



# STAY SHARP

IT'S SO EASY TO ERR WHEN GRINDING AND SHARPENING MOWER REELS AND BLADES. HERE SIX COMMON MISTAKES AND SOME WELL-HONED TIPS TO AVOID THEM.

By William Olmstead

**P**roperly maintaining mowing equipment is essential to successfully maintaining turf. While the principles behind responsible equipment management are dogmatic, the methods of blade and reel sharpening are more widely debated. GCI reached out to equipment industry leaders to find out what works, what doesn't, and how superintendents get the most out of their reels and blades year.

When turf managers and technicians run into with quality-of-cut issues they often overlook the most basic question: Is the mower operating with a sharp reel and bedknife? "Going out to mow with dull reels and bedknives is like running a stock car race with improperly inflated tires," says Lynn Westbrook, principal engineer at Jacobsen. "You'll never get the performance you need and the results will be less than perfect. It's amazing how many guys either forget or neglect reel and bedknife sharpness."

Here are six common mistakes superintendents and technicians make when grinding.

## NO RELIEF

Unfortunately, technicians often leave relief grinding out of their normal routines. "The key to relief grinding is to stay on top of it and not wait until quality-of-cut issues present themselves in the grass," says Klasie Baard, Jacobsen sales training manager. "Technicians should supplement their spin grinding with relief grinding at appropriate intervals. When you lose the relief grind on the blade edge, it creates additional contact and friction between the bedknife and reel blades, which demands additional horsepower. In fact, studies have shown that five reels running without relief use significantly more horsepower than five reels with relief." Maintaining a relief on the blade edge does more than save on wear-and-tear and horsepower. "A good relief angle will also throw grass into the baskets more effectively," says Baard. "A flat grind will actually fan the grass rather than cut it effectively."

## NOT USING OEM PARTS

"If there are any two parts you should buy directly from the manufacturer it's the reel and bedknife," says Westbrook. "They are designed to work together and have very precise



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metallurgy to ensure the highest performance. When you add in a 'may-fit' reel or bedknife into the mix, the performance of the machine will be sacrificed and the results will show up in the grass. Another benefit is having the backing and support of a manufacturer if you run into any issues."

#### NOT CHECKING THE CONDITION OF ROTATING COMPONENTS

While technician's typically focus on grinding the reel and bedknife, it's important to not to overlook the rollers, roller bearings, and reel bearings to ensure a stable grind. Any wear in the rotating components can cause the reel or bedknife to

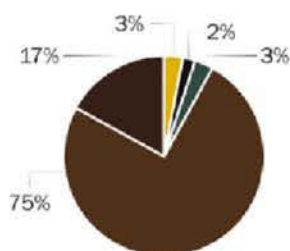
## By The Numbers

Last year GCI, in partnership with Foley United, conducted research to gauge reel and blade maintenance trends and practices among superintendents and equipment technicians.

### How do you determine when to grind?

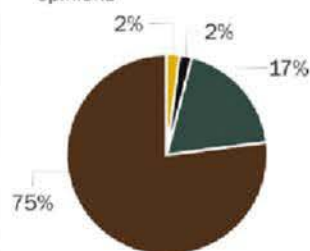
- Based on hours
- Based on weeks
- Based on weeks
- Whenever it needs it
- Other

*Editor's Note: "Other" responses included end of season, annual, and winter, as well as when labor was available.*



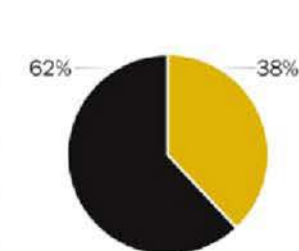
### How committed are you to your current grinding practice, regimen or philosophy?

- I don't know
- Definitely need to change my practices
- Would not change
- Open to hearing other opinions



### Do you spin grind only?

- Yes
- No



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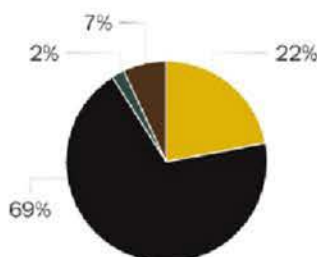
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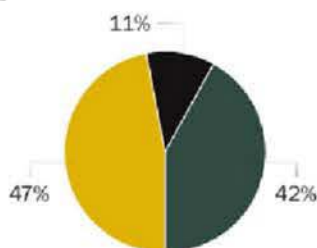


**By The Numbers** cont.**Do you subscribe to the "no contact/no relief" or "light contact with light relief" grinding philosophy?**

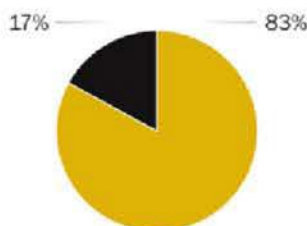
- No contact/no relief
- Light contact with light relief
- Don't know
- Other

**Do reels stay on/cut longer when maintained to the manufacturer specifications?**

- Yes
- No
- Don't know

**Do you grind new bedknives?**

- Yes
- No



time to check other things like hardware, seals, etc."

**NOT TRUING THE BEDKNIFE**

It's another simple step that technicians often skip. After you've married the bedknife to the backing, the top and front faces of the bedknife need to be ground to make sure they are straight and true.

**EXCEEDING REEL DIAMETER LIMITS**

move during grinding.

"A brand-new \$60,000 grinder will give you a bad grind if your \$5 bearing is shot, so make sure everything is working properly," says Baard. "While you have the machine off the floor, it's also a good

OEM reels are designed to work within certain parameters. Going beyond the manufacturer's reel diameter tolerance limit alters the original geometry of the reel and bedknife setup, says Westbrook. "For example,

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## EQUIPMENT

### Consider all of the variables

There are a large number of parameters and variables to evaluate to find the best course of action on any given day, says Foley United's Jim Letourneau. Making the decision to completely refurbish reels in the winter is an easy decision. What needs to be done to correct a poor quality of cut situation for a short period of time requires more complete evaluation.

"In most cases the manufacturers have tested and developed cutting units that will stay sharp, use the least amount of horsepower, and stay on cut the longest amount of time if they are returned to the manufacturer's specifications," Letourneau says. "However, there are many methods that work and produce a high quality of cut and the best program may use a combination of all practices."

- Understand the entire process and what labor and equipment are needed to execute the plan.
- Establish a realistic reel maintenance program that meets both the expectations and budgets is essential to quality turf management.
- Have the right tools in place to perform the tasks is essential to the program and lack of them may limit the options that are available.
- Start with a quality assessment and an establishment of goals, then looking at the methods needed to achieve those goals, and then ensuring the budgets are capable of supporting the program should be done carefully.

Letourneau recommends a program established by the team, not an individual, unless that individual is truly capable of understanding every facet of the reel maintenance program as it relates to the overall course maintenance program.

on a 5-inch reel, you don't want to get below a 4.5-inch diameter. When you see the reels worn past that diameter, the reel is simply unable to provide a good quality-of-cut."

#### PREP WORK

One of the biggest mistakes is not fully understanding that the reel and bedknife are not properly prepared for the task they are being asked to do, says Jim Letourneau, Foley United's president and COO.

"Using dull reels and expecting a perfect cut will not result in the reels meeting the expectations of the user," he says. "Doing a partial overhaul and sharpening job and expecting the reels to stay on cut for the entire season will also lead to disappointment."

When it comes to reel grinding, Tracy Lanier, John Deere Golf product manager, says everyone has their own method that works best for them. But that doesn't mean a program should be inflexible. "The most common problems that we see are on courses that use a grind-only program," says Lanier. "These courses tend to grind too much, which can lead to increased cost due to reduced life of reels or bedknives. It can also lead to cut issues during times of stress."

Lanier recommends a more balanced approach, using backlapping and reel grinding to maintain a good quality cut. Using this approach ensures the bedknife and reel stay sharper for longer. **GC**