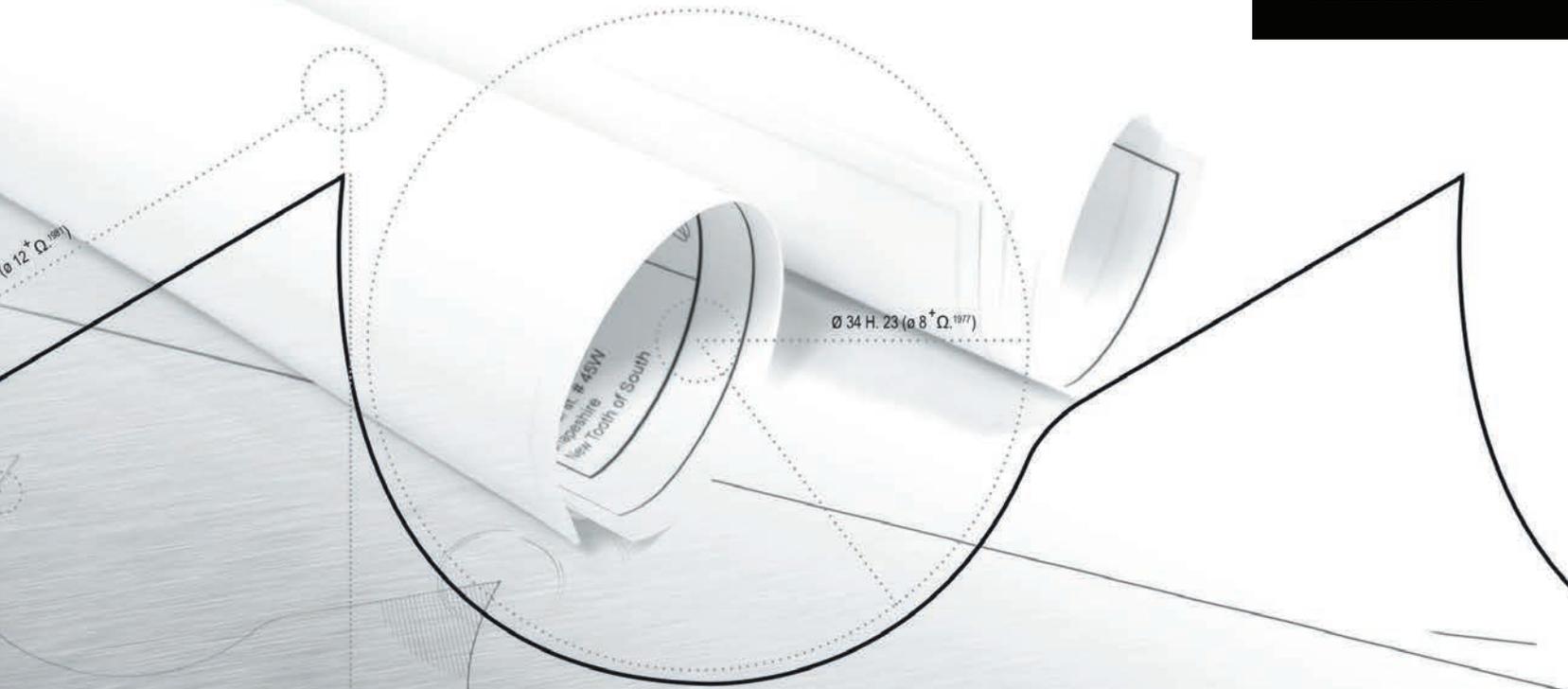




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$D = y + \varphi(x^\circ / d2)$

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“ BE SHARP - USE BAHCO BANDSAWS ”

3900/3999 Bandsaw

PRECISION TOOLS YOU CAN RELY ON

$D = y + \varphi(x^\circ / d2)$

D =

Unlimited Innovation

Every  product is made with passion, by professionals for professionals.

More than 100 years of innovation. Since 1886

State-of-the-art research and development centre. World class manufacturing facilities. We strive to provide you the most valued solutions in the world.



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Running in

To obtain the maximum blade life, always use the recommended band speed but lower the feed rate to 1/3-1/2 during the first 10 minutes of cutting.

During the next 10 minutes, increase the feed rate in stages, until you have reached the recommended feed rate.

Machine

Check frequently:

- The operation of the chip brush
- The wear and alignment of the guides
- The band tension with a tensionmeter (see page 10)
- The band speed with a tachometer (see page 10)
- The coolant concentration with a refractometer (see page 10)

Coolant / Cutting fluid

The coolant lubricates, cools and carries the chips from the cut. It is important to:

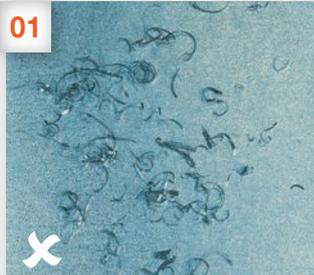
- Use appropriate cutting fluid
- Use recommended concentration of cutting fluid
- Make sure that the cutting fluid reaches the cut with low pressure and large flow

Workpiece

- Make sure that the workpiece is firmly clamped so that it cannot vibrate or rotate
- Do not use bent or damaged workpieces

Feed Rate / Chip

It is important that each tooth cuts a chip with the right thickness. This is determined by the selection of tooth pitch, band speed and feed rate. Please use the pictures below as indication.



Thin or pulverised chips
- increase feed rate or lower band speed



Loosely rolled chips
- correct cutting data

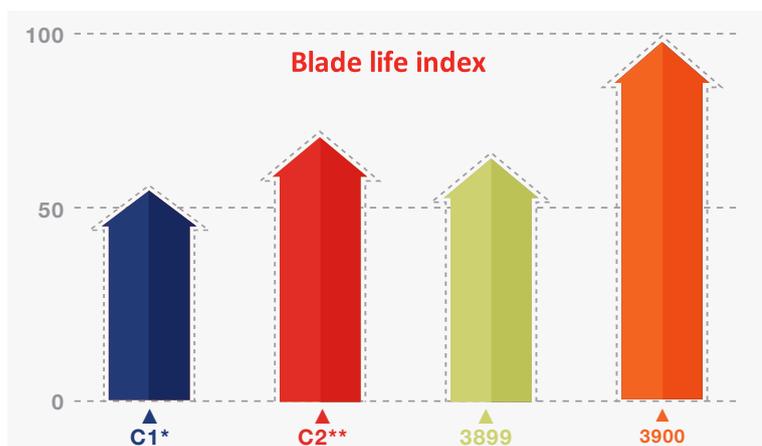


Thick or heavy chips
- lower feed rate or increase band speed

About 3900/3999

The All-New Revolution

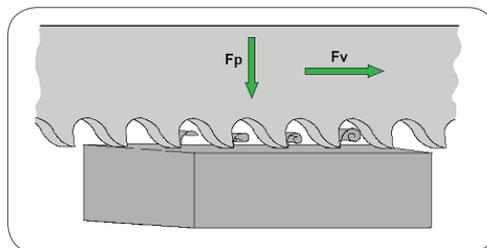
Cut wide range of materials, up to 50% longer life than previous generation 3899.



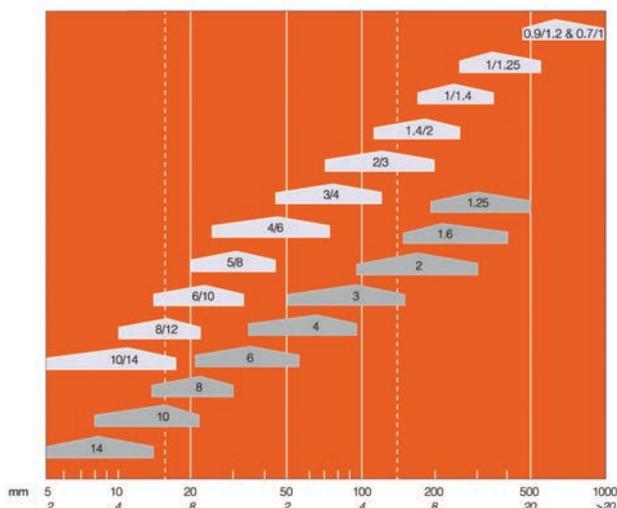
* Based on Bahco lab cutting test results in Sweden
 ** C1 and C2 are other leading brands in Asia

3900/3999 Key features

- ✓ Specially selected high grade HSS and spring steel materials.
- ✓ New breakthrough in precision manufacturing process.
- ✓ New innovative tooth designs.



TPI Selection



Tooth Pitch for Solid Workpieces

This diagram will help you select the right pitch for cutting solids.

The ideal choice is at the widest point of each field.

Example 1:

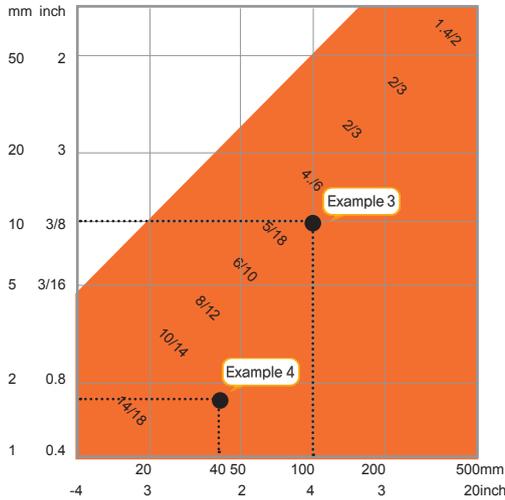
When cutting a Ø 150 mm (6 inch) bar, use a 2/3 TPI or a 1.4/2 TPI if you choose a variably pitched blade. Use 2 TPI, if an evenly pitched blade is your choice.

Example 2:

If you are sawing in soft materials like plastics, aluminium or wood, choose a pitch two steps coarser than recommended.

When cutting 13-20 mm (1/2-3/4 inch) thick pieces of aluminium, use a 5/8 TPI or a 6 TPI blade.

Speed Selection



Cutting Pipes and Profiles

The diagram will help you find the right tooth pitch for cutting pipes and profiles.

The recommended tooth pitch for cutting profiles is found in the field where the width meets the wall thickness of the profile.

Example 3:

When cutting a 100 x 10 mm (4 inch x 0.4 inch) U-beam, select a 5/8 TPI or a 4/6 TPI blade. The recommended tooth pitch is found in the field where the outer diameter meets the wall thickness of the pipe to be cut.

Example 4:

When cutting a 40 x 1.6 mm (1.5 inch x 0.06 inch) pipe, select a 10/14 TPI blade.

▶ SPEED SELECTION

Bi-metal		Meters per minute at Ø mm				
	Material	10-65	100-300	400-800	>1000	COOLANT
Non-Ferrous Metal	① Horizontal machines, aluminium, aluminium alloys	120	120	120	120	25%
	② Vertical machines, aluminium, aluminium alloys	3000	2100-2500	1250-2000	500-1200	25%
	③ Brass	120	120	90-120	80-100	4%
	④ Copper	120	110	80-100	60-80	15%
Carbon Steel	⑤ Structural steels, machining steel	100	85-95	60-75	40-60	6%
	⑥ Structural steels, quenched and tempered steels	80	70-80	60-68	40-50	6%
	⑦ Case hardened, spring steels, quenches and tempered steels	75-100	60-80	45-65	30-40	8%
Cast Iron	⑧ Cast iron	50-60	45-50	30-40	25-30	DRY
Tool Steel	⑨ Unalloyed tool steel, ball and roller bearing steel	60-65	55-60	34-45	25-35	8%
	⑩ Cold work tool steel	30-35	25-30	20-25	15-20	DRY
	⑪ Tool steels, alloyed	45-65	45-60	40-60	20-40	8%
	⑫ Nitriding steels, high alloyed hot working steels	40-45	35-40	25-30	20-25	8%
	⑬ High speed steel	45-50	40-45	30-35	20-25	8%
Stainless Steel	⑭ Rust and acid-resistant steels (magnetic)	40-45	40-45	35-40	30-40	10%
	⑮ Rust and acid-resistant steels (non-magnetic)	35-40	30-35	20-30	19-22	10%
	⑯ Duplex and heat resistant steels	25-30	20-25	15-20	14-16	10%
Aerospace Alloy	⑰ Titanium, titanium alloys, aluminium bronze	30-35	25-30	20-25	16-18	10%
	⑱ Nickel and nickel-cobalt alloys	15-20	13-15	10-12	10	10%

The bigger the size, the lower the speed

3900 PF

Tubes and Profiles Cutting, Bi-metal

- ✓ Enhanced durable tooth design for increased chip resistance, especially in conditions where tooth chipping is common.
- ✓ Wear resistant HSS tooth edge for increased blade life.



Application

Non-ferrous Metal				Carbon Steel			Cast Iron	Tool Steel						Stainless Steel			Aerospace Alloy	
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	

Sizes

Width (mm)	Thickness (mm)	TPI		
		5/8	4/6	3/4
27	0.9	●	●	●
34	1.1		●	●
41	1.3		●	●

Production Steel Cutting, Bi-metal

- ✓ Optimum tooth design, high wear-resistant tooth edge for cutting wide range of materials, from low alloy steels to stainless steels.
- ✓ Best seller and fast-moving product.



Application

①		②		③		④		⑤		⑥		⑦		⑧		⑨		⑩		⑪		⑫		⑬		⑭		⑮		⑯		⑰		⑱	

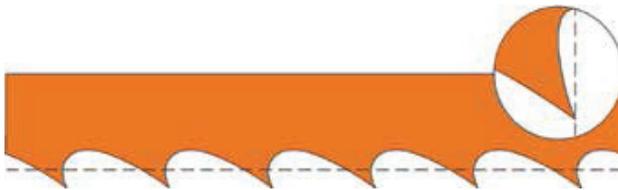
Sizes

Width (mm)	Thickness (mm)	TPI						
		5/8	4/6	3/4	2/3	1.4/2	1/1.4	0.7/1
20	0.9	●	●					
27	0.9	●	●	●	●			
34	1.1			●	●			
41	1.3			●	●	●		
54	1.6				●	●	●	
67	1.6				●	●	●	●

3900 HA

Foundry Cutting, Bi-metal

- ✓ Special tooth design, smooth gullets for cutting non-ferrous and abrasive materials, usually found in aluminium foundries.
- ✓ Wear resistant HSS tooth edge retains sharpness longer.



Application

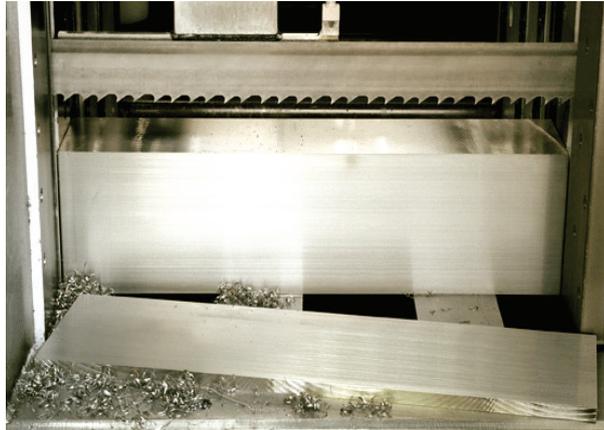
Non-ferrous Metal				Carbon Steel			Cast Iron	Tool Steel					Stainless Steel			Aerospace Alloy	
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱
▶																	

Sizes

Width (mm)	Thickness (mm)	TPI
		3
20	0.9	●
27	0.9	●

Tool Steel Cutting, Bi-metal

- ✓ High performance tooth design, high wear-resistant tooth edge for cutting difficult materials, such as alloy and tool steels.
- ✓ New high-alloyed backing material for straight cuts.



Application



Sizes

Width (mm)	Thickness (mm)	TPI				
		3/4	2/3	1.4/2	1/1.4	0.7/1
27	0.9	●				
34	1.1	●	●			
41	1.3		●	●		
54	1.6		●	●	●	
67	1.6			●	●	●

BANDSAW Aid

These tools will provide useful measurement and information to optimize bandsaw cutting performance.

3870 - Bandcalc™

An interactive computer software program that quickly recommends the best bandsaw blade and optimum cutting parameters based on user requirements - material to be cut, machine, workpiece, etc.



3870 - Tensionmeter

When changing blades, check machine condition and make sure there is sufficient tension.



3870 - Tachometer

This computerized tachometer instantly presents the actual band speed in ft/min, m/min on a LED display.



3870 - Refractometer

Proper coolant concentration is important to maximise the life of bandsaw blade. It is easily checked with the refractor.



3870 - Brush

Chip brushes are used to clean the gullet from a bandsaw blade and are vital for optimum performance of the bandsaw blade.



Troubleshooting



	Important Facts	Band Breakage	Crooked Sawing	Tooth Breakage	Rough Surface	Rapid Tooth Wear	Vibration	Band Slips on Wheel
MACHINE	Guides and Guidearms You have to check and adjust guides regularly. Check if worn out and replace if necessary. Position guidearms as close to work piece as possible.	Guides worn out or guide setting too wide	Guides too far apart, work out, or poorly adjusted guidearm loose				Guides poorly adjusted	
	Band Wheels The band wheels have to be kept in good condition and properly aligned.	Band wheels worn or too small - try thinner bands						Driving wheel is worn out
	Chip Brush Check that the chip brush is properly adjusted and change it regularly.			Chip brush does not work; gullets filled		Chip brush does not work		
	Band Tension The correct band tension is needed to get a straight cut. Measure with Bahco tensionmeter.	Band tension too high	Band tension too low				Band tension too low	Band tension too low
	Coolant / Cutting Fluid Needed to lubricate and to cool. Check concentration with a Bahco refractometer. Use good coolant. It should reach the cut with low pressure and with generous flow.						Too little coolant or incorrect concentration	
CUTTING DATA	Band Speed The band speed has to be chosen correctly. Check the band speed by using a Bahco tachometer.		Band speed too low		Band speed too low	Band speed too high	Natural vibration - band speed slightly high or slightly low	
	Feed Rate The feed rate has to be chosen so that the teeth of the bandsaw blade can work properly.	Feed rate too high	Feed rate too high	Feed rate too high	Feed rate too high	Feed rate too high or too low	Feed rate too high or too low	Feed rate too high
BANDSAW BLADE	Tooth Pitch The selection of the right tooth pitch is just as important as choosing the right feed and speed.		Tooth pitch too fine	Tooth pitch too fine Gullets filled	Tooth pitch too coarse	Tooth pitch too fine		
	Tooth Shape Every tooth shape has its ideal application.			Tooth shape too weak		Wrong tooth shape selection	Use combo	
	Running In A new bandsaw blade should be run in to obtain maximum bandsaw lifetime. Never saw in old kerf.				Band not properly run in	Band not properly run in	Band not properly run in	
	Blade Life All blades wear out eventually. Look for signs of wear.		Blade worn out		Blade worn out			Blade worn out
WORK PIECE	Surface A bad surface (scale) of the work piece will shorten the life of the blade. Lower the band speed.					Surface defects i.e. scale, rust, sand		
	Clamping Securely clamp work pieces, especially when bundle cutting. Do not use bent or damaged work pieces.			Work piece moves			Work piece not properly clamped	



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BAHCO IS A WORLD LEADER in producing a broad range of metal cutting and hand tools used by professionals in the construction and engineering industries as well as automotive, aeronautical, electronic, telecommunication and horticultural industries.



BAHCO IS GLOBALLY renowned for quality, performance and value for money. Professionals over the world rely on our tools, and for good reasons: we control the entire cycle, from basic research through product development and manufacturing to distribution. We regularly launch innovations that help users do a better job and do it more easily.

WE SPECIFY AND DESIGN all Bahco tools are of high quality and have a unique design, intended to give the best professional performance.

THE RESULT IS BETTER ergonomic hand tools are easier to use, more comfortable to hold and significantly more functional, because they are produced in close cooperation with professional users, together with specialists in industrial design.

QUALITY AND ERGONOMICS has made us one of the world's largest manufacturers of tools for professional use within a wide range of industries.

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