machines.

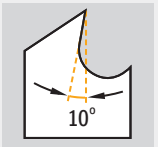
Also coated available C-TEC for extremely increased feet rates, significantly reduced cutting times and maximized blade life.

Engineered for:

- tensile strengths of up to 1400 N/mm²
- stainless steel
- all-purpose use for steels and non-ferrous metals
- thick walled structurals



The borazon-ground tooth tips produce an excellent cutting surface, perfect angular cutting and long tool life.



Dimensions				Tooth							
mm	P.V.P	SOLD.	inch	0,75/1,25		1,4/2		2/3		3/4	
27 x 0,90	19.08	8.49	1 x 0,035					K		K	
34 x 1,10	22.98	9.88	1 1/4 x 0,042			K		K		K	
41 x 1,30	32.76	11.28	1 1/2 x 0,050			K	C-TEC	K	C-TEC	K	C-TEC
54 x 1,30	43.35	17.64	2 x 0,050			K	C-TEC	K	C-TEC	K	C-TEC
54 x 1,60	43.35	17.64	2 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC	K	C-TEC
67 x 1,60	67.98	38.17	2 5/8 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC		
80 x 1,60	71.25	61.22	3 x 0,063	K	C-TEC	K	C-TEC				

K = Variable tooth

Article group 537 867 C-TEC

Professional Plus

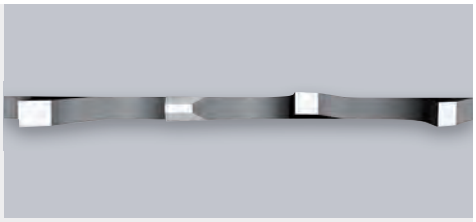
M51-TAIFUN-MAXIMA

Extremely wear-resistant, ground teeth for the most difficult cutting conditions.

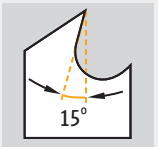
Also coated available C-TEC for extremely increased feet rates, significantly reduced cutting times and maximized blade life.

Engineered for:

- tensile strengths of up to 1700 N/mm²
- stainless steel
- heat resistant duplex steel
- nickel based alloys
- aluminium alloys
- titanium based alloys



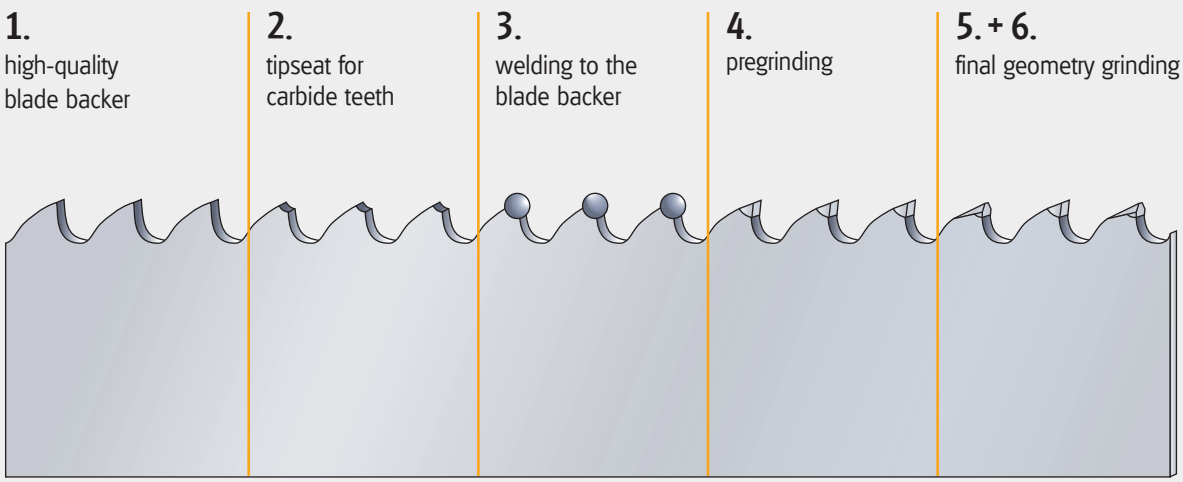
The borazon-ground tooth tips produce an excellent cutting surface, perfect angular cutting and long tool life.



Dimensions				Tooth									
mm	P.V.P	SOLD.	inch	0,75/1,25		1/1,3		1,4/2		2/3		3/4	
27 x 0,90	21.94	8.49	1 x 0,035							K		K	
34 x 1,10	26.42	9.88	1 1/4 x 0,042							K		K	
41 x 1,30	37.31	11.28	1 1/2 x 0,050					K	C-TEC	K	C-TEC	K	C-TEC
54 x 1,60	49.80	17.64	2 x 0,063			K	C-TEC	K	C-TEC	K	C-TEC		
67 x 1,60	71.32	38.17	2 5/8 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC	K	C-TEC		
80 x 1,60	87.99	61.22	3 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC				

K = Variable tooth

Why so successful?



Flexible:

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

Extremely durable:

The tooth tips consist of wear resistant high-grade carbide.

Perfectly joint:

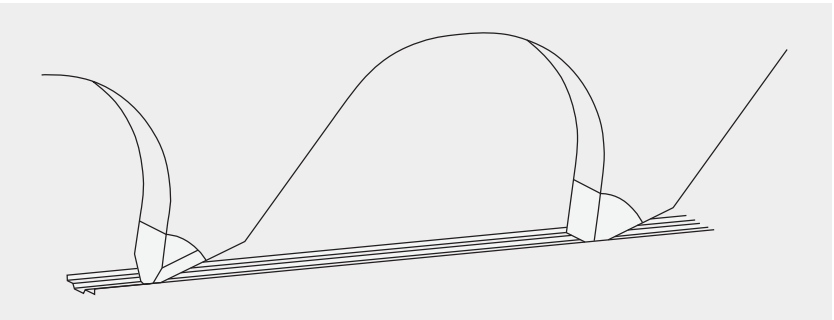
Carbide tooth tips are welded to the backer in a special procedure.

Band Saw geometry:

Also 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 are required.

Carbide Tipped Band Saw Blades are supplied as endless welded loops or in coils:

27 – 80 mm in length of approx. 50 m

Article group 620

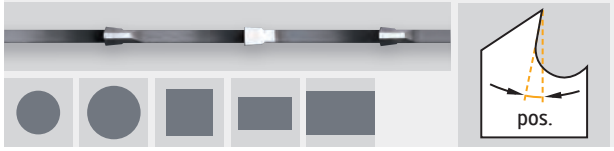
Professional

BLACK-LINE

Carbide tipped band saw blades with triple chip geometry for cutting steels and non-ferrous metals.

Engineered for:

- all-purpose use for construction steel, low-alloy steel, cast iron, aluminium, copper and bronze
- solid material in medium and large dimensions



Dimensions			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	P.V.P	1 1/2 x 0,050			K	K		K
54 x 1,30	A	2 x 0,050			K	K		
54 x 1,60	CONSULTAR	2 x 0,063	K	K	K	K		K
67 x 1,60		2 5/8 x 0,063	K	K	K	K		

K = Variable tooth H = Hook tooth

Article group 650 850 C-TEC

Professional Plus

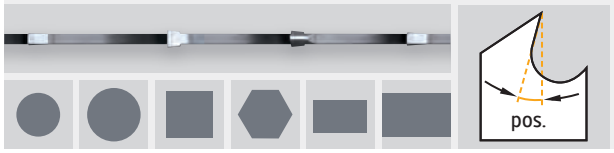
SILVER-LINE

Carbide tipped band saw blades with patented multi chip tooth geometry for cutting high-alloy steels and non-ferrous metals.

Also coated available C-TEC for extremely increased feet rates, significantly reduced cutting times and maximized blade life.

Engineered for:

- stainless steel
- heat resistant steels
- cold and hot working steels
- hardened steel up to 1900 N/mm²
- nickel based alloys
- aluminium-silicon alloys
- copper-nickel alloys
- titanium and titanium alloys
- exotic, hard to cut alloys



Dimensions		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	C-TEC	K	C-TEC	K	C-TEC
54 x 1,30	2 x 0,050					K	C-TEC	K	C-TEC		
54 x 1,60	2 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC	K	C-TEC	K	C-TEC
67 x 1,60	2 5/8 x 0,063	K	C-TEC	K	C-TEC	K	C-TEC	K	C-TEC		
80 x 1,60	3 x 0,063	K	C-TEC			K	C-TEC				

P.V.P A CONSULTAR

K = Variable tooth

Article group 651

Professional Plus

SILVER-LINE-N

Carbide tipped band saw blades with multi chip tooth geometry, negative rake angle for cutting extremely hard or surface hardened materials.

Engineered for:

- induction hardened piston rods
- steels hardened up to 62 HRC
- hard chromium plated materials
- manganiferrous alloyed steels

Dimensions			Tooth		
mm		inch	1,4/2	2/3	3/4
27 x 0,90		1 x 0,035		K	K
34 x 1,10	P.V.P	1 1/4 x 0,042		K	K
41 x 1,30	A CONSULTAR	1 1/2 x 0,050	K	K	K
54 x 1,60		2 x 0,063	K	K	K

K = Variable tooth

Article group 621

STONE-LINE-RT

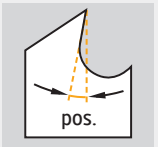
The universal band saw blade for all construction and insulation materials of small and large dimensions running on brick band saw machines.

The new variable tooth pitch ensures notably low-vibration and quiet sawing processes and assures supreme quietness. The results are clean and smooth cuts of the best quality.

Thanks to its long blade life and increased durability, our further developed, precision-ground tooth geometry is particularly convincing in hard building materials.

Engineered for:

- pore or lightweight concrete
- perforated brick
- porous bricks ("Poroton")
- insulation material



Dimensions			Tooth
mm	P.V.P A CONSULTAR	inch	2/3
27 x 0,90		1 x 0,035	K

K = Variable tooth