

THE USE OF TORO EQUIPMENT FOR CLIPPING REMOVAL

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For the past number of years there has been increasing emphasis on reductions in maintenance costs associated with golf course operations. Since 1974 cost reduction programs throughout the turfgrass industry have been intensified. And rightly so, for the increased cost of supplies, materials and labor have caused golf course superintendents to zero in on those areas which provide the greatest opportunity for savings. Manufacturers, for the most part, have continued a policy adopted many years ago: Build equipment that will "cut more acres per day per man".

Yet there are other aspects of the cost-benefit relationship in golf course turf maintenance that are often overlooked. Among the more important, for which members and players seem to be more than willing to pay, are playability, aesthetic appeal and pride of belonging, or the sense of satisfaction from being associated with something unique, different and superior. All are facets of superior turf quality with all that the term implies. And, an increasing number of private clubs are funding the production of such turf and you have heard from some of those superintendents already this morning, as they describe the total program of triplex mowing, clippings collection and reduced levels of irrigation and fertilization.

The major advantages cited by superintendents who follow the program are:

- Increased golfer and membership satisfaction
- Aesthetic appeal - lower height of cut and striping
- Improved playability - smoother, grain free surfaces
- Better grain control as result of ability to make cross and angular cut
- Reduced soil compaction
- Reduced turning friction
- Reduced heat from decomposition
- Increase in bentgrass
- Decrease in Poa annua
- Seed removal of Poa annua
- Less fertilizer - favors bentgrass, lowers cost
- Less water - favors bentgrass, lowers cost

Toro is pleased to have been a part of this dramatic advance in turfgrass appearance, in that our mowers were used by many of the clubs pioneering this experiment. My goal this morning is to review the technical aspects of the products which have been used so successfully in these programs and then to introduce several new products with fairway applications, designed in the Toro tradition of quality, performance and durability.

The Turf Pro 84 is the product most often used in fairway programs of this kind. This 84 inch triplex mower has a number of the state of the art features which make it suited for these tasks:

- Each reel is powered hydraulically with its own motor, eliminating drive belts and most of the chains and sprockets found on older designs.
- Reels are reversible for backlapping and maintaining a sharp edge, as well as clearing foreign objects from the reel.
- Each reel is independently suspended to hug ground contours, yet lift hydraulically for fast, easy transport.
- Three wheel hydraulic drive not only eliminates belts and other wear-prone components but also provides outstanding hill climbing and tracking ability. This ensures that one machine can tackle all the areas on a course.
- Optional front rollers and rear roller scrapers are available to meet varied conditions.
- And of course it can be fitted with grass catchers. As you have heard this morning, this feature makes it possible to remove the clippings, thereby minimizing the Poa content in the fairway as well as reducing the breeding ground for disease and harmful organisms.
- The cutting units can be set as low as 3/8" and quick change height of cut enables one mower to tackle tees, fairways, and approaches with minimum of adjustment.
- The ground contact pressure is a mere 16 psi. This minimizes compaction and promotes healthy turf.

The Toro Greensmaster 3 has won acclaim as the world's leading riding greensmower. In fact, it is found on a majority of the top 100 golf courses in the United States due to its outstanding cutting qualities and dependable service. It has also been used successfully in the kind of fairway maintenance program described today because it has many of the same features of Turf Pro 84, namely

- Hydraulic reel drive
- Hydraulic traction drive
- Fully floating cutting units
- Grass baskets.

Its ground contact pressure of under 10 psi is even lower than that of the average golfer walking on the fairway.

The new Reelmaster 350D is a five gang front cutting reel mower designed to offer a high degree of durability and reliability, excellent quality of cut, superior productivity and superior human engineering features. It is the state of the art of integrated hydraulic machines. The 350D is equipped with a strong water cooled diesel engine, 50 HP Mitsubishi, which is reduced to 38 HP in this application. This proven engine provides plenty of reserve power for mowing over rough hilly terrain and in tall dense or wet grass conditions. It also was chosen because of its low noise levels. The 350D has a heavy duty tubular frame construction and uses proven industrial hydraulic components. The cutting units are designed to cut as low as 3/8 inch and up to 3 inches height of cut. They are available with five or seven bladed reels. The reels are driven by a cogbelt which transmits the power of the reel motor to the reel. The mower speed is regulated through a hydrostatic transmission which has five individual mowing speeds. Hydraulic backlapping is standard.

The 38HP Mitsubishi engine provides plenty of reserve power for any mowing condition. The hydrostatic traction drive along with the single

operation peddle makes the 350D highly maneuverable. This five unit machine achieves a width of cut of 11'6" with a work capacity of 7.6 acres per hour. The individual hydraulic lift of the cutting unit allows two outside mowers to be lifted within three or five seconds to quickly narrow the path of cut in order to maneuver around trees or other obstacles. This feature along with quick response power steering, gives the 350D superior maneuverability. The speed of the reels is infinitely variable and therefore can be adjusted to meet any grass or cutting conditions. The 350D is designed to have a mowing speed of 7.5 miles per hour and a transport speed of 15.0 miles per hour to maximize its productivity. The top mowing speed can be varied through a lever having 5 separate stops. The cutting units are equipped with adjustable side skids for higher speed mowing. Larger wheels provide superior traction. Large fuel tank capacity does not require refilling during a working day.

Special attention was given on this machine to human engineering. All controls are located within convenient reach of the operator. A single drive pedal along with power steering make this machine very maneuverable and easy to operate. The 350D is equipped with large flotation tires, larger than other mowers of its class for the smoothest ride. The engine is run at low rpm to reduce the noise levels. The operator is seated up front without an obstructed view. He has easy entry and exit on both sides, as well as ample leg room. In addition to all of these features we have many safety features to protect the operator. The reels shut off automatically when the mowers are lifted. The reels can be locked into position for transport. The engine shuts off automatically when the operator leaves the seat and if the reel or traction drive systems are still engaged. There are no exposed components such as belts, pulleys or shafts. The machine is designed with a low center of gravity for the most stability on hillsides. There is a dual braking system in the 350D for backup. The noise level is below 90 DBA operator ear.

The Reelmaster transport frame is designed for high acreage mowing and easy transportability. You can lift the mowers to go to the shop for adjustment or sharpening; over narrow bridges, go to the next fairway without dragging mowers over roughs, etc. It also provides an alternative to self-contained tractors, and therefore greater versatility for use of industrial type tractors. Just hitch it to a tractor, and this frame is ready to take on your biggest mowing task. The Reelmaster transport frame contains seven cutting units which can be individually lifted or lowered. To raise or lower the cutting units, simply pull the hydraulic lever to lift the mowers in any sequence. The center three cutting units lift together; numbers 4, 5, 6 & 7 lift separately. The cutting units are positioned in such a way on the frame to allow sufficient overlap of the mower during turns, thus minimizing streaking or leaving uncut areas. The mowers are mounted on floating arms to allow them to hug the ground and avoid mismatch among them. Various cutting widths are obtainable from 6'9" to 14'4"; with all units raised, the transport width is within legal requirements of 8 ft. (7'11"). The cutting units can be locked up during transport to prevent them from lowering.

The Reelmaster frame is mounted on large flotation tires to reduce marking of the turf and create more stability on hillsides as well as make this transport frame easy to roll over the roads. In the mowing mode, a portion of the weight is partially shifted from the tractor to minimize

compaction. What really makes this frame easy to use are some of its convenience features. Detents on the control levers eliminate the need for the operator to hold the control lever after it is engaged to raise or lower the mowers. He can remove his hand, and the lever will stay engaged until the cutting units are completely raised or lowered. At that point, the lever will automatically disengage itself. The Reelmaster transport frame is designed so that it can be easily attached to a tractor. In a matter of seconds, this product can be unhooked. Hitching is a snap - with a screw type jack you lift the tongue and hold it at the right height. Then you disconnect the two hydraulic couplers, pull the drawbar pin, and your tractor is completely detached. The adjustable control tower allows easy reach of the lift controls and therefore makes this transport frame adaptable for most tractors. For the use of a Reelmaster transport frame we recommend a minimum 30 PTO HP tractor with a minimum 3,000 lbs. weight. This frame will adapt to our Spartan 5 & 7 blade mowers as well as our new Reelmaster 11 blade mower.

This new Reelmaster 11 Blade Gang Mower was specifically designed for an outstanding finished look at very low heights of cut (3/8" - 1-1/4"). The Reelmaster 11 blade has been designed to cut in those conditions to provide an improved playing surface, through its high frequency of clip and superior cutting force. The Reelmaster 11 has been designed with 11 blades to provide the smallest clip (.58") to match low height of cut, improve appearance and playability, minimize corrugation which becomes more apparent to low HOC. The position of the bedknife edge in relationship to the centerline of the reel is extremely important in minimizing stragglers. Through much testing in different grasses, Toro has established the optimal location for the bedknife to cut efficiently with or against the grain. In low heights of cut grasses are usually denser and therefore require more force to give a clean cut. We have reduced the diameter of the reel to 7" to develop more at the cutting edge of the blade. To maintain the sharpness of the blades and bedknife, we have made it easy to adjust the two precisely and conveniently--single knob adjustment. The lower the height of cut, the more evident the mismatch of height of cut from one end to the next of the same mower and between mowers themselves.