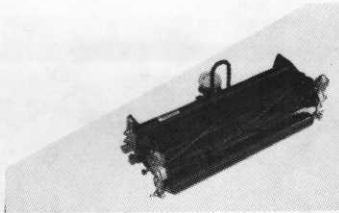


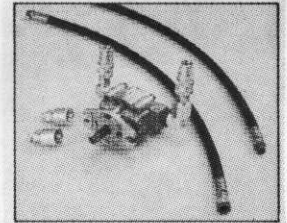


GREENS REELS

New



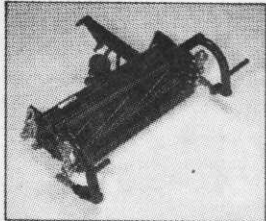
TEE REELS



NEW BACKLAPPING KIT
Model 04425
Backlapping Kit for
Greensmaster 300.

Cutting Units

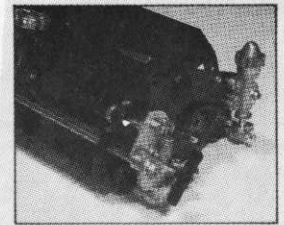
SINGLE KNOB ADJUSTMENT



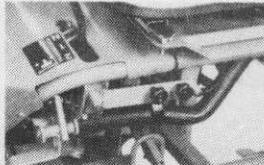
NEW PULL FRAME — LIMITED FLOATATION
Model 04452
Replaces standard floating carrier frame for special cutting applications requiring more down force.

New Options

NEW QUICK HEIGHT-OF-CUT CONVERSION KIT MODEL 04451
Quick Height-of-Cut Kit allows 6 cam setting by flip of a handle, each altering H.O.C. by .100 inch, total range of 1/2 inch above base setting of cutting unit.



Reel Shut-Off Kit

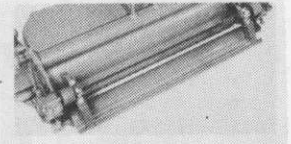


Allows operator to shut off one or two reel assemblies when cutting around greens.

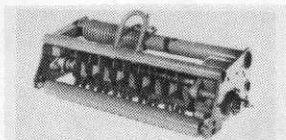


New Greensmaster 300

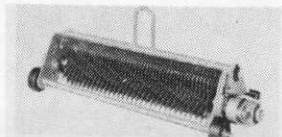
Rear Roller Cleaner Kit



Spring-mounted to assist in keeping rear roller free of grass buildup.

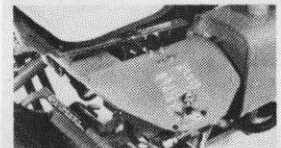


Toro's special profile-tooth blades spike cleanly without ruffling turf so greens are playable immediately after spiking. An adjustable transfer spring brings weight from the traction unit to bear on the reels 57" spiking width to achieve the maximum penetration of 1/4".

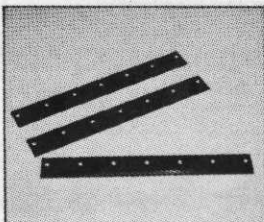


The spiral blade pattern of Toro's thatching units means less wear on the drive motors through more efficient thatching and throwing of thatch into baskets. The spacing between blades over the three reels 59" thatching width is adjustable from 1/2" to 1 1/2" to allow depth-of-thatch adjustments in meeting varying turf conditions.

Variable Speed Kit

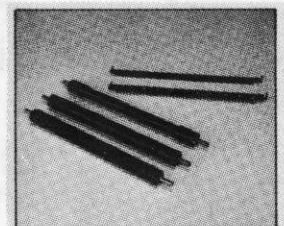


Provides infinitely variable speed control from 0 to 3.5 mph. Allows operator to select the constant ground speed that ensures the desired constant clip as the cutting units mow. For a finer clip at low heights of cut, or for easy maneuvering in tight spots, simply adjust the speed downward.



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HOLE NOTES

OFFICIAL PUBLICATION OF THE
MINNESOTA GOLF COURSE
SUPERINTENDENTS' ASSOCIATION

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PRESIDENT'S DESK CONTINUED

meeting and extravaganza..EVER!!!!

My position and the availability of this column gives me license to gloat about this subject. If anyone wants further information, or a fishing lesson, I can be contacted at the phone number listed elsewhere in this issue!!



FROM THE PRESIDENT'S DESK

DALE CALDWELL

There I was...eyeball to eyeball with the biggest walleye I had ever seen! Certainly the biggest walleye Mark Smith had ever seen! The entire hole in the ice under the fish house was filled with the gigantic walleye's head. As I worked the fish into position to get it into the house, my heart was pounding. I slowly pulled the fish out of the water. I could not believe my good fortune. The big fish was one third out of the water when I found a broken line was all I held in my hands. My heart stopped beating momentarily. The walleye began to sink back through the hole in the ice. I screamed in anguish, "Darn it!!!" At that instant I thought all was lost. I began imagining that no one back at the lodge would believe that I was this close to actually catching a fish that wasn't an eel pout or a rock bass, particularly with Mark Smith as my only witness. Others would know that Mark had accompanied me on fishing excursions in the past. At that moment I knew I had to have that fish in my possession or forget about telling this tale. Especially, considering my reputation as a less than average liar at the liar's poker table. I plunged my hands into the icy water up to my elbows, grabbed the big fish by the gills, hoisted it through the hole and threw it to the floor of the fish house, exhausted. Mark adequately summed up the fierce battle as he stared at the huge walleye and said, "Holy cow, what a fish!"

This entire episode took place within twenty minutes from the time we positioned ourselves in the fish house. We didn't catch another walleye the remainder of the time spent fishing, which amounted to the next nine hours. It was worth it as we were the last to arrive at the lodge for dinner and the business meeting. I walked through the lodge in the company of one of the largest walleyes caught during the January fishing

RESEARCH REPORT SUMMER PATCH OF ANNUAL BLUEGRASS CAUSED BY PHIALOPHORA GRAMINICOLA

by J. M. VARGAS, JR.
D. ROBERTS
R. DETWEILER

Back in 1983 and to a lesser degree in 1984 many golf courses in the mid-west experienced severe late summer turf loss on their annual bluegrass fairways. This even occurred on golf courses where the superintendents were utilizing good fungicide programs for the control of diseases such as anthracnose, collar spot and brown patch. The initial symptoms were a chlorotic yellowing of the turf in patches from 3 inches to 3 feet in diameter with most patches being approximately 6 inches to a foot in diameter. The disease was believed to be caused by the unusually hot summer and especially the warm nights. Examination of the roots in these patches revealed dark colored mycelial strands of a fungus running parallel along the roots. These runner hyphae, as they are known, are very characteristic of Gaeumannomyces like organisms.

This root fungus was isolated into pure culture by picking stands of runner hyphae off the roots under a dissecting scope. Several techniques were tried to induce the fungus to produce a sexual stage so a positive identification could be made. All attempts failed so it was decided to try and identify the fungus on the basis of its asexual characteristics. After a thorough literature search of articles dealing with the identification of Gaeumannomyces-like organisms, the fungus was temporarily identified as Phialophora graminicola. Samples of the fungus were sent to other turf pathology laboratories and cultures of P. graminicola were obtained from them for comparison. These results confirmed our initial findings that the organism responsible for the patch disease in annual bluegrass during warm weather is Phialophora graminicola. This same fungus has been shown to cause a similar patch disease in Kentucky bluegrass (it is believed to be the same disease we formerly called Fusarium blight), This disease is called summer patch in Kentucky bluegrass.

We see no reason to change the name for this disease caused by P.graminicola in annual bluegrass, therefore, this disease will now be referred to as summer patch.

Inoculation studies were also conducted on annual bluegrass during this period of time to be sure P.graminicola was the pathogen responsible for the patch disease. The plants were inoculated with P.graminicola and placed at two temperatures (22°C and 32°C). The plants at 22°C showed only a slight stunting compared to the untreated check plants, whereas plants maintained at 32°C showed much more severe yellowing and stunting which led to the death of approximately 70% of the plants. This symptom progression was very similar to what occurred in the field.

Field studies were established in the summers of 1983 and 1984 on annual bluegrass fairways on the Walnut Hills Country Club in East Lansing, Michigan and on the Orchard Lake Country Club in Orchard Lake, Michigan. In the 1983 fungicide trial, single applications of Tersan 1991 (8 oz/1000ft² drench) and Bayleton (4 oz/1000 ft² drench) gave good control of the disease, while Banner (2fl. oz/1000 ft² drench) gave some control and Chipco 26019 (4 oz/1000 ft² drench) was ineffective. The mild summer of 1984 resulted in reduced disease levels, and therefore, the disease did not reoccur in our plots. Further studies are planned for this summer in an attempt: 1) to find other effective fungicides; 2) to further define application rates and timing; and 3) to confirm the findings of the fungicide trial of 1983.

We wish to thank the Minnesota Golf Course Superintendents' Association of America for providing financial support for this project from their research funds. We also wish to thank them for their aid in obtaining funds from the U.S.G.A. and the G.C.S.A.A.

We will update you on the progress of this research project next year.

HELP WANTED

Golf Course Manager, Chaska Par 30
Seven month position. Responsible for maintenance and operation of golf facility and programming. For application or additional information, contact Tom Redman, Director of Parks and Recreation, City of Chaska, 612/448-5633.

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UPDATE:

U.S.G.A. PROGRAM AT MANKATO GOLF CLUB

by BOOTS FULLER
GOLF COURSE SUPERINTENDENT
MANKATO COUNTRY CLUB

How time flies!! Seemed like only yesterday, but in reality, September of 1980 was our initial contact. So many things have transpired at our golf course that have been related to our part of the U.S.G.A. program.

To refresh you readers, our initial problem was originated by a pythium strike on the greens during that summer which was diagnosed by the U.S.G.A. as, in part, caused by too much water and too much nitrogen. When the turf agronomist visited us and told us that we would have to change, many of our members were also going to have to change. And the result was a focal point on the controversy of the smooth, firm, fast green as opposed to the lush, dark colored, soft and somewhat slower green. You all can identify with stimpmeter readings and no one is really certain today as to the merits of that instrument.

For us, this meant a compliance with the U.S.G.A. recommendation which was: 1) To develop a deep root system which could better withstand the stress of both summer and winter; and 2) To implement the cultural practices which would give us a more consistent and reliable turfgrass, yet develop and retain the resiliency to counter our heavy play.

Aerification with 5/8" tines, removal of cores and "filling the holes" with high concentrates of sand (we also used peat - anywhere from 10% to 30% of the total mix) was done in the spring and fall. Heavy overseeding with Penneagle was done twice a year. Nitrogen applications were reduced to about 1 1/2 lbs. per 1000 sq. feet per season on the greens. Watering was held to a minimum. We dropped our height of cut to 5/32", mowed with vertical units, eventually dropping our cut to 1/64", and by the summer of 1983 were rolling consistently between 10 1/2 feet and 11 1/2 on the stimpmeter. The greens were super fast,

super smooth, and except for a lack of color, were among the best conditioned greens I saw.

Needless to say, problems developed. 1) The PH level increased; 2) We became potassium deficient; 3) We had to add iron sulphate frequently; and 4) Last summer, we had to finally increase the fertility level. We also raised the cut back to 5/32" because the majority of our members couldn't handle or didn't want those "11 foot rolls" on the green.

We have also moderated our frequency of topdressing, the size of our core pulling has been reduced to the 1/2" size, and we only aerified and pulled cores once last year.

The 1985 season will see some further modification. We are planning to 1) Aerify with 1/2" tines once, pull cores and topdress; 2) 5/32" cut; 3) Vertical mowing frequently; 4) Light nitrogen feeding totaling about 2 1/4 lbs. per 1000 feet for the entire season; 5) Light, controlled watering; 6) Frequent iron feeding; 7) Spring and fall feedings of 0-0-50; 8) Spring and fall feedings of sulfur to help keep that PH reading under control; and 9) The continued overseeding as Penneale is available.

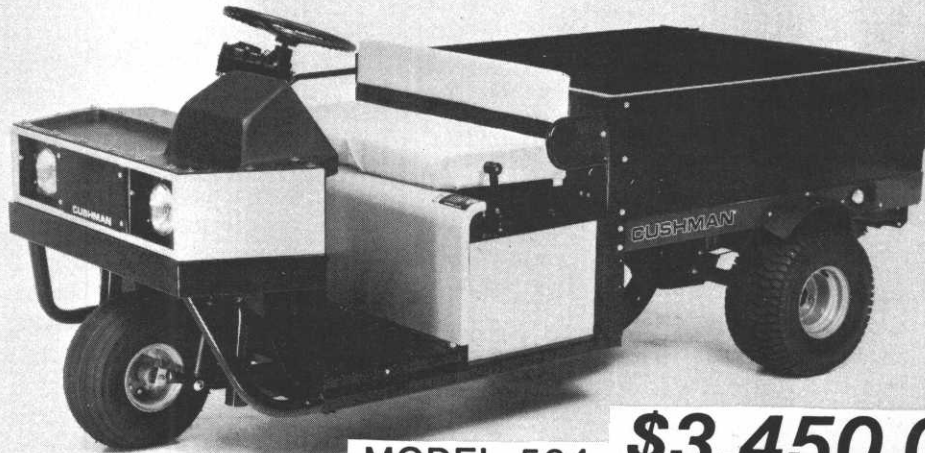
I have been immensely pleased with what the U.S.G.A. has put into our program. Their program alienated some of our members who still think that a green should "hold" that "Blue-darter" that comes in on that low trajectory from 180 yards out. However, I feel that within reason any program can be adjusted to meet the needs of the members. This has become our primary concern. No one is trying to make our course into a U.S.G.A. championship caliber course. The first and last concern is still the members. We feel that we are striving to make that come true.

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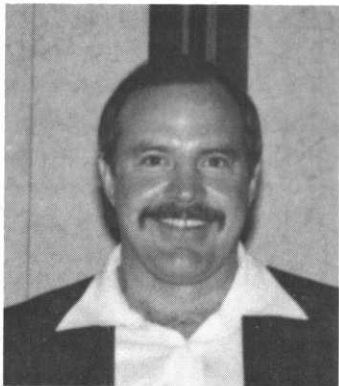
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EDITOR'S CORNER

FRED ANDERSON, JR.

It looks like Dale Caldwell caught the biggest fish at Mille Lacs Lake, an eight pound walleye. Rumor has it that he was seen coming out of Morrey's Fish House with a package under his arm (about the size of an 8 pound walleye). Congratulations are also in order for Dave Krupp, Mike Redmond and Lyle Olson for landing the "elusive Mille Lacs Lake Silver Sucker", a fish noted for its fighting and great leaping ability. Again guys, a great job of fishing! A great deal of thanks go out to Wally Benson and his staff for another super day of fishing, excellent meal and friendly atmosphere. I know that every one in attendance had a very enjoyable outing. Thanks also go to Dan Miller of R. L. Gould's, Richard Berscheit of P & H Warehouse Sales Co., and to Rick Frederickson of Rolling Green C.C. for their contributions of knowledge and ideas that they shared with us all in last month's newsletter.

According to the 1984 Tax Reform Act effective January 1, 1985 anyone who has a company vehicle will be responsible for recording all mileage. If you comply, you will keep your business vehicle tax benefits. If you fail to comply, the IRS will disallow all deductions and credits (i.e. no depreciation, no investment credit, no oil, gas or maintenance deductions) regardless of how legitimate your arguments may be regarding business use of the vehicle. What it amounts to is no daily mileage log - no deductions. Also this must be done to protect your club's tax depreciation. If this log is not properly maintained, besides the loss of the club's deductions, you will be issued a form 1099 or W-2 treating the value of the use of the vehicle entirely as compensation. I would suggest you contact your club's accountant for a more exact explanation of properly keeping your mileage log.

Don't forget to mark on your calendar the date March 11 for the Mini-Seminar to be held at Majestic Oaks. It sounds like a great slate of speakers will be on hand.

CHANGING TIMES

by KURT ERDMANN
SUPERINTENDENT
ROCHESTER GOLF & COUNTRY CLUB

Golf course maintenance forty years ago was quite different from today's demand for perfection. In 1944 I began working at Soldiers Field Municipal Golf Course in Rochester. There were three people employed for golf course maintenance. One man did the fairway mowing which also included mowing the collars with one wheel running on the greens and cutting the tees with the same mower with the tractor driving right over the tees. The second man would change the cups and come in early in the morning to water the greens and tees with the old California type sprinklers which had to be moved about four times. This left the third person to cut greens which were mowed every other day. We used a Worthington Overgreen which was a walk behind triplex. The tractor would pull the mowers that were roller driven. Obviously, triplex mowers are not anything new but rather they are much more efficient today. They are now hydraulically driven and have a much smoother and superior cut. We also had one 18" Toro pony greens mower.

In those days there weren't many pesticides used compared to the number used today. We would use milorganite to fertilize the greens, in the spring and fall a muriate of potash would be mixed in and in the summer arsenate of lead was mixed in to get rid of insects. As I think back to those days, we didn't know what poa anna was....we never had any. The probable reason for its non-existence is the use of arsenate of lead and there was as little watering done as possible. Thatch did accumulate on the greens and to combat this we used a delmonte rake which had to be pushed by hand to accumulate a two-wheel trailer load which was removed from each green in the spring. The only other pesticides used were calo clor and thiram for summer disease which was mainly brown

patch. The calo clor was also used in the late fall for snow mold. 24D was used for weeds.

We did topdress greens approximately once per month using a hand pulled topdresser. Two men would pull and one would push. The topdressing materials were mixed off season using a 1-1- 1- mix; one sand, one soil and one peat.

Tees got very little attention outside of occasional fertilizing and watering. However, the last thing we did in the fall before putting the course to bed for the winter was to go to a farm and buy rotted manure. (This is a lot like compost). It was spread on heavy by hand shoveling. The tees would be overseeded prior to spreading on the manure. The tees always seemed to be in good condition the following spring.

Today in 1985 the golf course is groomed to no end. The greens are cut daily at 3/16", 5/32" and some are even cut at 1/8". Tees are cut at our course on Mondays, Wednesdays and Fridays at 1/2". This doesn't even seem to be short enough. The fairways are cut every other day and long holes again on Saturday at 1/2". Roughs are cut at 1 1/2" on Tuesdays and Thursdays. Traps are raked with a power rake daily and are edged regularly to keep a sharp edge. During the three months of the warmer season we spray the greens for fungus on a preventative basis every 7 to 10 days. The tees and fairways are also sprayed for fungus. In the '40s we used four pesticides; today we are using dozens of pesticides...maybe far too many at the expense of the creation of many other problems. Our fairways are fertilized with three applications per season with 2 1/2 lbs. of N per 1,000. An application for tees is about 3 lbs. N per 1,000 and greens receive 5 lbs. N per 1,000 with K equal to 3/4 of N. In 1940 about half of this was used on greens and tees. The fairways received very little every other year or so.

Believe it or not, the whole golf course operating budget back then was under \$25,000 and we had quite a good golf course. Today's operating budget is reaching \$13,000 per hole plus additional funds for course improvements. This cost will continue to grow as competition increases.

In looking back, maybe it was easier forty years ago. Costs were relatively low and competition had not begun to escalate the costs of maintaining a top-notch course. The job of a maintenance crew was restricted to mostly physical labor. However, today with computerized irrigation systems, licensing requirements for pesticide control and the latest technology being utilized in equipment makes the career an exciting choice. The role of the golf course superintendent is constantly changing, giving us the opportunity to expand our minds and grow as individuals.

NEW ERA IN NEW PRAGUE

by W. SCOTT PROSHEK
BOB ADAMS
NEW PRAGUE GOLF CLUB

Fast approaching (possibly an earlier opening than usual) is my 5th year as manager and the on again, off again position of assistant superintendent. Each year has offered its own challenges, met with mixed results. Nevertheless, the learning process goes on.

Our past superintendents have been exclusively from the retired farming section. Being originally from New Prague, I've seen the course come a long way over the years. These farmers have done an excellent job providing our players with a course to be proud of. Yet not one of these former superintendents has received any formal turfgrass education nor been a member of the M.G.C.S.A.

New ideas in the turfgrass business are changing so quickly that it's time for us to change also. This past year we hired Bob Adams as superintendent and Bob and I joined the M.G.C.S.A. What we have learned through the association's monthly meetings, Mini-seminars, the recent annual conference or a simple one on one conversation has been enormously beneficial. My only regret is that I should have joined long ago.

Patience seems to be the theme Bob and I are experiencing now. Convincing members of needed changes is maintenance schedules and programs is easier said than

(Continued on page 9)

MEMBERSHIP REPORT

DOUG MAHAL
MEMBERSHIP CHAIRMAN

The size of M.G.C.S.A.'s membership has grown very steadily the past several years. I think one can attribute that strong growth to one thing - we're offering a necessary service to our members. And if we can continue to grow in numbers, the quality of those services will only improve. If you know of any potential members, encourage them to give me a call. It will benefit us all.

The following have been approved for membership since our annual meeting:

Greg Spencer, Class A
Barry Warren, Class A
Lee Kirchgather, Class A

The following are classification changes as of December 11, 1984:

Steve Sinclair from C to BII
John Sheedy from BII to B
Peter Mounts from B to A

Jim Krumwiede from BII to A
Richard Smith from BII to A
Larry Bellew from B to A
Brooks Ellingson from D to BII
Charles Vedvick from BII to A
Dean Pelkey from D to BII
Jeff Elseth from D to E

RECRUIT A NEW MEMBER!

If you know someone, a friend, an assistant, a co-worker who is interested in our association . . . be sure to bring them to our next meeting.

NEW PRAGUE from page 8

done....especially, if they seemed a bit content in the old way. Obvious advantages to these different procedures are sometimes not provided immediately.

So as we look to the future we aim to utilize more to our advantage the technological advances now available to us. Our first step in the right direction was made this spring when we joined the M.G.C.S.A. Our next is to put into action those ideas, therefore, enabling us to continue to play on a course where all can be proud.

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time
and
money.**



ASSOCIATE'S CORNER

by STAN KINKEAD
NATIONAL MOWER COMPANY

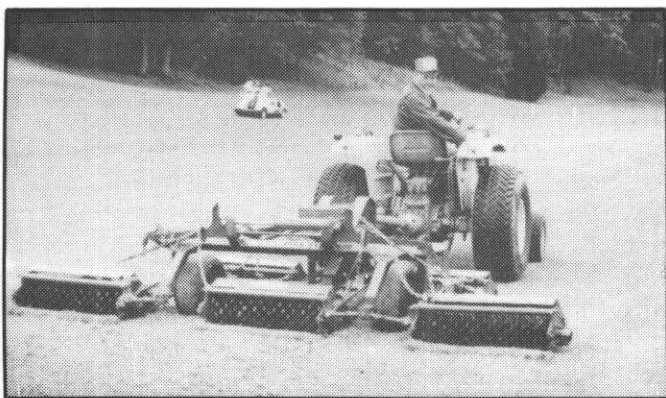
The National Mower Company was founded in 1919 by my grandfather, R. S. Kinkead, Sr., in Minneapolis, Minnesota. The first product he built was a gasoline powered 25" mower. The first mowers were equipped with a two cylinder, two cycle engine which was also manufactured by National Mower Company. The engines proved to be too costly so the mowers were equipped with a Maytag gasoline engine.

Around 1921 R. S. Kinkead and Mr. W. W. Brewer of Somerset Country Club got together to improve friction drive gang mowers. Mr. Brewer wanted gears to last longer in his gang mowers. R. S. Kinkead proposed to use cut steel gears instead of the powdered metal gears which were being used. National also started to use Timkin Roller Bearings for the reels at this time. A single 30" friction driven gang mower cost \$95.00 in 1921.

Presently we manufacture a 68" Triplex, 84" Triplex, 5 Gang PTO driven mower and a new 30" Front-throw walking power mower. National to this day enjoys a reputation of building one of the toughest reel and bed knives in the industry. We are presently located at 700 Raymond Avenue in St. Paul. I invite any superintendents in the area to please call and come and see our factory if they have the time.

I am a third generation Kinkead at National Mower Company. R. S. Kinkead who founded the company is 98 years old and still comes to the office five days a week. I attended St. Thomas Academy and St. Thomas College. My employment started in 1969, part time, at National. My wife, Kathy, and I live in the Highland Park area of St. Paul. We have three daughters ranging from one year to seven years old.

MOW WITH BROUWER



- Positive drive with no wheels and gears.
- Simple hydraulic lift design.
- Available in 3-5-7 gang models.
- Choice of 4-5-6-7 bladed reels.
- Produces a consistent uniform cut.
- Economical to buy and maintain.



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YOUR PLANT NUTRIENT HEADQUARTERS

TURF MIX

0-0-0 MINIMUM GUARANTEED ANALYSIS

Boron.....	.04%
Iron.....	2.50%
Magnesium.....	1.50%
Manganese.....	.10%
Sulfur.....	4.00%
Zinc.....	.10%

Derived from Sulfur, Iron, Magnesium, Manganese and Zinc Glucoheptonate.
Boron derived from Sodium Borate.

- ALSO:
- Sprayable - Sulfate of Potash
 - Sprayable - Sulfur
 - Chelated Iron
 - Granular materials also available



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