

Anticipation/Reaction Guide

Directions: Read each statement below and decide if you agree or disagree by writing yes or no. Respond before and after you read about the history of the band saw. Have you changed your beliefs? Confirmed or changed your opinions? Be ready to discuss your thoughts.

Title/Subject:		
Before I Read	Statement	After I Read
	The first band saws had a short life span because the blades could not withstand the force of the machine.	
	A French woman discovered a way to solder the blades together.	
	The blade for the saw is like a large band that keeps running in a loop	
	A circular saw is much easier to control though, than a band saw	

Band Saw History

An Englishman named William Newberry patented the first “band saw” in 1808. Unfortunately, it was almost four decades before this incredible machine would become a practical woodworking tool. The design and construction of the early band saws was sound, but the steel that was available at that time to make blades from was just not able to withstand the forces that the machine exerted on it. This was compounded by the fact that the welding processes of the day were not highly effective at holding the ends of a band saw blade together. These two problems combined to result in a very short blade life. The short blade life rendered the band saw highly impractical. This impracticality meant that the saw would go widely unused for nearly 40 years.

Then, two breakthroughs occurred that would finally allow the band saw to take its rightful place as an indispensable part of the woodworking industry. It began in 1846, when a French woman named Anne Pauline Crepin patented a practical and effective method for brazing the ends of band saw blades together. Her new method resulted in a nearly unbreakable joint. At the same time, steel makers developed a method of rolling spring steel that would finally provide an acceptable life span for the band saw blade. The new blade material combined with the new welding process finally allowed the band saw to achieve its potential. And that it did. So much so in fact, that by the turn of the 20th century, the band saw had gone from non-essential to indispensable in the woodworking industry! After the turn of the century, band saws became available that were smaller and less expensive than their larger industrial brethren. Small woodworking shops and contractors initially used these smaller machines. Contractors of the time used band saws in much the same way contractors use them today; to produce ornate trim such as ‘gingerbread,’ as well as other decorative details such as ‘flying clouds’ on rafter tails and corbels. From here, the band saw would eventually be scaled down even further, to the point where the average homeowner could have one for his or her personal shop.

The band saw is very unique in that it is the only saw with a band for a blade that runs in a continuous loop. Depending on the saw, the blades can vary in length from a few feet (for a bench top saw) to almost 100 feet! (for a log processing saw) The width of the blade also varies accordingly, from 1/8 inch to over 15 inches. Today, most sawmills use band saws (called band mills) instead of circular saws because their blades are thinner. For example, a circular sawmill blade is 1/2-inch-thick, so every cut the blade makes turns a half-inch wide strip of otherwise usable wood into sawdust. A large sawmill processes approximately 400 million board feet of lumber per year. Comparatively, an industrial band saw blade is just over 1/8 inch thick. By using a band saw instead of a circular saw, a sawmill can increase its lumber yield by 5 to 8 percent. So, it turns only a fourth of the wood being milled into sawdust per cut compared to a circular saw. That equals about 20 million more board feet of lumber produced instead of being turned into sawdust!

BUILDING INDUSTRY TECHNOLOGY ACADEMY: YEAR ONE CURRICULUM

Getting more lumber from each tree we cut down is also very important in our environmentally conscious society. If we can get more usable lumber from a tree by using band saws instead of circular saw blades, we won't have to cut down as many trees to meet our lumber needs.

Beyond the efficiency of the band saw in turning logs into lumber, the band saw is also a highly versatile machine. It can make most cuts that a circular saw can (just not as cleanly) while also being able to re-saw as well as cut just about any radii. Circular saws can be used to re-saw, but they cannot be used to make radius cuts!