

Band Saw Blades

The following eZtip is intended to assist in the selection of a band saw blade, as well as explain some of the related terminology and proper break in procedure for new blades.

There are many things to consider before the final selection of a blade.

- First and foremost is blade length. Band saws will either list a specific length of blade, or a range of blade sizes they can use. Consult your owners manual for this information. If you can't locate a blade size, there are a couple of ways to measure blade length. First, if you have an old blade, measure it's entire length, (end to end if it's broken, or all the way around the loop if it's still whole). Another option is to use a piece of string or similar material and measure the same way you would with an old blade.
- The next consideration will be application. What will you be cutting with the blade, wood, metal, stainless steel, thin metal, plastic, etc.? The application will help determine if you need a basic hard back or flex back blade, or possibly a bimetal blade. Also relevant will be the frequency of the operation. Are you production cutting, or is your use more occasional and general purpose.
- Another aspect of band saw blades is the number of Teeth Per Inch, or TPI as it is commonly expressed. TPI is the number of teeth in one inch of length, as measured from gullet to gullet. The thinner the material, the more teeth per inch you want to have. A good general rule of thumb is to have around 4-6 teeth in the material at one time. For example, a work piece that is 1/2" thick would do well with a blade having 8-12 teeth per inch. While some blades have a set number of teeth per inch (6, 10, 14, etc), others, called variable tooth blades will alternate every other inch. A 10/14 TPI blade will have 10 teeth in one inch, then 14 teeth in the next inch and so on. Variable tooth blades offer some flexibility of use when materials of different thicknesses will be cut.
- Band saw blades are available in a variety of widths, so it's also important to know the capabilities of your saw with respect to width. Blade width is measured from the tip of the teeth, to the back of the blade.
- Finally, there is blade thickness, which is measured from side to side on the blades cross section. Thicknesses can range from around 0.020" to 0.035" for blades up to the 11 to 12 foot range, while larger blades can approach 0.063" and higher in thickness.

Types of Blades

Carbon Flex Back- Made of high carbon steel with hardened teeth. Used on wood, plastic, cork, composition board, plywood, aluminum, and nonferrous metals.

Carbon Hard Back- General purpose blades that are stiffer than flex-back for straighter cuts, and will accept heavier feed pressures. Useful for short production runs and maintenance cutting of low-alloy ferrous metals, nonferrous metal, wood, plastic, cork, composition board, and plywood.

Bimetal- Used for cutting structural steels, stainless steel, tool steel, castings, and nonferrous metals. Bimetal blades are more of a "family" of blades, versus one particular type. Blade manufacturers will have a number of different product lines under this heading, based on the types of metal to be cut (stainless steel, structural, tool steel, etc.) and the frequency of the operation, (production, short production, maintenance/occasional).

As with any cutting or drilling operation, particularly with metals, lubrication is also important. If your band saw does not have a lubrication system, a cutting oil stick is an option to consider.



The use of an edge lubricant will help to extend the life of cutting tools and eliminates heat build-up.

To achieve the best performance and service life from a blade, new blades need to be broken in properly. The procedure below has step by step instructions on how to do this correctly.

Blade Break In Procedure

1. Select the proper band speed for the material being cut.
2. Reduce the feed rate to 20% to 50% of normal. Softer materials need to have a larger feed rate reduction than harder materials.
3. Begin the first cut at the reduced rate. Make sure the teeth are forming a chip. Small adjustments to the band speed may be needed if excessive noise and/or vibration occurs.
4. During the first cut, increase the feed rate slightly after the blade is completely inside the work piece.
5. With each following cut, gradually increase the feed rate until the normal cutting rate is achieved.



Information sources include Grainger, Lenox, M.K. Morse, Tapmatic

If you are still having difficulty choosing a Band Saw Blade,
please contact us at askzoro@zoro.com or 855-289-9676

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