KEEP YOUR EDGE

Grinding techniques can strengthen a turf maintenance program.

by KEITH HAPP

A dull mower blade results in a poor quality of cut that can lead to many turf problems. Wounds created on the leaves are potential infection sites for disease development.

ASK ANY turf manager to name important management strategies, and arguably one of those mentioned will be using good mowers. Good mowers do not have to be new mowers, however. To support sound agronomics, good mowers can be defined as functional units that provide a good-quality cut. And regardless of the budget a course has to work with, sharp mowers are a critical component of a good turf maintenance program.

Using sharp mowers to maintain turf is not new. Grinding equipment has always been integral to proper mower maintenance because sharp mowers can help to minimize many problems. First and foremost, the grass is cut cleanly, helping to produce the top-quality playing conditions today's golfers enjoy. Secondly, the potential for disease or other stress-related problems is diminished. When the turf is cut with sharp mowers, the grass blades are not torn, twisted, or bruised. There are fewer infection sites; therefore, disease incidence is culturally reduced and surface performance enhanced. Finally, sharp mowers are energy efficient, saving up to 50% in fuel costs compared to dull mowers.

For reel-type cutting units to function well, two primary surfaces must be adjusted and maintained. These components consist of the bedknife, which is stationary, and the reel, which spins to create the scissors or cutting action. In addition, when the sharpening process is performed, new bearings and other working parts are adjusted or replaced. Everything is put in order so that when the machines are used for the first time, they perform like new equipment.

Grinding Techniques

Relief grinding has been a standard grinding practice for many years. This technique creates a very sharp leading edge, but on rough terrain the blades of the reel as well as the bedknife are more likely to be damaged. To create this edge, more metal is removed from both reel blades and bedknives, making the cutting unit more susceptible to damage from tree roots, rocks, or other debris. If this occurs, the sharpening process must be repeated, and to do so, the cutting unit must be disassembled. Basically, it takes more time to relief grind, but an advantage is that the mowers tend to stay sharper for a longer period of time. The relief grind technique is still utilized by many golf course mechanics, and the results can be quite good.

Spin grinding provides the option to grind reels quickly, even during the season. It allows a reel to be ground into a true cylinder, which minimizes bearing wear and reduces drag (unnecessary metal-to-metal contact), and it can be performed without completely disassembling the cutting unit. Also, the bedknife does not have to be removed. Nevertheless, it is recognized that spin-ground mowers tend to become dull more quickly.

There are many elements of this grinding technique that save time and money. For example, the need for backlapping (a honing process by which the tolerance between the cutting surfaces is matched) is greatly reduced. No longer do units have to sit, spinning endlessly, on the shop floor to create a sharp cutting surface. Sharpening can be implemented and completed in very little time, significantly less when compared with relief grinding. Thus, in-season grinding can be performed without compromising the turf manager's ability to prepare the course.

Spin grinding actually creates approximately 2 to 3 degrees of relief grind. What is more important, if the reel is ground correctly and the bedknife equally well, the final tolerance between the cutting surfaces is reduced to about .002 inches. This provides a very sharp cutting unit that performs well, even under wet, saturated conditions. For example, during heavy spring turf growth, reduction of turf tearing and twisting results in stronger turf prior to the onset of stressful (high heat and humidity) summer weather.

Once the reel is sharpened, creating a sharp edge on the bedknife is equally important. There are two surfaces that are ground on the bedknife: the face grind and the surface grind. The face grind is the most important edge because it is the first surface that comes into contact with the turf. A special grinding machine is needed to accu-

rately grind these important surfaces, and initially it requires that the mower be disassembled. New bedknives must be ground separately prior to being installed on the cutting unit, but during the season, the practice of removing the bedknives is not necessary unless serious damage has occurred.

There are several strategies that can be used during the season to maintain the edge on the bedknife. A common strategy is to use a body grinder to *dress up* and create a clean face grind on the bedknife only. The mower does not have to be disassembled to use this technique. In the hands of an experienced operator, this sharpening process can be completed in a few minutes and provide excellent results. Caution must be exercised so as not to damage a reel blade. Once this procedure is complete, the newly sharpened leading edge provides a consistent, clean cut.

New tools now are available to maintain a consistent face grind for the entire season. Magnetically mounted grinders, for example, have been developed and have significantly reduced sharpening time while increasing the accuracy of this process. In as little as five minutes per unit, sharpening is complete, allowing this to be done on an as-needed basis and minimizing reliance on backlapping.

During the off-season, the time needed to perform this maintenance procedure is of little concern. However, during the playing season and particularly in sections of the country where golf is a year-round activity, taking equipment out of service to sharpen mowers can make it difficult to mow the course for daily play. Obviously, the more backup equipment you have, the easier it is to take a mower unit out of service to sharpen it.

Some golf courses have an abundance of equipment, which affords the opportunity to sharpen mowers frequently during the playing season. For most courses, however, and particularly those that function on a shoestring budget, the decision to perform midsummer grinding is a difficult one. The logistics and time needed to complete this procedure are burdensome, and if mowers are down for an extended period of time, complaints from golfers can increase.

During the golf season, a body grinder can be used to maintain a sharp face on the bedknife. In the hands of an experienced mechanic, five minutes is all that's needed to make the mower ready to go!

Fortunately, significant technological advancements have been realized in grinding tools and procedures, allowing for in-season sharpening with minimal equipment downtime. Course preparation can take place as scheduled and good surface quality can be maintained.

Newer grinding equipment provides the flexibility to sharpen mowers during the season in a very short period of time.

Proper Equipment

Grinding equipment is part of the infrastructure of the golf course operation. Shop equipment, particularly grinding tools, are often overlooked elements of an equipment replacement program. New mowers can be introduced into the equipment inventory on an annual basis, but if they cannot be sharpened properly, their value to the operation is reduced. If new grinding equipment cannot be purchased, an outside contractor can be utilized. In fact, mobile services are available to perform the necessary grinding procedures at the course.

There is an ever-increasing demand for accuracy in the game of golf and turfgrass management. The accuracy with which mowers are sharpened and adjusted is just as important as accurate fertility, pest management, and irrigation techniques. Furthermore, whether Integrated Pest Management (IPM) is practiced by choice or as a budgetary necessity, utilization of sharp mowers is an essential component of IPM. Mowers and the quality of performance they provide are the basis upon which other management practices are determined. If the quality of cut is compromised, the health of the turf also is compromised. Help keep your edge; investing in grinding equipment can provide long-lasting benefit and better playing conditions, which translates into happier golfers . . . something we all need more of.

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