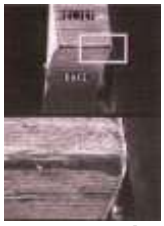
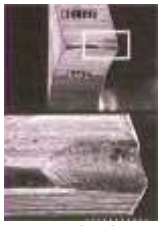
BLADE BREAK-IN



Proper Break-In



Improper Blade Break-In

A careful blade break-in procedure will minimize tool costs substantially.
Immediately after installing a new blade, use a very light feed rate for approximately 5-25 minutes. "Honing" the blade (break-in) maximizes blade life & reduces costs. As a general rule, the more patient you are with good break-in procedures, the longer the blade will cut straight and stay sharp. Harder materials require less "break-in" than softer materials.

Use the following "Break-in" procedure as a general guideline.

1. Determine the *size first* and *then material* to be cut.

2. Select the proper cutting speed.

3. Find the normal cutting rate number (square inches per minute). There will be a range of two numbers.

4. For an example, on piece of 10" diameter 1040 Carbon Steel the band speed (SFPM) reads 280 and the cutting rate (square inches per minute) is 14-21. For now, select the smaller conservative rate of 14 sq/in/min.

5. For **blade speed break-in**, reduce band speed by 10%. (Example 280 – 28 = 252). Select speed at 252 SFPM.

6. For **cutting rate break-in**, reduce selected cutting rate by 50%. Example 14 x .50 = 7). Begin cutting rate at 7 sq. in./min.

7. After the blade is buried in the first cut only and thereafter in the center of each cut, slightly turn up the feed rate. Begin the next cut at the same feed rate that ended the previous cut.

8. Begin increasing band speed towards the end of break-in period.

9. Repeat this process till your desired square inches has been achieved. At the end of break-in, you will be up to 280 SFPM and have a cutting rate of 14 sq. in. per min.

10. Hard Materials running under 100 SFPM will need less of a break-in period, 15-25 square inches. A material rated at 4 sq/in/min would be broken- in (50%) at 2sq./in./min or 7 ½ to 12 ½ minutes.

BLADE BREAK-IN *continued*

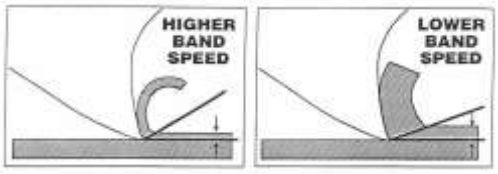
11. Work hardening materials will need no break-in or very little. Speeds at or above 250 SFPM will need to cut 50-80 square inches for blade break-in. Remember every material is slightly different for cutting rates & break-in. Use the guidelines as a reference or starting point.

12. Begin a "cutting rate" conservatively until you have developed a good break-in procedure and gain knowledge with each specific material. There is no substitute for experience.

13. Always break-in the blade on the same material you are currently cutting.

BAND SPEED

Band speed refers to the rate at which the blade runs across the material being worked. Generally speaking, increasing the band speed (FPM) will allow faster cutting. However, this quickly may dull the blade, strip teeth and/or fatigue the blade back causing breakage. A lower band speed will pull a larger chip load, removing the kerf more effectively and efficiently. Conversely, running too slow may cause teeth to break because the chips fully impact the gullets before the teeth have exited the material. Controlling the correct band speed is a major factor in managing proficient saw cutting and good band tool life.



A more aggressive tooth angle will also pull a heavier chip at still a slower speed and cut even more efficient. For an example, a 12 degree positive raked tooth will cut more efficiently at slower speed than a 7 degree positive raked tooth. So setting the speed also means to consider the tooth rake angle. (Review "tooth rake angle" above).

Band speed is restricted, however, by the machinability of the material and how much heat is produced by the cutting action. Too high a band speed or very hard materials produce excessive heat, resulting in reduced blade life.

How do you know if you are using the right band speed? Look at the chips; check their shape and color. The goal is to achieve chips which are thin, tightly curled and warm to the touch. If the chips have changed from silver to straw color, the blade speed is too fast generating too much heat. Blue chips indicate extreme heat from forcing the cut and will also shorten blade life.