ULTRA®

The World Sawing Specialist

CELEBRATING 1923 100 2023 YEARS ULTRA TOOLS

# BANDSAW BLADES

The original ULTRA France Since 1923

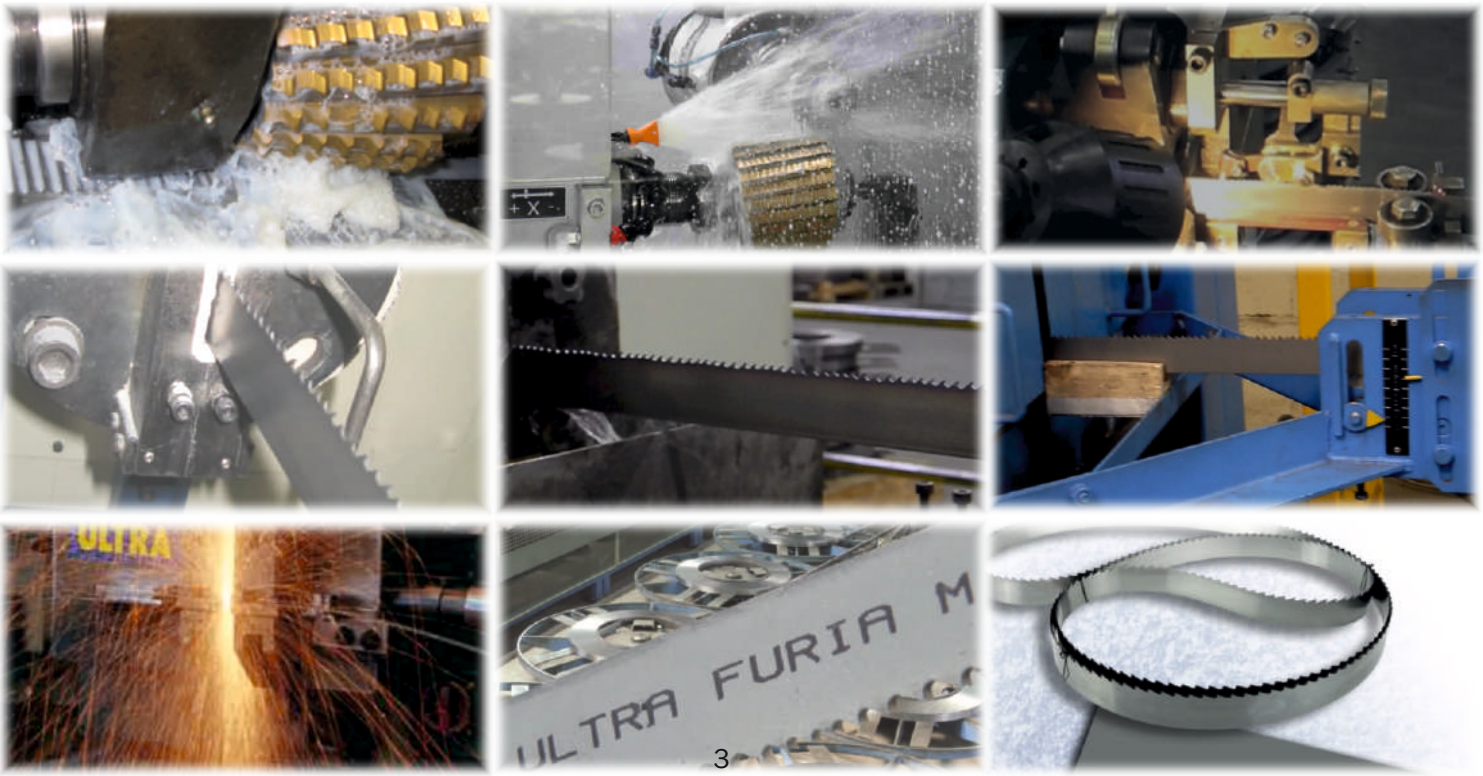
**ULTRA International Customers**

**Distributor Centers**

- Jebel Ali, Dubai, UAE
- Paris, France
- Singapore
- Amsterdam, Netherland (Coming soon)

**Manufacturing Sites (INDIA)**

| | |
|---|---|
| • Daman | **Saws & Tools** |
| • Ankleshwar | **Bandsaw Blades** |
| • Palghar | **Bimetal Strips & Flat Wires** |
| • Mumbai | **Corporate Office** |



## CONTENTS



## ABOUT US

**1948**
Late Mr. R.C. Gupta opens Hardware Shop

**1963**
Started Factory for Engine Bearing

**1971**
Acquired Factory for Copper Alloy Products

**1982**
MAGICUT,Established for the Manufacture of HSS Hacksaw Blades & Tool Bits

**1996**
Export Department Established

**2004**
Started Bimetal Hacksaw Blades Production

**2009**
Launched Bimetal Hole Saws

**2010**
Implemented Expansion cum Modernisation Project

**2011 to 2013**
Bimetal Bandsaw Weld & Distribution Centre with THE M.K. MORSE CO., USA

**2012**
Started Hacksaw Frames Production

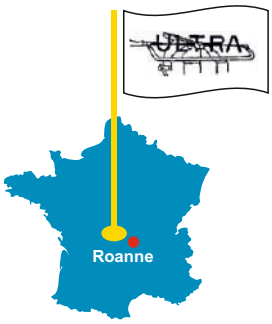
**2012**
Started Manufacturing of Bimetal Strips

**2013**
Started Bimetal Bandsaw Blades Production

**2014**
Started Manufacturing of HSS Round and Flat Wires

**2014**
MAGICUT Takes Over and name changed to MAGICUT ULTRA TOOLS

# Celebrating 100 Years of a Rich Legacy




## 1923

Established DÉMURGER SA in Roanne, France

## 1932

Launched Hand Too


## 1984

Launched Bi Hard Cobalt Hacksaw Blade


## 1990 to 1994

Developed Capacity for Producing Jigsaw Blades, Hole Saws and Hacksaw Frames

## 1995

New Production Workshop for Bandsaw Blades Inaugurated

## 1996

Company Obtains ISO 9001 Certificate

## 2006

DIAM Group Takes Over and name changed to ULTRA DIAM

## 2008

ALFRA Group Takes Over and name changed to ULTRA NOVA

## 2018

Ultra Tools Obtains ISO 9001 Certificate

## 2021

Implemented 5S Operational System

## 2022

Logistics Centre Established in UAE

## 2022

Purchased Equipements for Hacksaws & Carbon Band Saws from DORMER TOOLS INDIA PVT LTD (Make Miranda)

## 2023

Initiated Procedure for ISO 18000 & ISO 45000 Certification

ISO 18001 & 45001 Under implementation

Introduced HSS Hacksaw Blade

**1936**

**1950**

Sold 25,000 Sawing Machines and became the Leading French Manufacturer

**1964**

Export Department established

Launched ULTRA 77 Hacksaw Frame

**1968**

Joint Venture in India under the name MIRANDA ULTRA TOOLS PVT LTD

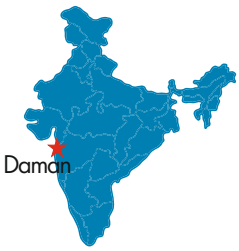
**2012**

**2014**

MAGICUT Takes Over and name changed to MAGICUT ULTRA TOOLS

Machinery moved to Daman, India and New Factory called ULTRA TOOLS

**2016**




**2017**

ULTRA TOOLS SAS Established in Paris, France

**2023**

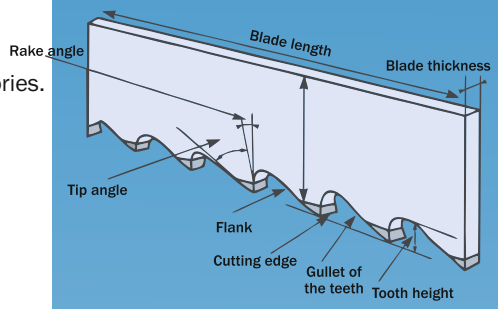
ULTRA Purchases Equipment's & Machinery for Bimetal Bandsaw Blades from Dormar Tools India Pvt Ltd (Make Miranda)


CELEBRATING 1923 100 YEARS 2023 ULTRA TOOLS

# SELECTING the right blade

## Toothing

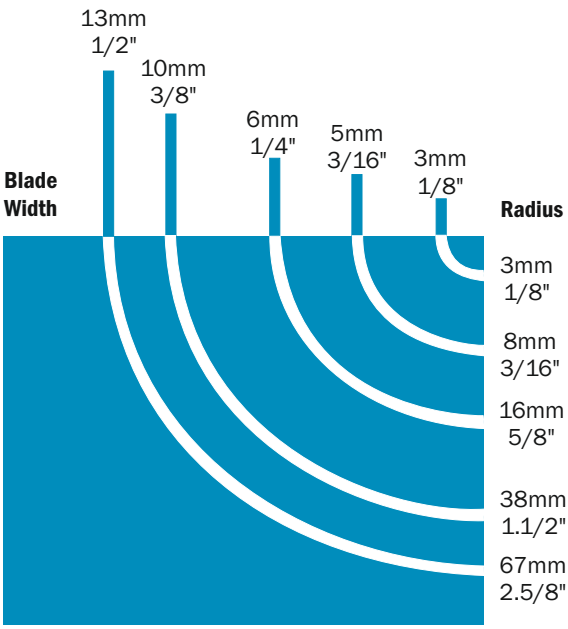
The teeth are obtained by milling according to different profiles developed in our laboratories. They give a combination of parameters:
- Variable pitch (marked by the letters V),
- Constant pitch with rake angle (marked by letter I, CI, X and G), with 0 rake angle (marked by letter N)
-High output work (alternate set) or with improved surface condition (Raker set)




| | Aluminium | | Bronze | | Low Carbon steels | | High Carbon steels | | Alloy Steels | Bearing steels | Steel for molds | Tool steels | Stainles steels | Nickel based Stainless | Titanium |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Profiles | Solids | Profiles | Solids | Profiles | Solids | Profiles | Solids | Solids | Solids | Solids | Solids | Solids | Solids | Solids |
| FLEX | | | | | | | | | | | | | | | |
| VULCA | | | | | | | | | | | | | | | |
| FURIA | | | | | | | | | | | | | | | |
| OPTIMA | | | | | | | | | | | | | | | |
| KATANA | | | | | | | | | | | | | | | |
| PROFILA | | | | | | | | | | | | | | | |
| ALUMINIA | | | | | | | | | | | | | | | |
| WOOD | | | | | | | | | | | | | | | |
| TITAN | | | | | | | | | | | | | | | |
| ULTIMA | | | | | | | | | | | | | | | |
| ADVANCE | | | | | | | | | | | | | | | |
| CS m/mn | +600 | | +100 | | 90 | | 70 | | 60 | | 45 | | 40 | 20 | 15 |

## Blade Width

Use the blade width recommended by the machine manufacturer, except for contour cuttting in vertical machines when you should use the chart below.




## The length and the section of the bandsaw blade

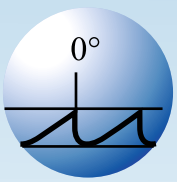
- Length and section are linked to the machine
- Length and width is measures in milimeters
- Thickness is linked to the section and is also measures in millimeters.

## Cutting Angle

Use a positive cutting angle to saw hardworking or non-ferrous materials..


***CI, VI, VX, V+***

Use a zero cutting angle for lightly alloyed construction steels and profiles



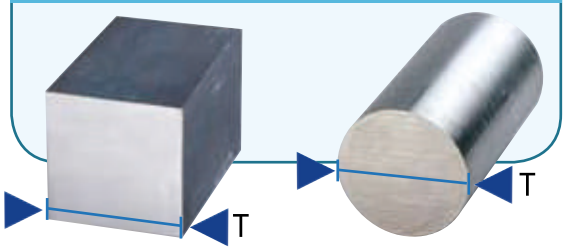

***N, VN***

# SELECTING the right blade

## The choice of the teething

Choose the right teething from the above chart. The teething is indicate in teeth per inch ( 1 inch = 25.4 mm) When section varies during sawing operation, choose variable pitch teething, allowing wider sawing possibilities.

### FULL MATERIAL



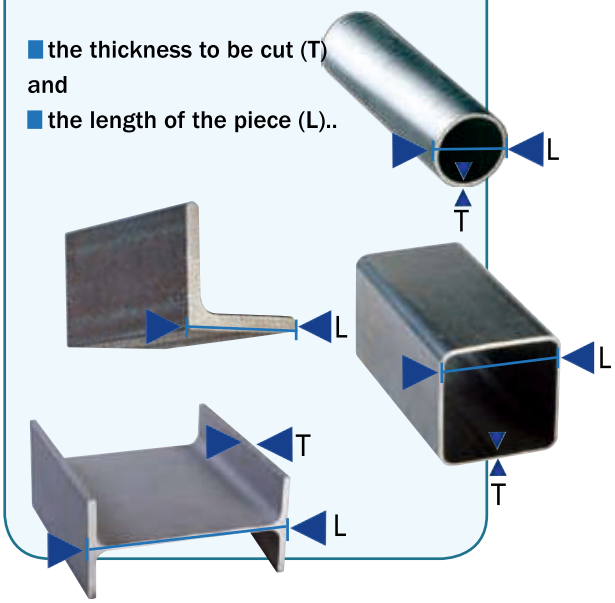

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Constant pitch | 18 | 14 | 10 | 8 | 6 | 4 | 3 | 2 | 1,2 | 0,75 |
| Thickness T (mm) | 2 - 3 | 5 - 8 | 12 - 16 | 22 - 30 | 40 - 70 | 100 - 140 | 200 - 240 | 300 - 450 | 600 | |
| Variable Pitch | 10/ 14 | 8/ 12 | 6/ 10 | 5/ 8 | 4/ 6 | 3/ 4 | 2/ 3 | 1/ 2 | 0.7/ 1.2 | |

## Variable sections & structurals and tubes cutting

### PROFILE AND PIPES

Choose the teething depending on

- the thickness to be cut (T) and
- the length of the piece (L)..




| T (mm) \ L (mm) | 20 | 40 | 60 | 80 | 100 | 120 | 150 | 200 | 300 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 14 | 14 | 10/14 | 10/14 | 10/14 | 10/14 | 10/14 | 8/12 | 6/10 | 6/10 |
| 3 | 10/14 | 10/14 | 10/14 | 10/14 | 8/12 | 8/12 | 8/12 | 6/10 | 6/10 | 5/8 |
| 4 | 8/12 | 8/12 | 8/12 | 8/12 | 8/12 | 6/10 | 6/10 | 6/10 | 5/8 | 5/8 |
| 5 | 8/12 | 8/12 | 8/12 | 6/10 | 6/10 | 6/10 | 6/10 | 5/8 | 5/8 | 4/6 |
| 6 | 6/10 | 6/10 | 6/10 | 6/10 | 6/10 | 6/10 | 5/8 | 5/8 | 4/6 | 4/6 |
| 8 | 6/10 | 6/10 | 6/10 | 6/10 | 5/8 | 5/8 | 5/8 | 4/6 | 4/6 | 3/4 |
| 10 | | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 4/6 | 4/6 | 4/6 | 3/4 |
| 12 | | 5/8 | 5/8 | 5/8 | 4/6 | 4/6 | 4/6 | 4/6 | 3/4 | 3/4 |
| 15 | | 4/6 | 4/6 | 4/6 | 4/6 | 4/6 | 3/4 | 3/4 | 3/4 | 2/3 |
| 20 | | | 4/6 | 4/6 | 3/4 | 3/4 | 3/4 | 3/4 | 2/3 | 2/3 |
| 30 | | | | 3/4 | 3/4 | 3/4 | 2/3 | 2/3 | 2/3 | 2/3 |
| 50 | | | | | 2/3 | 2/3 | 2/3 | 2/3 | 2/3 | 1,2/2 |



ULTRA®

# SELECTING the right blade

## The technical advices

TX = Surface / Cutting time

IMPORTANT : check the guide rollers.

**The cutting rate** Cutting rate is the surface in $cm^2$ divided by the cutting time. This fundamental. It guaranties the best compromised between performance and blade life.

**The blade set up** Install the blade into the machine so that the teeth will engage the material, if necessary turn the blade and carefully put the back of the blade in between the guide rollers.

**The blade tension** Once the blade is correctly seated on the machine. Start to lighten the blade. When done, you have to check that the blade remains in the correct position, Follow the values given by the machine manufacturers. You can also us a tension gauge to verify your adjustments.

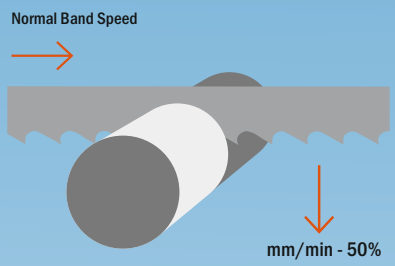
If your machine manufacture gives no indications use this chart a a guide

| Section (mm) | Horizontal machine | | Vertical machine | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| 20 | 14 | 20 | 18 | 24 |
| 27 | 16 | 22 | 19 | 26 |
| 34 | 21 | 27 | 23 | 30 |
| 41 | 23 | 28 | 24 | 29 |
| 54 | 24 | 31 | 24 | 31 |
| 67 | 24 | 31 | 24 | 31 |

## The break in

Bandsaw blades like all HSS cutting tools must have a break in period to maximise life. A good break in period will reduced the occurrence of teeth stripping and optimized blade life.

For the first cuts, it's imperative to reduce the feed rate by 50% and cutting speed by 30%. After the initial break in period, gradually increase the speed and feed to reach the desired values.




## Using Metal Chips to Troubleshoot

You can improve the productivity of your metal cutting operation by paying close attention to the chips made by the blade cutting through metal. This chart show some of the common problems that can be discovered and solved by paying attention to chips

| Chip Form | Chip Condition | Chip Color | Blade Speed | Blade Feed Rate |
|---|---|---|---|---|
|  | Thin, or Powderly chips | Silver | Decrease ⇩ | Increase ⇧ |
|  | Loosely and Curled | Silver | Suitable ✔ | Suitable ✔ |
|  | Heavy, Thick,and Tightly Curled | Blue | Suitable ✔ | Decrease ⇩ |

## The important points machine

- Guide arms : Adjust the guide arms as close to the work as possible.
- Guides: Check ball bearings for wear and tear.
- Hydraulic circuit : Visually check the hydraulic circuit, checking for leaks in the bow and on the vice.
- Lubrication : Check the coolant delivery, level and the concentration (5% to 10%)
- Brush : Check the brush position to ensure chip are efficiently removed.

## Various precautions:

- Check that the teeth are in the cutting direction• Adjust the guide arms as close to the work as possible
- Maximum of coolant.

ULTRA® FLEX

## HCS
52 HRc

These are steels with a high carbon content. They have various levels of alloy, their mechanical properties give a better resistance to abrasion.

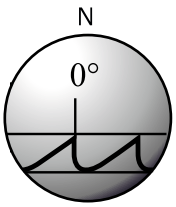
## Flex TD

Of older conception, this carbon blade is used for “lighter” cutting applications such as sawing slightly alloyed and non alloyed steels.

This tooth-only-hardened blade is flexible and meets the requirement for contouring operations.

### Constant pitch

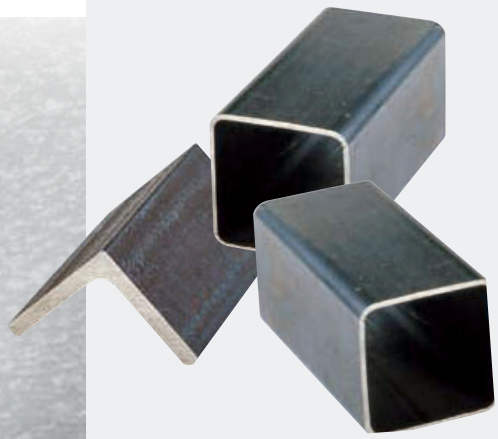
| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 4 | 6 | 8 | 10 | 14 | 18 | 24 |
| 3 x 0.065 | 1/8 x 0.025 | | | | | ■ | ■ | ■ |
| 6 x 0.090 | 1/4 x 0.035 | | | ■ | ■ | ■ | ■ | ■ |
| 8 x 0.065 | 5/16 x 0.025 | | | | ■ | ■ | ■ | |
| 10 x 0.090 | 3/8 x 0.035 | | | ■ | ■ | ■ | ■ | ■ |
| 13 x 0.065 | 1/2 x 0.025 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 16 x 0.080 | 5/8 x 0.032 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 20 x 0.080 | 3/4 x 0.032 | | ■ | ■ | ■ | ■ | ■ | ■ |
| 25 x 0.090 | 1 x 0.035 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

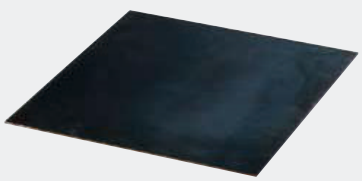



### Skip

| Section | | Teeth per inch | |
|---|---|---|---|
| mm | inch | 6 | 10 |
| 10 x 0.065 | 3/8 x 0.025 | ■ | ■ |
| 13 x 0.065 | 1/2 x 0.025 | ■ | ■ |
| 16 x 0.080 | 5/8 x 0.025 | ■ | ■ |
| 20 x 0.080 | 3/4 x 0.035 | ■ | ■ |
| 25 x 0.090 | 1 x 0.035 | ■ | ■ |







ULTRA®

# ULTRA® VULCA

## Matrix II

67 HRc

Less brittle, It has greater impact resistance

**PRECISION**

Manufactured in Matrix II Steel, the VULCA bandsaw blade offers a good compromise between hardness and resilience and is ideally suited for cutting profiles and thin metal sheets from low alloyed steel and non ferrouse metals.

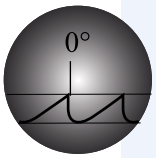
Designed to offer excellent shock resistance, VULCA teething offers a 20% increased life and enhances the safety of the operator.

| Characteristics | | Advantages |
|---|---|---|
| Reinforced tooth shape | > | Increase precision and cutting performance in small profiles |
| Shock resistance | > | 20% longer lihe time |

### Constant pitch

| Section | | Teeth per inch | | | | | |
|---|---|---|---|---|---|---|---|
| mm | pouce / inch | 6 | 8 | 10 | 14 | 18 | 24 |
| 6 x 0.090 | 1/4 x 0.035 | | | ■ | ■ | | |
| 10 x 0.090 | 3/8 x 0.035 | | ■ | ■ | ■ | ■ | |
| 13 x 0.065 | 1/2 x 0.025 | | ■ | ■ | ■ | ■ | ■ |
| 20 x 0.090 | 3/4 x 0.035 | ■ | ■ | ■ | ■ | | |

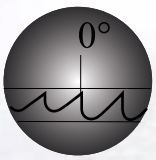
N

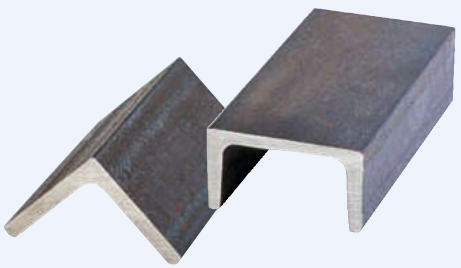


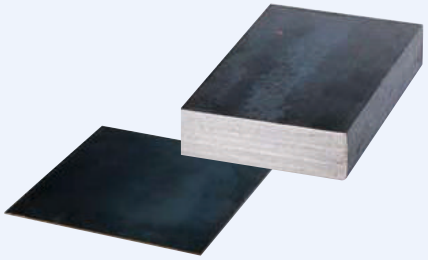

### Variable pitch

| Section | | Teeth per inch | | | | |
|---|---|---|---|---|---|---|
| mm | inch | 4/6 | 5/8 | 6/10 | 8/12 | 10/14 |
| 10 x 0.090 | 3/8 x 0.035 | | | ■ | ■ | ■ |
| 13 x 0.065 | 1/2 x 0.025 | | | ■ | ■ | ■ |
| 20 x 0.090 | 3/4 x 0.035 | ■ | ■ | ■ | ■ | ■ |

VN






ULTRA®

# ULTRA® FURIA

This multipurpose blade is designed to cut all kinds of steels, both ferrous and non-ferrous, in all dimensions and shapes. Combining durability and high hardness, this bandsaw blade is suitable for industrial sawing with automatic and semi-automatic machines.

Particularly resistant to wear, this blade offers increased life when exposed to less than ideal working conditions resulting in better productivity with reduced costs. Accurate, efficient and resistant, this blade guarantees a clean cut at a low cost.

**M42**
67 / 68 HRc

Provides the best compromise between hardness and impact resistance..

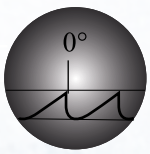
**MULTIPURPOSE**

| Characteristics | Advantages |
|---|---|
| Highly durable and hard | > Increased lifetime and cutting perfromance |
| Multiple Tooth geometry | > Suitable for full material and profiles |
| Tooth sequence designed to avoid vibrations generating noise and premature wear | > Better use comfort |
| | > Sawing of a wider selection of material and sections |
| | > Increased lifetime |

## Constant pitch

| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 2 | 3 | 4 | 6 | 8 | 10 | 14 |
| 20 x 0.090 | 3/4 x 0.035 | | | | ■ | ■ | ■ | ■ |
| 27 x 0.090 | 1 x 0.035 | | | ■ | ■ | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | | ■ | ■ | ■ | | | |
| 41 x 1.30 | 1 1/2 x 0.050 | ■ | ■ | ■ | ■ | | | |

N

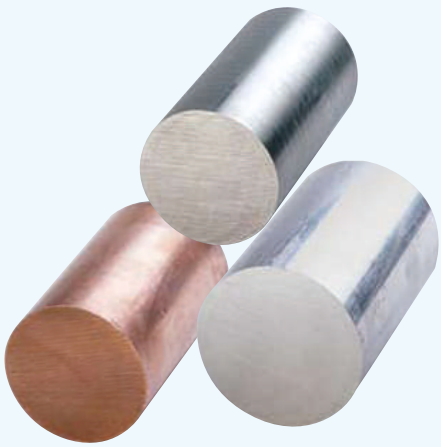


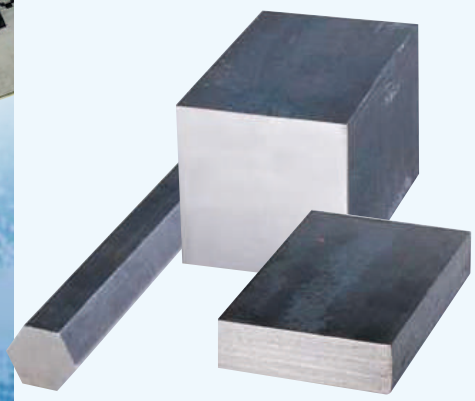

## Variable pitch

| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 2/3 | 3/4 | 4/6 | 5/8 | 6/10 | 8/12 | 10/14 |
| 20 x 0.090 | 3/4 x 0.035 | | | ■ | ■ | ■ | ■ | ■ |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ | ■ | ■ | ■ | | |
| 41 x 1.30 | 1 1/2 x 0.050 | ■ | ■ | ■ | | | | |

VN







# ULTRA® OPTIMA

## M42
67 / 68 HRc

Provides the best compromise between hardness and impact resistance.

Bandsaw blades to complete the Furia range. M42 steel with heat treatment adopted to reduce impact resitance. Positive cutting angle allowing all materials to be cut. The back of the tooth is reinforced for a better impact resistance, improve gullet line to facilitate the chip disposal. Teeth sequence cancelling noise during the cut.

Uses: Sawing plants, mechanics on automatic and semi-automatic machines. Cut steel, structural steel alloy, stainless steel, pretreated steel.

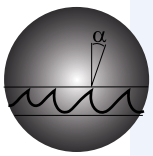
## ALL - ROAD

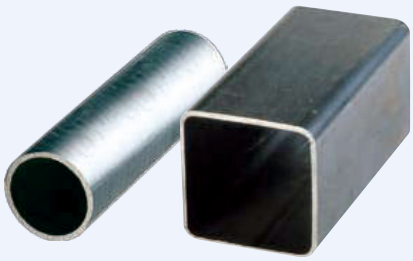
| Characteristics | | Advantages |
|---|---|---|
| 2 teething, 3 sections | > | An easier tooth selection |
| Reduced Impact Resistance | > | Long life significant improvement in standard steel and stainless steel pipes. |

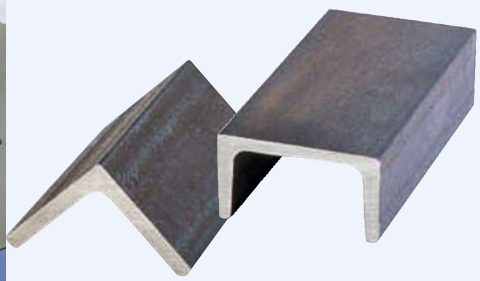
### Variable Pitch

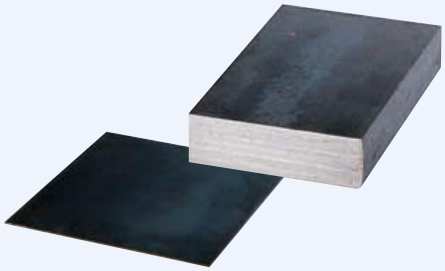
| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 0.75/1.25 | 1.2/2 | 1.4/2 | 2/3 | 3/4 | 4/6 | 5/8 |
| 27 x 0.090 | 1 x 0.035 | | | | ■ | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | | | | ■ | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | | | | ■ | ■ | ■ | ■ |
| 54 x 1.30 | 2 x 0.050 | | ■ | | ■ | ■ | ■ | |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | | ■ | ■ | ■ | |
| 67 x 1.60 | 2.5/8 x 0.063 | ■ | ■ | | ■ | | | |
| 80 x 1.60 | 3 x 0.063 | ■ | | | | | | |

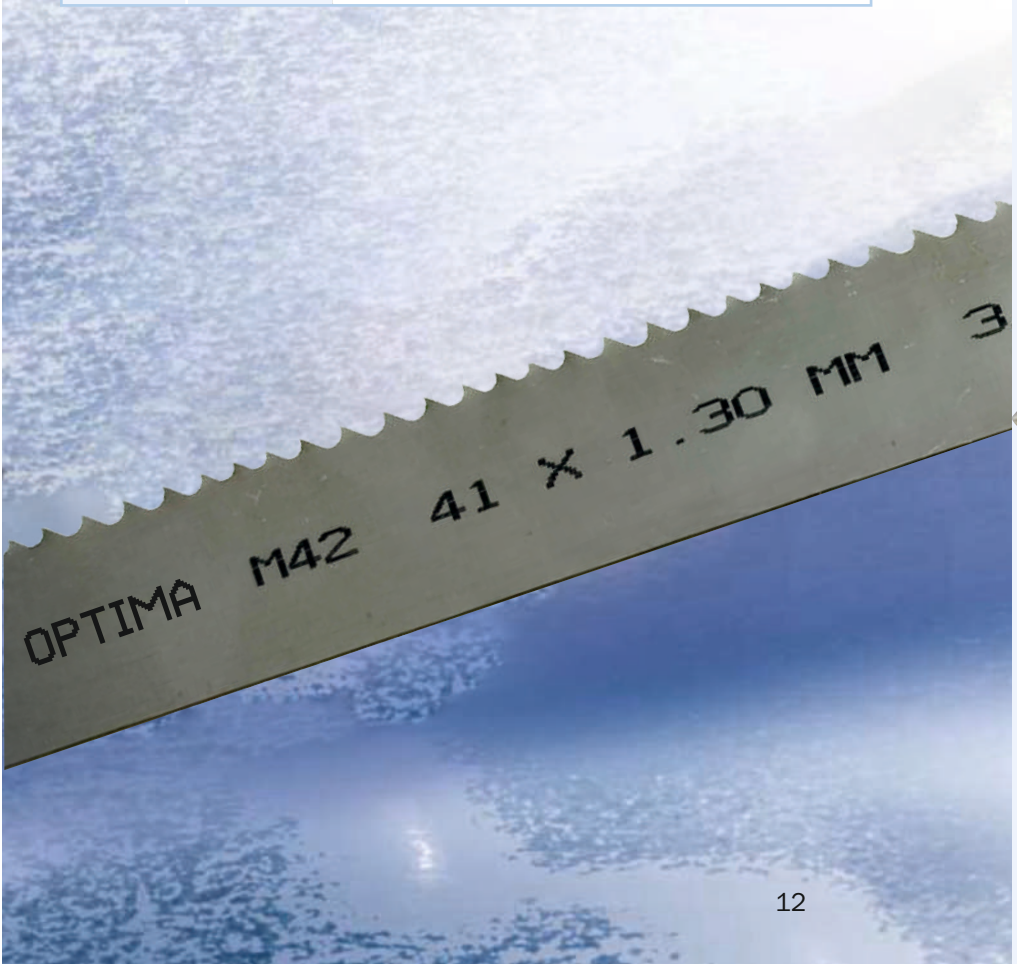
VI











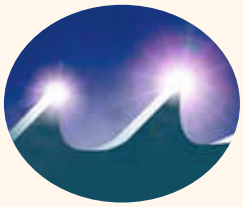

ULTRA®

# ULTRA® KATANA

## M42
67 / 68 HRc

Designed with a flat gullet and a highly positive cutting angle, KATANA is the perfect blade for sawing tool and stainless steels. This blade combines an aggressive tooth design and a resilient steel giving it all the required strength to cut the toughest of steels. Easy to use, KATANA is accurate and efficient in all alloyed steels.

This band us the most suitable for materials requiring cutting speeds between 25 and 50m/min.



Provides the best compromise between hardness and impact resistance.

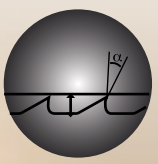
| Characteristics | Advantages |
|---|---|
| M42 quality | > Hardness & toughness |
| Extremely positive cutting angle | > Facilitates cutting difficult materials and reduced the cutting effort |
| Flat gullet | > Positive cutting angle |
| Variable pitch | > Reduction of vibration resulting in an increase of life |

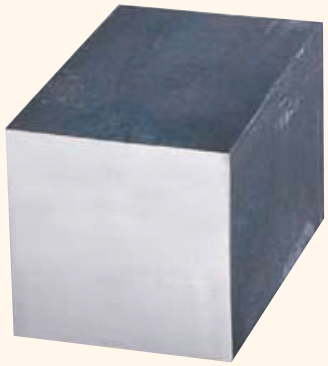
## PERFORMANCE

### Variable Pitch

| Section | | Teeth per inch | | | |
|---|---|---|---|---|---|
| mm | inch | 2/3 | 3/4 | 4/6 | 5/8 |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | ■ | ■ | ■ | |
| 54 x 1.30 | 2 x 0.050 | ■ | ■ | ■ | |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | ■ | |
| 67 x 1.60 | 2.5/8 x 0.063 | ■ | ■ | ■ | |

VX





# ULTRA® PROFILA+

## M42
67 / 68 HRc

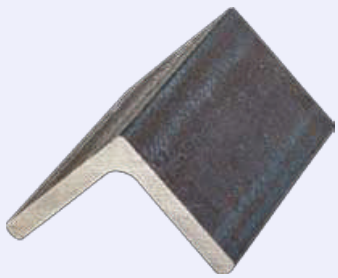
Provides the best compromise between hardness and impact resistance.

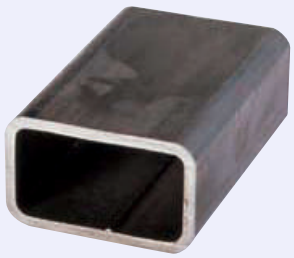
The PROFILA+ blade has been especially designed for cutting large steel and stainless steel profiles, singularly or in bundles.
The blade's progressive setting, enhances the safety conditions when cutting I-beams and girders reducing the occurrence of pinching and binding.

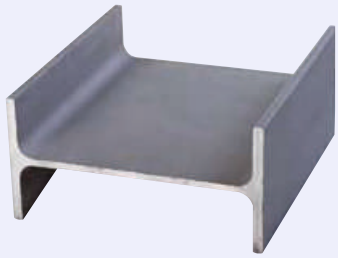
PROFILA+'s reinforced teething substantially increases the blades resistance to shocks.

| Characteristics | Advantages |
|---|---|
| Variable pitch with a stronger back clearance angle | > Reduction of vibrations and noise during cutting operation. Better resistance to shocks. |
| Positive cutting angle | > Easier material penetration |
| Progressive setting | > Reduced risk of blade pinching in material |
| M42 quality material with some unique processes | > Excellent shock and fatigue resistance of the blade |

## PROFILES

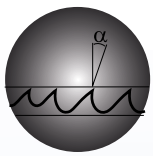






## Variable Pitch

VI




| Section | | Teeth per inch | | |
|---|---|---|---|---|
| mm | inch | 3/4 | 4/6 | 5/7 |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | ■ | ■ | ■ |




ULTRA®

# ULTRA® ALUMINIA

## M42
67 / 68 HRc

Developed for the European leader in aluminium manufacturing, this blade offers 50% greater lifetime as well as providing a 30% higher cutting rate when comparing it to other bandsaw blades in its category. Its extra large teething and positive cutting angle guarantee significant productivity and financial gains.

Perfectly suitable for sawing of aluminium blocks, it can also be used for trimming cast moulding and cutting aluminium profiles in bundle operations.

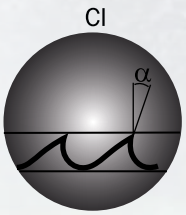
Provides the best compromise between hardness and impact resistance..

## ALUMINIUM

| Characteristics | Advantages |
|---|---|
| 60% larger setting | > No more binding blades in the material during sawing operarions |
| | > Higher chip capacity |
| Raker group 5 | > Less vibrations while cutting |
| M42 quality steel | > Greater abrasion and fatigue resistance for the blade |
| Positive cutting angle | > Less cutting efforts |
| Redesigned gullet | > Reduced twist |
| | > Better and easier chip removal properties |

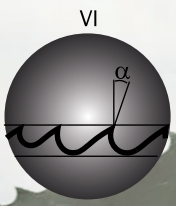
### Constant Pitch

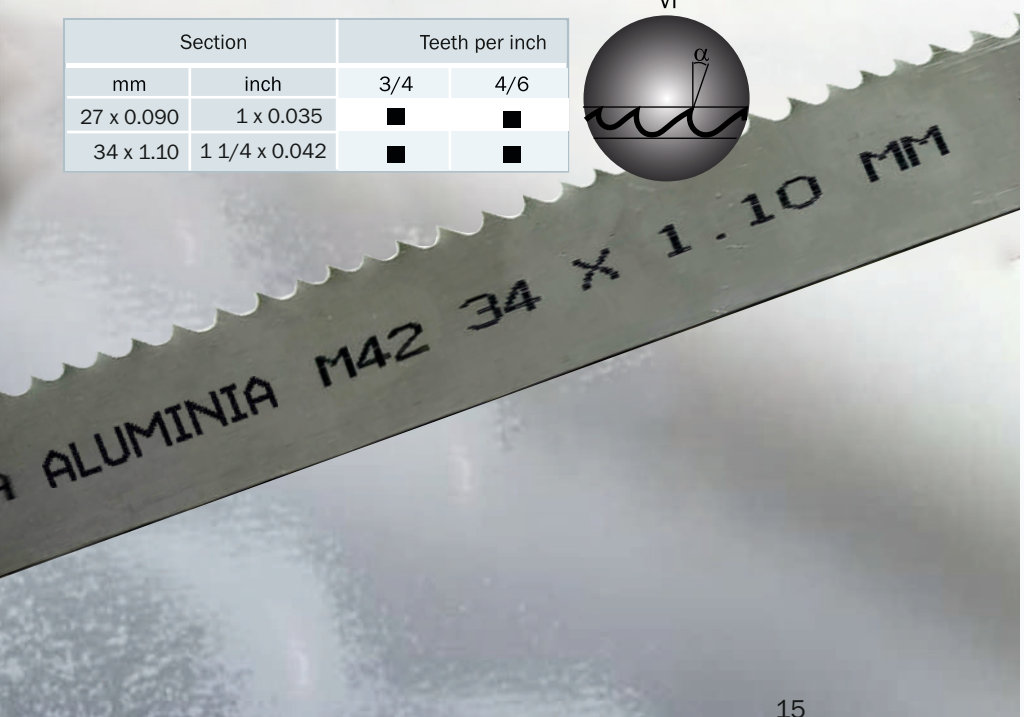
| Section | | Teeth per inch | | |
|---|---|---|---|---|
| mm | inch | 2 | 3 | 4 |
| 20 x 0.090 | 3/4 x 0.035 | | ■ | ■ |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | ■ | ■ | |




### Variable Pitch

| Section | | Teeth per inch | |
|---|---|---|---|
| mm | inch | 3/4 | 4/6 |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ |




# ULTRA® WOOD

Bimetal bandsaw blade, developed for the saw mill industry of wood, this tape offers a longer service life by 50% and cut rate 30% higher compared with other conventional bandsaw blades.Its extra large teeth and positive rake angle guarantee increased productivity and profitability high.

Specially adapted for cutting softwood and hardwood, it can be used for trimming operations and cutting logs with knots.

**M42**
67 / 68 HRc

Provides the best compromise between hardness and impact resistance.

## WOOD

| Characteristics | | Advantages |
|---|---|---|
| Positive cutting angle | > | Less cutting efforts |
| Longevity | > | Profitability |

### Constant Pitch

| Section | | TPI |
|---|---|---|
| mm | inch | 1.2 |
| 27 x 0.90 | 1 x 0.035 | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ |

CI





ULTRA®

# ULTRA® TITAN

By the use of M51, the TITAN offers unrivalled hardness and excellent abrasion resistance. Combined with an aggressive teething, this blade is specially suited for cutting exotic and high alloyed steels.

The hardest in its category, it offers a definite and efficient solution for sawing stainless steel, inconel and nickel or chromium based steels.

## M51
68 / 69 HRc

High-alloy, is extremely hard for cutting the houghest materials..

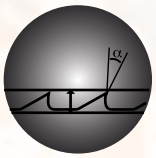
**AGRESSIVITY**

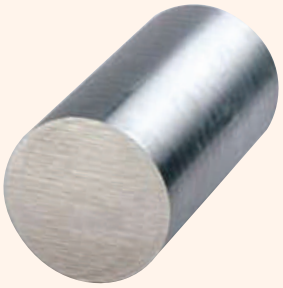
| Characteristics | Advantages |
|---|---|
| M 51 quality | > High hardness and resistance to abrasion |
| VX profile | > Tolerates high feeding pressure |
| | > Excellent penetration to reduce cutting efforts |
| | > Reduced vibration |

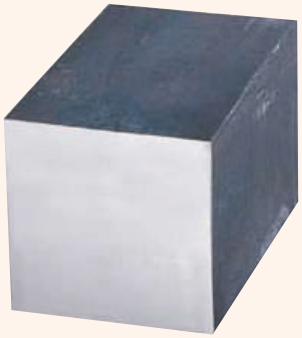
### Variable Pitch

| Section | | Teeth per inch | | | | | |
|---|---|---|---|---|---|---|---|
| mm | inch | 0.75/1.25 | 1.2/2 | 2/3 | 3/4 | 4/6 | 5/8 |
| 27 x 0.090 | 1 x 0.035 | | | ■ | ■ | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | | ■ | ■ | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | | | ■ | ■ | ■ | ■ |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | ■ | ■ | | |
| 67 x 1.60 | 2.5/8 x 0.063 | ■ | ■ | ■ | | | |

VX








ULTRA®

# ULTRA® ULTIMA

**ASP**
70 HRc

The ULTIMA bandsaw blade is the result of the most innovative research in the field of industrial sawing.

This blade has been developed for production sawing of hard-to-work steels like bearing steel (100C6), stainless steel and others.

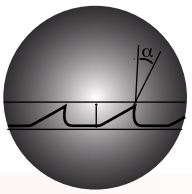
## HIGH OUTPUT

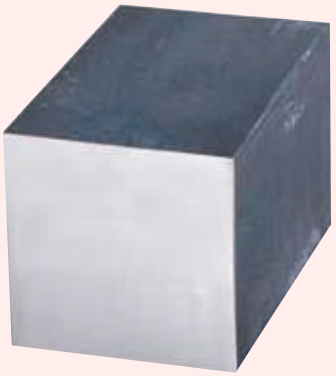
| Characteristics | | Advantages |
|---|---|---|
| Powder | > | Hardness, durability and abrasion resistance |
| Ultra HFS Technology | > | Greater cutting rate and tolerance to higher feeding pressure |

## Variable Pitch

| Section | | Teeth per inch | | | |
|---|---|---|---|---|---|
| mm | inch | 1.2 | 2 | 3 | 4 |
| 34 x 1.10 | 1 1/4 x 0.042 | | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | | ■ | ■ | ■ |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | ■ | |

V+



### It's conception is the mix of:

- **ASP Steel**

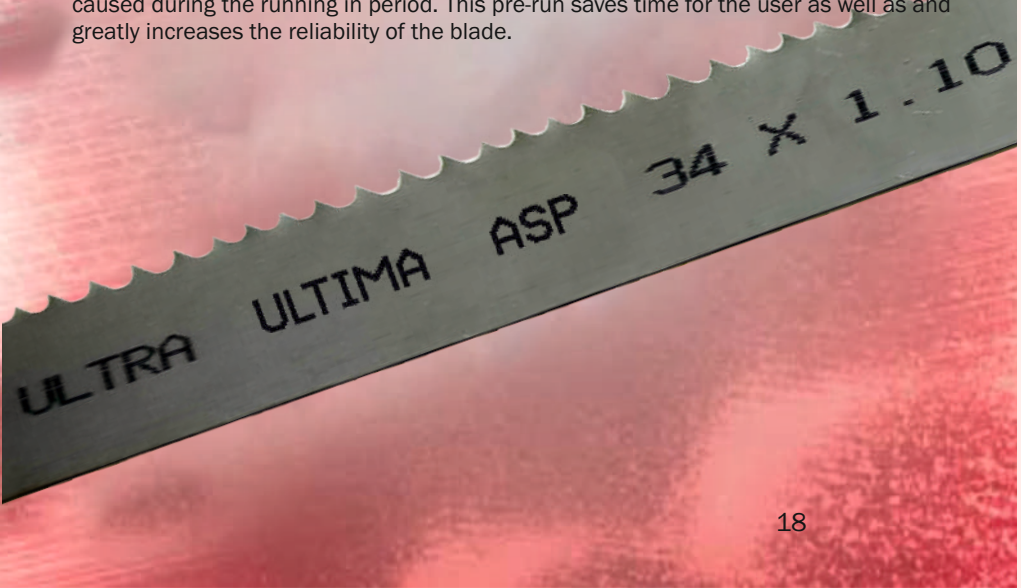
A steel created from the powder technology (ASP) which properties include a very high hardness to the point of the tooth and a higher reslience compared to usual high speed steels. These properties enable a 30% greater cutting feed when compared to other blades.

- **V+® Teethshape**

Thanks to a wide cutting angle, this teething was designed for lower cutting efforts and faster chip clearance. The cutting edge angle is significantly reduced and the induced weakness is compensated by PM ; resilience. This teething could not be used with traditional high speed steels.

- **Run of teeth**

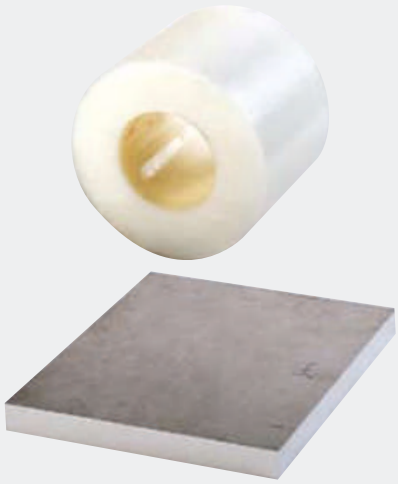
The V+ teething is the result considerable research on vibration, cutting noise and shocks on teeth. It combined advantages of constant and variable pitch and avoidsd their respective disadvantages.
ULTIMA is a ground product and is pre-run in our factory to reduce the risk of teeth damage caused during the running in period. This pre-run saves time for the user as well as and greatly increases the reliability of the blade.




ULTRA®

# ULTRA ADVANCE

| Characteristics | Advantages |
|---|---|
| **■ ADVANCE NF** | |
| Ground-sharpened raker set carbide blade, especially designed for trimming cast mouldings. | > Good resistance to backing material fatigue enabling higher cutting speeds |
| For sawing of abrasive and composite materials like fibre-glass reinforced polyester resins | > Excellent rigidity of backing strip for higher feed |
| **■ ADVANCE ALU** | |
| High performance for cutting large aluminium blocks, wrought or not | |
| Ground-sharpened, made of highly abrasion resistance carbide | > Tooth shape suitable for lower cutting efforts |
| For aluminum foundries and tranformation industry | |
| **■ ADVANCE TC** | |
| Ground-shaerpened carbide blade (Multi-Chip) forard-to-work steels, like chromiummolybdenum alloys or titanium | > Precise and fast cutting of difficult to work materials<br>> Excellent resistance to wear<br>> Particularly suitable for high speed and strong cutting pressure |
| Finest sharpening precision for unrivalled cutting finish and a greater using comfort | > Sawn surface do not require re-planning operations |
| **■ ADVANCE GRIT** | |
| Made of carbide grains welded continuously or discontinuously on the edge of the band, this blade does not need teeth | > Tungsten carbide grains for sawing of abrasive materials |
| Reduces shock effects caused by teething and offers much higher wear resistance | > Increased wear resistance |
| Used for sawing abrasive materials like resins, fibre-glass, carbon and multi-components like cables | > Easiest and safest to use |





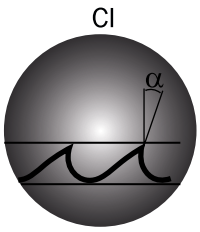
ULTRA®

# ULTRA ADVANCE

## Variable Pitch

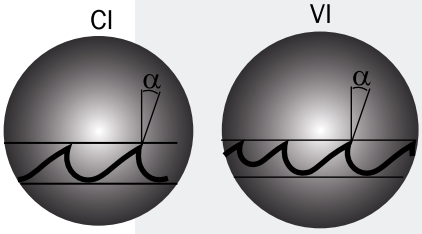
### Advance - NF

| Section | | Teeth per inch | |
|---|---|---|---|
| mm | inch | 2 | 3 |
| 20 x 0.090 | 3/4 x 0.035 | ■ | ■ |
| 27 x 0.090 | 1 x 0.035 | ■ | ■ |
| 34 x 1.10 | 1 1/4 x 0.042 | ■ | ■ |



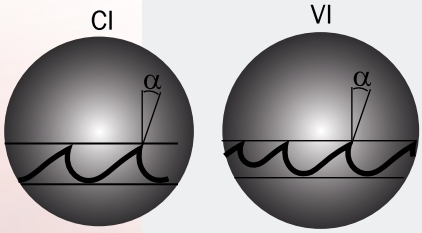

### Advance - ALU

| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 0.75/1.25 | 1/1.3 | 1.4/2 | 2 | 2/3 | 3 | 3/4 |
| 34 x 1.10 | 1 1/4 x 0.042 | | | | ■ | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | | | ■ | ■ | ■ | ■ | ■ |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | ■ | ■ | ■ | | |




### Advance - TC

| Section | | Teeth per inch | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mm | inch | 0.75/1.25 | 1.2/2 | 1.4/2 | 2 | 2/3 | 3 | 3/4 |
| 27 x 0.090 | 1 x 0.035 | | | | ■ | ■ | ■ | |
| 34 x 1.10 | 1 1/4 x 0.042 | | | | ■ | ■ | ■ | ■ |
| 41 x 1.30 | 1 1/2 x 0.050 | | | ■ | ■ | ■ | ■ | ■ |
| 54 x 1.60 | 2 x 0.063 | ■ | ■ | ■ | ■ | ■ | | |
| 67 x 1.60 | 2.5/8 x 0.063 | ■ | ■ | ■ | | ■ | | |
| 80 x 1.60 | 3 x 0.063 | ■ | ■ | | | | | |




### Advance - GRIT

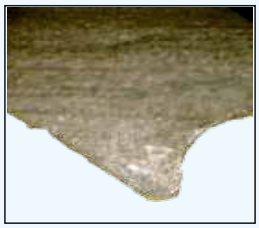
| Section | | Teeth per inch | |
|---|---|---|---|
| mm | inch | Constant | Variable |
| 10 x 0,90 | 3/8 x 0.035 | ■ | ■ |
| 13 x 0,65 | 1/2 x 0.025 | ■ | ■ |
| 20 x 0,90 | 3/4 x 0.035 | ■ | ■ |
| 27 x 0,90 | 1 x 0.035 | ■ | ■ |
| 34 x 1,10 | 1 1/4 x 0.042 | ■ | ■ |
| 41 x 1,30 | 1 1/2 x 0.050 | ■ | ■ |



ULTRA®

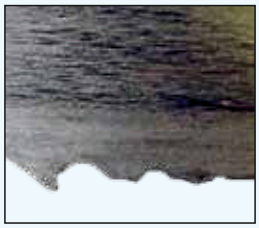
# ULTRA CAUSES & Solutions

| Problem Cause | Solutions |
|---|---|
| **1 - Premature Dulling of Teeth** | |
| • Bad break in | • Reduce speed and feed during break up to 30 % |
| • Teeth in wrong direction | • Flip blade inside out |
| • Bad steel structure not homogenous | • Check material hardness |
| • Hard spots an abrasive material | • Increase feed |
| • Cutting fluid badly used | • Check coolant mixture % |
| • Too high cutting speed | • Check cutting conditions |



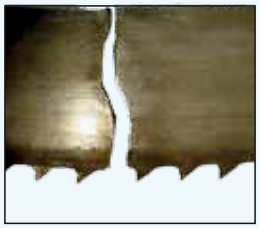
| | |
|---|---|
| **2 - Teeth Fracture** | |
| • Bad break in | • Reduce speed and feed during break up to 30 % |
| • Work piece not clamped | • Check hydraulic pressure |
| • Incorrect tooth selection | • Check cutting condiditons |
| • Guid arms not adjusted properly | • Adjust or replace the guide arms |
| • Incorrect speed or feed | • Adjust speed and feed |

| | |
|---|---|
| **3 - Teeth Stripping** | |
| • Incorrect or no break in | • Reduce speed and feed during break up to 30 % |
| • Parts not help properly | • Check hydraulic feed |
| • Incorrect tooth selection | • Check cutting conditions |
| • Lack of lubricant | • Check lubricant |
| • Feed too high | • Reduce feed and check cutting conditions |
| • Bad steel homogeneity | • Check hardness |
| • Bad chip removal | • Check the brush and chip removal |



| | |
|---|---|
| **4 - Chip Weld on the Teeth** | |
| • Cut badly cooled or/and incorrect lubricant or no coolant | • Check lubricant and coolant nozzles position |
| • Too high cutting speed | • Reduce speed |
| • Incorrect chip removal | • Check the brush and its position |

| | |
|---|---|
| **5 - Blade Breakage or Cracks in Gullet** | |
| • Too high blade tension | • Reduce tension |
| • Excessive feed | • Reduce feed |
| • Incorrect tooth selection (too coarse) | • Check cutting conditions |
| • No lubricant or incorrect lubricant | • Check lubricant conditions |
| • Guide arms too far from the work | • Readjust to the length to be cut |
| • Guides too tight (twisting of the blade) | • Check the blade position inside the guide |
| • Teeth working before starting the cut | • Allow 15 mm clearance before starting cut |



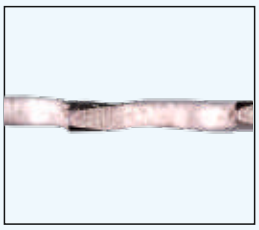
| | |
|---|---|
| **6 - Wear on Back Blade** | |
| • Incorrect tension of the blade | • Reduce tension |
| • Too high feed on the back | • Reduce feed |
| • Too high feed | • Check cutting condiditons |
| • Blade incorrectly set up | • Check blade position |
| • Worn guides | • Check guides arms and rollers |
| • Bad set up creates cracks | • Change blade and check guide arms |



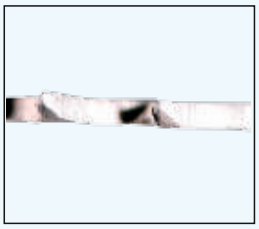
ULTRA®

# ULTRA CAUSES & Solutions

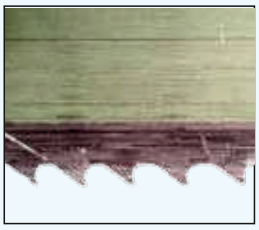
| Problem Cause | Solutions |
|---|---|
| **7 - Wear on the Two Sides of the Teeth** | |
| • Incorrect set up of the blade | • Adjust guides rams width |
| • Teeth rubbing on the guides arms | • Adjust guides rams width |
| • Guide arms are too wide for the blade | • See machine operator's manual for blade |
| • Insufficient blade tension | • Check blade tension |
| • Non homogeneous material | • Check work piece hardness |
| • Worn out guides | • Replace guide arms |



| | |
|---|---|
| **8 - Wear On One Sides of the Teeth** | |
| • Teeth are in contact with wheels due to a rollers wear | • Check wheels surface |
| • Incorrect guides position | • Check guides |
| • The blade is twisted when cutting hard material | • Non correct blade |
| • The blade is rubbing on the machine | • Check blade position |

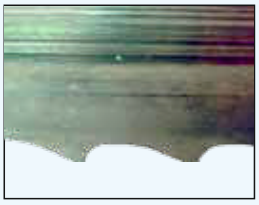


| | |
|---|---|
| **9 - Blade Wear** | |
| • Work badly cooled or/and incorrect lubricant or not lubricant | • Check lubricant and nozzles position |
| • Cutting speed too high | • Check cutting parameters |
| • Incorrect feed | • Check cutting parameters |
| • The blade has cut running backwards | |



| | |
|---|---|
| **10 - Tooth Gullet Overloaded** | |
| • Too fine pitch | • Select a new blade |
| • Too high feed | • Decrease feed |
| • Incorrect feed | • Check cutting parameters |
| • No brush or worn cut | • Check the brush and position |
| • Incorrect lubricant or no lubricant | |

| | |
|---|---|
| **11 - Wear On Each Side of the Blade** | |
| • Worn guides or chips between guides and blades | • Check guides and nozzles position |
| • Tips of the guides are too tightened | • Check the free movement of the blade |
| • Lack of lubricant between guides and blade | • Check lubricant |
| • Inocrrect lubricant or no lubricant | |



| | |
|---|---|
| **12 - Uneven Wear and Spot on the Sides of the Blades** | |
| • Damaged or missing guides | • Check guides and replace/adjust as necessary |
| • The blade is rubbing on part of the machine | • Check for free movement of the blade |
| • Chips jammed in the guides | • Clear the obstruction |
| • Incorrect lubricant or no lubricant | |

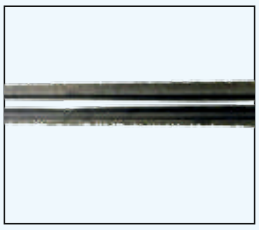


ULTRA®

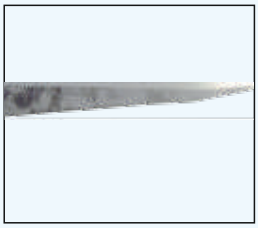
# ULTRA® CAUSES & Solutions

| Problem Cause | Solutions |
|---|---|
| **13 - Excess Wear to the Beach** | |
| • Excessive feed | • Check cutting parameters |
| • Too much pressure | • Check cutting parameters, reduce pressure |
| • Blade badly positionned, rubbing on the wheels | • Check the wheels surface and the positioning |
| • Guide tips worn | • Check the tips |

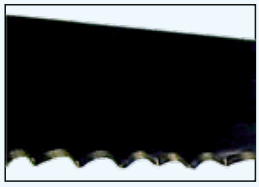
| | |
|---|---|
| **14 - Bowed Blade Towards Teeth** | |
| • Excessive feed | • Check cutting conditions |
| • Guides too close to the work and rubbing near the teeth | • Check the blade for free movement |
| • Blade out of the guides | • Check the blade positioning |
| • Wheel bearings wear due to excessive blade tension | |



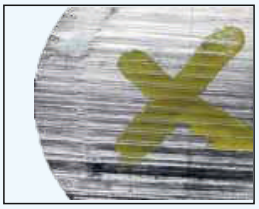
| | |
|---|---|
| **15 - Bowed Blade Towards Back** | |
| • Excessive feed | • Check cutting conditions |
| • Guide arms too tight, rubbing on the back | • Check the blade for free movement |
| • Guides too far apart compared to the piece | • Check the blade positioning |
| • Wheel bearings wear due to excessive blade tension | |



| | |
|---|---|
| **16 - Twisted Blade** | |
| • Excessive feed | • Check cutting conditions |
| • Guides too tight | • Check guides adjustments |
| • Work piece is loose | • Check the hydraulic vise |
| • No lubricant | • Check lubricant |



| | |
|---|---|
| **17 - Bad Surface Finish** | |
| • Worn out blade | • Replace the blade |
| • Feed and speed not correct | • Check cutting conditions |
| • Poor blade tension | • Check operator's manual for a correct tension |
| • No guides | • Check the guide |
| • Incorrect tooth select | |



| | |
|---|---|
| **18 - Wandering Cuts-Going Off Line** | |
| • Damage to the set of the teeth | • Check material hardness |
| • Over feeeding | • Check cutting conditions, reduced feed force |
| • Insufficient blade tension | • Position arms as chose to work as possible |
| • Guide set too far apart or not in line | • Check guides |



ULTRA®

# ULTRA® RECOMMENDED Bandsaw operating speeds

## FPM Table

| Carbon Steels | | Alloy Steels | | Tool & Mold Steels | |
|---|---|---|---|---|---|
| Material | FPM | Material | FPM | Material | FPM |
| 1008 | 320 | 150 | 250 | A10 | 160 |
| 1015 | 320 | 1330 | 220 | A2 | 180 |
| 1018 | 300 | 1345 | 210 | A6 | 200 |
| 1020 | 320 | 4130 | 270 | D2 | 90 |
| 1021 | 300 | 4140 | 250 | H11 | 190 |
| 1022 | 300 | 4145 | 210 | H12 | 190 |
| 1025 | 320 | 4340 | 220 | H10 | 190 |
| 1026 | 300 | 5160 | 220 | L6 | 190 |
| 1030 | 330 | 6150 | 210 | M1 | 110 |
| 1035 | 310 | 8616 | 240 | M42 | 100 |
| 1040 | 270 | 8620 | 240 | 01 | 200 |
| 1042 | 250 | 8630 | 220 | 06 | 190 |
| 1044 | 220 | 8640 | 200 | P20 | 230 |
| 1045 | 220 | 9310 | 170 | S1 | 200 |
| 1060 | 200 | 52100 | 160 | S5 | 140 |
| 1095 | 180 | 300M | 160 | S7 | 120 |
| 1117 | 340 | 41L40 | 270 | T1 | 100 |
| 1137 | 290 | A242 | 280 | T15 | 70 |
| 1141 | 280 | e.t.d. | 250 | W1 | 220 |
| 1144 | 280 | HP-9-4-20 | 100 | | |
| 1213 | 380 | HP 9-4-25 | 100 | | |
| 1215 | 380 | HY-100 | 160 | | |
| 1513 | 300 | HY-80 | 160 | | |
| 1541 | 250 | | | | |
| A35 | 270 | | | | |

| Stainless Steels | | Super Alloys | |
|---|---|---|---|
| Material | FPM | Material | FPM |
| 230 | 150 | A286 | 90 |
| 303 | 140 | Astrology | 60 |
| 304 | 120 | Hastelloy | 70 |
| 309 | 90 | Incoloy 800 | 90 |
| 310 | 80 | Incoloy 900 | 60 |
| 316 | 100 | Inconel | 60 |
| 324 | 100 | Inconel 625 | 100 |
| 347 | 110 | Monel | 70 |
| 410 | 140 | Nickel 200 | 80 |
| 414 | 110 | Pyromet X15 | 120 |
| 416 | 190 | Titanium | 70 |
| 420 | 190 | Waspalloy | 70 |
| 430 | 150 | WF11 | 60 |
| 431 | 90 | | |
| 450 | 80 | | |
| 502 | 140 | | |
| 2205 | 80 | | |
| 18-8-2 | 90 | | |
| 22-13-5 | 60 | | |
| 440C | 80 | | |
| 440F | 160 | | |
| M225 | 90 | | |
| Nitronic 50 | 60 | | |
| Nitronic 60 | 60 | | |
| SS-PH | 80 | | |

**BAND SPEEDS**
based on 4" material.

**INCREASE** for smaller sizes 2" +10%;

**DECREASE** for smaller sizes 6" +10%



ULTRA®

# Personnalised hotline

Our team of “**bandsaw application specialists**” is at your service,

- To establish a **technical diagnostic** of your requirement and needs.
- In order to give you the best sawing solution for **optimal material gains.**

- **by telephone**
- **on site**
- **in our sawing laboratory**

# Training

Our team of **qualified trainers** can teach

- **In your premises**
- **In our training center**

to develop the skills of your users.



ULTRA®

**ULTRA also provides :**

Hacksaw blades
Hacksaw frames
Hole saws
Jigsaw blades
Reciprocating saw blades
Bandsaw blades
Power hacksaw blades

ULTRA®

The World Sawing Specialist


**ULTRA TOOLS SAS**
37, rue des Mathurins
75008 Paris France

**ULTRA TOOLS INDIA PVT LTD**
Plot No 8A, Cama Industrial Estate
Walbhat Road, Goregaon East
Mumbai 400 063 India

Phone : +91 22 49707474
Fax : +91 22 49730505
Email : info@ultratools.fr

**www.ultratools.fr**