



Saw Blades

Product Overview



Digital saw band consultant
<https://blades.amada-mt.de>



Calculate cutting costs online
<https://cost-per-cut.com/en>



BAND SELECTION TABLE

		St-37, St-52, StE 380		1.2510, 1.0301, 1.7012, 1.7218, 1.6955			1.2341, 1.2735, 1.2303, 1.2379			1.2344, 1.4301, 1.4564			Inconel, titanium, aluminium, Hastelloy			
																
Saw blade type		Rolled steel products	Profile steel	Bundled small materials	Normal steel, non-ferrous metals *1			Cold working steel, case-hardened steel			Hot forming tool steel, stainless steel			High heat-resistant special alloys		
CARBIDE	AXCELA HP/HP1															
	AXCELA G-Series (patent applied for) *2															
	AXCELA STRIKER G															
	AXCELA H-Series (patent applied for) *2															
	AXCELA HMAX															
	AXCELA A-Series (patent applied for) *2															
	AXCELA ALB															
	AXCELA S-Series (patent applied for) *2															
	AXCELA STRIKER (patent applied for) *2															
	AXCELA B-Series (patent applied for) *2															
	AXCELA BOOSTER															
BIMETAL	AURORA (patented) *3															
	MAGNUM HL M71 (patented) *3															
	MAGNUM HLG M71 (patented) *4															
	SIGMA															
	SUPER HL (patented) *3															
	SUPER HLG															
	SUPER8															
	SGLB															
	HI-LO															
	PROTECTOR M42 (patented) *5															
	DUOS M42 (patented) *4															

*1 Non-ferrous metals are mainly aluminum, aluminum alloys, copper and copper alloys.
In some cases, these materials can be just as hard as difficult to cut steels or even harder.
In such cases, it is recommended to contact AMADA in advance.

*2 JP. PAT. P.

*3 US. PAT.

*4 JP. PAT.

*5 JP. PAT. (2/3P, 3/4P, 4/6P)

Select the blade according to the material form and quality to be sawn taking account of the task.

When sawing wide, rolled H profiles, the saw blade can pinch in the material to be sawn. In order to prevent this effect, a WS (wide offset) is available for „**PROTECTOR**“^{*5}.

For solid material with larger diameters, we provide an Anti-Pinching variant (AP) of the „**SUPER HL**“^{*3} for prevention of the pinching effect.

	Tooth tip material	Tooth tip hardness *6	Properties
	Carbide + coatings	2500 HV	Special coated bandsaw blade for extremely powerful machines such as the AMADA HPSAW 310.
	Carbide + various coatings	up to 2500 HV depending on type	Carbide saw blades for maximum performance with outstanding tool life.
	Carbide + coatings	2500 HV	Robust coated carbide saw blades for various application fields. Perfect for substitution of competitive products without changing the operating parameters.
	Carbide	1600 HV	Carbide saw blades for challenging materials and special applications.
		1600 HV	Uncoated bandsaw blade with special geometry for cutting surface hardened or hard chromium plated steels up to 65 HRC.
		1600 HV	Carbide saw blades for aluminium applications with high blade speed.
		1600 HV	Uncoated carbide-tipped high-performance bandsaw blades for large-format aluminium plates.
		1600 HV	Carbide saw blades for universal application on modern and strong bandsaw machines.
		1600 HV	Carbide saw blades for universal application on modern and strong bandsaw machines. Flexible application due to wide range of application parameters.
		1600 HV	Carbide saw blades for universal use on conventional machines. Replacement for setted carbide blades.
		1600 HV	Uncoated set carbide tipped bandsaw blade for high-performance standard saws. With optimised design for flexible use on machines without carbide option.
	M42 + TiN	950 + 2300 HV	TiN coated high-performance saw blade for difficult to cut materials with extremely long tool life.
	AMADA M71 HSS	1000 HV	HILO tooth geometry and precision offsetting result in friction reduction. High-performance tooth tip material and sectional cutting channel using patented tooth geometry. Can be used for difficult to cut materials including high heat-resistant special alloys.
		1000 HV	HILO tooth geometry and precision offsetting result in friction reduction. Outstanding cutting performance for tool steel.
	M42 HSS	950 HV	Sectional cutting channel using patented tooth geometry for the reduction of cutting resistance. Can be used for difficult to cut materials. Particularly recommended for stainless steels.
		950 HV	HILO tooth geometry and precision offsetting result in friction reduction. The sectional cutting channel reduces the cutting resistance. For materials in the medium and large diameter range. An Anti-Pinching variant is available for materials with internal clamping.
		950 HV	HILO tooth geometry and precision offsetting result in friction reduction. Wide application area from normal steel to difficult to cut materials.
		950 HV	New developed M42 bandsaw blade for universal purpose. Special design for noise reduced cutting, better lifetime and high surface quality.
		950 HV	Universal blade with wide range of applications.
	M42 HSS	> 950 HV	Special tooth profile in combination with HILO tooth geometry and a particular production method enables the economic cutting of tubes made of high strength materials such as duplex steel.
		950 HV	Saw blade specially for profile steel and tubes with reinforced tooth back for reduction of tooth breakouts.
	M42 HSS	950 HV	Due to the special offsetting and the different tooth heights, the sawing of a wide range of dimensions without blade replacement is possible. Particularly suitable for light weight workshop machines.

*2 JP. PAT. P.

*3 US. PAT.

*4 JP. PAT.

*5 JP. PAT. (2/3P, 3/4P, 4/6P)

*6 The hardness of the tooth tips refers to the average values published by AMADA. These can be different depending on type and dimensions of the product.

The basic requirement for cutting is that the tooth tip must be harder than the material to be cut. As a general rule of thumb, the tooth tips should be at least twice as hard as the material to be cut.

In the mid-80s the AMADA Group decided to establish a production facility for the production of saw blades and bending tools. At the Austrian city of Ternitz (60 km south of Vienna) Due to this, customers focus could be optimized to European customers, which is reflected not only in user-friendly products, but especially in the shortest delivery times of a few working days.

In July 1987, the first automatic mass production of bi-metalsawblades was put into operation and expanded in 2003 for the production of carbide-tipped bandsaw blades.

Until, the research and development field and production capacity were permanently extended. As a result, AMADA is able to cover the complete requirements of the European market.



Modern production and strict quality control systems in accordance with ISO 9001 and ISO 14001 are the guarantee for the high quality of the products manufactured by AMADA Austria GmbH.

AXCELA CARBIDE SAW BLADES

Carbide-tipped high-performance saw blades for maximum cutting performance for materials which can only be cut in a limited way or not at all with traditional bimetal saw blades.

AXCELA HP/HP1-Serie

- Coated carbide saw blades for high-performance saws

AXCELA G Series^{*2} coated carbide saw blades

AXCELA G2/GB2

- Application area: normal steel, tool steel and stainless steel

AXCELA G

- Universal application range up to nickel-based alloys
- Particularly hard coating for maximum wear resistance (EXCOAT-DP)

AXCELA G4

- Application area: normal steel, tool steel, case-hardened steel and hot forming tool steel
- Optimized coating for long tool life

AXCELA A Series^{*2} uncoated carbide saw blades

AXCELA A

- Developed for aluminium casting applications with high blade speed, mainly used for automotive applications

AXCELA ALB

- High performance tool for aluminium plate cutting with blade speed higher than 2000m/min. Very good surface quality and outstanding tool lifetime.

AXCELA B-Serie^{*2} uncoated carbide saw blades

AXCELA B

- Universal tool for steel and casting steel. Perfect for standard machines without carbide settings

AXCELA BOOSTER

- Slanted carbide saw blade for high cutting performance on conventional machines

AXCELA S Series^{*2} uncoated carbide saw blades

AXCELA S

- Universal tool for steel, casting steel and nearly all non-ferrous materials. Best for use on modern and strong bandsaw machines.

AXCELA STRIKER®-Serie

AXCELA STRIKER® G (available from 2020)

- Coated universal tool for steel, non-ferrous metals and cast iron on modern CNC machines, for use without adaptation of previous parameters used.

AXCELA STRIKER®

- Universal tool for steel, non-ferrous metals and cast iron on modern CNC machines, for use without adaptation of previous parameters used.

BIMETAL SAW BLADES

Here are some examples of bimetal saw blades which have been optimized for special application areas. As a tool for general applications, we recommend our „Super8“ product. Further information can be obtained from our Sales Department.

MAGNUM HL M71 (patented) ^{*3}

High-performance tooth tip material and sectional kerf using patented tooth geometry. Can be used for difficult to machine materials including high heat-resistant special alloys.

PROTECTOR M42 (patented) ^{*5}

Saw blade specially for profile steel and tubes. With reinforced tooth back for reduction of tooth breakouts.

SELECTION OF THE TOOTH PITCH PER MATERIAL

		Maximum cutting width										
Material		[mm]	50	100	150	200	250	300	400	500	700	1000
		[inch]	2"	4"	6"	8"	10"	12"	16"	20"	28"	40"
Rolled profiles		6/10 Z & 5/7 Z										
Profile steel, bundled tubes				4/6 Z								
Solid material	Bundled small diameters, normal steel											
	Cold working steel, case-hardened steel			3/4 Z		2/3 Z			1,5/2 Z	1,1/1,5 Z		
	Hot forming tool steel, stainless steel										0,7/1 Z	
	Extreme heat-resistant special alloys											

Comments

- For optimum sawing, we recommend selecting a tooth pitch which always has 10 to 20 teeth in the material.
- For sawing deformed workpieces or workpieces with varying cutting width, it is recommended during the cutting that at least two teeth penetrate the material simultaneously.
- The above table is based on a quality „SGLB“ as guideline. Specific applications of other blades vary occasionally due to their characteristic properties. For example, a 3/4 teeth PROTECTOR can also cut material from the above 4/6 teeth/inch range.

BASICS OF THE CUTTING PARAMETERS SELECTION

- Select a suitable saw blade according to the saw blade quality table.
- Select a suitable tooth pitch according to the tooth pitch selection table.
- Set the blade speed according to the table below.
- In relation to the cutting performance specified in the table, set the feed rate so that the cutting time calculated according to the table below is achieved.

Note: If a new blade is used, carry out the running-in process (see „General Instructions“)

DETERMINATION OF THE CUTTING RATE

Cutting rate means the machined area per minute and is expressed using the unit cm²/min. To achieve the target cutting performance, calculate the cutting time according to the following equation and set the feed rate.

$$\text{Cutting time (minutes)} = \frac{\text{Material surface area (cm}^2\text{)}}{\text{Cutting rate (cm}^2\text{/min)}}$$

For simplified calculation of the surface area, use the following formula*:

- Surface area of square material = width (cm) x height (cm)
- Surface area of round material = Ø (cm) x Ø (cm) x 0.785

* For bundle cutting, multiply the number of the bundled materials by the value of the individual surface areas.

Material dimensions [mm] Area [cm ²]		100 79	200 314	300 707	400 1256	500 1963	700 3847	1000 7850
Normal steel	Blade speed [m/min]	48 – 75	48 – 75	48 – 75	43 – 65	39 – 58	34 – 51	30 – 44
	Cutting rate [cm ² /min]	36 – 54	72 – 108	72 – 108	60 – 91	49 – 73	37 – 56	26 – 38
Cold working steel	Blade speed [m/min]	28 – 42	28 – 42	28 – 42	25 – 38	23 – 34	20 – 30	18 – 26
	Cutting rate [cm ² /min]	11 – 23	23 – 46	23 – 46	20 – 40	17 – 35	15 – 25	12 – 20
Case-hardened steel	Blade speed [m/min]	44 – 66	44 – 66	44 – 66	39 – 59	35 – 52	30 – 45	26 – 38
	Cutting rate [cm ² /min]	28 – 42	56 – 84	56 – 84	47 – 71	39 – 58	30 – 45	22 – 32
Hot forming tool steel	Blade speed [m/min]	24 – 36	24 – 36	22 – 32	19 – 29	17 – 26	17 – 26	17 – 26
	Cutting rate [cm ² /min]	8 – 15	16 – 30	14 – 27	14 – 27	13 – 24	13 – 24	13 – 24
Stainless steel	Blade speed [m/min]	40 – 60	40 – 60	40 – 60	35 – 53	31 – 46	26 – 39	22 – 32
	Cutting rate [cm ² /min]	20 – 30	40 – 60	40 – 60	34 – 52	29 – 43	23 – 35	18 – 26
High heat-resistant special alloys	Blade speed [m/min]	10 – 20	10 – 25	10 – 25	10 – 25	10 – 25	10 – 20	10 – 15
	Cutting rate [cm ² /min]	2 – 10	3 – 15	3 – 15	3 – 15	3 – 15	3 – 15	3 – 15

Orientation values – real performance is strongly related to individual machine. These performance figures can significantly exceeded with a AMADA PCSAW bandsaw machine.

GENERAL INFORMATION

- In order to achieve optimal tool lives, saw blades should always be run in. We recommend running in each saw blade using a cutting area of approx. 3000 cm². Reduce the blade speed here by approx. 30% and the cutting performance by approx. 50%.
- Ensure that the chip brush(es) of your machine is (are) always engaged. Replace worn brushes, otherwise the quality of the cut face and the tool life reduces.
- Ensure sufficient concentration of the cooling lubricant; this should usually be approx. 10%. For stainless steels, a slightly increased concentration of approx. 12% has proven itself. Only cast iron and plastic should be sawn dry.



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The cutting performance data in this catalogue is affected by machine condition, material, tooling and cutting conditions. Technical changes reserved.

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CA-B-LINEUP-SAWBLADE-E-2019



VERSPANINGSTECHNIEK



REINIGINGSTECHNIEK



STRAAL-EN OPPERVLAKTETECHNIEK