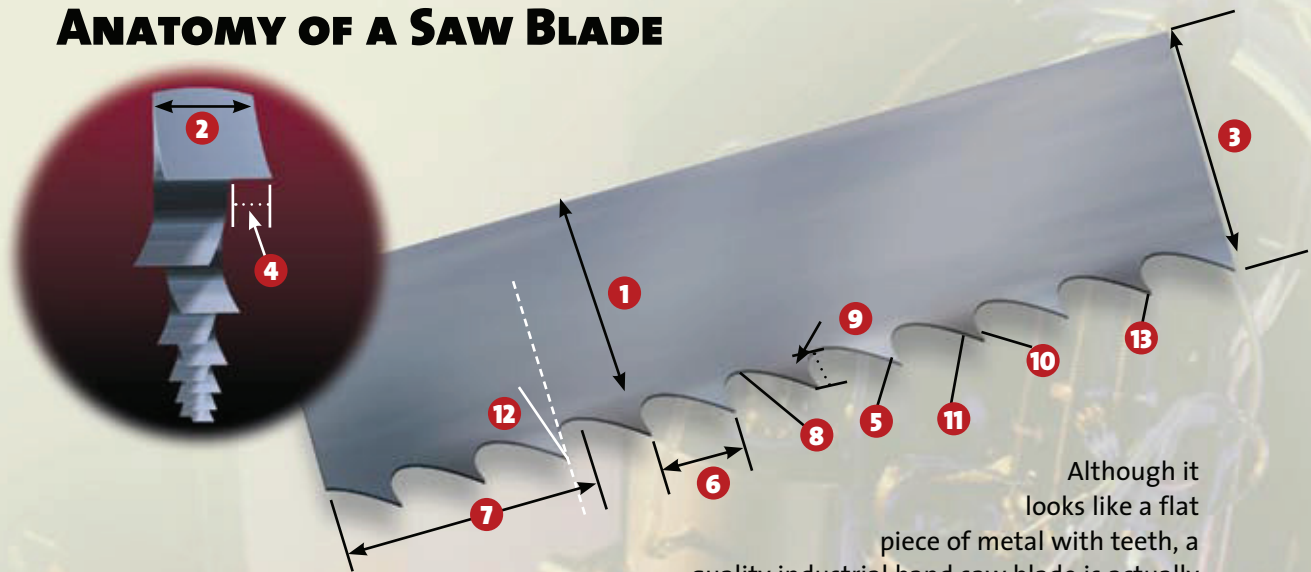
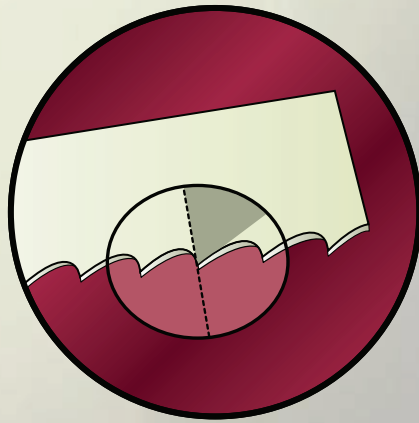


# ANATOMY OF A SAW BLADE

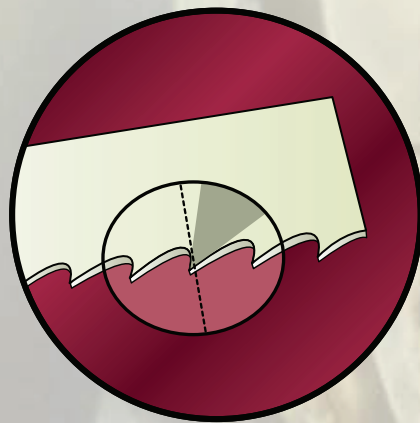


Although it looks like a flat piece of metal with teeth, a quality industrial band saw blade is actually a sophisticated cutting tool. Its ability to efficiently cut through tough metals, composite materials, plastics, and woods depends on a variety of interrelated factors such as the design, spacing and set of the teeth; the design and capacity of the gullets to make sure chips are efficiently removed; the composition of the backer strip; and the gage of the metal. These considerations must be taken into account when selecting the right blade for your application. The following Technical Pages will help you arrive at the perfect Morse solution to your particular cutting problem.

- 1** **BLADE BACK** ..... The body of the blade not including tooth portion
- 2** **GAGE**..... The thickness of the blade
- 3** **WIDTH**..... The tip of tooth to back of blade
- 4** **SET** ..... The bending of teeth right or left
- 5** **TOOTH** ..... The cutting portion of saw blade
- 6** **TOOTH PITCH**..... The distance from one tooth tip to the next
- 7** **T.P.I.** ..... The number of teeth per inch measured gullet to gullet
- 8** **GULLET** ..... The curved area between the tooth points
- 9** **GULLET DEPTH** ..... The distance from the tooth tip to the bottom of the gullet
- 10** **TOOTH FACE**..... The surface of the tooth on which the chip is formed
- 11** **TOOTH FLANK**..... The angled back surface of the tooth opposite the tooth face
- 12** **TOOTH RAKE ANGLE**. The angle of the tooth face measured with respect to a line perpendicular to the cutting direction of the saw
- 13** **TOOTH TIP** ..... The cutting edge of the saw tooth



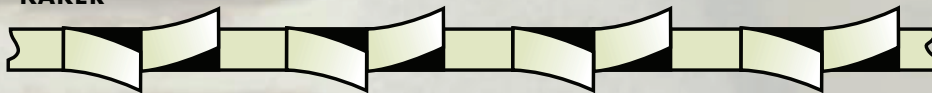
**STANDARD (0 RAKE)**



**HOOK (POSITIVE RAKE)**

Here's where the blade makes the cut. The tooth design variables include shape, position, set, type and spacing. The combination of these variables will determine whether the blade can move easily through your material without binding or becoming clogged with chips.

**RAKER**



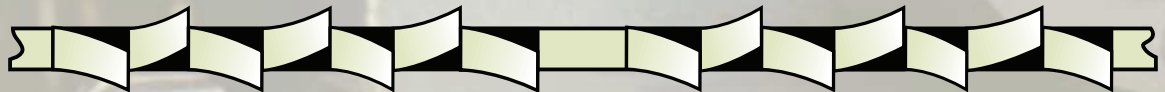
Recurring sequence of teeth - one set right, one set left, and one unset.

**MODIFIED RAKER (DOUBLE SET RAKER)**



Recurring sequence set left, right, left, right, straight tooth pattern.

**VARIABLE PITCH MODIFIED RAKER**



Set sequence depends on the number of teeth in the variable pitch tooth pattern. Recurring sequence with more than two set teeth before an unset tooth.

**WAVY**



Groups of teeth, usually 3 or 4, set to each side in a controlled pattern with an unset tooth between groups.

**ALTERNATE (ETS)**



Every tooth set alternately to the left and right.



**VARIABLE PITCH**

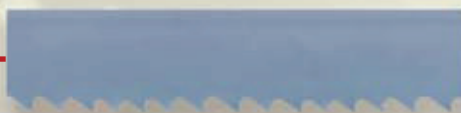
- VARYING GULLET DEPTH
- 0° RAKE ANGLE
- VARIABLE TOOTH SPACING

**ADVANTAGES**

- Excellent Chip Carrying Capacity
- Reduces Harmonic Vibration

**BENEFITS**

- Improves Blade Life
- Reduces Noise
- Cuts Smoother & More Efficiently



**VARIABLE PITCH POSITIVE RAKE**

- VARYING GULLET DEPTH
- VARIABLE TOOTH SPACING
- POSITIVE RAKE ANGLE

**ADVANTAGES**

- Better Chip Formation
- Excellent Chip Carrying Capacity
- Reduces Harmonic Vibration
- More Aggressive Cutting

**BENEFITS**

- Cuts Smoother, Cuts Faster
- Wide Range of Applications
- Reduces Noise
- Easier Chip Generation



**STANDARD RAKER**

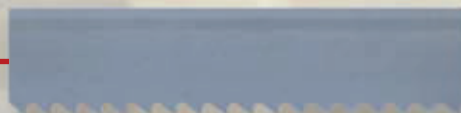
- EQUALLY SPACED TEETH
- 0° RAKE ANGLE

**ADVANTAGES**

- Excellent Chip Carrying Capacity

**BENEFITS**

- General Purpose



**SKIP**

- WIDE FLAT GULLETS
- 0° RAKE ANGLE
- EQUALLY SPACED TEETH

**ADVANTAGES**

- Excellent Chip Carrying Capacity
- Provide Coarse Pitch on Narrow Bands
- Flat Gullets

**BENEFITS**

- Excellent Cutting for Non-Metallic & Non-Ferrous Applications, (Wood, Plastic, Brass, Copper, Bronze & Aluminum)
- Help Break "Stringy" Chips



**HOOK**

- WIDE ROUNDED GULLETS
- EQUALLY SPACED TEETH
- POSITIVE RAKE ANGLE

**ADVANTAGES**

- Excellent Chip Carrying in Non-Metallic Applications
- Positive Rake Provides Better Tip Penetration with Less Feed Pressure

**BENEFITS**

- Good Cutting Performance in Discontinuous Chip Forming Materials (Cast Iron)
- Fast Cutting with Good Surface Finish

