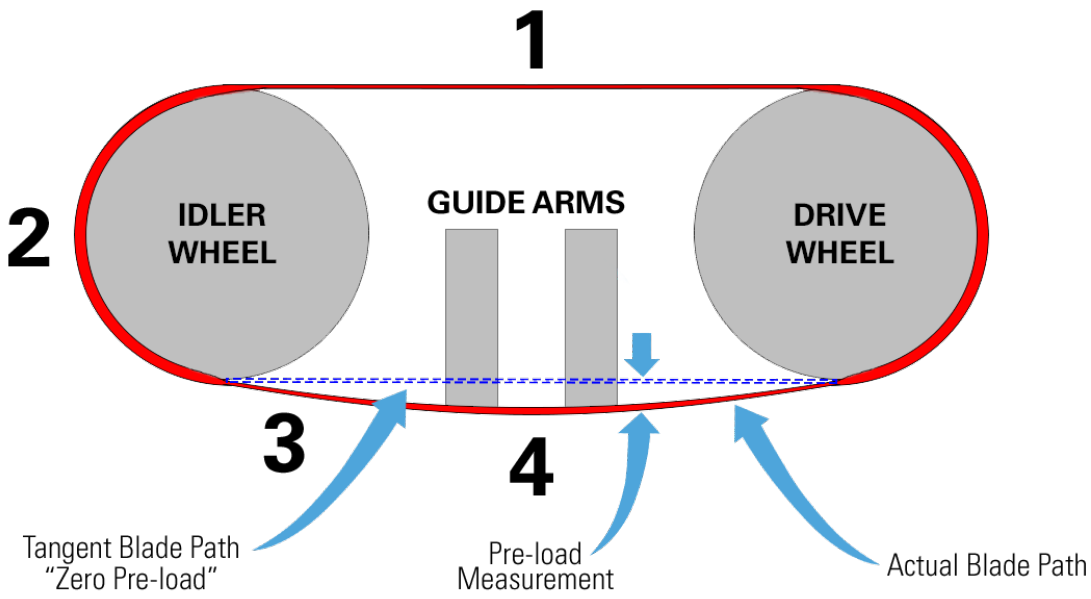
LENOX INSTITUTE OF TECHNOLOGY

THE 4 ZONES

Band saws affect the blade in four areas around the saw. The blade is a thin ribbon of steel that gets stretched, bent, and twisted as it spins around the band saw in the cutting process. Below is a diagram depicting the four zones of the saw, and the different forces they have on the blade.



1. TENSION: Occurs between the top of both band wheels. Tension is linear, and starts behind the deepest gullet.
2. BEND: Band wheels bend the blade, compressing the inside part of the blade, while stretching the outside. 500X the blade gauge is the accepted wheel diameter for metal.
3. TWIST: This area of the saw tries to break the blade from the deepest gullet to the back edge of the blade (refer to the twist chart for the correct distance).
4. PRE-LOAD: The blade travels down through the guides moving the tension towards the tooth edge to help hold squareness. We need a 5% higher reading behind the tooth edge versus the back edge (usually about .025 to .030 in distance of displacement).