

Keeping Reels Sharp

By Monty Montague
National Mower & Turfco, Inc.

Reel mowers are high-precision machines that provide top-quality cutting. To deliver such cutting performance, they employ a combination of a reel, often spinning between 600 and 2,000 rpm., and a bedknife.

Because those two elements combine to do the cutting, they should be adjusted precisely. There should be little or no contact between the reel and the bedknife, and the leading edges of both should be squared off — some manufacturers even believe there should be a “reverse angle,” and those vary from five to 15 degrees.

There are several ways to sharpen reels. The most commonly used is backlapping, which is actually a simple, inexpensive honing procedure that should be done after approximately 40 hours of cutting. Backlapping involves spinning the reels in reverse after applying (brushing) a special compound, and either backing the reel down to the bedknife or the bedknife to the reel, depending on the particular mower. The pressure between the reel and bedknife, combined with the sharpening compound acting as “liquid sandpaper” actually sharpens the reel blades. When the “grinding sound” stops, the backlapping process is usually complete.

Sharpening compounds come in a number of grits, from a very coarse 50 grit to a very fine 220 grit. Most people tend to use them in the 80 to 120 grit range.

There are two basic ways of spinning reels backward for backlapping. For reel mowers that are not hydraulically driven, there are electric backlappers. They cost about \$400 and can be hooked directly to the mower. Hydraulically driven reels, on the other hand, will probably have a backlapping switch on them.

Sometimes backlapping isn't enough. The next step is grinding and there are several ways to grind mower reels. The first is a spin grinder. Spin grinders range in cost from \$2,600 to \$20,000, so many sports turf managers will actually send their reels out for grinding. But whether you send your reels out for grinding or do it in house, the most important thing you do *before* is to check the reel for bearing wear and adjust end play. A worn reel, particularly an unevenly worn reel, could be the sign of an improper adjustment or even a worn bearing that needs replacement. If that same reel was sent out for grinding without the mechanical problem being corrected first, the reel and bedknife could “slap” during grinding and create a damaged or an unevenly sharpened reel. Solve any and all mechanical problems with your reels before you send them out for grinding — check your owner's manual for specific adjustment instructions.

Spin grinding is “flat-edged” grinding and is good until you have no relief left on your reel blade. Relief grinding creates an angle on the trailing edge of your blade. All blades come from their manufacturers with relief, and it reduces the pulling and tearing of grass when reels get dull. Relief also speeds up the backlapping resharpening process. Some manufacturers believe it extends the life of the bedknife.

One of the most common tests for reel sharpness after backlapping, grinding or relief grinding involves placing two pieces of newspaper between the reel and bedknife. If they cut the first piece of paper and bend the second, then the mower is probably ready for action. It's important to repeat this test, not just in the center of the mower but at both ends.

Improper adjustment or a worn bearing can lead to uneven sharpening and leave you with a conical reel.

How often you backlap, grind or relief grind your reels will, in large part, be determined by your specific situation. Factors include grass type, cutting frequency and height, top-dressing frequency, obstacles and more — it all depends on use. If your reel mower is still cutting beautifully at the end of the season, there's no sense in grinding it. Again, the most crucial thing is to consistently check bearing wear or end play wear, and correct it immediately. If you make adjustments and still get end play, it's probably time to change the bearing — before you use *any* reel sharpening method.



MSU Turfgrass Field Day To Be Held On August 18

The 1994 Michigan Turfgrass Field Day will be held Thursday, August 18, 1994, at the Hancock Turfgrass Research Center, Michigan State University, East Lansing, Mich. Details regarding this event will be mailed in July. For further information contact Kay at 517-321-1660.