

- Personal protective equipment and the regulations surrounding its use
- Training on what to look for on the golf course to prevent accidents

**STEPS TO SAFETY.** Over the years I have worked with a variety of clubs and management companies to assist in the formation of viable safety programs. It's hard to believe that some facilities say they cannot afford to have a safety program. My opinion has always been that you can't afford not to have one.

After a facility assesses their shortcomings in the safety arena, the next step is to prioritize the things that need to be done. Take into consideration the amount of time to do all the tasks required, the cost and whether you have

the expertise to do so. There are a variety of templates out there to get started with. Should you encounter an inspection, they will see that you are making an effort to be compliant. This will not get you off the hook, but many inspectors will cite you and then give you a period of time to take the corrective measures necessary to comply.

One of the best investments any golf facility can make is to purchase safety training videos. Many of these videos come in bilingual editions and all training must be in a language that the employee can comprehend.

Jim Becker, of Epic Creative, has several different excellent videos on not only safety, but equipment operation and such. This type of video should be shown annually as well as at the

point of hire during the orientation of new employees. My favorite is "Safety Basics on the Golf Course."

It may not come as a surprise that another company specializes in golf course safety and has consultation as well as safety training videos specific to golf facilities. I have recommended clients to consider using Golf Safety, which is a risk-compliance company. Bill Culbertson and Todd Miller have a very nice product and service, which could help anyone across the country. They have information specific to each state to be sure you are following your local regulations.

While I will not roll out the specifics of each written program, I can surely share what is required in most every state. So if you don't have these in your

**"No matter how good your golf course looks, your job may be in jeopardy if you have serious accidents, workers' compensation claims or injured golfers."**

facility, it is likely you will fall short after an accident or an inspection.

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WORKPLACE ISSUES

**“One of the best investments that any golf facility can make is to purchase safety training videos.”**

- Lock Out/Tag Out Program to identify equipment not to be used while under repair
- Guidelines for dealing with a blood-borne pathogen hazard
- Contingency Plan that includes an emergency plan and spill control
- Personal Protective Equipment Plan should include the training and usage of turf equipment that is required by law for

operators and applicators

- Heat Stress Program that is utilized to prevent heat-related illness

**SAFE CONDITIONS.** Another area that requires attention is the responsibility of the staff to ensure safe conditions on the golf course. Each and every employee should have the proper training to look for any conditions that could be deemed unsafe on the property. This could include sink holes, low-hanging limbs, uneven steps and any areas that could result in a slip/trip and fall incident. There are certainly many more dangerous situations, and it is incumbent upon staff to report any unsafe conditions to their supervisors.

When an accident happens, employees should follow the procedures outlined in the written documents and also through what they have learned in ongoing monthly train-

**10 rules for safe handling chemicals**

**B**usiness & Legal Resources (BLR), a provider of employment, safety and environmental compliance solutions, lists some key rules for workers who handle dangerous chemicals. You'll undoubtedly have other safety rules to add to the BLR's list. Better yet, present the list in a safety meeting and get employees involved in helping you add to the list. This will create a sense of ownership over your safe chemical handling rules. To employees, they'll be "our" rules rather than "their" rules. That way, people will be more likely to follow them.

**RULE #1.** Follow all established procedures and perform job duties as you've been trained.

**RULE #2.** Be cautious and plan ahead. Think about what could go wrong and pay close attention to what you're doing while you work.

**Rule #3. Always use required PPE – and inspect it carefully before each use to make sure it's safe to use. Replace worn-out or damaged PPE; it won't provide adequate protection.**

**RULE #4.** Make sure all containers are properly labeled and the material is contained in an appropriate container. Don't use any material not contained or labeled properly. Report any damaged containers or illegible labels to your supervisor right away.

**RULE #5.**

**Read labels and the material safety data sheet (MSDS) before using any material to make sure you understand hazards and precautions.**



**RULE #6.** Use all materials solely for their intended purpose. Don't, for example, use solvents to clean your hands, or gasoline to wipe down equipment.



**Rule #7. Never eat or drink while handling any materials, and if your hands are contaminated, don't use cosmetics or handle contact lenses.**

**RULE #8.** Read the labels and refer to MSDSs to identify properties and hazards of chemical products and materials.

**RULE #9.** Store all materials properly, separate incompatibles and store in ventilated, dry, cool areas.

**RULE #10.** Keep you and your work area clean. After handling any material, wash thoroughly with soap and water. Clean work surfaces at least once a shift so that contamination risks are minimized.

ing sessions on safety. First responders and others on the scene will need to fill out a written accident report. Such a report will indicate what happened and what the area looked like at the point of their arrival and dealing with the accident. Items in the accident report can and will be used later by either the insurance companies or legal counsel. For this reason alone it is important that the form be filled out accurately and may also include photos or video, accurate date/time and corrective action to prevent future accidents.

Insurance companies and lawyers will ask the typical questions after the accident.

- What happened?
- Did you complete an accident report?
- Did you take corrective measures to ensure this accident won't happen again?
- Was the employee trained properly?
- Is there documentation of training?
- Is training on a monthly basis, and do you have written records confirming attendance?
- Do you have an OSHA log for accidents and lost time from work?

In recent years the various OSHA entities in each state have offered volunteer programs in which a facility can have an inspection without facing fines or penalties as long as any items cited are fixed within about a 30-day period. This is a wonderful program and something worth consideration. However, I would only pursue it after I developed my own audit and remedies in areas where safety is deficient. That way the sticker shock may not be so great.

**SAFETY FIRST.** Over the years I have encountered more than a few people employed at golf courses who have lost a few fingers or a toe or two. Equipment operation and the use of blades can be a dangerous working environment. While we can't always take the danger away, we can certainly educate our staff on the proper operation of all equipment they will be using.

Each facility should have a checklist that shows what steps were used to train equipment operators. That training should also include reading and understanding the operator manual for any piece of equipment that they may operate. There is a reason each piece of equipment comes with a service manual and also an operator's manual or video that may be bilingual. Have your staff view these materials and sign off on their training to protect the business from liability in the future.

No matter how good your golf course looks, your job may be in jeopardy if you have serious accidents, workers' compensation claims or injured golfers. It is the moral and legal obligation of a facility to provide a safe work environment and also a safe place for golfers to play. Make safety a top priority at your facility. Once you develop the many plans and programs, they are easily transferable to other facilities you may work at in the future.

Update your programs annually to be sure they meet the needs of the facility and also any new regulations that may have developed in the preceding year. Safety is an ongoing issue. Make it a priority at your golf course. The attitude should be "Safety is our No. 1 concern!" **GCI**

Bruce Williams, CGCS, is principal for both Bruce Williams Golf Consulting and Executive Golf Search. He is a frequent GCI contributor.



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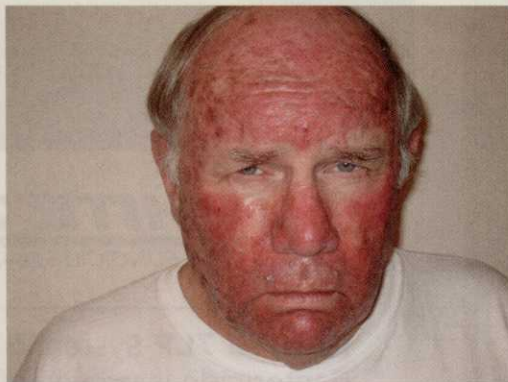


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## DODGING THE BULLET

I was stunned when I saw the USGA Green Section's Jim Moore at the Golf Industry Show (GIS) a few years ago. His face was swollen and red and distorted. After he was done speaking I rushed up to the speaker's podium and, with my usual bluntness, asked him, "What in the world happened to you?"

After he had chuckled a bit he explained that he was undergoing a treatment that, if successful, would reduce his chances of having skin cancer on his face. I called him this past winter before the GIS in Las Vegas and visited with him at the show about the procedure because I was ready to start it myself.



**"For the first few days I thought it was going to be easy. But after about the fourth day the swelling really developed, my skin was tender and sore, dryness set in and my face was bright red."**

I have been going to a dermatologist for many years, like any number of golf course superintendents I know. Each trip meant a number of pre-cancerous spots on my face and scalp and arms would be removed by freezing with liquid nitrogen. In a few weeks the resulting scabs would peel off and I assumed all was well.

However, the frequency and number of these spots gradually increased over the years until this

year when the skin specialist recommended setting time aside – in my case about six weeks – to undergo a program with Efudex. This is the trade name for the chemotherapy drug fluorouracil. This chemical removes pre-cancerous cells where it is applied, thereby decreasing the chance for development of skin cancer.

In my case, I applied a 5-percent topical crème to my face, forehead and scalp. However, I know of some guys who have used it on their arms, as well. It is applied twice a day, carefully, for the period of time prescribed by the physician. My prescription was two weeks for face and four weeks for forehead and scalp.

I wouldn't call it painful, but it is very uncomfortable, more so as the days move along. You know before you start it is a strong medication – apply with rubber gloves or triple wash hands if gloves aren't used. For the first few days I thought it was going to be easy. But after about the fourth day the swelling really developed, my skin was tender and sore, dryness set in and my face was bright red. I went one day too long using a razor; it was a real blood bath and my wife had to purchase an electric shaver for me. I had to sleep sitting up for a while.

Most importantly, it was critical *not* to be in the sun. This requirement, coupled with my increasingly sorry appearance, kept me confined indoors. That was the hardest part. We Skyped our two little granddaughters almost nightly so that when their planned visit occurred, I wouldn't surprise and scare them.

The confinement bothered me the most but, like Jim Moore, I chose to make my first public appearance among colleagues. For me it was at the Wisconsin Golf Course Superintendents Association's spring business meeting. By then I was on the mend – my skin had started to really peel off, almost in sheets – but my presence was the "elephant in the room." It was a chance for me to demonstrate just how serious skin cancer can potentially be for golf course superintendents. In front of me was a perfect audience because all of those in attendance were at an age when protective steps can really count in their favor.

I've never been surprised that this could potentially be a problem for me sometime in my life. In my youth I watched my grandfather make regular

trips to a dermatologist in Dubuque for skin cancer treatments. Also, my genetic composition predisposes me to skin cancer. My bloodlines all come from Northern Europe – Norway, Scotland, England and Germany. I am also a former farm kid who lived outdoors, mostly with no shirt or hat on during the summer months. My Army experience

was only a few hundred miles from the equator. And then there are the 40 years on golf courses with much of that tenure at a time when skin cancer dangers were not well understood.

Most tragic of all, skin cancer – at least indirectly – killed by father. He suffered terribly for years, and my brother and I were present when he underwent the surgery that removed his nose and chunks of his face. Some cancer cells got away, resulting in salivary gland cancer. After that it was a tumor wrapped around a carotid artery, which then ended with a good-sized tumor in his right kidney. He would have welcomed a chance to use Efudex when there was still a chance for prevention.

Nowadays, there is no

lack of information on this form of cancer. In many cases it can be avoided if a superintendent or anyone who spend a lot of time under the sun takes care and listens to medical advice and then takes it seriously.

Golf course superintendents love sunny days. They are good for healthy turf, great playing conditions and happy players. But they can be an insidious and harmful enemy, too.

The plain and simple fact is that precautions must be taken to avoid injury that will almost certainly develop one way or another into a threat that will, in the end, take your life.

Jim Moore turned out to be a poster boy for Efudex treatment. By writing this column and sharing these details with you I hope I will be, too.

Many of you have the opportunity to never let this medical malady get that far. For your own good, don't lose that opportunity. GCI

## JUST THE FACTS

According to a recent study conducted by the American Academy of Dermatology, nearly three-quarters of respondents (74 percent) did not know that skin cancer is the most common form of cancer in the U.S., and only half (53 percent) of respondents knew how to examine their skin for signs of skin cancer.

The need for a comprehensive skin cancer resource is evident based on the public's general lack of understanding of detecting and preventing skin cancer.

Here are some basic facts:

- More than 3.5 million skin cancer cases affecting 2 million people are diagnosed annually.
- Current estimates are that one in five Americans will be diagnosed with skin cancer in their lifetime.
- The five-year survival rate for people whose melanoma – the deadliest form of skin cancer – is detected and treated before it spreads to the lymph nodes is 98 percent.

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Superintendents share their sharpening and grinding tactics so that your colleagues will be green with envy about your greens.

# LOOK sharp!



Like anything else, the methodology in keeping reels sharp varies from course-to-course.

**“How are the greens?”** Invariably this is the first question one golfer will ask another when discussing a particular golf course. In this one little four-word sentence lies a dozen other unspoken questions with regard to speed, roll, size, firmness and even color.

What the golfer doesn't realize is the amount of maintenance that factors into the answers to these questions. Aside from your fertility and irrigation practices, the quality of cut from your greens mowing equipment can make all the difference between enticing a one-time customer and securing a repeat player.

Reel maintenance has been one of the most evolving practices of turf maintenance almost since the dawn of golf. Commercial reel mowers date back to the early 1800s and needed to be pulled by horses. Even then technicians were forever tweaking and adjusting the reel-to-bedknife relationship in their attempt to achieve optimum results.

Today superintendents and equipment managers have honed the practice of reel maintenance to a fine art. Whether the philosophy is light contact or no contact, spin grinding or angle grinding, all come down to the same thing: a clean cut goes a long way toward healthy greens and happy golfers.

Like anything else, the methodology in keeping reels sharp varies from course-to-course, one equipment manager to another. Budgets, equipment, personnel, and training all come in to play and it's vital that the superintendent and equipment manager see eye-to-eye on what is best for their facility.

For example, at Grand Traverse Resort & Spa in Acme, Mich., golf and grounds manager Paul Galligan keeps it pretty simple.

“Every time the mowers come in,” he says, “the reels are gone over, period.” Contact, height of cut, front facing if needed – everything is checked out. Of

course, Grand Traverse is a resort with 4 techs maintaining equipment for 3 golf courses. This level of maintenance is necessary, expected, and budgeted.

However, it's a whole different world at a public facility with a small budget and a single equipment technician. There, it's not unusual to hear reels spinning for hours on the backlap machine or witness mowing operations come to a grinding halt while a reel gets serviced because there was no backup equipment. That's never a good scenario.

Kenny Meals, turf equipment manager at Baltusrol Golf Club in Springfield, N.J., put things in perspective. “First you have to look at the golf course as a whole,” he says. “What grinders you have, what equipment, how much time you can afford to spend on grinding are all factors.

“Over the years, I've done different methods of maintaining reels and bedknives,” Meals adds. “First it was contact and backlapping, sharpening twice a year. Then I moved on to spin grinding and sharpening only on a Bernhard grinder with no contact. Once the reels started to make contact they would get sharpened, but that was mainly due to the ease of the setup of the Bernard... In general, you can grind the reels quicker. Fortunately, too, we had spare sets of reels for all the machines, which worked out very well.”

In the South, where there never really is an off-season, equipment techs don't have the luxury of a winter rebuilding program. Winter is the height of the season as the snowbirds fly south to play golf, and maintenance practices don't vary as much as they do in northern climates.

Stephen Tucker, equipment manager at the Ritz-Carlton Members Golf Club in Bradenton, Fla., explains his situation. “We don't have a winter rebuilding/sharpening routine here as winter is our prime season, so equipment has to perform day in and day out. Our summer and winter schedules look very similar despite the

growth patters of the turf.”

Tucker goes on to explain that because of the changing conditions there isn't a specific grinding “schedule” to follow.

“Whether we topdress, verticut, etc., all of these cultural practices affect the quality of cut so we address the need to grind as it becomes apparent from our daily checks,” Tucker says.

Obviously budget-sensitive, the ability to do daily checks on your cutting units goes a long way to maintaining a quality cut throughout the season. At those courses without the high-end budget, usually the mechanic depends on the operator to tell him if the units seem to be cutting OK. If there are no comments or complaints from the operator, then the mechanic usually moves on to put out some other fire instead of worrying about the reels.

While this method may work a majority of the time, superintendents must question whether the health of their greens is worth the risk? The operator might say the mower was cutting OK, but later in the afternoon the white cast across the green is the tell-tale sign the units were dull or out of adjustment and tearing the turf instead of cutting it clean. It's something an operator can easily miss during the morning mowing.

Remember, too, that an effective height of cut will be a little different than the bench setting. Factors such as the weight

## Additional factors

If you've never been to a Toro University training session, then you've missed out on an opportunity to learn some of the different factors that affect the quality of cut and the health of your turf. Some may surprise you and include:

- Tire pressure on the mower
- Traction speed
- Reel bearing condition and adjustment
- Roller and roller bearing condition
- Roller selection
- Reel and bedknife sharpness

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## EQUIPMENT

of the cutting units, attachments, as well as turf conditions like excessive thatch will all influence the effective height of cut. Be aware and adjust accordingly.

For Meals, Baltusrol GC has some pretty high standards as far as reel maintenance goes. "To maintain sharpness we adjust the mowers after we mow six greens with the walkers, and adjust the fairway units after each cutting. We backlap all the mowers once a week and front face every two weeks."

When it comes to grinding Meals is in the 'light contact' camp. "Currently when we grind we relief grind and spin grind," he says. "Setting the reel to bedknife at light contact allowing the contact to keep the edges sharp through metal-to-metal contact."

Tucker, on the other hand, has a similar routine, but with a slightly different methodology.

"Every machine we use gets checked out after use," he says. "There isn't a time where

## Often overlooked grinding advice

**S**uperintendents and technicians all seem to have their own ideas on when and how to grind reels. For some, their grinding philosophies are as guarded as a certain colonel's seven secret herbs and spices.

So, for an expert look at reel maintenance, Erik Sides, training manager for Jacobsen Turf Equipment, offers a few basics superintendents and technicians should keep in mind when it's time to grind.

### Check the reel first

Before doing any grinding, Sides advises that you thoroughly clean the reel and cylinder. Next, always check to make sure the reel and roller bearings are good and reel has proper end play.

"It's virtually impossible to get a good, consistent grind if there are worn bearings," he says. "Save yourself the headache and check these before wasting time at the grinder."

You should also look for a "coned" reel by using a pi-tape or other measuring device to check circumference. An uneven reel can affect cut quality as well as lead to contact with the bed knife. If you find a coned reel, Sides recommends following the directions for your specific grinding equipment to get the reel back to true.

### Maintain proper clearance

"Easily the most overlooked, but key component of reel maintenance is to make sure bedknife clearances are maintained," Sides says. A couple of minutes spent ensuring the reel blades are not coming into contact with the bedknife can save hours of grinding time down the road.

"We definitely promote daily clearance checks," he adds. "As a rule, you want between one-thousandth to two-thousandths clearance between the bed knife and reel blades. Avoid metal-to-metal contact, as that quickly wears down a reel."

Pulling a reel, mounting it in the grinder and replacing the unit can take up to an hour per reel. Daily clearance checks take just a few minutes and can help extend reel life and save shop time by extending the duration between spin grinds.

### Don't overlook the relief angle

When you do have to grind, Sides says, don't

overlook the relief angle.

"There are two distinct schools of thought on grinding," Sides says. "Those that spin grind only and those that relief grind in addition to spin grinding. I wholeheartedly recommend everyone maintain the relief angle throughout the life of the reel."

The relief is key to keeping the reels and the tractor working the most efficiently.

"Without the relief angle, you potentially increase drag on the reels or increase the likelihood of metal-to-metal contact," he says. "This puts more strain on the entire tractor and generates more heat in the hydraulic or electrical systems."

In addition to adding wear to the unit as a whole, this additional strain can also start to have a negative impact on fuel economy.

"Drag, wear and heat are minimized with a relief angle and proper bedknife clearances," Sides says.

The proper angles for reels can generally be found in manufacturer's manuals.

### Time to grind

How often to grind is another question Sides is frequently asked. While there is no hard and fast rule, this is a major factor that a lot of folks overlook.

"How often and how heavy you topdress will dictate how often you'll need to grind," he says. "The more sand that goes down, the more frequently you'll have to grind."

One way to extend reel life and still aggressively topdress is to make sure the sand gets worked in well before mowing. Brushing or dragging will help keep the sand down at the root level where it belongs and not up eroding the reels on your mowers.

### Lay out a grinding schedule

Finally, Sides recommends setting up a grinding schedule. This will help ensure that units get taken care of in a regular fashion as well as allows superintendents to plan enough time to get the job done.

"Too often, we see reels get overlooked because there's 'Just no time to grind,'" Sides says.



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we don't bring the machine in after it has been used and check the height, adjust the cut and file the bedknife. The reason being is that the most important job we do is to maintain cutting units."

The difference is in the backlapping, Tucker says. "We don't

backlap at all nor have I in my 13 years as an equipment manager," he says. "This is simply due to the fact that I have always been fortunate enough to have grinders."

He verifies that there are a lot of different schools of thought and all the tech's out there need

to do what allows you to produce the best results for your course.

"I look at it like maintaining an airplane," he says. "Pilots have to go through a series of checks every time they go from one airport to another to insure the safety of the aircraft and that it

will perform as intended. If they see the least little thing wrong they address it immediately. I don't see cutting units as needing any less attention than that." **GCI**

*Jim Black is a frequent GCI contributor.*

## Backlapping vs Grinding

**T**here are many practices and philosophies for maintaining reels and bedknives. Some choose to grind and utilize no backlapping, some will backlap only to get the longest life between grinds, and others prefer a position somewhere in the middle. Regardless of your preference, the key to proper cutting is to have a sharp reel and bedknife.

The modern technology in backlapping valves provides

Backlapping is a very quick and simple process and, depending on the number of reels on the machine, should take no more than two to 10 minutes to complete an entire mower. In regard to how often to backlap, first determine what level of expectation you require for your cut quality. The lower your height-of-cut, the more maintenance is required for the turf and for the

substitute for grinding. There will come a point in time during the reel's life where simply backlapping alone will not be sufficient. The land area of the reel blade will eventually increase, the length of the relief angle will decline, and there won't be as much surface area to hold the backlapping compound. At that point, the reel must be ground. However, backlapping is successful in extending the time between grinds to save maintenance time during the growing season.

When a reel is ground, it is important to re-establish the relief angle to allow for backlapping again in the future. The relief angle is critical in that it gives a place for the reel to hold the backlapping compound when it is applied.

Even more important, when both reels and bedknives are ground, backlapping after grinding matches the bedknife to the reel to ensure both components are operating in exactly the same cutting plane. Backlapping hones the reel and bedknife to the same cutting plane.

Also, when a reel is ground, it's common for a burr to exist on the backside of the reel blade. Technicians may sometimes experience issues where the bedknife-to-reel clearance opens up while mowing, causing the mowers to lose their cut. The cut may be shaggy, and grass blade tips may be torn and brown out. What causes this in a lot of cases is that the bedknife-to-reel clearance was set with the burr still present on the back of the reel blade. The machine cuts paper when it leaves the shop, the fairway or green may be cut very well for a few holes, and then – all of a sudden – the mower is cutting poorly. The burr on the back of a freshly ground reel wears very rapidly. By backlapping after

grinding, the burr is removed and the cutting unit can be set properly before it goes out to mow and it will stay on cut for a longer period of time.

*Tracy Lanier and Brad Aldridge are John Deere Golf product managers.*



There are many philosophies for maintaining reels and bedknives.

all reels on a machine can be backlapped at the same time. Backlapping valves are innovative in that they sense the restriction between the reel and bedknife when the backlapping compound is required, and adjust hydraulic flow accordingly to keep reel speed constant for a premium backlap. This makes the backlapping process the quickest method to help maintain the sharpness to the reel and bedknife. The more frequently a golf course backlaps, the longer they are able to keep a pristine, sharp edge on both the reel and the bedknife, and extend the time between grinds.

reel mower. There are also other variables – such as top dressing program, grass type, course soil conditions and the amount of grass being mowed by the machine. These variables and expectations for cut quality will determine how often to backlap and each individual course should determine its own program. It can be as frequent as after each mowing or it can be once every week or two. The key to backlapping is that you are maintaining the sharpness, while not trying to re-establish like when you are grinding. So, backlap before you lose your edge.

Backlapping should never be a

### Spin Grinding vs Relief Grinding

This is public information on the [www.deere.com](http://www.deere.com) public website that will provide some excellent information on relief vs spin grinding.

[www.deere.com/en\\_US/ProductCatalog/GT/servlet/com.deere.u90785.cce.productcatalog.view.servlets.ProdCatProduct?pNbr=RG55\\_XF&tM=GT](http://www.deere.com/en_US/ProductCatalog/GT/servlet/com.deere.u90785.cce.productcatalog.view.servlets.ProdCatProduct?pNbr=RG55_XF&tM=GT)

When opening the page, click on the "More" link at the end of the first bullet point that says "Choose from spin only or spin and relief grinding ..."

### Bedknife Grinding

This is also public information on the [www.deere.com](http://www.deere.com) public website that will provide some information on the importance of maintaining proper bedknife angles.

[www.deere.com/en\\_US/ProductCatalog/GT/servlet/com.deere.u90785.cce.productcatalog.view.servlets.ProdCatProduct?pNbr=BG15\\_XF&tM=GT](http://www.deere.com/en_US/ProductCatalog/GT/servlet/com.deere.u90785.cce.productcatalog.view.servlets.ProdCatProduct?pNbr=BG15_XF&tM=GT)

After the page has opened, click on the "More" link at the end of the first bullet point that says "Maintaining bedknife angles is key to premium golf course playing conditions ..."