



Photo: Jacobsen

Jacobsen's E-Walk all-electric walking greens mower generates no more than a whisper of noise to avoid disturbing golf course residents and enable early-morning mowing.

New greens mowers go low ...and do so much more

MANUFACTURERS ADDRESS MOWER PERFORMANCE AND PLAY ISSUES

It's a fact that golfers assume another personality when the topic is green speed. It doesn't matter that height of cut is only one factor that affects the speed of a green. According to this group, low is never low enough. All that matters is double digits on the stimp meter.

As a result, manufacturers are constantly challenged to design mowers that can drop the height of cut to levels that would have killed grass only a few years ago. While 1/4

inch was the standard for a long time, today 1/8 inch is probably the average. It's not unusual for some courses to dip beneath that mark.

The expectations for greens mowers get tougher for other reasons. To meet golfer demand, golf course architects are building more contoured greens, which call for mowers that will float over undulations to reduce scalping. Then there's the environmental factor. Many municipalities are imposing noise

restrictions in residential areas. This particularly affects golf courses surrounded by homes.

Thankfully, the ability to provide consistent, playable greens has to a great degree been satisfied by today's line of greens mowers. To find out how manufacturers are addressing these issues, *Golf Course News* contacted major manufacturers and superintendents who are using the latest innovations in greens mowers.

Toro Flex 21 answers the call on contoured greens

It takes a capable piece of equipment to mow greens at 1/8 inch or lower, especially if they are contoured. The Toro Flex 21 was designed to support the agronomic demands of greens cut to 1/16 inch and the increasing demands on today's superintendents who are expected to achieve that height.

The Flex 21 features a unique flexible cutting unit, specially designed for undulating greens and ultradwarf grasses. The innovative cutting unit flexes from side to side around the bedknife centerline, as well as forward and backward around the reel centerline. The flexible cutting mechanism is separate from the traction unit to further ensure crisp, tight mowing at the desired height with less scalping.

A California superintendent says the Flex 21 gives him the ability to push the mowing envelope.

"It's definitely given me a measurable difference on taking the greens down," says Brian Hardin of The Palms Golf Club in La Quinta, Calif.

"Our caliber of player really likes fast, challenging greens. I was sneaking under 1/8 inch and wanted something that didn't scalp. I put the Flex 21 on one of my greens with a really gnarly slope, and it took it fine. It's definitely following the contours better than a stationary unit. I haven't had any scalp problems."

Toro riding mowers feature new cutting units

Toro took its riding greens mowers to another level with the introduction of the dual-point adjust Greensmaster cutting unit. Features include:

- Lower height of cut to 1/16 inch
- Superior quality of cut at all heights
- Sealed bearings to eliminate greasing
- Simplified adjustment
- Greater rigidity to eliminate squaring-up problems
- Compatibility with all current and previous units

This new cutting unit is available in 8- or 11-blade reels. It replaces all 4-bolt and single point adjustment units in favor of the dual point adjustment proven on the Greensmaster 1000.

The new cutting unit impressed Pete Peterson, superintendent of Riverbend Golf Complex, Kent, Wash.

"We mow down to a little over 1/10 inch," he says. "When you cut that short you're going to notice any imperfections or misadjustments. These units hold adjustments better. Everything just seems to be a little tighter, a little better designed."

Superintendent Steve Kealy of Glendale Country Club, also in Washington, praises the Greenmaster units.

"They performed like a walking greens mower," he says. "The cut was more uniform, and it seemed like the units floated better over undulations with no scalping. The quality of cut was very high, and we were mowing down to 0.110 inch, which is pretty low."

Deere walk-behinds boast consistent cutting height

John Deere Golf and Turf One Source product manager Tracy Lanier says one of the advantages of the manufacturer's walk-behind greens mowers is their ability to deliver a consistent height of cut.

"Our 18-inch 180B walk mower is the ideal width for closely following green contours," he says. "The reels don't ride up and down at the ends like some flex mowers, which can result in an uneven cut. The mower's true 18-inch frame allows the operator to follow cut lines and overlap with more accuracy."

Other features of John Deere walk-behind mowers are designed with safety and operator comfort in mind. The operator-presence safety system is engaged when the handle is depressed.

"When the operator lets go," Lanier says, "wheel traction is disengaged and the cutting reels stop. This can be important early in the morning when the grass is covered with dew and the operator could slip while making turns."

Sound reduction features include high impact-resistant polymer chain covers, which also limit rust and dents, and a larger muffler. A drum drive and oil drain trough simplify maintenance.

John Deere's riding greens mowers have also been improved. One of the most important features on the 2500A triplex is the patented offset cutting units, especially critical on daily cleanup passes. The mower can move clockwise one day and counterclockwise the next and the wheel pattern will not be in the same track. This greatly reduces the "triplex ring" associated with this operation.

For operator comfort, the command arm on the 2500A triplex puts the key switch, mow switch, throttle lever and raise/lower lever conveniently at the operator's fingertips. This riding mower also has tilt steering and a two-foot-pedal system for forward and reverse.

"One of the keys to all our reel mowers," Lanier says, "is the commonality of parts and adjustments. On a 7-blade reel, for example, it doesn't matter if it is used for a fairway mower or a 2500A for mowing approaches. The parts are the same and there is the same easy adjustment on top of the reel."



One of the most important features on John Deere's 2500 triplex riding greens mower is the patented offset cutting units, especially critical on daily cleanup passes.

Photo: John Deere

Engine options for triplex electric reel greens mowers

John Deere continues to place special emphasis on technological advancement. This year the 2500E triplex electric reel greens mower is being produced for limited distribution, with full production expected in 2005.

Equipped with two engine options, the 2500E gas model offers an 18-hp, 4-cycle Kawasaki V-Twin engine, while an 18-hp 3-cylinder John Deere Series 220 powers the diesel model. However, reel circuits are all electric, supplied with power from the engine through an alternator.

"When developing the 2500E," Lanier says, "engineers focused on a growing concern of superintendents—hydraulic leaks that burn golf course greens. With the new electric reel motors, John Deere has eliminated more than 100 leak points at the reel circuit, while still providing superior cut quality and the power required to run various attachments."

Additionally, engineers equipped the 2500E with verticutting capability, providing golf courses with increased productivity from one machine.

Jacobsen's "floating cutting reel" takes contours

Jacobsen's Tournament Cut-22 floating-reel walking greens mower is the solution to several issues for director of golf course operations Chuck Green at Sage Valley Golf Club, Graniteville, S.C.

"We needed a mower with a floating head



John Deere's 18-inch 180B walk mower is the ideal width for closely following green contours. The reels don't ride up and down at the ends like some flex mowers, which can result in an uneven cut.

for our contoured greens," he says, "and the Tournament Cut-22 works great for us. This mower is more gentle on cleanup passes because the reel floats over steep inclines and roll offs. It has solved a number of our scalping issues. We're planning on acquiring additional Tournament Cut-22s to mow our tees."

The Tournament Cut-22 features turf-hugging, fully floating cutting reels with beltless, direct-drive to the cutting reel and separate traction drum. The mower has a narrow, 22-inch cutting width to better follow green contours.

This unique and balanced "floating cutting reel" design separates and unloads the weight of the rear traction wheel/power source from the suspended floating cutting reel. This enables the suspended reel to move up/down, front/back and left/right as it "floats" over uneven turf to avoid scalping and deliver a more even cut on undulating greens.

Mower is a hit at 2003 PGA Championship

The Tournament Cut-22 was used at the 2003 PGA Championship at Oak Hill Country Club in Rochester, N.Y. The mower was used to manicure fairways, walk areas, tees and greens. Able to follow ground contours precisely, the Tournament Cut-22 created the visual effect of apparently seamless greens and approaches.

"We were really glad we had the Tournament Cut-22 greens mower," says Paul Latshaw, then Oak Hill's manager of golf courses and grounds. "It let us give approaches and walk areas an extremely fine finish. We even used them to cut the greens on our other

course when they weren't mowing approaches during the tournament."

All-electric walk mower ends oil and fluid concerns

Responding to environmental and noise issues, Jacobsen's E-Walk all-electric walking greens mower uses no oil, no hydraulic fluids and has no emissions. It delivers a quality cut while generating little more than a whisper of noise to avoid disturbing golf course residents and enabling early-morning turf care.

But this mower has another benefit, which was demonstrated last year at the PGA Tour Memorial Tournament at Muirfield Village Golf Club in Dublin, Ohio. The E-Walk actually increased green speed without lowering height of cut.

Mike McBride, who was Muirfield's superintendent at the time says, "We calculated that the E-Walk, with its higher frequency of clip, would give us the same finish and green speed without having to drastically lower the height of cut.

"When we tested the E-Walk we used the same walk speed we normally do, but with reel speed set to give a higher frequency of clip. When we finished single-cutting the greens we had 30 percent more clippings mowing with the E-Walk than with our other mowers. That meant we could get an improved quality of cut and the same speed on the greens without putting additional stress

on our newly planted grass."

Clip frequency that is independent of walk speed

The E-Walk is unique among walking greens mowers because the frequency of clip is independent of the mower's walk speed. This is accomplished by using a patent-pending electrical control system that has two separate electric motors and two separate speed circuits. One motor and speed controller powers the drive drum and is used to control walk speed. The other motor and speed control deliver power directly to the reel and allow the operator to adjust the frequency of clip. Because the speed of the reel can be set independently of the speed of the traction drum, a unique phenomenon is produced. As walk speed slows, the number of clips per inch increases. The result is a smoother finish and faster green without stressing the plant.

During the Memorial, the Jacobsen E-Walk allowed McBride and his crew to increase green speed without severely lowering the height of cut.

"Jack Nicklaus likes the greens to be fast during the tournament and he was very pleased with the results we got from the E-Walk," McBride says. "Our greens were faster than the previous year, even though the height of cut was actually higher. In addition, this mower produces no emissions and has no fluids to leak or fuel to spill. And, it's so quiet." GCN



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