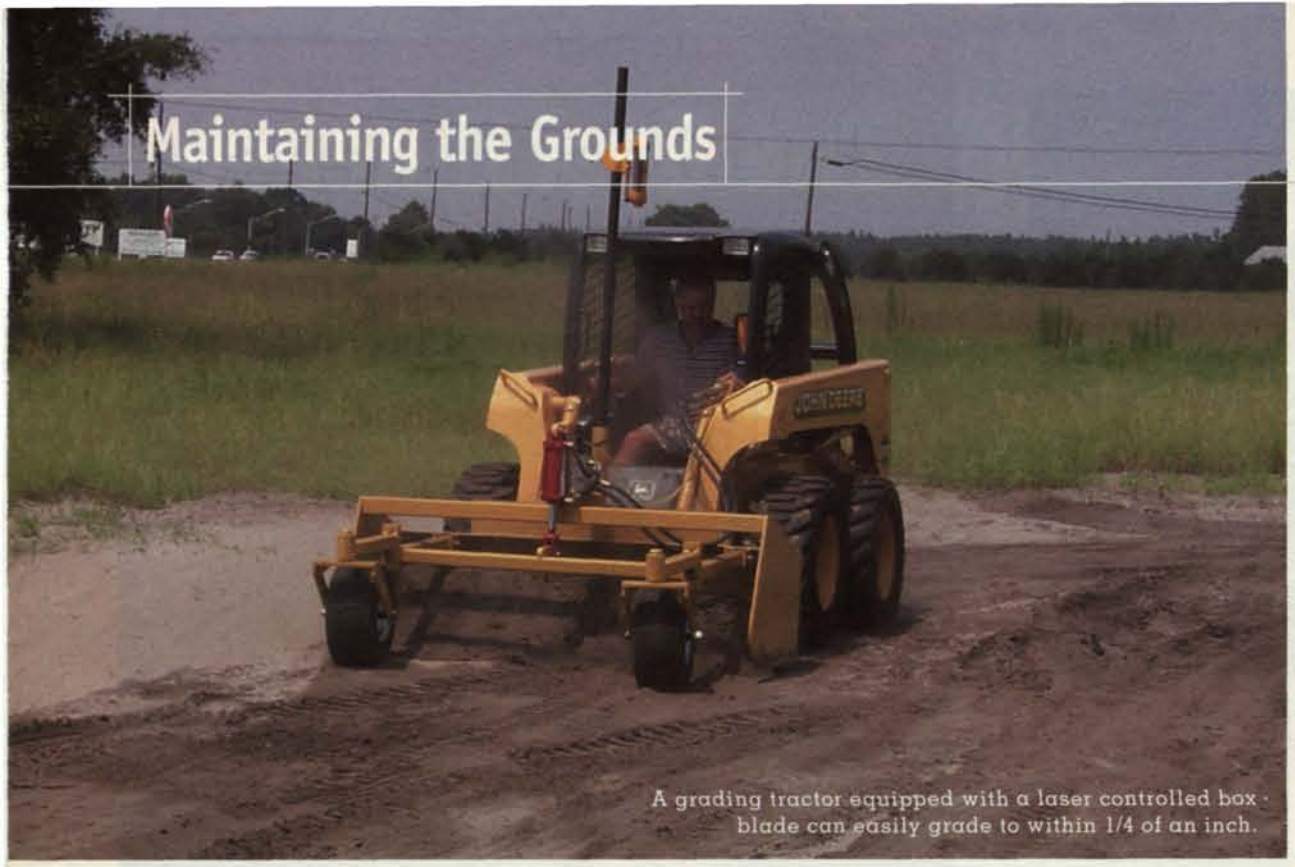

A grading tractor equipped with a laser controlled box blade can easily grade to within 1/4 of an inch.

How Grading by laser works

Using an automatic laser controlled box blade and a tractor, you can accurately grade sports fields

Laser leveling is not just a term, it's a process that sports turf contractors and managers are learning can improve productivity and accuracy when grading sports fields and golf tee boxes.

"Laser leveling" or "laser grading" is used to refer to the grading process, which combines the use of a laser system and a grading tractor, bulldozer, or skid steer loader to control finish or sub grade elevation.

The laser system consists of a laser transmitter, which provides a 360-degree reference plane of laser light similar to an airport beacon, a 360-degree sensor mounted on a box blade or bulldozer blade to receiver the laser light, and a control panel located on the tractor or in the cab of a bulldozer.

An operator can grade with a box blade or a bulldozer using the laser system as an "Indicate Only" manual reference, or the system can be installed to automatically control the cutting edge of the machine. When the operator uses the system in the manual mode, changes in elevation are displayed on the control panel as "High, Low, or On Grade", which allows the operator to make corrections.

Autopilot

However, many operators prefer to have the laser system automatically control the cutting edge of the box blade or the machine. The laser system sends a signal to the hydraulic system to automatically correct elevation of the blade, which follows the laser light set at a predetermined grade. Automatic machine control allows the operator to concentrate on operating the machine, while the laser system makes corrections automatically. This results in more efficient, and accurate fine grading.

A laser controlled box blade is commonly used with grading tractors for finish grading. A hydraulic valve mounted on the tractor plugs directly into the remote hydraulics of the tractor. A 3-point hitch allows workers to install the box blade on a Class I or II tractor in just a few minutes. The trailing wheels of the box blade are controlled by the hydraulic valve and raise or lower the blade on the 3-point hitch to maintain grade.

Benefits

Improved accuracy. In general, laser leveling is more accurate than any other grade control method commonly used in the turf industry. A grading tractor and a box blade can precisely grade to a predetermined elevation, which is preset in the laser system. Accuracy to within 1/4 of an inch is possible using automatic laser control.

Improved playing field. Athletes enjoy a smooth, accurate field; dips and valleys in the playing surface are eliminated and drainage is enhanced.

Increased productivity. Using a laser controlled box blade and grading tractor, you might finish grading an infield in 40% less time, according to one manufacturer.

Versatility. Level only, single, dual, or a cone grade can be achieved utilizing a laser controlled box blade grading system, and bulldozer or skid steer machine. Mounted on a bulldozer blade, sub grade can be controlled to a specified elevation. Select material can be added to the field in specified lifts and laser leveled between lifts to required specifications.

Cost control. Laser leveling helps control the cost of material and provides better control of select material. An initial grade check with a laser system allows you to calculate existing grades and establish the best profile for an existing field.

What to look for

It is important to focus on what you want to accomplish on your project.

- Do you grading jobs require level only, single, dual, or a cone grade?
- Will the laser system serve you well in future projects?
- How easy is the system to set up and use?
- Is your dealer knowledgeable enough to help you with set-up and grade questions.
- Inquire about warranty and service support.
- See if there's an advantage to leasing. ST

This article was provided by Laser Leveling, Tampa, FL, 800-622-5777.