



**We're putting a new spin  
on mowing**

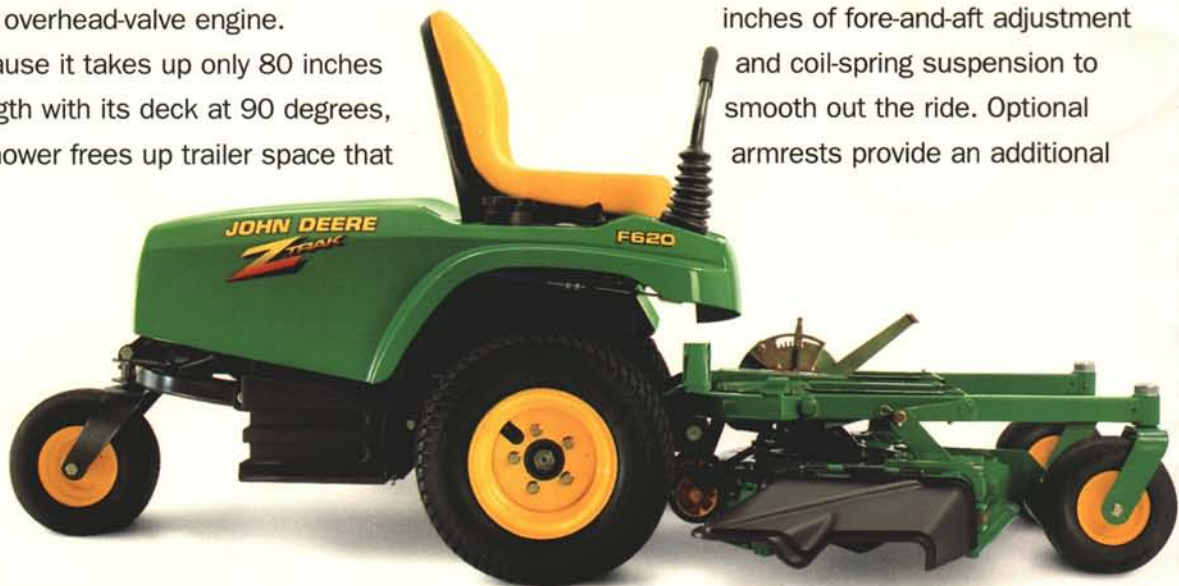
# Introducing the John Deere

It's the new crown jewel of the John Deere commercial mowing line. Designed to improve your productivity, reduce downtime and make maintenance easier, this zero-turn-radius mower is powered by a 20-hp overhead-valve engine.

Because it takes up only 80 inches of length with its deck at 90 degrees, this mower frees up trailer space that

many other machines gobble up. Space that can be used for additional equipment, like walk-behinds and handhelds.

The John Deere Z-machine is a 12-hour-day dream-come-true. The high-back seat has 5 inches of fore-and-aft adjustment and coil-spring suspension to smooth out the ride. Optional armrests provide an additional



# TRAK™

## Material collection system

Large 9-bushel-capacity system has 16-inch-diameter fan and 8-inch suction hose that handle even damp grass. Door latch operates from seat. To increase stability, the optional dual-rear-wheel kit is recommended.



## New 6

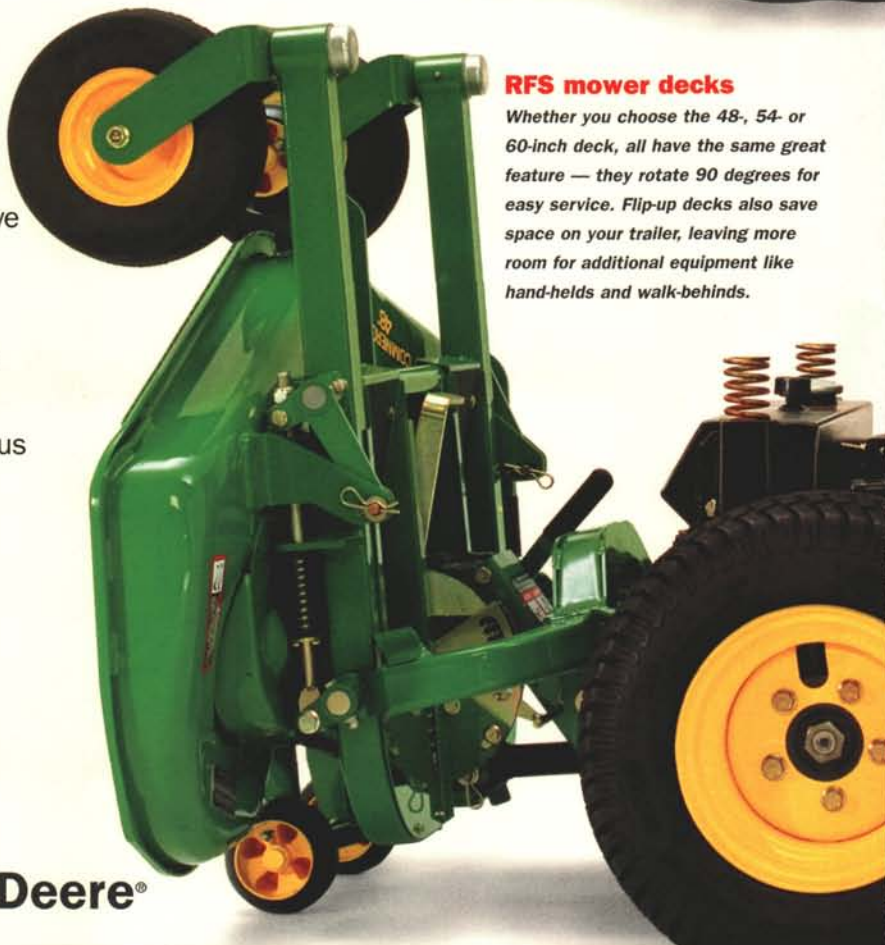
This optional...  
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measure of comfort. Twin hydrostatic control levers are ergonomically designed for rider comfort, and they feature a positive neutral lock for greater operator safety.

Read more about this amazing new machine on the following pages. Then see your dealer for a demonstration. For more information, call **1-800-537-8233**. Or visit us on-line at [www.deere.com](http://www.deere.com)

## RFS mower decks

Whether you choose the 48-, 54- or 60-inch deck, all have the same great feature — they rotate 90 degrees for easy service. Flip-up decks also save space on your trailer, leaving more room for additional equipment like hand-helds and walk-behinds.



**Nothing Runs Like a Deere®**

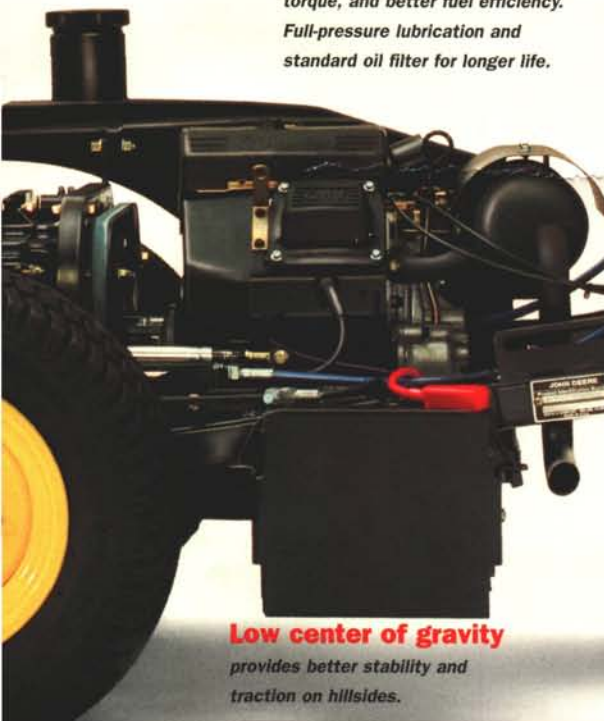
### 20-inch deck

Our optional Z-Trak deck is made of rugged 7-gauge one-piece steel. Other decks (14- and 18-inch) are built of one-piece steel. All have a 4-inch cutting height that can be adjusted with a pedal right from the seat.



### Engines

The F620 is powered by a 20-hp V-Twin air-cooled gas engine. Overhead-valve design provides more horsepower, torque, and better fuel efficiency. Full-pressure lubrication and standard oil filter for longer life.



### Low center of gravity

provides better stability and traction on hillsides.



### Easiest to service

The hood on our Z-Trak flips up for quick engine compartment access. Combine that with our 90-degree rotating decks and John Deere has the easiest-to-service Z-machine in the industry. Hoods and decks lock into position for safety while servicing.

### Wheel/tire options

The single rear-wheel configuration is standard on the Z-Trak. For greater stability with the material collection system, the optional dual-rear-wheel kit is recommended. Standard turf tires (shown) are well suited for most applications. Optional knobby tires improve traction in wet conditions.

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**TRAK**™

The image features the word "TRAK" in a bold, italicized, sans-serif font. The letters are filled with a gradient that transitions from yellow at the top to orange at the bottom. A thick black shadow is cast beneath the letters, giving them a three-dimensional appearance. The logo is positioned in the upper left quadrant of the page. A thin black horizontal line runs across the top of the page, passing behind the letters. A small "TM" trademark symbol is located at the top right of the word. The background is a plain, off-white color with some faint, light-colored smudges or stains.

## It's like adding 160 years of know-how to your business.

Every time you buy or lease a piece of John Deere equipment, you get the best of one of the oldest companies in America. The best equipment. The best financing. The best parts delivery. The best service after the sale.

### COMMERCIAL-USE FINANCING

The **John Deere Credit Installment Plan** offers: flexibility in down payment requirements, competitive low rates, up to 60 months to pay, and a variety of payment options. Including a skip-payment plan that helps you match payback schedules to your cash flow. The **John Deere Credit Lease Plan** offers another way to get new equipment on the job site, while providing a way to manage equipment rotation and replacement. The **John Deere Credit Revolving Plan Commercial-Use Account** is a quick and easy way to buy parts, service, and hand-held products.

### PARTS

John Deere is the **only** company that provides after-hours and weekend parts service and next-day delivery. We're ready to process your order 24 hours a day, 7 days a week. And, you get a 90-day warranty on all genuine John Deere parts. Many of our competitors offer nothing. We also have 13 parts warehouses throughout North America, with a storage area equal to 96 football fields. Now that's commitment.

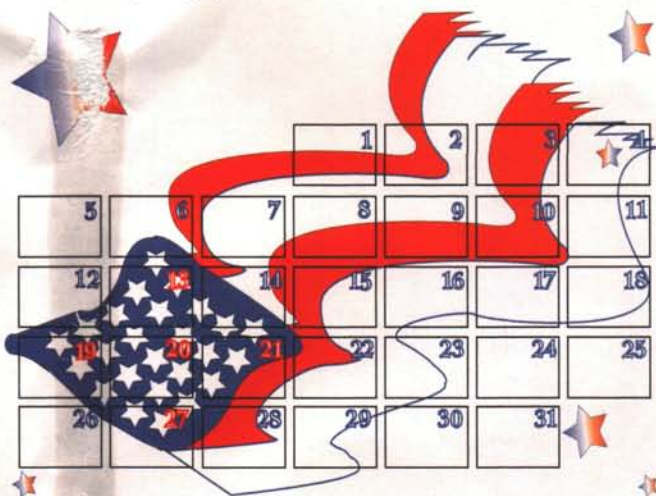
### SERVICE

The biggest advantage of all is your servicing John Deere dealer. With factory-trained technicians doing the maintenance and repair work, your dealer helps keep your down time to a minimum. And the work can be financed on **The John Deere Credit Revolving Plan Commercial-Use Account**. Unlike many of the competitors' dealers, ours provide warranty work for the entire machine, including the engine, transmission, battery, and even the tires, on most models. For qualifying larger customers, dealers can also provide parts on consignment at no additional cost. Take advantage of us today. It's the dollars-and-sense thing to do.



Nothing Runs Like A Deere.®





**September 14-18**

University of California-Riverside Extension's Turfgrass Management Intensive Institute, Riverside, CA. Contact Jan Crump: (909) 787-5804, ext. 1621.

**September 15**

Clemson University's Turfgrass Field Day, Clemson, SC, 9:00 am. Contact Landon Miller: (864) 656-4966, Bert McCarty: (864) 656-0120, or Ted Whitwell: (864) 656-4971.

**September 16-18**

National Lawn and Garden Trade Show, Philadelphia, PA. Contact Liza Wylie: (203) 847-9599.

**September 16-19**

Florida Turfgrass Association's (FTGA) 46th annual Conference and Show—Turf Web '98, Tampa Convention Center, Tampa, FL. Contact FTGA: (800) 882-6721, or (407) 856-5767.

**September 18-19**

Washington Landscape Trade Show & Field Day, King County Fair Grounds, Enumclaw, WA. Contact Washington Association of Landscape Professionals: (800) 833-2186.

**September 27-October 1**

Floyd Perry's Groundskeepers Management Academy, Salt Lake City, UT. (800) 227-9381.

**September 30**

Virginia Tech's Hampton Roads Agricultural Research and Extension Center's (HRAREC) 23rd annual Field Day, Virginia Beach, VA, 10:00 am-5:00 pm. Contact Dr. Bonnie Appleton, HRAREC: (757) 363-3906.

**November 10-13**  
New York State Turfgrass Association's (NYSTA) annual Turf and Grounds Exposition, OnCenter, Syracuse, NY. Contact NYSTA: (800) 873-8873, or (518) 783-1229.

**November 13-17**  
The ninth annual Green Industry Expo (GIE), Opryland Hotel and Convention Center, Nashville, TN. (800) 458-3466.

**November 13-20**  
Professional Grounds Management Society (PGMS) meeting, Opryland Hotel and Convention Center, Nashville, TN. Contact PGMS: (410) 584-9754.

**November 14-17**  
Associated Landscape Contractors of America's (ALCA) Landscape and

Grounds Maintenance Conference, Opryland Hotel and Convention Center, Nashville, TN. Contact ALCA: (800) 395-2522.

**December 7-10**  
Ohio Turfgrass Conference & Show, Columbus Convention Center, Columbus, OH. (614) 760-5442.

**December 9-11**  
The Rocky Mountain Regional Turfgrass Association's (RMRTA) 45th annual Conference and Trade Show, Currihan Hall, Denver, CO. Contact Anita Hutner: (303) 770-2220.



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# Reducing Field Compaction

by Dr. Coleman Y. Ward

**C**ompaction on athletic fields can be attributed to the traffic of heavy use. It compresses soil particles and reduces aeration porosity, water infiltration, and water movement through the soil.

Compaction hardens a field by increasing its bulk density, which measures the weight of the soil per cubic centimeter. This increases impact rebound for athletes—that jarring effect players experience when their bodies contact another surface. As the field's bulk density increases relative to the density of the human body, the impact rebound increases proportionately.

Artificial turf provides a good example of this principle. These surfaces have a bulk density 2-1/2 times greater than the density of the human body. This accounts for the greater degree of internal injury in field-contact injury situations.

## Problem areas

Athletic field compaction generally occurs in the top one to two inches of the

soil profile. The greatest damage occurs where traffic is heavy and repetitive.

On baseball fields, compaction is greatest in and around home plate, along

Compaction develops on football fields in areas where players practice punting and field-goal kicking, at the center of the field between the two 30-yard lines, and from the 10-yard lines to the goal lines. Soccer field compaction is greatest at the goal mouth and in the free-kick zones.

On-field practices and performances by the band, cheerleader routines, and movement of players and coaches along the sidelines also contribute to compaction problems. These factors can be more damaging than actual games or practices.

Layering can also lead to compaction. Layers of differently textured materials within the soil profile disrupt the downward movement of air and water. The only way to rectify a layering situation without major field renovation is to aerify deeply enough to rupture those layers.

## Avoid field compaction

The best way to avoid field compaction is to establish and maintain a good,



**Aerification creates a softer soil by reducing the bulk density, and it improves gas and water exchange in the soil.** Courtesy: Trusty & Assoc.

the first-base line, in the coaches' boxes, along the third-base grass line, in areas where players spill out of the dugout, and in the path between the mound and home plate.

healthy turf. A thick turf canopy becomes its own cushion against traffic pressure.

Wet soils are more easily compressed than dry soils, so avoid field use when soil conditions are too wet; if possible, restrict or cancel practice or play. Work with coaches to move practice sites during individual sessions and from session to session to avoid concentrating traffic in the same spots. Urge them to make use of the sidelines, end zones, and other turf outside the playing surface.

If space and budgeted funds permit, develop several fields to spread out practices. If multiple fields aren't an option, develop alternate field layouts on the existing field.

On football or soccer practice fields, shift the playing area by painting field dimensions parallel to the existing field, but moved 10 to 20 feet from the existing field borders. You can also line two shorter practice

fields over the top of the existing field, but perpendicular to it. Use portable



**Material removed during core aeration can be dragged back into the turf to control thatch.** *Courtesy: Trusty & Assoc.*

soccer nets and football goal posts to set up alternative kicking practices.

### Identify the problem

Sports turf managers can avoid and reduce compaction problems by paying attention to signals from the turf. Lack of vigor, change of color, thinning, reduced response to irrigation or fertilization, and weed invasion all indicate that turf is under stress. Compaction is a likely cause.

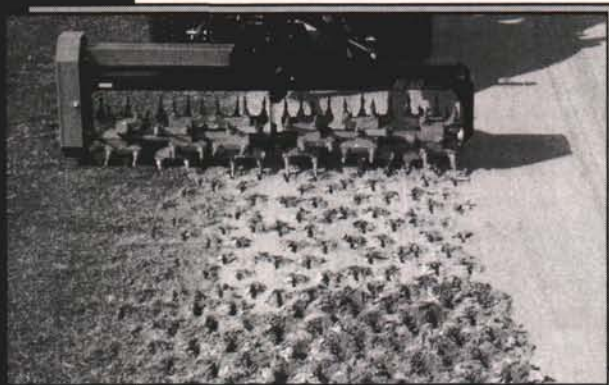
When compaction occurs, examine the field to determine the location, nature, and extent of the problem. Use a penetrometer or metal rod to probe the field, locate compacted areas, and gauge field hardness.

Use a soil-sampling probe or a length of hollow pipe to extract soil samples for examination. If soil is compacted, it usually breaks off of these samples at a straight line. It will come off in little sheets instead of crumbling across at an angle.

Once you see the type of materials being compacted and the depths at which problems are occurring, try to

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*Ross Andrews  
Superintendent, Cordillera Mountain Club  
Vail Valley, Colorado*



"This is the only multi-faceted aerator on the market today for sports fields. It can fracture the hardest clay and the most compacted turf with ease and leave the surface in near game-ready condition. It's a winner for the progressive groundskeeper."

*Floyd Perry  
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determine the cause. If you can get to the root of the problem, you'll be better equipped to develop an effective solution.

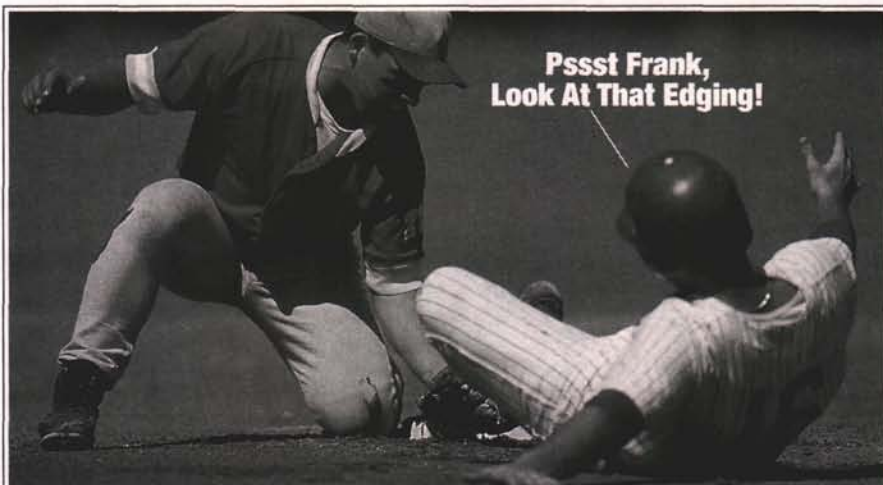
### Combat existing compaction

Compaction reduces root growth. Shorter, stunted roots have less ability to take up the water and nutrients necessary to support plant develop-

ment, so reduced root growth equals reduced shoot growth. Turf becomes less tolerant to heat and drought, and more susceptible to weed invasion.

Start your program of compaction repair by attacking this problem directly. Give turf short-term assistance by adopting maintenance practices geared to the shorter root system.

Provide more frequent irrigation.



### Great Fields Get Noticed.

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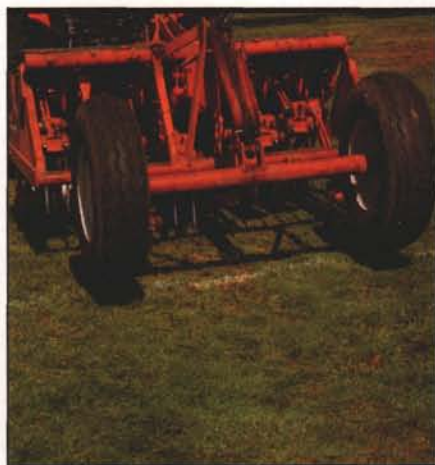


For details and the name of your local dealer, call

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**Solid-tine aeration is less disruptive than core aeration. The technique punches holes in turf without removing any material.**

*Courtesy: Trusty & Assoc.*

One strategy to avoid compaction is to let the soil surface dry out as much as possible without adding stress to the turf. However, once compaction develops, the turf's water needs intensify.

Irrigate the field deeply immediately after a game, especially if there are several days between the game and the next intensive field use. This allows time for excess water to drain away. Adjust the timing of pre-game irrigation so the soil will be moist, but not saturated—irrigate thoroughly late Wednesday or early Thursday for a Friday night game.

Shorten intervals between fertilizations to insure that adequate nutrient resources are within reach of the shorter plant roots. Compacted areas may require double, or even triple the amount of irrigation and fertilization given to the remainder of the field.

If necessary, install additional drainage to alleviate overly wet conditions. Topdress with a light layer of calcined clay or another absorbent material to reduce surface water problems.

Thin, weak turf is susceptible to weed invasion. Follow standard IPM practices to reduce weed competition, and include judicious use of pesticides.

#### Aerification as a solution

The main method of compaction reduction is aerification. This longer-term solution creates a softer soil by reducing its bulk density. The technique puts holes in the turf and

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