But, I really get a lot of satisfaction meeting with a small group of my peers on a monthly basis and focusing on common everyday problems and helping each other out. That is the heart and soul of our business as far as I am concerned."

How does one become a Director of Grounds, able to pop mighty oak trees in and out of the ground at will? Well, you could have had a father who built and managed officer's clubs while in the military. After he retired, maybe he might have helped to develop the Cherokee Town and Country Club in Atlanta. And just maybe, he might have gotten you a summer job on the golf course while you were on break from Kennesaw College. That is exactly what happened to Chuck!

"Steve Wilcoxen was the superintendent at Cherokee and a good friend of my dad's. I worked for Steve for a couple of summers, and during my third year break, he moved back to Oklahoma to take the superintendent position at the Ponca City Country Club. I was twenty or twenty-one and looking for a career so, I joined Steve in Ponca City and spent two years learning the basics of turfgrass. He could be a real son of a gun, but he was a master at getting things done. He was a model of good work ethics and drive, and he taught me how to prioritize my workload."

"I returned to Florida and took a job at John's Island during the Adam Yurigan years. He was a most inquisitive man, and he taught me that there may be more than one solution or answer to a problem. He was a former golf professional, and I learned how a superintendent needs to be able to communicate with the owners and members. I definitely learned a lot about public relations from Adam."

"I then did a short stint at Sun Air G.C. in Haines City before moving on to work with Paul Hickman at Grenelefe. Paul was the Director of Grounds, and I became his Golf Course Manager. Under Paul's direction I fine-tuned my Florida turfgrass knowledge and took it to another level. He guided me through the steps necessary to manage a multi-course resort operation. I cut my teeth on planning and organizing while working with Paul."

"Then there are fellows like Dave

'Get your hands dirty'

Superintendent Al Schram oversees a bunker excavation project.

Understand that this job is not just growing grass!

Barnes and Mike Ayers who have been a wealth of information on technical matters and business management. They grew up in the G.C. Horn days of expanding turfgrass education. It is guys like these and my peers in the superintendent associations that keep me on the cutting edge of what's happening in today's turf industry. All of these people have had a very positive influence on me, and I am grateful for their help along the way."

And for those out there who would aspire to become a superintendent, Chuck had these words of welcome and warning. "Be ready to put in a lot of hours! Understand that this job is not just growing grass! If you think this job will give you easy access to play golf, think again. I get that from guys all the time. Sometimes, playing golf is the last thing you'll have time to do. Learn how to be a good sprayman. Get your hands dirty. I have to laugh at some of the kids who come out of school and tell me they're going to put in a year with me and then move on to a superintendent's job somewhere.

They need more hands-on experience and a good taste of the real world before becoming a head superintendent."

The phone rang, and Chuck apologized for having to cut our interview short, but he was needed at another meeting involving future plans for Saddlebrook. Plans that would mean making more changes to Mr. Rogers' neighborhood.

The time-tested, performance-proven, perfect-finish bunker rake - often copied, never matched.

THE PREFERRED CONDITIONING SYSTEM

FOR THE BEST FINISH OF ALL

SOLD AND SERVICED BY:

KILPATRICK TURF EQUIPMENT
901 Northwest 31st Avenue ■ Ft. Lauderdale, FL 33311
Telephone: 305-792-6005 ■ Fax: 305-584-5831

TIECO/GULF COAST
540 W. Michigan Avenue ■ Pensacola, FL 32505-2413
Telephone: 904-434-5475 ■ Fax: 904-434-2786

TRESCA INDUSTRIES
4827 Phillips Highway ■ Jacksonville, FL 32247-0609
Telephone: 904-448-8070 ■ Fax: 904-448-2725

ALWAYS OUT FRONT

SMITHCO

WAYNE, PENNSYLVANIA 19087

(*excludes engine)

The Saddlebrook Resort is the world headquarters for the Arnold Palmer Golf Academy.

Saddlebrook Golf & Tennis Resort

Location - Wesley Chapel, Florida

Owner - Tom Dempsey

Playing Policies - Private. Resort guests. Some public play in off season.

Management - General manager, Dick Boehining. Golf Professional, Neil Postlethwait.

Designed by - Saddlebrook course by Dean Refram in 1976, Palmer course by Harvey Jones(9 holes) and Palmer Design group(final 9 holes plus modifications to entire complex completed in 1985).

Construction - Dean Refram

Number of holes - 36 plus World Headquarters for the Arnold Palmer Golf Academy.

Tees - 6 acres in Tifway 419. Height of cut-1/2 inch. Overseeded with perennial rye.

Greens - 4 acres. Average size 6,000 sq. ft.. Thirty-three in Tifgreen 328. Three in Tifdwarf. Height of cut-5/32 inch or lower. Overseeding-Saddlebrook Course greens with *Poa trivialis* and *fescue* blend for 1993-94 season. Palmer Course greens with perennial rye.

Fairways - 40 acres in Tifway 419. Height of cut-1/2 inch. Overseeded with perennial rye.

Roughs - 100 acres in Tifway 419. Overseeding-none.

Irrigation System - Water sources include surface ponds and lakes, wells, and effluent.

Four pumping stations - Toro VT II and Varitime 4000 control systems.

Staff - Director of Grounds, Chuck Rogers,CGCS; Golf Course Manager, Al Schram; Landscape Manager, Cecil Douberly; Shop Manager, Dick Gamelin; Office Manager, Sue Morrison.

Crew - Golf Course Operations-Currently, 15 full-time and 4 part-time. Landscape Operations, 32.

ACSP Water Conservation

Making water conservation an everyday practice

BY TOM BENEFIELD, CGCS

Every living organism, plant and animal is wholly-dependent on water. No other aspect of daily survival of life is as important as the need for this precious resource.

One needs only to look at the bleak conditions of drought-ravaged parts of the globe to understand the unique interwoven relationship between water, life and death.

It is through this knowledge that we gain an appreciation for the concept of water conservation. Our country has become the advanced civilization we call home because of our abundant fresh water supply and our ability to use it. If our country is to continue prospering, it will be because we have learned to develop and wisely use this resource many take for granted.

Water conservation means using water wisely.

Even in places like South Florida, home to one of the world's greatest wetlands, we find a pressing need to utilize and develop an attitude of conservation. With the recent deluges of Tropical Storm Gordon and the closing of golf courses being for prolonged periods of time due to inundation of rain, it is difficult to maintain focus on the conservation message.

However, one only needs to look back a few short years to the droughts of 1989, 1990 and 1991 to see that from a historical perspective, what we are now experiencing will be viewed as a brief moment in time. With the addition of a thousand people a day to this state, using 400 gallons per day, we will need an additional one and a half billion gallons of water per day just for the newcomers.

One day soon, we will again be living on the edge of available water resources. Couple this with a direct correlation of less available water recharge and collection basins acreage and you can understand the need for starting now to prepare for tomorrow.

With society's increased need for top-grade drinking water comes the realization that some water usage of our culture will be forced to adjust. Along with this

ACSP: Part IV

In Part 4 of this series on the Audubon Cooperative Sanctuary Program for Golf Curses, ideas for fulfilling the *Water Conservation* category are presented.

- ✓ Environmental Planning
- ✓ Member/Public Involvement
- ✓ Wildlife & Habitat Management
- ✓ **Water Conservation**
- ❑ Water Quality Management
- ❑ Integrated Pest Management

adjustment will also be large-scale acceptance and usage of reclaimed waste water. The goal is to save high-quality ground water resources for usage by the masses.

What this leads to is a shrinking of the water resource pie we currently use for irrigation. When the pie shrinks, we must turn inward to cope and deal with the problems encountered by managing turf under different attitudes.

Most of us practice some aspect of conservation on a daily basis. The use of computerized irrigation systems, utilizing weather stations, installing moisture sensors or automatic pump shutdown switches in the event of significant rainfall are all excellent examples of water conservation.

Each and every day that we make an analysis of the golf course to determine the irrigation needs, we are not only practicing sound turf management principals, but subconsciously we are also applying conservation measures.

We know conservation will be a major part of golf course life in the coming years. Our goal at this point should be to work diligently with the water agencies to position our industry at a sustainable degree of certainty for tomorrow.

Irrigation Practices

Irrigation weather station monitors conditions and adjusts run times.

Water Conservation and healthy turf are compatible

BY MATT TAYLOR

Assistant Golf Course Superintendent
Collier's Reserve Country Club

At Collier's Reserve, water conservation is a top priority. Beginning with the irrigation system design, selecting the best equipment available, and controlling water frequency, we are intent on maximum efficiency and minimum energy use and maintenance, as well as optimum water conservation.

Incorporating sound Integrated Plant Management (IPM) and agronomic practices, we keep a healthy turf, which translates into water conservation.

Irrigation System Design Golf Course and Common Grounds

The irrigation system at Collier's Reserve is a state-of-the-art, computerized prescription irrigation program and is controlled through a weather station.

Run times are calculated daily by theweather station which monitors and compares evapotranspiration (ET) rates and automatically sets each head's run time for that day. The computer program allows each head on the golf course to be manuallyfine tuned for irrigation cycles if adjustments are needed for wetor dry areas on the course, and delivers only the amount of waterneeded, where it's

needed. This keeps the turf healthier and results in water and energy conservation.

The system is a low-volume water delivery system. Its reduced water pressure cuts down on wind drift, misting and possible irrigation line breaks. Sprinkler heads throughout the course were individually staked to insure maximum coverage while avoiding throwing water into native plant areas, pine tree beds, preserves and lakes. Part- and half-circle heads throw irrigation water from the outside of the roughs to the inside of the fairways.

Historically, fairway irrigation designs would place heads in the middle of the fairways with water patterns throwing to the outside. The initial cost of a system like Collier's Reserve's is greater in design and construction, but the finished product produces exact coverage on the target turf areas.

At Collier's, we added 250 irrigation heads to the original design, at an approximate additional cost of $120,000. However, we will realize a 20% reduction in water and energy costs which will reap tangible and intangible benefits.

Projected pumping costs for both pumpstations combined, in 1995, is approximately $16,000. Off-peak pumping contributes to this low figure.

Greens and tees

Greens heads are individually set and controlled which allows heads to irrigate in varying amounts, depending on slopes or low areas onthe greens. All heads are half-circles, or adjustable, and irrigate only the greens. This is a benefit because you do not irrigate greens' slopes or approaches when watering-in a product or during the normal irrigation cycle.

The tee complexes are designed to support native grasses on three sides of the tee slopes and turfgrass on the fourth side. Cost savings are realized in maintenance and water because the native grasses do not require irrigation or hand labor — except to pull the few weeds which emerge through the tight canopy of native grasses.

Irrigation heads on the tee tops are more site specific and smaller because they do not irrigate large areas, such as tee slopes, which require larger heads. Again, we realize water and energy savings.

Equipment – Pumps

The highest quality premium efficiency pump motor with variable frequency drive (VFD) was selected to run the irrigation system. The pumps are 2% more efficient than any other pump available at that time. Because the property is separated by the Cocohatchee River, two pump houses were built; one on each side of the river.

Twin, premium-efficiency motors, driven by VFD's were installed in each pump house.

The VFD's expend only the energy required to meet the demands of the pumps. For example; if only 40 GPM (gallons per minute) is demanded, the VFD supplies only the energy needed to provide 40 GPM. We have already seen reduced costs due to energysavings from efficient irrigation pumps.

Irrigation Frequency

During most of the year, we water every other day, except greens. If weather conditions are favorable (i.e. rain, cool weather) we may skip several irrigation cycles. There is no set schedule for watering greens. Greens are checked daily by the Integrated Plant Management (IPM) Specialist, the Cup Cutter, and myself. We check moisture, root structure, etc. When watering is done on the greens, we water deeply enough to wet the entire root zone. We also monitor and hand water any "hot spots" on the greens on a daily basis. Our goal is to have 100 non-irrigation days per year at Collier's Reserve.

Other Irrigation

Newly-planted trees and native vegetation on the golf course and common grounds have low volume drip irrigation which will be removed when the new plantings are fully established.

IPM and cultural practices

At Collier's Reserve, we follow specific Integrated Plant Management (IPM) guidelines. Coupled with sound agronomic practices, we strive to produce the healthiest turf possible. A strong healthy turf will by itself greatly conserve water.

By controlling weeds, pests, disease, and using the proper fertility levels, you increase the turf's vigor.

We control the cart traffic which helps eliminate turf compaction on the fairways and roughs. When compaction does occur, aerification of the turf helps restore it. We have a testing program schedule for soil, grass tissue and our irrigation pond water quality.

Acid injection helps control high water pH and bicarbonate levels and can increase the efficiency of our irrigation water.

Water conservation must start with the pump stations and be carried through by checking every sprinkler head to ensure a properly working system.

Past routines of watering every other night or sometimes every night to keep the golf course green "wall to wall" have been reevaluated. We may let the turf go unwatered one more night if it appears to be on the border of needing water; thus begins true water conservation.

You not only conserve water, energy and wear and tear on your irrigation system, but will strengthen the root systems on the turfgrass plants.

Caution: Ifyou let the soil become hydrophobic, you will need excessive water to restore proper or desired soil moisture levels.

Summary

Not only is it wise to have a state-of-the-art irrigation system with the hardware and software to support it, it must be a well-managed and maintained system. Understanding the philosophy of IPM and water conservation principals are essential for a successfulwater conservation program.

Although a state-of-the-art irrigation system may initially cost more, with the proper management, these extra costs will eventually be recovered. Combining a modern, well-designed irrigation system, and using sound IPM and agronomic practices, you can be assured of a successful water conservation program for your golf course.

Turf Formula®

AGRI GRO

The Natural Solution

Agri-Gro of Florida, Inc. introduces **Turf Formula**, "The Natural Solution" for quality Turfgrass maintenance. Florida golf course superintendents are experiencing the following benefits of **Turf Formula**:

1. **Increased Soil Microbial Activity**
2. **Increased Root Mass and Root Penetration**
3. **Helps Eliminate Algae on Greens**
4. **Increased Aerobic Bacteria, a Natural Predator to Nematode Eggs**
5. **Increased Water Penetration and Percolation**
6. **Aids in the Decomposition of Thatch**

Turf Formula is a non-toxic and environmentally safe product which contains stabilized micro-organisms from the following genera: *Azotobacter, Bacillus* and *Clostridium.*

Turf Formula is a premium soil amendment and bio-catalyst with a four year shelf life.

For information and product availability:

GOLF VENTURES
2101 East Edgewood Dr.
Lakeland, Florida 33803

1-800-330-8874
(813) 665-5800
Fax (813) 667-0888

UNITED HORTICULTURAL SUPPLY
3632 Queen Palm Dr., Suite 306
Tampa, Florida 33619

1-800-457- 0415
(813) 628-0496
Fax (813) 664-0371

VAN WATERS & ROGERS, INC.
4240 L.B. McLeod Rd.
Orlando, Florida 32811

1-800-826-2611
(407) 843-2611
Fax (407) 649-8433

LIQUID AG SYSTEMS, INC.
5610 N.W. 12th Ave. Suite 211
Ft. Lauderdale, Florida 33309

1-800-884-6942
1-305 -776-2288
Fax (305) 776-6942

Shhhhhhhhhhhhhhhhhhhhhhhhhh!

with **HAND DREDGING** the play goes on!

◆ EXCLUSIVE HAND DREDGING ◆

WITH OUR PATENTED SYSTEM THE *PLAY GOES ON!*
WHILE WE CLEAN DREDGE YOUR LAKES, PONDS, CULVERTS, PIPES
AND INTAKES. MAKING YOU LOOK GOOD! MAKES US LOOK GOOD!

◆ EXCLUSIVE PUMP &DUMP ◆

WITH OUR PATENTED SYSTEM PUMP & DUMP WE PUMP DIRECTLY
INTO OUR WAITING TRUCKS, FAR FROM THE DREDGE SITE.
WE'RE QUIET, FAST, EFFICIENT AND ENVIRONMENTALLY SAFE.

FOR MORE INFORMATION CALL:
1-800-432-7658

SUBAQUEOUS SERVICES INC.
4201 KEAN ROAD, FORT LAUDERDALE, FL 33314
SERVING FLORIDA FOR OVER20 YEARS


Hector
TURF


WESCO TURF
INCORPORATED


ZAUN

and

TORO®

present...

Reelmaster® 4500-D 2 or 4 Wheel Drive

Superior playability: that's what it's all about! Your Reelmaster 4500-D delivers the means — superior cutting technology with exclusive variable reel speed and proven reliability with power to spare.

TORO®

The Reelmaster® 4500-D is the wisest choice you'll make for keeping your turf looking and playing its best. It combines durability, productivity with an unmatched quality of cut for improved mowing economics and course playability.

More Power. More Productivity.

Consider first the greater capacity this all-hydraulic reel mower has to offer. With its impressive 55 hp engine there's always a ready reserve of power to climb hills, dethatch large areas of turf or travel at higher transport speeds. Governed to run at lower rpms, it's fuel efficient, quieter and engine longevity is improved.

For productivity you can measure at day's end, the 4500-D offers a wide 11-1/2 ft. cutting swath, a fast 7.5 mph mowing speed, responsive power steering, and greater maneuverability that speeds your pace. While in your seat you can securely lock all five reels in place for a quick, stable transport from site to site.

4-Wheel Drive.

Now available in 4-wheel drive with standard 4-post ROPS, you'll tackle hilly terrain in a sure footed, safe manner. Either model provides excellent traction yet favors your turf. Large, soft shouldered tires help to lessen compaction and minimize scuffing.

Operator-Friendly.

Designed to heighten operator productivity, the Reelmaster 4500-D is especially easy to operate with fingertip controls, power steering, and excellent visibility. Other features include an adjustable traction pedal stop and a special control linkage to facilitate cross cutting.

Carefully built to keep noise and air pollutants furthest from the operator, it provides a much quieter, cleaner environment for increased comfort and safety.

And speaking of safer operations, Toro also provides an operator training video that serves to teach your crew the operation, safety, and adjustment of your 4500-D.

Most Reliable.

Enhanced with an enlarged cooling system, it will handle your heaviest work day. High air volume

is drawn in from the rear through a full screen end cap. There's a larger capacity radiator. And its water pump mounted, two-speed fan means there are no separate belts to fail.

A full featured hydraulic system with strong steel lines and 0-ring seals protects against the dread of leaks. An alarm alerts you to low fluid levels and diagnostic test ports are in place to quicken servicing.

Service-Friendly.

Half the chore of servicing a machine is trying to get at its components. But not with the Reelmaster 4500-D. Its wide open access makes for simpler, quicker servicing. Even the hydraulic oil cooler and radiator conveniently tilt out for cleaning and servicing.

Ask your Toro Distributor about the comprehensive service manual that's available to help your mechanic troubleshoot, adjust, test, and repair major systems and components of the 4500-D.

Reelmaster® 4500-D Specifications* (continued)

REELMASTER 5, 7 OR 11 BLADE CUTTING UNITS (cont.)	
BEDKNIFE/BEDBAR	Replaceable single edged high carbon alloy steel bedknife mounted to the bedbar with screws. Precision machined bedknife and bedbar.
REEL TO BEDKNIFE ADJUSTMENT	Reel is adjusted to bedknife with precision screw-type adjusters. Stainless steel and sintered bronze components.
REAR ROLLER	3.5" (9 cm) diameter, heavy duty rear roller with bearings and seals. Roller bearings are greased through protected fittings on shaft ends. Steel roller has greaseable tapered roller bearings with double lip seal. Zinc plate shaft for long, trouble-free service in corrosive/high moisture environments.
HEIGHT OF CUT (HOC) ADJUSTMENT	Heavy duty casting supports on either end of roller are adjustable for different HOC ranges. Supports locked in place on stainless steel shaft with two self centering steel nuts.
HEIGHT OF CUT & CLIP FREQUENCY	**5 Blade Cutting Unit** / **7 Blade Cutting Unit** / **11 Blade Cutting Unit** **Height of Cut range:** 1 – 4" (25 – 102 mm) / 1/2 – 2" (12.7 – 51 mm) / 3/8 – 1" (9.5 – 25 mm) **Clip Frequency (adjustable):** 0.176" clip per mph (4.47 mm per 1.609 km/h) / 0.126" clip per mph (3.2 mm per 1.609 km/h) / 0.080" clip per mph (2.03 mm per 1.609 km/h) Multiply clip by operating speed. All @ 1200 rpm maximum reel speed.
WIDTH OF CUT	No. of Cutting Units: 1 / 3 / 4 / 5 Width of Cut: 29.5" (75 cm) / 83" (211 cm) / 110" (279 cm) / 137" (348 cm)
CUTTING CAPACITY	Up to 10.5 acres (4.25 hectares) per hour maximum at 7.5 mph (12 km/h); assumes no overlap or reduction due to turns, stops, etc.

THATCHING REELS	
THATCHING UNITS	Model 03730: left, 2 required per machine. Model 03732: right, 3 required per machine. Skids are included with each unit. The fixed head mount kit is recommended to facilitate the mounting of thatching reels.
THATCHING WIDTH	Effective width per unit — 27" (68.5 cm); overall width of set of 5 units — 134" (340 cm).
PENETRATION DEPTH	Infinitely variable through rear roller up to a maximum depth of 1.12" (28 mm).
REEL CONSTRUCTION	Reel diameter: 9" (23 cm). Hardened steel blades are .105" (2.7 mm) thick. Spacing between blades — 1.25" (31.8 mm).

REELMASTER 4500-D ACCESSORY MATRIX

	5 Blade Cutting Units Model 03752/L Model 03753/R	7 Blade Cutting Units Model 03754/L Model 03756/R	11 Blade Cutting Units Model 03741/L Model 03751/R	Thatching Reels Model 03730/L Model 03732/R	Cruise Control Kit Model 03770	4-Post Roll Over Protective Structure
2 Wheel Drive Traction Unit, Model 03702	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.
4 Wheel Drive Traction Unit, Model 03704	Opt.	Opt.	Opt.	Opt.	Opt.	Std.
Flotation Mounting Kit (5), Model 03760	Opt.	Opt.	Opt.	Opt.	—	—
Fixed Head Mount Kit (5), Model 03762	Opt.	Opt.	Opt.	Opt.	—	—
Full Front Roller Kit (5), Model 03742	Opt.	Opt.	Opt.	—	—	—
Wiehle Front Roller Kit (5), Model 03740	Opt.	Opt.	Opt.	—	—	—
Side Skid Kit (5), Model 03744	Opt.	Opt.	Opt.	Std.	—	—
Sectional Front Roller Kit (5), Model 03738	Opt.	Opt.	Opt.	—	—	—
Rear Roller Scraper Kit (1), P/N 59-6090	Opt.	Opt.	Opt.	—	—	—
Front Roller Scraper Kit (1), P/N 62-6220	Opt.	Opt.	Opt.	—	—	—

*Specifications and design subject to change without notice. "Toro" and "Reelmaster" are registered trademarks of The Toro Company, 8111 Lyndale Avenue South, Minneapolis, Minnesota 55420-1196. Products depicted in this advertisement are for demonstration purposes only. Actual products offered for sale may vary in design, required attachments and safety features. Consult your local Toro distributor.

Easy on the Environment. 50% Recycled Fiber - 10% Post Consumer.

Commercial Products

TORO®

Helping you put quality into play.™

Form No. 94-60-T

Printed in U.S.A

Superior Cutting Technology.

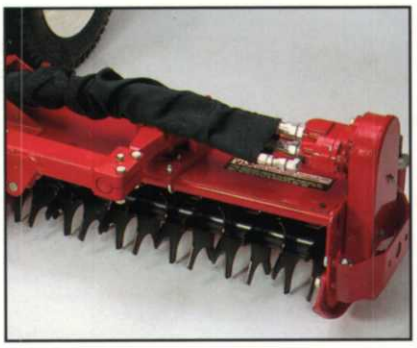
Several factors afford the 4500-D its reputation for superior cutting quality. Like equal cutting unit suspension. This means each reel places the same pressure on the turf, so there's no mismatch.

Toro's exclusive reel speed adjustment knob allows you to maintain a higher quality of cut over a variety of turf conditions. Only you know if the turf is wet, dry, short or high. So Toro gives you the ability to adjust for these and other factors.

You can infinitely adjust height of cut on both sides of the reel. Positive adjustments lock the roller into place and assure constant reel to bedknife positioning for an even cut your golfers will surely appreciate.

Accessorize.

Customize your Reelmaster 4500-D with 5, 7 or 11 blade, fixed or floating cutting units. Other options include full, sectional or Wiehle rollers, thatching reels and cruise control.



Reelmaster® 4500-D Specifications*

2-WHEEL DRIVE, MODEL 03702, OR 4-WHEEL DRIVE, MODEL 03704 TRACTION UNITS

ENGINE	Mitsubishi, 4 cylinder, 4 cycle, liquid cooled diesel engine rated at 55 hp (41 kW); governed to 40 hp (30 kW) @ 2300 rpm. Displacement: 139 cu. in. (2278 cc). Compression ratio: 21:1. Oil capacity: 6.9 quart (6.5 liter); with replaceable spin-on filter. Heavy duty 3-phase air cleaner.
RADIATOR AND OIL COOLER	Full flow hydraulic oil cooler. Heavy duty radiator with 7-row staggered tube construction. Oil cooler swings away for cleaning access. Engine cooling system capacity: 3.7 gallons (14 liters). High efficiency 2-speed engine fan.
FUEL SYSTEM/ CAPACITY	Rotary fuel injection pump with energized-to-run fuel flow and temperature controlled automatic timing advance. Replaceable spin-on fuel filter/water separator has built-in water sensor with front console warning to protect engine. Fuel capacity: 15 gallons (57 liters); No. 2 diesel fuel.
FRAME CONSTRUCTION	Chassis construction is precision welded high strength tubular steel.
TIRES/WHEELS/ PRESSURE	Front: (2) 31 x 13.50-15, 4-ply high flotation turf tire with tubes on bead-lock wheels. Rear: (2) 23 x 10.50-12, 6-ply high flotation turf tires. Recommended tire pressure: 13 psi (90 kPa) – front; 15 psi (103 kPa) – rear.
BRAKES	Hand brake has mechanical interlock. Twin disc brakes for parking/emergency brake. Dynamic braking through closed-loop hydrostatic drive.
STEERING	Automotive-type full power steering.
GROUND SPEED/ CLEARANCE	Mowing speed: 0-7.5 mph (12 km/h). Transport speed: 0-12.5 mph (20.1 km/h). Ground clearance: 7" (178 mm) at 1/2" (12 mm) height of cut measured at No. 1 cutting unit.
TRACTION DRIVE	**2 Wheel Drive**: Closed loop hydrostatic system driving industrial double planetary gear reduction front wheel drives. **4 Wheel Drive**: Closed loop hydrostatic system driving industrial double planetary gear reduction front wheel drives in parallel with two high torque wheel motors. Solenoid-operated selector valve.
CONTROLS	Foot operated traction pedal and front cutting unit latch release. Adjustable traction pedal stop. Ergonomically designed reel lift, on/off and reel speed adjustment controls. Special link allows simultaneous operation of controls during cross cutting applications. Backlap position has interlock to prevent chance reverse. Hand operated engine throttle and parking brake.
GAUGES/ DIAGNOSTICS	Gauges: speedometer, fuel level, engine temperature, hour meter. Diagnostic pressure test ports: traction forward/reverse; cutting, lift and steer circuits; charge pressure, and counterbalance circuit. Warning systems (with light and alarm): low hydraulic oil level, hydraulic filter change required, low voltage indicator, high reservoir oil temperature, low engine oil pressure, water in the fuel, high engine temperature (override button allows unit to be moved short distances), air cleaner restriction.
INTERLOCK SYSTEM	Prevents engine starting unless parking brake is engaged, traction pedal is in neutral, and cutting units are disengaged. Seat switch. Low hydraulic oil level and engine high temperature protection system also prevent starting engine.
ELECTRICAL FEATURES	2 kW electric starter with 35 amp alternator. Heavy-duty, maintenance free, 12 volt, 65 amp-hour battery. Ignition switch, glow plug, push button, and voltage indicator light.
SEAT	Deluxe seat with armrests, adjustable backrest angle and suspension adjustable for operator's weight. (Seat belt standard on Model 03704.).
OVERALL DIMENSIONS (approx.)	**Model 03702:** Height 57" (145 cm)[1] Length 112" (284 cm)[2] Wheelbase 58" (145 cm) Wheel Tread 51" (130 cm) Width 89" (227 cm)[1]/ 147" (374 cm)[3] **Model 03704:** 81" (207 cm) w/ROPS 116" (295 cm)[2] 58" (147 cm) 51.5" (131 cm) 89" (227 cm)[1]/ 147" (374 cm)[3] [1]With cutting units raised; [2] with cutting units; [3] with cutting units lowered
WEIGHT	**2-Wheel Drive**: 4,040 lbs. (1,832 kg) with 11 blade cutting units, baskets and full fluid levels. **4-Wheel Drive**: 4,360 lbs. (1,978 kg) with 11 blade cutting units, baskets and full fluid levels.
WARRANTY	One year limited warranty. Refer to the appropriate Operator's Manual for further details.
CERTIFICATION	Certified to meet the B71.4-1990 specifications of the American National Standards Institute's safety standards for riding mowers when equipped with rear ballast per operator's manual.

HYDRAULIC SYSTEM

CUTTING UNIT DRIVE SYSTEM	High efficiency fixed displacement pump. Filtration and cooling of the full cutting circuit flow for cool running, long life. Flow control system maintains constant reel speed regardless of cutting load. Reel speed is adjustable to permit matching clip length to ground speed while maintaining full engine power availability. Backlap capability. High torque toothed belt on reel drive.
CUTTING UNIT LIFT SYSTEM	Hydraulic lift system provides for simultaneous or independent lift control. Lift valve has automatic float position feature. Center three cutting units operate together; two wing units operate individually. Reels automatically shut off when raised. Mechanical transport locks may be released without leaving operator's seat. Single acting lift cylinders with air bleed screws.
HYDRAULIC OIL RESERVOIR	11 gallon (42 liter) capacity with large diameter fill cap with stainless steel strainer. Sight glass level indicator. Remote-mounted 40 micron replaceable breather element. Water collector/drain fitting. 125 micron suction screen. Internal baffle system. Oil level warning protection switch.
HYDRAULIC FITTINGS	Hydraulic system utilizes O-ring face seals at all connections.
HYDRAULIC FILTRATION	A single large spin-on hydraulic filter element. A filter change warning light is on the front console.

REELMASTER 5, 7 OR 11 BLADE CUTTING UNITS

TYPE OF CUTTER	Five 30" (76 cm) reels.
CUTTING UNIT CONSTRUCTION	Welded steel frame, welded reel with heavy duty, self aligning bearings. Precision machined cast iron bearing housings support reel. Bedbar and rear roller are isolation-mounted in rubber bushings. Adjustable deflector shields standard.
REEL CONFIGURATION	8" (20 cm) diameter; 5, 7 or 11 blade reels available. Heavy duty, all welded construction with hardened alloy steel blades.
CUTTING UNIT SUSPENSION	Patented cutting unit head using heavy duty U-joint provides precision mounting; choice of 1-axis or 2-axis cutting unit flotation. The fixed head, 1-axis flotation is suitable where ground contours are minimal. High strength forged alloy steel pivot with sealed needle bearings for all direction free flotation. Equal length lift arms act uniformly on all five cutting units. Counterbalance force is adjustable to match the cutting unit options installed and local conditions. Plated lift arm pivot and cylinder pins.

*Specifications and design subject to change without notice.