

ticles such as sand and the valves close automatically if electricity fails or the flexing portion of the diaphragm ruptures.

Irrigation Consultants, Inc.*

Moody Sprinkler Company, Inc., features its line of automatic irrigation controllers and valves. The model M-E-10P controller is used for controlling the irrigation of a golf course and lists for \$296.50.

Rain Bird Sprinkler Mfg. Company makes a full line of irrigation equipment, including automatic equipment controllers and valves, rotors, spray heads and impact sprinklers.

Rain-O-Mat Sprinklers, Inc., will have a new 1 1/4 inch riser rotary pop-up golf course sprinkler designed to take up to one-half inch nozzle.

Skinner Irrigation Company introduces a new concept in central control for automatic irrigation, which will include a new central control panel. The equipment will not be a stock item, but will be custom made.

Smith Blair makes the 342 Plastic Saddle for plastic pipe featuring a polypropylene body with stainless steel reinforcing cap to insure permanent thread fit. Installation is permanent and simple and does not require the use of bonding agents or special tools.

Thompson Turf Irrigation Equipment offers sprinklers for every need—surface, shrubbery, heavy duty and pop-up models.

Toro Mfg. Corp. offers the Vari-Time Central Control System. One Controller signals green and tee satellites simultaneously. An-

other starts nine fairway satellites; a third starts nine second fairway satellites. Once started, a satellite will operate independently of the others. The Vari-Time Central Control has a 14-day program with a 24-hour dial on-off switch which can cancel a watering schedule. Suggested list price: \$195.

The eleven-station Vari-Time Satellite Controller has variable



timing—zero to nine minutes or zero to 30 minutes—manual or semi-automatic over-ride and hydraulic or electric. Suggested retail price: \$275.

Weather-matic Division, Telsco Industries, offers a complete line of lawn sprinkler systems. Included in the lawn spray head line are the Lawnmaster, featuring two-inch pop-up action and nylon adjustable riser; the Super-Pop, which is moderately priced and features two-inch pop-up action (does not have adjustable riser), and the economical Excel with 1 1/8-inch pop-up action. All have cast bronze bodies.

The Rain-Stat automatically turns the sprinkler system off when it rains, then permits the controller to resume normal operation when needed.

MAINTENANCE VEHICLES

Bruce Mfg. Corp. offers Pug utility vehicles. Pug comes in either front wheel or four-wheel drive. The four-wheel drive can be added to the front wheel drive.

Bunton Company introduces the

4-Way Edge-Trimmer. It edges with the vertical blade and trims with the horizontal blade at the same time. A single, handle-mounted control lever both engages the vertical blade and selects the cutting depth.

The Champion Company makes the Doo-All Roll-Dump Trailers with Terra-Tires. The Model 05130 is available with hoppers in three-fourths or one cubic yard capacities which can carry up to 5,000 pound loads. Model 12540, equipped with a 1-1/2 or two cubic yard hopper handles loads of up to 10,000 pounds.

Cony America offers three vehicles in its 360 line—the wide panel van, the wide truck with fixed or drop side and the topless model. All 360s have horizontal opposed, two cylinder gasoline engine, four forward speeds and one reverse.

Cushman Motors makes the four-wheel Turf-Truckster, developed to cope with turf application requirements. It carries driver and passenger, dumps, sprays, tows fairway gang mowers and hauls equipment. The Turf-Truckster features an air-cooled 18hp engine and has a 1,000 pound payload capacity.



The three-wheel Turf-Truckster has a wide box body and comes with 12 or 18hp engine.

In the 1970 model gasoline-powered Turf Minute-Miser, the front suspension has been changed to trailing-link design with two coil springs.

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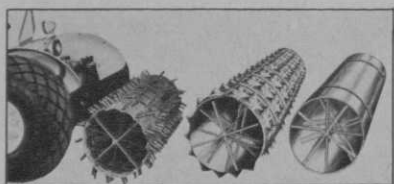
*Information was not available at press time

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Cyclone Seeder Company, Inc., offers the Cyclone line of broadcast spreading equipment including hand-push, and hand-crank machines and tractor-pull and truck or tractor-mounted PTO and electric machines.

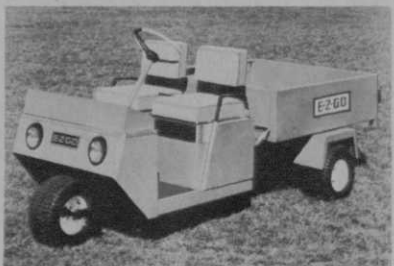
Dedoes Industries, Inc., offers the Dedoes Turf Maintenance System which permits any standard tractor to do aerating, slicing and rolling operations. The



system consists of a conversion unit, which utilizes the tractor's hydraulic system, plus a turf aerating cylinder, a turf slicing cylinder and a six-foot turf roller.

Excel Industries, Inc., introduces its new Tilt Deck Trailer with a three-inch box-steel frame, four-ply tires, ball-type hitch with safety chain, 2,000 pound capacity, heavy-duty 11 and 14 gauge ramps hinged to raise automatically and weighing 420 pounds.

E-Z-Go Car Div., Textron, Inc., offers the GT-7 Turf Truck with a gasoline engine and automo-



tive steering. The GT-7 features double seats with back rests, 950 by 86-ply Terra-Tires, dump body (corrosive resistant), trailer

hitch, dual headlights, 35 amp alternator, ammeter, oil pressure indicator, speedometer, heavy-duty shock absorbers, automotive hydraulic internal expanding brakes, and an 18hp Onan engine. Suggested retail: \$1,788.

E-Z Rake, Inc., offers vacuums, thatchers and rakes. Two vacuum models are available: Model 40 fits larger tractors and Model 30 has its own cart and bag.

Ford Motor Company will display the 4000 Special tractor equipped with a rotary cutter. The 4000 Special has a low silhouette, light weight and a short wheel base. The 4000 is said to be easy-to-get-on, easy-to-get-off and has excellent maneuverability. The 4000 Special offers 52 PTO-horsepower, sealed brakes, independent PTO, 14.9 by 28-inch rear wheels, plus standard power adjusted rear wheels, deluxe seat and differential lock.

Giant-Vac Mfg. Inc., produces a full line of heavy-duty Giant-Vacs, blowers and thatchers for all maintenance requirements. Giant-Vac offers a PTO driven power unit which performs many functions. Propelled by a standard tractor, this unit with available accessories can be operated as a double headed blower, cleaning many acres per hour. Attachments are available which convert the Blower to the Truck Loader. This PTO unit is readily changed to a six-foot vacuum machine. The Thatcher can be added to the vacuum head. Horsepower units range from 12 to 65. Hand operated vacuums range from five to 10hp and Giant-Blos range from five to 65hp.

Hahn Lawn and Turf Products offers the GT-700 gear-driven and hydrostatic drive tractors; Pow-R-Pro Deluxe 8-6 rotary mowers with automatic choke, engine cover and fold-down handle; Super 10-6 rotary

mowers with a 3-1/2hp engine and a belt-driven blade on some models, steel housing rotary mowers with direct drive; 21-Inch High wheel rotary mowers with belt-driven blade; rotary tillers with vertical shaft or horizontal shaft, 30-inch LTD 500 riding mowers with gear transaxle drive or the 26-Inch with friction drive transmission, cast iron frame, self-propelled reel mowers; Aerifiers and verti-cutters, the Aeri-Vac turfgrass vacuum and the Flex-A-Matic 140 mower.

In the West Point line there are the Master Verti-Cut with Catch-Master, the VC-20 Verti-Cut mower with Catcher and the VC-5 Verti-Cut. Also by West Point is the Verifier puncher, the Grasslan Aerifier, the JR Aerifier, the Aeri-Spiker, the three gang Power Drag for greens matting, the Big Boy S-4000 spreader and Aerifier spoons, blades and tines.

International Harvester Company introduces its International Cub Cadet model 127 all purpose lawn and garden tractor for which 60 attachments are available. Also new is the Sandrake for golf course use.

Jacobsen Mfg. Company makes the Turf King mower, which has three power-driven units fully ar-



ticulated to follow uneven ground contours. Featuring variable forward speeds plus reverse, it allows close work and trimming.

Kohler Company makes 10hp, 12hp and 14hp engines that have identical dimensions. Since the

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three engines are interchangeable, manufacturers can design one piece of equipment and offer it with a choice of horsepower.

Kut-Kwick Corp. offers Models J, H, EDV and HR commercial mowing equipment. The Models J feature the JV920-36-inch cut, J900-31-inch cut and the JVOM 920-40-inch cut mowers. All are rotary, extra heavy duty type with self-propelled forward and reverse mowers.

Models H include the H920-48-inch cut without front cutting, oil bath gear drive, steel deck, five forward speeds, neutral and reverse, the H920 36-inch cut and the H1250-60-inch cut made for large area mowing.

Models EDV offered are the EVD 920 36-inch L walking model or with rider and the EDV 920 36-inch with skip deck.

Models HR are the H920-48RE 48-inch cut with steering wheel control, the H920-36R 36-inch cut also with steering wheel control and the H1250-60RE 60-inch cut for large area mowing.

Lely South West, Inc., offers a complete line of spreaders. Standard features include the forced feeding system with ejector disk and an adjustable spread pattern of up to 52 feet wide. There is a choice of spread patterns.

Lely also manufactures the Buryvator for rotary cultivation plus burying capabilities. This Buryvating action is achieved by rotor and underhood spring tines which deflect large lumps into the bottom and sieve fine soil to cover the lumps.

Lindig Mfg. Corp. has the KT-12 Shredder/Screenener which combines low level feed, patented shredding and high discharge into one compact Tractor-Fed unit.

The KT-12, discharges directly into topdresser, trailer, utility vehicle or soil cart. Feeding, shredding, elevating, screening and loading are done in one mechanized operation.

Also new is the line of Porta-Screeners which include sizes for varying applications, ranging from small manual operations to medium volume mechanized applications.

Locke Mfg. Company, Inc., makes a reel mower designed without forward casters or gauging wheels to knock down uncut grass. The mower will turn sharply without raising the cutter units or matting the grass. Counterbalancing of cutter units permits them to follow the natural contours of an undulating lawn.

The MS Series 22-, 24- and 26-inch cut rotary mowers are available in push or self-propelled unit. The MP-5, which also comes in push or self-propelled, is a highwheeler that permits operator to disengage the mower for easier engine starting.

Massey Ferguson, Inc., will show the MF 20 Turf Tractor and MF 40 Tractor Loader. The MF 20 features low center of gravity, gas or diesel power, standard or manual shuttle transmission and a choice of dual or high-flotation rear tires and wheels. The MF 40 features gas or diesel engine, manual shuttle or instant reverse transmission.

Mott Corp. makes the Hammer Knife safety flail mowers which mow, shred weeds, mulch leaves and renovate. There is a heavy-duty three-point hitch mower in 60- or 72-inch models; the Hammer-Knife mowers with easy maneuverability either walking or riding; the Model 88 safety mower; the powered walk-behind 18A and International tractors.

National Mower Company makes the 68 Inch Triplex. The

tractor is made of welded tubular steel. All gears are machined from solid steel.

The 84 Inch Triplex has a tractor engine of Wisconsin AENL 9.2hp or Briggs & Stratton 10hp. The mowers are three 30-inch units power driven and free floating to follow ground contours.

Princeton Turf Farms, Inc., introduces the Princeton Harvester which cuts, sizes, palletizes and unloads. The Harvester, which is operated by three men, rolls on large flotation tires.

Rogers Mfg. Company, subsidiary of Jacobsen, offers the Model 12 Truck, featuring a four by four-foot all-steel, low level bed with a 30-inch ramp load tailgate, rugged all-welded steel construction, 12 or 14hp engine, heavy-



duty four-speed transmission, and carries up to 1,000 pounds.

The Model 720 Sweeper covers a five-foot swath, holds five cubic feet of trash.

The 720E has its own 12hp engine and universal hitch, and the deluxe 720-E-HL features hydraulic lift dumping. The Model 154 Riding Sweeper gathers wet or dry grass clippings and has a 48-inch sweeping width.

The Model 40 Blower has a 250 mph blast, a three-point hitch, chain driven 36-inch impeller and all-steel welded frame.

The Model 522 Aero-Spiker

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spikes and aerates, allowing air, moisture and fertilizer into the soil. The four hp engine allows operating speed sufficient to cover over 29,000 square feet per hour.

Aero Blades come in four models—512, 510 which handles vertical cutting, spiking, deep shatter aerification, and both models remove thatch, renovate, prepare seed beds and relieve compaction; 507 standard unit with .032 gauge; two pointed blades with three-fourths inch spacing, and the 504, a self powered four or six hp verticle mower.

The Aero-Blade 548 removes thatch, aerates, renovates, tills plants, spikes and prepares seed beds. It has a three-point hitch, PTO drive and four-foot cutting width.

Models 590 and 595 Aerators are built in sections with two wheels per contour unit. Equipped with either full length or individual weight trays, these machines permit contour following on uneven ground, plus full machine weight on hard packed areas.

Roseman Mower Corp. offers the seven-gang Hydraulic Transport Mower and the Hydraulic Transport Lo-Cut mower. The Hydraulic Transport Lo-Cut has



a 10 blade, high-speed for mowing the new grass strains that require low cutting heights of three-eighths inches with a one-half inch frequency of cut. Two rakes, the Tiller Rake, on which 32 spring-loaded thatching tines are spaced at about four-inch in-

tervals to prevent raking or build-up of debris, are also available.

Royer Foundry & Machine Company offers two new shredders, the 180 and the Superintendent 120. The 180 combines shredding, blending, aerating and cleaning in one action. The Su-



perintendent 120, a low-priced model, features feed conveyor, automatic and continuous trash removal and discharge.

Ryan Turf Equipment offers turf-care products for all needs. Many items are available as rental units. These include Ren-O-Thin power rake, Motoraire self-propelled turf aerator, Lawnaire self-propelled and tractor-drawn lawn turf aerators and JR Sod Cutter.

Sand Master Div.'s sand separators are said to meet three specific needs: reduction of high-wear areas, economy in application and adaptability to all sand removal situations. Available in three different types—submersible, inline and industrial, Sand Master is capable of removing up to 95 per cent (by weight) of all sands up to 200 mesh (.0029 inches or 74 microns).

Sod Master Company, a subsidiary of Jacobsen, offers Mete-R-Matic, a powered top dresser. Also available is the Sub-Air, which tills sub-soil without punching or spooning.

The Bantam Sod Cutter is a compact unit that cuts sod at the rate of 150 feet per minute.

The Edge-R-Rite offers a new edging method to remove a complete sod strip at one time.

Toro Mfg. Company, in addition to its irrigation equipment (see p. 73), will be showing its extensive line of institutional mowing equipment.*

Turf Vac Company introduces the new Model 70 4 1/2-foot, self-propelled Turf Vac sweeper. Also new are the PTO drives for various Fairway Master Models.

In addition Turf Vac also offers Blowers and self-powered units.

The Vandermolen Corp. offers the Diadem line of fertilizer spreaders and seeders, which features a uniform spread pattern. Model K 65A holds about 800 pounds of granular fertilizer, Model K 600 holds 1,500 pounds and Model GK-15, 2,200 pounds.

Viking Mfg. Company, Div. of Allied Farm Equipment, Inc., offers the Roller Blade one-tool tractor attachment for overseeding, scarifying, fertilizing, leveling, aerating, slicing and rolling.

Warren's Turf Nursery imports from Ransomes Sims & Jefferies, Ltd., England, a heavy-duty Hydraulic Power 5/7 Gang Mower for cutting large areas of grass.



This is suitable for attaching to the Ford 3000 and Ferguson 135 range of tractors. Also in the line

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are the Gang Mowers, the Sport-cutter (a 10-unit mower) and the Magna (a 12-unit mower) for cutting grass up to five inches and eight inches high, respectively. The Certes 16-inch and the 20-inch Auto-Certes are both hand putting mowers.

York Modern Corp. introduces its Professional, Model Pro rake, which allows the rake angle to be changed hydraulically from the tractor seat to an infinite number of rake angle positions,

John Bean Div., FMC Corp., offers the Rotocast air spraying attachment mounted in conjunction with hydraulic sprayer featuring remote hydraulic controls and controlled pattern and direction.

The Turfkeeper, models 1010-G and 1010-GE, is a compact, versatile golf course sprayer designed for use with utility-type vehicles. The 1010-G has a 100-gallon fiberglass tank, a lightweight, three-section 15-foot boom with five-foot fold-away wings, 18 nozzles spaced at 10 inches. It requires 860 rpm on the power take-off to operate the Royalette Pump—10 gallons per minute at up to 500 pounds pressure; V-Belt PTO drive with guard; and a Mechanical Agitator to keep the spray solution mixed. The 1010-GE offers an alternative choice of a completely self-contained golf course sprayer with a gasoline engine drive.

TURF PRODUCTS, SPRAYERS

Agrico Chemical Company makes turf products.*

Aquatrols Corp. of America offers Aqua-Gro, Aqua-T and Aqua-Gro Granular soil wetting

*Information was not available at press time

agents and Stoma-Seal chemical control for Wilt.

Borden Chemical Inc., announces Greens & Fairways NO PHOS 15-0-15, which is designed for *Poa annua* control.

Greens & Fairways 10-3-7 Bug Knocker contains Chlordane for insect control plus 1 per cent iron.

The Broyhill Company has its 960 Series of high pressure turf and industrial sprayers with a tank capacity of 230 or 300 gallons. The pumping system contains a four piston 10 gpm at 500 psi driven by nine hp engine.

The 1660 Spra-Mate Series features a 150-gallon tank with an epoxy lining. The trailer is a low silhouette with 9.50 by 8 inch flotation tires or with standard 14-inch rims.

Certified Laboratories introduces Turftec W/A, which kills and controls snow mold, dollar spot, pink patch, bluegrass blight.

Liquid chemicals include fertilizers: Ever-Green and Lawn-Green; chelated iron: Soil-I-Ron; soil penetrant; Deep Penetrant; weed killers: C-100, AS-90, C-300, C-795; crabgrass killer: C-400; soil sterilant: AS-655; fungicide: L.T.F.; insecticide: BP-977 and foliage spray: All-Safe.

In the Comet-II System, products include Com-Gro concentrated liquid plant food; Com-Pen penetrating chemical concentrate; Com-Kill weed killer; Neutra-Plus micronutrient supplement; Aptrex soil sterilant; Multi-Cide, for exceptional municipal insect control; Secti-Cide insecticide and the Comet II.

Chanderlin Seed Company, Inc.*

Chemagro Corp. offers Dyrene turf fungicide, which controls blight, leaf spot, melting-out, copper spot, rust, dollar spot, brown patch and snow mold for two weeks or longer and Dexon turf

fungicide for the control of pythium cotton blight.

Chemical Systems Corp.*

W.A. Cleary Corp. makes PM-AS herbicide-fungicide for the prevention and control of crabgrass and other turf diseases. Methar products, used for killing crabgrass, are available in liquid and powder forms. Cleary also puts out Spotrete, a dry 75 per cent Thiram fungicide, Caddy, a liquid cadmium fungicide and Thimer, a dry, broad spectrum fungicide.

Cloro-Spray Corp. features Ferro-Spray Plus, a high analysis liquid fertilizer combined with an iron chelate solution, which is soluble in cold water and will remain stable. Price: \$3.95 a gallon. Dew Down Xtra organic wetting agent contains chlorophyll, enabling plants to carry on photosynthesis.

Diamond Shamrock Chemical Company offers Dacthal, a pre-emergence weed control product for crabgrass and *Poa annua*, available as a wettable powder and a 5 per cent granule. Daconil 2787 is a broad spectrum non-mercurial fungicide. Dacamine is a proprietary postemergence weed control herbicide for controlling thistles, knotweed, dandelions and other hard to kill broadleaf weeds. Dacagin spray adjuvant is used with herbicides for minimizing drift control when spraying around shrubs and ornamentals.

Doggett Fison Company offers the Hydro-Matic System which fertilizes while watering. The system consists of a water sensing device that precisely measures each gallon of water pumped from the main well pump. This measurement is carried electronically to the Translator which directs the feed control pump to auto-

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