

How to Choose a Band Saw

By Jeff Hall, Icon Machine Tool, Inc.

In the machine tool world, band saws get the non-sexy rap compared with other available technologies. As things tighten up, we see companies looking to improve their shops in areas often overlooked. Some people think a saw is a saw, until they really give it a closer look. Technology advancements have also taken place in the saw world that will offer advancements to every shop. You need to understand that in most cases, the band saw is your first process and if it is the bottleneck in your shop, it just holds up the rest of the progression.

When looking at band saws, ask yourself a few questions:

- What material will I be cutting?
- What shapes of material are being processed?
- Blade and material sizing?
- Is bundling important?
- Is mitering necessary?
- What production levels are needed?

Let's look deeper into each question...

What material will I be cutting? Different material types require different cutting techniques. For instance, aluminum needs a much higher blade speed. Others material types require slower speeds. You may need to adjust speeds on the fly to optimize the blade life. Most saws today come with a variable speed motor to match the blade speed, blade type, and material type to provide the best results.

What shapes of material are being processed? If you are cutting large I-beams, you need the mass of a true structural saw. If you are cutting round stock that needs to be fed into a chip machine, then a good dual column saw will provide the best cut. Band saws come in several types: scissors, single or dual column, and vertical. Each saw type offers levels of performance over the others but, in general, scissors style offer the broadest spectrum of performance.

Blade and material sizing? This can be one of the most important issues. It is very important to size the dimension of the part or bundle to the blade. It is not a good idea to max out a saw's capacity or even the blade's capacity. As your material increases in size, the guide arms spread apart and the beam strength of the blade becomes critical. A good rule of thumb is to size the blade to approximately 80% of your work. The beam strength affects both the squareness of cut as well as production rate. The blade length is also important. Basically the blade is a cutting tool with teeth. Longer blades have more teeth and therefore, they last longer. Usually longer blades have larger blade wheels. The larger the blade wheel the less stress is put on a blade as it wraps around the wheels.

Is bundling important? A great way to increase production is to bundle cut. If you decide to bundle cut, it is important to consider bundling clamps and to weld the end of round tubing to prevent spinning of parts. Spinning parts will quickly destroy a blade. As you consider bundling, re-read the blade sizing topic.

Is mitering necessary? Saws are available in fixed, single miter, and double miter.

What production levels are needed? Saws today are available with simple manual controls up to fully CNC versions. As production increases, consider a control that allows programming of single parts with part length and quantity. Controls are also available that allow you to program multiple

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part lengths and quantities to be nested on singles or bundles to optimize material usage. Some controls even provide the capability of programming angles.

Another way to increase production may be to increase blade size and motor size so that you can push through the material at a faster rate.

Lastly, consider options such as chip and material conveyors, ease of maintenance, and availability of parts.

Blade Size	HP Req'd for	90% of machine's work			9% of machine's work			1% of work
		Structurals	Mild Steel	Exotic	Structurals	Mild Steel	Exotic	
1"	3	9"	5"	3"	12"	8"	6"	MACHINE'S DESIGNED MAXIMUM CAPACITY
1-1/4"	5	16"	8"	6"	18"	12"	10"	
1-1/2"	10	20"	11"	8"	24"	16"	14"	
2"	15	26"	16"	12"	30"	22"	18"	
2-5/8"	20	30"	20"	16"	36"	30"	24"	

Icon Machine Tool offers several brands and sizes of band saws to meet almost any application. Call today to schedule a time for us to look at your sawing process and suggest the correct saw and features to improve your through put. Call **Icon Machine Tool** today at 1-877-221-9830.

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