Arntz

Passionate Cutting!

SPT SUNCOAST INC. PRECISION TOOLS

ESTABLISHED 1963

Fact Book

Edition 2016

BAND SAW BLADES

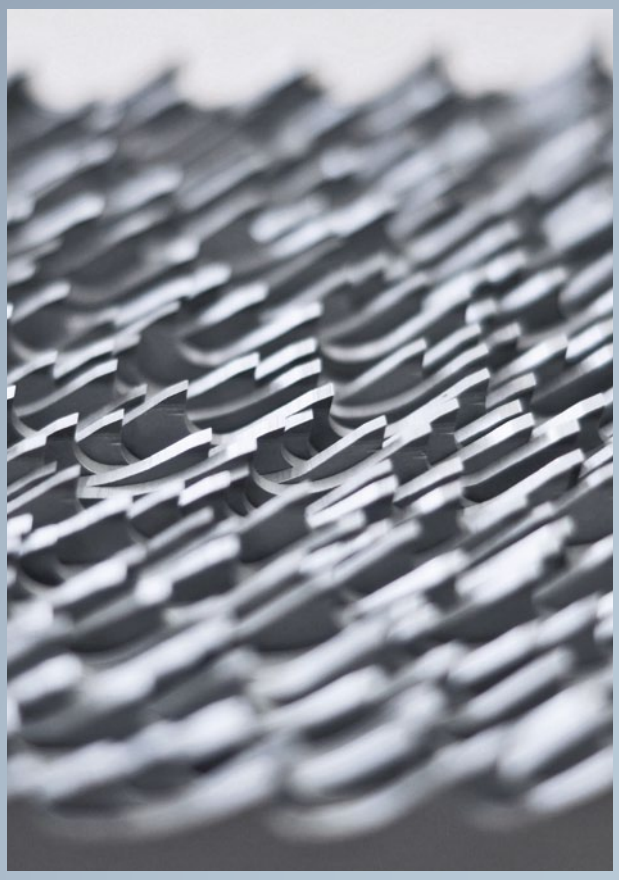
Welcome to ARNTZ

Our passion and over 220 years of experience in manufacturing tools makes our band saw blades what they are today:

High-performance professionals for the cutting of the most diverse range of materials – economical, precise and tailor-made to your requirements. Your need for quality is what drives us. For highest efficiency we supply "Made in Germany" products that you can rely on – worldwide. Needless to say that all our products are certified ISO 9001 : 2008.

ARNTZ is dynamic and innovative – these are our guiding principles. As specialists for band saw blades we enthusiastically embrace the new challenges posed by very diverse markets. From across a range of industries we know every last detail about the materials being cut; what chip formation needs to be accounted for, where vibrations occur and which materials require special attention. Alloys and composite materials change with the increasing demands being made on the finished product.

New markets are arising with new materials. ARNTZ's slimline structure enables us to address your specific requirements quickly and individually, and to work with you to jointly develop optimal results. We will provide full support, from the initial product consultancy to optimizing performance – on-site if necessary.

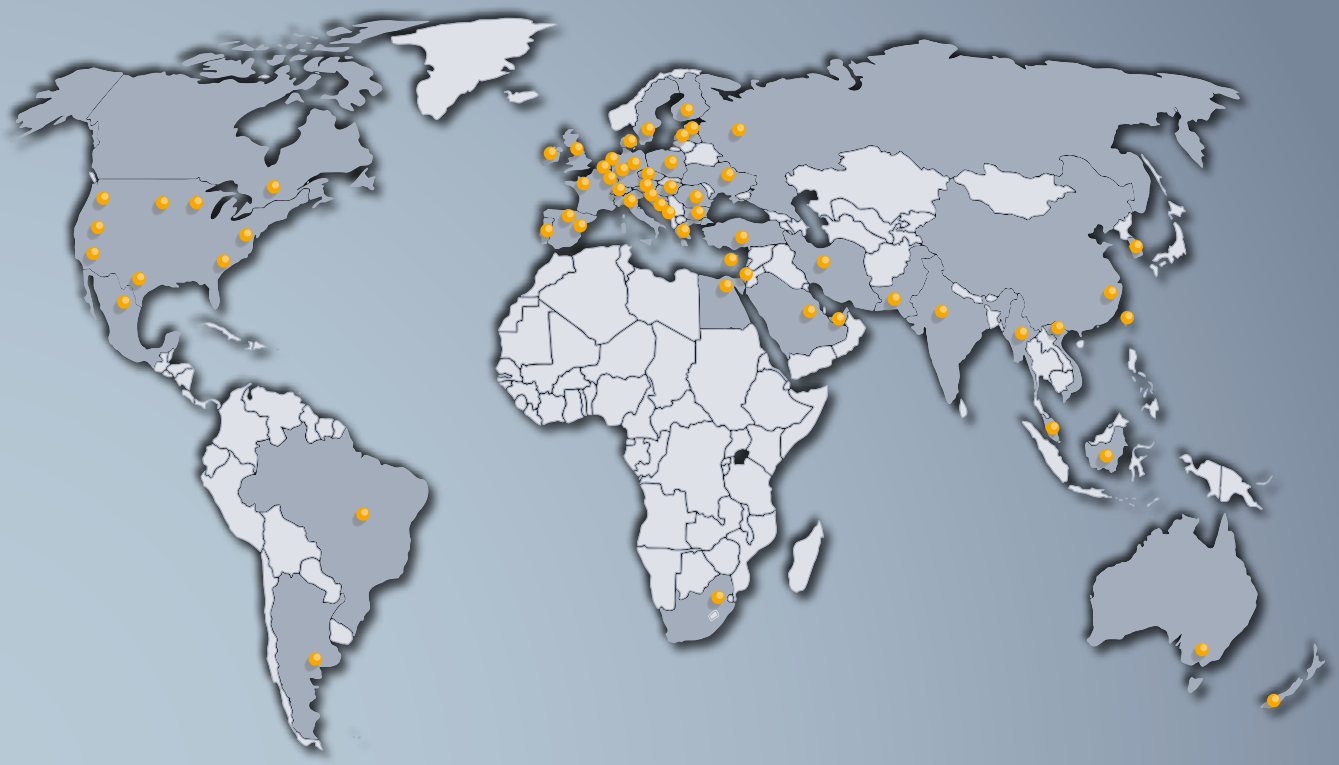


Innovative cutting technology…

Optimized operating processes and certified quality controls are the foundation of ARNTZ's high-end saw blades. Every single step in the production process goes through our multilayered control system to guarantee our quality standards.

Our experienced service technicians provide in-depth expert knowledge that has been adapted to fit your exact requirements. Alongside telephone assistance and on-site support, we also offer training modules targeted to your requirements.

…and competent advice.



We are on your side – worldwide.

Jan Wilhelm Arntz · CEO

Explanation of symbols

	Article group		Article group
	solid material round small	420 | 430	
	solid material round medium	421 | 426 | 434 | 436 620 | 622 | 630 | 640 650	
	solid material round big	431 | 434 | 437 | 438 531 | 537 | 544 | 620 622 | 630 | 640 | 650	
	solid material square big	431 | 434 | 437 | 438 531 | 537 | 544 | 620 622 | 630 | 640 | 650	
	solid material special alloy	434 | 438 | 531 | 537 544	
	solid material rectangular big	431 | 434 | 437 | 438 537 | 544 | 620 | 622 630 | 640 | 650	
	solid material very big	431 | 437 | 537 | 544 620 | 630 | 640 | 650	
	sheet panel	430	
	small round tube standard wall thickness	430	
	small round tube thin walled	430	
	round tube standard wall thickness	426 | 430 | 433 | 442	
			 round tube heavy walled — 431 | 437 | 531 | 537
			 bundle of tubes — 430 | 433
			 square tube small — 420
			 square tube big — 433 | 442
			 aluminium profile — 436
			 standard steel beam — 433 | 442
			 wide flange steel beam — 445
			 heavy walled steel beam — 445
			 U channel steel — 433 | 442
			 L angle steel — 433 | 442
			 surface hardened material — 651

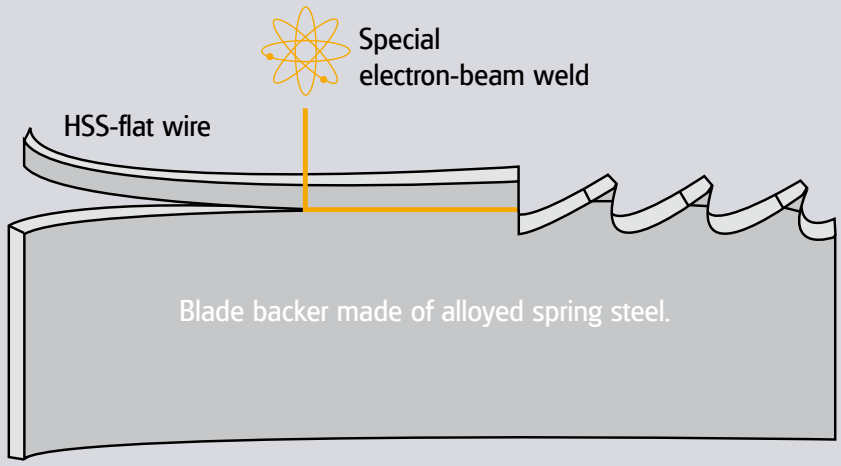
Now is the time to make the **right cut!**

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 special electron or laser beam.

Hard and wear resistant:

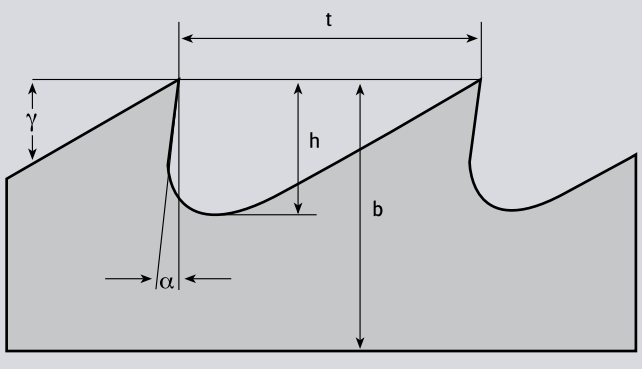
Tooth tips made of hardened HSS-Steel in M 42 or M 51 quality obtained due to well-balanced hardening and fixed structure resulting in high wear resistance.

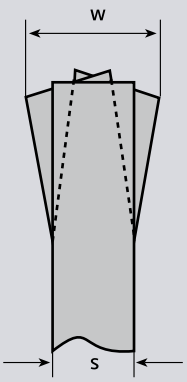
All advantages:

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

Band Saw geometry

Terminology?



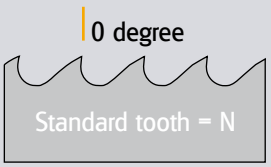


b = width of blade
s = thickness of saw blade
h = gullet depth
t = tooth pitch
α = rake angle
γ = clearance angle
w = width of set

Tooth forms

Where performs the right tooth?

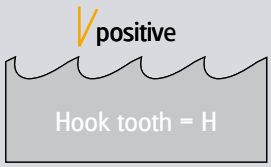
Only correct choice of tooth forms allows efficient cutting with low vibration. Four basic types are available:



Designed for:
- short chipping materials
- light wall thickness

Data:
- rake angle 0^0
- 4 to 18 tpi

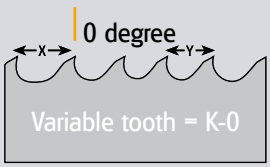
Article groups:
100, 110, 420



Designed for:
- long chipping materials
- large cross sections

Data:
- positive rake angle
- 2 to 6 tpi

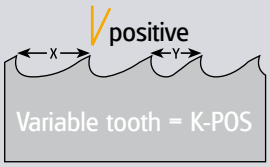
Article groups:
100, 110, 421, 426



Designed for:
- low vibration cutting
- structurals

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

Article group:
430 (K-0)

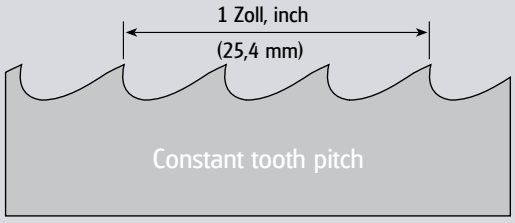


Designed for:
- low vibration cutting
- solid materials

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

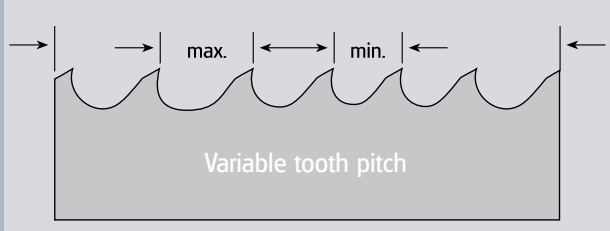
Article groups:
433, 442, 445 (K-V)
431, 436, 437 (K-POS)
434, 438, 531, 537, 544 (K-PLUS)

Tooth pitch



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

Constant or variable?



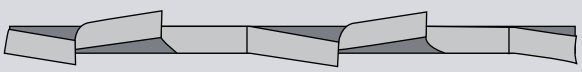
The tooth distances vary within a group of teeth. The smallest and the largest tooth pitch denotes the variable tooth of saw blade.

Tooth set

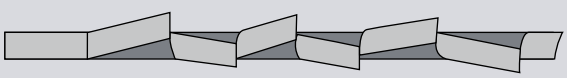
What groups and waves can cause.

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.

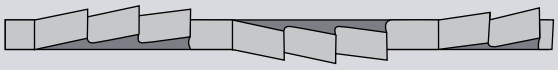
This is to avoid blade pinching, very important in problematic cutting jobs. Width and type of set are tuned to the cutting application:



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 — up to 14 tpi, tooth form N

Correct tooth pitch – optimum performance.

The choice of the right tooth pitch can be decisive to achieve the optimum performance. Choose either standard tooth with constant tooth pitch or variable tooth with unevenly spaced teeth. It is advisable to use variable tooth 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	1/1,3 | 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 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. 50 m

Bi-Metal and Carbide Tipped Band Saw Blades

For each cutting operation the right choice.

		Art. gr.	420	421	426	436	430	433	431	434	445	442	437	438	531	544	537	620	630	622	640	650	651
		Product name	M42-STAR	M42-STAR-PLUS	M42-ALUCUT-PLUS	M42-ALUCUT-SPRINT	M42-SPRINT	M42-SPRINT-MEDIUM-VS	M42-SPRINT-PLUS	M42-MAXIMA-SPRINT	M42-PROFILER-SPRINT-VS	M42-TAIFUN-MEDIUM-VS	M42-TAIFUN-SPRINT	M42-TAIFUN-MAXIMA	M51-SPRINT-PLUS	M51-BLIZZARD-SPRINT	M51-TAIFUN-MAXIMA	TC-BLACK-LINE	TC-RED-LINE	TC-BLACK-LINE-S	VC-BLUE-LINE	VC-SILVER-LINE	VC-SILVER-LINE-N
Page of catalogue			10	10	11	11	12	13	14	15	16	17	18	19	20	20	21	23	23	24	25	26	27
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**

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

Dimensions		Tooth				
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
20 x 0,90	3/4 x 0,035	N*	N*		N-W*	N
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 * Special item

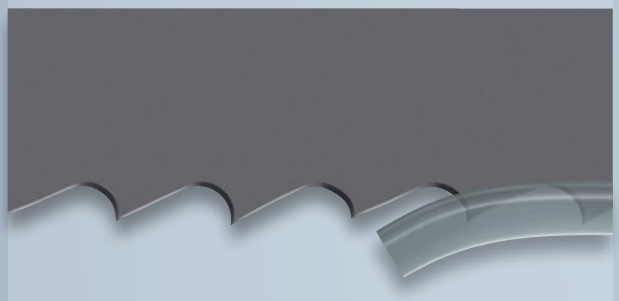
Article group 421

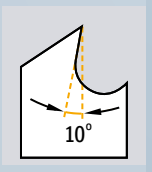
M42 **STAR-PLUS**

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		Tooth			
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		
27 x 0,90	1 x 0,035	H	H		

H = Hook tooth

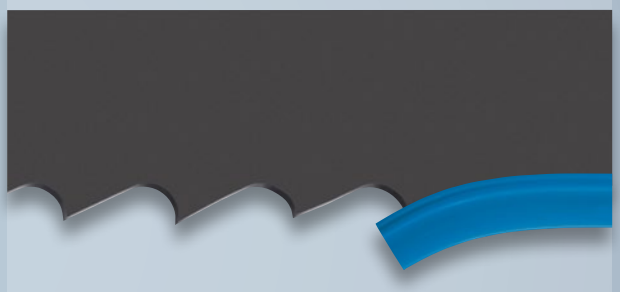
Article group 426

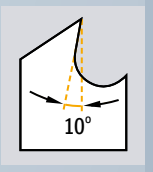
M42 ALUCUT-PLUS

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





Dimensions		Tooth		
mm	inch	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 = Hook tooth

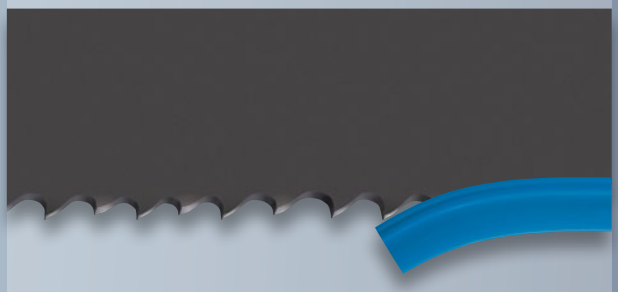
Article group 436

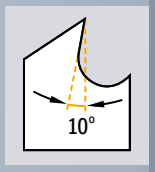
M42 ALUCUT-SPRINT

Easy cutting though light metals.

Engineered for:

- Pure aluminium and aluminium alloys
- Solid material and structurals





Dimensions		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

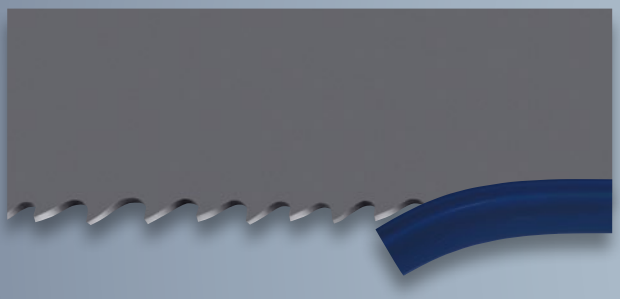
Article group 430

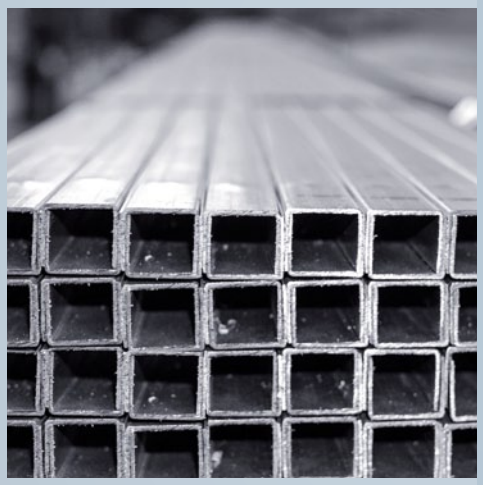
M42
SPRINT

The structural 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		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	
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

* = Special item

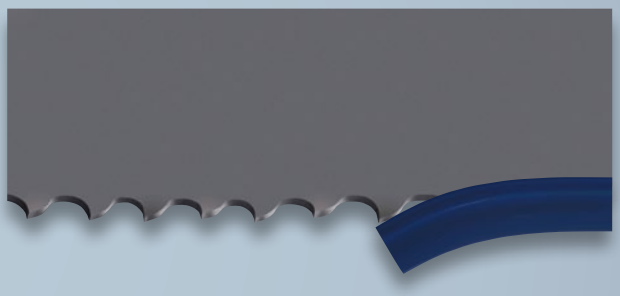
Article group 433

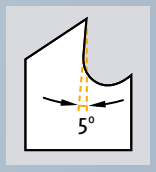
M42
SPRINT-MEDIUM-VS

The multi purpose blade for various applications.

Engineered for:

- Structural and beams
- Also for solid materials as part of a mix of materials
- Small and medium scissor-arm machines





Dimensions		Tooth				
mm	inch	2/3	3/4	4/6	5/7	8/11
20 x 0,90	3/4 x 0,035					K
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

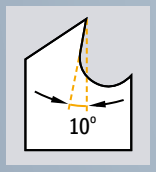
Article group 431

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		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	K
67 x 1,60	2 5/8 x 0,0630	K	K	K		
80 x 1,60	3 x 0,063	K	K			

K = Variable tooth

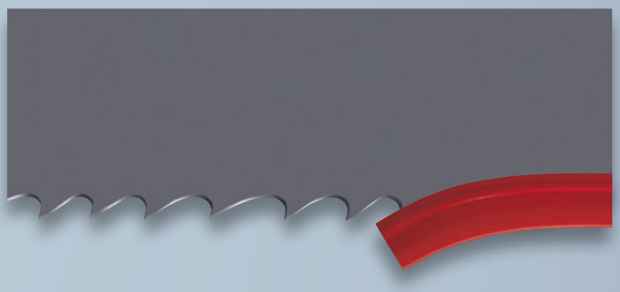
Article group 434

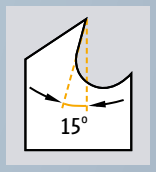
M42
MAXIMA-SPRINT

Excellent for tough materials and alloys.

Engineered for:

- Long chipping steels
- Stainless steel
- Titanium based alloys
- Special bronzes
- Copper based alloys
- Nickel based alloys
- Exotic, difficult to cut alloys
- Solid material of medium dimensions





Dimensions		Tooth		
mm	inch	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
54 x 1,30	2 x 0,050		K	
54 x 1,60	2 x 0,063	K	K	K

K = Variable tooth

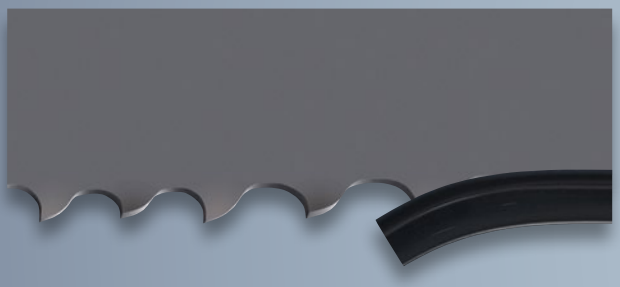
Article group 445

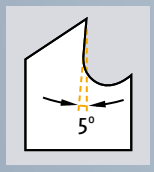
M42
PROFILER-SPRINT-VS

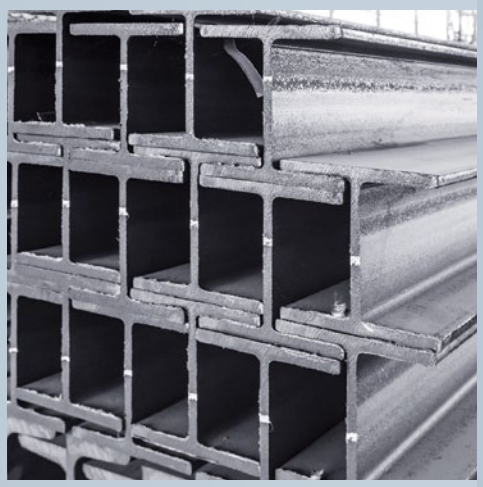
Robust performance for steel construction.

Engineered for:

- Large cross-section steel beams
- Structurals with residual stress







Dimensions		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 442

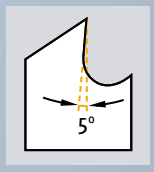
M42
TAIFUN-MEDIUM-VS

The universal multi-purpose blade with even more bite.

Engineered for:

- Structural steel
- All types of steel beams

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



Dimensions		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 1,30	2 x 0,050		K
54 x 1,60	2 x 0,063	K	K
67 x 1,60	2 5/8 x 0,063		K

K = Reinforced variable tooth

Article group 437

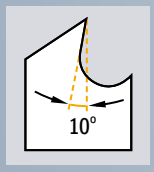
M42
TAIFUN-SPRINT

Excellent for use on high-performance band saw machines.

Engineered for:

- Stainless steel
- All-purpose use for steels and non-ferrous metals
- Tensile strengths of up to 1400 N/mm²
- Thick walled structurals

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



Dimensions		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	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 438

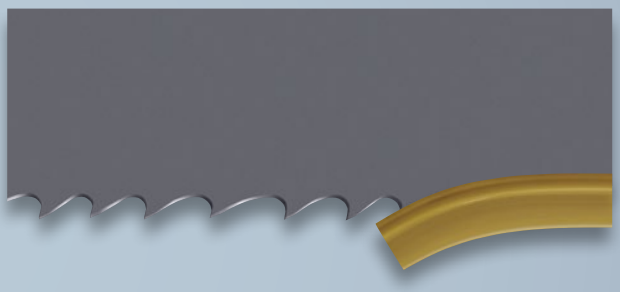
M42
TAIFUN-MAXIMA

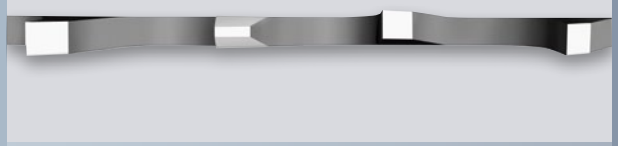
Perfect for cutting tough materials and alloys.

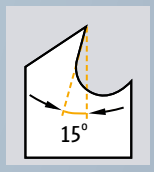
Engineered for:

- Long chipping materials
- Stainless steel
- Titanium alloys
- Special bronzes
- Copper alloys
- Nickel based alloys
- Exotic, difficult to cut alloys

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







Dimensions		Tooth		
mm	inch	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
54 x 1,30	2 x 0,050		K	
54 x 1,60	2 x 0,063	K	K	K

K = Variable tooth

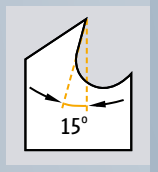
Article group 531

M51 SPRINT-PLUS

Wear resistant teeth for difficult to cut materials of medium dimensions.

Engineered for:

- Hard and tough materials up to 1700 N/mm² tensile strength
- Stainless steel
- Nickel based alloys
- Titanium and special bronzes
- Thick walled structurals



Dimensions		Tooth		
mm	inch	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		
67 x 1,60	2 5/8 x 0,063	K		

K = Variable tooth

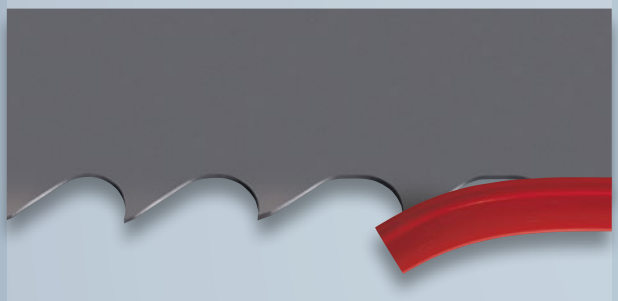
Article group 544

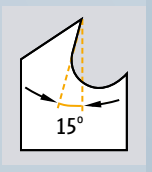
M51 BLIZZARD-SPRINT

For extra wear resistant cutting, made of powder metallurgical hardened steel for large cross-sections and demanding alloys.

Engineered for:

- Steels of the highest tensile strength
- Long chipping materials
- Stainless steel
- Titanium based alloys
- Nickel based alloys
- Special bronzes





Dimensions		Tooth			
mm	inch	0,75/1,25	1/1,3	1/1,5	1,4/2
41 x 1,30	1 1/2 x 0,050				K
54 x 1,60	2 x 0,063			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 with special geometry * = Special item

Article group 537

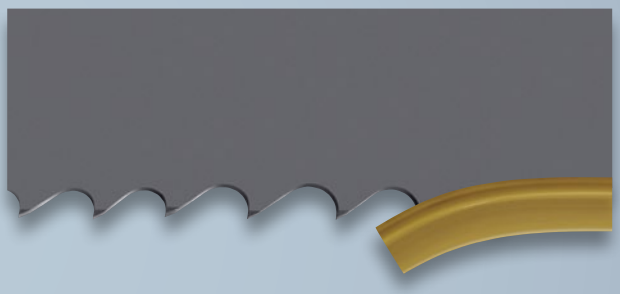
M51
TAIFUN-MAXIMA

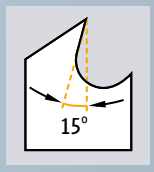
Extremely wear-resistant, ground teeth for the most difficult cutting conditions.

Engineered for:

- Hard and tough materials up to 1700 N/mm² tensile strength
- Stainless steel
- Nickel based alloys
- Titanium and special bronzes
- Thick walled structurals

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



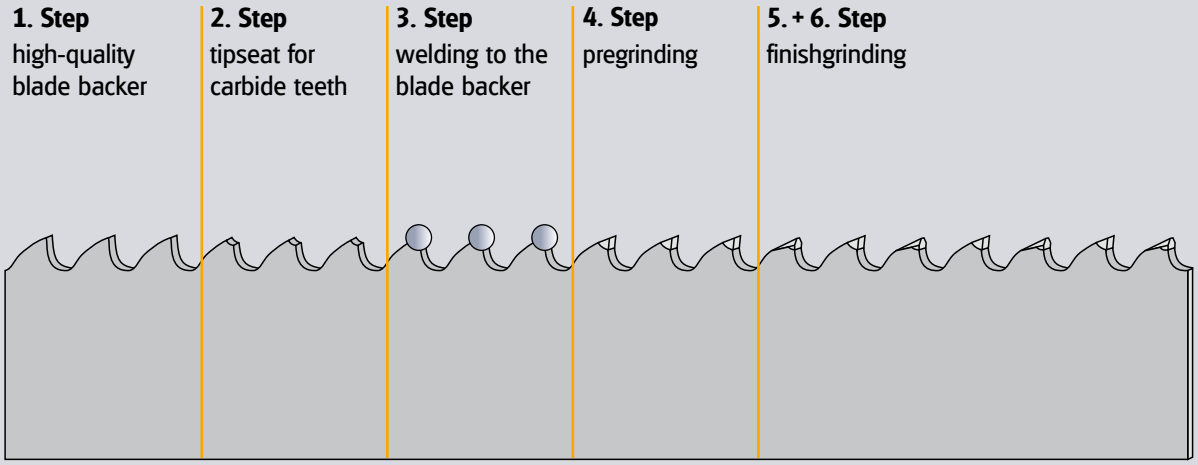


Dimensions		Tooth					
mm	inch	0,75/1,25	1/1,3	1/1,5	1,4/2	2/3	3/4
27 x 0,90	1 x 0,035					K	K
34 x 1,10	1 1/4 x 0,042					K	K
41 x 1,30	1 1/2 x 0,050				K	K	K
54 x 1,60	2 x 0,063			K	K	K	
67 x 1,60	2 5/8 x 0,063	K	K		K	K	
80 x 1,60	3 x 0,063	K	K		K*		

K = Variable tooth

* = Special item

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:

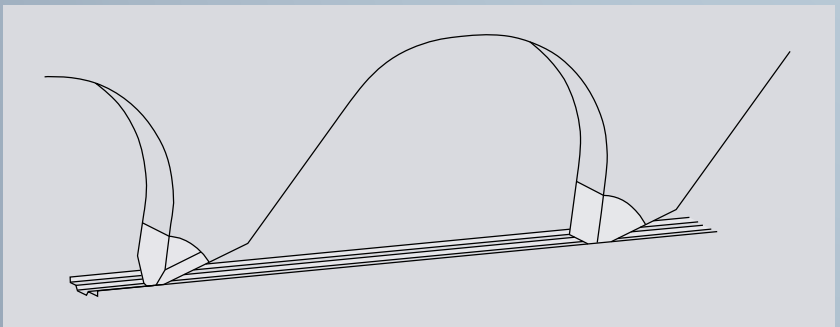
Carbide tooth tips are welded to the backer in a special procedure.

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 have to be used.

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

27 - 80 mm in length of approx. 50 m

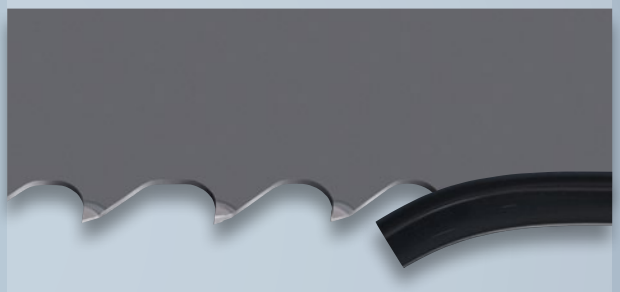
Article group 620

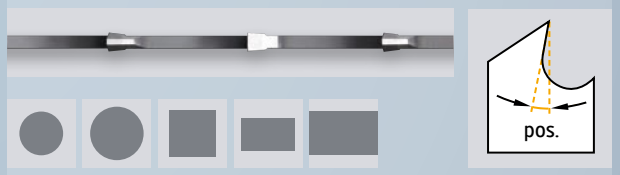
TC
BLACK-LINE

Carbide tipped band saw blades with triple chip geometry for cutting **steels.**

Engineered for:

- All-purpose use for construction steel, low-alloy steel and cast iron
- 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	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		

K = Variable tooth H = Hook tooth

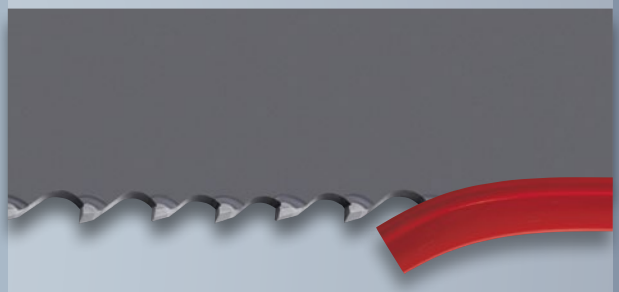
Article group 630

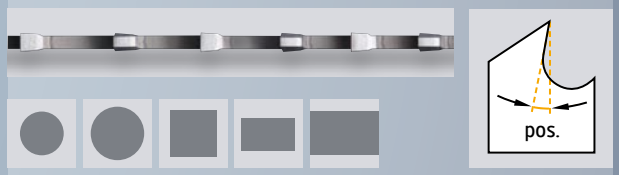
TC
RED-LINE

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

Engineered for:

- All-purpose use for 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	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		

K = Variable tooth H = Hook tooth

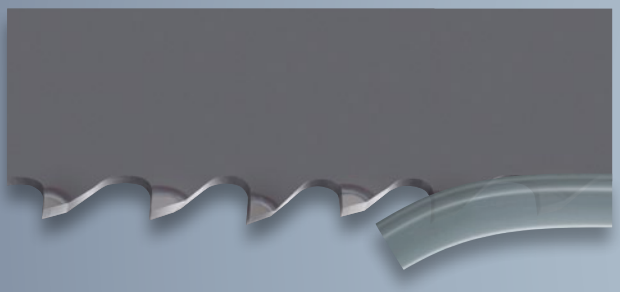
Article group 622

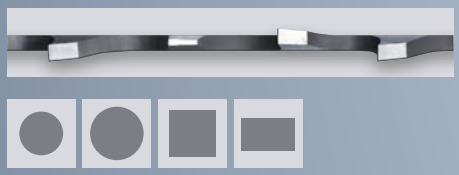
TC
BLACK-LINE-S

Carbide tipped band saw blade with set tooth for difficult to cut, abrasive materials.

Engineered for:

- Titanium alloys
- Metals with high residual stress
- Stainless steels
- Special alloys
- Abrasive non-ferrous metals and graphite





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	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	
67 x 1,60	2 5/8 x 0,063	K		

K = Variable tooth

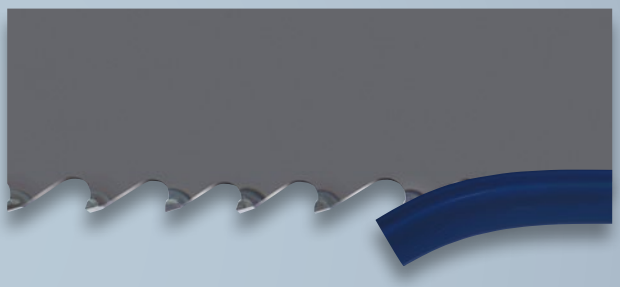
Article group 640

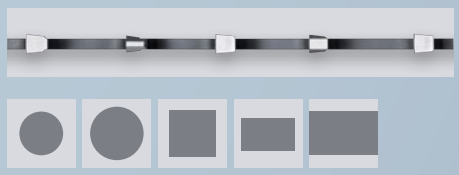
VC
BLUE-LINE

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

Engineered for:

- Aluminium alloys
- Aluminium bronzes
- Copper alloys
- Sand cast aluminium and cast magnesium
- Graphite





Dimensions		Tooth				
mm	inch	0,75/1,25	1,4/2	2/3	3	3/4
20 x 0,90	3/4 x 0,035				H	
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		
67 X 1,60	2 5/8 x 0,063		K			
80 x 1,60	3 x 0,063	K				

K = Variable tooth H = Hook tooth

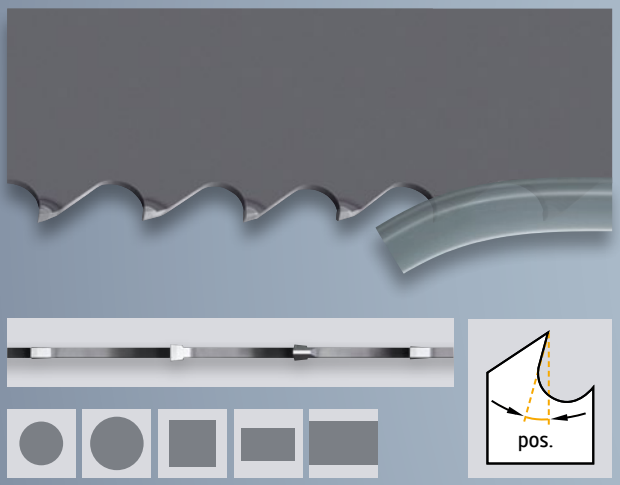
Article group 650

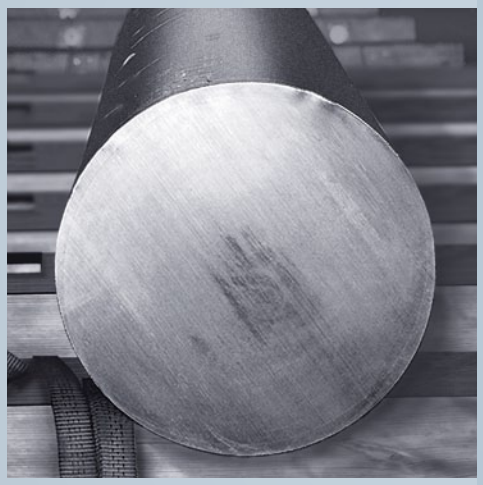
VC
SILVER-LINE

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

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	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	
80 x 1,60	3 x 0,063	K		K		

K = Variable tooth

Patent no. 102 53 711

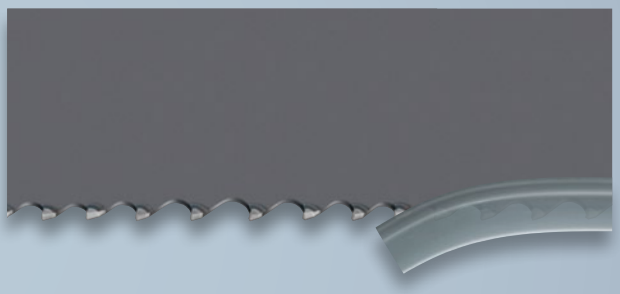
Article group 651

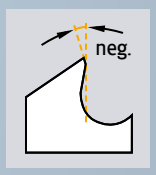
VC
SILVER-LINE-N

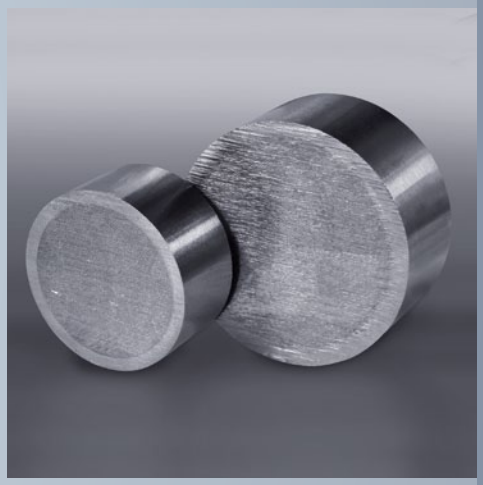
Carbide tipped band saw blades with multi chip tooth geometry, negative rake for cutting extremely hard or surface hardened materials.

Engineered for:

- Induction hardened piston rods
- Steels hardened up to 63 HRC
- Hard chromium plated materials
- Manganiferous alloyed steels







Dimensions		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

Carbon Steel Band Saw Blades

Article group 100

CS-1

Flexible band back in pin-point quality with hardened teeth. Suitable for everyday workshop purposes.

Dimensions		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°

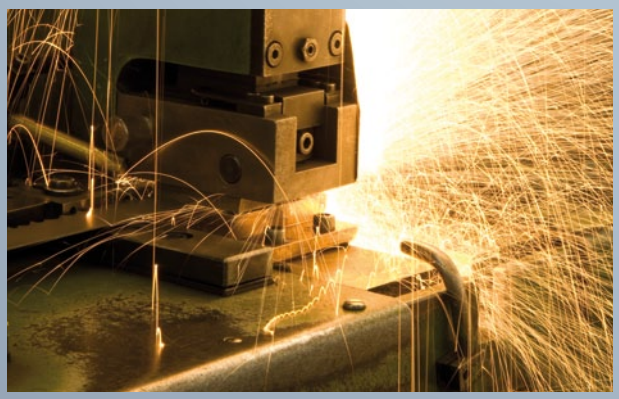
Article group 110

CS-2-PLUS

Spring hardened band back with hardened teeth. For increased wear resistance and long tool life.

Dimensions		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
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 Accessories

Chip brushes

We stock a large selection of brushes of different diameters, widths and bore holes.

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 procedure 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 be slightly 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	80-100 60-85 50-70		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	80-100 40-55 50-60 40-60	x x x x	
Free machining steels	9 S 20 45 S 20	1.0711 1.0727	80-120 80-120		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	60-70 60-70 60-70 50-65 50-65		x x x x x
Ball bearing steels	100 Cr 6 100 CrMn 6	1.3505 1.3520	35-50 35-50		x x
Spring steels	65 Si 7 50 CrV 4	1.5028 1.8159	45-60 45-60		x x
Unalloyed tool steels	C 125 W C 75 W	1.1663 1.1750	40-60 40-60		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	40-50 30-40 30-40 35-45 30-45 30-50 45-60 40-50	x x dry x x x x x	x x x x x x x
Hot-work tool steels	56 NiCrMoV 7	1.2714	40-50	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	35-45 35-45 35-45		x x x
Valve steels	X 45 CrSi 9 3 X 45 CrNiW 18 9	1.4718 1.4873	30-45 30-40	x x	x x
High temperature steels	X 20 CrMoV 12 1 X 5 NiCrTi 26 15	1.4922 1.4980	10-30 10-30	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	15-25 15-25 15-25	x x x	x x x
Stainless steels	X 5 CrNi 18 10 (V2A) X 6 CrNiMoTi 17 12 2 (V4A)	1.4301 1.4571	30-40 30-40	x x	x x
Steel castings	GS-38 GS-60	1.0420 1.0558	40-60 40-60		x x
Cast irons	GG-15 GG-30 GGG-50 GTW-40 GTS-65	0.6015 0.6030 0.7050 0.8040 0.8165	30-60 30-60 30-60 30-60 30-60	dry dry dry dry dry	
Copper	KE-Cu Elektrolyt-Copper	2.0050	100-400 100-400	x x	x x
Brass (copper-zinc alloys)	CuZn 10 CuZn 31 Si 1	2.0230 2.0490	100-400 100-400		x x
Aluminium bronze (copper-aluminium alloys)	CuAl 8 CuAl 10 Fe 3 Mn 2	2.0920 2.0936	35-50 35-50		x x
Bronze (copper-TIN alloys)	CuSn 6 CuSn 6 Zn 6	2.1020 2.1080	80-150 80-150		x x
Red brass (copper-cast alloys)	CuSn 10 Zn CuSn 5 ZnPb	2.1086 2.1096	50-100 50-100		x x
Nickel base alloys	NiCr 20 TiAl NiCr 22 FeMo	2.4631 2.4972	10-25 10-25	x x	x x
Aluminium and aluminium alloys	Al 99.5 AlMgSiPb G-AlSi 5 Mg	3.0255 3.0615 3.2341	80-800 80-800 80-800		x x x
Titanium and titanium alloys	Ti Grade 1 TiAl 6 V 4	3.7025 3.7164	10-20 10-20	x x	x x
Thermoplastic plastics	PVC Teflon, Hostalen		100-400 100-400	dry dry	
Plastics with fibre inlays	Resitex Novotex		50-300 50-300	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	1.0037/1.0042	100-130	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	St 52/60	1.0050/1.0060	90-120	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Case-hardening steels	C10/C15	1.0301/1.0401	110-140	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	16 MnCr 5	1.7131	80-100	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	20 CrMo 5	1.7264	80-100	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	21 NiCrMo 2	1.6523	70-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Nitrate steels	34 CrAlNi 7	1.8550	45-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	34 CrAlMo 5	1.8507	45-60	3/4 K	3 tpi 2/3 K	1,4/2 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	1.0501/1.0503	90-120	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	42 CrMo 4	1.7225	70-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	34 CrNiMo 6	1.6582	70-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Ball bearing steels	100 Cr 6	1.3505	70-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	100 CrMo 7 3	1.3536	65-85	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Spring steels	65 Si 7	1.5028	65-85	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	50 CrV 4	1.8159	65-85	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Unalloyed tool steels	C 125 W	1.1663	65-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	C 80 W 1	1.1525	70-85	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Cold-work tool steels	125 Cr 1	1.2002	65-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 210 Cr 12	1.2080	40-50	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 155 CrVMO 12 1	1.2379	40-50	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	90 MnCrV 8	1.2842	45-55	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Hot-work tool steels	40 CrMnMo 7	1.2311	70-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 40 CrMoV 5 1	1.2344	60-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	56 NiCrMoV 7	1.2714	50-70	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	40 CrMnNiMo 8 6 4	1.2738	35-50	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
High speed steels	S 6-5-2	1.3343	50-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	S 3-3-2	1.3333	55-65	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	S 2-10-1-8	1.3247	45-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	S 10-4-3-10	1.3207	45-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	S 18-0-1	1.3355	45-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Stainless steels	X 5 CrNi 18 10	1.4301	70-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 6CrNiMoTi 17 12 2	1.4571	65-75	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 20 Cr 13	1.4021	80-100	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Valve steels	X 45 CrSi 9 3	1.4718	50-60	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 45 CrNiW 18 9	1.4873	40-50	3/4 K	3 tpi 2/3 K	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 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 20 CrMoWV 12 1	1.4935	80-100	3/4 K	3 tpi 2/3 K	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 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 12 NiCrSi 36 16	1.4864	30-40	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Special alloys	NiCr 19 NbMo	2.4668	20-30	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	NiMo 30	2.4810	22-35	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	NiCr 13 Mo 6 Ti 3	2.4662	20-30	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	NiCo 20 Cr 20 MoTi	2.4650	22-35	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	X 8 CrNiAlTi 20 20	1.4847	22-35	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Heat treated steels							
1000 - 1200 N/mm²			35-50	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
1200 - 1400 N/mm²			30-45	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
1400 - 1600 N/mm²			25-35	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Hardened steels							
50 HRC			15-20	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
55 HRC			10-15	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
60 HRC			8-12	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Steel castings	GS-38	1.0420	70-100	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	GS-60	1.0558	60-85	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Cast irons	GG-30	0.6030	60-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	GGG-50	0.7050	55-75	3/4 K	3 tpi 2/3 K	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	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	3.0255	up to 3000	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	AlMg 1	3.3315	up to 3000	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	AlMg 3	3.3535	up to 3000	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	AlMg 4.5Mn	3.3547	up to 3000	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	AlMgSi 1	3.2315	up to 3000	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Copper	KE-Cu	2.0050	100-200	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	E-Cu	2.0060	100-200	3/4 K	3 tpi 2/3 K	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 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	VuZn 31 Si	2.0230	150-250	3/4 K	3 tpi 2/3 K	1,4/2 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	2.1096	90-130	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	CuSn 10 Zn	2.1086	90-130	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Aluminium-bronze	CuAl 8	2.0920	60-80	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	CuAl 8 Fe 38	2.0920.60	52-65	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	CuAl 10 Ni 5 Fe 4	2.0966	50-70	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
Titanium and titanium alloys	Ti Grade 1	3.7025	80-100	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K
	TiAl 6 V 4	3.7164	60-90	3/4 K	3 tpi 2/3 K	1,4/2 K	0,75/1,25 K

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