


FOCS 903:

"Industrial Engineering
Masterpiece Of The Year"

— Hanover Industrial Fair

GET A HEAD START ON THE FUTURE



Tomorrow is calling for efficiency, quiet operation and reliability. Answer the call with Lombardini's revolutionary, Full Overhead Control System (FOCS) technology. More than just a new design, FOCS integrates three major innovations into a liquid cooled design to provide the most practical, cost-effective power in history:

- All critical components are located in the cylinder head for ease of access, low maintenance and minimum overall dimensions
- Unit pump injectors eliminate the traditional fuel injection lines to provide optimum fuel delivery throughout the performance curve
- The camshaft is driven by a toothed belt and specifically designed for quiet performance in heavy duty applications

Three basic versions of the FOCS are available:

- 2 cylinder, 600 cm³, 15HP
- 3 cylinder, 900 cm³, 22HP
- 4 cylinder, 1200 cm³, 30HP

Infinite configuration possibilities, and "total solutions" assistance from our application engineering team assure you of being one step ahead with FOCS. Lombardini offers performance like never before. To explore the future, give us a call today.

Lombardini USA, Inc.
Lawrenceville, GA 30245
(404) 963-4881 FAX (404) 995-1107



**LOMBARDINI
USA, INC.**

Disposal of grass clippings may soon be illegal.

It's true. The landscape maintenance profession has come under the scrutiny of lawmakers and environmentalists. Several states have passed laws against dumping grass in the local landfill and by 1995 nearly all states will have some form of legislation governing the disposal of lawn wastes.

Shred the evidence

Don't be left holding the bag. Now you can shred your clippings as you mow with the Hustler Turbo Shredder™ rotary mower from Excel. The Turbo Shredder reduces clippings to tiny particles which fall quickly, harmlessly, (and legally) back to the soil surface. No one will know you left them behind to decompose naturally.

The Case for Shredding

When you shred clippings, you help the turf recover valuable nutrients that would ordinarily be hauled to the landfill. University studies have shown that leaving

the clippings can eliminate one fertilizer application per year. You also save the cost of the labor to put it on.

If you shred your clippings instead of bagging, you can slash your time and labor by 50%! Say good-bye to raking, bagging, hauling and dumping. You'll have more time to pursue new customers or tackle other projects.



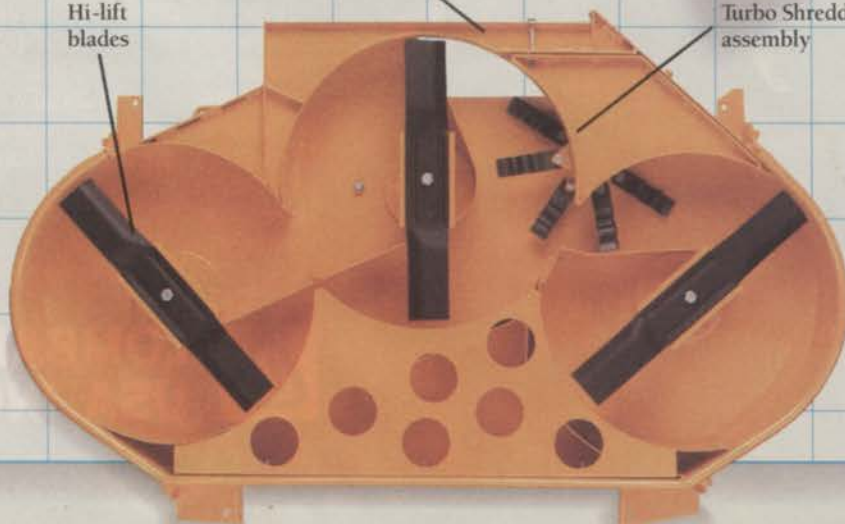
The only complete maintenance system in its class—equip your Hustler with the 8-bushel BAC-PAC and side-mounted edger for fast clean-up and a professional finish.

The unique design* on the eight double-edged shredder blades is the key to Hustler's superior finish. (shown larger than actual size.)
*Patent pending.

Discharge area

Hi-lift blades

Turbo Shredder assembly



A total mowing system to help you beat "the System"

The Hustler Turbo Shredder is a complete turf maintenance system. A single operator can mow, edge and clean up in less time than it takes a two man crew with 48" walk-behinds and a power edger. The Hustler 251K and 260K offer operator comfort features like a high

Excel's Secret Weapon against grass bags—Hi-lift blades cut the grass and direct the clippings into the Turbo Shredder assembly where they are re-cut again and again.

back seat and simple twin lever controls.

You can choose between 18 or 20 horsepower Kohler Magnum engines with either

the 51" or 60" Shredder Deck. Add to your productivity with the side-mounted edger attachment and the 8-bushel BAC-PAC™

catcher. Both can be added or removed in just seconds without tools.

For quick cutting height adjustments, you can order an optional hydraulic lift that changes the mowing height right from the driver's seat.



The Hustler Turbo Shredder deck, in 51" or 60" cutting widths, is the innovative answer to your clippings disposal problems.

Justice prevails

With Excel's easy lease and purchase options, it would be a crime not to get your own Turbo Shredder. Contact your local Hustler dealer or call Excel for the name of the dealer near you.

Excel Hustler...Still Out Front!

1-800-835-3260

(In Kansas and Canada 316-327-4911)

Excel Industries, Inc.
Hesston, KS 67062-2097



©1989 Excel Industries, Inc.

Circle No. 114 on Reader Inquiry Card

Unlike grass cut with a conventional rotary mower, shredded clippings work their way down to the soil surface for rapid decomposition. (All clippings shown actual size on a 1/2" grid.)

Turbo Shredder clippings

Conventional clippings

Equipment

continued

Dozers

Howard S Crane Inc
Deere & Co
Deutz-Allis Corp
Komatsu Dresser

Drainage Material

Advanced Drainage Systems Inc
Eljen Prefabricated Systems/Master Distributors Inc
Warren's Turf Nursery Inc

Drainage Tubing

A C F Inc
Advanced Drainage Systems Inc
Atlantic Construction Fabrics Inc
Hancor Inc
LESCO Inc
Warren's Turf Nursery Inc

Drills

Ariens Co
Bush Hog Div Allied Products Corp
Feldmann Engineering & Mfg Co
JISCO
Little Beaver Inc
Stanley Hydraulic Tools
Strong Enterprises Inc
Tanaka Ltd

Dusters

B & G Equipment Co
Encap Products Co
H D Hudson Mfg Co
Maruyama US Inc
Robco USA Inc
Southern Mill Creek Products Co
Strong Enterprises Inc
Trebor Corp
Westheffer Co

Edgers

Ames Co
Ariens Co
Bunton Co
Howard S Crane Inc
Curb King
Excel Industries Inc
Green Machine Div of HMC
Hoffco Inc
Homelite Div Textron Inc
Jacobsen Div Textron
LESCO Inc
Scag Power Equipment Inc
Snapper Power Equipment
Steiner Turf Equipment Inc
Tanaka Ltd
Turfco Mfg Inc
Wheel Horse Products Inc

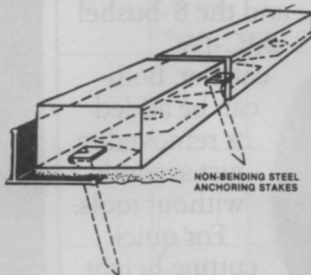
Edging, Lawn

A C F Inc
Howard S Crane Inc
Deere & Co
Eberhart Steel Products Plastic Div
Green Machine Div of HMC
Oly-Ola Sales Inc

SEE AD NEXT COLUMN

PermaLoc Aluminum Edging

BRIC-EDGE is a unique system designed to support and contain brick pavers, cobblestones or patio blocks.



Flexible or rigid sections available

Phone: 708-833-3033
(Outside Illinois) 1-800-334-4647
Fax 708-833-0816

Oly-Ola Sales, Inc.

124 E. St. Charles Road
Villa Park, Illinois 60181

Engine Parts

Briggs & Stratton Corp
Kohler Co

**KOHLER®
engines**

LESCO Inc
Lombardini USA Inc
Power Lawnmower Parts Inc
Professional Tree & Turf Equipment
Strong Enterprises Inc
Tecumseh Products Co
Teledyne Total Power
Wheel Horse Products Inc

Engines, Diesel

Deere & Co
Ford New Holland Inc
Honda Power Equipment
Kawasaki Motors Corp Engine Div
Kubota Tractor Corp
LESCO Inc
Lombardini USA Inc
Professional Tree & Turf Equipment
Strong Enterprises Inc
Tecumseh Products Co
Teledyne Total Power
Tufflex Mfg Co
Westheffer Co

Engines, Gas

Briggs & Stratton Corp
Deere & Co
DOB Distributors Inc

Homelite Div Textron Inc
Kohler Co
LESCO Inc
Onan Corp

Onan's Performer series of two cylinder engines includes 16, 18, 20 and 24 HP horizontal shaft models and 16, 18, and 20 HP vertical shaft models. Features include electronic ignition, solenoid shift starter and full pressure lubrication.

Onan recently expanded its engine line with the addition of the single cylinder Elite series. The 12.5 HP vertical shaft model is currently in production and future models will include 5-12.5 HP horizontal and vertical crankshaft configurations.

ONAN CORPORATION

1400 73rd Avenue • Minneapolis, MN 55432
(612) 574-5000

Professional Tree & Turf Equipment
Teledyne Total Power
Tufflex Mfg Co

Erosion Control Blocks

A C F Inc
Atlantic Construction Fabrics Inc
Eberhart Steel Products Plastic Div
Hydro-Turf & Assoc
Presto Products Co

Erosion Control Fabric

A C F Inc
Akzo Industrial Systems Co
Atlantic Construction Fabrics Inc
Belton Industries Inc
Conwed Fibers
Dewitt Co
E I DuPont de Nemours & Co
Jonathan Green Inc
Hoechst Celanese Corp
Hydro-Turf & Assoc
North American Green Inc
Phillips Fibers Corp
Proseed (USA) Inc
Reemay Inc
Warren's Turf Nursery Inc

Fertilizer Injectors

Encap Products Co
Inject-O-Meter Mfg Co
LESCO Inc
J J Mauget Co
Nature's Touch Div of Agro Chem Inc
Professional Tree & Turf Equipment
Robco USA Inc
Smith Precision
Vaughan's Seed Co

Filters, Sand

Claude Laval Corp
Morie Co

Foggers

B & G Equipment Co
Falkenberg Inc
Southern Mill Creek Products Co
Westheffer Co

Forklifts

Brouwer Turf Equipment Ltd
Lawrence Inc

Equipment

continued

Raymond Corp
Teledyne Princeton
Trojan Battery Co
Waldon Inc

Generators

Ariens Co
Howard S Crane Inc
Dyna/Energx Corp
Fairmont Hydraulics Div Fairmont Railway Motors-
Harsco Corp
Homelite Div Textron Inc
Honda Power Equipment
Kawasaki Motors Corp USA
Kohler Co
Kubota Tractor Corp
Onan Corp
Shindaiwa Inc
Tanaka Ltd

Geotextiles

A C F Inc
Advanced Drainage Systems Inc
Atlantic Construction Fabrics Inc
Belton Industries Inc
Dewitt Co
DowElanco
Hydro-Turf & Assoc
Mar-Mac Wire Inc
Phillips Fibers Corp
Reemay Inc
Warren's Turf Nursery Inc

Golf Cars

Club Car Inc
Columbia ParCar Corp
E-Z-GO Textron
Melex USA Inc
Noland Car Co
Trojan Battery Co

Golf Course Accessories

Blue Mountain Industries
J A Cissel Mfg Co
LESCO Inc
Outdoor Products & Supply Inc
Salsco Inc
Standard Golf Co
Vaughan's Seed Co

Grass Pavers

Atlantic Construction Fabrics Inc
Golf 2000 Corp
Hydro-Turf & Assoc
Presto Products Co

Hose & Reels

Agrotec Inc
Ames Co
Anchor Swan
Arborchem Products Co
Encap Products Co
Falkenberg Inc
Friend Mfg Corp
Hahn Inc
Clifford B Hannay & Son Inc
Hydro-Turf & Assoc
LESCO Inc
Maruyama US Inc
Professional Tree & Turf Equipment
Robco USA Inc
Southern Mill Creek Products Co
Spraying Devices Inc
Strong Enterprises Inc
Tuffex Mfg Co
Westheffer Co

It's About Time!



Quik-D-Tatch® grasscatcher systems and versatile attachments add year-round productivity.

First to finish...built to last.
Grasshopper cuts mowing time with high productivity, agility, instinctively natural controls and rugged durability.

Grasshopper is designed to put you outfront in the daily race against the clock. By combining agility, efficiency, operational ease and rugged reliability, Grasshopper cuts labor costs, downtime, and most importantly, the time you spend on each job.

Today's Gemini 700 Series Grasshoppers are the result of two decades of constant design advancements and refinements. The Gemini direct drive dual-hydrostatic system, while increasing mowing capabilities, also reduces maintenance and extends service life.

Dual-lever steering with automatic neutral-return safety puts total command of mowing at your fingertips. Zero-turning-radius and outfront deck design deliver superior visibility, trim capability and maneuverability. Grasshopper dealers offer strong support and the choice of six versatile models, 11 to 21 hp, deck options from 35" to 72", plus several "capability-enhancing" attachments. So, if you're not using Grasshopper now, it's about time, because you're probably spending too much time mowing.

The Ultimate Time-Cutter

The Grasshopper Company
One Grasshopper Trail
P.O. Box 637, Moundridge, KS 67107

Telephone 316-345-8621
FAX 316-345-2301



GRASSHOPPER®

YOUR NEXT MOWER

Circle No. 118 on Reader Inquiry Card

GRA-3-90

©1990, The Grasshopper Company

Equipment

continued

Irrigation Systems & Supplies

AMETEK Plymouth Products Div
Aquapore Moisture Systems
Arborchem Products Co
Bloch & Co
Buckner Inc
Gardenamerica
Hunter Industries
Kalo Inc
Claude Laval Corp
LESCO Inc
Moisture Systems Professional Irrigation Div
Motorola Inc
Outdoor Products & Supply Inc
Progressive Electronics Inc
Rain Bird Sprinkler Mfg

Standard Oil Engineered Materials Co
Submatic Irrigation Systems
Toro Co Commercial Products Div
Toro Co Irrigation Div
Weather-matic

Lighting Systems

LESCO Inc
Rain Bird Sprinkler Mfg

Litter Receptacles

LESCO Inc
Outdoor Products & Supply Inc
Playworld Systems
Standard Golf Co

Loaders

American Trencher Inc
Billy Goat Industries
Bush Hog Div Allied Products Corp
J I Case Outdoor Power Equip Div
Howard S Crane Inc
Deere & Co
Deutz-Allis Corp
Ditch Witch
Engineering Products Co
Giant-Vac Mfg Inc
Ingersoll Equipment Co
Kubota Tractor Corp
Massey-Ferguson Inc Industrial Machinery
Melroe Co business unit of Clark Equip
Olathe Mfg Inc
Steiner Turf Equipment Inc

Thomas Equipment Ltd
Waldon Inc
Westendorf Mfg Co

Loading Ramps

Giant-Vac Mfg Inc
Magline Inc
Melcher Mfg Co
Salsco Inc

Log Splitters

Bush Hog Div Allied Products Corp
J I Case Outdoor Power Equip Div
Duerr Inc
Ingersoll Equipment Co
Vermeer Mfg Co

Markers, Field

Jonathan Green Inc
LESCO Inc
Outdoor Products & Supply Inc
Precision Laboratories Inc
Richway Industries Ltd

Because every drop counts.

RAIN BIRD®

Rain Bird Sales, Inc.
Commercial Division/Contractor Division
145 N. Grand Ave., Glendora, CA 91740

"WE WANTED THE BEST MOWER



... SO WE BUILT IT."



Titan Turf Equipment
345 Leitchfield Road • Owensboro, KY 42303
(502) 683-7326

Circle No. 158
on Reader
Inquiry Card

TURF MARKER™
— Since 1973 —
A Must For Spraying
Parks, Golf Courses & Cemeteries
FOAM SPRAY PATH INDICATOR
Highly Visible • Economical
Toll Free 800-553-2404
In Iowa 319-987-2976
Richway Industries
Janesville, IA

Warren K Lerfald
Westheffer Co

Measuring Wheels

Gandy Co
Jonathan Green Inc
Green Pro Services
Hendrix & Dail Inc
Imler Industries Inc
LESCO Inc
Nature's Touch Div of Agro Chem Inc
Strong Enterprises Inc
Tuflex Mfg Co

Mist Blowers

Agrotec Inc
Arborchem Products Co
Encap Products Co
Friend Mfg Corp
H D Hudson Mfg Co
Maruyama US Inc
Professional Tree & Turf Equipment
Solo Inc
Strong Enterprises Inc
Trebort Corp
Westheffer Co

Moisture Sensors

Glen Hilton Products
LESCO Inc
Spectrum Technologies Inc
Westheffer Co



THE MAZDA WARRANTY: DESIGNED TO LAST THE LIFE OF YOUR FLEET.

KEEPING COSTS DOWN—IT'S CRITICAL TO YOUR SUCCESS AS A FLEET OPERATOR. THAT'S WHY WE GIVE YOU THE MAZDA WARRANTY. BECAUSE EVEN WHEN YOU BUY A TRUCK AS RELIABLE AS OURS, THE FEWER REPAIRS YOU PAY FOR, THE BETTER YOUR BOTTOM LINE.

EVERY MAZDA TRUCK COMES WITH A 36-MONTH/50,000-MILE WARRANTY—STANDARD. WHAT IT COVERS WOULD FILL THIS PAGE. WHAT IT DOESN'T COVER IS ROUTINE MAINTENANCE, PARTS SUBJECT TO NORMAL WEAR AND REPLACEMENT, AND ACCESSORIES COVERED BY THEIR OWN WARRANTY. THAT'S ALL. AND THERE'S NEVER A DEDUCTIBLE.

SO, CALL OUR NATIONAL FLEET SALES OFFICE


AT (714) 727-6453. WE'LL SEND YOU COMPLETE INFORMATION ON AMERICA'S MOST TROUBLE-FREE COMPACT TRUCK,* INCLUDING A QUICK REFERENCE GUIDE TO THE MAZDA WARRANTY. THEN YOU CAN READ ALL ABOUT OUR TRUCKS, AND THE BEST BASIC WARRANTY IN THE COMPACT TRUCK BUSINESS.

THE MAZDA WARRANTY. IT COSTS NOTHING AND COVERS JUST ABOUT EVERYTHING. AND IF YOU RUN YOUR FLEET LIKE MOST, IT WILL STILL BE IN EFFECT WHEN IT'S TIME TO TURN YOUR TRUCKS OVER. YOU MIGHT JUST CALL IT THE WARRANTY OF A LIFETIME.


mazda
IT JUST FEELS RIGHT.™

This Time, We Did Competition, We Out

To make a dramatic turnaround in your productivity, put yourself behind the wheel of the machine that outmaneuvered them all: The new Groundsmaster® 220-D or the new gas-powered 224 from Toro. No other out-front rotary mowers are as maneuverable, as effortless to operate or provide as much trim productivity.



Fourlink power steering is your link to unmatched maneuverability. Now operators can make sharper, easier turns with less fatigue. This makes trimming around any obstacle quick and almost effortless.



To give you even more cutting control, Groundsmasters feature a single knob deck-to-tractor weight transfer system. A twist of the wrist is all it takes to balance cutting unit flotation to height of cut and traction needs. The result is better traction and better flotation without scalping.



When it comes to engine size, Toro gives you the power of choice. The new Groundsmaster 220-D features a 20 hp liquid-cooled, 3-cylinder Mitsubishi diesel engine. The new Groundsmaster 224 gives you the same engine in a gas model, providing you with the durability diesels are known for, but with more power. Both give you all the speed and power needed for the most demanding jobs.

The Groundsmaster 220 also is available with a 20 hp air-cooled gas engine.



n't Overpower The maneuvered Them.

A small, compact wheelbase provides a small uncut trim circle and tight turn-around enabling you to trim close around any obstacle. Just what you need to get into or out of tight areas.



With all these performance features, it's obvious why the new Groundsmaster 220-D and 224 are so popular. And why Toro is the leader in out-front riding rotary mowers. To request a demonstration, call your local Toro distributor or contact Toro at the address below.



A patented, heavy-duty carrier frame with floating cutting decks allow the cutting units to follow ground contours for a superb quality of cut. For added cutting control, there are three decks to choose from: 72", 62" or 52". And the 52" is available with an optional grass collection system.

TORO

The Professionals
That Keep You Cutting.

The Toro Company, Commercial Marketing Services, 8111 Lyndale Ave. So., Minneapolis, MN 55420.

Circle No. 156 on Reader Inquiry Card

Equipment

continued

Mower Accessories

Bolens Corp
Buntun Co
Cub Cadet Commercial Mowers
Deutz-Allis Corp
Excel Industries Inc
Grazer Div M & W Gear Co



**GRAZER DIVISION
M & W GEAR CO.**

A cut above the rest

Gibson City, IL 60936

800-221-2855 800-252-5807

Heckendorn Mfg Co
Homelite Div Textron Inc
Lawn-Boy Inc
LESCO Inc
Mathews Co
Power Lawnmower Parts Inc
Scag Power Equipment Inc
Simplicity Mfg Inc

Mower Parts

Bolens Corp
Cub Cadet Commercial Mowers
Dandl Mfg Co
Deere & Co
Deutz-Allis Corp
Homelite Div Textron Inc
Jacobsen Div Textron

Lawn-Boy Inc
LESCO Inc
Power Lawnmower Parts Inc
Scag Power Equipment Inc

Mowers, Flail

BEFCO Inc
Brillion Iron Works Inc
Bush Hog Div Allied Products Corp
Howard S Crane Inc
Dandl Mfg Co
Deere & Co
Ford New Holland Inc
Gravely International Inc
Jacobsen Div Textron
Mathews Co
Middlesworth Engineering & Mfg Inc
MoTrim Inc
R L Parsons & Son ECI AKA The Micro-Mower Co
Rousseau
Woods Div Hesston Co
Yazoo Mfg Co

Mowers, Reel

Brouwer Turf Equipment Ltd

BROUWER™
TURF EQUIPMENT LIMITED
A RANSOMES COMPANY

LESCO Inc
Magic Circle Corp
Massey-Ferguson Inc Industrial Machinery
Middlesworth Engineering & Mfg Inc
MoTrim Inc
Howard Price Turf Equipment
Ransomes Inc
Sarlo Power Mowers Inc
Scag Power Equipment Inc
Sensation Div Gilson Bros
Simplicity Mfg Inc
Snapper Power Equipment
Steiner Turf Equipment Inc
Titan Turf
Toro Co Commercial Products Div
Walker Mfg Co

The Walker Mower
Fast, Easy & Beautiful Mowing

WALKER MANUFACTURING CO.
5925 E. Harmony Rd.
Ft. Collins, CO 80525

WALKER (303) 221-5614

Wheel Horse Products Inc
Woods Div Hesston Co
Yazoo Mfg Co

Mowers, Sickle Bar

Deere & Co
Ford New Holland Inc
Gravely International Inc
Kinco Mfg
Massey-Ferguson Inc Industrial Machinery
MoTrim Inc

Mulchers, Hydraulic

Bowie Industries Inc
Finn Corp
Homelite Div Textron Inc
Hydro-Turf & Assoc
Reinco Inc

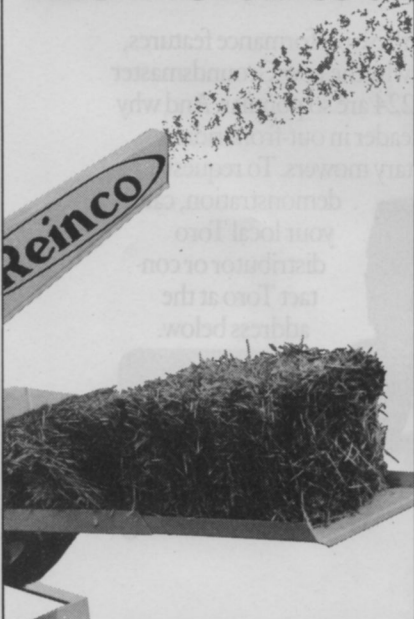
Netting

A C F Inc
Atlantic Construction Fabrics Inc
Blue Mountain Industries
J A Cissel Mfg Co
Dewitt Co
Jonathan Green Inc
Hydro-Turf & Assoc

Nozzles & Accessories

Agrotec Inc
Arborchem Products Co
Delavan Inc
Encap Products Co
Falkenberg Inc
Friend Mfg Corp
Hahn Inc
H D Hudson Mfg Co
Hypro Corp
LESCO Inc
Na-Churs Plant Food Co

**Does
Your Power
Mulcher Go
the Distance?**



Buntun Co
Deere & Co
Jacobsen Div Textron
Kubota Tractor Corp
LESCO Inc
Locke Mfg Inc
National Mower Co
Howard Price Turf Equipment
Ransomes Inc
Roseman Mfg Co
Steiner Turf Equipment Inc
Toro Co Commercial Products Div

Mowers, Rotary

Ariens Co
BEFCO Inc
Bolens Corp
Buntun Co
Bush Hog Div Allied Products Corp
J I Case Outdoor Power Equip Div
Howard S Crane Inc
Cub Cadet Commercial Mowers
Cushman Inc
Deere & Co
Deutz-Allis Corp
DewEze Mfg Inc
Dixon Industries Inc a Coleman Co
Excel Industries Inc
Exmark Mfg Co
Ford New Holland Inc
Giant-Vac Mfg Inc
Grasshopper Co
Gravely International Inc
Grazer Div M & W Gear Co
Heckendorn Mfg Co
Homelite Div Textron Inc
Honda Power Equipment
Ingersoll Equipment Co
Jacobsen Div Textron
F D Kees Mfg Co
Kubota Tractor Corp
Kut-Kwick Corp
Lawn-Boy Inc

Circle No. 149 on Reader Inquiry Card