

## Seek a Saw That's Built to Dampen Vibration

*Stress-free steel and high-quality gears minimize the vibration that impacts the cutting process.*

**M**ost band saws look pretty much the same. A head frame, wheels, vise, base—nothing really differentiates them until you look a little deeper. What separates one saw from another is how well it controls the vibration produced by the teeth of the blade during the cutting process.

Steel retains internal stress from its manufacturing process. When a head frame, vise and base are welded to the material, that introduces even more stress. Then a band saw blade is tensioned and the cutting process begins. The vibration from the cutting process is transferred to these stressed components and is radiated out with very little vibration reduction. This has a direct effect on the cutting process, impacting cut time, blade life and surface finish.

Some sawing machine manufacturers utilize cast components to solve this problem. Although cast components are very good at absorbing vibrations, they are also very expensive and make machine updates cumbersome or impractical.

BTM Saws stress-relieves its components. This heating process releases the stresses and anneals the parts, which makes them extremely durable and more effective at absorbing vibration. Saws with stress-relieved parts perform at a level far above typical band saws with both weldments and cast components.

Another major factor in cutting performance is the gear box that drives the blade during the cutting process. Typically, manufacturers will take a general gear box and mount it to the head frame, then bolt the drive wheel onto the out-

put shaft. This arrangement places all the blade-tension stress and feedback-cutting stress onto the output shaft, causing premature wear on the shaft and the output shaft bearing. The fragile nature of this arrangement leads manufacturers to use a low-cost gear box to make any premature failures less costly. The problem with an inferior gear box is that the gears are not hardened and ground. This directly leads to gear sets that have excessive backlash and produce more feedback-cutting stress because the blade does not move smoothly over the cutting surface.

BTM saws utilize a separate shaft that is supported by bearings on the head frame, as well as a bearing mounted on a brace placed on the outside of the drive wheel. This arrangement isolates the gear box from stress produced from the cutting process and protects the gear

box from any blade-tension stress. Because the gear box is isolated and should not be affected by excess vibration, a high-quality gear box with hardened and ground gears can be used, reducing gear-set backlash and eliminating feedback-cutting stress.

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**BTM Saws North America**, Woodstock, Ontario, offers a complete line of metal cutting band saws manufactured at the company's headquarters in Bergamo, Italy. For more information, call 519-539-0450 or visit [www.btmsaws.com](http://www.btmsaws.com).

**Editor's note:** This article was contributed by the experts at BTM Saws North America.



BTM Saws uses stress-relieved steel on the base, wheel braces and other components of its band saws to relieve vibration. (Photo courtesy BTM Saws North America)

## WHY JUST REPLACE YOUR EXISTING BANDSAWS, WHEN YOU CAN ALSO UPGRADE AT THE SAME TIME?

BTM bandsaws are designed utilizing the latest technology available. This allows the saw to greatly reduce cutting vibrations and increase blade life while reducing cut times. This line of saws uses top of the line components and any regular service items are available "off the shelf" from local suppliers. Over 70 different models covering all "chip" and "fabrication" applications.

*It's worth a look.*

[www.btmsaws.com](http://www.btmsaws.com)

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