

BAND SAW BLADES

SIMONDS[®]

**NEW
Blades &
Solutions**

The Professionals' Edge™



The Professionals' Edge™

What do we mean by "The Professionals' Edge™"?

It all comes down to confidence in quality products. With Simonds products you have the peace of mind of knowing that the designs and innovations present in every Simonds Blade and cutting tool have stood the test of time in the harshest environments under the scrutiny of some very tough customers. And that quality comes at a fair price. We offer tremendous value for products made to exacting standards from the longest-lasting alloys and other state-of-the-art materials, resulting from time-tested research and design.

"The Professionals' Edge™" also means you have access to Simonds' superior product support. We offer comprehensive customer service backed up by our highly skilled and trained field technicians. We offer training, partnerships to increase business productivity, and money-back guarantees. You can also look to us for other product lines including files and other industrial products.

"The Professionals' Edge™" simply delivers our promise — the best blades and the best people to back them up.

Guaranteed Trial Offer

If the blade Simonds recommends doesn't outperform your current blade, it's yours FREE!



"Simonds' mission is best defined by continuous improvement on our proven blades while we develop new blade technologies for our customers and today and tomorrow's toughest sawing applications."
— Simonds Design Engineer



"With Simonds, I know I can be assured that my customers will always have the right blade for their toughest applications. Simonds' service and support gives me an edge over my competition."
— Simonds Distributor



"Whether I need more production volume out of a blade or a better cut finish, I know that Simonds can give me the advantage that I need for increased profitability in my operation."
— Simonds Customer

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**Simonds premium quality band saw blades
are made in the USA and Germany.**

SIMONDS BANDSAW BLADES CATEGORIES AND PRODUCT NAMES								
	CARBIDE					BI-METAL		
	Triple Chip	CWT™	Quad 7™	Negative Rake	Set Tooth	X-51™	SiClone®	BlockBuster®
	page 6	page 7	page 7	page 8	page 9	page 10	page 11	page 12
MATERIAL	Wood	•			•			
	Carbon Graphite	•			•			
	Fiberglass				•			
	Non-Metallic Materials	•			•			
	Non-Ferrous Metals		•		•			
	Cast Iron			•	•	•		
	Brass				•			
	Bronze				•			
	Aluminum		•		•			
	General Purpose Cutting							
	Structural Steel							
	Carbon Steels							•
	Low Alloy Steels		•					•
	Med. Alloy Steels: Nickel/Moly/Chrome		•				•	•
	Silicon Steels						•	•
	Alloy Steels/ Mold Steels	•	•	•	•	•	•	•
	Tool Steels/ Die Steels	•	•	•		•	•	•
	Stainless Steels	•	•	•	•	•	•	•
	Nickel Base Alloys	•	•	•	•	•	•	•
	Titanium Alloys	•	•	•	•	•	•	•
	Induction Hardened Cylinder Rod			•				

Band Applications Cross-Reference Chart



SIMONDS BANDSAW BLADES CATEGORIES AND PRODUCT NAMES							
BI-METAL				CARBON			
BroadBand®	IC Enduro™	Die Band Plus®	PalletBuster®	WoodMax™	HardBack	FlexBack	
page 13	page 14	page 15	page 16	page 17	page 18	page 19	
			●	●	●	●	Wood
							Carbon Graphite
							Fiberglass
					●	●	Non-Metallic Materials
●					●	●	Non-Ferrous Metals
							Cast Iron
					●	●	Brass
					●	●	Bronze
					●	●	Aluminum
●		●			●	●	General Purpose Cutting
●	●				●	●	Structural Steel
●	●	●			●	●	Carbon Steels
●	●	●			●	●	Low Alloy Steels
●							Med. Alloy Steels: Nickel/Moly/Chrome
●		●					Silicon Steels
●		●					Alloy Steels/ Mold Steels
●		●					Tool Steels/ Die Steels
●							Stainless Steels
●							Nickel Base Alloys
●							Titanium Alloys
							Induction Hardened Cylinder Rod

MATERIAL

MATERIAL



Special Applications Technology

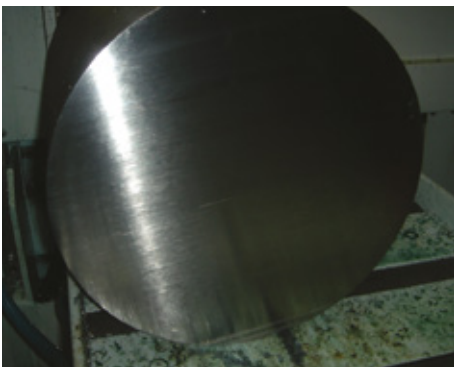
SIMONDS application engineered SineWave® technology provides enhanced cutting ability, reducing work time and increasing blade life.

SineWave® technology features a value-added broaching cutting action by utilizing ramps on the back edge of the blade. This technology exerts more force into the cut without having to increase machine pressure.

SineWave® technology provides ramp customization capabilities to optimize the cutting performance of specific alloy cross sections.

SineWave® can be supplied on all M42 bi-metal and all carbide tipped bandsaw blades from 1" to 3-1/8".

SineWave® is supplied only in welded-to-length bands.



SineWave® Technology

IMPROVED!

**Engineered to
your exact
cutting needs!**

■ ● □ ○ CUTS SHAPES

Simonds Bi-metal and Carbide Tipped bandsaw blades with SineWave® technology are ideal for use on difficult to cut steels such as high chrome, tool, die, stainless and nickel base. Also ideal for cutting titanium and other exotic metals.



With self-feeding action, the band actually grows in width (see magnified back edge view of the SineWave® blade above), forcing each tooth to penetrate the work.

*Products displaying
this icon are available with
SineWave® technology.*

SineWave



How Does SineWave® Work?

SineWave® technology from Simonds Saw provides an aggressive broaching action in the cut, enhancing cutting ability, reducing work time and increasing blade life. It incorporates a series of “ramps” on the back edge of bandsaw blades, which allows bandsaw machines to exert more force into a cut without increasing machine pressure. The “rocking” motion of SineWave ensures less tooth to work piece contact, which increases penetration for faster cutting.

Ramp depth and length can be engineered to a customer’s specific cutting applications, operating parameters and production requirements to optimize performance across a wide variety of materials. SineWave technology can be applied for light, moderate or aggressive cutting action.

Supplied only in welded-to-length bands, Simonds SineWave technology is ideal for blades cutting high chrome, tool, die, stainless and nickel based steels. The technology is a proven solution for cutting titanium and other exotic metals and can be used on almost all bandsaw machines.

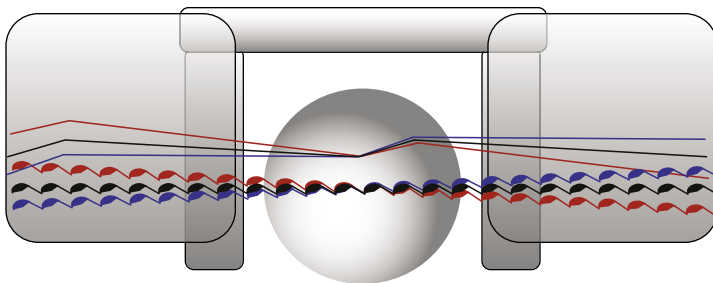
SineWave Advantages

- Cuts work hardened materials 30-40% faster.
- Can double blade life.
- Makes cutting rate more consistent.

How Do I Order SineWave?

- Determine maximum cross-section dimension of all materials cut.
- Determine your required aggressiveness of the cutting action – light, moderate or aggressive.
- Call your Simonds sales person for applications assistance.

SineWave Engineering Rocks!



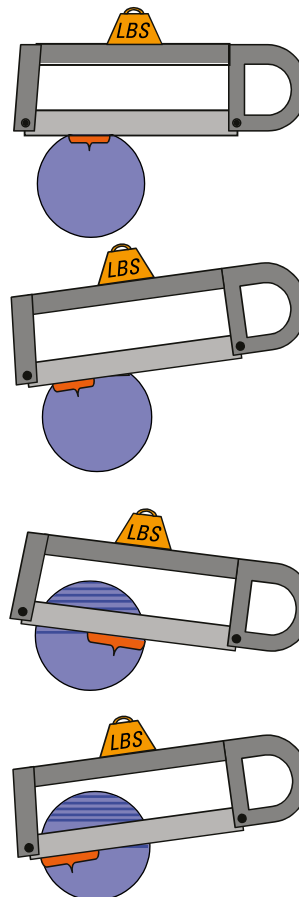
SineWave’s rocking motion ensures better tooth penetration for faster cutting rates while allowing the blade to cut with less pressure, extending blade life

- Lighter Machine Pressure
- Reduced Sawblade Strain
- Faster Cutting
- Longer Life

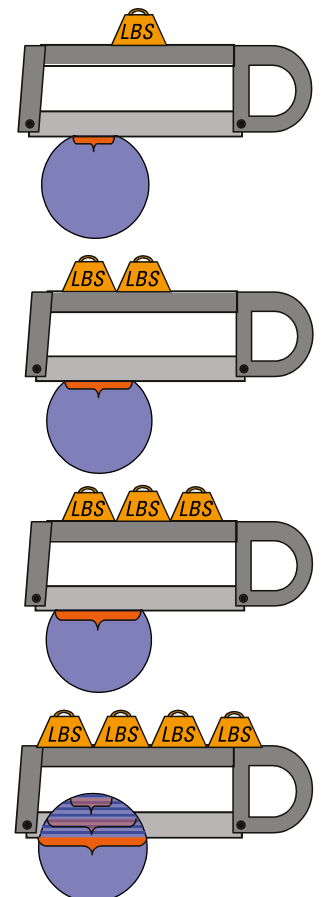


Actual SineWave finish on high nickel alloy.

SineWave



Conventional Blades





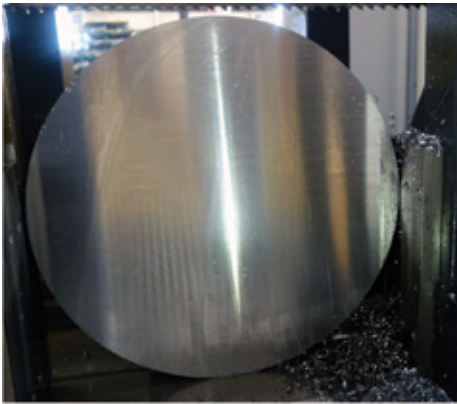
Triple Chip

Applications

Production cutting operations, steel service centers, foundries, aerospace.

Materials

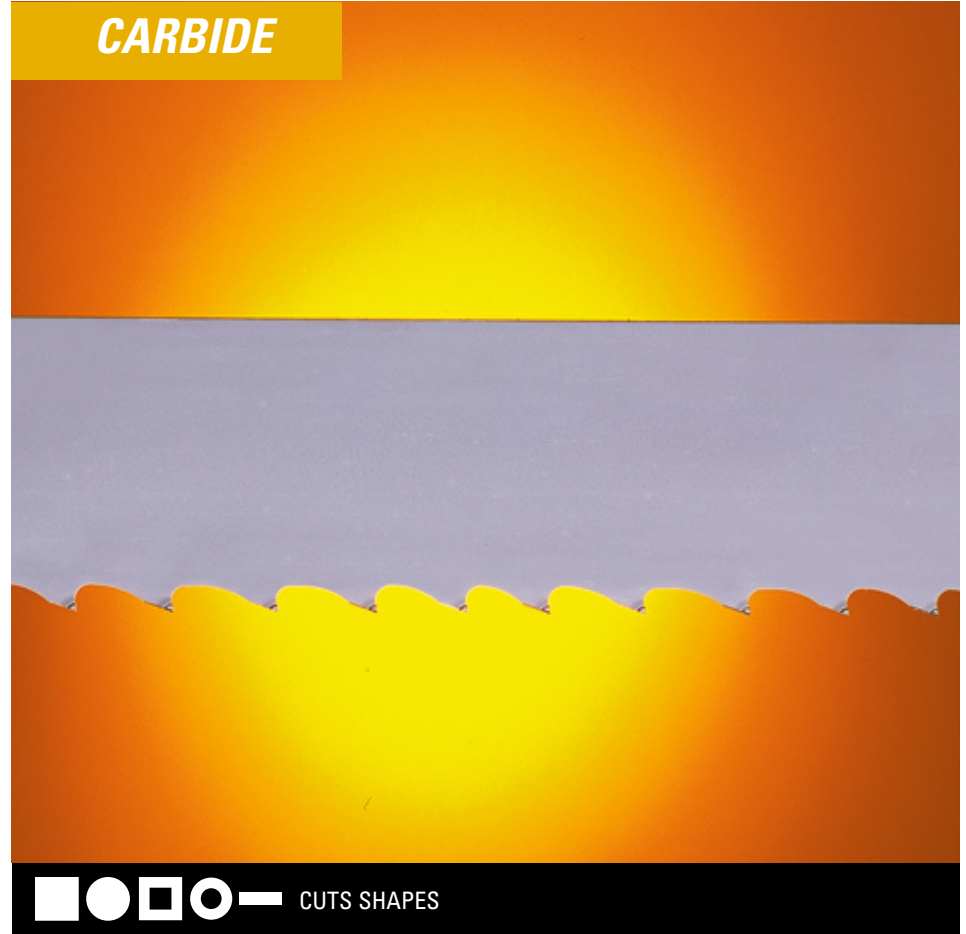
High nickel alloys, titanium, aluminum, bronze, Inconel and other exotic materials.



Features and Benefits

- High Carbide tipped teeth increase wear resistance cutting high temperature alloys
- Triple Chip geometry provides a smoother surface finish
- Positive rake angle allows faster penetration for high production cutting
- Plastic capping protects teeth against damage in transit and handling

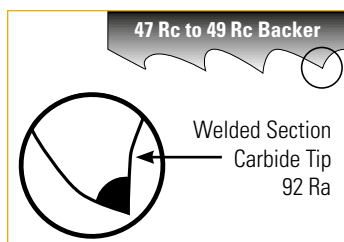
CARBIDE



■ ● □ ○ — CUTS SHAPES

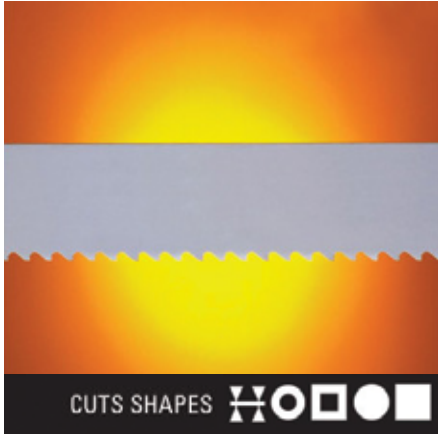
Triple Chip is ideal for cutting applications requiring smooth surface finish and high production rates.

Triple Chip	1/2" x .035 13 x 0.9 250'	3/4" x .035 19 x 0.9 250'	3/4" x .050 19 x 1.3 250'	1" x .042 27 x 1.1 250'	1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .062 54 x 1.6 150'	2-5/8" x .062 67 x 1.6 150'	3-1/8" x .062 80 x 1.6 150'
3 TPI	55799000	55800000	55800050	55801000	55801800				
2.5-3.5 TPI		55800508		55801108	55801208	55803458	55804808	55805908	
2-3 TPI					55801308	55803700	55804708		
1.9-2.1 TPI					55801508	55803308	55804508	55805858	
1.4-1.8 TPI						55803408	55804008	55805808	55807008
.9-1.1 TPI							55805008	55805308	55808008



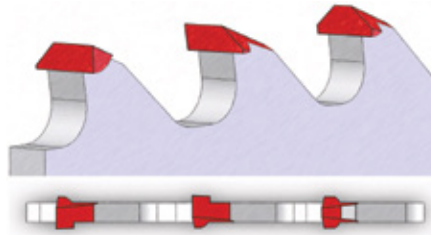
NEW! CWT™ Carbide

SIMONDS®



Applications

Production cutting operations, steel service centers, foundries, aerospace.



California Wing Tip tooth formation

CWT	1-1/4" x .042 34 x 1.1 150'	1-1/2" x .050 41 x 1.3 150'	2" x .062 54 x 1.6 150'	2-5/8" x .062 67 x 1.6 150'	3-1/8" x .062 80 x 1.6 150'
2-3 TPI	55334400	55341400	55354400		
1.9-2.1 TPI		55341500	55354500	55367500	
1.4-1.8 TPI		55341600	55354600	55367600	
.9-1.1 TPI				55367800	55380800

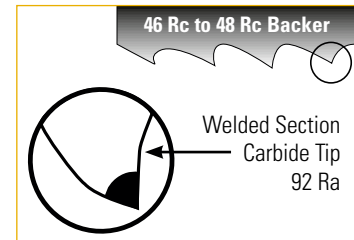
Materials

Aluminum block, aluminum gates and risers, aluminum automation (Mossner), Inconel and nickel-based alloys, rene.

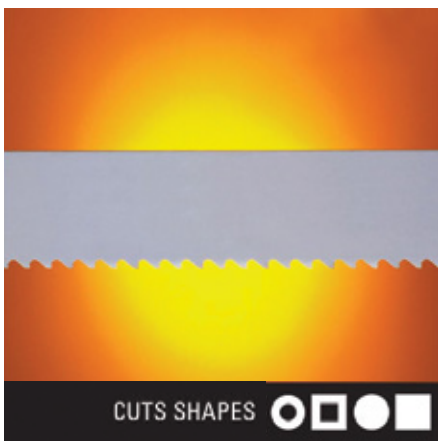
Features and Benefits

- Positive rake angle provides aggressive tooth geometry for faster cutting and increased production
- Three tooth pattern with Raker mimics Set Tooth blade advantages
- Plastic Capping prevents tooth damage during shipping and handling

SineWave

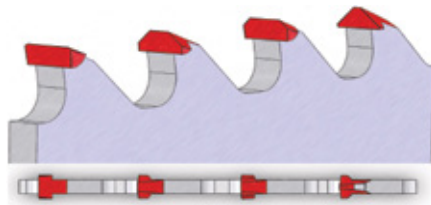


NEW! Quad 7™ Carbide



Applications

Production cutting operations, steel service centers, foundries, aerospace.



Quad 7	3/4" x .050 34 x 1.1 150'	1-1/2" x .050 41 x 1.3 150'	2" x .062 54 x 1.6 150'	2-5/8" x .062 67 x 1.6 150'	3-1/8" x .062 80 x 1.6 150'
2.5-3.5 TPI	55720350				
2-3 TPI		55741400	55754400		
1.9-2.1 TPI		55741500	55754500		
1.4-1.8 TPI		55741600	55754600	55767600	
1.1-1.4 TPI				55767700	55780700
.9-1.1 TPI					55780800

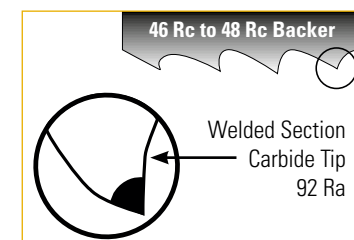
Materials

Alloy steels, high chrome alloys, mold steels, stainless steels, tool steels, bearing steels, titanium block, titanium plate saw, Inconel and nickel-based alloys, rene.

Features and Benefits

- Positive Rake angle 4 tooth pattern creates 7 distinct chips, providing high penetration for faster cutting in alloy materials
- Plastic Capping prevents tooth damage during shipping and handling

SineWave





Negative Rake

Applications

For cutting hardened materials up to 65 Rc on power feed saws when machinability is a challenge.

Materials

Heavy chromed shafts, induction hardened shafts, linear bearing shafts.

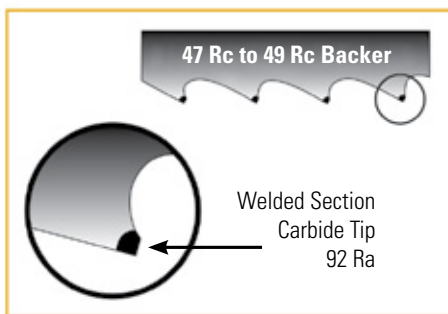
Features and Benefits

- Negative tooth tip rake angle provides greater tip strength able to penetrate high hard materials and surface coatings
- Plastic Capping prevents tooth damage during shipping and handling

CARBIDE

CUTS MATERIAL HARDER THAN Rc 50

Negative Rake Carbide Tipped bands make short work of the hardest materials.



Negative Rake		1" x .042 27 x 1.1 250'	1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .062 54 x 1.6 150'
2.5-3.5	TPI	55801908	55801408	55803608	55804908



CARBIDE

Applications

Production cutting operations, steel service centers, foundries, aerospace and forging houses.

Materials

High nickel alloys, titanium, aluminum, bronze, Inconel and other exotic materials.



CUTS SHAPES

Carbide Set Tooth is great for cutting high temperature alloys. Specialty blades also available for non-ferrous foundries.

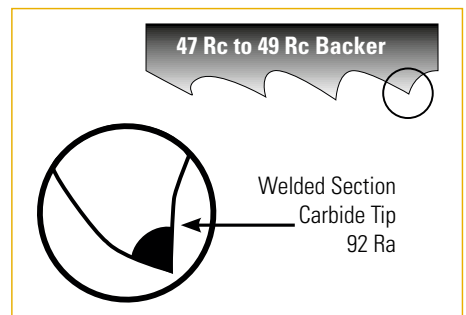
Carbide Set Tooth	1/2" x .025 13 x 0.6 250'	3/4" x .035 19 x 0.9 250'	1" x .035 27 x 0.9 250'	1" x .042 27 x 1.1 250'	1-1/4" x .042 34 x 1.1 250'
4 TPI			55470500		
3 TPI	55176000	55400100	55400600	55400500	55500600
3 TPI VariSet*		55400200			

* 3 TPI VariSet designed for foundry use

Features and Benefits

- Positive rake angle provides aggressive tooth geometry for faster cutting and increased production
- Three tooth pattern with Raker ensures straighter cuts
- Plastic Capping prevents tooth damage during shipping and handling

SineWave





Applications

Steel service centers, production cutting.

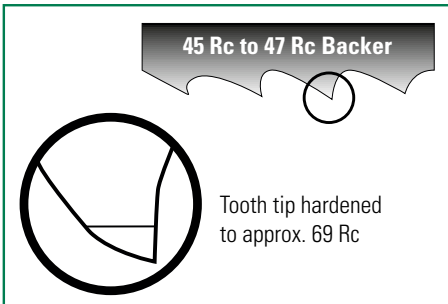
Materials

Cast iron, tool steel, die steel, stainless steel, nickel based alloys, titanium, Inconel and other exotic alloys.



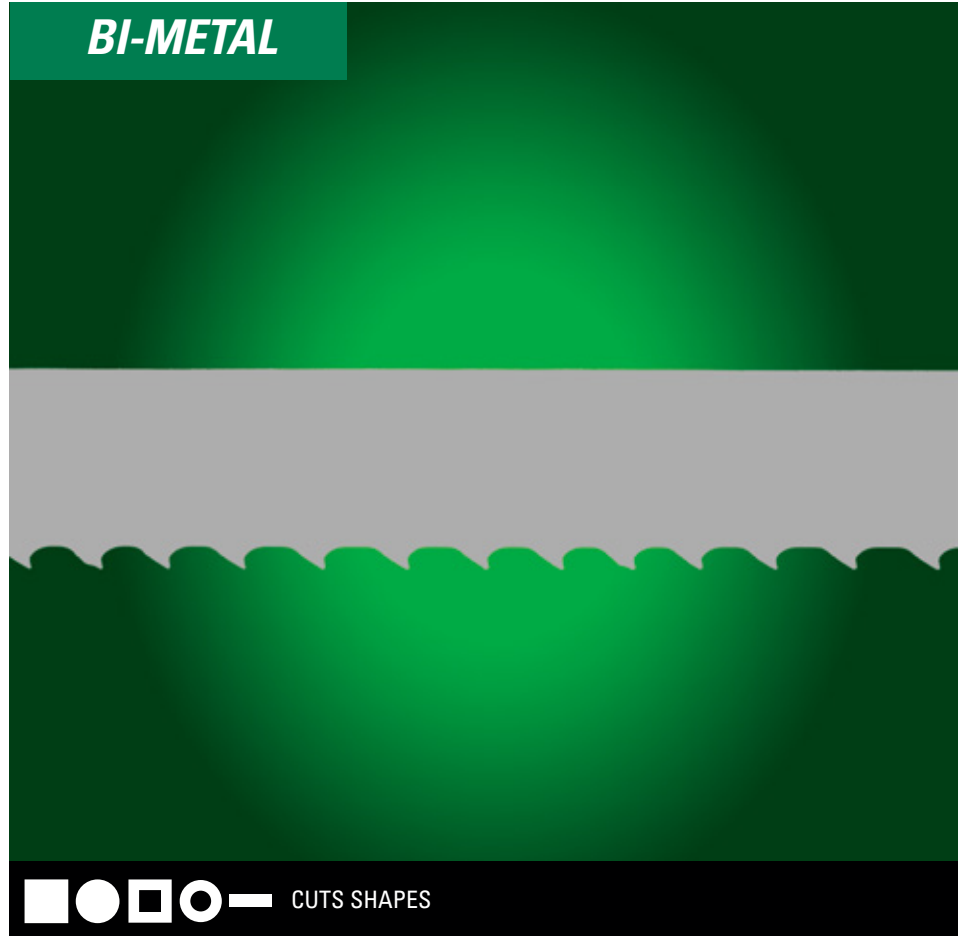
Features and Benefits

- M51 high speed wire electronically welded to premium back for greater wear resistance
- Hybrid alloy for cutting large cross-section exotic alloys
- Oversized blade width increases beam strength
- Aggressive tooth geometries provide optimum angles for top cutting performance



X-51™

BI-METAL



X-51 bandsaw blades feature M51 tooth tips to provide longer life cutting the toughest materials and large cross-sections, making them ideal for cutting exotic alloys.

X-51		1" x .035 27 x 0.9 250'	1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .062 54 x 1.6 150'	2-5/8" x .062 67 x 1.6 150'
4-6	TPI	64W22000	64W25000	64W28000		
3-4	TPI	64W21000	64W24000	64W27000	64W31000	
2-3	TPI	64W20000	64W23000	64W26000	64W30000	64W34000
1.4-2	TPI				64W29000	64W33000
.7-.9	TPI					64W32000



NEW!

Rugged backing steel,
proprietary heat treating,
tooth forming and finishing.
Sizes 1-1/2" to 3-1/8"

BI-METAL

CUTS SHAPES



The SiClone bandsaw blade is ideal for cutting stainless steel and exotic alloys.

SiClone	1" x .035 27 x 0.9 250'	1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .062 54 x 1.6 165'	2-5/8" x .062 67 x 1.6 165'	3-1/8" x .062 80 x 1.6 165'
4-6 TPI	63544327	63550107				
3-4 TPI	63543750	63549600	63552604	63556504		
2-3 TPI	63542000	63559000	63552004	63556004		
1.4-2 TPI		63549000	63551204	63555004	63558004	
1.1-1.4 TPI				63554104	63557104	63559104
.7-.9 TPI				63553500	63568004	63569004

All product except 4-6 TPI have ground tooth forms

1-1/4" and wider blades have protective tooth capping

Applications

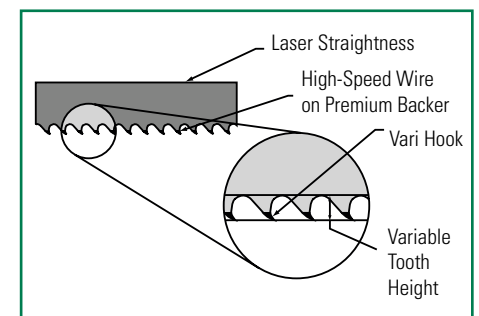
Steel service centers, production cutting.

Materials

Inconel, D2, stainless steel, Monel, other exotic alloys.

**Features and Benefits**

- Designed for constant feed and pressure machines - user friendly blade
- Unique tooth geometry prolongs blade life and minimizes work-hardening
- 8% cobalt high speed steel teeth laser welded to premium backing steel improves performance
- Oversize blade width increases beam strength

**SineWave**

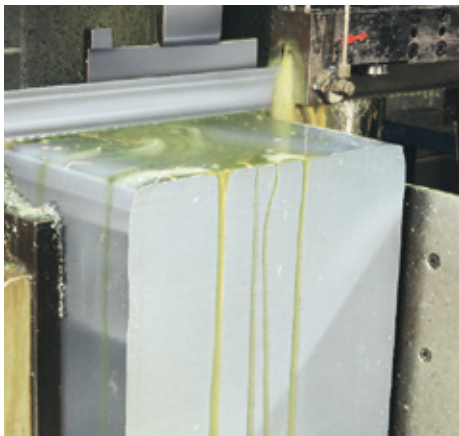


Applications

Production and general purpose cutting in steel service centers.

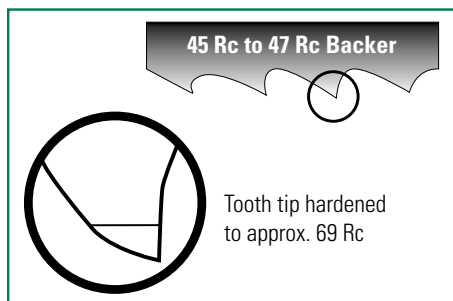
Materials

Carbon steel, chrome steel, tool steel, die steel, stainless steel, and nickel base alloys.



Features and Benefits

- M42 high speed edge improves wear resistance
- Oversized blade width increases beam strength
- Aggressive tooth geometries provide optimum angles for top cutting performance
- Plastic capping protects teeth against damage in transit and handling



BlockBuster®

BI-METAL

NEW!

Rugged backing steel, proprietary heat treating, tooth forming and finishing. Sizes 2" to 3-1/8"



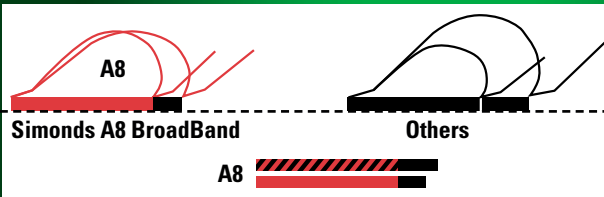
New BlockBuster M42 bandsaw blades are designed for high-production cutting applications where cut accuracy and blade life are the most critical factors.

BlockBuster		1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .050 54 x 1.3 165'	2" x .062 54 x 1.6 165'	2-5/8" x .062 67 x 1.6 165'	3-1/8" x .062 80 x 1.6 165'
5-8	TPI		64374007				
4-6	TPI		64373007	64375307	64377607		
3-4	TPI	64370507	64372707	64375207	64377407	64378807	
2-3	TPI	64369507	64372507	64375107	64377307	64378007	
1.4-2	TPI	64368008*	64371904*	64375004*	64377244*	64378854*	64378844*
1.1-1.4	TPI				64377264*	64378814*	64378824*
.8-1.0	TPI				64377224*	64377754*	64385004*

* Ground Tooth products



BI-METAL



CUTS SHAPES



The BroadBand all-purpose blade features a patented A8 tooth design that provides optimal cutting performance across a broad range of materials, shapes, structurals and solids.

BroadBand		3/4" x .035 19 x 0.9 328'	1" x .035 27 x 0.9 328'	1-1/4" x .042 34 x 1.1 250'
10-14	TPI	64363407	64367007	
8-12	TPI	64120007	64365507	64188007
6-10	TPI	64362007	64366007	64186007
5-8	TPI	64361007	64364907	64371507
4-6	TPI	64360007	64364607	64371207
3-4	TPI		64364307	64370007
2-3	TPI		64364007	64369007

1-1/4" blades have protective tooth capping

Applications

Steel service centers, medium and large manufacturers, fabricators, maintenance shops, job shops, tool & die shops.

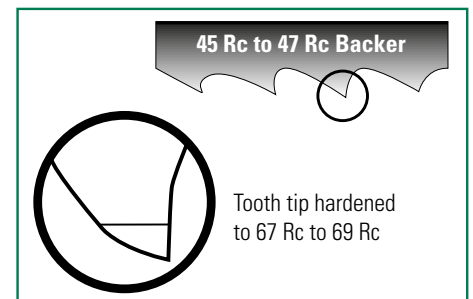
Materials

Carbon steel, chrome steel, tool steel, die steel, stainless steel, nickel base steel, structurals, pipe and tube, and mixed metal applications.



Features and Benefits

- M42 high speed edge improves wear resistance
- Oversized blade width increases beam strength
- Patented tooth geometries provide optimum cutting performance across a wide array of applications and materials



SineWave





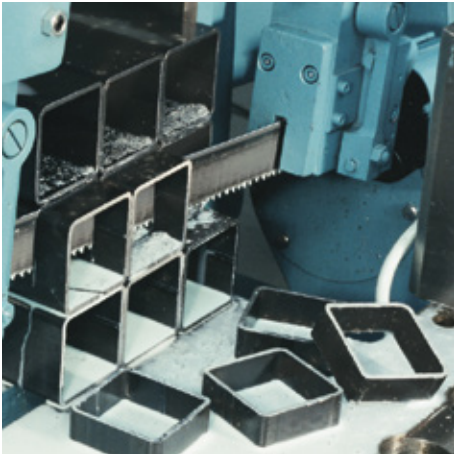
IC Enduro™

Applications

Fabricators, steel service centers, job shops, machine shops and production cutting houses.

Materials

Bundles, solids, tubes and structurals, including large cross-section "H" beams and "I" beams.



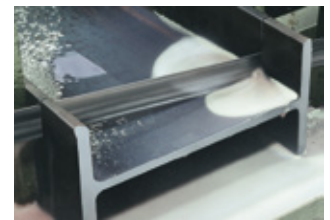
Features and Benefits

- Ground tooth technology provides a smoother finish and longer blade life
- Robust tooth geometry produces faster cutting rates and increases productivity
- 8% cobalt high speed wire increases blade durability
- Proprietary heat treat minimizes tooth chipping and improves blade flex life

BI-METAL

CUTS SHAPES

IC Enduro is designed for cutting bundle solids, structurals and tubes. It can handle even large cross section structurals while avoiding blade pinching during the cut.



IC Enduro		3/4" x .035 19 x 0.9 250'	1" x .035 27 x 0.9 250'	1-1/4" x .042 34 x 1.1 250'	1-1/2" x .050 41 x 1.3 250'	2" x .062 54 x 1.6 165'	2-5/8" x .062 67 x 1.6 165'	3-1/8" x .062 80 x 1.6 165'
5-8	TPI	64361407	64365307	64371557	64374257			
4-6	TPI	64360307	64364107	64371477	64373757	64377657		
3-4	TPI		64364207	64371177	64372857	64377557	64379054	64390054
2-3	TPI			64369077	64372407	64377297	64380054	

1-1/4" and wider blades have protective tooth capping



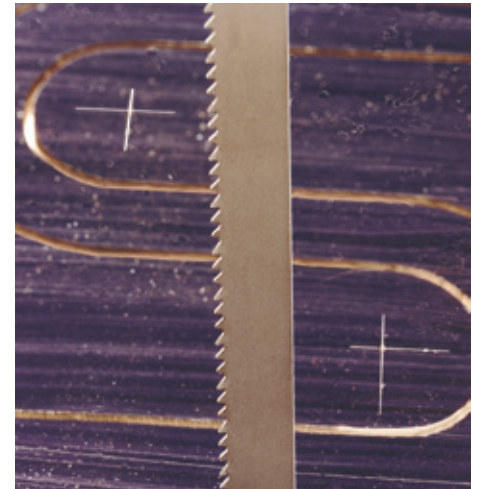
BI-METAL

Applications

Tool and die makers.

Materials

Tool and die steels.

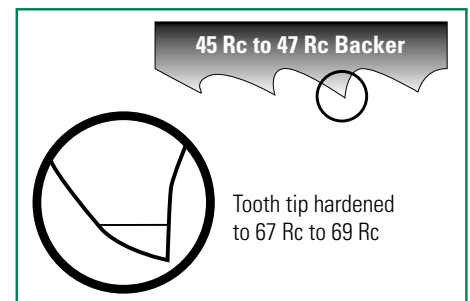


Features and Benefits

- Bi-metal construction means longer life and lower cost per cut than carbon blades
- M42 high-speed steel edge provides high wear resistance for longer life
- Tempered alloy backer results in longer life for contour cutting

DieBand Plus is an M42 product developed specifically for toolrooms and machine shops where contour cutting is the norm.

DieBand Plus		1/2" x .020 13 x 0.5 328'	1/2" x .025 13 x 0.6 328'	1/2" x .035 13 x 0.9 328'
14-18	TPI	61614180		
10-14	TPI	61610140	64512000	64522100
8-12	TPI		64511000	64521600
6-10	TPI		64510000	64521400
4	TPI			60720000
3	TPI			60730000





Applications

Dismantling/recycling pallets using bandsaw blades.

Materials

Recycled pallets constructed with nails or staples.



Features and Benefits

- Special nail-embedded wood tooth design results in longer blade usage
- Oversized blade width improves beam strength for straighter cuts

PalletBuster®

BI-METAL

 CUTS SHAPE

PalletBuster is manufactured specifically for recycling used wood pallets.

PalletBuster		1-1/4" - .042 34 x 1.1 250'
5 - 8	TPI	64371527



CARBON

Applications

Furniture factories, cabinet shops and woodworking shops.

Materials

All softwoods and hardwoods including oak, maple, mahogany and hickory.



Features and Benefits

- Precision set provides smoother surface finish
- Positive rake angle facilitates tooth penetration for faster cuts
- Larger gullets improve chip removal for faster cuts
- Available in .032 thickness for improved band stiffness



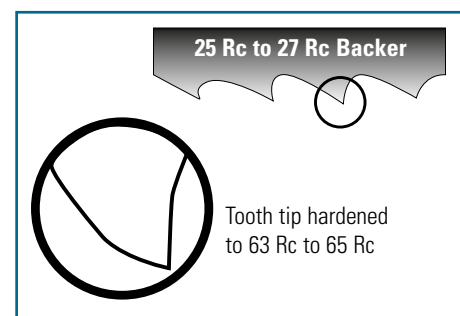
CUTS SHAPES

WoodMax is ideal for furniture, cabinet and woodworking operations.

WoodMax	1/4" x .025 6 x 0.6 328' (100M)	3/8" x .025 10 x 0.6 328' (100M)	3/8" x .032 10 x 0.8 328' (100M)	1/2" x .025 13 x 0.6 328' (100M)	1/2" x .032 13 x 0.8 328' (100M)
6 TPI Sabre MultiSet	37379000	37412000		37448000	
4 TPI Sabre MultiSet	37373000	37409000		37445000	
4 TPI Sabre ETS*			37621600		37623500
3 TPI Sabre MultiSet		37403000		37439000	
3 TPI Sabre EHS**			37621200		37622300

*ETS = Every Tooth Set

**EHS = Extra Heavy Set





HardBack

Applications

Maintenance, production shops and job shops.

Materials

Mild steel, aluminum, brass, wood and plastic.

Features and Benefits

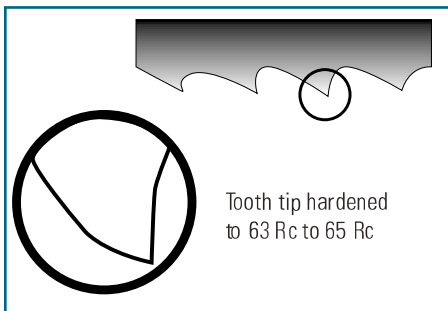
- Spring-tempered back increases beam strength for straighter, faster cuts and longer life
- Hardened tooth tip improves tooth tip wear resistance

Recommend maximum operating blade speed of 4000 SFPM.

CARBON

□ ○ I H ^ CUTS SHAPES

HardBack offers enhanced performance over FlexBack through improved beam strength.



HardBack		1/2" x .025 13 x 0.6 328'	3/4" x .032 19 x 0.8 328'	1" x .035 27 x 0.9 328'
14	TPI Wavy		40828800	
10	TPI Regular	40818000	40827300	40832400
10	TPI Wavy		40827600	
8	TPI Regular	40817500		
4	TPI Sabre			40831700
2	TPI Sabre EHS		40825000	
2	TPI Sabre			40830000



CARBON

Applications

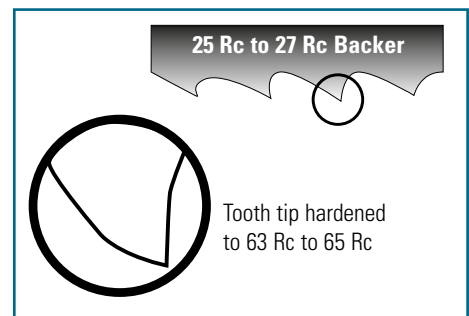
Maintenance shops, small foundries and job shops.

Materials

Aluminum, brass, lead, wood and plastic.

Features and Benefits

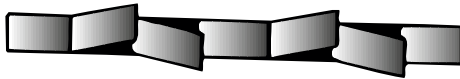
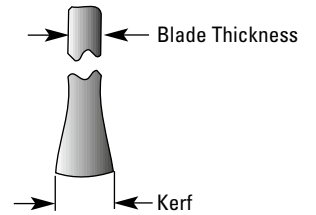
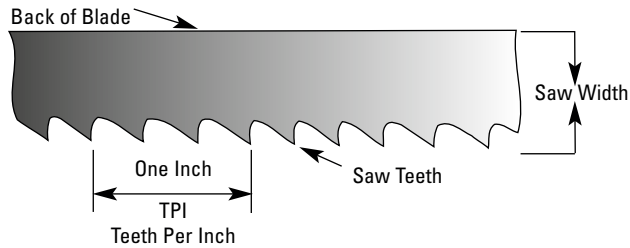
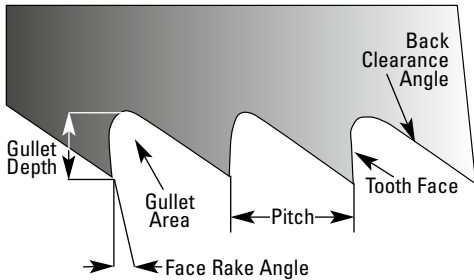
- Hardened tooth tip prolongs cutting edge life
- Flexible back extends the flex life of the blade
- Raker set provides straighter cuts



CUTS SHAPES □ ○ I H ^

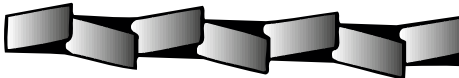
FlexBack is a versatile, low cost carbon blade.

FlexBack		1/4" x .025 6 x 0.6 328'	3/8" x .025 10 x 0.6 328'	1/2" x .025 13 x 0.6 328'	5/8" x .032 16 x 0.8 328'	3/4" x .032 19 x 0.8 328'	1" x .035 27 x 0.9 328'
24	TPI Wavy			37469000			
18	TPI Regular	37390000	37425000	37466000			
14	TPI Regular	37388000	37421000	37460000	37484000	37529000	37571000
14	TPI Wavy			37463000			
10	TPI Regular	37382000	37418000	37454000		37517000	37565000
8	TPI Regular					37511000	37562000
6	TPI Regular			37451000		37508000	37559000
6	TPI Sabre	37379000	37412000	37448000		37505000	
4	TPI Regular						37556000
4	TPI Sabre	37373000	37409000	37445000			



Regular or Raker Set

Regular Set is sometimes referred to as Raker Set and consists of a repetitive pattern with one tooth set to the right, the next to the left, and the third (called the raker tooth) without set. This type of set is best when the material being cut is of uniform size. It is also used in contour sawing.



Every Tooth Set (E.T.S.)

Every Tooth Set (E.T.S.) is similar to the regular set pattern, but without the raker or unset tooth. All teeth are set right and left in an alternating and repeating pattern. This provides, in effect, one-third more cutting teeth and is especially good for blades used in furniture industries where a raker tooth is a disadvantage.



Wavy Set

Wavy Set is a different arrangement in which groups of teeth are set to the right and then to the left in a repetitive wave-like pattern. This reduces the strain that would occur on individually-set teeth, making the saw more suitable for cutting thin stock or a variety of shapes and thicknesses without changing blades. Wavy set, therefore, has a range of applications in which it is much superior to the regular-set pattern.



Variable Tooth Set

Variable Tooth Set consists of teeth set alternately right and left at regular intervals with a raker tooth (i.e., left-right-left-right-raker). Excellent for cutting a variety of shapes and pipe from 15 mm wall thickness and upward.

REGULAR TOOTH STYLE

- 0° rake angle
- Full, well-rounded gullets
- Strong supporting back tooth

All tooth shapes the same



SKIP TOOTH STYLE

- 0° rake angle
- Skip tooth has double the gullet capacity to handle more chips and larger chips

All tooth shapes the same



SABRE TOOTH STYLE

- 10° positive rake angle
- Deeper, more rounded gullets than regular or skip tooth styles
- Allows for faster feeding
- Less tendency to clog under heavy chip load

All tooth shapes the same



VARIABLE TOOTH STYLE

- Regular tooth pattern broken up to reduce noise
- Less vibration and chatter
- One blade is suitable for a wider range of cutting

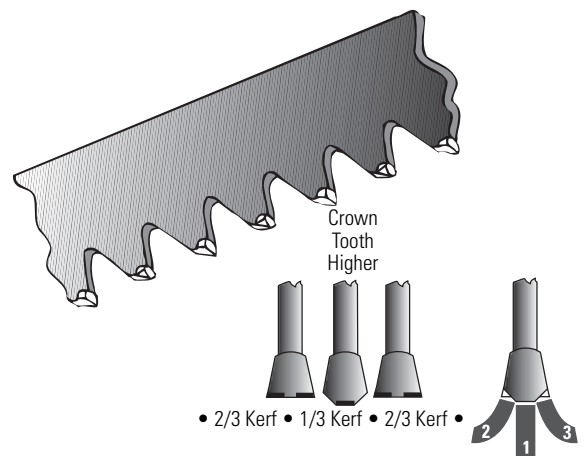
Tooth pattern repeated throughout band.

Tooth shape changes within pattern.



TRIPLE CHIP TOOTH STYLE

- Carbide tipped for cutting high nickel alloys and exotics
- Triple Chip teeth are ground to provide side clearance
- Designed for high production applications where good surface finish is needed



WHAT TOOTH PITCH DO WE USE?

OPTIMIZING TOOTH PITCH

Always strive for a minimum of 3 teeth and a maximum of 24 teeth in the cut (6 to 12 teeth in the cut at any time is the optimum)

Soft materials (*example: carbon*) 3-6 teeth in the cut average

Hard materials (*example: die steels*) 18-24 teeth in the cut average

Tough materials (*example: Inconel*) 12-18 teeth in the cut average

AVERAGING VARIABLE PITCH TEETH

PITCH	AVERAGE # OF TPI
3-4 PITCH	3-1/2 TPI
4-6 PITCH	5 TPI
5-8 PITCH	6-1/2 TPI
6-10 PITCH	8 TPI

EXAMPLE:

4" bar stock – using a 3-4 TPI blade

Avg. TPI = $3 + 4 \div 2 = 3.5$

(Bar stock size, multiplied by the average TPI = no. of teeth in the cut)

(4 x 3.5 = 14)

3-4 pitch would give us 14 teeth in the cut

4-6 pitch would give us 20 teeth in the cut

5-8 pitch would give us 26 teeth in the cut

6-10 pitch would give us 32 teeth in the cut

ITEMS THAT INFLUENCE TOOTH PITCH SELECTION

Material Shape

- Complex shapes can easily strip teeth. It is best to use a blade with less face rake angle when cutting structurals and other complex shapes.

Chip Formation

- Hard materials require a small, strong tooth shape.
- Soft materials make large chips that fill up a gullet quickly. Select a large gulleted blade.

Chip Length

- The longer the tooth is in a cut, the more chip that will be generated, and the more gullet area that will be needed to hold the chip.
- Cutting stops when the gullets are full.

Basic Procedure

1. Set band speed to the normal recommended S.F.P.M. for the material.
2. Reduce feed by 50% of the normal cutting rate (25% if SineWave).
3. Determine the recommended square inches of material to be cut at break-in from table.
4. Gradually increase the feed rate to normal over total break-in period.

Caution: During the break-in period, it is very important that the band always produce chips. Increase the feed if needed to produce chips.

For SineWave® Blades

Recommended band speed (SFPM)	150	100	50
Sq. in. to cut for break-in	40	25	10

For Carbide Tipped Blades

Recommended band speed (SFPM)	300	250	200	150	100	50
Sq. in. to cut for break-in	110	95	75	50	35	15

For Bi-Metal Blades

Recommended band speed (SFPM)	300	250	200	150	100	50
Sq. in. to cut for break-in	90	75	60	40	25	10

For SiClone® Blades

Recommended band speed (SFPM)	300	250	200	150	100	50
Sq. in. to cut for break-in	110	95	75	50	35	15

Speeds and feeds are based on running bi-metal blades. When using carbon blades or when cutting dry, reduce speeds and feeds by 50%.

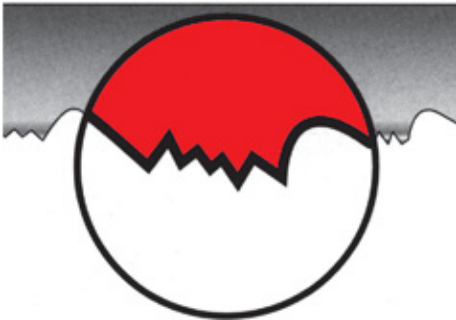
Stock Dimensions Tooth Pitch	Up to 1" 10-14, 8-12		From 1" - 3" 8-12, 6-10, 5-8		From 3" - 6" 5-8, 4-6, 3-4, 3 Sabre		Over 6" 3-4, 2-3, 2 Sabre, 1 Tooth, 3-4" T.S.	
Material (Annealed)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)
Carbon Steels								
1008-1013	250	8 - 10	275	9 - 12	280	12 - 15	250	9 - 12
1015-1018	250	8 - 10	275	9 - 12	250	12 - 15	230	9 - 12
1048-1065	200	5 - 7	200	5 - 7	175	8 - 10	150	6 - 8
1065-1095	200	4 - 6	200	5 - 7	150	6 - 8	120	6 - 8
Free Machining Steels								
1108-1111	300	9 - 11	330	12 - 14	275	13 - 15	220	11 - 14
1112-1113	300	8 - 11	330	11 - 13	275	12 - 15	220	12 - 15
1115-1132	300	7 - 10	330	10 - 13	275	13 - 16	220	11 - 14
1137-1151	275	6 - 8	250	8 - 10	250	8 - 11	200	7 - 10
1212-1213	300	8 - 10	320	11 - 13	300	13 - 15	255	11 - 14
Manganese Steels								
1320-1330	250	5 - 7	250	5 - 8	200	8 - 11	175	7 - 10
1335-1345	250	5 - 7	225	5 - 7	200	7 - 9	175	5 - 8
Nickel Chrome Steels								
3115-3130	260	4 - 6	260	5 - 7	230	5 - 7	225	5 - 7
3135-3150	220	4 - 6	200	4 - 7	180	6 - 8	150	5 - 8
3310-3315	200	3 - 4	180	4 - 5	180	5 - 7	160	4 - 6
Molybdenum Steels								
4017-4024	300	3 - 5	270	4 - 7	250	6 - 8	220	5 - 8
4032-4042	300	3 - 5	270	4 - 7	250	6 - 8	230	5 - 8
4047-4068	250	3 - 5	220	4 - 6	200	5 - 7	180	3 - 5
Chrome Moly Steels								
4130-4140	280	4 - 6	250	5 - 8	250	8 - 10	220	6 - 8
4142-4150	230	3 - 5	200	4 - 6	200	5 - 7	170	4 - 6
Nickel Chrome Moly Steels								
4317-4320	250	3 - 5	225	4 - 6	200	5 - 7	170	4 - 6
4337-4340	230	3 - 4	200	4 - 5	200	4 - 6	170	4 - 5
8615-8627	250	4 - 5	230	6 - 7	230	6 - 8	200	6 - 7
8630-8645	250	3 - 5	230	4 - 6	230	5 - 7	180	4 - 6
8647-8660	220	2 - 4	200	3 - 5	200	4 - 6	150	3 - 5
8715-8750	250	3 - 5	220	4 - 6	220	5 - 7	180	4 - 6
9310-9317	200	1 - 3	160	2 - 3	160	2 - 4	150	2 - 3
9437-9445	250	4 - 5	230	4 - 5	230	5 - 6	180	4 - 5
9747-9763	250	2 - 4	230	3 - 5	200	4 - 6	180	3 - 5
9840-9850	240	4 - 5	220	4 - 6	200	5 - 7	180	4 - 6
Nickel Moly Steels								
4608-4621	250	3 - 5	220	5 - 6	220	6 - 7	200	5 - 6
4640	220	3 - 5	200	4 - 6	200	5 - 7	170	4 - 6
4812-4820	200	3 - 5	180	3 - 5	180	4 - 6	160	4 - 5
Chrome Steels								
5045-5046	280	4 - 6	250	5 - 7	250	8 - 10	200	7 - 8
5120-5135	280	4 - 6	250	6 - 7	240	7 - 8	180	5 - 8
5140-5160	250	3 - 5	230	4 - 6	230	5 - 7	200	4 - 6
50100-52100	180	2 - 4	160	3 - 5	150	4 - 6	100	3 - 5
Chrome Vanadium Steels								
6117-6210	225	4 - 5	225	5 - 7	200	6 - 8	170	5 - 7
6145-6152	225	3 - 4	200	4 - 5	200	5 - 6	150	4 - 5
Die Steels								
A-2,	210	2 - 3	200	3 - 4	190	3 - 4	180	2 - 3
D-2, D-3	110	1 - 2	100	1 - 2	90	1 - 2	80	1 - 2
D-7	90	1	80	1	70	1	70	1
O-1, O-2	240	3 - 4	210	4 - 5	190	5 - 6	170	4 - 5
O-6	230	3 - 4	200	4 - 6	180	5 - 7	150	4 - 6

Speed and Feed Charts



Speed and feed rates reflect optimum blade life. For increased production rates, contact Simonds for more information.

Stock Dimensions Tooth Pitch	Up to 1" 10-14, 8-12		From 1"- 3" 8-12, 6-10, 5-8		From 3"- 6" 5-8, 4-6, 3-4, 3 Sabre		Over 6" 3-4, 2-3, 2 Sabre, 1 Tooth, 3-4" T.S.	
Material (Annealed)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)	Blade Speed (SFPM)	Cutting Rate (SIPM)
Silicon Steels 9255-9260 9261-9262	200 200	2 - 4 1 - 3	180 160	3 - 5 2 - 3	180 160	3 - 5 2 - 4	150 150	3 - 5 2 - 3
High Speed Tool Steels T-1, T-2 T-4, T-5 T-6, T-8 T-15 M-1 M-2, M-3 M-4, M-10	130 110 110 80 150 120 100	1 - 2 1 - 2 1 - 2 1 1 - 3 1 - 2 1 - 2	110 100 100 80 140 110 90	2 - 3 1 - 2 1 - 2 1 2 - 4 2 - 3 1 - 2	100 90 80 70 130 100 80	2 - 4 2 - 3 1 - 2 1 3 - 5 3 - 4 1 - 3	90 80 70 50 110 80 60	2 - 3 1 - 2 1 - 2 1 2 - 4 2 - 3 1 - 2
Hot Work Steels H-12, H-13, H-21 H-22, H-24, H-25	150 150	2 - 4 1 - 3	125 125	3 - 5 1 - 3	125 125	2 - 4 1 - 3	125 125	2 - 4 1 - 3
Shock Resisting Tool Steels S-1 S-2, S-5	220 170	2 - 4 1 - 3	180 150	3 - 5 2 - 4	165 120	3 - 5 2 - 4	150 100	2 - 4 1 - 3
Special Purpose Tool Steels L-6 L-7	200 200	2 - 4 2 - 4	180 180	3 - 5 3 - 5	170 150	3 - 5 3 - 5	150 100	2 - 4 2 - 4
Stainless Steels 201, 202, 302, 304 303, 303F 308, 309, 310, 330 314, 316, 317 321, 347 410, 420, 420F 416, 430F 430, 446 440 A,B,C 440F, 443 17-4PH, 17-7PH A-7	120 140 90 90 130 150 200 100 120 150 100 100	2 - 4 2 - 4 1 1 1 - 3 1 - 3 3 - 5 1 - 3 1 - 3 1 - 3 2 - 3 1 - 2	100 120 70 80 110 130 180 90 10 130 90 100	2 - 4 2 - 4 1 1 1 - 3 1 - 3 4 - 6 2 - 4 1 - 3 1 - 3 2 - 4 1 - 2	100 100 60 70 100 120 170 80 90 120 80 100	2 - 4 3 - 5 2 2 2 - 4 2 - 4 5 - 7 2 - 4 2 - 4 2 - 4 3 - 4 2 - 3	100 100 60 60 80 100 150 80 70 100 80 100	1 - 3 2 - 4 1 1 1 - 3 1 - 3 4 - 6 1 - 3 1 - 3 1 - 3 2 - 3 2 - 3
Beryllium Copper #25 BHN 100-120 BHN 220-250 BHN 310-340	350 250 200	4 - 6 2 - 4 1 - 2	300 225 160	5 - 7 3 - 5 1 - 2	275 200 140	6 - 8 4 - 6 2 - 3	225 175 100	5 - 7 3 - 5 1 - 2
Nickel Base Alloys Monel R Monel K Monel KR Monel Inconel Inconel X Hastelloy A Hastelloy B Hastelloy C Rene 41 Udimit Waspalloy Titanium	100 140 100 100 110 90 120 110 100 90 100 90 100	1 - 2 2 - 3 1 1 - 3 1 - 2 1 1 - 2 0 - 1 0 - 1 1 1 1 1 - 2	100 140 80 90 100 80 100 100 90 90 90 90 100	1 - 2 2 - 4 1 1 - 3 1 - 3 1 1 - 2 1 - 2 0 - 1 1 1 - 2 1 - 2 2 - 3	80 125 60 80 80 70 85 90 70 90 90 90 100	1 - 2 2 - 4 1 1 - 3 1 - 3 1 2 - 3 1 - 2 0 - 1 1 - 2 1 - 2 1 - 2 2 - 3	60 75 60 60 80 60 75 75 60 90 90 90 100	1 2 - 3 1 1 - 2 1 - 2 1 1 - 2 0 - 1 0 - 1 1 - 2 1 - 2 1 - 2 2 - 3
Titanium Alloys TI-4AL-4MO TI-140A 2CR-2MO TI-150A TI-6AL-4V 99% Pure Titanium	100 100 100 100 100	0 - 1 0 - 1 0 - 1 0 - 1 0 - 1	90 90 90 90 90	0 - 1 0 - 1 0 - 1 0 - 1 0 - 1	80 80 80 80 80	0 - 1 0 - 1 0 - 1 0 - 1 0 - 1	70 60 60 60 60	0 - 1 0 - 1 0 - 1 0 - 1 0 - 1



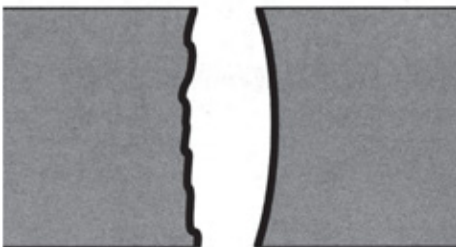
Stripping Teeth

- Too many teeth or too few teeth in the cut – please see Optimizing Tooth Pitch on p. 22
- Parts not held securely – use a third clamp or weld ends
- Feed rate too high or speed too slow
- Poor butt weld
- Chip brush not working, causing chips to overload gullets
- Check coolant concentration



Band Breakage

- Worn guides
- Guide arms set too far apart
- Diameter of wheels too small – use thinner bands
- Band tension too high
- Feed rate too high
- Poor butt weld



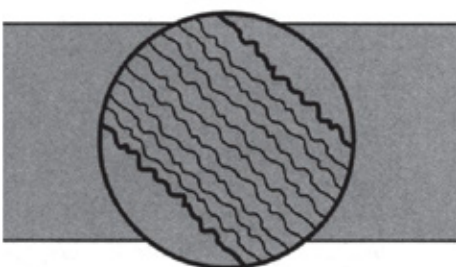
Crooked Cut

- Dull blade
- Improper break-in
- Guide arms too far apart or out of alignment
- Damaged roller or carbide guides
- Feed rate too heavy or blade speed too slow
- Tooth pitch too fine
- Band tension too low
- Vise clamp out of square



Premature Dulling of Teeth

- Improper break-in
- Check coolant concentration and flow
- Check chip brush
- Check feed rates and blade speed
- Select proper tooth pitch



Rough Cut

- Band speed too slow and feed rate too high
- Improper break-in
- Dull or damaged teeth
- Check chip brush
- Poor butt weld

Other Simonds Products

SIMONDS®



OUR TOUGHEST COMPETITION IS THE MATERIAL WE FILE. Looking for files that can get you through the toughest work with hours to spare? Simonds has a line of workhorse files that are still hard at work when others are in the scrap bin. For wide-ranging applications choose from our standard American Pattern Files or our premium Black Maxi-Sharp® Files specially treated with black oxide coating to resist loading and rust, Swiss Pattern Files for finishing delicate and intricate parts; and Vixen® Files recognized as the most efficient ever designed for auto-body work and manufacturing.

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