

1978 Managers Guide to Equipment,
Chemicals and Supplies

WEEDS TREES & TURF

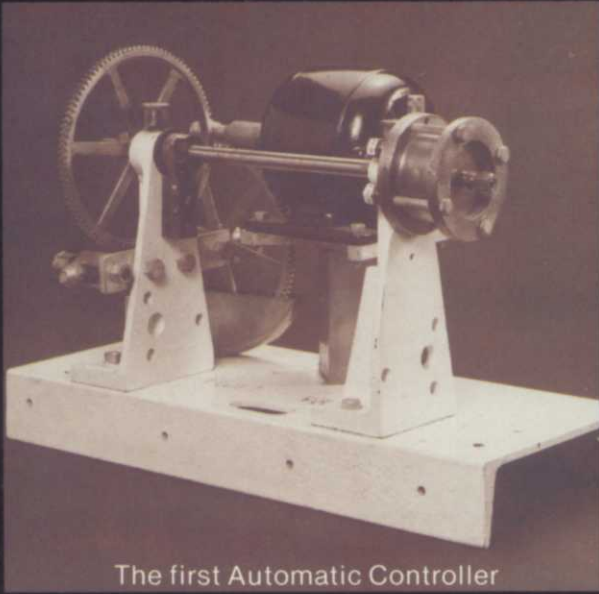
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SEPTEMBER 1977, Vol. 16, No. 9

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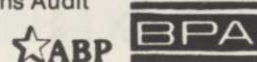
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Single Copy Price: \$1.25 for current and all back issues. Foreign \$1.50. Subscription Rates: WEEDS TREES AND TURF is mailed free, within the U.S. and possessions and Canada, to qualified persons engaged in the vegetation care industry and related fields in controlled circulation categories. Non-qualified subscriptions in the U.S. and Canada are \$10.00 per year; other countries, \$12.00 per year. Controlled circulation postage paid at Cleveland, Ohio 44101.

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TO OUR READERS

This month has been especially demanding. Compiling any lengthy directory would seem to be. We have added a new section, a chemical listing. I know there might be more chemical manufacturers out there than the ones we have listed. So before you sit down to write that irate letter, please realize first that there might not have been a way we could have known . . . excuses, etc.

Please do, however, inform us of the company name, address, chemicals or equipment it manufactures and what each is used for. The only way a directory can be perfect is to include everyone!

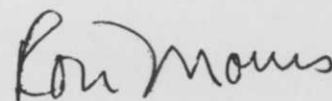
If you read thoroughly your last issue of WEEDS TREES & TURF, you will have noticed that this month's issue was to include the winners of the annual WEEDS TREES & TURF awards. This is not the case, however, as a time factor proved otherwise. You will have to remain in suspense another month.

This month the WEEDS TREES & TURF staff traveled to St. Paul and saw first hand some of the equipment and methods that are used to produce fine sod. See page 29 for more details and photos.

WEEDS TREES & TURF was also at the Rutgers field day in New Jersey. Many extensive experiments are underway there that are already benefiting the "Green Industry." The many experiments will continue to provide results that will benefit us in the future.

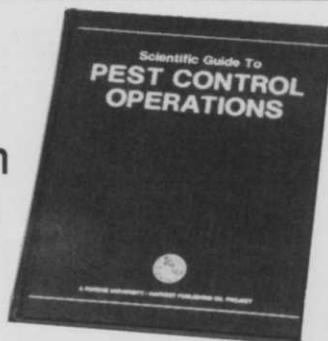
The feature story on page 14, you need to read. Mr. LeSieur did extensive research and talked with many turf managers about equipment. Read it and find out how the others do it.

And if you need a ground cover that is highly salt tolerant and requires little moisture, be sure and check out the "Corto" Australian saltbush story on page 46.



Ron Morris
Assistant Editor

This book is
the latest on
pest control
operations



Purdue University and PEST CONTROL Magazine have teamed up to publish the most current and comprehensive guide to industrial pest control available today. An Environmental Protection Agency study found the book to significantly help supervisory personnel and yet said it is written in a manner that is of practical value to any member of a pest control company or department. This third edition is in its second printing within one year. Order your today.

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It runs through the briars, it runs through the brambles and it runs through the timber where a rabbit couldn't go.

If the British had used a Klearway at the battle of New Orleans, they could have beaten a hasty retreat and returned to face "Old Hickory" another day.

For any job, you must have the proper equipment. You certainly wouldn't try to cut through a jungle with a penknife. Although, some companies make a comparable error in their choice of right-of-way clearing equipment.

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KLEARWAY The army of one.



Government News

Applicators living in states which have not passed laws requiring a pesticide certification program that complies with EPA standards will have their training and certification programs administered by a regional office of the EPA.

Applicators in this situation will have to keep records of how they dispose of pesticides and take examinations every two years to renew their certifications. Nebraska and Colorado will probably fit into this category, according to Andrew Ceraker, senior regional officer in the EPA's office of pesticide programs.

The chances are over 90 percent that prospective pesticide registration application will be rejected, according to Edwin L. Johnson, Deputy Assistant Administrator for Pesticide Programs of the EPA.

Johnson gave two basic reasons: 1) The applicant "cannot submit or cite data to fulfill the current requirements of the registration (Section 3) regulations; or 2) the data upon which (the applicant) wishes to rely is claimed to be a trade secret by the data developer, who refuses to let the applicant rely on the information."

The conditional registration and the Sections 10 and 3(c)(1)(D) amendments approved by the Senate Agriculture Committee were cited by Johnson as solutions to these problems.

The North Carolina Agriculture Department used a crisis exemption to apply methomyl. It was used in several counties to control outbreaks of the fall armyworm on coastal bermudagrass.

A rebuttable presumption against registration (RPAR) notice against pesticides which contain cadmium is about to be issued by EPA, according to EPA sources. The EPA Carcinogen Assessment Group (CAG) cited studies which show a "statistically significant increase" in the incidence of prostatic cancer deaths among alkaline battery workers who had been exposed to cadmium for at least one year.

In addition, the CAG report said that cadmium salts "increase the frequency of point mutations and somatic chromosome aberrations" and "interact with and break DNA" among other things.

If issued, the cadmium RPAR will be the first RPAR to be issued on a natural substance. The RPAR would involve 30 registrants and 35 products -- all fungicides for turfgrass applications.

The EPA has issued three section 5 experimental use permits to Fisons corporation to allow use of 2,2-dimethyl-1,3 benzodioxil-4-yl methylcarbamate on turf to evaluate control of turf insects in Calif., Ill., Ind., Kansas, Md., Mass., Nebr., N.H., N.J., N.Y., N.C., Ohio, Okla., Penn., and Texas. One permit allows use of 585 pounds of the pesticide on 308 acres, another allows 152 pounds on 76 acres, and the third also allows 152 pounds on 76 acres.

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 20 Nylon Pounding Caps

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Make check payable to Ross Daniels, Inc.

Industry News

First EPA restricted pesticides designated

The first draft of the EPA Decision Summary regarding classification of certain pesticide products for "restricted" use has been published. More will be added as EPA reviews more compounds. Nearly all of the products listed are restricted for all uses for all formulations and concentrations. They include Aldicarb, TEPP/Tetraethyl Pyrophosphate, Ethylene Oxide, Paraquat, Picloram, Hydrocyanic Acid, Aluminum phosphide, Acrolein, Allyl Alcohol, Carbon Tetrachloride, Acrylonitrile, Sulfotepp/Bladafume, Calcium Cyanide, Methomyl/Lannate, Sodium Cyanide, Mevinphos/Phosdrin, Fluoroacetamide/1080, Methyl Bromide, Demeton/Systox, Ethoprop/Mocap, and Phorate/Thimet.

Manhattan ryegrass royalties top \$142,000

The Manhattan Ryegrass Growers Association has contributed over \$142,000 to further research of grasses at Rutgers University, according to Bill Rose, president of the association.

Manhattan perennial ryegrass was developed by Dr. Reed Funk of Rutgers, and the royalty payments to that university have been a big factor in maintaining the level of research there.

Phosphate producers join Potash group

The Board of Directors of the Potash Institute has approved a new phosphate program that brings major U.S. phosphate producers into the organization and changes the name to Potash/Phosphate Institute.

The first phosphate producers joining the Potash/Phosphate Institute are Agrico Chemical Co.; Inter-

national Minerals and Chemicals Corp.; Mobil Chemical Co.; Occidental Chemical Co.; Royster Co.; Smith-Douglass, division of Borden Chemical, Borden, Inc.; and Teasgulf Inc.

Basagran gets OK for nutsedge control

Basagran has recently been approved for supplemental labeling of yellow nutsedge (*Cyperus esculentus*) in commercial turf.

Basagran should be applied postemergence to nutsedge plants when they are actively growing. A second application may be made 10-14 days later if control is not adequate. Thorough leaf coverage is essential for maximum control and mowing should be delayed for 3-5 days after application.

In experiments at Ohio State University, Basagran gave excellent selective control. No phototoxicity occurred on desirable species where recommended rates were used.

NAA has slide/cassette programs available

The National Arborist Association has six cassette programs available. They are: Basic Instruction for a Tree Care Trainee; Climbing Techniques for the Professional Arborist; The Tools and Techniques of Pruning; The Reasons for Pruning; The Technique of Spraying; and Cable Bracing.

The cost of each slide/cassette program is \$50 and may be obtained from the National Arborist Association, 3537 Stratford Rd., Wantagh, N.Y. 11793.

New Scleroderris identified in U.S.

A new virulent strain of Scleroderris canker has been identified for the first time in the U.S. The out-

break has been identified in nine counties in New York's Adirondack Mountain area, covering 34,000 acres. Tree mortality has exceeded 90 percent on 2300 acres. Seriological work has shown that the new strain is identical to one present in Norway and Finland that has extensively damaged conifers in those countries.

The AAN has urged the Senate appropriations subcommittee on interior and related agencies to appropriate \$200,000 for research aimed at the control and, if possible, eradication of the new strain.

Wasted time adds up to big money loss

Time is money and wasted time means wasted money. This is obvious when you consider the cost of one wasted hour per day for your employees. Assuming your employee works an eight-hour day, 40-hour week, with paid holidays and vacations, that wasted hour can add up to big money in a year's time:

Employee's salary:	Cost to employer
\$ 5,000	\$ 625
7,500	935
10,000	1,250
12,000	1,500
16,000	2,000
20,000	2,500
25,000	3,125
40,000	5,000
50,000	6,250

Dutch elm disease symposium planned

The National Arborist Association will sponsor a symposium, Nov. 9-10 at the U.S. National Arboretum in Washington, D.C. on the "state of the art" of Dutch Elm disease control. Twelve researchers will share the podium with six representatives from industry. Contact NAA, Inc., 3537 Stratford Rd., Wantagh, NY 11793

New program to focus on people

A new management training program called Professional Effectiveness Program for Garden Center Managers is being jointly sponsored by the American Association of Nurserymen and Garden Centers of America. As in AAN courses of the past, the program will continue to concentrate on things like accounting procedures, cost control, budgeting, advertising, etc., but will now focus on the management of people.

The program will teach an understanding of sound management concepts and the practical application of them to the garden center situation. It is designed for anyone in a garden center who manages people.

Enrollment is limited to 30 participants to permit a more in-depth treatment of the various subjects. More information may be obtained by writing to AAN Professional Effectiveness Program, Suite 230, Southern Building, 15th & H streets, N.W., Washington, D.C. 20005.

Rhodia expands turf care products

Rhodia Inc. Agricultural Division has expanded its Chipco turf care products line. It has received an experimental use permit for Chipco 26019, a new fungicide. The permit allows for the use of Chipco 26019 on dollar spot, brown patch and Helminthosporium.

Rhodia also expects to receive full registration of a preemergent contact herbicide, Ronstar G, by the fall for use on turf and ornamentals. Ronstar G controls crabgrass, annual bluegrass, goosegrass and other weeds in turf applications. In ornamentals, it controls a wide range of broadleaf and grassy weeds.

Asulox herbicide was recently approved by the state of Florida for postemergent control of crabgrass on St. Augustinegrass and Tifway 419 bermudagrass on golf courses and sod farms. Asulox has been used for some time for post-emergent control of grassy weeds in

Florida sugarcane, roadsides, rights-of-ways and other areas.

Roundup receives EPA registration approval

Roundup herbicide has received Environmental Protection Agency registration approval for turfgrass applications, according to Monsanto Company. Roundup may now be applied, by professional applicators as specified on the label, to actively growing weeds before renovation.

Three new perennial weeds — napiergrass, silverleaf nightshade and wirestem muhly — have also been added to the Roundup label.

Research at Purdue University by Dr. W.H. Daniel and Jeff Kollenkark has determined that complete kill of annual and perennial weeds could be expected in approximately 10 days at the recommended rate of one to two pounds active ingredient per acre.

Roundup is inactivated once in the soil and has no effect on seed germination. New weeds may also germinate and infest the site. Because of this it is recommended that renovation be done in early fall. This also allows the turf to reach adequate mowing height before snowfall.

It is further recommended that water with soil or iron in it be avoided when using Roundup as either can inactivate the glyphosphate.

GCSAA expands and forms new departments

The Golf Course Superintendents Association of America (GCSAA) has put into operation a new department and expanded an existing department. The new Department of Chapter and Industrial Relations will promote the growth of the GCSAA conference and show. It will also handle chapter relations and recruit new members. James R. Brooks, who has been director of membership services since 1974, is the director of the new department.

The Membership Services Department has been expanded to become the Department of

Membership and Administrative Services. Its director is Janie Storm, formerly administrative assistant to the executive director since 1975. Storm's department will provide essential administrative functions for the headquarters office and perform all service for members, including Employment Referral Service, audio-visual services, membership applications, reclassifications and terminations, data processing, circulation for the association magazine and registration for both the show and all educational sessions.

Ryan production moves to Lincoln

Production of Outboard Marine Corporation's Ryan institutional turf maintenance line is being moved from St. Paul, Minn. to Lincoln, Nebr. The gasoline-powered Ryan line, ranging from sod cutters to lawn aerators, will be manufactured at the corporation's 500,000 sq. ft. Cushman plant.

"The consolidation of our Ryan and Cushman manufacturing operations will enable us to hold the line on production costs, while enabling us to remain price competitive in the turf and industrial marketplaces," commented Herbert A. Jespersen, division manager and corporate vice president.

Toro sells two distributorships

The Toro Company has sold its branch distribution operations in the Cleveland and Pittsburgh metropolitan areas, according to Toro president David T. McLaughlin.

The name of the Cleveland organization will be changed to Schaefer Turf & Irrigation Co. and will continue to be a full-line distributor, handling all Toro consumer, turf and irrigation products.

The Pittsburgh distributorship will be known as Allegheny Toro Distributing, Inc. For Toro, it will handle only consumer products.

The two sales leaves Toro with three company-owned distribution centers serving Los Angeles, San Francisco and greater New York.

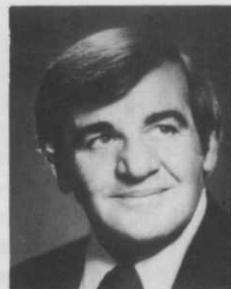
People on the Move

Richard C. Pedersen is vice president, technical affairs for Jacobsen Manufacturing Co. He was formerly director of engineering for Jacobsen's Turf Products division. Pedersen will be responsible for managing product quality, safety, legal and environmental requirements, as well as engineering policies, procedures and standards. He will also be responsible for product liability, patent activities and new product technology. Pedersen is a Registered Professional Engineer.



Budecki

Al Palladino has been appointed field sales manager for Melnor Industries. He will be responsible for the sale of Melnor products throughout the U.S. and will direct the activities of Melnor's regional sales managers and representatives.



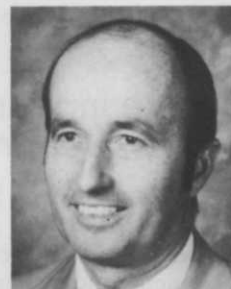
Palladino

Erling D. Schmidt has been named manager of engineering planning and construction with ICI United States central engineering department. Since joining the company in 1975 as senior project manager, Schmidt has been responsible for building and opening the company's \$70 million paraquat herbicide plant at Bayport, Tex., scheduled to open in late 1977.



Pedersen

James Walsh, MacFarland Co., Harrisburg, Pa., has been elected president of the Horticultural Research Institute. New vice president is **Robert Siebenthaler**, The Siebenthaler Co., Dayton, Ohio. **John Flemer**, Princeton Nurseries, Princeton, N.J., is the new treasurer, and **Robert Voorheis**, Blue Ridge Nurseries, Kansas City, Mo. will serve on HRI's Executive Committee.



Shoemaker

Ed Shoemaker has been named director of sales and marketing for the turf division of Rain Bird. He has been with the company for 19 years, joining as an irrigation engineer in 1958. Shoemaker will be responsible for all market planning, product development and sales for the turf irrigation market in the U.S. Shoemaker has served on the Board of Directors of the Irrigation Association and is currently a member of the Industrial Advisory Council of the Golf Course Superintendents Association.



Tharrington

Monsanto Agricultural Products Co. has named **Walter P. Hobgood** as product manager for Roundup herbicide, non-crop. Hob-

good joined Monsanto in 1973, and has most recently held the position of supervisor, market research, in the crop chemicals division.

Jack Welch is product manager of fertilizer and grass seed at Lakeshore Equipment & Supply Co. Welch formerly served as regional manager in the ProTurf division of O.M. Scotts and most recently as manager of the professional turf products department for Northrup, King & Co.

Williams H. Tharrington has been appointed product manager, agricultural engineering, by Stauffer Chemical Co. Tharrington is responsible for basic and applied systems engineering relating to the application of agricultural pesticides. He is also involved in various planning aspects aimed at improving new and existing products and coordinating advertising and sales.

Edward F. Mulcahey has joined Wilkie Turf Equipment Co. as marketing manager, turf and irrigation products. **Charles Kemp** has been named manager, irrigation department and **Kurt Kraly** has been promoted to manager, golf course and irrigation contractor sales.

Robert K. Bernard has been appointed as sales representative for agricultural chemicals for Rohm and Haas Company's central district. He will be responsible for western Minnesota and the Red River Valley of North and South Dakota. Prior to joining Rohm and Haas, Bernard was manager of the soil service center at the Farmers' Union Central Exchange, St. Paul, Minn.

Robert M. Budecki has been named manager, walk-behind products for the Simplicity Manufacturing Co. He will be responsible for planning and implementing changes to the company's lines of walk-behind mowers, tillers and snow throwers. Budecki joined the company in 1972 and has most recently served as national accounts manager.

Marvin M. Schreiber, research scientist with the USDA's Agricultural Research Service at Purdue University, has been named president-elect of the International Weed Science Society (IWSS).



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EQUIPMENT: How to maintain it and when to replace it

by Harold LeSieur

Harold LeSieur is the principal of his own management consulting firm in Santa Maria, Calif. He holds an M.S. degree in engineering from the University of Southern California and an M.B.A. degree from Stanford University.

Many turf professionals "depend upon their equipment, but don't treat it like they depend upon it" is the shrewd observation of an experienced equipment company service manager. Yet, imagine a total mower failure during a major golf tournament, or even a shabby putting green during a heavy weekend of play—all for lack of a mower part. Effective preventive maintenance is the answer, of course, but when this is no longer economically justified, equipment should be replaced without delay. Nice in theory, but this does not happen very often, even for affluent golf clubs or well-budgeted cities.

What is the answer? Without systematic programs of maintenance and replacement, your equipment is "Soon worth only what it weighs", says Joe C. Judd, Los Angeles City Parks Chief Maintenance Supervisor. But if you "learn the truth" about your equipment, he adds, and install meaningful





Superintendent Don Lokey of Valley Club in Montecito, Calif., illustrates mechanism of Toro sand trap rake, awaiting repair in his shop.

Superintendent Lokey displays spray tanks adapted for use on Cushman scooter and mounted on jacks for easy loading.



replacement and maintenance programs, you may be in for some pleasant surprises!

Preventive maintenance pays off

Imagine a simple adjustment to reel bearings on a Toro Greensmaster III, requiring 5 to 10 minutes per cutter, becoming an \$800 plus job because all three cutting units were damaged beyond repair. Between an operator failing to disclose a "floating reel", and a mechanic who did not bother to check, this equipment continued to mow 5 days per week until it self-destructed. And not at some under-budgeted, small course but at a "prominent, exclusive" club in Southern California. On the other hand, consider a California college operating a Toro Superpro which broke down every year for 5 years, then went 2½ years without missing a mowing schedule or needing a major repair. The difference? A matter of preventive maintenance in the second case, according

to Service Manager John Johnston of Toro Pacific Distributing Co.

Nor is this problem limited to golf courses. Foreman Leo Nichols of Ventura County in California tells of a large Yazoo riding rotary mower brought into his shop for replacement belts. An alert mechanic found also two bad bearings, adjusted the steering mechanism and replaced a defective battery cable and spark plug. This mechanic is instructed to go over such equipment "each time for all possible defects", and so he did. "We don't want any surprises for our operators," says Nichols. "If the equipment in our shop is not ready to use when it leaves, my people will hear about it," he adds.

"A half-day job costing \$50 can easily lead to a week's downtime with a \$300 pricetag", explains Toro's Johnston, "simply because communications are bad and preventive maintenance is neglected". Operators tend to let equipment get dirty, he continues, "and 18 pounds of grass hung-up may be hiding 18 grease fittings". This is

where damage will occur, Johnston adds. In his estimation, a piece of equipment "will operate about as it looks". Thus, 8- or 10-year old equipment which is clean and sharp will probably operate better than 3 year-old machines which have been neglected. With this philosophy in mind, Johnston claims Toro "goes overboard" on its warranty program—even after 2 years on a one-year warranty—providing the customer has taken "exceptional care" of the equipment.

What constitutes exceptional care is probably included in Johnston's recommendation to put away equipment each night in a "semi-storage state". This he defines to include washing, drip-drying, flushing and lubricating bearings, "eyeballing" for loose fasteners and repairing as needed. He especially advises operators to listen for bad bearings or other suspicious sounds, and report them to a mechanic. If equipment is stored with moist and contaminated bearings, as during the common 3- or 4-day weekends, corrosion pitting will commence. It

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is small wonder, then, that working this equipment a full day without lubrication can lead to early failure.

By comparison, there is little difference between the recommended Toro Pacific preventive maintenance procedure and that of Lakeside Country Club in North Hollywood. Small additions include superintendent Eichner's recommendations to replace expendable parts, (chains, sprockets, belts) before failure; a minor tune-up of engines; plus sharpening and adjusting reels. To this he adds checking mower bearings for end play — an adjustment requiring only a "few seconds" that can easily save early bearing replacement.

There is a right way and a wrong way to change oil, and a better way to insure correct greasing! Oil should be changed only when hot, advises Toro's Johnston, since contaminants picked up by oil will not remain suspended when oil cools. Again, he cautions to wipe off the oil filter before opening or closing, to avoid debris collecting in the oil. Oil changing on air-cooled engines is doubly important, Johnston cautions, since these engines run hotter and are not equipped with oil filters. As for greasing, reverse the usual order of greasing, attending first to those fittings commonly neglected — the hard-to-get-to ones. To accomplish this, use a color coding system, with "code" recorded on underside of engine hood. For example, all fittings due for daily greasing can be designated by a yellow marking; all scheduled for weekly attention by a green coloration.

Some equipment or components can best be described as "self-destructive," so high is their maintenance. Examples are gears and chains exposed to water and dirt, requiring constant replacement. To this list, Larry Bicking of New-Castle County, Del., adds hand-operated tools such as chain saws, rotary push-type mowers and the Weed Eater. Eichner of Lakeside Country Club nominates as the highest maintenance item of all, per hour of operation, the aerifier. On

this he claims "universal agreement," and describes his own maintenance procedure: Once per year, open cam case and replace followers (if indicated); next year, repair externals, including rod bearings and rod slide bushings. "Our machine destroys itself as it operates," he says, not unlike an automobile engine operated upside down and with no crankcase! However, results are so essential to maintaining healthy turf under traffic, "we put up with it."

People relations key to preventive maintenance

Few would disagree with Bob O'Link Golf Course superintendent Robert W. Williams of Lake Forest, Ill., that preventive maintenance is the "cheapest, best way to go." This requires, he adds, "daily attention to machines used daily." Well and good, but there are really two "answers" to equipment longevity, according to Al Noble of B. Hayman Co. in Los Angeles. "First in importance is a motivated operator, followed by good preventive maintenance." And how to get the "man in the field" to take care of his equipment is often over half the problem.

"If we could consistently get the man in the field to take care of his equipment, this would go a long way," according to maintenance supervisor William Mc Kennrick of Los Angeles County. In this statement, he includes regular lubrication and oil changes, together with attention to "picking up bottles" before they can break blades and ruin mowers. How can this be accomplished?

Inspiring a "That's my machine" pride in each operator by "locking" each employee to a specific piece of equipment is the successful method used by the Valley Club's Don Lokey in exclusive Montecito, Calif. Even more specific is the method used by Ventura County's George Lawhead and Leo Nichols, wherein each employee is assigned to a specific item of equipment, and given two hours each Friday for the "get ready for Monday" ritual. This consists of an oil change, lubrication, filter cleaning and a hunt for loose nuts and bolts, as well


as more serious attention (as needed) by a professional mechanic.

On the same theme, with a clever variation, is the scheme used by superintendent Richard Eichner of the Lakeside Country Club. All operators are recalled from the course one hour early, every other week, on — yes, on pay days: And who forgets a pay day? While washing and oil additions are daily responsibilities of operators, this bi-weekly routine insures a regular oil change and systemic check on mechanical problems, advises Eichner.

Getting the most from your men, by establishing good communications and confidence, is the approach favored by Lokey of the Valley Club. "It takes time to build this confidence," says Lokey, "but there are few who will not respond." Working on a daily basis with his foreman on preventive maintenance, Lokey admits that periodic "jogging" of his men is necessary. However, rather than hurt a man's pride, he finds that a compliment to one soon leads others to follow suit.

It helps communications for a worker to know that he is not going to be fired if he damages equipment. As an example, Lokey cites one of his men who "froze" and drove a tractor over a 15-foot embankment from a wet, steep hill. When free from this fear, workers will be more willing to report equipment out of order, rather than just park the faulty machine and "disappear." As expressed by Toro Pacific's John Johnston, the "I didn't do it" psychology can only be overcome by constant attention to two-way communications between the superintendent, mechanic and operators.


Of course, it's not all that easy when available labor is unfitted or unskilled. A shortage of qualified mechanics is one problem. Another is the hiring sometimes, under many civil service systems, of unqualified help. Thus, passing a written test may still not insure mechanical aptitude. "When you get a good man, hang onto him" is the sensible advice of Los Angeles County's Bill McKennrick. Again, at Newcastle County, Del., a unionized shop sometimes forces superintendent



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Superintendent Richard Eicher instructs operator of irrigation service vehicle at Lakeside Country Club in North Hollywood, Calif. A Cushman flat bed cart has been equipped with service box, sprinkler rack, pipe vise and air tank.



Howard Turf-Quaker aerifies turf at Lakeside Country Club. Equipment consists of tractor-towed rototiller with slicing reel.

Larry Bicking to use inexperienced people acquired by promotion or transfer. Thus, a back hoe operator or sewer tile man from Public Works may not be well suited to operating a large mower on Newcastle's stadiums and golf courses. Bicking estimates, for example, that problems with 40 percent of the mowing equipment brought into his shops could have been averted by better equipment knowledge and preventive maintenance.

Another problem is salaries too low to attract competent people. Then, misuse of equipment becomes common, according to superintendent Ed Dembnicki from the Country Club of North Carolina in Vass, N.C. "When salaries are so low, it is hard to find men who take pride in their work and can be motivated." Dembnicki is at least blessed with a competent mechanic.

One happy answer to some of these problems is the hiring of female operators. Women, it seems, have proven they can drive well and will follow instructions and precautions. As explained by Al Noble of B. Hayman Co. in Los Angeles, females don't have to prove male "macho," and will take fewer chances while driving and care for their machines as instructed (and not blow seals while lubricating!).

Taking a cue from superintendents who have had success with women in turf work, "Rich" Eichner of Lakeside Country Club plans to add separate women's facilities in his new 50 percent shop expansion.

In the last analysis, "heads up" supervision is still the most important answer to results through people (and excellent equipment maintenance as a result). A shortage of Grade A superintendents is one complaint heard from the ranks of equipment suppliers, but attentiveness to the job is even more important. One example will illustrate the point. At a prominent course in Southern California, five 7-gang mowers were purchased between 1965 and 1975, because reels and side plates were consistently broken. Reason: Operators were fording rock-strewn creek beds (an 18-hole "finger" course) without declutching reels or lifting arms. This example of "flat abuse" was licked by purchase of a hydraulic mower, with easy-to-lift arms and reels. Needless to say, supervision had to be "jacked-up" as well.

At a time when skilled labor costs are escalating more rapidly than equipment prices, a premium is placed on sharp supervision. An amusing story is told of a prominent course in San Luis Obispo, Calif.,

whose "no nonsense" superintendent demanded that his men take care of their scooters. When overtaken by this alert professional, an operator who was "drag racing" his scooter was summarily sentenced to walking the course for 30 days! And after 13 years, the same transportation equipment is in daily use, "and good operators have resulted."

By taking "all hands" into your confidence, superior results can be your reward. As explained by golf course supervisor Neil Beeson from the City of Anaheim, Calif. (home of famed Disneyland), "Operators can make or break a piece of equipment." Before any such equipment is purchased at Anaheim, all concerned must be consulted, and this includes actual operation by the rank-and-file employee. If the operator's recommendations are not followed, supervision feels obligated to explain exactly why.

Precisely the same procedure is followed at famed Forest Lawn Memorial Parks in Southern California. Manager of grounds maintenance Robert Davidson explains that, before purchase, equipment must be driven by actual operators on the steep slopes of Forest Lawn's main park. This provides not only better input to the final decision, but

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helps to win the cooperation and interest of operators in their equipment. This is valued, considering the hazards and abuse mowers encounter in the unique and difficult environment of steep cemetery hill-sides.

"Don't be afraid to ask dumb questions. They're easier to handle than dumb mistakes." This bit of advice hangs as a sign over the shop bench in the County of Ventura's landscape maintenance headquarters. This attitude, spelled out in actions as well as words, should go a long way toward winning worker cooperation in effective equipment maintenance.

"So you think you have problems?"

If you think your turf equipment is subject to abuse, just consider the difficult situation with cemeteries. Especially is this true with Forest Lawn and Mt. Sinai Memorial Parks, lying astride mountainous Griffith Park in North Hollywood, Calif. "Endlessly rattling over bronze or stone grave tablets does our equipment no good," says Grounds Maintenance Manager Robert Davidson of Forest Lawn. Not only this, but machines at both cemeteries must operate continuously on grades of 30 percent or better, often on wet grass, and with constant stop and go operation during visitation hours. To compound the problem, stones from freshly dug graves and loose wire, sticks and glass vases from flower arrangements are often lost until discovered by a mower operator! Or until the teeth of a turf aerator are broken off.

Superintendent Al Dennis of Mt. Sinai estimates such treatment shortens the life of his equipment by at least 20 percent, and causes "nothing but high repair bills."

To remedy this problem, Forest Lawn professionals literally rebuild a standard 76-inch mower, and "give back" some \$1,300 worth of gear to the vendor on a \$3,000 machine. This includes the sit-down

sulky, since safety requires the mower be remodeled into a stand-up machine with trailer in rear. Then, a customized steering gear is added to suit each operator's height, dual rubber wheels may be added, a hand emergency brake and kill switch installed, and the reels and frame "beefed up."

If Forest Lawn officials could buy this type of equipment, or at least more rugged mowers, they might gladly pay an extra \$1,000 for a 5-gang mower costing \$4,600. Most of these, observes Davidson, are manufactured for mowing bent-and bluegrass on golf courses or median strip grasses to a depth of 2 inches to 6 inches, not Kikuyu grass to 3/4 inch on such steep slopes. "And they can't understand why their machines won't work," adds Davidson.

To be sure, memorial parks do not have a corner on difficult equipment problems. Consider operating mowers on a slope of the Rocky Mountains, with a total fall of 350 feet in little more than one mile. "We have tipped a few mowers over," reports Broadmoor Golf Course Director Charles Clark, "and our National mowers take a real beating in only 2 years."

A more usual situation is the maintenance shop located remotely from any golf course. Lack of a blacktop road to such a shop, even if only a quarter mile away, increases wear by an estimated 20 percent. Another common problem for municipalities, reported by Larry Bicking of Newcastle County, Del., is the "pooling" of turf equipment. In this case, where machines are not assigned to individual operators, equipment may be treated with less respect and be much more subject to abuse.

Speaking of unusual examples of heavy wear and maintenance, the cleaning of seaweed from beach sand by the Huron-Clinton Metropolitan Park Authority of Detroit has to be unique. Director David Laidlaw describes a converted potato and bean digging machine which picks up a 6-foot swath of seaweed and sand, conveying the mixture by belt and separating by rough screening. This machine is towed by a tractor and is subject to heavy wear from the sand and high

maintenance requirements. The same is true for a separate tractor-towed trash pickup trailer.

"East is East, West is West"

Interesting regional differences exist in maintenance practices between courses, based on three months of heavy winter weather in the East and up to 363 days per year of playing time on the West Coast. "Our course is closed only on Yom Kippur each year," explains Superintendent David Mastroleo of the Hillcrest Country Club in Southern California. "We mow our fairways like crazy all spring and summer," he adds. Consequently, equipment on California courses is used continuously and must be repaired "on the run," in his words. Having worked at Arrowhead Country Club and Addison Golf Club, both in Illinois, Mastroleo is qualified to note the differences between eastern and western maintenance practices.

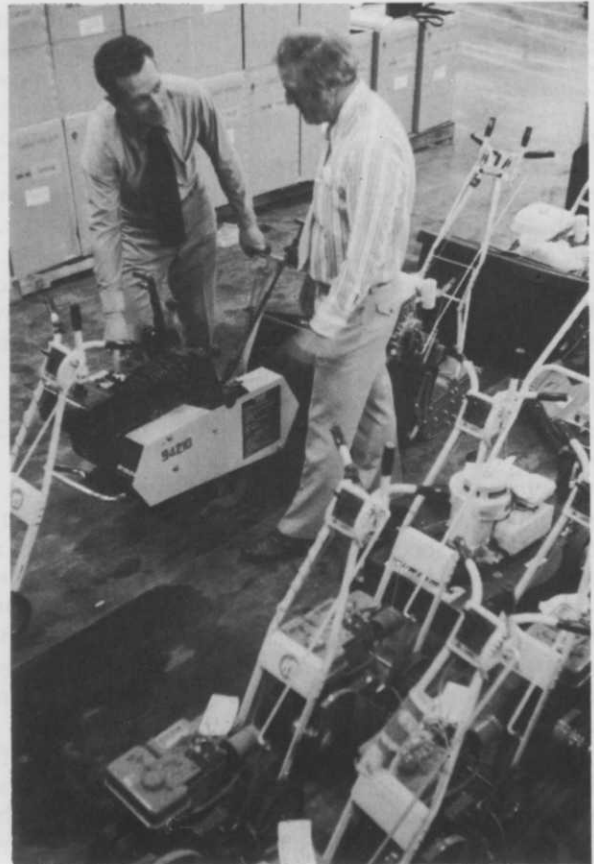
Each winter, an eastern or mid-western golf course will typically go through its equipment thoroughly, repairing and repainting. Engines will be torn down, if needed, gears will be checked, then bearings and bushings replaced. Even Colorado Spring's Broadmoor Golf Course, considered the "Far West" to many Easterners, undertakes its heaviest rebuilding and repainting jobs when the "frost is on the ground." Again, bermudagrass goes dormant from November to mid-March in California, often accompanied by rain (except under present drought conditions). Consequently, Forest Lawn Memorial Parks uses this period to rebuild its mowers, since bermuda is its principal turf grass.

Even further west, Lokey of Montecito, California's Valley Club prefers the January-February "frost" period to pull down motors, regrind reels and generally to anticipate bearing and other jobs which could "hold up the show" in summer weather.

In one sense, the luxury of warm weather may tempt some to neglect their equipment. Bob O'Link's Robert Williams notes eastern clubs all keep their equipment inside. Not so in the South, especially Florida, and in California. Here he observes open

Chief Maintenance Supervisor Joe C. Judd illustrates operation of sod cutter to Central Storeroom Manager Howard. A backlog of new machines, purchased under engineered equipment replacement program, is kept at this Los Angeles City facility.

Superintendent Richard Eichner inspects greens mowers lined up for repair in machine shop of Lakeside Country Club.



equipment sheds, and equipment sometimes left to rust. Does this practice unduly hasten the need for replacement, he asks?

Replace or repair?— THE BIG QUESTION

To replace or to repair? That is the question. And there is no one answer, even for the same class of equipment, since each user has a different problem.

To illustrate the divergence possible, we need but consider two large governmental units in the same area, namely the City and County of Los Angeles.

Los Angeles City has gained some reputation for its turf maintenance equipment replenishment program. This emphasizes prompt replacement of on-line or high frequency use equipment, according to engineered standards of life expectancy. Under this program, triplex and 30-inch mowing units are removed from front-line service promptly after 4 years, to a standby or low-frequency use. Chain saws and edgers are retired after only 2

years. The results, according to Chief Maintenance Supervisor Joe C. Judd, have been a better job, newer equipment to work with and less cost in the long run. There is now less temptation for supervisors to "squirrel away" extra mowers. Further, careful accounting of equipment has actually permitted Judd to set up a "spare and loan equipment program" with the same equipment inventory. Needless to say, equipment distributors such as Toro Pacific are very fond of the L.A. City program!

At the other extreme is Los Angeles County, which Toro Pacific's Johnston rates as having the "best parts department in the country and a shop second to none." Here the emphasis is on "keeping equipment until it begins to cost money," and probably well beyond.

Nor is Los Angeles County alone in this approach. In the very same area, the City of Los Angeles School District maintains two separate repair shops, to service mowers, tractors, sprayers and other equipment used in its 700 square-mile maintenance territory. "We

have to live with our equipment longer than we like," says James H. Lane, gardening technical supervisor. Operating under a predetermined dollar budget, equipment used 10 to 15 years is not at all uncommon. "We may buy a piece of equipment two times over," he explains, "really beyond the point of economic feasibility to repair." A good preventive maintenance program helps to compensate for this policy, and this school district hires four travelling equipment repairmen to make minor repairs. Larger jobs are picked up by truck and transported to one of two central machine shops.

Even prestigious golf courses have had the problem of antiquated equipment to overcome. Both superintendent Terry Bucken of the Riviera Country Club in Pacific Palisades, and Don Lokey with the Valley Club of Montecito, both in California, speak of replacing high maintenance, "museum"-type equipment. In fact, Lokey proudly displays a gear-driven spray rig from the 1920's, no longer in use but recalling memories of a steam cal-

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liope.

There are really only three basic approaches to equipment replacement, according to Robert Davidson, manager of grounds maintenance for the largest of Forest Lawn Memorial Park cemeteries in Southern California. Thus, one can (1) replace equipment after a set number of years (say, 5 years average), or (2) replace when maintenance becomes too high, or (3) "work over old machines to keep them running." This, he admits, is the Forest Lawn approach, partly because of the difficulty in "getting the weak points worked out." With steep hillsides to contend with, plus stop and start mowing over rugged terrain Forest Lawn finds it necessary to rebuild mowers to its own specifications.

Still another municipality which must use equipment "typically to the breakdown point" is the City of Norfolk, Va. Like California, Norfolk has a temperate, long growing season, so that tractors and mowers are in constant use. Responsibility for maintaining 4,000 acres of turf, Parks & Recreation Director James Colley believes down-time would be reduced, and performance increased, if most equipment were replaced at least one year earlier. At Norfolk, Colley explains, the Central City garage must "sign off" on all existing equipment, certifying it as "beyond repair."

Assuming a reasonable equipment replacement program stands a chance at your institution, what kind of service life does experience show to be possible? This one needs to know in setting up a budget and depreciation schedule, a procedure lauded by such oldtimers in the golf superintendent business as Art Twombly of the Bel Air Country Club near Beverly Hills, Calif. and GCSAA past president Bob Williams of the Bob O'Link Golf Club in Lake Forest, Ill. For a walking green mower costing approximately \$1,000, Twombly considers 4 to 5 years of life "about it," if the machine is run daily. Other estimates may vary from this. At the City of Anaheim, Calif., golf course supervisor Neil Beeson (who teaches

equipment maintenance at a nearby college), rates the practical life of greens mowers at only 3 years, although his city programs a 5 year life. Famous Broadmoor Golf Course in Colorado Springs, places a 3 year schedule on their mowers. "After this," says superintendent Tommy D. Anderson, "we may move this equipment down and use as a tee mower."

Walt Disney World in Florida follows the University of Florida's Extension Service recommendations of 3 years life for riding-type greens mowers and triplexes, and 5 years for fairway and rough mowers. Superintendent Larry L. Kamphaus adds that one-cylinder machinery is replaced in less than 3 years, as vibration and metal fatigue soon wear out such equipment.

Many equipment replacement decisions can be made as a matter of "common sense," without the benefit of formulas. In fact, formulas are seldom used in actual practice, although espoused by some equipment manufacturers. On small equipment, selling new for under \$200, such facilities as Mt. Sinai Memorial Park in North Hollywood or Bob O'Link Golf Course in Illinois simply discard such equipment after two years' use. Thus, there is no sense in buying a new \$50 or \$60 motor for a rotary trim mower costing only \$60 to \$85 in the first place. On the other hand, a \$700 motor replacement in a \$3,000 to \$3,500 Cushman Truckster is well worth considering, feels Bob O'Links' Bob Williams.

More mundane equipment, such as diesel tractors, may last from 5 to 10 years, and spreaders or renovators even "indefinitely." Twombly of the Bel Air Country Club expects no maintenance at all for the first 10 years from a Massey Ferguson diesel tractor with bucket loader and excavator. For most equipment, however, he complains, "Manufacturers are not building machines like they used to," thinking of his 1947 Buick which lasted 120,000 miles "without the head off."

Forest Lawn's Supervisor of Mechanics, John McKinney, agrees with this observation, adding that today's turf equipment engines have a "built-in" obsolescence. After 400

operating hours, he says, they begin to have problems. McKinney admits, however, that running even an automobile engine 100 percent of the time on a slant would soon wreck it.

Neil Beeson from the City of Anaheim, California is somewhat more generous in his estimate of engine life than the Forest Lawn people, probably based on his experience with less severe environments. Beeson offers a useful formula for operating costs:

Year 1) Low maintenance, excepting for accident or other major problem.

Year 2) 2 times cost of Year 1

Year 3) 3 times cost of Year 1 (or 1 1/2 times Year 2).

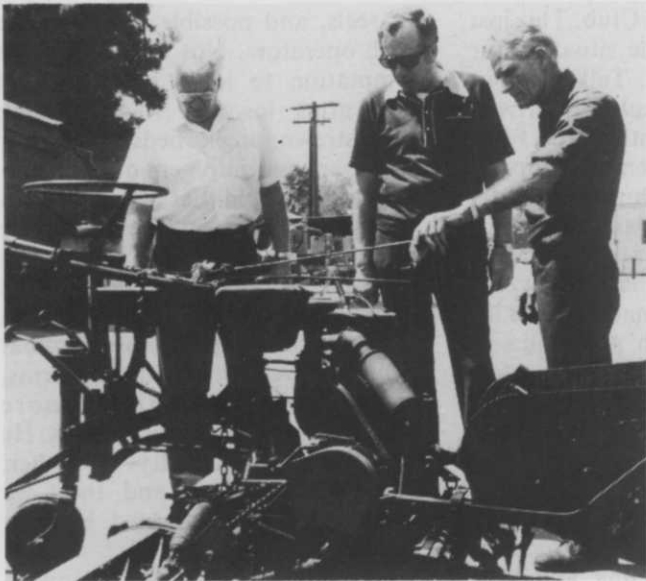
After the third year, Beeson explains, engines will probably need all new bearings, bushings and rollers, and total engine life will approximate 1,500 hours, for the environment of Anaheim's golf courses.

Of course, there is always the grey area between complete replacement and simple repair, where one can profitably rebuild equipment. Some professionals prefer this, or are forced into rebuilding by a die-hard greens committee. Superintendent "Rich" Eichner of the Lakeside Country Club considers in-house engine rebuilding a "loser". He has had two tractor engines rebuilt on the outside, and bought fitted blocks for in-house replacement of trap edgers and trimmers. But Eichner is happy for a switch to diesel engines. Now he needs only new injectors and injection pump adjustments, although he acknowledges fuel injectors require outside specialists and he prefers outside help for a major tune-up yearly.

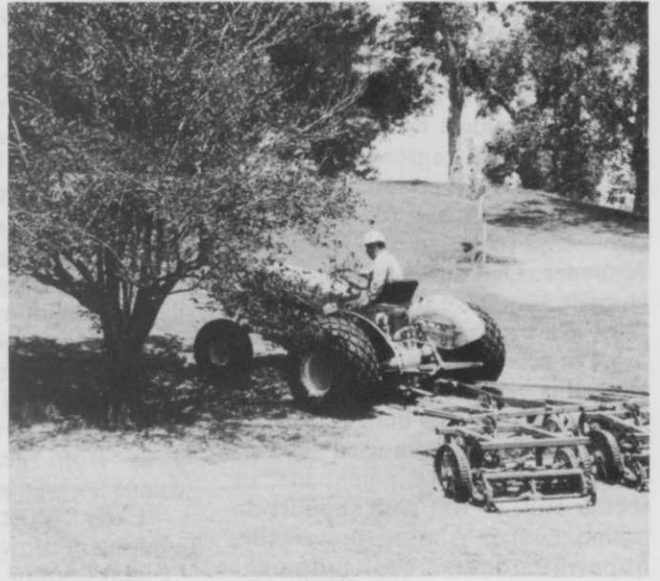
In contrast, David Mastroleo of the Hillcrest Country Club in Southern California prefers rebuilding his engines. For a greens-mower costing over \$900, for example, he can short-block his engine and replace reels, and continue to operate after 12 years. As usual, there is more than one way to skin a cat!

Budget and inventory rated "musts"

Not every club, or even municipi-



Mechanic answers questions concerning rebuilt 76-inch mower for Forest Lawn Memorial Park's John McKinney, left, and Robert Davidson, center.



At exclusive Lakeside Country Club in North Hollywood, Calif., Massey Ferguson diesel tractor tows 5-gang Toro mower.

pality, can afford the computerized cost accounting system of the Broadmoor Golf Club, retreat of the late President Eisenhower, in Colorado Springs. Here, each piece of equipment is assigned a code number, and monthly printouts keep golf course director Charles Clark fully informed on maintenance costs. Even so, there would hardly be a single club which could not benefit by a systematic equipment inventory and a long range plan, or budget, for equipment replacement. "Remember," says Art Twombly of the Bel Air Country Club, "many of your members are business people, and you must show them how they can spend money to make money." He urges that such a budget be "properly prepared," listing each item to be replaced, with its value at today's prices "through 1995."

Riviera Country Club's Terry Bucken, in Pacific Palisades, Calif. arrived in his new job only to find no equipment inventory available. Not only did he install Hamilton Watch hour meters on major equipment, Bucken also inventoried all equipment by name, model year, serial number, original and current expected life, original cost ("which we can't find in most cases"), and annual depreciation.

A further refinement would be to

establish a depreciation reserve, funded in cash for equipment replacement. If your club is strapped, this may be hard to come by. Lakeside Country Club, which boasts such Hollywood notables for dues-paying members as Bob Hope, Bing Crosby, Arnold Palmer, and John Wayne, has a "substantial" depreciation or replacement reserve, which Superintendent Eichner nevertheless labels as "prudent and reasonable." Laguna Hills Golf Course is another Southern California club with affluent members, including several top leaders of business and industry. Golf superintendent John Polder, Jr. reports they enjoy a depreciation reserve to back up a practice of 5-years for depreciation and replacement of equipment.

Many municipalities are not this fortunate. Cleveland's Maintenance Superintendent Edward Lubie, reputed to have "one of the best" equipment maintenance programs in government, has faced a "little dollars" budget for the past 5 years. Then he brightens and reports, "This year we received almost \$225,000 for new tractors, jeeps and turf equipment." In addition, Lubie enjoys an \$80,000 yearly budget for equipment maintenance. Much of this he uses during September and October, by calling in equipment from each of 12 parks and com-

pletely overhauling as needed, including transmissions, engines and all working parts.

If Cleveland seems reasonably affluent, consider Newcastle County, Del. whose superintendent Larry Bicking says, "We are at the mercy of the budget people, still operating equipment with 5 years life expectancy after 10 or 15 years." Sound familiar? Bicking says a complete inventory list is submitted each year, but Parks and Recreation typically gets about 30 percent funded in practice. "We are always behind," he adds.

More fortunate is the Huron-Clinton Metropolitan Park Authority in Detroit, whose director David Laidlaw presides over maintenance of 16,000 acres of parkland, including beaches and golf courses. With a 1977 equipment budget totaling \$342,000 (not all for grounds maintenance, however), Laidlaw is able to affirm, "We definitely believe in an early replacement program, retiring equipment at the end of its useful life, and not getting into excessive maintenance." Lucky suppliers!

Each year, in the Fall, Huron-Clinton Park people meet to review the "condition of and when to replace" each piece of equipment. This is the first step toward a capital

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equipment budget for the next year, and priorities are agreed upon by individual Park Superintendents and mechanics, the Chief Mechanic, and the Equipment Purchasing Manager. Of course, a new stump chipper may have to wait until next year, if a brush grinder is older and more in need of replacement. But, at least, this park authority is not hurting as a result of its budget process.

Can a formula be used successfully, to predict equipment life, or (better still) to win club support on replacements? Almost universally, Superintendents use judgment rather than mathematical formulas to prove their case. Most that is, but not all. Broadmoor's Chuck Clark frankly admits to using a formula "only if it helps our case." Oakland Hills Country Club's Ted Woehrle acknowledges that both Toro and Jacobsen have formulas to enhance sales of equipment, but adds smilingly, "They're different than ours." As a rule, Woehrle shoots for equipment replacement when maintenance costs reach the 25 percent level, as compared to original cost of a given machine.

Mt. Sinai Memorial Park's Al Dennis admits he guesses at life spans for equipment. "We would all be out of the woods if we had a good rule," he says, "but there's no formula around worth a damn."

Admittedly, there is a good bit of psychology to winning approval from a golf club Board of Directors for an equipment budget. "You had better be right," admonishes Don Lokey of Valley Club. He favors pitching improved maintenance and greater safety, rather than emphasizing labor savings and opening the door for cutting a man off the payroll. By setting up an amortization schedule, he is able to say, "I am instructed to replace this equipment" rather than simply asking for money.

Hydraulic revolution

"I had to take a course in hydraulics, but we needed this kind of equipment desperately," says

Don Lokey of Valley Club. This just about summarizes the situation for hydraulic equipment. Talked about for years, the hydraulically-driven, 9-gang mower was introduced from England by the Ransomes Company in the early 1960's. During the same period, Toro and Jacobsen both were developing hydraulic mowers, but only during the last two years has such equipment made serious inroads into American golf courses, parks and cemeteries. Now, few superintendents fail to recognize the tremendous advantages in getting away from gears, sprockets and chains — even at a higher first cost.

Early resistance to hydraulic equipment slowed its introduction. "I don't know anything about it, and don't want to fool around with hydraulic equipment. I'm afraid I might mess it up." These were the early laments heard from some turf mechanics. Then, too, some superintendents objected to possible hose breakage and oil spillage on golf greens — a valid protest. But all that is changed now. Hydraulic mowing equipment has come of age, and superintendents widely acknowledge this as the most significant machinery development in many generations. They recognize the advantages of less maintenance, less down time, no clutch slippage, greater safety on hillsides and more work output. These all help to justify a higher price tag.

Hydraulic equipment, despite its glamour, is not without problems. A Ransomes fairway mower operating at Walt Disney World in Florida is reported to do a "real good job" on thatch and fairways, yet a problem is experienced in keeping reels level. Also, oil spillage "does happen," according to Disney's golf superintendent.

One weakness in this new breed of fairway equipment inherent with hydraulics: power goes to the point of least resistance. One basic improvement has been to develop separate hydraulic drives for cutting reels, rather than "rob" drive wheels of power. As a result Don Lokey of the Valley Club has found his hydraulic equipment safer on dangerous hillsides, claiming more traction and weight at the wheels than conventional units. Also, hydraulics eliminate manual lifting

of reels, and possible back trouble with operators. Not to mention the temptation to leave reels engaged and arms lowered when fording rock-strewn creek beds. Or when transporting equipment on the road.

Do municipalities also believe in hydraulic equipment? Yes, if the five years experience of Newcastle County, Del. may be taken as a good example. Superintendent Larry Bicking speaks of his "bat wing" mowers with hydraulic arms, as being "substantially more reliable" than mechanical types. He says their productivity is higher, maintenance lower, and they are more rapidly transported between parks.

"It is common for hand mowers to be out of commission, but rare for hydraulic equipment," is the comment of Don Lokey. He concludes that minor maintenance (chiefly checking pressure hoses) is adequate, "two or three times per year"

Your mechanic: A key person

"Our equipment salesman told us if we didn't get rid of our mechanic, he never could sell us a new piece of equipment!" Not every golf course is blessed with two excellent mechanics as is exclusive Pine Valley Golf club and veteran superintendent Eberhard Steinger of Clementon, N.J. On the importance of a good mechanic to a golf club, some will go even further. According to Richard Eichner of the Lakeside Country Club, if the mechanic should leave, many clubs would "come to a halt in one week" (after, he continues, the "bailing wire" falls off the machinery). Richner appreciates what he calls "incredibly reliable" preventive maintenance. Toro Pacific's John Johnston states he believes that a club can "get along" without a manager or pro, before it can sacrifice a good mechanic (and superintendent, he adds).

Why do some courses or municipalities have trouble in hanging onto first-rate mechanics? Principally because they try to find an \$8 to \$10 per hour class of man for only \$2 or \$3, says Johnston of Toro Pacific. Such mechanics can do bet-

Continued on page 24

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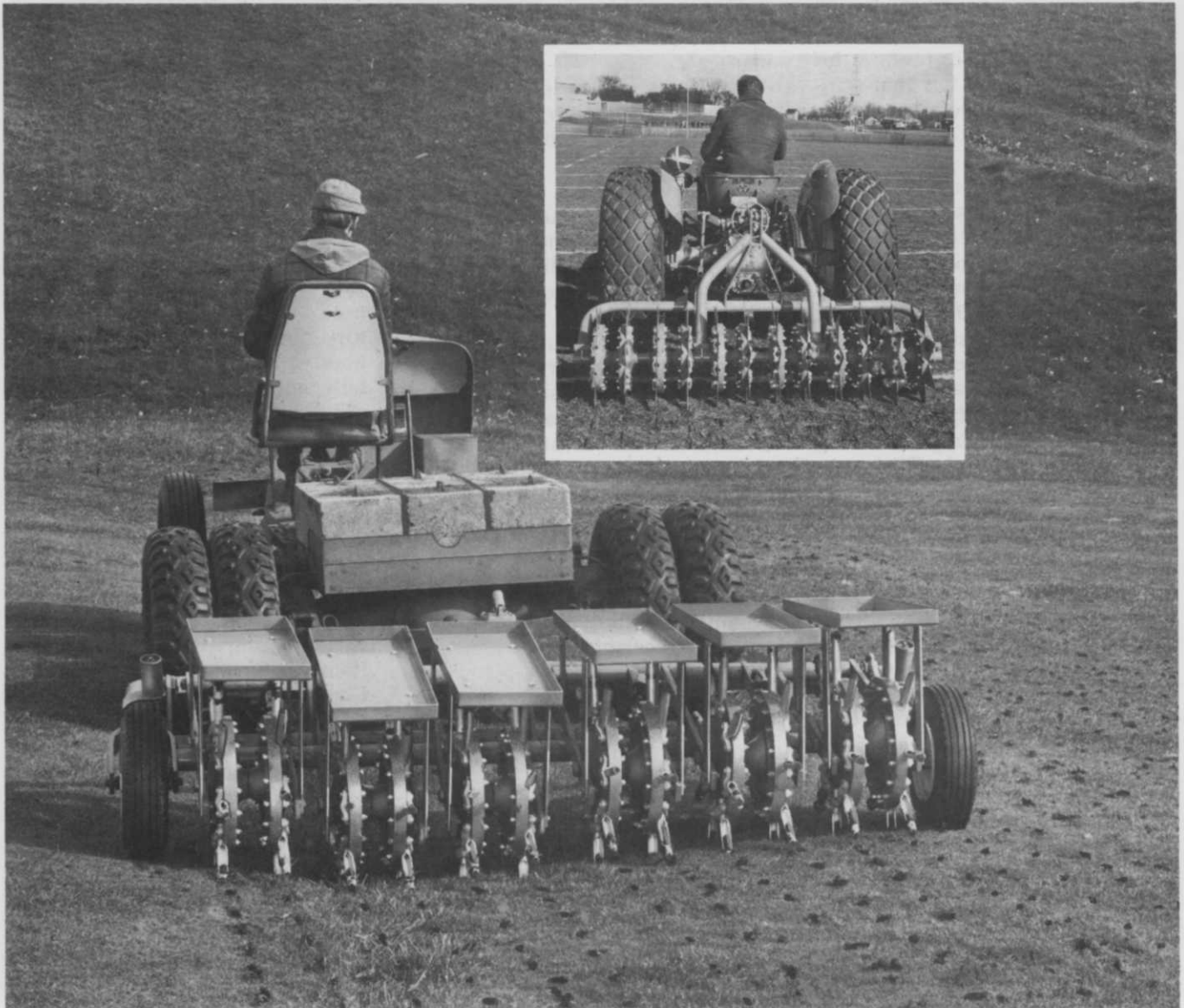
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The large area aerators.



Equipment

Continued from page 22

ter at their local Chevrolet or Ford agency, although "this is starting to reverse," he notes. Al Noble of B. Hayman Co. in Los Angeles agrees with this observation, concluding that skimping on mechanics is very "short sighted."

Not everybody pays low wages, however; the City of Los Angeles Recreation and Parks offers an entrance-level mechanic \$1,200 per month plus 30 percent fringe benefits. Or Lakeside Country Club, which considers itself "extremely competitive" in paying \$6.00 per hour plus 29 percent fringes for its Shop Foreman-Mechanic or \$4.50 per hour for a non-supervisory mechanic. Los Angeles City's Joe C. Judd agrees that it is not only hard to get good mechanics (even at his high wage offering), but that attrition through advancement under civil service works an additional hardship.

It is not hard to understand why Southern California's Forest Lawn Memorial Park has 21-year and 15-year veteran mechanics in its non-union shop. Based on area surveys, Forest Lawn's Bob Davidson states that his organization pays higher wages than any other local cemetery, and is "way ahead of golf courses." He adds, "We are competitive with anybody hiring mower mechanics, and offer fantastic fringe benefits." Turnover, as a result, is so low as to be "almost unhealthy," Davidson comments.

At a time when additional and more complicated equipment has come on the scene, requiring extra mechanics, there is in many areas an apparent shortage of qualified people. What is needed, says superintendent Al Dennis of Mt. Sinai Memorial Park is the "jack-of-all-trades," who knows "diesel to 2-cycle engines," and can engineer and design small jobs as well as be a practical welder. Dennis finds men with a farm background best for this purpose. Similarly, Lee Nowacki, Golf Manager for Twin Lakes Golf Club in El Monte, California complains of mechanics being "too specialized," able to do brakes or ignitions (for example) but not broad

enough to handle such variations as mower repairs.

Broadmoor Golf Club's Charles A. Clark prefers to train younger men, which he considers less "set in their ways" than older men. Even so, Clark relies on his 30-year veteran mechanic to "keep an eye" on progress by his mechanics-in-training.

Some golf courses get double-duty from their mechanics, using them also for course maintenance. For example, Golf Course Superintendents Association of America's President Ted W. Woehrle feels his mechanics can mow part of the day and still take care of mower adjustments. "They appreciate the equipment more," he explains. Even so, he considers his mechanic at the Oakland Hills Country Club the "most important man on the course" (next to the right waterman).

Probably no one in the business has such a unique arrangement for maintenance as Eberhard Steinger, C.G.C.S. from Pine Valley Golf Club in Clementon, New Jersey. Nestled between Atlantic City and Philadelphia is this smallest town in New Jersey, with golf course, waterworks and police force all under Steinger's control. Not unlikely then, is to see a "cop" cutting roughs, or caring for the private putting greens of wealthy residents in this 1000 acre idyllic retreat. Even more unusual is the arrangement for maintenance, where each man has his own machinery and completely cares for three tees, greens and holes from his private tool shed hidden in the woods! And it's worked now for 40 years, says Steinger. A brilliant example of motivation through pride of ownership.

Common pitfall: Inadequate spares

Many golf courses get into a bind because they lack an inventory of spare parts and have not allowed for this in their equipment budgets. This is a "common trap," according to Service Manager John Johnston of Toro Pacific Distributing. He is concerned that customers fail to heed warnings, operating until parts

fail, then blame vendors for not producing the parts immediately.

On the other side of the picture, a number of superintendents complain they cannot get parts on time, or that distributors' inventories are "too small," and that some distributors feel they are "doing you a favor" to supply needed parts. "We never want a breakdown we're not able to fix," says Broadmoor's Chuck Clark, "and especially during a tournament, this would be disastrous." Tim Sedgley, Asst. Superintendent at Cherry Hills, lists getting parts on time as his "number one problem."

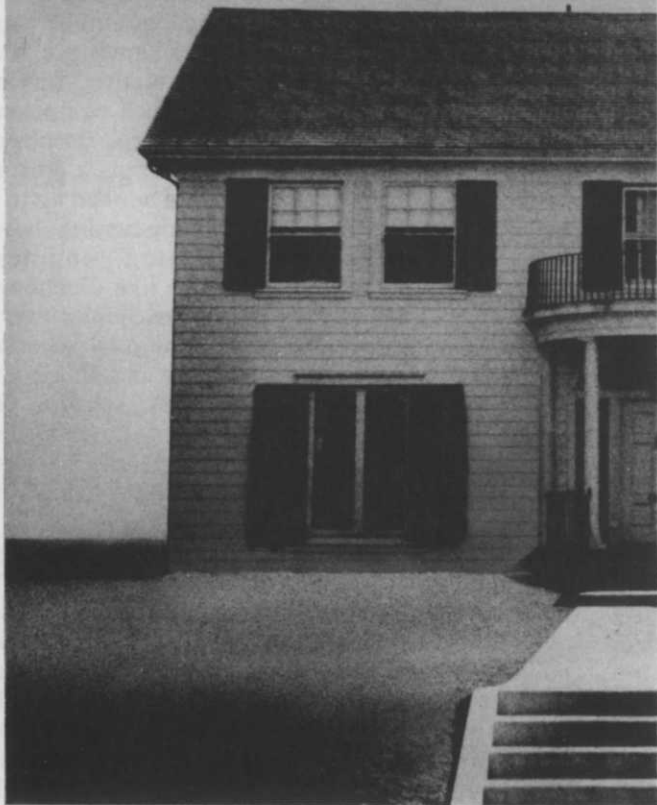
Getting parts is also rated as the biggest maintenance problem for Newcastle County, Delaware. This is complicated by a bidding process, which results in a varied mix of equipment and parts. Equipment may be out of service up to 3 or 4 weeks, according to superintendent Larry Bicking, but 3 to 5 days in the shop is average. Part of this delay results from "chasing parts," since such a variety of parts are "hard to stockpile."

Some superintendents are blessed with suppliers close by, so that stockpiling is less of a problem. Bob O'Link's Bob Williams prefers not to tie up much money in inventory, since his supplier is only one hour away. He advises, incidentally, not letting your mechanic purchase parts, lest you end up with "two knives for every one you really need." On the other hand, bed knives are one of the few things Pine Valley's Eberhard Steinger keeps on hand, even though both Jacobsen and Toro are located close by in Philadelphia.

Spare parts inventory has increased in importance, according to Richard Eichner of the Lakeside Country Club, for at least two reasons. First, there are more kinds of machines now ("Who bothered with Aeroquip fittings or 'O' rings ten years ago?" he asks). Second, uncertainty of supply. Some parts are just plain hard to get. Eichner painfully remembers allowing 9 days, "generously," to rebuild five 5-gang fairway mowers. To receive gear chain mechanisms, axles and mowing frame hangers took 5 weeks! Eichner recommends

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Equipment

Continued from page 24

priority stocking of high-failure items, such as drive belts, bed knives, mower clutches and spare rollers.

Heavy expense, of course, is reason enough for at least some limitation in spare parts. Eichner lessens this problem by buying from industrial supply houses, rather than from original equipment manufacturers. As an example, he cites a drive belt for a Rogers cart costing \$14.65 plus tax and shipping from an equipment supplier, versus only \$4.26 from a bearing supply house, "with one hour delivery service." Eichner has also found a switch to Aeroquip fittings involves a high first cost, but "you gain back one-half of this on your first order for hose replacements."

How much spare inventory do major golf courses carry? Lakeside Country Club stocks about \$6,000 in spares, to care for a total equip-

ment selection valued at \$175,000 to \$190,000. Broadmoor Golf Club, servicing three golf courses, stocks this same amount of spares just for its Jacobsen Greens King mowers and at least \$15,000 or more total spares. These spares stand behind an equipment inventory costing \$385,000, but which would require over \$500,000 to replace today, according to Broadmoor's Chuck Clark.

Training school available

"Universally," states Parks Director James Colley from the City of Norfolk, Va., "municipal administrators have a weakness in understanding and knowing maintenance equipment." Colley's remedy is more training programs, from universities and equipment manufacturers, which provide a broader base of product knowledge than any single manufacturer. One such course is taught by Golf Course Supervisor Neil Beeson from the City of Anaheim, Calif., at nearby Fullerton College. But, admittedly,

such offerings are scarce.

A more common approach, and one which increasing numbers of supervisors and mechanics are taking advantage of, is the "service college" put on by such equipment manufacturers as Toro, Jacobsen and Kohler. Toro accepts a 30 student limit on courses booked up to a year in advance, discussing lawn mowers, sharpening, engines, hydraulics and the like. Jacobsen holds schools for mechanics every two years, with additional sessions for their distributors and an advanced golf and park school. B. Hayman Co., Inc. in Los Angeles services usually 600 people in 3 sessions, holding additional schools in San Diego and Las Vegas.

Agreeing that there is a shortage of good mechanics, Toro Pacific's Johnston advises that every course needs a first-line mechanic as an instructor and an adequate budget. Los Angeles Trade Tech trains such specialist mechanics, "but can't supply enough graduates," concludes Johnston. □

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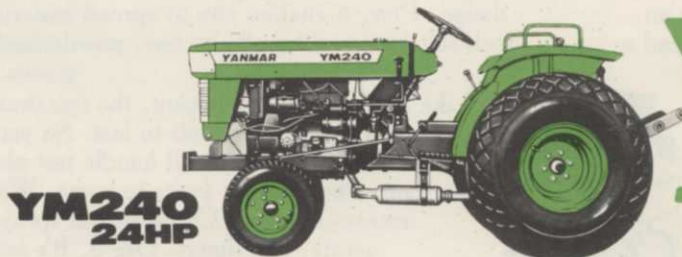
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Discs (cultivating)
Earth augers
Harrow (spring-toothed)
Hoists
Mowers (rotary and replacement parts)
Post hole digger
Rakes (landscaping)
Scrapers
Shredders

Auto Hoe, Inc., Lost Dauphin Dr., Box W121, De Pere, Wis. 54115
Tillers

Avco Ezee Flow, First & Sycamore Streets, Coldwater, Ohio 45828
Chemical Applicators (Granular)
Pruners
Seeders (Hopper-Type)
Spreaders (Hopper-Type)
Tractor Mounted Air Compressor

Avco New Idea, 420 South First St., Coldwater, Ohio 45828
Chemical Applicators (Granular)
Loaders (Tractor-Mounted)
Flail Mowers
Pruners
Seeders (Hopper-Type)
Snow Thrower

B

Bachtold Bros. Inc., 619 N. Center Street, Forrest, Ill. 61741
Brush Cutters
Log Splitters
Rotary Mowers
Saws, Circular, Gasoline
Trailers

B.A.G. Corporation, 9443 Sherwood Glen, P.O. Box 28403, Dallas, Texas 75228

Taicon Container, plastic, collapsible, reusable shipping container for handling bulk shipments
Super sack container, one-ton disposable container

Baker Equipment Mfg. Co., 1710 High Point Ave., Richmond, Va. 23230

Aerial towers, mobile equipment
Derricks, mobile equipment

Bartlett Mfg. Co., 3024 East Grand Blvd., Detroit, Mich. 48202

Saws, tree, combination pruner and saw
Saw, pruning, hand
Saw sheaths
Tree bracing materials

Bar-Way Mfg. Co., 476 Canal Street, P.O. Box 640, Stamford, Conn., 06904

Spray guns
Invigorator Gun (Liquid Ground Feeding)
Swivels for Coupled Hose
Lam-in-Sole (Foot Sole Protection)

John Bean Div., FMC Corp., 1305 S. Cedar St., Lansing, Mich.

Sprayers, hydraulic, all-purpose, pull-type, stainless steel tanks
Mistblowers, truck mounted, nozzle parts
Flamethrowers, (sprayers)

Beard-Poulan Division, Emerson Electric Co., 5020 Flournoy-Lucas Rd., Shreveport, Louisiana 71107

Generators
Pumps (centrifugal)
Saws (chains, electric and gasoline, chain parts)

Beatty Trailers, Box 1027, Burlington, N.C., 27215

Beatty trailers, self-contained, hydraulic dump; capacities 2, 3, 5, 9, 13-yard
Transport trailers, 6 to 30,000 lb. capacity; tag-a-long and goose neck

Beck Manufacturing Company, P.O. Box 2014, Auburn, Alabama 36830

Sod Cutters
Sod Harvesters
Greenhouses
Turf Grass Planters

Beeco Products Co., Industrial Park, Fort Washington, Pa. 19034

Spray Nozzles, Complete
Rotary Spray Head for Greenhouse Humidification

Bell Helicopter Co., P.O. Box 482, Fort Worth, Texas Helicopters

Bemis Company, Inc., 800 Northstar Center, Box 215, Minneapolis, Minn. 55402

Bags and liners, plastic
Bags, tree balling, litter, grass catcher
Twine, tying

Wm. Bergman Co., 11335 M-15, Reese, Mich. 48757

Service, stone picking, seeding, land preparation

Berkeley Pump Co., 829 Bancroft Way, Berkeley, Calif. 94710

Pumps (centrifugal)

Bermuda King, Inc., Rte. 1, Okarche, Okla. 73762

Sprig harvesters, 20", 28", 42", 30 to 60 hp, 500 to 1,000 watt an hour rating
Sprig planters, 1, 2, 3 and 4-row, large capacity
Fairway spriggers, 2 to 10' width, large capacity

Bete Fog Nozzle, Inc., P.O. Box 311, 305 Wells Street, Greenfield, Mass. 01301

Spray Nozzles (Complete)

Big Brute Turf Cutter, 18035 Georgia Ave., Olney, Md. 20832

Sod cutter

Big "J" Products, Route 1, Hanna, Ind. 46340

Sod harvester, dual palleted

Big John Tree Transplanter Mfg. Co., P.O. Box 608, Heber Springs, Ark. 72543

The world's largest patented tree spade

Billy Goat Industries, Inc., P.O. Box 308, Lee's Summit, Mo. 64063

Leaf Blowers
Lawn Sweepers
Vacuums

Black & Decker Mfg. Co., 701 E. Joppa Road, Towson, Md. 21204

Battery chargers
Edgers (electric)
Mowers (electric and cordless) & replacement parts
Cordless grass shears
Electric tillers
Trimmers (electric and cordless; hedge and grass; parts)

John Blue Co., P.O. Box 1607, Huntsville, Ala. 35807

Chemical applicators (granular and liquid)
Dusters (power)
Irrigation (injection equipment)
Pumps (centrifugal and complete power unit)
Spray booms
Sprayers (complete power unit)
Sprayers (cart or wheelbarrow type)
Spreaders (hopper-type)
Tanks (spray)
Tractor (13-20 hp)

Bluebird International, Inc., 2778 South Tejon, Englewood, Colo, 80110

Cranes
Hoists
Hydraulic Lifts
Vertical Mowers
Thatchers

BMB Company, Inc., North Vermont at 9th, Holton, Kansas 66436

Brush Cutters
Flail Mowers
Rotary Mower
Shredders
Rear Tractor Blades
Chisel Plows
Rear Mounted (Tractor) Lawn Mowers

Bock Industries Inc., 57540 State Rd. No. 195, Elkhart, Ind. 46514

Trailer for utility vehicles and golf car

Bogue Club Car, 100 Pennsylvania Ave., Paterson, N.J. 07059

Golf Cars

Bolens FMC Corp., OPE Division, 215 South Park St., Port Washington, Wisc. 53074

Earth augers
Backhoes
Blades (dozer-scraper)
Tractor loaders
Rotary mowers and replacement parts
Post hole digger
Snow thrower
Tillers
Tractors (8-20 hp)

Bombardier Limited, Valcourt, Quebec, Canada

Brush cutters
Low PSI tracked vehicles

Boss Irrigation Div., Consolidated Pipe Mfg., P.O. Box 5695, Lubbock, Texas 79417

Irrigation sprinkler

Bowie Industries Inc., P.O. Box 931, Bowie, Texas 76230

Erosion Control Materials
Hydraulic Seeding & Mulch Machines
Log Splitters
Pumps
Seeders (Hydraulic)
Sprayers, Complete Power Unit

Bridgeport Implement Works, Inc., 60 Rachel Drive, Stratford, Conn. 06497

Pixtone, trailer-type—self-powered, picks stone ¾ to 9-inch diameter

Briggs & Stratton Corp., P.O. Box 702, Milwaukee, Wis. 53201

Gasoline, Engines

Brighton By-Products Co., Inc., P.O. Box 23, New Brighton, Pa. 15066

Aerators

Chemical Applicators (Liquid)

Erosion Control Materials

Log Splitters

Dust Masks

Gas Masks

Backpack Mistblowers

Moisture Meters

Pruners

Hose Reels

Respirators

Spray Guns

Spray Nozzles, Complete

Sprayers (Cart or Wheelbarrow Type)

Sprayers (Complete Power Unit)

Brillion Iron Works, 200 Park Ave., Brillion, Wis. 54110

Swing-cut, rotary mower (60" and 72")

Turf-Maker, seeder for sod-growers (8' and 10')

Terra-Scraper, landscape rakes

Sure-Stand, landscape and agricultural seeders (5', 8', 10', 12')

Brinly Hardy Co., Inc., P.O. Box 1116, Louisville, Ky. 40201

Aerators

Blades (dozer-scraper)

Cultivating discs

Fork lift (attachment)

Harrow (spike-toothed and spring-toothed)

Turf rollers

Lawn sweepers

Brouwer Turf Equipment Limited, R.R. No. 1, Keswick, Ontario, Canada L4P 3C8

Reel mowers

Sod harvesters

Seeder Rakes

Steel Wheels

The Broyhill Company, No. Mkt. Sq., Dakota City, Nebr. 68731

Chemical applicators (liquid)

Hose (spray and irrigation)

Pumps (centrifugal)

Hose reels

Spray booms

Spray guns

Spray nozzles (complete)

Sprayers (cart or wheelbarrow type)

Sprayers (complete power unit)

Spray tanks

Power washers

Buffalo Turbine Agri. Equipment Co., Inc., Industrial Place, Gowanda, N.Y. 14070

Chemical Applicators (Granular and Liquid)

Power Dusters

Foggers

Insect Killer

Mistblowers, Backpack

Mistblowers, Truck-Mounted

Mistblowers, Nozzle Parts

Spray Nozzles, Complete

Sprayers, Complete Power Unit

Spreaders, Hopper-Type

Bunton Co., 4304 Poplar Level Rd., Louisville, Ky. 40232

Mowers, Rotary

Bush-Hog Implements, P.O. Box 1039, Selma, Ala.

Mowers, Rotary

C

E. L. Caldwell & Sons, Inc., 3204 Agnes St., P.O. Box 9316, Corpus Christi, Tex. 78408

Brush Cutters

Graders

Flail Mowers

Rotary Mowers

Replacement Parts Mowers

Post Hole Digger

Shredders

Sub-soilers

Hydraulic Cranes

Chisel Plows

California Brass Manufacturing, 2251 East 7th Street, Los Angeles, Calif. 90023

Foggers

Hose (Spray, Irrigation)

Irrigation Controller/Programmers

Irrigation, Components

Irrigation Sprinklers (Above Ground)

Irrigation Sprinklers (Impact)

Irrigation Sprinklers (Impulse, Pop-up, Heads)

Irrigation Sprinklers (Shrub and Bubbler)

Irrigation Sprinklers (Stationary)

Irrigation Miscellaneous Accessories

Irrigation Valves, Automatic

Irrigation (Quick Coupling Valves)

Irrigation Valves (Solenoid)

Cal-Turf, Inc., 5417 Santa Clara Ave., Camarillo, Calif. 93010

Sod

Stolons

Vexar® sod netting layer

Campbell-Hausfeld Co., Lombard Chain Saws, Sales Ave., Harrison, Ohio 45030

Gasoline chain saws and parts

Spray guns

Spray nozzles (complete)

Sprayers (cart or wheelbarrow type and complete power unit)

Capital Equipment Company, P.O. Box O, Alexander, Ark. 72002

Aerators

Blowers

Chippers

Edgers

Gasoline and Diesel Engines

Generators

Harrow (spike-toothed and spring-toothed)

Hose (spray, irrigation)

Irrigation (injection equipment)

Irrigation (components, pipe, risers)

Irrigation sprinklers (above ground)

Impulse, pop-up, heads

Spray, pop-up, heads

Rotary, pop-up, heads

Stationary

Valve in head (complete)

Leaf blowers

Tractor loaders (mounted)

Mowers (flail, greens, reel, rotary, sickle bar, vertical)

Park equipment

Post hole diggers

Pruners

Seeders (disc-type, hopper-type, hydraulic)

Shredders
Sod cutters
Soil testers
Sprayers (cart or wheelbarrow type)
Complete power unit sprayers
Lawn sweepers
Spray tanks
Thatchers
Tillers
Tractor (at 8-60 hp)
Hedge and grass parts trimmers
Turf vehicles
Vacuums

Caretree Systems, 7030 Huntley Rd., P.O. Box 347,
Worthington, Ohio 43085
Fork Lift (Attachment)
Hydraulic Lifts
Tree Spade
Tree Mowers

J I Case, Outdoor Power Equipment Division, 119 South First
Street, Winneconne, Wisconsin 54986

Backhoes
Blades (dozer-scraper)
Fork lift attachments
Tractor loaders (mounted)
Rotary mowers
Lawn sweepers
Tillers
Tractor (8-20 HP)
Complete line of lawn and garden tractor attachments in-
cluding snow-blowers, rotary mowers, tillers, compact
loaders and compact loader, backhoes
Dump Carts

Cast Iron Pipe Res. Assoc., 1211 W. 22, Oakbrook Exec.
Plaza, Suite 23, Oakbrook, Ill. 60521
Cast iron pipe for irrigation

Causco Inc., 106 W. 31 St., Independence, Mo. 64055
Portable hydraulic power packs
Hydraulic tools for pruning
Chain saws
Pavement breakers
Clay spades
Also sell and rent aerial bucket lifts, 24-150 feet.

Cenol-Division Burgess Vibrocrafters Inc., Route 45 and
Peterson Rd., P.O. Box 177, Libertyville, Ill. 60048.
Chemical applicators (liquid)
Foggers
Insect killers
Mistblowers (nozzle parts)

Century Engineering Corporation, 221 4th Ave. S. E., Cedar
Rapids, Iowa 52401
Sprayers, trailer, tractor, jet or mechanical agitation
Washers, high pressure
Heaters, portable oil and gas

Certain-Teed/Daymond Co., 230 Collingwood, Suite 150,
Ann Arbor, Mich. 48103
Certa-Flex, corrugated plastic tubings of various
diameters for land drainage and trickle irrigation

CertainTeed Corporation, P.O. Box 860, Valley Forge, Pa.
19482
Irrigation Pipe (Risers)

Champion Brass Mfg., Co., 1460 N. Naud St., Los Angeles,
Calif. 90012
Irrigation Controller/Programmers
Irrigation, Components
Irrigation Sprinklers (Above Ground, Impact, Impulse,
Pop-up, Heads, Stationary)

Irrigation Miscellaneous Accessories
Irrigation Valves (Automatic and Flow Control)

The Champion Company, 400 Harrison St., Springfield, Ohio
45501
Trailer

Champion Heater Company, 221 4th Ave. SE, Cedar Rapids,
Iowa 52401
Heaters (portable oil fired and portable gas fired)
Washers (portable high pressure)

R. E. Chapin Mfg. Works, Inc., 29 Liberty St., Batavia, New
York 14020
Sprayers (Cart or Wheelbarrow Type)
Sprayers (Complete Power Unit)

Chemagro Agricultural Division of Mobay Chemical Corp., Box
4913, Kansas City, Mo.
Fungicides
Insecticides
Molluscicides

Clarke Div., Clarke-Gravelly Corp., 2800 Estes Street, Dept.
17 WT&T, Muskegon, Michigan 49441
Lawn sweepers
Vacuums
Automatic scrubber/vacuums for artificial turf main-
tenance
Wet/dry vacuum cleaners
Parking lot sweepers

Clark Equipment Company, 112 North University, Fargo
N.D. 58102
Skid steer loader

Clark Equipment Trailer Division, P.O. Box 410, Michigan
City, Indiana 46360
Clark equipment mini trailers; 22 and 30 ft. flatbed
trailers designed for use with 5th wheel connecting pick-
up trucks.

Clinton Engines Corporation, Clark & Maple Streets, Ma-
quoketa, Iowa 52060
Edgers
Gasoline Engines
Rotary Mowers
Replacement Parts Mowers
Centrifugal Pumps
Saws, Chain, Gasoline
Sprayers, Complete Power Unit

Club Car, Inc., P.O. Box 897, Augusta, Georgia 30903
Caroche, four-wheel electric golf car (2 passengers)
Caroche utility truck, four-wheel electric utility truck (2
passenger and 500 lb. load)
Caroche Personnel Carrier, four-wheel electric (4
passengers)
Caroche Islander, combination commuter and golf car

Conaway, Inc., P.O. Box 303, Mayview Road, Lawrence, Pa.
15055
Blowers
Edgers
Generators
Leaf Blowers
Log Splitters
Rotary Mowers
Saws, Chain, Gasoline
Tillers
Tractor (8-20 HP)

Contree Sales, P.O. Box 129, Columbus, Wis. 53925

Chemical Applicators (Granular and Liquid)

Hose

Pumps

Centrifugal Pumps

Spray Booms

Spray Guns

Spray Nozzles, Complete

Sprayers (Complete Power Unit)

Spray Tanks

Conwed Corporation, 2200 Highcrest Rd., St. Paul, Minn. 55113

Conwed Hydro Mulch, a wood fiber mulch used in hydro seeding

Conwed Economy Erosion Control Netting, tough plastic net used over loose mulches in high erosion areas

Cooper Mfg. Co., 422 S. First Ave., Mardhaltown, Iowa 50158

Edgers, gasoline powered

Mowers, reel, walking

Champion 21, greensmower

Corona Clipper Co., 14200 E. 6th, Corona, Calif. 91720

Pruners

Manual saws

Shears

Trimmers (hedge and grass parts)

Correct Mfg., London Road Extension, Delaware, Ohio 43015

Aerial Bucket Lifts

Earth Augers

Coursigns, Inc., 6500 N. Clark St., Chicago, Ill. 60626

Stakes, signs rope/plastic stakes and signs to direct golfers and golf carts, and to rope off repair areas of golf courses

Sand trap rakes, specially designed for golf course use

Howard S. Crane, Inc., P.O. Box 88, Oneida, New York 13421

Moisture tester

Creative Sales, Inc., 222 Park Avenue, Fremont, Nebraska 68025

Tree Injectors

Cresline Plastic Pipe Co., Inc., 955 Diamond Ave., Evansville, Ind. 47717

Cresline, PVC pipe and fittings

Crown Chemicals, 4235 Duncan Ave., St. Louis, Mo. 63110

Arborist supplies

Chemical applicators (liquid)

Insect killer

Dust masks

Gas masks

Mistblowers (truck-mounted and nozzle parts)

Pumps

Reels (hose)

Respirators

Spray guns

Spray nozzles (complete)

Sprayers (cart or wheelbarrow type, also complete power unit)

Spray tanks

Tree injectors

Crysteel Mfg. Inc., Highway 60 East, Lake Crystal, Minn. 56055

"Lo-Boy" truck hoist, 8 models available to fit any size truck

Trailer hitches

Grain bodies

Curtis Dyna Products Corporation, P.O. Box 297, Westfield, Indiana 46074

Chemical Applicators, Liquid

Foggers

Cushman-Ryan OMC-Lincoln, Box 82409, Lincoln, Nebraska 68501

Golf cars

Cyclone Seeder Co., Inc., Box 68, Urbana, Ind. 46990

Seeders (hopper-type)

Spreaders (hopper-type)

All products are of the broadcast type

D

Dadco, P.O. Box 2086, Fresno, Calif. 93719

Dadco, Battery Clamps

Ross Daniels, Inc., P.O. Box 430, West Des Moines, Iowa 50265

Root-Feeding Rods

Commercial Tree Stakes

Davey Tree Expert Co., Kent, Ohio 44240

Tree nursery, 150 varieties of shade and ornamentals

Tree service, nationwide and Canadian representation

Davis Mfg., P.O. Box 9228, Wichita, Kansas 67277

Backhoes

Blades (Dozer-Scraper)

Boring Units

Compactors

Fork Lifts

Fork Lift (Attachment)

Boom Loaders

Tractor Loaders

Vibratory Plows

Turf Rollers

Snow Thrower

Trencher

Dedoes Industries Inc., 1060 W. Maple Rd., Walled Lake, Mich. 48088

Aerator

Deere & Company, John Deere Rd., Moline, Ill. 61265

Backhoes

Compactors

Engines, Diesel

Fork Lifts

Graders

Skid Steer Loader

Tractor Loaders

Flail Mowers

Scrapers

Tractor, Crawlers

Motor Graders

Excavators

4 Wheel-drive Loaders

Skidders

Log and Lumber Loaders

Feller-Bunchers

Tree Harvester

Delavan Mfg. Co., 811 Fourth St., West Des Moines, Iowa 50265

Nozzles, all conceivable types, sizes and spray angles

Accessories, boom control valves, pressure relief valves, pumps, roller, turbine, piston

Derby Tiller Co., P.O. Box 21, Rumson, N.J. 07760

Log Splitters

Tillers

DESA Industries, Inc., 25000 S. Western Ave., Park Forest, Ill. 60466

Saws, Chain, Electric, Gasoline

Saws, Chain, Parts

Dico Co., Inc., P.O. Box 1344, Des Moines, Iowa 50305
Dico Knuckle Boom for log loaders
Trolley boom hoists

Didier Mfg. Co., 1652 Phillips Ave., Racine, Wisc. 53403
"Hydra Splitter" log splitter
"Hydra Sickle" sickle bar attachment

Digz-All Trencher Co., Div. Wing King Co., Merrill, Iowa 51038
Digz-All, Trenchers

J. J. Dill Co., P.O. Box 788, 1407 Ravine Rd., Kalamazoo, Mich. 49005

- Blowers
- Chemical applicators (granular and liquid)
- Power dusters
- Foggers
- Hose (spray, irrigation)
- Insect killer
- Leaf blowers
- Dust and gas masks
- Mistblowers (backpack and truck-mounted)
- Pumps
- Centrifugal pumps
- Hose reels
- Respirators
- Safety equipment
- Spray booms
- Spray guns
- Spray nozzles (complete power unit)
- Spreaders (hopper-type)
- Spray tanks

Ditch Witch, P.O. Box 66, Perry, Ohio 73077

- Backhoes
- Boring Units
- Skid Steer Loader
- Vibratory Plows
- Trencher

Ditch Witch Division, The Charles Machine Works, Inc., P.O. Box 66, Perry, Okla. 73077

Underground construction equipment — trenchers, vibratory plows, utility backhoes, horizontal boring units and related equipment including trailers. Range of line — 7 hp to 195 hp.

Ditch Witch Equipment Co., P.O. Box 15881, 11662 S. Choctaw Dr., Baton Rouge, La. 70815

- Backhoes
- Boring units
- Hydraulic and air powered T
- Vibratory plows
- Trailers
- Trenchers

Ditch Witch of Columbus Inc., P.O. Box 420, Worthington, Ohio 43085

Distributor of trenchers

Ditch Witch of San Diego, 4661 Ruffner St., San Diego, Calif. 92111.

- Augers
- Earth augers
- Backhoes
- Boring units
- Drainage tubing
- Trailers
- Trencher

Dobbins, Inc., 9371 Chapman Ave., Garden Grove, Calif. 92641

- Turf dresser
- Precision multi-purpose mulcher-spreader

The Dow Chemical Co., 14955 Sprague Rd., Strongsville, Ohio 44136

- Insect killer
- Weed killers
- Grass killers
- Insecticides
- Miticides
- Nematocides
- In general—turf chemicals

DriAll, Inc., P.O. Box 309, Attica, Ind. 47918

- Air curtain destructor, pit incinerator for disposal of trees and wood products—air pollution approved
- Scarifier leveler, leveling device with scarifying teeth for landscapers, sod growers
- Yard leveler, leveling or grading drag

Dunlop Tire & Rubber Corp., Box 1109, Buffalo, N.Y. 14240
Dunlop tires, for cars and trucks, tractors and implements

E

Eagle Mfg. Co., 24th & Charles St., Wellsburg, W. Va. 26070
Eagle Cans, gasoline cans manufactured to meet OSHA regulations

Earth Packing Industries, 3340 Peachtree Rd., Atlanta, Ga. 30326

Earth compactor, mounts on a backhoe boom

Echo Chain Saw Div., Kioritz Corp. of America, 350 Wainwright Ave., Northbrook, Ill 60062

- Blowers
- Brush cutters
- Foggers
- Mistblowers (backpack)
- Gasoline chain saws and parts
- Gasoline engines
- Flamethrowers (sprayers)
- Power duster

Edwards Manufacturing Company, Route No. Box 1275, Ponca City, Oklahoma 74601

Edwards sprayers, power sprayers, 50, 100, 200, 300, 400, 500, 1,000 gallons; 3 to 50 hp engines

Energy Mfg. Co., Inc., 100 North Main Street, Monticello, Iowa 52310

- Hoists
- Hydraulic Cylinders
- Hydraulic Pumps
- Hydraulic Motors
- Hydraulic Valves
- Truck Hoist

Engineering Products Co., 1505-HF, Anoka Street, Waukesha, Wis. 53186

- Tractor Loaders
- Rotary Mowers
- Sickle Bar Mowers
- Snow Thrower
- Tractor (8-20 HP)

Erickson Corp., 211 St. Anthony Blvd., N.E., Minneapolis, Minn. 55418

- Backhoes
- Skid Steer Loaders
- Handling Materials
- Post Hole Digger
- "Eldorado" slipform concrete paver
- Material Handling Trucks

ESB Brands, Inc., P.O. Box 6949, Cleveland, Ohio 44101

- Storage Batteries
- Battery Chargers

Eversman Mfg. Co., Curtis at Fifth St., Denver, Colo. 80204
Eversman Land Leveler

Excel Industries, Inc., Box 727, Hesston, Kansas 67062

Blades (Dozer-Scraper)
Brooms
Edgers
Rotary Mowers
Shredders
Snow Thrower
Tractor (13-60 HP)
Trailers
ROPS cabs for lawn tractor
Grass/leaf catcher/compactor attachment
Cultivator attachment
Grass/leaf mulcher attachment

E-Z Go Car, Textron, Inc., P.O. Box 388, Augusta, Ga. 30903

Light-Hauling Utility Truck
Turf Vehicles
Electric and Gasoline Golf Cars

E-Z Rake, Inc., 1001 S. Ransdell Road, Lebanon, Indiana 46052

Lawn Sweepers
Thatchers
Vacuums

F

Fairmont Hydraulics, 332 S. Michigan, Chicago, Ill. 60604

Earth Augers
Brush Cutters
Hoists
Hose
Hydraulic & Air Powered Tools
Post Hole Digger
Pruners
Saws, Chain Hydraulic, Circular
Tools, Hand, Hydraulic
Winch

The Fanno Saw Works, P.O. Box 628, Chico, Calif. 95927

Arborist Supplies
Hydraulic & Air Power Tools
Manual Saws
Saws, Chain, Hydraulic
Pruners
Tools, Hydraulic, Hand, Pneumatic

Fayette Division, Dayton-Walther Corporation, P.O. Box 339, Fayette, Ohio 43521

Trailers

Ferrari International Inc., 6104 Avenida Encinas, Carlsbad, Ca. 92008

Sickle Bar Mowers
Snow Thrower
Sprayers (Complete Power Unit)
Tillers
Tractors (21-60 hp)

Ferti-Feeder, 3973 Eastlay, Des Moines, Iowa 50306
Ferti-Feeder, tree deep root fertilizer injector

Fibre Glass Products, Box 147, Swannanoa, N. C. 28778

Tool boxes—pickup truck, fiberglass construction, pad-
dle locks, built to accommodate B & G sprayer, fits all
size trucks

Fimco, Inc., 1st & Court Streets, Sioux City, Iowa 51101

Big Butch, pressure washer, electric, portable
Dobbins, sprayer, lawn and garden, gas, mechanical
agitation; sprayer, orchard and golf course, gas, mechani-
cal agitation

Finn Equipment Company, 2525 Duck Creek Rd., Cincinnati, Ohio 45208

Hydraulic seeding and mulch machines
Mulch blowers
Hydraulic seeders
Burner (air curtain)

The Flintkote Co., Pipe Products Div., Box 151, Ravenna, Ohio 44266

PVC pipe

Flo-Control Inc., 3212 Winona Ave., Burbank, Calif. 91510

Irrigation valves (flow)
P.V.C. compression fittings
Couplings
Adapters
Tees
Check valves

FMC Corp., Agricultural Machinery Div., 5601 E. Highland, Jonesboro Ar. 72401

Blowers
Brush cutters
Chemical applicators (liquid)
Foggers
Hose (spray, irrigation)
Leaf blowers
Mistblowers (truck-mounted and nozzle parts)
Flail mowers
Pumps
Centrifugal pumps
Hose reels
Spray booms
Spray guns
Spray nozzles (complete)
Spray boom
Sprayers (cart or wheelbarrow type, also complete power unit)
Spray tanks

FMC Corporation, Outdoor Power Equipment Div., 215 South Park Street, Port Washington, Wis. 53074

Rotary Mowers
Replacement Parts Mowers
Snow Thrower
Tillers
Tractor (8-20 HP)

FMC Corporation, Side-Winder, P.O. Box 818, Minden, Louisiana 71055

Blades (Dozer-Scraper)
Brush Cutters
Flail Mowers
Rotary Mowers
Power Incorporators
Power Cultivators
Power Bed Forming Tools

FMC Corporation, Sweeper Division, 1201 E. Lexington St., Pomona, Calif. 91766

Chippers
Municipal and Industrial Sweepers
Power Scrubbers

Flymo, P.O. Box 939, Elkhart, Ind. 46514
Flymo air-cushion rotary mower

Foamspray Chemicals, Inc., P.O. Box 20183, 2623 Perth St., Dallas, Texas 75220

Spray Nozzles, Complete
Soil Conditioners (Liquid)
Growth Aids (Liquid)
Surfactants and Wetting Agents

THIS GANG MEANS BUSINESS



There are things, like fine wines, which improve with age. Regrettably, industrial lawn-turf equipment doesn't. It takes quality replacement parts and periodic maintenance to keep it performing at its best.

Because so much of your business depends on your grounds-keeping equipment, you want replacement parts that are rugged, reliable and available when you need them. Down-time is an expensive and bothersome problem which effects the beauty and popularity of your course.

At LMP we understand your equipment problems. For more than 20 years, we have specialized in manufacturing and stocking the finest bed knives,

gears, bearings, gaskets, seals, shafts and other replacements. And, every LMP part is original equipment quality or better, to keep your gang in top condition.

LMP has replacements that put "bite" back into your equipment and keep it rolling for years to come. Parts for Toro, Jacobsen, Worthington, Locke Devere, Roseman and others. Also reel and rotary-type mower and edger parts, all ready for immediate shipment.

The next time you and the gang get together, make sure you mean business.

Replace those worn-out parts with quality LMP parts. You'll save time and money.

There's an LMP distributor near you... nationwide.



Foley Mfg. Co., 3300 Fifth St. N.E., Minneapolis, Minn. 55418

Chain saw sharpeners
Mowers and cutters sharpeners

Ford Motor Co., Tractor Operations, 2500 E. Maple, Troy, Mich. 48084

Backhoes
Blades (Dozer-Scraper)
Skid Steer Loader
Tractor Loaders
Flail Mowers
Rotary Mowers
Sickle Bar Mowers
Post Hole Digger
Landscaping Rakes
Snow Thrower
Tillers
Tractor (8-151 and up HP)

Fore-Par, Inc., 7150 Fenwick Lane, Suite 106, Westminster, Calif. 92683

Fore-Par, tee markers, practice green markers, direction and rules signs, flags, personalized flags, tee monuments

Fox Valley Marking Systems, P.O. Box H, Cary, Ill. 60013.

Park Equipment
Safety Equipment
Landscaping Marker
Parking Lot Striping Equipment

Friend Mfg. Corp., 4441 Prospect St., Gasport, N.Y. 14067

Arborist supplies
Brush cutters
Brush hooks
Chemical applicators (liquid)
Generators
Hose
Hose (spray, irrigation)
Dust mask
Mistblowers (truck-mounted and nozzle parts)
Pruners
Pumps
Hose reels
Respirators
Manual saws
Hydraulic chain saws
Electric circular saws
Shears
Spray booms
Spray guns
Spray nozzles (complete)
Spray boom
Sprayers (complete power unit)
Spray tanks
Canvas fruit picking buckets

Fruend Can Co., 143 W. 84th St., Chicago, Ill.

Gasoline cans to meet OSHA specifications

Fuerst Brothers, Inc., P.O. Box 271, Rhinebeck, New York 12572

Aerators
Harrow (Spike-Toothed)
Landscaping Rakes
Fuerst F-l-e-x-i-b-le Tine Harrows

Game Time, Inc., 900 Anderson Rd., Litchfield, Michigan 49252

Park Equipment
Metal and Wood Park and Playground Equipment
Above Ground Pools
Circle Eight Panelized Buildings
Park Shelters

Gandy Company, 528 Gandrud Road, Owatonna, Minnesota 55060

Gandy turf tender, for fertilizer, seed or granular chemical; 42-inch width
Gandy spreader 600 series, for fertilizer, seed or granular chemical; 3, 4, or 5-foot width
Gandy Spreader 10A series, for fertilizer, seed or granular chemical, 6, 8, 10 or 11-foot width, pull-type and tractor mounted
Gandy Spreader 1020A, for fertilizer, seed or granular chemical; 20 foot; folding
Gandy disk mount, granular applicator; 3 to 20 foot, hydraulic or mechanical drive
Gandy Ro-Hi, high clearance granular applicator; 5 to 28-inch band
Gandy line tender, granular applicator; 1 to 21-inch band, handle control
Gandy super/junior, granular applicator; 1 to 21-inch band, implement-mounted
Gandy measuring wheel, one-man land measuring in feet or meters

Garber Seeders, Inc., St. Paris, Ohio

Seeders, hopper-type

General Control, Inc., 3334 E. Pennsylvania St., Tucson, Ariz. 85714

Irrigation Valves
Flow Control

General Electric Co., Outdoor Power Equipment Operation, Corporations Park, Bldg. 702, Schnectady, N.Y. 12345

Tractors, electric/battery-powered, full line of attachments

General Scientific Equipment Co., Limekiln Pike & Williams Ave., Philadelphia, Pa. 19150

Dust Masks
Gas Masks
Pumps
Respirators
Safety Belts and Saddles, Tree Climbers
Trash Compactors
First Aid Supplies, Kits, Cabinets

Giant-Vac Mfg., Inc., Machine Shop Road, South Windham, Conn. 06266

Leaf blowers
Chippers
Log splitters
Handling materials
Tillers
Lawn sweepers
Thatchers
Vacuums

Gielow Co., Inc., 3311 Sharpview Dr., Dallas, Texas 75228

"Trim-it" a weed cutting-grass trimming machine which cuts with a flexible filament of nylon

Gilson Bros. Co., Box 152, Plymouth, Wisc. 53073

Mowers
Shredders
Tractors

G

G. & H. Products, Inc., St. Paris, Ohio 43072

Uni-Lift, motorized all-position stand for riding mowers, lifts up to 80 inches, 1,000 lb. loads, in less than 30 sec.

Ginther Equipment Corp., 1830 Gird Rd., Fallbrook, Ca. 92028

- Park equipment
- Pruners
- Hand and hydraulic and pneumatic tools
- Trailers
- Light-hauling utility trucks
- Turf vehicles
- Control stakes and guide rope
- Clipping spreaders
- Du-Wipers
- Turf drags
- Hydraulic dump trucks and trailers
- Driving range markers and bag supports, signs and out of bounds markers

Glendale Optical Co., Inc., 130 Crossways Park Dr., Woodbury, L. I., N.Y. 11797

- Hard hats, head protection gear

Goodall Div., 1405 Bunton Rd., Louisville, Ky. 40213

- Goodall, mower, rotary

The Gorman-Rupp Company, 305 Bowman Street, P.O. Box 1217, Mansfield, Ohio 44901

- Pumps

Gould Inc., P.O. Box 3140, St. Paul, Minn. 55165

- Storage batteries

Granberg Industries, Inc., 200 So. Garrard, Richmond, California 94804

- Chain saw sharpener

Grass Growers, Inc., P.O. Box 584, Plainfield, New Jersey 07061

- Terra Tack, for erosion control, straw / hay tack and mulch binder

Gravely, Division Clarke-Gravely Corp., One Gravely Lane, Clemmons, N.C. 27012

- 816 4-wheel tractor, 8-spd. trans., 16 hp, Onan 2-cylinder engine (rear mounted)
- 812 4-wheel tractor, 8-spd. trans., 12 hp Kohler single cylinder engine (rear mounted)
- 810 4-wheel tractor, 8-spd. trans., 10 hp Kohler single cylinder engine (rear mounted)
- 408 lawn tractor, 34-inch rotary mower, 8 hp Kohler engine
- 7.6 hp custom 2-wheel tractor, 30" rotary mower, 40" rotary mower, 50" rotary mower
- 7.6 hp 2-wheel tractor, rotary tiller, rotary plow, rotary cultivator
- C-10 hp commercial 2-wheel tractor, 44", 38", 36" snowblowers, front mount 48" scraper
- C-12 hp commercial 2-wheel tractor, blade, center-mount scraper blader, riding sulky for 2-wheel tractors

Greenlawn Sprinkler Co., 2200 South Lipan, Denver, Colorado 80223

- Irrigation Pipe, Risers
- Irrigation Sprinklers, Shrub and Bubbler
- Irrigation Sprinklers, Spray, Pop-Up, Heads
- Irrigation Valves, Automatic
- Irrigation Valves, Flow Control
- Irrigation Valves, Solenoid
- Manifold Tees

W-W Grinder Corp., 2957 N. Market, Wichita, Kansas 67219

- Augers
- Chippers
- Shredders
- Soil Elevator
- Magnetic attachment for Fork lift

Griswold Controls, 124 E. Dyer Road, Santa Ana, Calif. 92707

- Irrigation controller/programmers
- Irrigation valves (automatic)
- Irrigation valves (flow control, pressure activated, and solenoid)

Ground Hog, Inc., P.O. Box 290, San Bernardino, Calif. 92402

- Augers
- Earth Augers
- Drills (Field)
- Post Hole Digger

Grumman Aircraft Corp., S. Oyster Bay Rd., Bethpage, L.I., N.Y.

- Aircraft, fixed wing

The Guildsman Co., Harrisburg, Pa.

- Sprayer, pneumatic-hydraulic, self-contained

Gulf States Paper Corp., P.O. Box 3199, Tuscaloosa, Ala. 35401

- Erosion control material

H

Hadfield Sod Roller Co., 6443 Sherwood, Oxford, Mich. 48051

- Sod roller

Hahn, Inc., Turf-Ag Division, 1625 N. Garvin St., Evansville, Indiana 47717

- Aerators
- Blowers
- Chemical Applicators, Liquid
- Leaf Blowers
- Greens Mowers
- Reel Mowers
- Rotary Mowers
- Vertical Mowers
- Pumps
- Snow Thrower
- Spikers
- Spray Booms
- Spreaders Hopper-Type
- Spray Tanks
- Thatchers
- Tillers

W. L. Hamilton Co., 327 Lenter St., Bangor, Mich. 49013

- Spray guns
- Spray nozzles (complete)
- Unloader valves

Hancor, Inc., P.O. Box 1047, Finlay, Ohio 45840

- Drainage tubing

Clifford B. Hannay & Son, Inc., 422 Maple St., Westerlo, N.Y. 12193

- Hose reels

Harvestall Industries, Inc., 3 North Walnut Ave., New Hampton, Iowa 50659

- Truckler, combination forklift trailer

Haynes Mfg. Co., Inc., P.O. Box 191, Livingston, Texas 77351.

- Tree girdler, mechanical earth drill, wood and stump drill, brush and pruning tools, power soil sampling tools, brush saws, shredder-mowers, saw grinders, brush rakes.

Hays Fluid Controls Division, Zurn Industries, 801 West 12th Street, Erie, Pa. 16512

- Irrigation Valves, Solenoid

Hays Spray Gun Co., 98 N. San Gabriel Blvd., Pasadena, Calif.

Sprayers, hose end

Hefty Tractor, Cross & Industrial Sts., Juneau, Wisc. 53039
Tractors

Hemco Corporation, 111 N. Powell/P.O. Box 210, Independence, Missouri 64051

Spray tanks

Tool box-Fiberglass for Pick-up Trucks

Herd Seeder Company, Inc., P.O. Box 448, 3600 E. on U.S. 35 SE, Logansport, Indiana 46947

Chemical applicators (granular)

Hopper-type seeders

Hopper-type spreaders

Hesston Corp., Lawn Equipment Division, The Toro Company, P.O. Box 39040, Indianapolis, Ind. 46239

Hesston Front-Runner—grounds maintenance tractors, model 200, 19.8 hp—model 180, 18 hp—Model 160, 16 hp; 48", 60" mowers and 80" batwing mower head, self-contained vacuum pick-up (fits 48" & 60" mower heads only). Other attachments: rotary broom, dozer, snow thrower and tillage equipment; features hydrostatic drive, articulated steering, "up-front", roomy operator cockpit Hesston stump cutter, 8 hp Briggs & Stratton engine, portable, replaceable

Hesston tractor, 16 hp, 18 hp, 20 hp; mower—rotary 48", 60", 80"; vacuum collector, snow-plow dozer blades, rotary broom, cultivators, 42" wide—disc harrow—29"-39" cutting width, aerator, 36" wide, stump cutter, stump removal to 8" below ground level

Highway Equipment Company, 616 D Ave. N.W., Cedar Rapids, Iowa 52405

Hi-Way model P, utility, hopper-type spreader body that is simply set into a truck body to convert pickup, flatbed or dump body into spreader unit; spreads sand salt or cinders up to 40 ft; used, to spread fertilizer and lime in landscape work

Hiller Aircraft Corp., 1350 Willow Rd., Palo Alto, Calif.

Aircraft, helicopter

Hills-Liqui System, P.O. Box 1043, Victoria, Texas 74901

Horticultural service machine, a specialized tool for feeding, spraying, and treating plants, trees and lawn sprayers

HMC, The Green Machine, 22131 S. Vermont, Torrance, Calif. 90502

Earth Augers

Blowers

Boring Units

Brush Cutters

Flamethrowers (Sprayers)

Leaf Blowers

Backpack Mistblowers

Post Hole Digger

Pruners

Pumps

Pumps, Centrifugal

Trimmers, Hedge and Grass

Hoffco, Inc., 25 Washington Ave., Richmond, Ind. 47374

Hoffco, P8—power scythe, MP—brush cutter, 973—one-man post hole drill, 1000—2-man (2 cycle) post hole drill, Comet Jac-Lift, 2000 lb. winch hoist, 1100—2-man (4 cycle) post hole drill

W. J. Holland Supply, 191 W. 32nd St., Holland, Mich.

Trailers

Holsclaw Bros., Inc., 1325 E. Virginia St., Evansville, Indiana 47711

Trailers

Homelite, A Division of Textron, P.O. Box 7047, Charlotte, N.C. 28217

Generators

Pumps

Centrifugal pumps

Gasoline chain saws and parts

Hortiscap, Inc., 7866 Second St., Dexter, Michigan

Hortiscap landscape border edging

Hortiscap tree guying units

Howard Rotavator Co., Inc., 343 South Division, P.O. Box 100, Harvard, Ill. 60033

Aerators

Backhoes

Tillers

Hub States Chemical, 2000 North Illinois Street, Indianapolis, Ind. 46202

Power dusters

Flamethrowers (sprayers)

Foggers

Hose

Insect killer

Dust and gas masks

Mistblowers (backpack, self-propelled, truck-mounted, nozzle parts)

Pumps

Hose reels

Respirators

Spray booms

Spray guns

Spray nozzles (complete)

Spray boom

Sprayers (cart or wheelbarrow type, and complete power unit)

Spreaders (hopper-type)

Spray tanks

H. D. Hudson Manufacturing Company, 1500 N. Michigan Ave., Chicago, Illinois 60611

Chemical applicator (granular and liquid)

Flamethrowers (sprayers)

Pumps

Root-feeding rods

Spray booms

Spray guns

Spray nozzles (complete)

Spray boom

Sprayers (cart or wheelbarrow type, complete power unit)

Cordless electric sprayers

Compression sprayers

Hunt Malyce Inc., 723 E. Haley Street, Santa Barbara, Calif. 93103

Irrigation, Injection Equipment

Auto Pilot Liquid Fertilizer Injector

Electrolab—Automatic laboratory for auto pilot injector and manual testing

Husqvarna, Inc., 151 New World Way, South Plainfield, New Jersey 07080

Reel mowers

Rotary mowers

Gasoline chain saws

Gasoline circular saws

Chain saws parts

Huss Sales and Service, 1929 Starr Ave., Toledo, Ohio 43605
Stump cutter

Hydraulic Products Co., Inc., 501 East 42nd, Lubbock, Texas 79404

HPC submersible and vertical turbine pumps for deep wells and pressure booster applications for irrigation applications

Hydra Terra Corp., 1524 Alameda, Pomona, Calif. 91768
Hose, Spray/Irrigation

Hydro-Turf, P.O. Box 3, Elk Grove, Ill. 60007
Hydro Turf spraying equipment, sprinkler systems —
above ground, seeders, portable pumps, portable
generators, flexible hose and pipe, Hydro seeders and
mulchers

Hypro Division, Lear Siegler, Inc., 375 Fifth Ave. N.W., New
Brighton, Minn. 55112

Pumps
Centrifugal Pumps
Spraying and liquid transfer accessories: strainers, relief
valves, unloader valves, ball valves, flow control and
diverting etc.

I

Ideal Crane Div., Bert Parkhurst & Co., 15051 E. Admiral Pl.,
Tulsa, Okla. 74116

Ideal Crane, hydraulic truck crane (can be operated both
electrically and by hand); 3000 lb. capacity electrically-
operated crane is \$799.00; 2500 lb. capacity hand-
operated crane is \$349.45; barrel chain and nursery and
appliance strap available

Imperial Underground Sprinkler, 705 E. 31st St., Kansas City,
Mo. 64109

Irrigation, spray heads and controllers

Inject-O-Meter Mfg. Co., Inc., 820 Thornton, Clovis, New
Mexico 88101

Chemical Applicators, Liquid
Irrigation, Injection Equipment

Instant Shade Tree Inc., P.O. Box 45437, Houston, Texas
77045

Hydraulic tree spade for transplanting trees

International Harvester Co., 401 N. Michigan Ave., Chicago,
Ill. 60611

Rotary Mowers
Shredders
Snow Thrower
Tillers
Tractor (8-60 HP)

International Spike, Inc., 462 East High St., Lexington, Ky.
40508

No. 2000 tree and shrub food spikes
No. 2001 evergreen food spikes
No. 2001 fruit tree food spikes

Irri-Trol Mfg. Inc., 13745 Satcot St., Van Nuys, Calif. 91402

Irrigation Valves
Control Programs

Irrrometer Company, Inc., P.O. Box 2424, Riverside, Calif.
92506

Irrigation (miscellaneous accessories)
Moisture meters
Soil moisture sensors
Hermetically sealed gauge (pressure and vacuum)

ITT Marlow, P.O. Box 200, Midland Park, N.J. 07432
Pumps, irrigation, portable, submersible

J

Jacobsen Manufacturing Co., 1721 Packard Ave., Racine,
Wisconsin 53403

Aerators
Blowers
Brooms
Leaf Blowers
Greens Mowers

Reel Mowers
Rotary Mowers
Vertical Mowers
Replacement Parts Mowers
Park Equipment
Seeders, Disc-Type
Snow Throwers
Sod Cutters
Spikers
Sweepers, Lawn
Thatchers
Top Dressers
Tractor (61-151 HP)
Trailers
Turf Vehicles

Jacobsen Manufacturing Co., Sod-Master Div., 3456 N.
Washington Ave., Minneapolis, Minn. 55412

Pipe Piper, 10, 14, 18 hp irrigation pipe pullers; bury the
pipe without removing the earth—no trenching

Jameson Corporation, 610 Scholtz Rd., Charlotte, N.C. 28210

Arborist Supplies
Pruner Poles—Fiberglass

Jari Division, Year A Round Cab Co. Inc., Hwy. 167 North,
Mankato, Minn. 56001

Sickle bar mowers

Jeep Corporation, 14250 Plymouth Road, Detroit, Michigan
48232

Jeep 4-wheel drive vehicles, Jeep CJ-5/CJ-6 and Jeep
Cherokee 4-wheel drive sport/utility vehicles, Jeep
Wagoneer 4-wheel drive station wagons and Jeep 4-wheel
drive pick-up trucks (light/medium duty)

JLM Products & Design, 6805 Boysenberry Way, Colorado,
Springs, Colo. 80907

Soil moisture meter, tested to 12-inch depth, deeper depth
units available

Jobu Chain Saws, P.O. Box 6023, Texarkana, Texas 75501
Chain saws

Johns Manville, Ag. Turf Division (irrigation), P.O. Box 232,
Fresno, Calif. 93702

Automatic controllers; Binar® Buckner-central field and
residential controllers. Pipe-P.V.C., Transite® Valves:
Buckner-electric Piston, electric diaphragm, manual,
Stop-Flo-Matic, quick couples, one and two piece.
Sprinklers: Buckner-electric and hydraulic valve-in-head,
valve-in-head, sprays, edger sprays, bubbler heads, drain
valves.

Hose swivels, hose bibs, adjustable risers. Febco® back
flow devices-reduce pressure; double check valve assem-
blies, pressure vacuum breakers, atmospheric vacuum
breakers.

Johns Manville, Club Car, P.O. Box 5108, Denver, Colo.
80217.

Golf car-electric and fiberglass body, aluminum frame; 4
wheels

Johnson Hydraulic Equipment Co., 215 W. 78 St., Min-
neapolis, Minn. 55420.

Work Horse loader, for compact tractors
Work Horse terra-blade, for compact tractors
Work Horse forklift, for compact tractors
Work Horse terra-comb, for compact tractors

Johnson's Industrial Supply Co., 1941 Karlin Dr., St. Louis,
Mo. 63131

Earth augers
Soil Testers

K

K-D Manufacturing Company, P.O. Box 4547, Waco, Texas 76705

Edgers
Fork lifts
Fork Lift (Attachment)

Kees Mfg. Co., Inc., P.O. Box 2195, 3107 18th Street East, Brandon, Florida 33508

Rotary Mower
"The Mule"—Lawn & Garden Carts
KEE Underwater Weed Cutter

F. D. Kees Mfg. Company, 700 Park Avenue, Beatrice, Nebraska 68310

Aerators
Blowers
Chemical Applicators, Granular
Turf Combs
Irrigation Sprinklers, Above Ground
Leaf Blowers
Rotary Mowers
Vertical Mowers
Seeders, Hopper-Type
Shredders
Spreaders, Hopper-type
Thatchers

Kemp Shredder Co., 1027 E. 26th St., Erie, Pa. 16505
Shredders

Kershaw Manufacturing Co., Inc., 2205 West Fairview Ave., P.O. Drawer 9328, Montgomery, Ala. 36108

Klearway, a land clearing machine for brush control

Kinco Mfg., 170 North Pascal, St. Paul, Minnesota 55104

Aerators
Brush cutters
Turf combs
Sickle bar and vertical mowers
Thatchers

King Bros. Industries, 251 Powell Rd., Fillmore, Calif. 93015
Flex-Riser®, flexible riser for sprinkler systems
Sta-Stake®, sprinkler riser support

Kioritz Corporation of America, 350 Wainwright Avenue, Northbrook, Ill. 60041

Blowers
Brush Cutters
Chemical Applicators, Granular
Chemical Applicators, Liquid
Power Dusters
Edgers
Flamethrowers (Sprayers)
Leaf Blowers
Backpack Mistblowers
Saws, Chain, Gasoline
Trimmers, Hedge and Grass

Kirchdorfer Irrigation, 924 Baxter Ave., Louisville, Ky. 40201
Preassembled pumping stations for irrigation systems

Knaack Manufacturing Co., 420 East Terra Cotta Ave., Crystal Lake, Ill. 60014

Tool chests
Shelving and ladder racks all for pickup trucks vans and stake body trucks

Kohler Co., Kohler, Wis. 53044

Gasoline engines
Generators

KPS Manufacturing, Inc., P.O. Box 671, Bay City, Mich. 48706

Chippers; in addition to standard, trailer-mounted,

engine driven, tree service and line clearing chippers, also make P.T.O. driven, tractor mounted chippers with capacity up to 4" diameter

Kubota, 300 West Carob St., Compton, Calif. 90220

Backhoes
Blades (dozer-scraper)
Tractor loaders
Rotary mowers
Post hole digger
Tillers
Tractor (8-30 hp)

Karl Kuemmerling, Inc., 4536 Lincoln Way, E., Massillon, Ohio 44646

Arborist Supplies
Earth Augers
Street Brooms
Brush Cutters
Brush Hooks
Chemical Applicators, Granular and Liquid
Chippers
Log Splitters
Backpack Mistblowers
Self-propelled Mistblowers
Moisture Meters
Pruners
Landscaping Rakes
Root-Feeding Rods
Safety Belts and Saddles, Tree Climbers
Safety Equipment
Manual Saws
Chain Saw Sharpener
Shears, Grass and Hedge
Tree Spade
Stump Cutter/Remover
Spray Tanks
Tree wrappings
Trimmers, Hedge and Grass
Winch
Summer and winter clothing for Tree Trimmers: T-Shirts, jackets, sweatshirts, Carhartts, etc.

L

Lakeshore Equipment & Supply Co., 300 S. Abbe Rd., Elyria, Ohio 44035

Replacement parts, mowers
Golf accessories, flags, cups, etc.

Lakeside Mfg. Company, Inc., 39 E. Main St., Honeoye, N.Y. 14471

Trailers, industrial, 6 to 15-ton rated capacity

Lakes Supply Co., Inc., P.O. Box 101, Dundee, Ill. 60118

Aerators
Augers
Earth Augers
Chemical Applicators, Liquid (Drip Roller)
Edgers
Leaf Blowers
Log Splitters
Rotary Mowers
Saws, Chain, Gasoline
Seeders, Hopper-Type
Snow Thrower
Sweepers, Lawn
Tillers
Tractor (8-20 HP)

Lancaster Pump & Mfg. Co., Inc., 1340 Manheim Pike, Lancaster, Pa. 17604

Saws, chain, five models, 8 1/2-15 lbs. weight, 12-24-inch bar lengths, manual and dual system chain oiler

Lansdowne Equipment Co. Inc., 11402 N. Broadway,
Wichita, Kansas 67147

- Earth augers
- Backhoes
- Storage batteries
- Boring units
- Brooms
- Gasoline and diesel engines
- Fork lifts and attachments
- Skid steer loaders
- Tractor loaders
- Post hole digger
- Trailers
- Trencher

L. L. Larson Machine, Inc., P.O. Box 308, Princeville, Illinois
61559

- Chemical applicator (granular and liquid)
- Park equipment
- Pumps
- Seeders (hopper-type)
- Spray booms
- Spray guns
- Spray nozzles (complete)
- Spray boom
- Sprayers (cart or wheelbarrow type and complete power unit)
- Spreaders (hopper-type)
- Spray tanks

Lauson Power Products, Engine Div., Tecumseh Prod. Co.,
900 North St., Grafton, Wisc. 53024

- Engines, 2 to 16 hp, vertical and horizontal shaft, trans-axles, transmissions, differentials, hydrostatic units

Laval Separator Corp., 1911 N. Helm, Fresno, Calif. 93727
Irrigation, Sand Separator

Lawn-Boy, OMC-Lincoln, P.O. Box 82409, Lincoln,
Nebraska 68501

- Lawn-Boy, solid state ignition rotary mowers, deluxe model rotary mowers

Lawn Medic, Inc., 1024 Sibley Tower, Rochester New York
14604

- Aerators
- Chemical Applicators, Granular and Liquid
- Seeders, Hopper-Type
- Spray Boom
- Sprayers, Complete Power Unit
- Spreaders, Hopper-Type
- Spray Tanks
- Turf Vehicles

Lawnmower Parts Mfg. Co., 16400 Truman Rd., Inde-
pendence, Mo. 64050.

- Bed knives, gears, gaskets, rollers, mower blades

Lehara Equipment Co., Inc., 60 East 42nd St., New York,
N.Y. 10017

- Lehara Hy-Dro Flail, hydraulic extension mower—for mowing behind guard rails, up and down banks

Lehard Equipment Co., Inc., Edgeboro Rd., Box 309, East
Brunswick, N.J. 08816

- Mowers (flail, boom, extension)

Lely, Box 1060, Wilson, N.C. 27893

- Brush Cutters
- Chemical Applicator, Granular and Liquid
- Levelers
- Landscaping Rakes
- Seeders, Hopper-Type
- Spray Booms
- Spray Nozzles, Complete
- Spray Tanks
- Tillers

Levco Manufacturers, Inc., P.O. Box 72, Wynne, Arkansas
72396

- Model HD50 stump grinder, a one-man stump removal system; operates behind a standard pickup truck (½-ton) or small tractor; features include industrial, water-cooled power unit and self-contained hydraulic system

Fred A. Lewis Company, 40 Belknap Rd., Medford, Oregon
97501

- Augers
- Earth augers
- Post hole digger
- Electric chain saw
- Winch
- Chain saw attachments: winch, fair lead, snatch block, post hole digger, auger
- Electric winch with chain saw attachment

Lewis Systems Inc., 424 Montgomery St., Watertown, Wisc.
53094

- Golf course equipment

Lifetime Career Schools, 2251 Barry Ave., Los Angeles, Calif.
90064

- Home study training in landscaping

Lift-Quik Mfg. Co., South Min St., Evans Mills, N. Y. 13637
Lift-Quik, garden, golf cart, lift

Lindell Industries, Div., of Lindell Pattern Works, 2689 S.
10th St., Fresno, Calif. 93725

- Sweepers, vacuum yard
- Blower, leaf blower (windrow)
- Edger/trimmer, lawn

Lindig Manufacturing Corporation, 1875 West County Road
C, St. Paul, Minnesota 55113

- Brush Cutters
- Chippers
- Log Splitters
- Shredders
- Sprayers, Cart or Wheelbarrow Type
- Sprayers, Complete Power Unit
- Stump Cutter/Remover

Locke Mfg. Div., Stellar Lawn Care, 1085 Connecticut Ave.,
Bridgeport, Conn. 06607

- Mowers, reel, self-propelled and riding, 30 inches to 87 inches; rotary

Lockwood Corporation, Box 160, Gering, Nebr. 69341

- Pumps
- Centrifugal pumps
- Rock pickers
- Spray booms
- Spray guns
- Sprayers (complete power unit)
- Center pivot irrigation
- Potato equipment
- Sugar beet equipment
- Dry edible bean equipment
- Pecan equipment
- Orchard sprayer

Loft-Kellogg Seed, Inc., 322 E. Florida St., P.O. Box 684,
Milwaukee, Wisc. 53201

- Chemical applicator (granular and liquid)
- Hose
- Insect killer
- Irrigation sprinklers (above ground)
- Landscaping rakes
- All purpose rakes
- Disc-type seeders
- Hopper-type seeders
- Soil testers
- Hopper-type spreaders
- All Grass seed varieties and grass seed mixture
- Fertilizer, chemicals and mulch products

Loft Pedigreed Seed, Inc., Chimney Rock Rd., P.O. Box 146, Bound Brook, N.J. 08805

Proprietary and common turf seed varieties for golf courses, parks, municipalities, etc.

Turf herbicides

Turf fungicides

Turf fertilizers

Lombard Power Equipment, Sales Ave., Harrison, Ohio 45030

1500 electric, saw, chain, 12-inch bar; 12 amps

Pony, saw, chain, gasoline, 12-inch bar, 6 1/2 lbs.

Comango, saw, chain, gasoline, 16-inch bar

Super Comango, saw, chain, gasoline, 1/2 "anti-vibe," automatic oiler

London Fog Company, 505 Brimhall Lane, Long Lake, Minn. 55356

Foggers

Sprayers, Complete Power Unit

ULV Sprayers for Mosquito Control

Luminate Electronic Co., 2331 N. 17th Ave., Franklin Park, Ill. 60131

Irrigation Controller/Programmers

Irrigation, Components

Irrigation, Switches

Moisture Meters

Automatic Timers

24 hour/7 day Time Switch: Operates during a power failure

Lundin-Milner, Inc., Los Altos, Calif.

Chippers, will handle up to 3-inch diameter material, pull-type, stationary, mounted, electric, gas, PTO powered

Lupton Tree Service, 32 Martha St., Tiffin, Ohio 44883

Log Splitter

M

Maasdam Pow'r Pull, Inc., 3130 No. Hollywood Way., Burbank, Calif. 91510

Hoist

Winch

Magline, Inc., 500 Mercer St., Pinconning, Mich. 48706

Handling materials

Trailers

Hand trucks

Platform trucks

Dockboards

Hydraulic elevating trailers

Hydraulic lift gates

Utility trailers

Mars Industries, Inc., 5209 West Broadway, Minneapolis, Minn. 55429

Mars Chem-Spray, turf sprayer, 5 gal. capacity

Suburban angle broom, tractor attachable rotary sweepers

Suburban pick-up sweepers, tow-type turf pick-up sweepers

Martindale Electric Co., 1375 Hird Ave., Cleveland, Ohio 44107

Martindale protective mask, respiratory protection against non-toxic dusts

Martindale protective eyeshield, one-piece eyeshield

Massey-Ferguson, Inc., 1901 Bell Ave., Des Moines, Iowa 50315

Backhoes

Fork lifts

Skid steer loaders

Tractor loaders

Tractor (8-151 hp)

Tractor crawlers

Earth augers

Blades (dozer-scraper)

Cultivating discs

Fork lift attachment

Rotary Mowers

Sickle bar mowers

Post hole diggers

Gasoline chain saws

Scrapers

Snow thrower

Tillers

Turf vehicles

Master Mfg. Co., 119 Main St., P.O. Box 694, Sioux City, Iowa 51102

Pumps

Centrifugal pumps

Spray booms

Sprayers (cart or wheelbarrow type)

Sprayers (complete power unit)

Mathews Company, 500 Industrial Ave., Crystal Lake, Ill. 60014

Flail Mowers

Shredders

Lawn Sweepers

Thatchers

Maxey Manufacturing Co., P.O. Box 2001, Ft. Collins, Colo. 80521

Trailers

M-B Company Inc., of Wisconsin, 1615 Wisconsin Ave., New Holstein, Wis. 53061

Chippers

Rotary Sweepers for attachment to tractor/loaders

Small Job Line Striper for parking lots, aisles and athletic fields

McCabe-Powers Body Co., 8900 Frost, St. Louis, Mo. 63134

Aerial buckets, lifts

Aerial platforms

Augers

Earth augers

Cranes

Hydraulic lifts

Post hole diggers

Forestry trucks

Light-hauling utility trucks

Winch

McCulloch Corp., P.O. Box 92180, Los Angeles, Calif. 90009

Generators

Saws, Chain, Gasoline

Saws, Chain, Parts

McDonough Power Equipment, Inc., McDonough, Georgia 30253

Mower, rotary, push-type and riding; reel, self-propelled

Ben Meadows Co., 3589 Broad St., Atlanta, Ga. 30366

Arborist supplies

Augers

Earth augers

Brush cutters

Brush hooks

Log splitters

Dust masks

Backpack mistblowers

Self-Propelled mistblowers

Moisture meter

Pruners

- Respirators
- Safety belts and saddles for tree climbers
- Safety equipment
- Shears
- Soil testers
- Tree injectors

Medalist Universal Motors, P.O. Box 2708, Oshkosh, Wisconsin 54901

- Battery Chargers
- Generators
- Hose
- Hose, Spray, Irrigation
- Pumps, Centrifugal

Melnor Industries, One Carol Place, Moonachie, New Jersey 07074

- Irrigation Sprinklers, Above Ground
- Moisture Meters
- Hose Reels
- Spray Nozzles, Complete
- Spray Tanks

Melroe Division, Gwinner, North Dakota 58040
Melroe Bobcat, skid turn front end loader

Melroe Division, Clark Equipment Co., 112 N. University Dr., Fargo, N.D. 58102

- Earth augers
- Backhoes
- Compactors
- Fork lift attachments
- Skid steer loaders
- Handling materials
- Post hole digger
- Tree movers

Merritt Equipment Service, Inc., D/B/A Ditch Witch of Georgia, 4891 Clark Howell Hwy., College Park, Ga. 30349

- Aerial Bucket Lifts
- Augers
- Earth augers
- Backhoes
- Blades (dozer-scraper)
- Blowers
- Boring Unit
- Brooms
- Brush cutters
- Compactors
- Diesel and gasoline engines
- Generators
- Hose
- Centrifugal pumps
- Gasoline and hydraulic chain saws and parts
- Trailers
- Trencher

Metro-chiper, Vestor Div., Morbark Ind., Winn, Mich. 48996
Chippers, for large tree chipping

Mid-State Metal Casting and Mfg. Co., 2689 S. 10 St., Fresno, Calif. 93725

- Blowers
- Leaf Blowers
- Park Equipment
- Lawn sweepers
- Vacuums
- Lindall Litter Gitter Powered Vacuum

Miller Tilt Top Trailer, Inc., 450 S. & 2 St., Milwaukee, Wis. 53214

- Tilt Top®, machinery hauling trailer, changes quickly from between the wheel to over the wheel trailer
- Ramp Champ®, over-the-wheel platform trailer; both trailers available with new gooseneck hitches



NEW! KEEES HEAVY-DUTY 36" POWERMOW

For large residential and commercial grounds use.

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CHECK THESE PERFORMANCE FEATURES:

- Powerful 11 h.p. Briggs & Stratton synchro-balanced engine
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NEW! RAIN JET® 2 1/2" HI-POP SPRINKLERS

IDEAL SPRINKLERS FOR TALL, THICK GRASS.

New RAIN JET HI-POP Sprinklers pop up 2 1/2" above the turf line. Their patented "Rotary Pendulum" and "Pulsa Jet"® actions distribute rain-like water droplets evenly over the entire lawn area. 15 Models: Squares to 30' x 30'; Circles to 48'; Strips; Half and Quarter Circles. All save you precious water. Send for Free Catalog & Prices.

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- Hi-pressure cleaning units
- Mechanical invert sprayers
- Aquatic invert sprayers

Mitts & Merrill, Inc., 109 McCoskry St., Saginaw, Michigan 48601

- Chipper, brush, staggered knife pattern, swing away folding feed chute, positive safety lock pin

Mobile Aerial Towers, Inc., 2314 Bowser Avenue, Fort Wayne, Indiana 46803

- Aerial Bucket Lifts
- Aerial Platforms

Moody Sprinkler Co., Inc., 3020 Pullman St., Costa Mesa, Calif. 92626

- Rainmaster, automatic valves, electric and hydraulic
- Automatic controllers electric and hydraulic
- Sprinklers—pop-up and stationary heads

Morbark Industries, Inc., Box 1000, Winn, Mich. 48896

- Chippers
- Erosion Control Materials
- Boom Loaders
- Log Splitters
- Mulch Blowers

Moridge Mfg. Co., Moundridge, Kansas 67107

- The Grasshopper-riding mower; cutting width 44", 12 hp.
- Kohler engine, cutting height 1/2-5"

Mott Corp., 500 Shawmut Ave., LaGrange, Ill. 60525

- Flail mowers

MTD Products, Inc., 5389 W. 130 St., Cleveland, Ohio 44111

- Blowers
- Chippers
- Edgers
- Leaf Blowers
- Log Splitters
- Reel Mowers
- Rotary Mowers
- Seeders, Hopper-Type
- Shredders
- Snow Thrower
- Spreaders, Hopper-Type
- Sweepers, Lawn
- Tillers
- Tractor (8-20 HP)
- Trailers
- Vacuums
- Wheelbarrows

Mud Cat, Div. of National Car Rental, 5501 Green Valley Dr., Minneapolis, Minn. 55431

- Weed harvester, aquatic

The F.E. Myers Co., 400 Orange St., Ashland, Ohio 44805

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- Mistblowers, Nozzle Parts
- Pumps
- Centrifugal Pumps
- Spray Booms
- Spray Guns
- Spray Nozzles, Complete

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Sprayers, Complete Power Unit

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National Chemsearch, 2727 Chemsearch Blvd., Irving, Texas 75062

- Roll-A-Boom sprayer

National Foam System, Inc., Parco Div., 150 Gordon Drive, Lionville, Pa. 19353

- Dragon model 180, back pack 5-gallon sprayer

National Hydro-Ax, Inc., P.O. Box 568, Owatonna, Minn. 55060

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- Rotary Mowers
- Tractors (61-150 HP)
- Hydrostatic propelled prime movers 91-175 HP w/front hydraulic P.T.O. (60-120 HP)

National Irrigation Co., 4605 SW 44th Ave., Ft. Lauderdale, Fla. 33314

- Hose (spray, irrigation)
- Centrifugal pumps
- Irrigation controller/programmers
- Irrigation components
- Irrigation pipe, risers
- Irrigation pumping stations, complete
- Irrigation sprinklers (above ground, impact, impulse pop-up heads; shrub and bubbler; spray pop-up heads; rotary pop-up heads; stationary valve in head)
- Irrigation systems, complete
- Irrigation switches
- Irrigation, sand separators
- Irrigation, miscellaneous accessories
- Irrigation valves (automatic, flow control, pressure activated, quick coupling and solenoid)

National Mower Co., 700 Raymond, St. Paul, Minn. 55116

- Reel mowers

Nelco, Inc., 2712 S.W. Freeway, Suite 118, Houston, Texas 77006

- Pipe, irrigation through microporous openings

L. R. Nelson Corp., 7719 N. Pioneer Lane, Peoria, Ill. 61614

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- Irrigation components
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- Irrigation, miscellaneous accessories
- Irrigation valves (automatic, flow control, pressure activated, quick coupling, and solenoid)
- Irrigation traveling sprinklers

New Draulics, Inc., 2252 South 3600 West, Salt Lake City, Utah 84119

- Brush cutters
- Hydraulic and air powered tools
- Hydraulic chain saws, circular, hydraulic

Northrup King and Co., 1500 Jackson St. NE, Minneapolis, Minn. 55413

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Nunes Manufacturing, 2006 Loquot Ave., Patterson, Calif. 95363

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Oberdorfer Foundries, Inc., Agri, Pump Div., Thompson Rd., Syracuse, N.Y. 13201

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Occupational Safety Marketing Division of ESB, Inc., P.O. Box 622 Reading, Pa. 19603

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Respirators
Safety Belts and Saddles, Tree Climbers
Safety Equipment

Olathe Mfg. Inc., 100 Industrial Parkway, Industrial Airport, Kansas 66031

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Log Splitters
Stump Cutter/Remover

Omark Industries, Inc., Oregon Saw Chain Div., 9701 S.E. McLoughlin Blvd., Portland, Ore. 97222

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Oregon power mate and super-tronic saw bars
Oregon power mate, rim and drum sprockets

Onan Division, Onan Corp., 1400 73rd Ave. NE, Minneapolis, Minn 55432

Battery chargers
Diesel and gasoline engines
Generators

Otis Elevator Co., Special Vehicle Div., P.O. Box 8600, Stockton, Calif. 95208

Otis Golf Car, electric, 4-wheel, 36 volts
Otis Turf-Awl, gasoline, 3 and 4-wheel, 18 hp

Otis Materials Handling, 8000 Baker, Cleveland, Ohio
Forklifts

P

Pac Craft Products, Inc., 515 Schoenhaar Dr., West Bend, Wisc. 53095

"Heff-T-Herman"-vertical platform lift
"Pac-A-Boom"-aerial bucket lift
"Sert-A-Dump"-hydraulic dump bed

Papec Machine Co., Shortsville, N.Y. 14548
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Par Aide Products Co., 296 No. Pascal St., St. Paul, Minn. 55104

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Payline Division, International Harvester, 600 Woodfield, Schaumburg, Ill. 60096

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Scrapers
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Tractor crawlers

Perma-Rain Irrigation, Inc., P.O. Box 880, Lindsay, Calif. 93247

Filter, sand, silt, algae, etc. (irrigation)
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Fogger, Perma-Rain, for tree and shrub irrigation and plant cooling

Pioneer, OMC-Lincoln, P.O. Box 82409, Lincoln, Nebraska 68501

Pioneer P 40, 4.0 cu. inch engine chain saw for professional use
Pioneer P 20, 3.1 cu. inch displacement chain saw for casual use
Pioneer P25, 3.1 cu. inch displacement chain saw for casual use
Pioneer 1200 A, 3,546 cu. inch displacement chain saw for professional use
P 50, 5.0 cu. inch engine chain saw for professional use
Pioneer 1074, 3.1 cu. inch displacement chain saw for casual use

Piper Aircraft, Bald Eagle Street, Lock Haven, Pa. 17745
Aircraft, fixed wing

Piqua Engineering, Inc., Box 605, Piqua, Ohio 45356

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Log splitters
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Pitman Manufacturing Co., Div. A. B. Chance Co., P.O. Box 120, Grandview, Mo. 64030

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Plasti Chain Corporation, P.O. Box 267, Hebron, Illinois 60034

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Plastiline, Inc., 1251 N.E. 45 St., Pompano Beach, Fla. 33061
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Plastic Techniques, Inc., P.O. Box 197, New Boston, N.H. 03070

Aerial Bucket Lifts
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H. K. Porter, Inc., 74 Foley St., Somerville, Mass. 02143

Cutters, bolt, rod, cable, chain, etc.
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Power Spike Mfg. Co., P.O. Box 67, Walters, Okla. 73572

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Precision Chipper Corporation, Box 360, Leeds, Ala. 35094
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Prestolite Battery Division of Eltra Corp., P.O. Box 931, Toledo, Ohio 43694

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Princeton Manufacturing Co., 955 West Walnut Street, Winchester, Ohio 43110

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R

RainBird Sprinkler Mfg. Corp., 7045 N. Grand Avenue, Glendora, Calif. 91740

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Irrigation Systems, Complete
Irrigation, Sand Separators
Irrigation (Miscellaneous Accessories)
Irrigation Valves (automatic; flow control; pressure activated; quick coupling; solenoid, pressure regulating, pressure relief)
Irrigation, Backflow Prevention
Irrigation, Trickle emitters and accessories

Rain Jet Corporation, 301 S. Flower St., Burbank, Calif. 91503

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Irrigation sprinklers (spray, pop-up, heads; rotary, stationary)
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Decorative Fountains

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Automatic controllers
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Reach-All Manufacturing and Engineering Co., 436 Calvary Road, Duluth, Minnesota 55803

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Hydraulic Seeders
Spray Booms
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Bluebird, lawn combers@ A/K/A thatchers, dethatchers, lawn rakes, renovators and vertical mowers, 4hp, 5hp, 7hp.
Bluebird "1500", engine hoists, knockdown types
Bluebird "3000", engine hoists, towable type
Bluebird "Yardbird", utility crane
Bluebird, engine stands
Bluebird "F20B", lawn comber, compact type, 5 hp

Richdel Inc., 1235 W. Glenoaks Blvd., Glendale, Calif. 91201
Irrigation Controller

Ridge Plastics Co., Highway 18 East, P.O. Box 2205, Jonesboro, Arkansas 72401

Biaxially oriented HD plastic pipe, sub-irrigation

Rivlex Ind., 301 E. Stevens Ave., Santa Ana, Calif. 92707
Golf Cars

Robco, Inc., Div. of Farmtec, Inc., 1812 E. 12th St., Oakland, Calif. 94606

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Leaf Blowers
Mistblowers, Backpack
Mistblowers, Self-Propelled
Mistblowers, Nozzle Parts
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Hose Reels
Sprayers, Complete Power Unit
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Robinson Industries/Limb-Lopper Division, 11845 Burke Street, Santa Fe Springs, Calif. 90670

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Tampers, Hydraulic
Wrenches, Impact, Hydraulic
Drills, Hydraulic
Pumps, Sump, Hydraulic

Rockwell International, 5001 North Rockwell Ave., Bethany, Oklahoma 73008

Rockwell Thrush Commander, agricultural aircraft, fixed wing

Rogers Bros., 100 Orchard St., Albion, Pa. 16401
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Roof Mfg., 1011 W. Howard St., Pontiac, Ill. 61764
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Chemical applicators (granular and liquid)
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Turf rollers

Roseman Mower Corporation, 2300 Chestnut Avenue, Glenview, Illinois 60025
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Landscaping Rakes
Thatchers

Rotary Power, Inc., P.O. Box 244, Centerville, Tenn. 37033
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Hydra-Just Tractor Seat

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Tillers

Rowco Mfg. Co., Inc., 48 Emerald St., Keene, N.H. 03431
Brushking®, brushcutter, engine-driven

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Irrigation Sprinklers, Impulse, Pop-up, Heads
Irrigation Sprinklers, Rotary, Pop-up, Heads
Irrigation Sprinklers, Spray, Pop-up, Heads
Irrigation Sprinklers, Stationary
Irrigation Sprinklers, Valve in Head

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"Woodsman"—Land Clearing Machines

Russ International, Inc., 1100 W. 135th St., Gardena, Calif. 90247
Irrigation Controller

Ryan Turf Equipment/OMC-Lincoln, 1401 Cushman Dr., Lincoln, Nebraska 68512
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Landscape Edging—Plastic and steel

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GL-67, 2" pop-up spray type
GL-71, 6" pop-up spray type

Safety Test & Equipment Co., P.O. Drawer 400, Hwy 150 East, Shelby, North Carolina 28150

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Gas Masks
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Pruners
Respirators
Safety Belts and Saddles, Tree Climbers
Safety Equipment
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Tools, Hand and Hydraulic
Trimmers, Hedge and Grass

Sarlo Power Mowers, P.O. Box 1169, Ft. Meyers, Fla. 33902
High Wheels power mower

Satco-Systems Inc., 1717 Four Mile Rd. NE, Grand Rapids, Mich.

Turf-Vac self-propelled rider vacuum, fairway vacuum sweepers

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S-650G, tractor, utility, 25 hp; water-cooled, 4-cylinder engine, category I—3-point linkage; 2-speed PTO, 540 and 1,000 rpm

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Schutt's Equipment Co., P.O. Box 412, Birmingham, Mich. 48012

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Tree Movers

Schwartz Mfg. Co., P.O. Box 248, Lester Prairie, Minn. 55354

Aerial Bucket Lifts
Cranes
Tractor Loaders
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Aerial hydraulic seeders
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Aerial seeding systems
Aerial fertilizing systems
Aerial dust systems

Simplicity Mfg. Co., 500 N. Spring St., Port Washington, Wis. 53074

Blades (Dozer-Scraper)
Blowers
Fork Lift (Attachment)
Flail Mowers
Rotary Mowers
Sickle Mowers
Replacement Parts, Mowers
Snow Thrower
Tillers
Tractor (8-20 HP)
Vacuum Collectors for garden tractors

Skil Corporation, 4801 W. Peterson Avenue, Chicago, Ill. 60646

Saws, Chain, Electric, Gasoline, Circular
Saws, Chain, Parts

The Skinner Irrigation Co., 2530 Spring Grove Ave., Cincinnati, Ohio 45214

Irrigation systems

R. & G. Sloane Mfg. Co., 7606 N. Clybourne Ave., Sun Valley, Calif. 91352

GSR Color Guard, PVC fittings for pipelines, sizes include 3/4-inch through 2 inches class 315 and 2 1/2 inches through 8 inches; class 200, press rated

Slope Tractor, Inc., 106 W. Ninth St., Harper, Kansas 67058

Rotary mowers
Sickle bar mowers
Tractor (21-150 HP)

Smith & Co., Inc., D.B., Main St., Utica, N.Y. 13503

Pumps
Spray Guns
Spray Nozzle, Complete
Sprayers, Cart of Wheelbarrow Type
Sprayers, Complete Power Unit
Spray Tanks
"Indian" Fire Pumps
Portable Backpacks
Flame Gun Burner Units
"Weed Burning" Speedex
"Tree & Garden" Sprayer

Smithco, Inc., 11 West Ave., Wayne, Pa. 19087

Rotary Mowers
Pumps
Centrifugal Pumps
Spray Booms
Spray Guns
Spray Nozzles, Complete
Reels, Hose

Sprayers, Cart or Wheelbarrow Type
Sprayers, Complete Power Unit
Spray Tanks
Truck, Light-Hauling Utility
Turf Vehicles

Smith Precision Products Co., 1299 Lawrence Dr., Newbury Park, Calif. 91320

Liquid fertilizer dispersion (measurmix)
Irrigation, injection equipment

SMR Back-Flo Div., P.O. Box 1185, Newport Beach, Calif. 92663

Backflow Valves

The Snow Company, 4350 McKinley, Omaha, Nebraska 68112

Trailers
Light-Hauling Utility Truck
Turf Vehicles

Soilmoisture Equipment Corp., P.O. Box 30025, Santa Barbara, Calif. 93105

Earth augers
Irrigation, Miscellaneous
Moisture meters
Soil testers
Soil Core Sampler
Lord Soil Sampler
Soil Water Sampler
Plant Water Status Console
Soil Salinity Sensors
Salinity Bridge

Solo Motors, Inc., P.O. box 5030, Newport News, Virginia 23605

Augers
Earth Augers
Blowers
Chemical Applicators, Granular and Liquid
Power Dusters
Edgers
Gasoline Engines
Flamethrowers (Sprayers)
Foggers
Generators
Leaf Blowers
Backpack Mistblowers
Self-propelled Mistblowers
Truck-Mounted Mistblowers
Nozzle Parts Mistblowers
Rotary Mowers
Sickle Bar Mowers
Mowers, Replacement Parts
Post Hole Digger
Centrifugal Pumps
Saws, Chain, Electric, Gasoline
Saws, Chain, Parts
Spray Booms
Spray Guns
Spray Nozzles, Complete
Sprayers, Complete Power Unit
Spray Tanks
Tillers
Trimmers, Hedge and Grass

Sorensen Sprayers, Inc., Box 344, Worthington, Minn. 56187
Aviation sprayers, detachable

Speedex Tractor Co., 367 N. Freedom St., Ravenna, Ohio 44266

Speedex tractor, 8hp, 10hp, 4hp
Mowers rotary 36-inch, 44-inch, 50-inch

Sperry-New Holland, New Holland, Pa. 17557

Skid steer loaders
Sickle bar mowers
Trencher

Spray Baby, Inc., 751 N. Edmonds Dr., Carson City, Nev. 89701

Seeders, hydraulic
Mulchers, hydraulic

Spraying Systems Co., North Avenue at Schmale Road, Wheaton, Illinois 60187

Spray nozzles, complete
Spray guns

Sprinkler Irrigation Supply Co., 1316 N. Campbell Rd., Royal Oak, Michigan 48067

Hose, Spray, Irrigation
Irrigation, Injection Equipment
Irrigation Controller/Programmers
Irrigation Components
Irrigation Pipe, Risers
Irrigation Pumping Stations Complete
Irrigation Sprinklers (above ground; impact; impulse, pop-up, heads; shrub, bubbler; spray, rotary, and stationary)
Irrigation Sprinklers, Valve in Head
Irrigation Systems, Complete
Irrigation, Switches
Irrigation, Sand Separators
Irrigation, Miscellaneous Accessories
Irrigation valves (automatic, flow control; pressure activated; quick coupling valves; solenoid)
Moisture meters
Sisco Diesel Pumpers
Packaged Pumping Stations

Standard Golf Co., 220 E. 4th St., Cedar Falls, Iowa 50613
Golf Course Accessories

Stanley Hydraulic Tools, 13770 S.E. Ambler Road, Clackamas, Oregon 97015

Brush Cutters
Pruners
Saws, Chain, Hydraulic
Tools, Hand, Hydraulic, Pneumatic

Stihl Inc., 5898 Thurston Ave., Virginia Beach, Va. 23455
Chain saws, electric and gasoline powered, saw, chain, powered
Stihl SG-17, blower/sprayer, backpack gasoline powered
Stihl Cutquik, saw, circular cut-off for cement, stone, steel, pipes, etc.
Stihl earth auger and planting tool, gasoline powered
Stihl Brush-Cutter, brush and weed cutter, gasoline powered
Stihl Hedge-Trimner, hedge trimmer, gasoline powered, trim hedges and small brush and trees

Stone Construction Equipment, Co., 32 East Main, Honeoye, N.Y. 14471

Compactors
Handling materials
Concrete/mortar mixers
Mortar boxes/mortar car
Power trowels
Concrete grinders
Power screens
LP-oil fired heaters
Re-rod bender/cutters
Portable conveyors

Strong Mfg. Co., 498 Eight Mile Rd., Remus, Mich. 49340
Whole tree chipper

Sudbury Laboratory, Inc., 572 Dutton Rd., Sudbury, Mass. 01776

Soil Testers
Pest Repellents
Liquid Sea Weed
Water Soluble Fertilizers

Sun-Mastr Corp., P.O. Box 31, 603 S. Kansas, Olathe, Kansas 66061

- Brush cutters
- Flail mowers
- Rotary mowers
- Shredders
- Flail shredders

Superflex Hitches, P.O. Box 437, St. Marys, Ohio 45885
Shock-absorbing hitches for trailers, cars, and trucks

Superior Controls Co., Inc., 427 W. Palmer Ave., Glendale, Calif. 91204
Automatic sprinkler controls

Swan Hose Div., Amerace Corp., P.O. Box 509, Worthington, Ohio 43085
Swan garden hose, industrial and maintenance hose

Sweepster Inc., 2810 Baker Road, Dexter, Michigan 48130
Brooms
Fork Lift (Attachment)
Snow Throwers
Lawn Sweepers
Thatchers

Swenson Spreader & Mfg. Co., P.O. Box 127, Lindenwood, Illinois 61049
Spreader, gas, hydraulic
Thatcher, attachment for rotary mowers
Leaf loader, trailer mounted

T

Tallman Equipment Co., Inc., 3825 W. 31st St., Chicago, Illinois 60623

- Augers
- Earth augers
- Brush hooks
- Drills (field)
- Generators
- Hoists
- Hydraulic and air powered tools
- Dust and gas masks
- Handling materials
- Post hole diggers
- Pruners
- Pumps
- Centrifugal pumps
- Landscaping and all-purpose rakes
- Safety equipment
- Manual saws
- Gasoline and electric chain saws
- Gasoline and electric circular saws
- Chain saw parts
- Chain saw sharpener
- Mowers and cutter sharpener
- Tree spade
- Hand and hydraulic tools
- Hedge and grass parts trimmers
- Winch

Taylor Dunn Mfg. Co., 2114 W. Ball Rd., Anaheim, Calif. 92804

- Golf Cars

TCI, Inc., Box 249, Benson, Minnesota 56215
Fork Lifts
Loaders

TCI Power Products, Inc., 900 Ferdil Avenue, Yankton, S.D. 57078

- Compactors
- Fork Lifts and Attachments
- Skid Steer Loader

Tecumseh Products Co., 900 North St., Grafton, Wis. 53024
Gasoline Engines
Mowers, Replacement Parts
Gear Drives for Riders & Tractors
Transmissions
Differentials
Transaxles
Hydrostatic Gear Drives
Right Angle and "t" Drives

Teledyne Wisconsin Motor, 1910 South 53rd St., Milwaukee, Wisconsin 53246

Wisconsin, Wisconsin-Robin, Wisconsin-Hatz Diesel, heavy-duty, air-cooled internal combustion engines, 3-80 hp, single, two, three and four-cylinder

Tennant Co., P.O. Box 1452, 721 North Lilac Dr., Minneapolis, Minn. 55440

Power sweeper for hard surface maintenance—walks, drives, surfaced playgrounds, parking lots, tennis courts, etc.

Terrain King Corp., P.O. Drawer 549, Seguin, Texas 78155
Brush cutters

- Hoists
- Flail mowers
- Rotary mowers
- Replacement parts for mowers
- Pick-up truck attachments—rear step bumpers, grille guards, auxiliary gasoline tanks, tool or utility boxes, and headache racks
- Terrain King "Slopemowers"

Thomas Equipment, Ltd., Centreville, New Brunswick, Canada

- Mower, sickle, attachment to front end loader

Thompson Manufacturing, 2251 E. 7th St., Los Angeles 90023
Irrigation components

- Irrigation sprinkler (above ground, impact, impulse, pop-up, heads; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; stationary)
- Irrigation (miscellaneous accessories)
- Irrigation (quick coupling valves)

Tilton Equipment Co., 4612 N. Chatsworth, St. Paul, Minn. 55112

- Jonsereds brush cutters
- Jonsereds chain saws, six models, 7 to 20 lbs. weight, 12-60 inch bar length, automatic and dual system chain oiler
- Olympic chain saws, 4 models, 15-20 lbs. weight

Time Mfg. Co., 7601 Imperial Dr., Waco, Texas 76710
Versalift hydraulic aerial lift

Topeka Metal Specialties Inc., 5600 S. Topeka Blvd., Box 5014, Topeka, Kansas 66605

- "Strong Boy"—hydraulic dump bed designed for use on pick-up trucks

Tork Time Controls, Inc., 1 Grove St., Mt. Vernon, N.Y. 10550

- Tork, irrigation, automatic lawn sprinkler controls

The Toro Company, 8111 Lyndale Ave., So. Bloomington, Minn. 55420

- Mowers: Hevi-Duty-Walk rotary two 21" 4 hp both hand propelled. One is rearbagging, one has optional side bagging. Two 21" 5 hp heavy duty. One is hand propelled, other is self-propelled. One 6 hp 25" heavy duty.
- Trojan, 50" and 60" 14 hp.
- Groundmaster 72" and 52" riding rotary
- Tee mower 70" reel, 6 blades only
- 70 Professional 5 or 6 blades, recoil or electric start
- 76 Professional 5 or 6 blades, rope start

Super Pro 81" 5 or 6 blades
Greenmaster, 21" walk
Greensmaster 3-14 hp riding mower
Sand Pro
Turf tractor
Gangmowers-30" Spartans 5 or 7 blades
Rough Masters 4 or 6 blades
Park Master 5, 7 or 9 units
Rake-O-Vac
Workmaster-Turf Truck
Toro Front Runner Line
80" Batwing mower
GMT tractors 18 hp, 19.8 hp, 16 hp
Front Runner Turf Truck
Front Runner 3 wheeler 16, 19.8 hp.

Toro Irrigation Division, P.O. Box 489, Riverside, Calif. 92502

Irrigation controller/programmer
Irrigation components
Irrigation sprinklers (impact; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; valve in head)
Irrigation (miscellaneous accessories)
Irrigation valves (automatic; quick coupling valves; solenoid)
Back flow preventers

Towner Mfg. Co., P.O. Box 6096, Santa Ana, Calif. 92706

Cultivating Discs
Scrapers
Ditchers
Mold Board Plows
Offset Disc Harrows
Toolbars and attachments
Slopers
Land Planes
Disc Ridgers
Asparagus Harvesters
Bottom Plows and Disc Plows

Tradewinds, Inc., P.O. Box 1191, Tacoma, Washington 98401

Flamethrowers (Sprayers)
Mistblowers, Backpack
Tillers
Tractor (13-60 hp)

Travelrain Sprinkler Co., 239 N. Robertson Blvd., Beverly Hills, Calif. 90211

Hose, Spray, Irrigation
Irrigation Sprinklers, Above Ground
Irrigation Systems, Complete

Tree Guying Systems Inc., P.O. Box 452, Kent, Ohio 44240

Tree collars, turnbuckles, cable and anchors to support trees until they reach self-supporting size

Tree-ject Company, Box 396, Waycross, Ga. 31501

Sprayers, hose end, complete power unit

T.R.E.E.S., Inc., 6605 N. Nebraska Ave., Tampa, Fla. 33604

Blowers
Power dusters
Earth augers
Edgers
Backpack mistblowers
Gasoline chain saws and parts
Chain saw sharpener

Triumph Machinery Co., Box 110, Hackettstown, N.J. 07840

Rotary mowers
Sickle bar mowers
Landscaping rakes

Trojan Battery Company, 9440 Ann St., Santa Fe Springs, Calif. 90670

Trojan, storage batteries—electric golf car, automotive, commercial, truck, bus, and industrial chargers

True Temper Corp., 1623 Euclid Avenue, Cleveland, Ohio 44115

Brush Cutters
Edgers
Log Splitters
Post Hole Digger
Pruners
Landscaping Rakes
All Purpose Rakes
Hose Reels
Tools, Hand
Trimmers, Hedge and Grass
Shovels
Spades
Farm Forks
Garden Cultivators
Shears, Grass, Hedge and Lopping
Axes
Wedges

Tuflex Manufacturing Co., P.O. Box 13143, Port Everglades, Florida 33316

Irrigation Field Storage Tanks (Fiberglass)
Pumps, Fiberglass Spray Tanks, 50 to 1200 gal. Capacity
Sprayers, Complete Power Unit (Jet or Mechanical Agitation)
Spreader, Hopper-Type
Custom Production-Fiberglass Items

Tuco, Division of the Upjohn Co., 7000 Portage Rd., Kalamazoo, Mich. 49001

Agricultural chemicals

Turf Service Laboratory, Inc., P.O. Box 1001, Laguna Beach, Calif. 92652

Moisture Meters
Garden Angel
Moisture-O-Meter Model 50

Turf Vac Corp., P.O. Box 4339, Long Beach, Calif. 90804

Lawn Sweepers
Turf Vac Model 70 Rider
Turf Vac Model 70 Lift Dump Rider
Turf Vac Model 80 Rider
Turf Vac Model G.T.S. Towed Model
Turf Vac Model FM-5 PTO Towed Model
Turf Vac Model FM-5 Lift Dump Towed Model
Turf Vac Model FM-5 Towed Model
Turf Vac Model FM-Truck Loader
Turf Vac Model FM-10 Towed Model
Turf Blo

U

Universal Gerwin Division, Leigh Products, Inc., 411 64th Ave., Coopersville, Mich. 49404

Garden dusters
Flamethrowers (sprayers)

Cart or wheelbarrow type sprayers
Complete power unit sprayers
Spray tanks

Universal Motor Division, Medalist Industries, P.O. Box 920,
Oshkosh, Wisconsin 54901

Aquamaster pumps, portable centrifugal pumps 1 1/2" or
2" suc/disch., 3 hp gas engine or 1/2, 3/4, 1 1/2, 2 hp electric
motors, standard seal for water, corrosion resistant seal
for fertilizer, herbicides, etc.

Up-Right Scaffolds, 1013 Pardee St., Berkeley, Calif. 94710

Aerial Platforms
Hydraulic Lifts
Portable Aluminum Scaffolds
Self-propelled Work Platforms
Telescopic Work Platforms

Utility Body Co., 901 Gilmen, Berkeley, Calif. 94710

Buckets—aerial towers

V

Valcon Automatic Irrigation Equipment Company of San
Gabriel, Calif. 1726 S. DelMare Avenue, San Gabriel, Calif
91776

Irrigation Controllers
Irrigation Sprinklers
Turret Sprinklers
ADV Valves—Check Valves

Valley Products Corporation, Box 668, Valley, Nebr. 68064
VPC Stump Cutter, 8 hp one-man tree stump remover

Vandermolen Corp., 119 Dorsa Ave., Livingston, N.J. 07039

Blowers
Chemical Applicators, Liquid
Chippers
Power Dusters
Insect Killer
Leaf Blowers
Mistblowers, Backpack
Mistblowers, Truck-Mounted
Spreaders, Hopper-Type

Vemco, 1331, 23rd Street, Racine, Wisconsin 53403

Flail Mowers
Blades

Venable Sprinkler Sales, Inc., 3401 Conflans, Irving, Texas
75060

Pump-A-Matic, pre-built pump station for golf course,
etc., irrigation
Pressure-Matic, booster pump unit to increase pressure of
water in hydraulic system tubing to use potable water

Veri Products, 1252 W. Keats, Fresno, Calif. 93705

Log splitters
Rotary mowers Parts
Electric and gasoline chain saws
Chain saw sharpener

Vermeer Manufacturing Company, P.O. Box 200, Pella, Iowa
50219

Backhoes
Blades (Dozer-Scraper)
Boring Units
Chippers
Irrigation Sprinklers, Above Ground
Irrigation Systems, Complete
Log Splitters
Vibratory Plows
Tree Spades
Stump Cutter/Remover
Trailers
Tree Movers
Trencher

Viking Pump Division, Houdaille Industries, Inc., 4th &
Shutte Sts., Cedar Falls, Iowa 50613
Pumps

Village Blacksmith, McGraw Edison Portable Electric Tool
Division, 1200 East State St., Geneva, Illinois 60134

Village Blacksmith, garden cutting tools, electric chain
saws, electric hedge trimmers, electric edger trimmers,
electric cultivator, cord reels, "Blitz Fog" insect fogging
devices, gas engine fogger, electric tree surgeon, post hole
diggers and augers

Vogel Tool & Die Corp., Stone Park, Illinois

Post hole drill

W

Waco Industries, Inc., 749 Airways Blvd., Jackson, Tenn.
38301

Chain saws

Waldon, Inc., 201 W. Oklahoma Ave., Fairview, Okla. 73737

Tractor loaders
Handling materials

Walsh Manufacturing Co., 1200 Fisher Street, Charles City,
Iowa 50616

Trailer model sprayer, exclusive sump trap, exclusive uni-
stand, rear safety stand 200, 300, and 500-gallon cap.;
built in nylon agitator

RA side mounted sprayer, 400-gallon capacity; each tank
valve controlled, 2-200 gallon tanks, custom fit mounting
brackets, valve stand

3-point hitch sprayer, 165, 200, or 300-gallon capacity,
Cat. II hitch pins

Fiberglass tanks (all above units), 10" x 20" fill hole;
bullet-shaped ends; built in agitators, built in steel outlets;
1 1/4" steel sump outlet; double protection inner lining; lid
with snap-over lock; special sump trap and anti-swirl baf-
fle; continuous flow pump; sprays evenly over all terrain
Index-O-Matic Washer, completely portable; semi-
pneumatic tires; all-steel frame 5 or 25-gallon tank; 3 gpm
pump; 1 1/2 hp motor; fiberglass tank

Tri-Matic II, fiberglass tank; completely portable; all-
steel frame 25-gallon tank; 3 gpm pump; 1 1/2 hp motor;
semi-pneumatic tires

W.A.N.E. Tree System, Rt. 1, P.O. Box 68, Tampa, Florida
33612

Tree feeding system

Warren Turf Nursery, 8400 W. 111 St., Palos Park, Ill. 60464
Sod, seed and lawn food

Waymark, 44 River St., Cortland, N.Y. 13045

Spreaders, disc type
Sprayers, boom; complete power unit

Wayne Engineering Corp., 1st & Iowa Sts., Cedar Falls, Iowa
50613

Honey B, lightweight refuse packer for parks, highway
rest stops, etc.
Pup, pickup refuse packer

WD-40 Company, 1061 Cudahy Pl., San Diego, Calif. 92110
WD-40: lubricant, penetrant, rust preventative, moisture
displacement

Weather-matic Division/Telsco Industries, P.O. Box 18205,
Dallas, Texas 75218

Irrigation controller/programmers
Irrigation components
Irrigation sprinklers (above ground; impact; impulse,
pop-up, heads; shrub and bubbler; spray, pop-up, heads;
rotary, pop-up, heads)
Irrigation systems complete
Irrigation (miscellaneous accessories)

Irrigation valves (automatic, quick coupling valves; solenoid)

Weather-Tec Corp., 5645 E. Clinton, Fresno, Calif. 93727
Sprinklers, Pop-up

H. N. Webster Mfg., P.O. Box 1628, Sebring, Florida 33870
Quick coupling riser irrigation valves
Rust catchers to fit under sprinklers on tall risers

Welsh Mfg. Co., Magnolia St., Providence, R.I. 02909
Respirators, for use in pesticide application
Ammonia respirators
Dust respirators
Goggles
Safety caps

Western Products, 7777 N. 73rd Street, Milwaukee, Wisconsin 53223
Salt Spreaders
Snowplows for 4WD Vehicles

Westinghouse Electric Vehicles, Westinghouse Bldg., Pittsburgh, Pa. 15222
Electric golf cars

Wet Mfg. Co., Inc., 955 Elm St., Orange, Calif. 92667
Sprinkler irrigation equipment

Wheel Horse Products, 515 W. Ireland Rd., South Bend, Indiana 46614

Wheel Horse D-200 Automatic, 19.9 hp twin cylinder tractor

Wheel Horse D-180 Automatic, 18 hp twin cylinder tractor

Wheel Horse D-160 Automatic, 16 hp tractor

Wheel Horse C-160 Automatic, 16 hp tractor

Wheel Horse C-160 8-speed, 16 hp tractor

Wheel Horse C-100 8-speed, 10 hp tractor

Wheel Horse D-Series Attachments; for D-1 200 automatic, D-180 automatic and D-160 Automatic: 60" rear mount mower; 48" side discharge mid-mount mower; 56" snow/dozer blade; 50" grader blade; 50" tiller; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 4-wheel wagon; 2-wheel dump cart; and a 48" snowthrower

Wheel Horse C-Series Attachments, for C-160 Automatic, C-160 8-speed, C-120 automatic and C-100 8-speed: 48" side discharge mower; 42" side discharge mower; 36" side discharge mower; 36" rear discharge mower; 42" snowthrower; 56" snow/dozer blade; 42" snow/dozer blade; 40" grader blade; 36" tiller; 36" aerator; 38" or 31" lawn sweeper; 32" roller; 2-section cultivator; harrow; 32" disc; lawn vacuum; 4-wheel wagon; and a 2-wheel dump cart

Wheel Horse B-Series Attachments, for B-100 Automatic and B-80 4-speed: 36" side discharge mower; 36" rear discharge mower; 37" snowthrower; 42" snow/dozer blade; 40" grader blade; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 32" disc; 2-section cultivator; harrow; 36" tiller; 4-wheel wagon; and a 2-wheel dump cart

Wheel Horse A-Series Attachments, for A-800 42" snow blade; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 4-wheel wagon; and a 2-wheel dump cart

Wheel Power Corp., P.O. Box 21227, Phoenix, Ariz. 85036
Wheel Power Truck Tractor, two-passenger, 25 hp gas, 3,000 lb. load capacity, four-wheel drive, center articulated steering; accessories: hydraulic dump bed can and windshield, hyd. blade, 3-point hitch.

White Farm Equipment, 2625 Butterfield Rd., Oak Brook, Ill. 60521

Cultivating discs
Diesel engines
Spring-toothed harrow

Tractor loaders

Gasoline chain saws

Tillers

Tractors 13-20 hp and 61-161 and up hp

White Turf, Winchedon, Mass. 01475

Irrigation Equipment

Willmar Mfg. Co., Wilmar, Minn.

Spreader, pull-type, floatation tires, spreads up to 1½ tons per load

Willson Products Div., ESB Inc., P.O. Box 622, Reading, Pa. 19603

Masks, gas; dust

Respirators

Safety equipment-ear muffs, ear plugs, blasting helmets, welding goggles, face masks/shields, safety spectacles, and hard hats.

Wisconsin Marine, Inc., P.O. Box 28, Lake Mills, Wisconsin 53551

Rotary Mowers

Snow Thrower

Wood Brothers, Inc., Hwy. 2 So., Oregon, Ill. 61061

RM 59, rear mounted rotary lawn mower; three blades cut a 5-foot swath; adapts to any standard 3-point hitch

Woods, Div. of Hesston Corp., Oregon, Ill. 61106

Backhoes

Blades (dozer-scraper)

Hoists

Rotary mowers

Vacuums

Y

Yard Vac Inc., 5567 Airways Ave., Fresno, Calif. 93727

Edgers

Yamaha Motor Corp., U.S.A., P.O. Box 6620, 6620 Orangethrop Ave., Buena Park, Calif. 90620

Golf Cars

Yannar Diesel Engine, c/o Mitsui & Co., 303 E. Ohio St., Chicago, Ill.

Tractors

Yazoo Mfg. Co., Inc., 3607 Livingston Rd., Jackson, Miss. 39216

Edgers

Gasoline Engines

Rotary Mowers

Tillers

Tractor (8-20 HP)

Trailers

York Rakes: A Division of York Modern Corporation, P.O. Box 488, Unadilla, N.Y. 13849

Blades

Landscaping Rakes

Equipment Manufacturers by Item

AERATORS

Brighton By-Products Co. Inc.
Brinly Hardy Co.
Capital Equipment Co.
Fuerst Brothers, Inc.
Hahn Inc., Turf-Ag, Division
Howard Rotavator Co., Inc.
Jacobsen Mfg. Co.
F. D. Kees Mfg. Co.
Kinco Mfg.
Lakes Supply Co., Inc.
Lawn Medic Inc.
Power Spike Mfg. Co.
ProTurf Div., O. M. Scott and Sons
Ryan, OMC-Lincoln

AERIAL BUCKET LIFTS

Causco Inc.
Correct Mfg., Hughes Keenan Div.
McCabe-Powers Body Co.
Merritt Equipment Service Inc. D/B/A
Ditch Witch of Georgia
Mobile Aerial Towers Inc.
Pac Craft Products, Inc.
Pitman Mfg. Co., Div. A. B.
Chance Co.
Plastic Techniques, Inc.
Reach-All Mfg and Engineering Co.
Schwartz Mfg. Co.
Selma Trailer & Mfg. Co.
Time Mfg. Co.
Utility Body Co.

AERIAL PLATFORMS

McCabe-Powers Body Co.
Mobile aerial Towers Inc.
Pac Craft Products, Inc.
Reach-All Mfg. and Engineering Co.
Up-Right Scaffolds

AIRCRAFT, FIXED WING

Grumman Aircraft Corp.
Piper Aircraft
Rockwell International

AIRCRAFT, HELICOPTER

Bell Helicopter Co.
Hiller Aircraft Corp.

AQUATIC WEED HARVESTER

Air-Lec Industries, Inc. Outdoor
Product Div.
A. O. A. Research & Development,
Inc.
Aquamarine Corp.
Mud Cat Div. Of National Car Rental

ARBORIST SUPPLIES

American Arborist Supplies
Crown Chemicals
The Fanno Saw Works
Friend Mfg. Corp.
Jameson Corp.
Karl Kuemmerling, Inc.
Ben Meadows Co.

AUGERS

Austin Products
Ditch Witch of San Diego
W. W. Grinder Corp.
Ground Hog, Inc.
Lakes Supply Co.

Fred A. Lewis Co.
McCabe-Powers Body Co.
Ben Meadows Co.
Merritt Equipment Service Inc. D/B/A
Ditch Witch of Georgia
Solo Motors Inc.
Village Blacksmith, McGraw Edison
Portable Electric Tool Div.

BACKHOES

Allis-Chalmers Corp.
Arps Corp.
Bolens: FMC Corp., OPE Div.
J I Case, Outdoor Power
Equipment Division
Davis Mfg., Div. of J I Case
John Deere and Company
Ditch Witch Div. of The
Charles Machine Works, Inc.
Ditch Witch Equipment Co.
Ditch Witch of San Diego
Erickson Corp.
Ford Tractor Operations
Howard Rotavator Co., Inc.
Kubota
Lansdowne Equipment Co. Inc.
Massey-Ferguson, Inc.
Melroe Division, Clark
Equipment Co.
Merritt Equipment Service Inc. D/B/A
Ditch Witch of Georgia
Payline Division, International
Harvester
Vermeer Mfg. Co.
Woods, Div. of Hesston Corp.

BARRIER, AQUATIC WEEDS

Aquamarine Corp.
Sea Guard, Inc.

BATTERIES, STORAGE

ESB Brands, Inc.
Gould Inc.
Lansdowne Equipment Co., Inc.
Prestolite Battery Division
of Eltra Corp.
Trojan Battery Co.

BATTERY CHARGERS

Black and Decker Mfg. Co.
ESB Brands, Inc.
Medalist Universal Motors
Onan Division of Onan Corp.

BLADES, DOZER-SCRAPER

Ariens Co.
Arps Corp.
Austin Products
Brinly Hardy Co., Inc.
J. I. Case, Outdoor Power
Equipment Division
Davis Mfg.
Excel Industries, Inc.
Ford Tractor Operations
Kubota
Massey-Ferguson, Inc.
Merritt Equipment Service Inc., D/B/A
Ditch Witch of Georgia
Payline Division, International
Harvester
Simplicity Mfg. Co.
Vemco
Vermeer Mfg. Co.
Woods, Div. of Hesston Corp.
Yazoo Mfg. Co.

BLOWERS

Atwater Strong Div. Gouglar
Industries, Inc.
Billy Goat Industries Inc.
Capital Equipment Co.
Conaway, Inc.
J. J. Dill Co.
Echo Chain Saw Div., Kioritz Corp.
of America
FMC Corp., Agricultural
Machinery Div.
Hahn, Inc.—Turf Ag. Div.
HMC—The Green Machine
Jacobsen Mfg. Co.
F. D. Kees Mfg. Co.
Kioritz Corp. of America
Merritt Equipment Service, Inc.
Mid-State Metal Casting
& Mfg. Co.
MTD Products, Inc.
Parker Sweeper Company
Reinco/Grass Growers Inc.
Robco, Inc.
Simplicity Mfg. Co.
Solo Motors, Inc.
Stanley Hydraulic Tools
Stihl American Inc.
T.R.E.E.S., Inc.
Vandermolen Corp.

BORING UNIT

Davis Mfg. Div. of J I Case
Ditch Witch Div., The Charles
Machine Works, Inc.
Ditch With Equipment Co.
Ditch Witch of San Diego
HMC—The Green Machine
Lansdowne Equipment Co., Inc.
Merritt Equipment Service Inc., D/B/A
Ditch Witch of Georgia
Vermeer Mfg. Co.

BRIDGES, PORTABLE

Standard Mfg. Co.

BROOMS

Ariens Co.
Atwater Strong Div.
Excel Industries, Inc.
Jacobsen Mfg. Co.
Karl Kuemmerling, Inc.
Lansdowne Equipment Co., Inc.
Mars Industries, Inc.
Merritt Equipment Services, Inc. D/B/A
Ditch Witch of Georgia
Rosco Mfg. Co.
Solo Motors, Inc.
Sweepster, Inc.

BRUSH CUTTERS

Austin Products
Bachtold Bros. Inc.
BMB Co. Inc.
Bombardier Limited
E. L. Caldwell & Sons, Inc.
Echo Chain Saw Div., Kioritz Corp.
of America
FMC Corp., Side Winder Div.
Fairmont Hydraulics
Friend Mfg. Corp.
HMC—The Green Machine
Hoffco, Inc.
Kershaw Mfg. Co., Inc.
Kinco Mfg.
Kioritz Corp. of America
Karl Kuemmerling, Inc.
Lely
Lindig Mfg. Corp.
Ben Meadows Co.

Merritt Equipment Service Inc. D/B/A
Ditch Witch of Georgia
National Hydro-Ax Inc.
New Draulics, Inc.
H. K. Porter, Inc.
Rowco Mfg. Co., Inc.
Royer Foundry and Machine Co.
Stanley Hydraulic Tools
Stihl American, Inc.
Stone Construction Equipment
Sun Master Corp.
Tilton Equipment Co.
True Temper Corp.

CHEMICAL APPLICATORS, GRANULAR

Agro Care
Avco New Idea
John Blue Co.
Brighton By-Products Co. Inc.
Buffalo Turbines Ag. Equipment Co.
Contree Sales, Inc.
J. J. Dill Co.
Gandy Co.
Hahn Inc., Turf-Ag. Div.
Herd Seeder Company, Inc.
H. D. Hudson Mfg. Co.
F. D. Kees Mfg. Co.
Kioritz Corp of America
Karl Kuemmerling, Inc.
L. L. Larson Machine Inc.
Lawn Medic, Inc.
Lely
Loft-Kellogg Seed, Inc.
ProTurf Div., O. M. Scott and Sons
Root-Lowell Corp.
Simplex Mfg. Co.
Solo Motors, Inc.

CHEMICAL APPLICATORS, LIQUID

Agro Care
John Blue Co.
The Broyhill Co.
Buffalo Turbine Ag. Equipment
Co. Inc.
Cenol-Division Burgess
Vibrocrafter's Inc.
Contree Sales, Inc.
Crown Chemicals
Curtis Dyna Products Corp.
J. J. Dill Co.
Friend Mfg. Corp.
Hahn Inc., Turf-Ag. Div.
H. D. Hudson Mfg. Co.
Inject-O-Meter Mfg. Co.
Kioritz Corp. of America
Lakes Supply Co., Inc.
L. L. Larson Machine, Inc.
Lawn Medic Inc.
Lely
Loft-Kellogg Seed, Inc.
Minnesota Wanner Co.
Red Ewald Inc.
Root-Lowell Corp.
Ryan Turf Equipment
—OMC Lincoln
Simplex Mfg. Co.
Smith Precision Products Co.
The Vandermolen Co.

CHIPPERS

American Arborist Supplies
Asplundh Chipper Co. Div.
Asplundh Tree Expert Co.
Billy Goat Industries Inc.
Capital Equipment Co.
FMC Corp., Sweeper Div.
Giant Vac Mfg. Inc.
W-W Grinder Corp.
KPS Mfg. Inc.
Karl Kuemmerling, Inc.

M-B Company Inc. of Wisconsin
Metro-Chipper, Vestar Div.,
Morbark Ind.
Mitts & Merrill Inc.
Morbark Industries, Inc.
MTD Products Inc.
Olathe Mfg., Inc.
Piqua Engineering Inc.
Precision Chipper Corp.
Royer Foundry & Machine Co.
Safety Test & Equipment Co., Inc.
Vandermolen Corp.
Vermeer Mfg. Co.

COMPACTORS

Davis Mfg.
Deere & Co.
Earth Picking Industries
Melroe Division,
Clark Equipment Co.
Merritt Equipment Service, Inc.
Dba Ditch Witch of Georgia
Stone Construction Equipment Co.
TCI Power Products Inc.

COMBS, TURF

Johnson Hydraulic Equipment Co.
F. D. Kees Mfg. Co.
Kinco Mfg.
Rental Equipment Mfg. Co.

CRANES

Adventure Line Mfg. Co.
Austin Products
Blue Bird International, Inc.
Ideal Crane Div., Bert Parkhurst
& Co.
McCabe-Powers Body Co.
Reach-All Manufacturing &
Engineering Co.
Rental Equip. Mfg. Co.
Schwartz Mfg. Co.

DISCS, CULTIVATING

Allis-Chalmers Corp.
Austin Products
Brinly Hardy Co., Inc.
Massey-Ferguson Inc.
Towner Mfg. Co.
White Farm Equipment

DRAINAGE TUBING

Advanced Drainage Systems, Inc.
Amoco Chemicals Corp.
Industrial Products Div.
Certain-Teed Daymond Co.
Ditch Witch of San Diego
Hancor, Inc.

DRILLS (FIELD)

Ground Hog, Inc.
Haynes Mfg. Co., Inc.
HMC
Limb-Lopper Co., Inc.
McCulloch Corp.
Tallman Equipment Co., Inc.

DUMPERS, SELF-UNLOADING

Allen-Clark Equip. Co.
Schultz Mfg. Co.

DUSTERS, POWER

John Blue Co.
Buffalo Turbine Ag. Equip. Co.
J. J. Dill Co.
Echo Chain Saw Division-Kioritz
Corp. of America
Hub States Chemical
Simplex Mfg. Co.
Solo Motors, Inc.
T.R.E.E.S., Inc.

Universal-Gerwin Div.,
Leigh Products, Inc.
Vandermolen Co.

EARTH AUGERS

Arps Corporation
Austin Products
Bolens: FMC Corp.,
OPE Division
Correct Mfg. Co.
Ditch Witch of San Diego
Fairmont Hydraulics
Ground Hog, Inc.
HMC—The Greem Machine
Johnson's Industrial Supply Co.
—JISCO
Karl Kuemmerling, Inc.
Lakes Supply Co.
Landsdowne Equip. Co., Inc.
Fred A Lewis Co.
Massey-Ferguson Inc.
McCabe-Powers Body Co.
Ben Meadows Co.
Melroe Division, Clark
Equipment Co.
Merritt Equipment Service, Inc.
D/B/A Ditch Witch of Georgia
Reach-All Mfg. and
Engineering Co.
Soilmoisture Equipment Co.
Solo Motors, Inc.
Stihl American Inc.
Tallman Equipment Co., Inc.
T.R.E.E.S., Inc.

EDGERS

A.M.F. Lawn and Garden
Black & Decker Mfg. Co.
Capital Equipment Co.
Clinton Engines Corp.
Conaway, Inc.
Cooper Mfg. Co.
Excel Industries, Inc.
HMC—The Green Machine
Hortiscape, Inc.
K-D Mfg. Co.
Kioritz Corp. of America
Lakes Supply Co. Inc.
Lindell Industries, Div. of
Lindell Pattern Works
Rotary Power, Inc.
Joseph T. Ryerson & Son, Inc.
Solo Motors, Inc.
T.R.E.E.S., Inc.
Village Blacksmith, McGraw Edison
Portable Electric Tool Div.
Weed Eater, Inc.
Yard Vac Inc.
Yazoo Mfg. Co.

ENGINES, DIESEL

Allis-Chalmers Corp.
Capital Equipment Co.
Deere and Co.
Landsdowne Equipment Co. Inc.
Merritt Equipment Service, Inc.
D/B/A Ditch Witch of Georgia
Onan Division-Onan Corp.
Payline Division,
International Harvester
White Farm Equipment
Yanmar Diesel Engine

ENGINES, GASOLINE

Briggs & Stratton Corp.
Capital Equipment Co.
Clinton Engines Corp.
Echo Chain Saw Division-Kioritz
Corp. of America
Kohler Co.
Landsdowne Equipment Co., Inc.

Lauson Power Products, Engine Div.
Tecumseh Products Co.
Merritt Equipment Service, Inc.
D/B/A Ditch Witch of Georgia
Onan Div., of Onan Corp.
Payline Div. International Harvester
Solo Motors, Inc.
Tecumseh Products
Teledyne Wisconsin Motor
Yazoo Mfg. Co., Inc.

EROSION CONTROL MATERIALS

Agro Care
American Excelsior Corp.
Bowie Industries, Inc.
Brighton By-Products Co., Inc.
Conwed Corporation
Grass Growers, Inc.
Gulf States Paper Corp.
Morbark Industries Inc.
Reinco Inc.

FLAMETHROWERS (SPRAYERS)

John Bean Div., FMC Corp.
Echo Chain Saw Div., Kioritz Corp.
of America
HMC—The Green Machine
Hub States Chemical
H. D. Hudson Mfg. Co.
Root-Lowell Corp.
Solo Motors, Inc.
Tradewinds, Inc.

FOGGERS

Buffalo Turbine Ag. Equipment Co. Inc.
California Brass Mfg.
Cenol-Division Burgess
Vibrocrafter's Inc.
Curtis Dyna Products Corp.
J. J. Dill Co.
Echo Chain Saw Div., Kioritz Corp.
of America
FMC Corp., Agricultural
Machinery Div.
Hub States Chemical
London Fog Company
Perma-Rain Irrigation, Inc.
Root-Lowell Corp.
Solo Motors, Inc.
Village Blacksmith, McGraw Edison
Portable Tool Div.

FORK LIFTS

Allis-Chalmers Corp.
Davis Mfg.
Deere and Company
Harvestall Industries, Inc.
Johnson Hydraulic Equipment Co.
K-D Mfg. Co.
Landsdowne Equipment Co., Inc.
Massey-Ferguson, Inc.
Otis Materials Handling
Payline Division,
International Harvester
TCI, Power Products

FORK LIFT (ATTACHMENT)

Allis-Chalmers Corp.
Caretree Systems
J I Case, Outdoor Power
Equipment Div.
Davis Mfg.
K-D Mfg. Co.
Landsdowne Equipment Co. Inc.
Massey-Ferguson Inc.
Melroe Div., Clark Equipment Co.
Simplicity Mfg. Co.
Sweepster Inc.
T. C. I. Power Products

GENERATORS

Allis-Chalmers Corp.
Beard-Poulan Div.,
Emerson Electric Co.
Capital Equipment Co.
Conaway, Inc.
Friend Mfg. Corp.
Homelite, Division of Textron
Kohler Co.
London Fog Co.
McCulloch Corp.
Medalist Universal Motors
Merritt Equipment Service, Inc.
D/B/A Ditch Witch of Georgia
Onan Div. of Onan Corp.
Solo Motors, Inc.
Tallman Equipment Co., Inc.

GRADERS

E. L. Caldwell & Sons, Inc.
Deere and Company
DriAll, Inc.

GOLF SUPPLIES

Bogue Club Car
Club Car, Inc.
Coursigns, Inc.
E-Z-Go Car Division Textron Inc.
Fore-Par, Inc.
Game Time, Inc.
Ginther Equipment Corp.
Johns Manville, Club Car
Lakeshore Equipment & Supply Co.
Lewis Systems Inc.
Lift-Quik Mfg. Co.
Otis Elevator Co.,
Special Vehicle Div.
Par Aide Products Co.
Pargo, Inc.
Rivlex Industries
Standard Mfg. Co.
Taylor Dunn Mfg. Co.
Westinghouse Electric Vehicles
Yamaha Motor Corp. U.S.A

HARROW, SPIKE-TOOTHED

Allis-Chalmers Corp.
Brinly Hardy Co., Inc.
Capital Equipment Co.
Fuerst Brothers Inc.

HARROW, SPRING-TOOTHED

Allis-Chalmers
Austin Products
Brinly Hardy Co., Inc.
Capital Equipment Co.
White Farm Equipment

HOISTS

Austin Products
Bluebird International, Inc.
Crysteel Mfg. Inc.
Dico. Co., Inc.
Energy Mfg. Co., Inc.
Fairmont Hydraulics
Hoffco, Inc.
Maasdam Pow'r Pull Inc.
Rental Equipment Mfg. Co.
Safety Test & Equipment Co.
Schwartz Mfg.
Tallman Equipment Co., Inc.
Terrain King Corp.
Woods, Div. of Hesston Corp.

HOSE

Aeroquip Corporation
American Arborist Supplies
Contree Sales
Fairmont Hydraulics
Friend Mfg. Corp.
Hub States Chemical

Loft-Kellogg Seed, Inc.
Merritt Equipment Service, Inc. D/B/A
Ditch Witch of Georgia
Medalist Universal Motors
Minnesota Wannter Co.
Rain Bird Sprinkler Mfg. Co.
Robco, Inc.
Swan Hose Div., Amerace Corp.

HOSE, SPRAY, IRRIGATION

American Arborist Supplies
American Hose & Reel Co.
The Broyhill Co.
California Brass Mfg.
Capital Equipment Co.
J. J. Dill Co.
FMC Corp., Agricultural
Machinery Div.
Friend Mfg. Co.
Hydro-Terra Corp.
Hydro-Turf
Medalist Universal Motors
National Irrigation Co.
Rain Bird Sprinkler Mfg. Corp.
Robco, Inc.
Sprinkler Irrigation Supply Co.
Travelrain Sprinkler Co.

HYDRAULIC & AIR POWERED TOOLS

Causco Inc.
Ditch Witch Equipment Co.
Fairmont Hydraulics
The Fanno Saw Works
Ginther Equipment Corp.
Limb-Lopper Co., Inc.
New Draulics, Inc.
Robinson Industries/
Limb-Lopper Div.
Stanley Hydraulic Tools
Tallman Equipment Co., Inc.

HYDRAULIC LIFTS

Bluebird International Inc.
Caretree Systems
Magline, Inc.
McCabe-Powers Body Co.
Reach-All Mfg. &
Engineering Co.
Turf Vac Corp.
Up-Right Scaffolds

HYDRAULIC SEEDING & MULCHING MACHINES

Bowie Industries, Inc.
Hydro Turf
Reinco, Inc.
Rinn Equipment Co.
Spray Baby, Inc.

IRRIGATION, COMPONENTS

California Brass Mfg.
Capital Equipment Co.
Champion Brass Mfg. Co.
Johns Manville-Ag Turf
Div. (irrigation)
Lumenite Electronic Co.
National Irrigation Co.
L. R. Nelson Corp.
RainBird Sprinkler Mfg. Corp.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Irrigation Div.
Toro Technology Center-Div.
of the Toro Company
Weather-matic Div., Telsco
Industries
Wet Mfg. Co., Inc.
White Turf

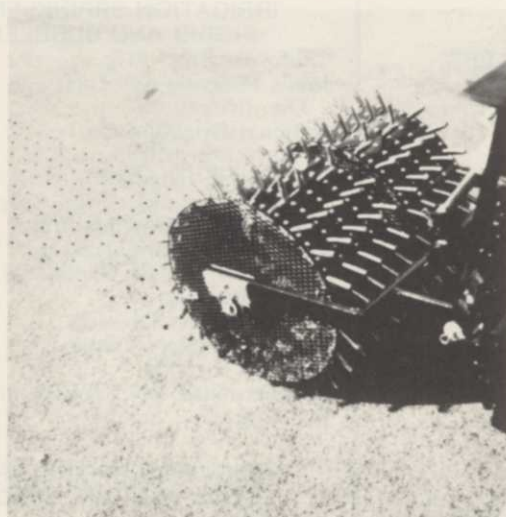
New

Pointed tine gives you up to a 3" depth!



You can have a neat, clean aerating pattern on close to 2" centers

The Dedoes pivoting tines enter straight in the turf and come out straight, leaving your green in a playable condition. ONE MAN CAN AERATE A 5000 SQUARE FOOT GREEN IN LESS THAN 15 MINUTES, with the plugs collected inside the drum! Saves costly clean-up.



TCA-550 Two Drum

This model available with 240 tines on close to 2" centers — gives you a 25" swath, or with the usual 60 tines per drum.

The hydraulic principle utilizes the weight of the vehicle for down-pressure giving you needed hole depth.

Designed and ruggedly built to cut maintenance costs.



TCA-501 Three-Drum Supreme

With 180 tines this model gives you a 42" swath and is available in three tine sizes to satisfy your individual requirements.

Dedoes the Aerating Pro

Quickly mounts to any all-purpose vehicle you may already have. Three sized tines to choose from 3/4" tine gives you 3" penetration, and 3/8" and 1/2" tines are also available. BACKWARDS OR FORWARDS you have complete mobility—no special attachments necessary.

WE HAVE A DISTRIBUTOR IN YOUR AREA.

Our economy model TCA-450 costs 20% less than the regular models — has 120 tines on 2 drums.

Fairway Models also available with the same advantages — and they can pick up the plugs.

Manufactured by

Dedoes Industries, Inc.

1060 West Maple Road, Walled Lake, Michigan 48088
(313) 624-7710

IRRIGATION CONTROLLER/PROGRAMMERS

Aqua-Dial
California Brass Mfg. Co.
Champion Brass Mfg. Co.
Griswold Controls
Imperial Underground Sprinkler
Irri-Trol Mfg., Inc.
John Manville-Ag. Turf
Div. (irrigation)
Lumenite Electronic Co.
Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Richel, Inc.
Russ Int'l., Inc.
Sprinkler Irrigation Supply Co.
Superior Controls Co., Inc.
Tork Time Controls, Inc.
Toro Irrigation Division
Toro Technology Center-Div.
of the Toro Company
VALCON
Weather-Matic Div., Telsco
Industries
Wet Mfg. Co.

IRRIGATION, INJECTION EQUIPMENT

Agro Care
Andrasko Engineering Co.
John Blue Company
Capital Equipment Co.
Hunt Malyce, Inc.
Inject-O-Meter Mfg. Co., Inc.
Smith Precision Products Co.
Sprinkler Irrigation Supply Co.
Wet Mfg. Co., Inc.

IRRIGATION MISCELLANEOUS ACCESSORIES

Ametek, Inc.
California Brass Mfg.
Champion Brass Mfg.
Greenlawn Sprinkler Co.
Irrrometer Co., Inc.
Johns Manville-Ag. Turf
Division (irrigation)
Melnor, Turf Irrigation Div.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Rain Jet Corp.
Soilmoisture Equipment Corp.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Irrigation Division
Toro Technology Center-Division
of the Toro Company
Weather-Matic Div./Telsco
Industries
West Mfg. Co., Inc.

IRRIGATION PIPE, RISERS

Alcoa Aluminum Co. of
America
Amoco Chemicals Corp., Industries
Products Div.
Capital Equipment Co.
Cast Iron Pipe Res. Assoc.
Certain-Teed/Daymond Co.
Certain-Teed Pipe &
Plastics Group
Cresline Plastic Pipe, Inc.
Flintkote Co., The Pipe Products
Div.
Flo-Control Inc.
Greenlawn Sprinkler Co.

Hydro-Turf
Jacobsen Manufacturing Co.,
Sod-Master Div.
Johns Manville-Ag Turf
Div. (irrigation)
King Bros. Industries
Melnor, Turf Irrigation Div.
National Irrigation Co.
Nelco, Inc.
Plastiline, Inc.
Rain Jet Corp.
Raven Industries Inc.
Ridge Plastics Co.
R. & G. Sloane Mfg. Co.
Sprinkler Irrigation Supply Co.

IRRIGATION, PUMPING STATIONS, COMPLETE

Kirchdorfer Irrigation
National Irrigation Co.
Sprinkler Irrigation Supply Co.
Venable Sprinkler Sales, Inc.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, ABOVE AGROUND

California Brass Mfg. Co.
Capital Equipment Co.
Champion Brass Mfg. Co.
Hydro-Turf
F. D. Kees Mfg. Co.
Loft-Kellogg Seed, Inc.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Royal Coach Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Technology Center-Division
of the Toro Co.
Travelrain Power Sprinkler Co.
VALCON
Vermeer Mfg. Co.
Weather-matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, IMPACT

California Brass Mfg. Co.
Champion Brass Mfg. Co.
Johns Manville-Ag Turf
Div. (irrigation)
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Royal Coach Sprinklers, Inc.
Safe-T-Lawn, Inc.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Irrigation Division
Toro Technology Center-Division
of the Toro Co.
Weather-matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, IMPULSE, POP-UP, HEADS

Aqua-Dial
California Brass Mfg. Co.
Capital Equipment Co.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Royal Coach Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Technology Center-Div.
of the Toro Co.
Weather-matic Div., Telsco Ind.
Weather-Tec Corp. Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS ROTARY, POP-UP, HEADS

Aqua-Dial
Capital Equipment Co.
Johns Manville-Ag. Turf
Div. (irrigation)
Melnor, Turf Irrigation Div.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Rain Jet Corp.
Rain-O-Mat Sprinklers, Inc.
Royal Coach Sprinklers, Inc.
Safe-T-Lawn, Inc.
Sprinkler Irrigation Supply Co.
Thompson Manufacturing
Toro Irrigation Division
Toro Technology Center-Div.
of the Toro Co.
Weather-matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, SHRUB AND BUBBLER

California Brass Mfg.
Johns Manville-Ag. Turf
Div. (irrigation)
National Irrigation Co.
L. R. Nelson Mfg. Co., Inc.
Perma-Rain Irrigation, Inc.
Rain Bird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Royal Coach Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Irrigation Division
Toro Technology Center-Div.
of the Toro Co.
Weather-matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, SPRAY, POP-UP, HEADS

Aqua-Dial
Capital Equipment Co.
Greenlawn Sprinkler Co.
Imperial Underground Sprinkler
Johns Manville-Ag. Turf
Div. (irrigation)
Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
National Irrigation Co.
L. R. Nelson Corporation
Rain Bird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Safe-T-Lawn, Inc.
Sprinkler Irrigation Supply Co.
Thompson Manufacturing
Toro Irrigation Division
Toro Technology Center-Division
of the Toro Co.
Weather-matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, STATIONARY

California Brass Mfg. Co.
Capital Equipment Co.
Champion Brass Mfg. Co.
Greenlawn Sprinkler Co.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Rain Jet Corporation
Royal Coach Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
Thompson Mfg. Co.
Toro Technology Center-Div.
of the Toro Co.
Wet Mfg. Co., Inc.

IRRIGATION SPRINKLERS, VALVE IN HEAD

Capital Equipment Co.
Greenlawn Sprinkler Co.
Johns Manville-Ag. Turf
Div. (irrigation)
National Irrigation Co.
Rain Bird Sprinkler Mfg. Corp.
Royal Coach Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
Toro Irrigation Div.
Toro Technology Center-Div.
of the Toro Co.
Wet Mfg. Co., Inc.

IRRIGATION, SAND SEPARATORS

Laval Separator Corp.
National Irrigation Co.
Rain Bird Sprinkler Mfg. Co.
Rain Jet Corp.
Sprinkler Irrigation Supply Co.
Wet Mfg. Co., Inc.

IRRIGATION, SWITCHES

Lumenite Electronic Co.
National Irrigation Co.
Sprinkler Irrigation Supply Co.
Wet Mfg. Co., Inc.

IRRIGATION SYSTEMS, COMPLETE

Boss Irrigation Div. Consolidate
Pipe Mfg.
W. J. Holland Supply
National Irrigation Co.
Rain Bird Sprinkler Mfg. Corp.
The Skinner Irrigation Co.
Sprinkler Irrigation Supply Co.
Toro Technology Center-Div.
of the Toro Co.
Travelrain Sprinkler Co.
Vermeer Mfg. Co.
Weather-Matic Div., Telsco Ind.
Wet Mfg. Co., Inc.

IRRIGATION VALVES, AUTOMATIC

Aqua-Dial
California Brass Mfg. Co.
Champion Brass Mfg. Co.
Greenlawn Sprinkler Co.
Griswold Controls
Hays Mfg. Div., Zurn
Industries, Inc.
Irr-Trol Mfg., Inc.
Moody Sprinkler Co., Inc.
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Sprinkler Irrigation Supply Co.
Toro Irrigation Div.
Toro Technology Center-Div.
of the Toro Co.
Weather-matic Div./Telsco Industries
Wet Mfg. Co., Inc.

IRRIGATION VALVES, FLOW CONTROL

Champion Brass Mfg. Co.
Flo-Control Inc.
General Control Co., Inc.
Greenlawn Sprinkler Co.
Griswold Controls
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
SMR/Backflow Div.
Sprinkler Irrigation Supply Co.
Toro Technology Center-Division
of the Toro Co.
Wet Mfg. Co., Inc.

IRRIGATION VALVES, PRESSURE ACTIVATED

Griswold Controls
National Irrigation Co.
L. R. Nelson Corp.
Rain Bird Sprinkler Mfg. Corp.
Sprinkler Irrigation Supply Co.
Toro Technology Center-Division
of the Toro Co. Wet Mfg. Co., Inc.
Wet Mfg. Co., Inc.

IRRIGATION, VALVES QUICK COUPLING

California Brass Mfg. Co.
Flo-Control Inc.
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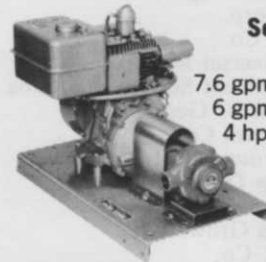
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 FMC Corp., Ag. Machinery Div.
 Friend Mfg. Corp.
 W. L. Hamilton Co.
 Hub States Chemical
 H. D. Hudson Mfg. Co.
 L. L. Larson Machine, Inc.
 Lockwood Corp.
 F. E. Myers Co.
 Minnesota Wanner Co.
 Red Ewald Inc.
 Smith & Co., Inc.
 Smithco Inc.
 Solo Motors, Inc.
 Spraying Systems Co.

SPRAY NOZZLES, COMPLETE

Agro Care
 Beeco Products Co.
 Bete Fog Nozzle, Inc.
 Brighton By-Products Co. Inc.
 The Broyhill Co.
 Buffalo Turbine Ag. Equip. Co., Inc.
 Cambell Hausfeld Co., Lombard
 Chain Saws
 Contree Sales
 Crown Chemicals
 Delavan Mfg. Co.
 J. J. Dill Co.
 FMC Corp, Agri. Machinery Div.
 Foamspray Chemicals
 Friend Mfg. Corp.
 W. L. Hamilton Co.
 Hub States Chemical
 H.D. Hudson Mfg. Co.
 L. L. Larson Machine, Inc.
 Lely
 Melnor Industries
 Minnesota Wanner Co.
 F. E. Myers Co.
 Red Ewald Inc.
 Reinco/Grass Growers Inc.
 Simplex Mfg. Co.
 Smith & Co., Inc.
 Smithco Inc.
 Spraying Systems Co.

SPRAYERS, CART OR WHEELBARROW TYPE

Argo Care
 John Blue Co.
 Brighton By-Products Co. Inc.
 The Broyhill Co.
 Campbell Hausfeld Co., Lombard
 Chain Saws
 Capital Equipment Co.
 Century Engineering Corp.
 R. E. Chapin Mfg. Works Inc.
 Crown Chemicals
 J. J. Dill Co.
 FMC Corp., Ag. Machinery Div.
 Hub States Chemical
 H. D. Hudson Mfg. Co.
 L. L. Larson Machine, Inc.
 Lindig Mfg. Corp.
 Master Mfg. Co.
 Minnesota Wanner Co.
 F. E. Myers Co.
 Red Ewald, Inc.
 Smith & Co., Inc.
 Smithco, Inc.
 Universal-Gerwin Div. Leigh
 Products, Inc.

SPRAYERS, COMPLETE POWER UNIT (Also See Pumps)

Agro Care
 American Arborist Supplies

John Bean Div., FMC Corp.
 Bowie Industries, Inc.
 Brighton By-Products Co. Inc.
 The Broyhill Co.
 Buffalo Turbine Ag. Equip Co.
 Campbell Hausfeld Co., Lombard
 Chain Saws
 Capital Equipment Co.
 R. E. Chapin Mfg. Works, Inc.
 Clinton Engies Corp.
 Contree Sales
 Crown Chemicals
 Curtis Dyna Products Corp.
 J. J. Dill Co.
 Edwards Mfg. Co.
 Ferrari International Inc.
 Fimco, Inc.
 FMC Corp., Ag. Machinery Div.
 Friend Mfg. Corp.
 The Guildsman Co.
 Hahn Inc., Turf-Ag. Div.
 Hays Spray Gun Co.
 Hills Liqui System
 Hub States Chemical
 H. D. Hudson Mfg. Co.
 Hydro Turf
 L. L. Larson Machine, Inc.
 Lawn Medic Inc.
 Lindig Mfg. Corp.
 Lockwood Corp.
 Mars Industries Inc.
 Master Mfg. Co.
 Minnesota Wanner Co.
 F. E. Myers Co.
 National Chemsearch
 National Foam System, Inc.
 Red Ewald, Inc.
 Robco, Inc.
 Root-Lowell Corp.
 Simplex Mfg. Co.
 Smith & Co., Inc. D. B.
 Smithco Inc.
 Solo Motors, Inc.
 Tradewinds, Inc.
 Tree Ject Company
 Universal-Gerwin Div., Leigh
 Products, Inc.
 Walsh Mfg. Co.
 Waymark

SPREADERS, HOPPER-TYPE

Arctic Mizer Mfgs., Inc.
 Avco E-Zee Flow
 John Blue Co.
 Buffalo Turbine Ag. Equip. Co. Inc.
 The Cyclone Seeder Co., Inc.
 J. J. Dill Co.
 Dobbins, Inc.
 Gandy Co.
 Ginther Equipment Corp.
 Hahn Inc., Turf-Ag. Div.
 Herd Seeder Co., Inc.
 Highway Equipment Co.
 Hub States Chemical
 F. D. Kees Mfg. Co.
 L. L. Larson Machine, Inc.
 Lawn Medic Inc.
 Loft-Kellogg Seed, Inc.
 MTD Products Inc.
 Proturf Div., O. M. Scott
 and Sons
 Swenson Spreader & MFG. Co.
 Tufflex Mfg. Co.
 Vandermolen Corp.
 Waymark
 Willmar Mfg. Co.

STUMP CUTTER/REMOVER

Hesston Corp., Lawn Equipment
 Div., The Toro Co.

Huss Sales and Service
 Karl Kuemmerling, Inc.
 Levco Mfg., Inc.
 Lindig Mfg. Corp.
 Olathe Mfg., Inc.
 Valley Products Corp.
 Vermeer Mfg. Co.

SWEEPERS, LAWN (Also See Broom, Vacuum)

A.M.F. Lawn and Garden
 Atwater Stron Div., Gougler
 Industries, Inc.
 Billy Goat Industries, Inc.
 Brinly Hardy Co., Inc.
 Capital Equipment Co.
 J I Case, Outdoor Power
 Equipment Division
 Clark Div., Clarke-Gravelly Corp.
 E-Z Rake Inc.
 Giant-Vac Mfg. Inc.
 W-W Grinder Corp.
 Jacobsen Mfg. Co.
 Lakes Supply Co., Inc.
 Lindall Industries, Div. of
 Lindell Pattern Works
 Mars Industries, Inc.
 Mathews Co.
 M-B Company of Wisconsin
 Mid-State Metal Casters & Mfg. Co.
 MTD Products Inc.
 Nunes Mfg.
 Parker Sweeper Co.
 Sweepster, Inc.
 Tennant Co.
 Turf Vac Corp.

TANKS, SPRAY

Agro Care
 John Blue Co.
 The Broyhill Co.
 Capital Equipment Co.
 Contree Sales
 Crown Chemicals
 J. J. Dill Co.
 FMC Corp., Ag. Machinery Div.
 Friend Mfg. Corp.
 Hahn Inc., Turf-Ag. Div.
 Hemco Corp.
 Hub States Chemical
 Karl Kuemmerling, Inc.
 L. L. Larson Machine, Inc.
 Lawn, Medic Inc.
 Lely
 Melnor Industries
 Raven Industries, Inc.
 Red Ewald, Inc.
 Robco, Inc.
 Simplex MFG. Co.
 Smith & Co. Inc.
 Smithco Inc.
 Solo Motors Inc.
 Tufflex Mfg. Co.
 Universal-Gerwin Div., Leigh
 Products Inc.

THATCHERS (See Mowers, Vertical)

Arctic Mizer Mfrs., Inc.
 Bluebird International, Inc.
 Capital Equipment Co.
 E-Z Rake, Inc.
 Giant-Vac Mfg., Inc.
 Hahn Inc., Turf-Ag. Div.
 Jacobsen Mfg. Co.
 F. D. Kees Mfg. Co.
 Kinco Mfg.
 Mathew Co.
 Parker Sweeper Co.
 Swenson Spreader & Mfg. Co.

TILLERS

A.M.F. Lawn and Garden
Ariens Co.
Atlas Tool & Mfg. Co.
Auto Hoe, Inc.
Black and Decker Mfg. Co.
Bolens: FMC Corp., OPE Div.
Capital Equipment Co.
Derby Tiller Co.
J. I. Case, Outdoor Power
Equip. Div.
Conaway, Inc.
Ferrari International Inc.
FMC Corp., Side Winder
Ford Tractor Operations
Giant-Vac Mfg. Inc.
Gravely, Div. Clarke-Gravely
Hahn Inc., Turf-Ag. Div.
HMC—The Green Machine
Howard Rotavator Co., Inc.
International Harvester
Kubota
Lakes Supply Co., Inc.
Lely
Massey-Ferguson, Inc.
MTD Products Inc.
The Roto-Hoe Co.
Simplicity Mfg. Co.
Solo Inc.
Tradewinds, Inc.
White Farm Equipment
Yazoo Mfg. Co.

TOOLS, HAND, HYDRAULIC, PNEUMATIC

Fairmont Hydraulics
The Fanno Saw Works
Ginther Equipment Corp.
Robinson Industries/Limb
Lopper Div.
Safety Test & Equipment Co.
Skil Corp.
Stanley Hydraulic Tools
Tallman Equipment Co., Inc.
True Temper Corp.

TOP DRESSERS

Jabobsen Mfg. Co.

TRACTORS, 8-12 HP

Agro Care
A.M.F. Lawn and Garden
Ariens Company
Bolens: FMC Corp., OPE Div.
Capital Equipment Co.
J I Case, Outdoor Power
Equip. Div.
Conaway, Inc.
Engineering Products Co.
FMC Corp., Outdoor Power
Equip. Div.
Ford Tractor Operations
General Electric Co., Outdoor
Power Equipment Operation
Gilson Bros. Co.
Gravely, Div. Clarke-Gravely Corp.
International Harvester
Kubota
Lakes Supply Co., Inc.
Massey-Ferguson, Inc.
MTD Products Inc.
Simplicity Mfg. Co.
Speedex Tractor Co.
The Toro Co.
Wheel-Horse Products
Yazoo Mfg. Co. Inc.

TRACTORS, 13-20 HP

John Blue Co.
Bolens: FMC Corp., OPE Div.

Capital Equipment Co.
J I Case, Outdoor Power
Equip. Div.
Conaway, Inc.
Engineering Products Co.
Excel Industries, Inc.
Ferrari International Inc.
FMC Corp., Outdoor Power
Equip. Div.
Ford Tractor Operations
Gravely, Div. Clarke-Gravely Corp.
Hefty Tractors
Hesston Corporation, Lawn Equip. Div.,
The Toro Co.
International Harvester Co.
Kubota
Lakes Supply co. Inc.
Massey-Ferguson, Inc.
MTD Products Inc.
Satoh Tractor c/o NEDA
Simplicity Mfg. Co.
The Toro Co.
Tradewinds, Inc.
Wheel-Horse Products
White Farm Equipment
Yazoo Mfg. Co.

TRACTORS, 21-60 HP

Capital Equipment Co.
Deere & Co.
Excel Industries
Ferrari International Inc.
Hefty Tractor
International Harvester
Kubota
Massey-Ferguson, Inc.
Payline Div., International
Harvester
Satoh Tractor c/o NEDA
Slope Tractor, Inc.
Tradewinds, Inc.
Wheel Power Corp.

TRACTORS, 61-150 HP

Deere & Co.
International Harvester
Jacobsen Mfg. Co.
Massey-Ferguson, Inc.
National Hydro-Ax Inc.
Slope Tractor, Inc.
White Farm Equipment

TRACTORS, 151 and up HP

Allis-Chalmers Corp.
Deere & Co.
White Farm Equipment

TRACTORS, CRAWLERS

Allis-Chalmers Corp.
Deere & Co.
Massey-Ferguson Inc.
Payline Div., International
Harvester

TRAILERS

Agro Care
Bachtold Bros. Inc.
Beatty Trailers
Bock Industries, Inc.
The Champion Co.
Clark Equipment Trailer Div.
Deere & Co.
Ditch Witch Div., The Charles
Machine Works, Inc.
Ditch Witch Equipment Co.
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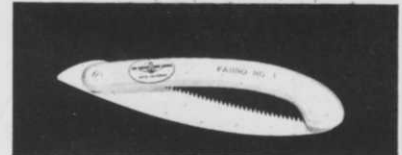
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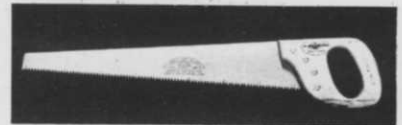
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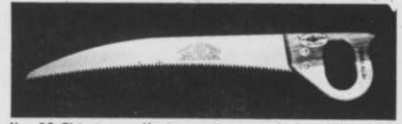
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 Ben Meadows Co.
 Product Development International

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 Ditch Witch Div., The Charles Machine Works, Inc.

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 Ditch Witch of Columbus, Inc.
 Ditch Witch of San Diego
 Ground Hog, Inc.
 Lansdowne Equipment Co., Inc.
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 McCabe-Power Body Co.

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 E-Z-Go Car Div. Textron Inc.
 Ginther Equipment Corp.
 HMC—The Green Machine
 Jacobsen Mfg. Co.

McCabe-Power Body Co.
 Smithco Inc.
 The Snow Co.

TURF VEHICLES

Agro Care
 Capital Equipment Co.
 Club Car, Inc.
 Ginther Equipment Corp.
 E-Z Go Car
 Jacobsen Mfg. Co.
 Jeep Corp.
 Lawn Medic Inc.
 Massey-Ferguson, Inc.
 Pargo, Inc.
 Promark Corp.
 Smithco, Inc.
 The Snow Co.
 The Toro Company

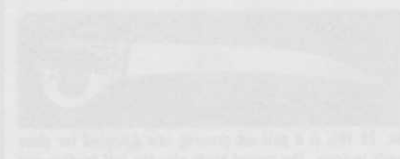
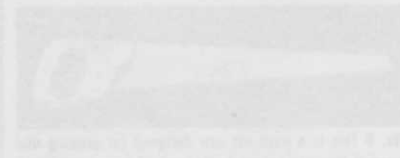
VACUUMS

A.M.F. Lawn and Garden
 Arctic Mizer Mfrs., Inc.
 Ariens Co.
 Billy Goat Industries, Inc.
 Capital Equipment Co.
 Clarke Div., Clarke-Gravelly Corp.
 E-Z Rake, Inc.
 Mid-States Metal Casting & Mfg. Co.
 MTD Products Inc.
 Satco-Systems Inc.
 Turf Vac Corp.

WINCH

(Also See Hoist)

Fairmont Hydraulics
 Hoffco, Inc.
 Karl Kuemmerling, Inc.
 Maasdam Pow'r Pull, Inc.
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Jobs too small for big specialized equipment can add up to a punishing expense in manpower. Hauling. Mowing. Tilling. Grading. Loading. Trenching. Backfilling.

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*For a free copy of a University study on nitrogen return, contact FMC Corporation, Port Washington, Wisconsin 53074.

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FMC
Consumer
Products

Chemical Manufacturer List

Abbott Laboratories, Agricultural and Veterinary Products
Div., Dept. 95M, North Chicago, IL 60064

INSECTICIDES — Bacillus Thuringiensis, Dipel

Agricola Chemicals Ltd. (Great Britain), 2 Stratford Place,
London W1N 9AE, England

HERBICIDE — Calcium Arsenate

INSECTICIDES — Calcium Arsenate

Agway Inc., Box 1333, Syracuse, NY 13201

FUNGICIDES — Glyodin

Amchem Products, Inc., Brookside Ave., Ambler, PA 19002

HERBICIDES — Amdom, Amitrol, Amizine, Amizol,
Benzac, Brominal, Bromoxynil, Fenac, Weedazol

American Cyanamid Co., Agricultural Div., P.O. Box 400,
Princeton, NJ 08540

HERBICIDES — Amitrol, Cytrole Amitrole-T

INSECTICIDES — AC 18682, Dimethoate, Thiophos

The Ansul Company, One Stanton Street, Marinette, WI
54143

HERBICIDES — Ansar, DSMA, MSMA, Sodium
Cacodylate

GROWTH RETARDANTS — Maleic Hydrazide

Applied Biochemists, Inc., 5300 W. County Line Rd., Me-
quon, WI 53092

HERBICIDES — Weedtrine D

Atanor S.A.M., Lavalle 348 2° Piso, Buenos Aires, Argentina

HERBICIDES — MCPA

A & V, Incorporated, P.O. Box 211, Butler, WI 53007

HERBICIDES — A & V-70 Algeacide

BASF Aktiengesellschaft, Carl-Bosch-Str. 38,
6700/Ludwigshafen (Federal Republic of Germany)

FUNGICIDES — Carbendazim, Dodemorph,
Dodemorph Polyran-Ultra

HERBICIDES — Alipur, Dichlorprop, MCPA, MCPP,
U-46

INSECTICIDES — Basamid, Carbaryl, Dazomet,
Dimethoate, Perfekthion, Rebelate

BASF Wyandotte Corp., Agricultural Chemicals, 100 Cherry
Hill Rd., P.O. Box 181, Parsippany, NJ 07054

INSECTICIDES — Dimethoate

Bayer AG, Pflanzenschutz Anwendungstechnik Beratung, 509
Leverkusen Bayerwerk, Federal Republik of Germany

FUNGICIDES — Dexon, Eradex, Euparen M, Pomar-
sol forte, Thiram

HERBICIDES — Amitrol, Hedonal MCPP

INSECTICIDES — Baygon, Dimethoate, Eradex,
Folidol E605, Gusathion M, Guthion, Metasystox-R,
Nemacur, Parathion, Systox, Unden

The Boots Co., Ltd., Agro Chemical Div., 1 Thane Rd. West,
Nottingham, England

HERBICIDES — Dichlorprop, MCPP

INSECTICIDES — Baam

Burts & Harvey Ltd., Crabtree Manorway, Belvedere, Kent
DA17 6BQ, England

HERBICIDES — Dichlorprop, MCPA, MCPP

GROWTH RETARDANTS — Maleic Hydrazide,
Regulox

Celamerck GMBH & Co. KG, P.O. Box 202, 6507 In-
gelheim/Rhein, West Germany

FUNGICIDES — Dithianon, Triforine

GROWTH RETARDANTS — Maintain CF 125

INSECTICIDES — Dimethoate, Nexion

Chemagro Agricultural Division, Mobay Chemical Corp.,
P.O. Box 4913, Kansas City, MO 64120

FUNGICIDES — Dexon, Dyrene

INSECTICIDES — Baygon, Guthion, Metasystox-R,
Nemacur, Systox

Chemical Formulators, Inc., Box 26, Nitro, WV 25143

INSECTICIDES — Methoxychlor

GROWTH RETARDANTS — Maleic Hydrazide

Cheminova, P.O. Box 9, DK 7620 Lemvig, Denmark

INSECTICIDES — Dimethoate, Parathion

Chevron Chemical Co., Ortho Division, 575 Market Street,
P.O. Box 3744, San Francisco, CA 94105

FUNGICIDES — Phaltan

HERBICIDES — Diquat, Paraquat, Weed-B-Gon

Ciba-Geigy Ltd., P.O. Box 11422, Greensburg, N.J. 27409

HERBICIDES — Gesatop, Princep

INSECTICIDES — Azodrin, C1414, Diazinon,
Nuvacron

Cities Service Co., Industrial Chemicals Marketing Dept., Box
50360, Atlanta, GA 30302

FUNGICIDES — Copper Carbonate, Basic

W. A. Cleary Corp., 1049 Somerset Street, Somerset, NJ 08873

FUNGICIDES — Cadium Chloride, Thimer, Thiram

HERBICIDES — DSMA, MCPP, Methar

Commercial Chemical Co., P.O. Box 7415, Memphis, TN
38107

HERBICIDES — Calcium Arsenate

INSECTICIDES — Calcium Arsenate

Crystal Chemical Co., 1525 N. Post Oak Rd., Houston, TX
77055

HERBICIDES — Diuron, DSMA, Dynex, Mesamate,
MSMA, Namate

INSECTICIDES — Crysthion 2L, Dimethoate, Guthion

Crystal Chemical de Costa Rica, Apartado 5397, San Jose,
Costa Rica, C.A.

HERBICIDES — Diuron, DSMA, MSMA

INSECTICIDES — Dimethoate, Guthion

Crystal Chemical Interamerica, 1525 N. Post Oak Rd.,
Houston, TX 77055

HERBICIDES — Diuron, DSMA, MSMA

INSECTICIDES — Dimethoate, Guthion

Cyprus Industrial Minerals Co., 555 S. Flower Street, Los
Angeles, CA 90017

MISCELLANEOUS — Diatomaceous Earth

Diamond Shamrock Chemical Co., Agricultural Chemical
Div., 1100 Superior Ave., Cleveland, OH 44114

FUNGICIDES — Bravo

HERBICIDES — Arsonate Liquid, Daconate, Dacthal,
DSMA, MSMA

Dow Chemical Co., P.O. Box 1706, Midland, MI 48640

HERBICIDES — Kuron, Silvex, Tordon

E. I. duPont De Nemours & Co., Inc., 1007 Market Street,
Wilmington, DE 19898

FUNGICIDES — Arasan, Benomyl, Chloronob,
Hydroxymercurichlorophenols, Tersan, Thiram

HERBICIDES — Bromacil, Diuron, Karmex, Lkoben,
Neburon, Siduron, Trichlorobenzoic Acid, Trysken

INSECTICIDES — Lannate Methomly Methoxychlor
Oxamyl
GROWTH REGULATORS — Krenite Brush Control
Agent

Eagle-Picher Industries, Inc., Agricultural Chemicals Div.,
P.O. Box 83, Joplin, MO 64801

MISCELLANEOUS — Diatomaceous Earth

Elanco Products Co., Div. of Eli Lilly & Co., P.O. Box 1750,
Indianapolis, IN 46206

FUNGICIDES — Pipron

HERBICIDES — Balan, Surflan

Eli Lilly & Co., P.O. Box 708, Greenfield, IN 46140

HERBICIDES — Dymid, Ryzelan

Fabriek van Chemische Producten, Vondelingenplaat B.V.,
P.O. Box 7120, Rotterdam 3031, Netherlands

FUNGICIDES — Thiram, Tripomol

INSECTICIDES — Tribactur

HERBICIDES — Diuron, Vonduron

Fairmount Chemical Co., Inc., 117 Blanchard Street, Newark
NJ 07105

HERBICIDES — Amitrol, Herbezole

GROWTH RETARDANTS — De-Cut, Maleic
Hydrazide

Fisons Corp., Ag. Chemicals Division, 2 Preston Court, Bed-
ford, MA 07130

HERBICIDES — MCPA

Fisons Limited, Agrochemical Division, Hauxton, Cambridge
CB2 5HU, England

HERBICIDES — Nortron, Phenoxyline-Plus, Premalin

FMC Corp., Agricultural Chemical Div., 2000 Market Street,
Philadelphia, PA 19103

FUNGICIDES — Actispray

HERBICIDES — Tandex

INSECTICIDES — Endosulfan, NIA 5488

GAF Corp., Chemical Division, 140 W. 51st Street, New
York, NY 10020

MISCELLANEOUS — Blanco

Great Lakes Chemical Corp., P.O. Box 2200, West Lafayette,
IN 47906

INSECTICIDES — Brom-O-Sol

MISCELLANEOUS — Terr-O-Gel

Guard Chemical Co., One Avenue L, Newark, NJ 07105

FUNGICIDES — Cadium-Calcium Copper Zinc

Chromate Complex, Puraturf 117

Harshaw Chemical Co., 1945 E. 97th Street, Cleveland, OH
44106

FUNGICIDES — Cooper Carbonate, Basic

Hoechst AG (West Germany), 6230 Frankfurt (Main)-80,
West Germany

FUNGICIDES — Afugan, Carbendazim

HERBICIDES — Aresin

INSECTICIDES — Endosulfan, Hostaquick, Thiodan

Hysan Products Co., 919 W. 38th Street, Chicago, IL 60609

HERBICIDES — GCC-711

ICI Australia Limited, ICI House-1 Nicholson Street, P.O.
Box 4311, Melbourne, Victoria, 3001, Australia

HERBICIDES — MCPA

ICI Plant Protection Division, Fernhurst, Haslemere, Surrey,
England, Haslemere 4061

FUNGICIDES — Fernasan, Milcurb, Nomersan

HERBICIDES — Agrozone, Diquat, MCPA, MCPP
(Potassium Salt), Methoxone, Paraquat, Rexone

INSECTICIDES — Albolineum, Fosferno 50, Premicid

International Minerals & Chemical Corp., IMC Plaza, Liber-
tyville, IL 60048

MISCELLANEOUS — Bentonite

I.Pi.Ci., Industria Prodotti Chimici SpA, Via F. Beltrami, 11,
20026 Novate Milanese, Italy

HERBICIDES — Diuron, Princep

INSECTICIDES — Dimethoate, Endosulfan, Kelthane,
Tedion V-18

Johns-Manville Products Corp., Filtration & Minerals Div.,
Ken Caryl Ranch, Denver, CO 80217

MISCELLANEOUS — Diatomaceous Earth

Kalo Laboratories, 9233 Ward Parkway, Kansas City, MO
64114

MISCELLANEOUS — Buffer-X, Fomex, Hydro-Wet

Kemira Oy, Box 330, 00101 Helsinki 10, Finland

HERBICIDES — Hormotuh

Los Angeles Chemical Co., 4545 Ardine Street, South Gate,
CA 90028

HERBICIDES — Calcium Arsenate

INSECTICIDES — Calcium Arsenate

Lowe's Inc., N. Edward Street, Cassopolis, MI 49031

MISCELLANEOUS — Bentonite

Makhteshim-Agan (Israel), Koor Chemicals Crop Protection
Div., P.O. Box 60, Beer-Sheva, Israel

FUNGICIDES — Phaltan

HERBICIDES — Amitrol, Di-On, Diuron, Neburex,
Neburon, Simanex, Weedaxol-T

INSECTICIDES — Azodrin, Carbaryl, Cotnion-Methyl,
Diazol, Endosulfan, Guthion, Kelthane, Monocron,
Thionax

Mallinckrodt, Inc., P.O. Box 5439, St. Louis, MO 63147

FUNGICIDES — Cadminate, Calo-Clor, Calo-Gran,

Fungo 50, Kromad, Thiramad

HERBICIDES — Pre-San, Trex-San-Bent

GROWTH RETARDANTS — Po-San

A. H. Marks & Co. Ltd., Wyke Lane, Bradford BD12 9EJ,
West Yorkshire, England

HERBICIDES — Dichlorprop, MCPA, MCPP, Silvex

May & Baker Ltd., Dagenham, Essex, England RM 10 7XS

FUNGICIDES — Crotothane

HERBICIDES — Bromoxynil, Compitox, Premalin,
Seritox 50

Merck & Co., Inc., Merck Chemical Division, 126 Lincoln
Avenue, P.O. Box M, Rahway, NJ 07065

INSECTICIDES — Agritol, Bacillus Thuringiensis

Miller Chemical & Fertilizer Corp., P.O. Box 333, Hanover,
PA 17331

FUNGICIDES — Miller 531

INSECTICIDES — Micofume

Mirfield Agricultural Chemicals Ltd., P.O. Box 1, Mirfield,
Yorkshire, England

HERBICIDES — Silvex

Mobil Chemical Co., Phosphorus Division, P.O. Box 26683,
Richmond, VA 23261

INSECTICIDES — MobilLawn, Mocap

GROWTH REGULATORS — Phosfon

Monsanto Agricultural Products, 800 N. Lindbergh, St. Louis,
MO 63166

HERBICIDES — Radox, Roundup, Vegadex

INSECTICIDES — Niran, Parathion

Montedison Dipa, Agricultural Products Div., Piazza Della Republica 14/16, 20100 Milano, Italy

INSECTICIDES — Demes L40, Dimethoate

Murphy Chemicals, Ltd., Wheathampstead Nr., St. Albans, Hertsfordshire, U.K., England 2001

INSECTICIDES — Chlorfephos

Nihon Nohyaku Co., Ltd., Export Division, 2-5 Nihonbashi 1-chome Chuo-ku, Tokyo, Japan

GROWTH RETARDANTS — Maleic Hydrazide

Nippon Soda Co., Ltd., Fine Chemicals Div., Shin-Ohtemachi Bldg., No. 2-2-1 Ohtemachi, Chiyoda-ku Tokyo, Japan

FUNGICIDES — Thiophanate, Thiophanate-Methyl, Topsin Wettable Powder

Nissan Chemical Industries, Ltd., Kowa-Hitotsubashi Bldg., 71-, 3-Chome, Kanda-Nishiki-Cho, Chiyoda-Ku, Tokyo, Japan

HERBICIDES — MCPA, Silvex

NL Industries, Inc., Industrial Chemicals Division, P.O. Box 700, Hightstown, NJ 08520

MISCELLANEOUS — Bentonite

Nutrilite Products, Inc., 5600 Beach Blvd., Buena Park, CA 90620

INSECTICIDES — Bacillus Thuringiensis, Biotrol

Occidental Chemical Co., P.O. Box 198, Lathrop, CA 95330 or 2000 Post Oak St., Houston, Tex. 77031

HERBICIDES — Ureabor, Ureabor 8D

PBI-Gordon Corp., 300 S. 3rd Street, Kansas City, KS 66118

HERBICIDES — Trimex

Pennwalt Corp., Agchem Div., 1630 E. Shaw Ave., Suite 179, Fresno, CA 93710

FUNGICIDES — Thiophanate-Methyl, Topsin M, Topsin Wettable Powder

HERBICIDES — Aqua-Vex, Endothall

INSECTICIDES — Pencil

Philips-Duphar B. V., Appollolaan 151, Amsterdam, Holland

HERBICIDES — Casoron 133, Du-Sprex

INSECTICIDES — Dimilin, PH 60-40, Tedion V-18

PPG Industries, Inc., Chemical Div., One Gateway Center, Pittsburgh, PA 15222

FUNGICIDES — Azide

HERBICIDES — Azide

INSECTICIDES — Azide

Prentiss Drug & Chemical Co., Inc., 363 Seventh Ave., New York, NY 10001

INSECTICIDES — Methoxychlor

Proctor & Gamble Co., P.O. Box 599, Cincinnati, OH 45201

MISCELLANEOUS — Off-Shoot-O

Quimica Estrella S.A.C.I. e I., Agrochemical and Veterinary Dept., Av. De Los Consituyentes 2995, Buenos Aires, Argentina

INSECTICIDES — Azodrin

Rhodia, Inc., Agricultural Div., P.O. Box 125, Monmouth Junction, NJ 08852

FUNGICIDES — Chipco Spot Kleen

INSECTICIDES — Chip-Cal

HERBICIDES — Borea, Bromoxynil, Buctril, Chipco-Crab-Killer, Chipco Turf Herbicide, Chiptox, Chlorea, Dichlorprop, DSMA, MCPA, MCPP, Rhomeme, Rhonox, Ronstar, Weed-Broom

Rhone-Poulenc, Div. Phytosantaire, (Societe des Usines Chimiques), 74 Rue de Villiers, 92527 Neully - S/Seine, France

HERBICIDES — Ronstar, RP 17623

INSECTICIDES — Bacillus Thuringiensis

Rohm and Haas Company, Agricultural Division, North America, Independence Mall West, Philadelphia, PA 19105

FUNGICIDES — Fore, Karathane

HERBICIDES — Kerb

INSECTICIDES — Kelthane

Sandoz, Inc., 480 Camino Del Rio South, Suite 204, San Diego, CA 92108

HERBICIDES — Komeen

INSECTICIDES — Bacillus Thuringiensis

MISCELLANEOUS — K-Lox

Shell Chemical Co., Agricultural Chemicals, 2401 Crow Canyon Road, San Ramon, CA 94583

INSECTICIDES — Akton, Azodrin, Methomyl, Nudrin, SD 9129, Vendex

Shell Chemicals U.K. Limited, Agricultural Division, 39/41 St. Mary's Street, Ely, Cambridgeshire, CB74HG, England

FUNGICIDES — Saprol

HERBICIDES — Tetralax-Plus

Shell International Chemical Co. Ltd., Shell Centre, London, SE 1 7PG, England

HERBICIDES — Prefix

INSECTICIDES — Axodrin, Gardona, Vendex

The Sherwin Williams Co., Chemicals Div., P.O. Box 6520, Cleveland, OH 44101

INSECTICIDES — Dimite

Societe Pour la Protection de l'Agriculture (SOPRA), 8 Avenue Reaumer, 92-Clamart, Paris, France

INSECTICIDES — Didigam S, Fac-Super

Stauffer Chemical Co., Agricultural Chemical Div., Westport, CT 06880

FUNGICIDES — Phaltan

HERBICIDES — Betasan

INSECTICIDES — Aspon, Dazoment

Stull Chemical Co., 1006 Paulsun, San Antonio, TX 78219

HERBICIDES — Vegebate 1

Sumitomo Chemical Co., Ltd., 15 5-chome, Kitahama, Higashi-Ku, Osaka, Japan

INSECTICIDES — Dimethoate

Tenneco Chemicals Inc., P.O. Box 365, Piscataway, NJ 08854

HERBICIDES — Fenac, Trichlorobenzoic Acid

Thompson-Hayward Chemical Co., 5200 Speaker Rd., Kansas City, KS 66110

HERBICIDES — Casoron 133, Ded-Weed, Silvex, THIT

INSECTICIDES — De-Fend, Dimilin

3M Company, 3M Center, St. Paul, MN 55101

INSECTICIDES — Tinpate

GROWTH REGULATORS — Embark

Transvaal, Inc., P.O. Box 69, Marshall Road, Jacksonville, AR 72076

HERBICIDES — Silvi-Rhap, Silvex

TUCO, Division of the Upjohn Co., Dept. 9510-190-1, 7000 Portage Road, Kalamazoon, MI 49001

FUNGICIDES — Acti-dione

INSECTICIDES — Baam, U36059

MISCELLANEOUS — Bacticin

Chemical Manufacturers by Item

FUNGICIDES

Acti-dione
TUCCO, Div. of The Upjohn Co.

Actispray
FMC Corp.

Afugan
Hoechst AG (West Germany)

Arasan
E. I. duPont de Nemours & Co.

Azide
PPG Industries, Inc.

Benomyl
E. I. duPont de Nemours & Co., Inc.
Biochemicals Dept.

Brave
Diamond Shamrock

Cadium-Calcium Copper Zinc Chromate Complex
Guard Chemical Co.

Cadium Chloride
W. A. Cleary Corp.
Vineland Chemical Co.

Cadminate
Mallinckrodt, Inc.

Calo-Clor
Mallinckrodt, Inc.

Calo-Gran
Mallinckrodt, Inc.

Calomel
Mallinckrodt, Inc.

Carbendazim
BASF Aktiengesellschaft
Hoechst AG

Chipco Spot Kleen
Rhodia, Inc., Agricultural Div.

Chloroneb
E. I. duPont de Nemours & Co., Inc.
Biochemicals Dept.

Copper Carbonate, Basic
Cities Service Co., Industrial
Chemicals Marketing Dept.
The Harshaw Chemical Co.

Crag Fruit Fungicide 341
Union Carbide Co.

Crag Turf Fungicide 531
Union Carbide Co.

Crotothane
May & Baker Ltd.

Dexon
Bayer AG
Chemagro Agricultural Div.,
Mobay Chemical Co.

Dithianon
Celamerck GmbH & Co., KG

Dodemorph
BASF Aktiengesellschaft

Dyrene
Chemagro Agricultural Div.,
Mobay Chemical Co.

Eradex
Bayer AG (West Germany)

Euparen M
Bayer AG (West Germany)

Fernasan
ICI Plant Protection Division

Fore
Rohm and Haas Co.

Fungo 50
Mallinckrodt, Inc.

Glyodin
Agway, Inc.

Hydroxymercurichlorophenols
E. I. duPont de Nemours & Co.

Karathane
Rohm and Haas Co.

Kromad
Mallinckrodt, Inc.

Milcurb
ICI Plant Protection Division

Miller 531
Miller Chemical & Fertilizer Corp.

Nomersan
ICI Plant Protection Division

Phaltan
Chevron Chemical Co., Ortho Div.
Makhteshim-Agan
Stauffer Chemical Co.

Pipron
Elanco Products Co., Div.
of Eli Lilly & Co.

Polyran-Ultra
BASF Aktiengesellschaft

Pomarsol forte
Bayer AG

Puraturf 117
Guard Chemical Co.

Saprol
Shell Chemical, U.K. Ltd.

Tersan
E. I. duPont de Nemours & Co.

Thimer
W. A. Cleary Corp.

Thiophanate
Nippon Soda Co. Ltd., Fine Chemical

Thiophanate-Methyl
Nippon Soda Co., Ltd., Fine Chemical
Pennwalt Corp.

Thiram
Bayer AG (West Germany)
W. A. Cleary Corp.
E. I. duPont de Nemours & Co., Inc.,
Biochemicals Dept.
Fabriek van Chemische Produkten
Vondelingenplaat B. V.
Vineland Chemical Co.

Thiramad
Mallinckrodt, Inc.

Topsin M
Pennwalt Corp.
Topsin Soda Co. Ltd., Fine
Chemical Div.
Pennwalt Co.

Triforine
Celamerck GmbH & Co. KG

Tripomol
Vondelingenplaat

HERBICIDES

Agroxone
ICI Plant Protection Division

Algaecide
Ciba Geigy Corp.

Alipur
BASF Aktiengesellschaft

Amdom
Amchem Products Inc.

Amine Methanearsonates
Vineland Chemical Co.

Amitrol
Amchem Products Inc.
American Cyanamid Co.
Bayer AG (West Germany)
Fairmount Chemical Co., Inc.
Makhteshim-Agan (Israel)

Amizine
Amchem Products Inc.

Amizol
Amchem Products Inc.

Ammonium Methanearsonate
Vineland Chemical Co.

Ansar
The Ansul Co.

Aqua-Vex
Pennwalt Corp.

Aquazine
Ciba Geigy Corp.

Aresin
Hoechst AG (West Germany)

Arsonate Liquid
Diamond Shamrock

A & V-70 Algaecide
A & V Inc.

Azide
PPG, Industries, Inc.

Balan
Elanco Products Co., Div. of
Eli Lilly & Co.

Banvel
Velsicol Chemical Corp.

Betasan
Stauffer Chemical Co.

Benzac
Amchem Products Inc.

Borea
Rhodia, Inc.

Bromacil
E. I. duPont de Nemours & Co., Inc.
Biochemicals Dept.

Brominal
Amchem Products Inc.

Bromoxynil
Amchem Products Inc.
May & Baker Ltd.
Rhodia Inc., Agricultural Div.

Buctril
Rhodia Inc., Agricultural Div.

HERBICIDES—Cont.

Calcium Acid Methanearsonate

Vineland Chemical Co.

Calcium Arsenate

Agricola Chemical Ltd.
Commercial Chemical Co.
Los Angeles Chemical Co.
Woolfolk Chemical Works, Ltd.

Casoron 133

Philips-Duphar B.V. (Netherlands)
Thompson-Hayward Chemical Co.

Chipco-Crab-Killer

Rhodia Inc., Agricultural Div.

Chipco Turf Herbicide

Rhodia Inc., Agricultural Div.

Chiptox

Rhodia Inc., Agricultural Div.

Chlorea

Rhodia, Inc., Agricultural Div.

Compitox

May & Baker Ltd.

Crab-E-Rad

Vineland Chemical Co.

Cytrole Amitrole-T

American Cyanamid Co.

Daconate

Diamond Shamrock

Dacthal

Diamond Shamrock

Ded-Weed

Thompson-Hayward Chemical Co.

Dichlorprop

BASF Aktiengesellschaft
The Boots Co., Ltd.
Burts & Harvey Ltd.
A. H. Marks Co., Ltd.
Rhodia Inc., Agricultural Div.
Universal Crop Protection Ltd.

Di-On

Makhteshim-Agan

Dipnenamid

Refer to Dymid, Enid

Diquat

Chevron Chemical Co., Ortho Div.
ICI Plant Protection Division

Diuron

E. I. duPont de Nemours & Co., Inc.,
Biochemicals Dept.
Fabriek van Chemische Producten
Vodelingenplaat B. V.
I. Pi. Ci. S. P. A.
Makhteshim-Agan
Universal Crop Protection Ltd.
Crystal Chemical Co.
Crystal Chemical de Costa Rica
Crystal Chemical Interamerica

DSMA

The Ansul Co.
W. A. Cleary Corp.
Crystal Chemical Co.
Crystal Chemical de Costa Rica
Crystal Chemical Interamerica
Diamond Shamrock
Rhodia Inc., Agricultural Div.
Vineland Chemical Co.
Willow Creek Co.

Du-Sprex

Philips-Duphar B.V.

Dymid

Eli Lilly & Co.

Dynex

Crystal Chemical Co.

Endothall

Pennwalt Corp.

Enid

The Upjohn Co.

Fenac

Amchem Products Inc.
Tenneco Chemical Inc.

GCC-711

Hysan Products Co.

Gesatop

Ciba-Geigy Corp., Agricultural Div.

Hedonal

Bayer AG (West Germany)

Herbezole

Fairmount Chemical Co.

Hormotuh

Kemira Oy, Finland

Karmex

E. I. duPont de Nemours & Co., Inc.

Kerb

Rohm and Haas Co.

Kloben

E. I. duPont de Nemours & Co., Inc.
Biochemicals Dept.

Komeen

Sandoz, Inc.

Kuron

The Dow Chemical Co.

MCPA

Atanor" Sociedad Anonima Mixta
BASF Aktiengesellschaft
Burts & Harvey Ltd.
Fisons Ltd., Agrochemical Div.
ICI Australia Limited
ICI Plant Protection Div.
A. H. Marks & Co., Ltd.
Nissan Chemical Industries Ltd.
Rhodia Inc., Agricultural Div.
Universal Crop Protection Ltd.
Willow Creek Co.

MCPP

BASF Aktiengesellschaft
Bayer AG (West Germany)
The Boots Company Ltd.
Burts & Harvey Ltd.
W. A. Cleary Corp.
A. H. Marks & Co., Ltd.
Rhodia Inc., Agricultural Div.
Universal Crop Protection Ltd.

MCPP (Potassium Salt)

ICI Plant Protection Division
Vineland Chemical Co.

Mesamate

Crystal Chemical Co.

Methar

W. A. Cleary Corp.

Methoxone

ICI Plant Protection Div.

MSMA

The Ansul Co.

Crystal Chemical Co.

Crystal Chemical de Costa Rica
Crystal Chemical Interamerica
Diamond Shamrock
Vineland Chemical Co.
Willow Creek Co.

Namate

Crystal Chemical Co.

Neburex

Makhteshim-Agan

Neburon

E. I. duPont de Nemours & Co.,
Biochemicals Dept.
Makhteshim-Agan

Nortron

Fisons Ltd., Agricultural Chemical
Division

Paraquat

Chevron Chemical Co., Ortho Div.
ICI Plant Protection Division

Phenoxyline-Plus

Fisons Ltd., Agrochemical Div.

Polyborchlorate

United States Borax & Chemical Corp.

Prefix

Shell International Chemical Co.

Premalin

Fisons Ltd., Agrochemical Div.
May & Baker Ltd.

Pre-San

Mallinckrodt, Inc.

Primatol

Ciba-Geigy Corp.

Princep

Ciba-Geigy Corp., Agricultural Div.

Rad-E-Cate 25

Vineland Chemical Co.

Rad-E-Cate 35

Vineland Chemical Co.

Randox

Monsanto Agricultural Products Co.

Ravage

Velsicol Chemical Corp.

Rexone

ICI Plant Protection Division

Rhomene

Rhodia Inc., Agricultural Div.

Rhonox

Rhodia Inc., Agricultural Div.

Ronstar

Rhodia Inc., Agricultural Div.
Rhone Poulenc

Roundup

Monsanto Agricultural Products Co.

RP 17623

Rhone Poulenc

Ryzelan

Eli Lilly & Co.

Seritox 50

May & Baker Ltd.

Siduron

E. I. duPont de Nemours & Co.

Silvi-Rhap

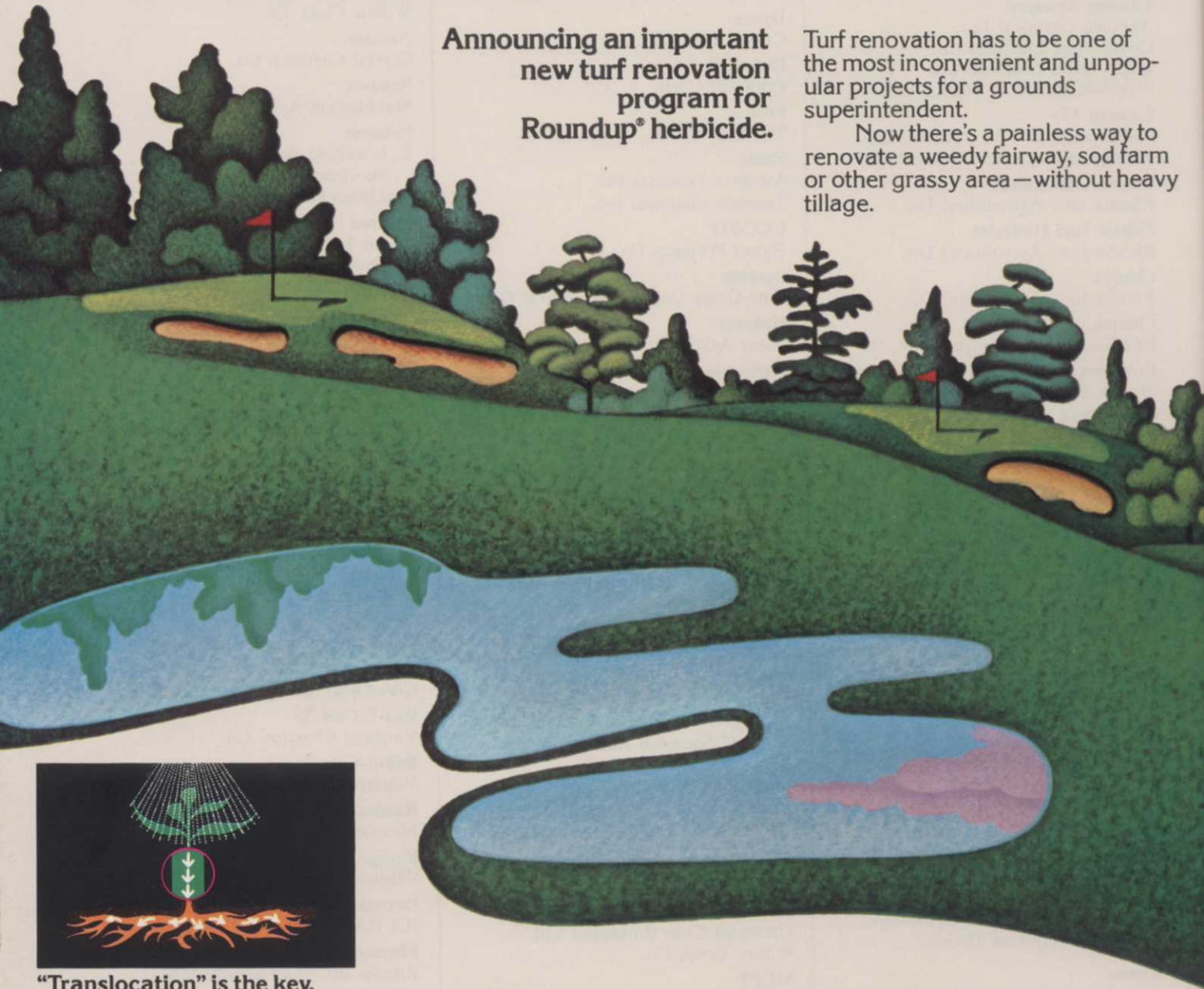
Transvaal, Inc.

Wow. Now you can "Weed and

Announcing an important
new turf renovation
program for
Roundup® herbicide.

Turf renovation has to be one of the most inconvenient and unpopular projects for a grounds superintendent.

Now there's a painless way to renovate a weedy fairway, sod farm or other grassy area—without heavy tillage.



"Translocation" is the key.

Roundup is applied to the weed foliage, absorbed through the leaf surface, and "translocated" throughout the entire plant. In this way, Roundup effectively controls most weeds—right down to the roots and rhizomes.



Roundup has no residual soil activity.

That's why you can go in seven days later and re-plant. And Roundup won't wash or leach from the treated area to injure desirable vegetation. Naturally, normal precautions should be observed to avoid spray drift.

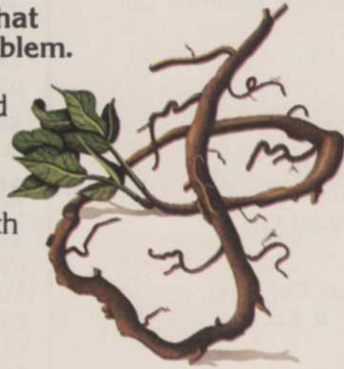


Re-seed" in a matter of days.

It's with a turf renovation program involving Roundup® herbicide by Monsanto. Roundup will control many annual and perennial grasses and broadleaf weeds. Yet, as soon as seven days after treatment (to allow time for translocation), you can proceed with your tillage and planting operations.

Roundup. The herbicide that gets to the root of the problem.

To learn about a turf renovation program suited to your needs, write: "Turf Renovation," Monsanto Agricultural Products Company, C3NF, 800 North Lindbergh Boulevard, St. Louis, Mo. 63166.



Roundup controls many emerged annual and perennial grasses and weeds.

Including bluegrass, bermudagrass, quackgrass, bindweed, johnsongrass, fescues, and vasegrass.

Circle 118 on free information card

There's never been a herbicide like this before.

Monsanto



Silvex

The Dow Chemical Co.
A. H. Marks & Co., Ltd.
Mirfield Agricultural Chemical Ltd.,
Agrochemical Div.
Nissan Chemical Industries, Ltd.
Thompson-Hayware Chemical Co.
Transvaal, Inc.
Willow Creek Co.

Simanex

Makhteshim-Agan

Sodium Cacodylate

The Ansul Co.
Vineland Chemical Co.

Surflan

Elanco Products Co., Div.
of Eli Lilly & Co.

Tandex

FMC Corp. Agricultural Chemical Div.

Tetralex-Plus

Shell Chemicals — U.K. Ltd.

THIT

Thompson-Hayward Chemical Corp.

Tordon

The Dow Chemical Co.

Trex-San-Bent

Mallinckrodt, Inc.

Trichlorobenzoic Acid

E. I. duPont de Nemours & Co.
Tenneco Chemical Inc., Organics &
Polymers Div.

Trimex

PBI-Gordon Corp.

Trysken

E. I. duPont de Nemours & Co.

U-46

BASF Aktiengesellschaft

UC 22463

Union Carbide Corp.

Ureabor

Occidental Chemical Co.

Ureabor 8D

Occidental Chemical Co.

Vegebate 1

Stull Chemical Co.

Vegadex

Monsanto Agricultural Products Co.

Vi-Par

Vineland Chemical Co.

Vonduron

Vondelingenplaat

Weedazol

Amchem Products Inc.

Weedazol-T

Makhteshim-Agan

Weed-B-Gon

Chevron Chemical Co.

Weed-Broom

Rhodia Inc., Agricultural Div.

Weed-E-Rad

Vineland Chemical Co.

Weedmaster

Velsicol Chemical Co.

Weedtrine D

Applied Biochemists Inc.

INSECTICIDES**AC 18682**

American Cyanamid Co.

Agritol

Merck & Co., Inc.

Akton

Shell Chemical Co.

Abolineum

ICI Plant Protection Div.

Aspon

Stauffer Chemical Co.

Azide

PPG Industries Inc.

Azodrin

Ciba-Geigy Limited (Switzerland)

Makhteshim-Agan

Quimica Estrella

Shell Chemical Co.

Shell Internationao Chemical Co.

Baam

The Boots Co. Ltd.

TUCO Div. of The Upjohn Co.

Bacillus Thuringiensis

Abbott Laboratories, Agricultural and
Veterinary Products Div.

Merck & Co., Inc.

Nutrilite Products, Inc.

Rhime-Poulenc

Sandoz, Inc.

Basamid

BASF AG

Baygon

Bayer AG

Chemagro Agricultural Div.,

Mobay Chemical Corp.

Biotrol

Nutrilite Products, Inc.

Brom-O-Sol

Great Lakes Chemical Corp.

C1414

Ciba-Geigy Ltd.

Calcium Arsenate

Agricola Chemicals Ltd.

Commercial Chemical Co.

Los Angeles Chemical Co.

Woolfolk Chemical Works, Ltd.

Carbaryl

BASF Aktiengesellschaft

Makhteshim-Agan

Union Carbide Corp.

Chip-Cal

Rhodia, Inc.

Chlormephos

Murphy Chemical Ltd.

Cotnion-Methyl

Makhteshim-Agan

Crag Fungicide 974

Union Carbide Corp.

Crag Nematicine

Union Carbide Corp.

Crysthion 2L

Crystal Chemical Co.

Dazomet

BASF Aktiengesellschaft

Stauffer Chemical Co.

De-Fend

Thompson-Hayward Chemical Co.

Demes L40

Montedison

Diazinon

Ciba-Geigy Corp., Agricultural Div.

Diazol

Makhteshim-Agan

Didigam S

Societe pur la Protection de
l'agriculture (SOPRA)

Dimethoate

American Cyanamid Co.

BASF Aktiengesellschaft

BASF Wyandotte Corp.

Bayer AG

Celamerck GmbH & Co., KG

Cheminova

I.Pi. Ci.S.p.A.

Montedison S.p.A.

Rallis India Limited

Sumitomo Chemical Co., Ltd.

Crystal Chemical Co.

Crystal Chemical de Costa Rica

Crystal Chemica Interamerica

Dimilin

Philips-Duphor B.V.

Thompson-Hayward Chemical Co.

Dimite

Sherwin Williams Co.

Dipel

Abbott Laboratories, Agricultural
and Veterinary Products Div.

Endosulfan

FMC Corp., Agricultural Chemical Div

Hoechst AG

Makhteshim-Agan

Velsicol Chemical Corp.

Eradex

Bayer AG

Fac-Super

Societe pour le Protection de
l'agriculture (SOPRA)

Folidol E605

Bayer AG

Fosferno 50

ICI Plant Protection Division

Gardona

Shell International Chemical Co.

Gusathion M

Bayer AG

Guthion

Bayer AG

Chemagro Agricultural Div.,

Mobay Chemical Corp.

Makhteshim-Agan

Crystal Chemical Co.

Crystal Chemical de Costa Rica

Crystal Chemical Interamerica

Hostaquick

Hoechst AG

Kelthane

I.Pi. Ci. S.p. A.

Makhteshim-Agan

Rohm and Haas Co.

Komeen

Sandoz Inc.

Lannate

E. I. duPont de Nemours & Co.



**More than 120 years of
manufacturing experience
goes into every
Mits & Merrill Brush Chipper**



Double-edged knives staggered around the large 16-in. diameter solid steel rotor provide smooth, efficient cutting without an external flywheel. Easily accessible.



Telescoping discharge chute rotates to give maximum flexibility to fill dump boxes. An adjustable bonnet at end of the chute controls direction of discharge.



Feed chute folds to enclose the cutter chamber during storage or transportation. It is side hinged so it may be swung away for easy access to cutter chamber.

For 30 years Mits & Merrill Brush Chippers have been considered the standard of the industry by many buyers. That's because, over 120 years of engineering and manufacturing experience goes into each unit. This reputation for excellence has won for our Brush Chippers international recognition . . . has helped us maintain and build our market position.

And, over the years, we have modified and improved our chippers. Some of our design features and available options are given below.

For further information on the various models of M&M Brush Chippers, write: Mits & Merrill, Inc., 109 McCoskry, Saginaw, MI 48601 or Phone 517-752-6191.

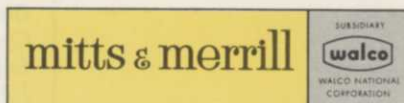
Other standard features . . .

- Safety-lock pin helps prevent the accidental throw-out of knives not properly tightened.
- All steel rotor made in segments from steel plate and supported by ball bearings.
- Double-edged knives provide twice the cutting time between sharpenings.
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- "Sound Conditioning" to reduce noise level
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5" trunk diameter, 5 Spikes.

"We use one for each inch of diameter. Figuring, say, a 5" tree, that's \$1.50 a tree. If we weren't using Jobe's Spikes, we would probably be using a slow-release, high-nitrogen fertilizer. Compared to that, the cost is drastically cut by using Jobe's Spikes."

Now Jobe's offers Evergreen and Fruit Tree Spikes, too.

You can meet most feeding situations with Jobe's Tree and Shrub Spikes 16-8-8, Evergreen Spikes 12-6-8 or Fruit Tree Spikes 5-15-15.

They're as effective as drilled fertilizer because rainwater carries the fertilizer down to the root zone. (University leaching

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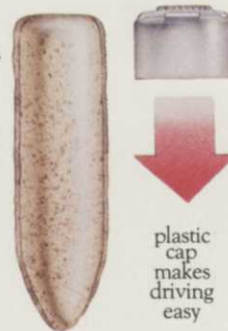
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"Very handy and easy to install around trees. They cut down a lot on labor costs."

Tony Kimball is saving time and making money with Jobe's.

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Jobe's Evergreen Spikes 12-6-8 and Fruit Tree Spikes 5-15-15 are now available in bulk. They can be combined for shipping with Tree and Shrub Spikes.

Call your local Jobe's distributor or order direct. \$30 per case (105 Spikes) prepaid, 5 case minimum. 15 or more cases, \$25 per case. 36 or more cases, \$22.50 per case.

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JOHN DEERE on the move

ASPA convention draws record crowd

A record 425 people viewed over 40 exhibits and demonstrations at the American Sod Producer Association's 11th annual summer convention and field day in July. Guests from Australia, England and Sweden and a group from the Nursery Sod Growers Association of Ontario attended.

Booth exhibits were educational, as many suppliers to the sod industry were there to answer specific questions about their lines.

Several types of irrigation equipment and sprayers were demonstrated at the Green-Glo Turf Farms Thursday afternoon. At the Glenn Rehbein maintenance shop many innovative features, including a mini-computer for farm/sod operations, were demonstrated and discussed.

New officers and board members were introduced. Glenn Rehbein, Glenn Rehbein Farms, is now the president of ASPA. E. John Hope, Manderley Turf Farms, took over as vice president, replacing Charles Lain of Pine Island Turf Nursery who has been appointed to fill an unexpired term on the board of directors, created by the resignation of Rober Hummer. Paul Unruh, Unruh's Turf Farm, is now secretary and Chris Beasley, Tuckahoe Turf Farms, is the new treasurer.

The board of trustees for ASPA now includes Chris Beasley, Ray Weekly, Prince William Turf Growers, Woodrow Wilson, Eastside Nursery, Charles Davis, Wharton Turf Grass, Emory Patton, Turf Center, and Charles Lain.

Friday was spent at Harley's Sod Farm watching demonstrations of actual sod farm operations, including mowing, harvest, loading, and the equipment involved.



Mayor George Latimer welcomes ASPA to St. Paul



ASPA president Norman LeGrande gives industry update.



Harley Johnson of Minn. Turf Assoc. acts as host.



Business review and future goals capture members (above) interest. Booths and demonstrations (below and bottom left) highlighted show.



Bob Garey (right), executive director, was instrumental in programs success.



Meeting Dates

Second Annual Hoosier Turfgrass Association Research and Scholarship Golf Tournament, Orchard Ridge Country Club, Fort Wayne, Ind., Sept. 12.

Lawn & Garden Distributors Association Annual Convention, Hershey Motor Lodge and Convention Center, Hershey, Penn., Sept. 13-17.

1977 Mid-Atlantic Fluid Fertilizer Conference, Host Inn, Harrisburg, Penn., Sept. 14-15.

ALCA Management Information Systems Executive Management Seminar, Chicago, Ill., Sept. 15-16.

Annual Turfgrass Equipment Irrigation and Supplies Field Day, G.C.S.A. of N.J., Hopewell Valley Golf Club, Hopewell, N.J., Oct. 4.

Northwest Turfgrass Conference, Salishan Lodge, Gleneden Beach, Ore., Oct. 5-6.

ALCA Management Information Systems Executive Management Seminar, Sheraton Airport Hotel, Atlanta, Ga., Oct. 6-7.

Florida Nursery and Allied Trades Show, Curtis Hixon Convention Center, Tampa, Fla., Oct. 7-9.

5th Transworld Home Horticulture Exhibit, Chicago Expocenter, Chicago, Ill., Oct. 14-17.

Florida Turfgrass Annual Management Conference and Show, Sheraton Towers Hotel, Orlando, Fla., Oct. 16-19.

17th Annual Turfgrass Equipment & Materials Educational Exposition, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 19-20.

ALCA Management Information Systems Executive Management Seminar, Sheraton Mockingbird Hotel, Dallas, Tex., Oct. 20-21.

International Society of Arboriculture, New England Chapter, Annual Meeting, Red Jacket Mountain View Inn, North Conway, N.H., Oct. 24-25.

Continued on page 32



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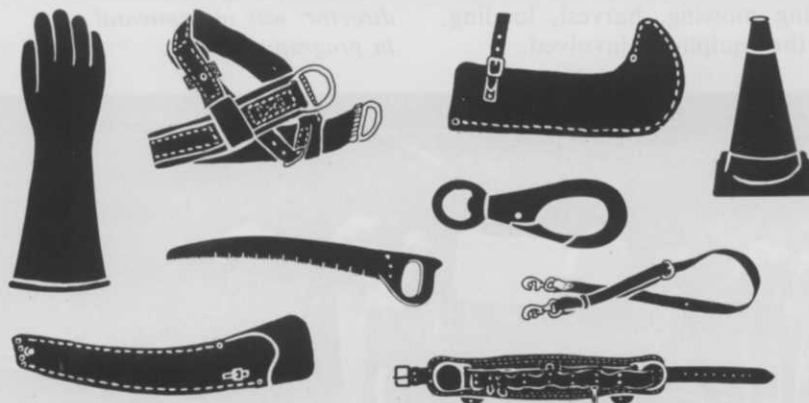
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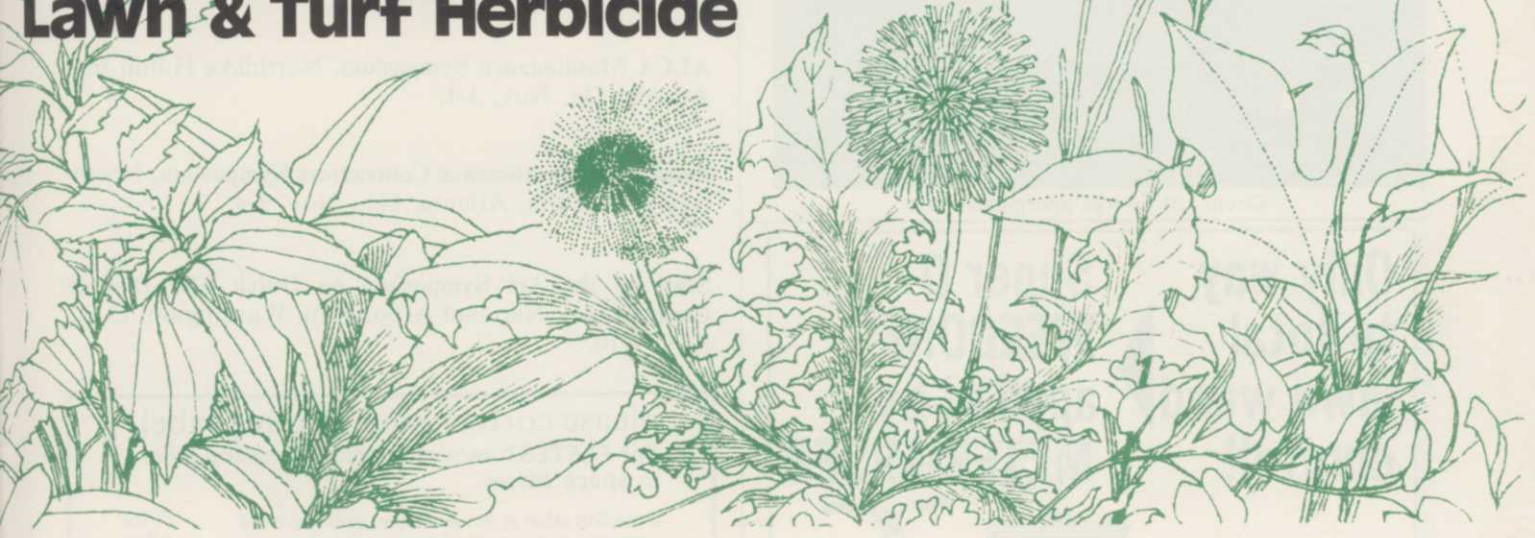


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Meeting Dates

Continued from page 30

Green Industry Seminar and Trade Show, Springfield-Oaks Park and Youth Activities Center, Davisburg, Mich., Oct. 25-26.

Washington-North Idaho Seed Association Annual Convention, North Shore Motor Hotel, Coeur d'Alene, Idaho, Oct. 28-29.

Professional Grounds Management Society Annual Conference, Stouffers Hotel, Greenway Plaza, Houston, Tex., Oct. 30-Nov. 3.

Texas Recreation and Park Society Annual State Conference, La Quinta Royale, Corpus Christi, Tex., Nov. 2-5.

ALCA Maintenance Symposium, Northlake Hilton Inn, Atlanta, Ga. Nov. 3-4.

Landscape Maintenance Contractors Symposium, Northlake Hilton Inn, Atlanta, Ga., Nov. 3-4.

State of the Art Symposium on Dutch Elm Disease Control, U.S. National Arboretum, Washington, D.C., Nov. 9-10.

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Pre-mixing the pesticide proposed mixture in jars in appropriate use proportion is one method to determine if incompatibility might occur.

In addition to pre-mixing in jars, incompatibility can be minimized if the following procedure is used when mixing pesticides:

1) It is best to pre-mix the pesticides in small containers.

2) Make a slurry of wettable powders.

3) Pour the slurry into a nearly filled spray tank while agitating. If a pesticide is a water dispersible liquid (WDL), add WDL directly to the water in the spray tank.

4) Next add the liquid formulations while still agitating.

5) Lastly add any surfactant. This minimizes foaming.

6) Maintain moderate agitating to provide uniform mix during application.

7) Do not allow the agitation to stop (as for lunch) especially if wettable powders are used as these settle out of suspension and cannot be easily re-suspended. □

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Chairman and Chief Executive Officer
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Laval Separators, from 3-4100 gpm, will remove up to 98% of all particles as small as 200 mesh (74 microns). If you’ve got a problem with sand, call on Laval.

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Dept. DD2



Sex life of fire ant may be one key to eventual control

A Texas scientist has discovered an oddity in the sex life of the fire ant that may be the very weakness needed for control of this fast-spreading pest.

Dr. Akey C. F. Hung, entomologist with the Texas Agricultural Experiment Station has found some naturally occurring sterile male fire ants. “These sterile males are associated with colonies which contain a large number of queens,” he says.

“This in itself is unusual since most colonies of fire ants have only one queen, which may live for years.

“If we can identify the cause of this naturally-occurring male sterility, the production of sterile males could then be encouraged in natural populations, or they could be artificially produced for release.

“Sterile males would be of real help in reducing reinfestation of treated areas or halting the spread of the imported fire ant. A mature fire ant colony can release as many as 700 queens during mating flights, and a queen can fly as far as ten miles.

“After mating, the queen will in turn establish her own colony and produce more queens in a year or so. Since the queen only mates with one male, if that male was sterile, her eggs would be infertile and fail to hatch, thus she cannot establish a new colony,” Hung says.

This potential control method is of major significance because of 1) growing concern about the development of resistance to insecticides in pest species, and 2) pollution of the environment with persistent toxic chemicals.

Sterile males of the red imported fire ant were first discovered by Hung in 1974 in three counties in East Texas. Since then he has sought the cause and its potential in fire ant control.

Like honeybee drones, normal male fire ants have only one set of chromosomes. However, Hung finds sterile males have two sets of chromosomes as do normal queen and worker ants.

His research had been complicated by the fact that the queen and male fire ants only mate in the air at an altitude of 200 to 500 feet.

By using a genetic marker, Hung has determined that queens of the red imported fire ant mate with only one male.

Since fire ant queens and males won’t mate in captivity, Hung has developed an artificial insemination technique for fire ants. He has used this method and other biochemical techniques to verify one case of natural crosses between the southern fire ant and the tropical fire ant.

This research is aimed at developing genetic control methods in the near future to supplement the large-scale insecticide-based control programs already in operation.

Hung is a member of an Experiment Station team, working on fire ant control, directed by Dr. Bradleigh Vinson. This group is working on a broad variety of different control methods that include 1) research to discover chemicals that won’t pollute the environment but will kill fire ants, 2) juvenile hormones to prevent normal development of young ants, 3) pheromones which are the chemical “smells” used for communication by insects, 4) attractants, which will help ants locate baits and increase usage and 5) environment which discourages or prohibits the spread of these ants.

Vinson stresses the importance of developing alternative methods of control since so many of the chemicals previously used are now unavailable. □

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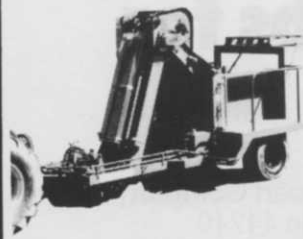
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ARS Beltsville news

These experiments are ongoing and results may change with time.

Bio-dethatch

Bio-dethatch was applied on June 11, 1975 at the rate of one lb/M to one-half of 10 x 10 ft. plots of seven Kentucky bluegrass cultivars, most of which had excessive thatch layers. Plots were not irrigated and no rain occurred for 15 days following the application. Thatch measurements were taken in November. There was no significant difference in thatch accumulation between the treated and untreated plots.

Treatments were repeated on May 6, 1976, and the plots were irrigated immediately following application. Thatch measurements were taken again in November of 1976. Bio-dethatch was not effective in reducing the thatch layer.

Tall fescue

An experiment to determine the effects of fertility levels, cultivation, and clipping removal on quality and thatch accumulation of tall fescue turf was initiated on October 13, 1974, on established tall fescue under turf management for several years. Turf quality was increased significantly by leaving clippings on plots. Aeration increased turf quality while verticutting decreased it when compared with no cultivation treatment. The greatest increase in turf quality from aeration was obtained where clippings were not removed and 10-10-10 was supplied at the rate of 1 1/2 lb N/M each year.

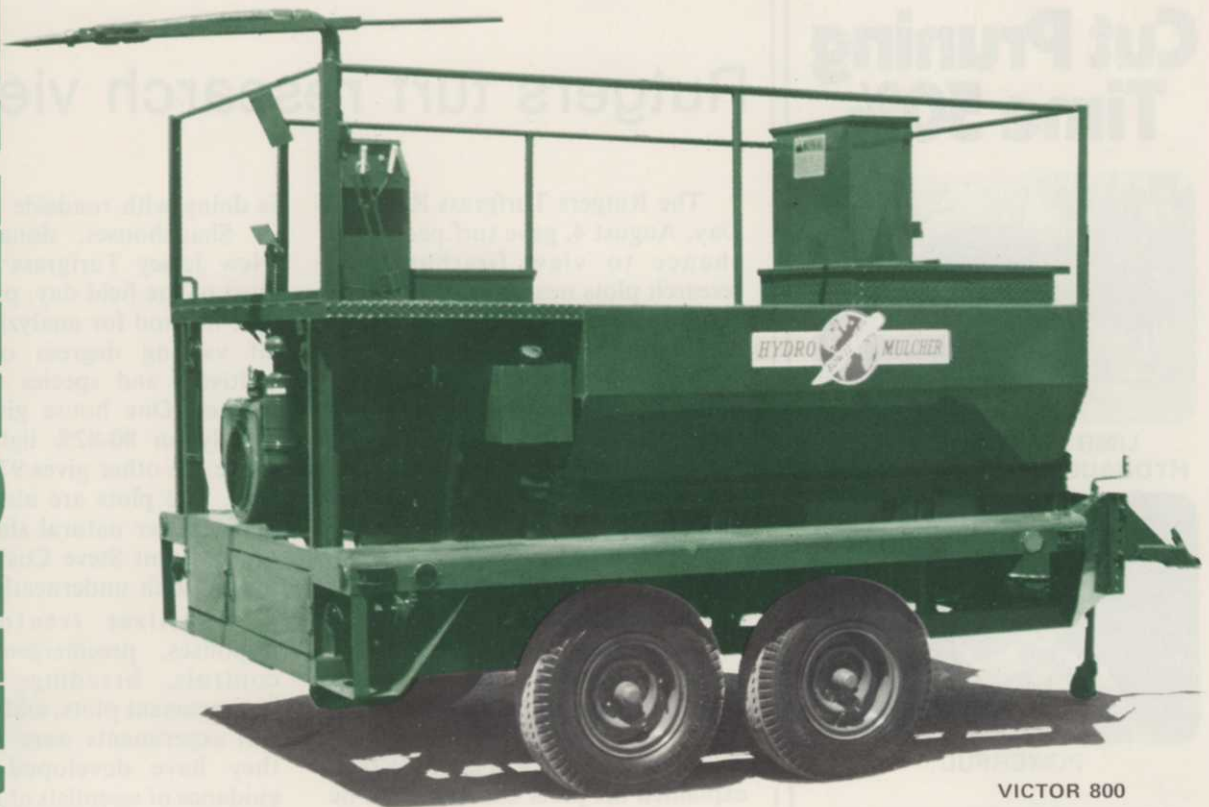
High quality turf was produced with three yearly applications of 10-10-10 at 5 lb/M where clippings were not removed and plots were aerified. This combination of treatments resulted in turf quality as good as three applications of 15 lb/M with clippings removed and not aerified. There has been no accumulation of thatch during the experiment.

Pennlawn red fescue

Performance of Pennlawn red fescue turf as effected by irrigation, mowing height, and nitrogen fertilization was studied beginning in the spring of 1975. All possible combinations of three rates of N (1/2, 1, and 1 1/2 lb N/M) applied in spring and fall and three mowing heights (1, 2 and 3 inches) were used. Four applications of the treatments were irrigated to promote summer growth.

Any beneficial effects from irrigation in preventing summer dormancy were offset by increased disease damage in 1975. Summer stress was not as severe in 1976 and three irrigations in July and August improved turf quality. However, the highest quality turf during spring and fall was on plots that were not irrigated. This is probably due to the greater use of nitrogen during the summer months on irrigated plots. On irrigated plots the 2-inch mowing height and 1 1/2 lb N/M were the best treatments. The 3-inch mowing height and one lb N/M treatments were best on plots not irrigated.

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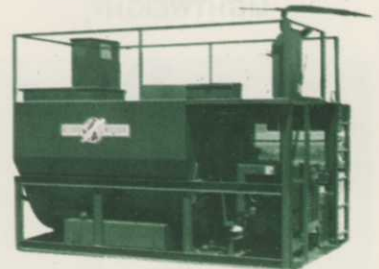
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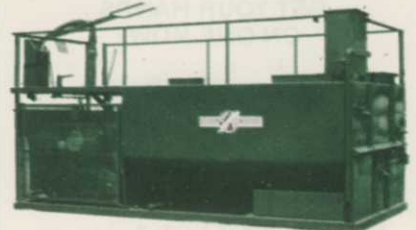
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Rutgers turf research viewed

The Rutgers Turfgrass Research Day, August 4, gave turf people the chance to view firsthand the research plots near New Brunswick, N.J., and results as they appear to date. Observations like these are very valuable because they give a visual impression that words sometimes do not create.

The current results of many extensive research projects were viewed. Dr. C. Reed Funk discussed Kentucky bluegrass plots. His work in turfgrass breeding is widely acclaimed. Bill Dixon, senior soils and plant technician, pointed out the possibilities *Poa trivialis* has in adapting to some turfgrass situations. Dr. R.W. Duell, who is conducting research in highway turf, explained his plots and the work he

is doing with roadside turf species.

Shadehouses, donated by the New Jersey Turfgrass Foundation, host of the field day, provide a unique method for analyzing the effect of varying degrees of shade on cultivars and species of fine turfgrasses. One house gives approximately an 80-82% light reduction while the other gives 97-98% reduction. The plots are also duplicated again under natural shade. Graduate assistant Steve Cosky explained his research underneath the roots.

Fertilizer treatments and responses, preemergent crabgrass controls, breeding and strain improvement plots, and disease control experiments were presented as they have developed under the guidance of scientists at Rutgers. □



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Dr. H. W. Indyk, Extension Specialist in Turfgrass Management, got the field day off to a fast start and kept the groups moving to see many experiments.

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Above, Dr. R. W. Engel discusses bluegrass fertilization plots. Below, Dr. P. M. Halisky explains disease control on bentgrass.



Above, shadehouses allow experiments under controlled shade. Below, C. W. Bussey evaluates preemergent crabgrass controls.

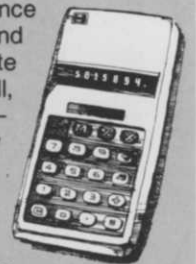


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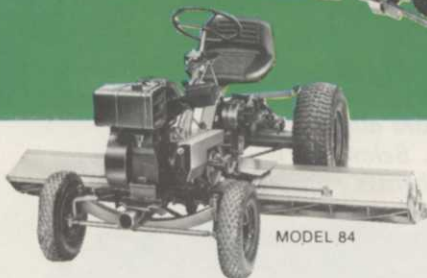
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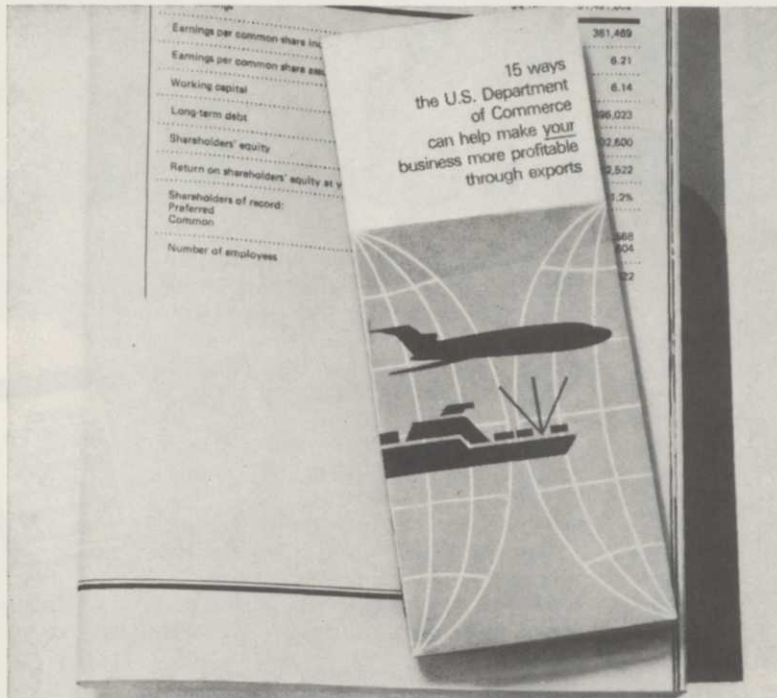
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Nurserymen meet in Seattle

The American Association of Nurserymen held its 102nd annual meeting, July 16-20, in Seattle, Washington. Headquartered in Washington, D.C., the association serves over 2,700 member nursery firms representing garden center operators, wholesale growers, landscape firms, mail order nurserymen and allied suppliers.

Avery H. Steinmetz, president of Stark Street Properties, was inducted into the AAN's Nurserymen's Hall of Fame, the highest honor the nursery industry may bestow. The Hall of Fame Award was conveyed to recognize truly outstanding nursery businessmen whose acts and deeds in business, home, community, and country serve as a guide and challenge for all other members of the nursery industry.

The Norman Jay Colman Award, the nursery industry's highest award for horticulture research, was presented to Dr. Haruyuki Kamemoto, renowned orchid cytologist and professor at the University of Hawaii.

The award, named after the first Secretary of Agriculture of the U.S. and a two-term president of the AAN, is granted each year to stimulate research work in the land grant universities, colleges and other research institutions.

Dr. Howard C. Brown, Dean of Agriculture and Natural Resources

at Cal Poly University, received the second L. C. Chadwick Award from the AAN. The award was established last year by the Education Committee of the AAN to honor those classroom horticulture teachers who have made their mark where it counts most — among their students. Dr. L. C. Chadwick was the first recipient.

Ed Hume received the Garden Communicator's Award. In presenting the award, immediate past president Hilscher praised Hume for his outstanding contributions towards increasing public awareness of environmental plants and landscape beautification. Hume writes regular garden columns for the "Seattle Times" and "Vancouver Columbian." He broadcasts on Seattle's KBIQ-FM and conducts the "Gardening with Ed Hume" show, aired on KING-TV in Seattle and KGW-TV in Portland each Sunday.

A Crimson King Maple, donated by the Julius Rosso Wholesale Nursery, Seattle, was presented as a gift to the people of Seattle for their gracious hospitality to the AAN. It was planted in a downtown park to be enjoyed by all citizens.

Itsuo Uenaka, president of Cupertino Nursery in Cupertino, California, was elected president of the AAN. He succeeds L. J.



Dr. Haruyuki Kamemoto receives the Norman Jay Colman Award.



Above, Ed Hume receives Garden Communicators Award. Below, l-r: R. F. Lederer, Seattle Mayor Wes Uhlman and L. J. Hilscher.



President L. J. Hilscher presents the AAN Hall of Fame Award to Avery H. Steinmetz. Sharing is his wife, Agnes.





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Nurserymen

Continued from page 43

Hilscher, Hilscher Nursery & Garden Center in Texas, who remains as current Director-at-Large. Uenaka, along with other officers, will direct the national efforts of the AAN in all areas including legislation and environmental improvement.

Ernest A. Tosovsky, Jr., vice president of Home Nursery Greenhouses, Edwardsville, Ill., was elected vice president. Tosovsky also serves as treasurer and director of Region III of the AAN.

John B. Wight, Jr., president and chairman of the board of Wight Nurseries, Cairo, Ga., has been re-elected to the board of directors. He serves as director of Region II, which represents over 650 member nursery firms in southern states.

Hugh Steavenson, president and owner of Forrest Keeling Nursery, Elsberry, Mo., was reelected director of Region IV, representing over 350 member nursery firms.

R. Jerry Rosso, secretary and treasurer of Julius Rosso Wholesale Nursery Company, Seattle, Wash., succeeds Itsuo Uenaka as director of Region VI, also representing over 350 member nursery firms. Rosso served as convention chairman for this year's meeting.

Kent Langlinais, Kent's Nursery, La., is director of Region VII, and Henry A. Weller is the director of Region I. □



Cecil Shirar (left) receives Wholesale Nursery Landscape Award from Hubert Nicholson, president of Wholesale Nursery Growers of America. The Award is presented for outstanding efforts in landscape beautification of Shirar's firm's grounds.



L.J. Hilscher (right) turns over the President's Gavel to Itsuo Uenaka.



New AAN officers: bottom l-r, Ernest A. Tosovsky, L. J. Hilscher, Itsuo Uenaka, Hugh Steavenson; top l-r, Kent Langlinais, Jerry Rosso, John Wight, Jr., and Henry Weller.

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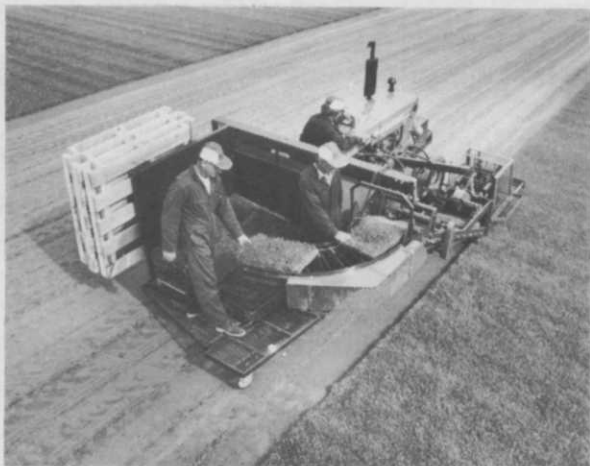


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Desert saltbush species released

"Corto" Australian saltbush, *Atriplex semibaccata*, R.Br., has been released by the USDA and the Arizona Agricultural Experiment Station, for use as a ground cover for erosion control and beautification of highway rights-of-way, construction sites, and similar disturbed areas in the desert Southwest.

Australian saltbush is semiherbaceous plant that was introduced into California in the 1880's and various ecotypes have become naturalized in southern California, Arizona and New Mexico since.

"Corto" is a semiprostrate perennial plant, eight to 10 inches tall and spreads to a diameter of six feet. Stems become somewhat woody, but the plant is primarily herbaceous. Leaves are numerous and grey-green in color. The flowers are monoecious and inconspicuous. Male florets are located on the end of the stems. Female florets are located in the upper leaf axils. Fruits are fleshy and turn red at maturity. The fruit is subtended by two fruiting bracts that turn red with fruit maturity and exhibit fall colors from October through December.

"Corto" plants provide good cover with an annual precipitation of 10 to 12 inches. Hardiness limits have been established at about 3,500 feet in elevation. Older plants at Tucson, Ariz. are killed back to the crown by temperatures below 25°F. Young plants have withstood 17°F. temperatures at Tucson and recovered in the spring. It is probable that plants would be permanently damaged at temperatures less than 10°F. Plants are shortlived, but stands are reestablished from seed.

"Corto" is best adapted to light and medium textured soils. It is well adapted to saline-alkali sites. Tests conducted on mine tailings, overburden, and mixed tailings-overburden showed good plant vigor with pH readings of 7.8 to 8.2 and total soluble salts of 2,870 ppm, approximately four tons of soluble salts per acre.

No grazing studies have been done specifically with "Corto" Australian saltbush, but grazing studies in California reported Australian saltbush as a good forage plant for horses, cattle and sheep. Results of forage analysis show that the amount of digestible nutrients compares well with that of alfalfa.

"Corto" has approximately 246,000 seeds per pound. Seeding rates of seven pounds per acre pure live seed have resulted in adequate stands on critical areas. Late fall or early spring planting provide the cool season best for seedling establishment. Drilling the seed less than one-fourth inch into a firm, clean seedbed and compacting the soil around the seed results in good germination.

Breeder and Foundation seed will be maintained at the SCS Tucson Plant Materials Center, Tucson, Ariz. Foundation seed is available to growers through the Arizona Crop Improvement Association and Natural Resource Conservation Districts.

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U.S. Plant Patent 3151



NLA finds landscape guarantees widespread

A recent survey by the National Landscape Association revealed that guarantees of plants and labor are offered by a majority of landscape firms. Ninety-seven percent of the firms responding to the survey indicated some type of warranty was provided.

The results also showed that plant material guarantees are more common than labor guarantees. No preference was revealed for full versus limited warranties, although the time period covered varied widely.

The customer was assured of satisfactory plants in 92 percent of the landscape firms' guarantees. The warranty usually stipulated that the customer assume the responsibility for the care and maintenance of the newly-installed plants. Regional differences in the percentage of firms that guaranteed plants appeared:

Northeast	98%
Southern	97%
Great Lakes	88%
Western Plains	88%
Southwestern, Pacific and other	92%

It is interesting to note that the percentage guaranteed decreases in the Great Lakes and Western Plains regions by about ten percent. Moreover, many firms stated a time period of "one growing season" in both

these regions. These differences may be attributable to the severity of winters. Note that the percentage rose again in the Far West regions.

Another significant finding was the lower percentage of firms offering guarantees of labor. Labor coverage is definitely lower than plant coverage — only 62 percent of labor is guaranteed nationwide. Companies seem to generally guarantee the labor performance 100 percent, 50 percent, or not at all — very few percentages in between.

Again, there were regional differences:

Northeast	74%
Southern	52%
Great Lakes	72%
Western Plains	48%
Southwestern, Pacific, and other	58%

The percentages in the Southern and Western Plains areas are significantly lower than the Northeast and Great Lakes areas. In both of these areas firms generally guarantee their labor 100 percent or not at all.

The landscape guarantee survey also questioned the type of guarantee/warranty provided, specifying that a full guarantee requires replacement or repair of a product (that is defective or fails) within a reasonable

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time at no cost: anything else is a limited guarantee. No preference for a full rather than a limited guarantee appeared, however; respondents split almost evenly nationwide: 73 offered full guarantees, while 71 offered limited.

The final question on the NLA survey concerned the time period covered by the guarantee of plants and/or labor. The respondents chose between "one calendar year," "months," and "other." Most landscape firms (53 percent of the survey respondents) base their guarantees on one calendar year:

Northeast	26 (of 36 respondents)
Southern	12 (of 20)
Great Lakes	26 (of 37)
Western Plains	25 (of 39)
Southwestern, Pacific and other	10 (of 16)

These 38 firms, however, differed widely in the number of months specified — from one to nine months after installation. The average number of months nationwide was 4.4. Regionally, the Northeast and the Western Plains were high (5.1 and 5.5 respectively); the Great Lakes and the Southwestern, Pacific and other regions specified an average of 4.5 and 4.3 months

respectively; and the Southern region guaranteed their plants for 3.5 months.

Other time periods specified included "one year from installation," "one growing season," or until a certain date after installation such as August 1 or November 1. (Due to possible consumer misunderstanding, NLA recommends that precise time guarantees be used in lieu of "one growing season.") One firm dealing entirely with industrial landscaping, replaced and replanted until the customer was satisfied.

The NLA survey demonstrated that guarantees/warranties are common among landscape firms, especially for plant coverage. Labor is guaranteed by fewer firms. The respondents split in preference for full or limited guarantees, and most seemed to base their guarantees on a one-year period. The Northeast and Great Lakes regions showed similarities in almost all categories (e.g. high percentage coverage of plants and labor, preference for full guarantees, and one calendar year coverage.) In contrast, the Southern and Western Plains states revealed similarities in low incidence of labor guarantees, preference for limited guarantees, and coverage for specified time periods. The Southwestern Pacific and other regions were middle-of-the-road. □

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To correct your dry or wet condition write or call for free brochure and construction guidelines for PURR-Wick water management systems with Tu-Tuf.

Ask us about our superior sand trap liner.

Meet the
"Untearable"
Mr. Tu-Tuf

STO-COTE PRODUCTS, INC.

Richmond, Illinois 60071 • Call Toll Free 800/435-2621 • In Illinois 815/675-2358

Products



Toro has developed a new sprinkler head with a combination of features designed to reduce water usage as well as installation and maintenance costs of automatic underground irrigation systems.

The Rain Pro permits spacing up to 53 feet and features clog-resistant nozzles, corrosion-resistant construction and a removable basket screen that can be serviced easily from the surface. It has four rotating nozzles that deliver water slowly and uniformly to minimize puddling and run-off.

Circle 701 on free information card



Heckendorn Manufacturing has introduced a low cost 8 hp stump remover available with its own trailer for easy transportation or mounting on a Heckendorn mower, pickup truck bumper, garden tractor or other unit.

The stump remover reduces stumps to an easily removed pile of fine chips, leaving a clean depression. The cutter disc has four hardened carbide teeth, easily removed for sharpening or replacement, on a 12-inch diameter by 1/2-inch thick steel plate. The depth of cut on each pass of the cutter disc is regulated by a hand screw adjustment, set by the operator to remove the maximum amount of material possible.

Circle 702 on Free Information Card



A new 20-cubic-foot capacity rear-mounted box scraper which fits standard category II 3-point quick-coupler hitches has been introduced by the Woods Division of the Hess-ton Corp. It weighs 750 pounds and is designed for tractors with maximum 60 hp or 6,000 pounds gross weight.

The BB600 box scraper features hydraulically controlled scarifier shanks for 5-position depth penetration.

Circle 703 on free information card

"Understanding Soil Compaction", a 22-page booklet has been published as a helpful guide by Davis Manufacturing Division of J I Case.

The booklet outlines the reasons soil compaction is needed and discusses soil types, properties and moisture content. It explains compaction methods and machine characteristics to consider for selection of the most effective combination in various job applications. The guide also explains the most widely used soil compaction tests, their functions and purpose.

Circle 704 on free information card



Rain Bird has introduced Model 1300, a new bubbler nozzle, designed for a variety of landscape irrigation applications.

The unit is constructed of molded plastic to minimize field problems and maintain peak operating efficiency and can be easily installed on existing 1/2-inch irrigation systems.

Flow control is regulated by an adjustable screw on the bubbler's head. Operating pressure ranges from 10 to 60 psi with a corresponding performance range from 1.0 to 2.7 gpm.

Circle 705 on free information card



A battery-operated electronic Soil Moisture Meter which measures and displays the amount of moisture in the soil instantly, has been introduced by Agronics Manufacturing. The probe measures conductance in the soil.

Circle 706 on free information card

Reach-All Manufacturing and Engineering has recently introduced Model OC5048 aerial basket with 40' side reach, 48' bottom-of-basket height and a 1-man, 300 lb. or 2-man 600 lb. capacity. This model features a concept new to non-overcenter basket design — the lower boom travels overcenter (133° articulation) — thus extending effective side reach to 40 feet. While achieving side reaches comparable to overcenter devices, this design is available at lower costs.

The OC5048 is equipped with Reach-All's standard safety and operational features, including double cylinders at both lower and upper boom, automatic hydraulic-cylinder basket leveling, continuous, unlimited rotation, a fiberglass insert in the lower boom, a 345 KVAC potential dielectric certification and an end-mounted basket for a 3-sided working area.

Circle 707 on free information card



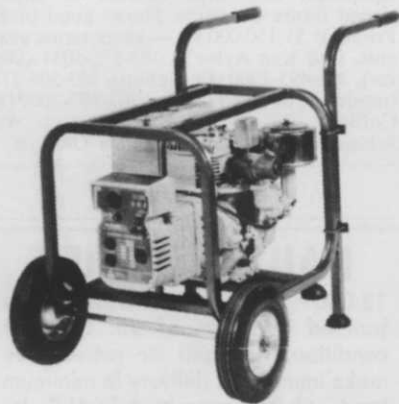
eral tools at once. The generators are available with capacities of 1250, 2000, 3000, 4500 and 6000 continuous duty watts.

Circle 708 on free information card

quick, easy attachment and detachment that is hydraulically assisted; a wrap-around frame that evenly distributes loads to the front and rear axles; and an assortment of eleven utility attachments.

Also described is the new Model 400 loader compatible with the Allis-Chalmers 40 and 50 hp tractors and the Model 500 loader for mid-sized tractors.

Circle 709 on free information card



The new "A Series" rotary field electric generators are available from Ag-Tronic. Powered by industrial-type Briggs & Stratton engines, the generators feature rotary field design to provide greater motor starting capacity, superior performance and longer life. A protective cradle of one-inch steel tubing surrounds each unit to protect against damage. Rubber feet on the cradle also dampen vibration and minimize crawling.

The "A" Series" is full load continuous duty rated to deliver rated capacity. Outlets are protected by circuit breakers which can be reset immediately. A variety of NEMA receptacles, duplex and twist lock, allow operation of sev-



A series of detachable loaders is described in a new brochure from the Allis-Chalmers Corp. One of the loaders, the Model 470, matches the high performance of the over 100 hp, 7000 series tractors from the company. Among its features are a



Jacobsen has made available a water cooled engine as an option for the 72-inch Out Front Commercial riding rotary mower. The heavy duty engine option was added for users who require longer than usual operating intervals between engine maintenance. It has a comparatively low operation temperature (180°F) which extends the life of valves, rings and other internal working parts, a characteristic of water cooled power.

Circle 710 on free information card

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, Dorothy Lowe, Box 6951, Cleveland, Ohio 44101.

Rates: All classifications 65¢ per word. Box number, \$1. All classified ads must be received by Publisher the 5th of the month preceding publication date and be accompanied by cash or money order covering full payment. Mail ad copy to: Dorothy Lowe, Weeds, Trees & Turf, P.O. Box 6951, Cleveland, Ohio 44101.

USED EQUIPMENT

2 — 50' AERIAL BASKETS — 65' Aerial basket, 2 Asplundh brush chippers, 1 Vermeer tree mover, 1 Vermeer stump cutter. Small hydraulic crane, 2 John Bean sprayers, ten ton tri-axle trailer, 1 Prentice log loader, tractor with front end loader and Bobcat loader, Parkway Tree Service, 120626 W. Cherry, Wauwatosa, Wis. 414 257-1555.

1964 ASPLUNDH aerial bucket truck, 55' working heights; 1700 International Load Star; 5 speed box with Hi and Lo range, 4-wheel drive with built in 12" chipper and hyd. dump box, also built in air compressor and aux. engine, excellent condition. 1966 and 1970 F350 Ford with chipper dump box and side tool boxes. 1969 GMC split dump chipper truck. 1960 Ford with built in chipper and hydraulic dump bed. H & M Tree, pictures available. Phone: 707 459-2013.

SEVERAL 50 FOOT SERVI-lifts mounted on GMC trucks. Call 401 725-2250.

FOR SALE — 1975 Vermeer TS-22" tree spade. Mounts on Bobcat or 3 pt. hitch. Excellent condition. \$1800.00. 1976 Care tree 30" tree spade. Mounts on Bobcat or 3 pt. hitch. Mint condition. \$2995.00. 1976 Care tree 36" tree spade. Mounts on 990 Bobcat, tractor, loader, or dozer. Mint condition. \$4495.00. 1972 Vermeer TS-44T tree spade on 1974 GMC 1 ton. New spades. Good condition. \$7800.00. Will send photographs upon request. Call or write: Spartan™ Tree Transplanting Equipment Company, 16084 S. Chandler Rd., East Lansing, Michigan 48823. Phone 517 351-1370. (We buy, sell, and repair high quality tree transplanting equipment).

FOR SALE: Ford 5000 diesel with less than 300 hours operating time. Selecto-O-Speed transmission, power steering, wide flotation tires, equipped with Mo-Trim Telescopic 31' reach side arm mower for rotary or sickle bar. Suitable for farm or industrial use. Excellent condition. Marianna Telephone Co., P.O. Box 308, Marianna, Pa. 412 267-3333.

VERMEER 671 LOG CHIPPER with GMC 4-53 diesel engine. Like new with only 74 total hours on tach. \$18,500 (new price is \$38,000). 100 foot Arlo crane mounted on Mach truck. Brand new auxiliary generator to run crane, and has optional bucket for crane. \$10,500. Vermeer no. 10 stumper, completely reconditioned. \$3,100.00. ESSCO, 5620 Sunrise Hwy., Massapequa, N.Y. 11758. 516 799-7619.

FMC BEAN SPRAYER, all purpose, model 1010 TRP. 200 gallon Epoxy lined tank. Like new! \$1,295.00. Toro Rak-O-Vac, PTO driven, flextip reel, 5/8 cubic yard hopper, used one season. \$3,200.00. Richard McFeters, 205 Atwell Ave., Greensboro, N.C. 27406. 919 272-6419.

FOR SALE: 2 Vermeer model TS 66 tree spades. 1 mounted on 1966 Chevrolet C 80 twin screw truck. 1 mounted on 1967 International L 190 twin screw truck. Both in good condition. Ready to go to work. Phone 605 398-6303.

FOR SALE Several 40 to 50-foot Skyworkers. One 32-foot working height Sky-jacker and truck. Phone: Aerial Lift Repair, Inc. 203 878-0695.

1973 SCOTT MIDLAND 5 ton crane. Mounted on 4 wheel drive International flat bed, 35 foot hydraulically telescoping boom with extra 10 foot extension and PTO. Sheets Tree Expert Company, Pittsburg, Pennsylvania. 412 241-1019.

FOR SALE: Bean Rotomist model 901, \$2,500.00. 303 774-1061.

FOR SALE: Beck 9-row Lawn-O-Matic plugger-sprigger, PTO drive, always shedde, like new. John E. Wolfe, phone 918 543-2414.

FIRETRUCK — 1950 American LaFrance, 550 gallon pumper, low mileage, excellent condition. Will make good water or spraying truck. \$2,500.00. 412 774-7469.

IRRIGATION PUMP Pressure Pump, 5" intake, 3" outlet, \$2,200.00. Telephone 312 244-3976.

WORTHINGTON 5-gang mower, \$2,000.00. Telephone 312 244-3976.

EASY FLOW FERTILIZER spreader, \$200.00. Telephone 312 244-3976.

INSECT SPREADER, \$750.00. Telephone 312 244-3976.

SEEDS

SOD QUALITY Seeds Merion, Fyking, Delta, Park, Newport, Nugget, Adelphi, Cheri, Glade and Baron bluegrasses also fine fescues. Manhattan ryegrass. Custom mixing available. Michigan State Seed Co., Grand Ledge, Michigan 48837. Phone 517 627-2164.

REAL ESTATE

NORTHERN COLORADO: Turf Farm and Sprinkler Installation Company. Approx. 120 acres of established turf; complete solid set sprinkling system. Includes extensive list of equipment and large number of already signed future contracts. Shows good profit. Priced at \$1,150,000.00 — some terms available. Call Ken Aylor at 303-572-5031 (Denver), 303-493-7000 (Ft. Collins), 303-568-7776 (residence) or Ray Dixon at 303-493-7000 (Ft. Collins), 303-484-7247 (residence). Van Schaack & Co. Farm & Ranch Division.

FOR SALE

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12,000 No. 1 landscaping ties banded in stacks of 25. Excellent condition, not split or rotted. We make immediate delivery in minimum loads of 250 anywhere in U.S. Inquiries welcomed 7:00 A.M. to 7:00 P.M. Monday thru Saturday.

MIDWEST TRACK SALVAGE

Rt. 1, Box 198
Westfield, Indiana
Phone 317 896-3333
if no answer call 317 846-3457

FOR SALE complete tree service company on West Coast. Grosses over \$350,000.00 per year. Good potential for expansion. 26 pieces of equipment, plus office equipment and miscellaneous tools and equipment. Box 164, Weeds, Trees & Turf, P.O. Box 6951, Cleveland, Ohio 44101.

BUSINESS OPPORTUNITIES

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Sarlo HIGH WHEELERS

Rate HIGH because . . .

- Heavy duty commercial quality
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- 21"-26" cut . . . Self-Propelled and Grass Catchers Available
- Proved in municipal work over 25 years

Sarlo
SINCE 1935

P.O. Box 1169, 2315 Anderson Ave.
Fort Myers, Florida 33902

SINCE 1935

Circle 148 on free information card

A.A.A. Tree Service has a business opportunity for you in Florida. Call or write Henry Hardy, Jr., P.O. Box 6173, Orlando, Fla. 32802. Phone 339-5242.

LEARN LANDSCAPING and the Growing of Plants at home. Start a satisfying business or hobby. Free booklet. Lifetime Career Schools, Dept. A-262, 2251 Barry Avenue, Los Angeles, Ca. 90064.

NURSERY STOCK

COLORADO BLUE SPRUCE, 6-8', well sheared, Vermeer dug-in wire baskets. Mostly shiners with excellent color, \$35.00. Dana Ginter, R3, Friendship, Wisconsin 53934. 608 339-7341.

WANTED TO BUY

WANTED: 44' tree spade, cash, must be priced right, no junk. 503 679-6312.

HELP WANTED

WANTED: LAWN SPRINKLER DESIGNER and estimator. We are a 50 year old company specializing in lawn sprinkler system installations. This position would in-

volve design, estimating, engineering and material purchasing. Company is well known in the mid-west and does some work out of state. Persons qualifying for this position must have previous experience minimum 3 years. Non-experienced persons need not apply. Strong mathematical and mechanical aptitudes will be an advantage. Salary commensurate with background and experience. Call or send resume to: Muellermist Irrigation Company, P.O. Box 478, Maywood, Illinois 60153. Phone 312 344-8680.

GROUNDS TECHNICIAN: Expansion finds us looking for individuals with experience in

tree and/or lawn care, wanted for a growth-oriented company. Presently with offices in St. Louis, Kansas City, and Denver. Degree preferred. Salary open based on qualifications. Send resume to Box 177, Weeds, Trees & Turf, Box 6951, Cleveland, Ohio 44101.

TREE SURGEON: Must be experienced climber. 4-5 years. Good pay. Drivers license required. Opportunity for advancement. Also, older man who has had experience in selling tree work. Car necessary. Salary and commission. Almstead Tree Company, Inc., 129 Union Avenue, New Rochell, New York. 914 738-5238, 914 576-0193.

YOUR PICKUP'S WAITING for the New



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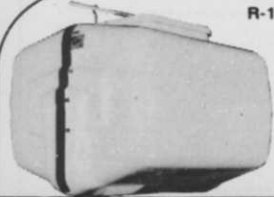
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ACE DUMPET

the insertable/removable dumping accessory that can • **SAVE COSTLY MANHOURS** • **CONSERVE ENERGY TO REDUCE FUEL COSTS** • **CUT CAPITAL EXPENDITURES** • **PROTECT YOUR PICKUP INVESTMENT.**

So look into a new ACE DUMPET today — it's what your pickup is waiting for.

R-100 gal.



Tuflex
**FIBERGLASS
SPRAY TANKS**

Tuflex Manufacturing Co...specialists in pest control fiberglass spray tanks. Economical prices with high quality handcrafted workmanship. Many other tank sizes available from stock.

The Tuflex manufacturing process allows a five year warranty on all tanks.

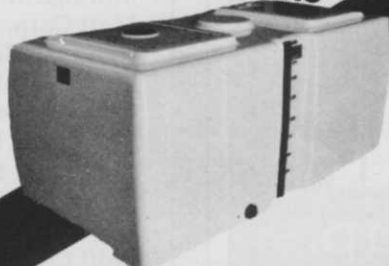


PC-1200 gal.

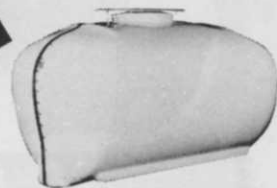
CONTROL PESTS... WEED... FERTILIZE

WITH FIBERGLASS SPRAY TANKS

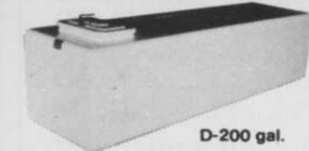
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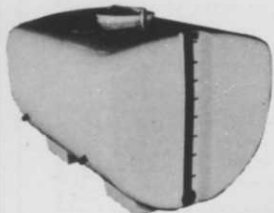
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INTRODUCES
THE NEW
MODEL PC 200 Cap. 208 gal. 64" Long, 31-3/8" Wide and 27" Deep. Designed for installation forward of the wheel wells in a standard size pickup truck and meeting EPA standards.



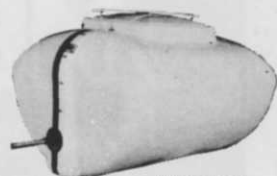
U-600 gal.



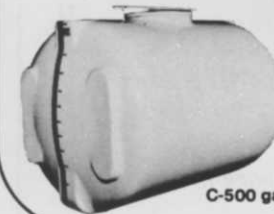
D-200 gal.



PC-800 gal.



U-200 gal.



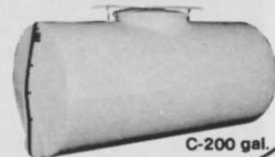
C-500 gal.

PLANT LOCATION:
800 Eller Drive, Port Everglades,
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THE LARGEST FIBERGLASS "PEST CONTROL" SPRAY TANK MANUFACTURER IN THE SOUTHEAST

Write today to: Tuflex Manufacturing Co.
P.O. Box 13143, Port Everglades, Florida 33316
or Call

305-525-8815



C-200 gal.

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FLAIL SAFE

When your job is grounds maintenance year around, you need a mower for all seasons.

With one **VERSATILE** Mott mower, you can mow fine lawns, shred high grass and weeds, mulch leaves and renovate.

Flail type mowers have a reputation for being **SAFER** than rotary type mowers. Mott mowers... with their lightweight knives... are the safest of the flails.

Mott mowers also offer **COST EFFECTIVE PERFORMANCE** because they last longer and are more reliable to operate.

Write or call for information about **YOUR MOWING REQUIREMENTS**. This season and every season, mow Flail Safe... with Mott mowers.



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MOTT CORPORATION

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When trees turn yellow too soon



turn to
MEDICAP
 for fast green-up.

Yellow leaves often indicate a deficiency of iron, manganese or zinc. Medicaps are the most efficient method of correcting the deficiency. Medicaps put minerals directly into the sap stream for quick availability... treatment is fast and economical and does not harm the appearance of the tree. Write to us for more information regarding new **MEDICAP** products... widely used as the treatment of choice for mineral deficiencies.



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D following number designates page in directory in center of magazine.

Debris never had it so bad.

Beer cans, cigarette butts, twigs, bottles, matted grass clippings and rocks look pretty ugly on a beautiful turf.

But picking them up hasn't been all that easy. (Ever try to get hold of wet leaves in wet grass?)

Then along came Jacobsen's unique rubber finger pick-up system. You'll find it used on all six of our Sweeper models. They pick up just about everything that you'd call debris, including branches up to 3" in diameter.



Patented rubber pick-up fingers are the worst thing that can happen to turf debris.

Even wet leaves in wet turf.

Besides having incredible rubber fingers, our big 700 Series models sweep a 5-foot swath, and have hoppers with a hefty 5-cubic-yard capacity.

Our models 720 and 730HL are PTO driven. The 730HL has a hydraulic dumping system that saves labor and time by dumping directly into a truck instead of on the ground.

Our models 720E and 720E-HL come with 12 HP or optional 14 HP engines, and can be pulled by any vehicle. The 720E-HL also has a hydraulic dumping system.

Then, our smaller 154 Riding Sweeper and 154T Towed Sweeper both sweep a 48" swath, and dump manually.

Five sweepers have the optional Curb Broom that cleans up parking lots fast. And all models offer the Thatcher Thinner

attachment that lets you thatch and thin turf while sweeping. Plus other options you might want.

To find out about the most complete line of Turf Sweepers



Hydraulic dumping feature of HL models can dump at any height up to 8½'.

being made by anyone, ask your Jacobsen distributor for details. What he has to say is bad for debris.

And that's good for you.

Jacobsen Manufacturing Company, Racine, Wisconsin 53403

JACOBSEN
An Allegheny Ludlum Industries Company



Take a look at leadership.



"Tough K.C. Chiefs need tough grass! That's why I picked **baron** KENTUCKY BLUEGRASS."



George Toma, Director of Field and Landscaping Operations, Kansas City Chiefs and Royals, and consultant for all Super Bowl games.

"I need a grass that will withstand the wear and tear of forty big football players on it five days a week from August to December. With the toughness of Baron there are darn few worn out spots."

George Toma explains to Peter Loft:

"I oversee this practice field with 50 lbs. of Baron as early as February and the field is ready in April. We'll have good grass all the way through the season."

"With the field in use so much of the time, I need a grass that doesn't need much care. In the 3 years this field has been in, I've never used a fungicide, insecticide or herbicide. That's a plus for me. I can only water maybe once a week and you can see how green this field is."

"We fertilize well around Thanksgiving. With the lower fertilization requirements of Baron, we don't have to worry about tender grass. Baron stays tough."



it to 3/4" up until June 1. After that we keep it at 2".

"We mow whenever the grass needs it. That may be once, twice or even three times a week. We only remove 1/4 of the growth and usually cut



"The players love this field. They even replace their own divots! And I think psychologically they practice better when they see a beautiful field like this."



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Loft Kellogg Seed Co.
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