

And After 160 Years



Gator 4x2

\$99/month^{††}

or just \$5,995*

Your to-do list just got a lot shorter. Gas or diesel, 2- or 4-wheel drive, Gator® Utility Vehicles are great for most any job. Stable and surefooted, they haul more than their own weight (up to 1,400 pounds!), yet tread lightly on turf, with a psi of only 7.1 to 7.5. For as little as \$99 a month, you'll wonder how you ever did without one.



†Total capacity for the 6x4 Diesel—includes 200-lb. operator, 200-lb. passenger and maximum box capacity.



Fleet Owner's Discount

Get a minimum of \$100 credit per unit when you buy any combination of 3 or more John Deere commercial walk-behinds (36-in. or larger), commercial front mowers, Z-Trak zero-turning-radius mowers and Gator utility vehicles. Ask your dealer for complete details.

Z-Trak™ F620

zero down^{††}

\$214/month^{††}

Front Mowers

\$500 off F725*

\$800 off F900s and F1145*

The savings? Industrial-size. Choose from six front mower models — 20 to 28 hp, gas or diesel. Every one with patented two-pedal control, power steering, and master brake pedal for the PTO. F1145 has on-demand or full-time 4-wheel drive. See one today.



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†† All financing offers are for commercial use only at participating dealers and expire 31 May 99. Subject to approved credit through John Deere Credit. Installation Plan. Equipment financing is at 8.4% up to 60 months except as follows: the Commercial Cutter package is 36 mo., Commercial Walk Behind Mowers are 36 mo., the Z-Trak is 48 mo. A 20% minimum down payment is required on all equipment except as follows: the Commercial Cutter Package is \$99, the 790 tractor is \$2,251, 4500 tractor w/460 loader, 616 rotary cutter is \$7,598, Commercial Walk Behind Mowers require no down payment and no interest until 1 May 99 and no payments until 1 June 1999. No down payment is required on Z-Traks. Dealer set up, freight, taxes, and other miscellaneous charges (if any) are not included in prices and monthly payments. * Lease term is 36 mo. and lease amount and monthly payments do not include insurance, dealer set up, freight, or any applicable taxes or fees. For commercial use only, capital cost reduction is required. See dealer for details. ***Subject to approved credit through the John Deere Credit Revolving Plan-Commercial Use Account. For commercial use only at participating dealers.



Nothing Runs Like A Deere®

With Us,

90 Days

Same As Cash

It's an advance on your future. Pay nothing for 90 days for the John Deere commercial parts, service and handheld products you need to build your business now. Offer good through October 31, 1999.***

Gator 6x4

\$136/month††

or just \$8,255*

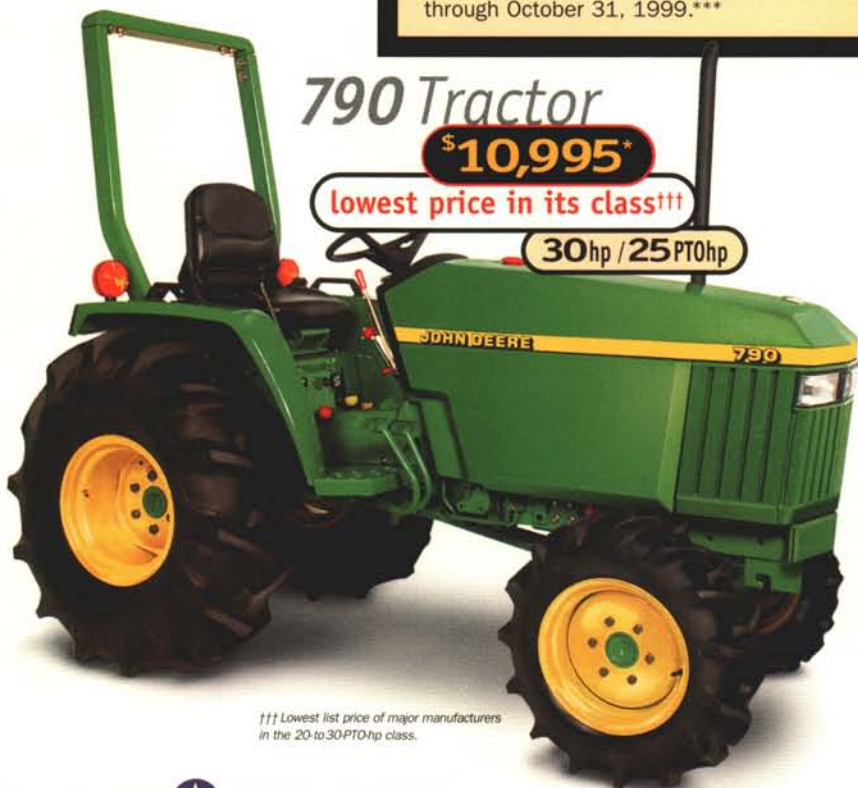


790 Tractor

\$10,995*

lowest price in its class†††

30hp / 25PTOhp



††† Lowest list price of major manufacturers in the 20-to-30PTO-hp class.



Quality Decks

A great first impression. Most John Deere decks are pressed from a single sheet of heavy steel, lending them a strength welded-together rivals simply can't match. Underneath, a high-lift design, maximum blade overlap, and a wide-discharge chute provide you the precision cut that impresses the first time — and every time.

The original workhorse: Now with more horses. Hitching to implements in under five minutes is just one of this 30-hp tractor's abilities. Others include easy starts, and restarts, with direct injection and an auto-bleed fuel system. Standard transmission is a smooth sliding gear. Package includes 4WD. (8.4% financing available.)

The best financing around. These 20-hp zero-turning-radius mowers with a choice of 48-, 54-, or 60-inch decks already set the standard for operator-friendliness and ease-of-service. Now, with the introduction of buying one with no money down (through 10/31, 1999)††, their financing is the same.

It's Nowhere Near

100 HST Tractor

\$300 off*

20hp / 16PTOhp



The quicker

hooker-upper. A 20-hp diesel engine. HST automatic transmission with easy-to-use Twin Touch® foot controls. 4WD. Mid- and rear-PTOs. Power steering. And really, really quick implement hook up. Stop by your dealer to find out more.

Never lets work pile up. High breakout force, quick cycle times, and a PowrReverser™ transmission (that lets you go back and forth without clutching) allow this 39-hp tractor package to set the pace in the industry for loading and unloading. But don't take our word for it, try one for yourself. (Price includes 460 Loader, 616 Rotary Cutter.)

PowerGard® Protection Plan

Security and value for the long term. Available for all new John Deere tractors, engine and powertrain coverage can be purchased for 12, 24, or 36 months (with varying hour combinations) beyond the John Deere Basic Warranty. This coverage transfers to subsequent owners, so it not only protects your investment, but adds resale value, too.

5210 Tractor

Lease for \$199⁹⁹/month*

53hp / 45PTOhp

Power and economy.

This 45-PTO-hp package includes standard CollarShift transmission with 9 forward/3 reverse speeds. Ask your dealer about upgrading to our 540/540E PTO option. For light- to medium-duty jobs, it saves fuel and reduces noise by operating 540-rpm PTO implements at a much lower engine speed.



4500 Tractor

\$399⁰⁰/month††

39hp / 33PTOhp



r An Early Retirement.

The American work ethic



Commercial Cutter Package

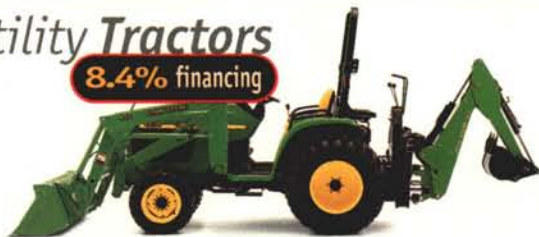
\$99/month

\$99/down



Utility Tractors

8.4% financing



Z-Trak™ F620

zero down

Commercial Walk-Behinds

free line trimmer



Gator 4x2

\$99/month

is not dead ➔



Taking Care Of Business

SAVINGS

Implements

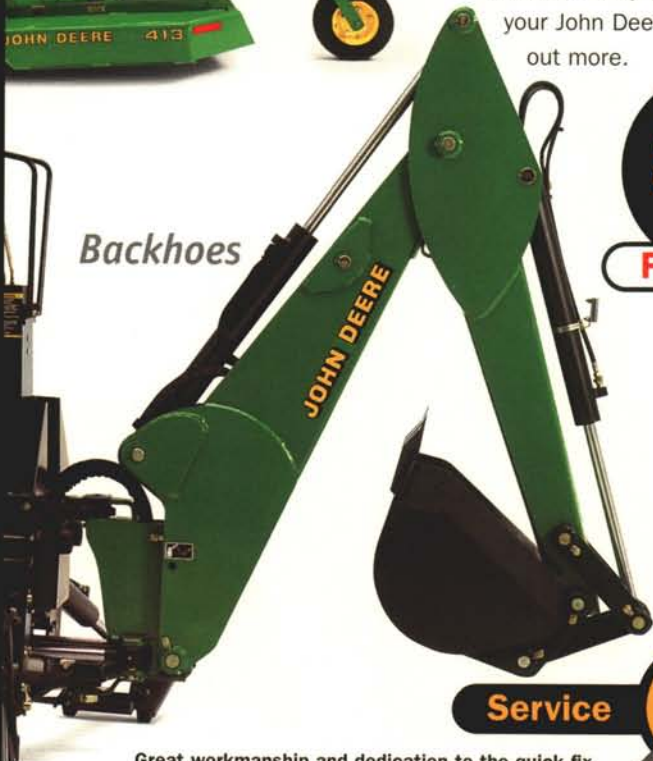
The wait is over. Now you can finance John Deere implements worth over \$1,000 for one low rate. These implements are exceptionally easy to hook up, and perfectly complement the machines they attach to. Visit your John Deere dealer to find out more.

RPM Parts Kit
Perhaps the only time in-the-box thinking is a good idea. This kit contains almost everything you need to perform routine service on your equipment. Pick one up when you buy a machine, and you'll be all set for 500 hours of service.

Rotary Cutters



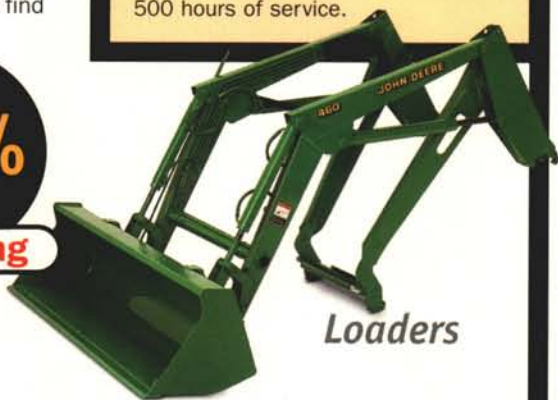
Backhoes



8.4%

Financing

Loaders



Service

Great workmanship and dedication to the quick fix.

We put as much care into servicing machines as we do building them. That's why for the past 160 years, expert technicians have always stood by to perform repairs quickly and well.

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for a dealer near you.

Parts on time

After-hours. Weekends. Next-day delivery. A 90-day warranty. Before you ever install them, John Deere parts set themselves apart. Crafted to meet the most exacting standards (ours), they're available both when you need them, and where — at your John Deere dealer.



Nothing Runs Like A Deere®

Now Through May 31, 1999

With Us, ➔

Commercial Cutter Package Sale

Save

\$ **360**

\$99 down/\$99 a month**

JOHN DEERE

When you test-drive any commercial equipment in this brochure, you'll receive a **FREE** John Deere mesh trash bag. Empty, of course.

Offer available at participating dealers only.

For this package, the price is right. The thirteen-hp GS30 gear-drive mower with 36-inch deck, 250-mph backpack blower, fast-cutting commercial hedge trimmer, and industry-best XT120 gas line trimmer all mean business — lots of business, for you.



A deal with a really long string attached. Buy a John Deere commercial walk-behind (36-in. or larger) before May 31, 1999, and you'll receive a free, next-generation commercial-grade line trimmer (plus get zero-down financing).** Besides enjoying the advantages of superior decks and fully enclosed transmissions, on our hydrostatic models, you'll also get the opportunity of a ten-day test drive.***

GS30 Gear Drive
With 36-Inch Deck

\$78/month**

or just \$2,450*

zero down**

New XT Series Trimmers

Deere M-Series engines set the tone for power and sound quality. Their extreme durability, reliability, and power make these new handhelds the best way to arm yourself.

3 YEAR

limited warranty on HD & GS transmissions

Perhaps the most vital part of a commercial mower, John Deere wide-area walk-behind transmissions come with the assurance of a three-year limited warranty. So they'll be part of your crew for a long time to come.

Free Line Trimmer \$319⁹⁹ Value

with purchase of commercial walk-behind 36-in. or larger

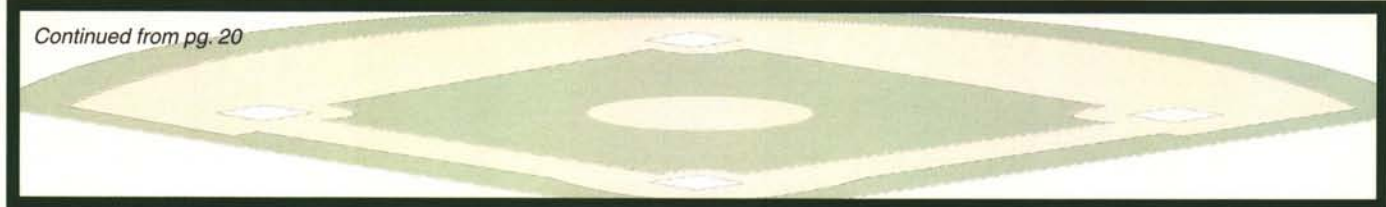


The XT120: A cool-running, highly efficient M-Series 1.2-hp engine. Shock-absorbing grip. Noise-reducing intake silencer and low-tone muffler. Advanced throttle control. Large capacity tap-for-cord line head. And lifetime ignition and shaft warranties.

*Manufacturer's suggested list price. Price may vary by dealer.

**At participating dealers. Subject to approved credit through John Deere Credit Installment Plan. Financing at 8.4% for 36 mo. for commercial use only. Dealer setup, freight, taxes, and other miscellaneous charges (if any) are not included in prices and monthly payments. Personal use installment financing also available. Ask dealer for details. Offer expires May 31, 1999.

***It's the John Deere Promise: If you're not completely satisfied with your purchase, you can return it within ten days for a full refund.



into the subgrade, an eight-inch by eight-inch trough backfilled with pea gravel holds ABS collector drains placed on 30-foot centers. These drain lines drop into the storm drain at the low end of the field.

Additional material was brought in to fill and finish the subgrade layer. The sand and peat were blended off site and trucked to the fields. All stages of reconstruction were laser leveled.

The skinned portion of the baseball field uses a six-inch layer of a locally produced clay-topsoil mix. The skinned area surface is conditioned with sand, Turface Pro-League, and MVP. It's top-dressed with sand because the material packs tight.

John Osterman brainstormed an innovative procedure for the drain outlets, capping them with a plug that contains a one-inch clear pipe. He says, "If there's a high runoff, they can still drain, but they hold back the majority of the runoff. This was intended to counteract seasonal problems, as winter snow would remain on the drain lines, and then in the summer they would tend to dry out. We assumed some air movement was chilling the lines in the winter and resulting in desiccation in the summer. This system helps to control the humidity level a bit by controlling the drains. The fields are at a 1-1/2 grade, so we can't back up the moisture, but we do see the affect at the low end.

"The original intent with the one-inch line was to see if we could recycle some of the effluent from the field through a process of pumping it out and reapplying it. Moody researched the use of a venturi valve and using our irrigation supply as the pump, but we haven't found a practical way to make this application work and we're open to suggestions."

Irrigation

The new irrigation system uses a

Motorola 5000 controller and Toro 640 and 700 rotors. A well delivers water through a six-inch main that comes clear across the field. A four-inch loop goes all around the complex.

"Water management is critical," says Moody. "Though snowfall can be heavy, it generally melts within a few days. The winter of 1998-99 has had below-normal precipitation, so

adjusted for the correct amount of water the rest of the week."

Turf

Thin-cut, big-roll sod grown on the sandiest soil locally available minimizes imported clay and the "sod cap" scenario. Still, Moody's crew has been heavily coring in March, May, and November, and sweeping off the cores to remove the clay. In May and November, the crew follows coring by topdressing 1/8-inch with a 90-percent sand / 10-percent Dakota Peat mixture. The USGA specification continues to be their standard.

The crew uses Turface for topdressing and seeding in problem turf areas, and pre-germinated seed is used whenever possible. Crown III is used in high-traffic areas.

Slicing and solid-tine aeration take place monthly during the rest of the season. Solid tines are used in the summer; slicing during the spring and fall to minimize sur-

face disruption.

Only December and part of January are off-season. With only a softball league in play during the summer, that becomes the prime maintenance period.

Fall overseeding has used a blend of 40-percent perennial ryegrasses and 60-percent bluegrasses. The last seed purchase included 30-percent midnight to incorporate its aggressive nature and its ability to hold up at ultra-short heights.

Moody has established a sod farm behind the batting cages, where the turf receives the same care as the field. Some is mowed to infield height, and some to outfield height. Repair plugs are cut out with a bulb planter to a depth of 3-1/2 inches. This sod farm is rejuvenated by seeding, so all future resodding will



Courtesy: Auraria Higher Education Center

we've needed to irrigate in December and February.

"Our fields are in the open, exposed to desiccation year-round, and humidity is always low. During the summer, temperatures spike into the high 90s. High night temperatures add to the turf stress. We have three irrigation zones for the infield and foul territory by the dugouts, and six zones for the outfield.

"We can run up to three zones at once and have a syringe cycle that gets the water down in an hour. We also have strategically placed quick couplers, with two on the baseball infield, and five 1-1/2-inch gate valve outlets around the complex from which we can run a 1-1/2-inch fire hose for a portable sprinkler or a nozzle. The fields are irrigated heavily once a week and programs are

match the field turf and soil profile.

"Mowing frequency ranges from daily to two to three times per week, depending on turf growth," says Moody. "We use an 84-inch triplex reel mower for the outfield; and a 20-inch, walk-behind reel mower for the infield.

"We raised our mowing height to three inches during the summer of 1998, but lost the blade density we wanted for fall sports. This year, in the outfield we'll use two inches as our top height and drop down to 1-1/2 inches for play, and keep the infield at 1-1/2 inches in the off-season, dropping to one to 1-1/4 inches for play."

Moody cites the cooperation of the Roadrunners' coaching staff as a major factor in maintaining field playability. He says, "The mounds were built by the baseball

pitching coach and the players with the assistance of my staff, and the coach does a lot to maintain the mounds.

Bob Tracinski is business communications manager for John Deere in Raleigh, NC. He is public relations co-chair for the National STMA.



Groundskeeper III Tom Moody and STMA President Steve Guise at the 1999 STMA Annual Conference.

Courtesy: STMA

"The coaches also keep a duty roster for the players. They sweep edges, drag the skinned area, rake, and do the cleanup. They even drag hoses and do the watering for games. Our staff hasn't traditionally provided coverage on weekends when they have doubleheaders, so they used to do that themselves. We have changed that with the new field to provide more immediate repair, seeding, and watering to aid in recovery."



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3-3-4

SPORTS TURF dryROOTS feeds the microbial life in the soil, adding plant hormones, vitamins, amino acids, and complex carbohydrates to give you tighter turf under all playing conditions.

Guaranteed nutrient analysis

Total Nitrogen (N)	3.0%
Water Insoluble Nitrogen	0.5%
Water Soluble Nitrogen	2.5%
Available Phosphate (P ₂ O ₅)	3.0%
Soluble Potash (K ₂ O)	4.0%
Calcium (Ca)	9.0%
Magnesium, Water Soluble (Mg)	0.8%
Sulfur, combined as (S)	1.5%
Iron (Fe)	1.0%

Derived from: North Atlantic Kelp Meal, Humic Acid, Feather Meal, composted Poultry Manure, Rock Phosphate, Langbeinite, Ferrous Sulfate, Vitamin C, B₁, and E, Glycine, and Myo-Inositol. Chlorine less than 1%.

Contents

SPORTS TURF dryROOTS formula has a low salt content, so it is non-burning on plantings, turf and landscapes. It is screened for consistency, and is free of unwanted pathogens.

Notice

Buyer assumes all responsibility for safety and use not in accordance with directions. Read entire label carefully.

Caution

KEEP OUT OF REACH OF CHILDREN.

Applications

Field preparation/pre-game application
5 lbs./1,000 sq. ft. Apply one to three days before play. Water in if practical.

Field restoration/post-game application
10 lbs./1,000 sq. ft. Apply soon after the period of play, usually after a weekend. Water in if practical.

Maintenance

In off-play period during the grass growing season, apply SPORTS TURF dryROOTS every thirty days at the rate of 10 lbs./1,000 sq. ft. Not necessary to water in.

Growing In from Seed

Work 10 lbs./1,000 sq. ft. into soil as part of preparation, before seeding.

Installing Sod

Apply 10 lbs./1,000 sq. ft. before and after laying sod.

Spreader settings

Settings are approximate for 5,000 sq. ft. coverage, at the rate of 10 lbs./1,000 sq. ft. You may need to adjust for proper coverage.

Cyclone	6.0
Lely	7.11
Lesco	J
Scott's RX7	N
Scott's RBA	O
Spyker	6.0
Vycon	28

Net 50 lbs.

ROOTS^{inc.} 3120 Weatherford Road • Independence MO 64055

FIELD PREPARATION/PRE-GAME APPLICATION

5 lbs. per 1,000 sq. ft. will prepare the sports turf for the stress of play, building up the root system and encouraging a strong leaf system without flush growth. Apply one to three days before play. Water in if practical.

FIELD RESTORATION /POST-GAME APPLICATION

10 lbs. per 1,000 sq. ft. will revive the sports turf with a special ROOTS[®] formula, providing a nutrient supplement that restores the turfgrass stressed by severe wear. Apply soon after the period of heavy play. Water in if practical.

Available in 50lb. bags at your ROOTS[®] distributor.

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Call 1 (800) 817-1889 use **Fast Fax #1140499** and/or Circle 114 on Inquiry Card

Laser Grading

Know what you're getting

by Grove Teates

We've become accustomed to hearing the term "laser grading" used in association with construction of various types of athletic fields. More and more frequently, laser-controlled equipment is being used to establish elevation and grade.

Proponents of the technology claim that lasers can accomplish these tasks with greater speed and efficiency than more traditional methods. If you're considering using laser grading on your field, make sure you're armed with the knowledge to make an informed decision.

What is laser grading?

Some still associate lasers with science fiction films and ray guns. But lasers have become important tools in today's world. Their medical and military applications are familiar to all of us.

In the turf industry, lasers are making headway as tools for athletic field construction. Laser grading uses a laser system to control various types of machinery: box blades, bulldozers, trenchers, and motorgraders. With the help of a 360-degree sensor, a laser can automatically control blades or cutting edges mounted to these machines to create a desired surface grade.



Courtesy: Level Best

Laser transmitters provide a 360-degree plane of laser light over an entire construction site. It acts as a beacon, and provides a continuous 360-degree reference to guide a laser-controlled machine.

Laser systems are available in level only, single, and dual grade configurations.

What should you look for?

Accuracy: Laser grading is generally more accurate than other methods. However, lasers do not necessarily guarantee accuracy.

You should specify the degree of accuracy you wish to attain with your project. Typically, a laser system can provide grading that's accurate to within 1/4 inch, and lasers can provide accuracy to within 1/8 inch.

Arm yourself with information before making your investment. Generally, inexpensive laser equipment will not provide the same accuracy that more expensive models will give you. Ask your contractor for details on the equipment that is to be used.

Laser operators also affect accuracy. Inexperienced or sloppy operators can impact the method's results. Your contractor's crew should always be qualified to operate the equipment necessary to do the job.

Equipment: Regardless of the type of grading system being used, the machinery must be well-maintained. Lasers only control the grading machines; they cannot provide the promised degree of accuracy if these machines are worn.



Courtesy: Level Best

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We specialize in the design, planning, planting, and renovation of natural turfgrass sports fields, tennis courts, horse tracks, theme and recreational parks, as well as commercial installations and golf courses.

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