John Deere recommends relief grinding the reels before spin-grinding to:

- Reduce the blade contact area, resulting in less friction, thus requiring less horsepower to drive the reel;
- Ensure longer wear life;
- Cut time required to backlap;
- Reduce pulling and tearing of the grass as the unit becomes dull from use;
- Provide an area for backlapping compound to be trapped to backlap reels more effectively;
- Remove metal from the trailing edge of the blade forming an angle (the relief angle) to reduce the contact area of the cutting edge; and
- allow the operator to true a reel (make it round), when backlapping, if a blade is .001 inch to .002 inch too high.

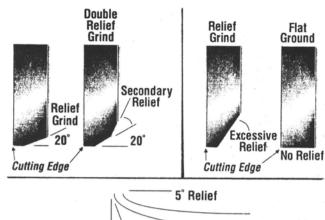
Backlapping - Backlapping is used to sharpen the cutting edges when grinding is not necessary. Backlapping, as compared to grinding, removes a very small amount of metal and requires less time.

The backlapping procedure is accomplished by spinning the reel backwards while applying special abrasive compounds to the reel. Usually, coarse compounds are used initially, followed by a finer abrasive for final honing.

John Deere recommends backlapping after spin grinding to remove burrs and rough edges left from the spin grinding procedure. Backlapping produces a honed edge that will cut the grass evenly and leave the tops of the grass with clean, straight edges.

The cutting unit should be inspected, backlapped, adjusted and checked daily for a uniform cut along the complete length of the bedknife. The adjustment should allow the reel to turn freely without dragging against the bedknife. Metal-to-metal contact will generate heat, causing the reel to expand, intensify the dragging and produce more heat. This vicious cycle will quickly "shut-down" the mower.

Reel and bedknife sharpening - Sharpening is necessary when the grass is not being cut cleanly due to dull bedknife and/or reel blade edges, or when turf streaking is apparent, caused by the bedknife and reel not cutting the full width of the blade due to nicks, bends or uneven wear.



5° Relief

Lap when the relief angle remains and edges are rounded only slightly. Grind when no, or very little, relief angle remains on the reel blade and/or the bedknife relief angle is minimal or non-existent.

Precision grinders - Many grinders on the market today provide an acceptable quality reel and bedknife grind, but this is not equivalent to a "factory" precision grind. At the John Deere, Horicon, Wis., factory, the reels and bedknives are ground on very precise industrial grinders that are mounted to an independent concrete bed over 12 feet deep to eliminate vibration. Though a grinder of this quality is too expensive for most golf course budgets, superintendents are demanding as close to a "factory grind" as possible to provide the highest quality turf for their players. Therefore, it's important the reel and bedknife grinders be set up properly!

The grinders should be kept as clean as possible to prevent premature wear and maintain their precision design. A separate grinding room in the equipment maintenance building helps to protect the reel and bedknife grinder. Level the grinder on a flat concrete floor and bolt it down securely.



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