

# Machine Control and Guidance **SOLUTIONS GUIDE**



**Thompson** 

# AccuGrade® Laser for Track-Type Tractors and Motor Graders

A laser transmitter creates a grade elevation reference plane over the work area to maintain precise grade control.



**Operation.** AccuGrade Laser is designed for precise grade control using a laser transmitter and receiver.

A laser transmitter is set up on the work site and creates a constant grade reference over the work area. A digital laser receiver is mounted on the machine and captures the laser signal as the machine moves across the work site.

The system captures information and calculates the blade adjustments necessary to achieve grade. The system makes automatic elevation adjustments typically performed by the operator and provides automatic blade control. The operator simply steers the machine. The system also calculates cut/fill requirements for manual blade control.

**Single Laser System.** The single laser system provides automated blade adjustments to the center of the blade for automatic elevation control.

**Dual Laser System.** When two laser receivers are used, the system provides automatic elevation and slope control to both sides of the blade.

**Laser Transmitter.** A laser transmitter is mounted on a tripod so the laser beam can rotate unobstructed above the machine. The laser transmits a plane of light above the work area, which allows several machines to work effectively in any direction using one laser transmitter.



**Laser Receiver.** An all-new digital laser receiver is mounted on an electric mast above the cutting edge and is used to detect the laser beam. The receiver picks up the position relative to finish grade and measures height deviation from the on-grade location to the laser beam strike. The receiver sends blade position information back to the system to calculate necessary adjustments.

A full 360 degrees of laser detection range allows the receiver to pick up the laser signal from any direction on the work site while the machine is working.

**Electric Mast.** An electronically adjustable, telescopic mast is used for mounting the laser receiver above the blade's cutting edge. The mast is powered by an electric motor, which allows the operator to raise and lower the mast from inside the cab to precisely position the receiver above the cab for unobstructed laser reception.



**In-Cab 2D Display.** The CB420 or all-new CD610 in-cab displays with easy-to-read grade indicators and elevation display delivers all system information to the cab for easy viewing by the operator. Simple controls offer easy setup, operation and access to system menus, allowing the operator to focus on productivity. Grade indicators provide vertical guidance to the operator and indicate which direction to move the blade to achieve grade. The monitor numerically displays cut/fill requirements for manual control. Refer to technical specification pages for compatibility chart.



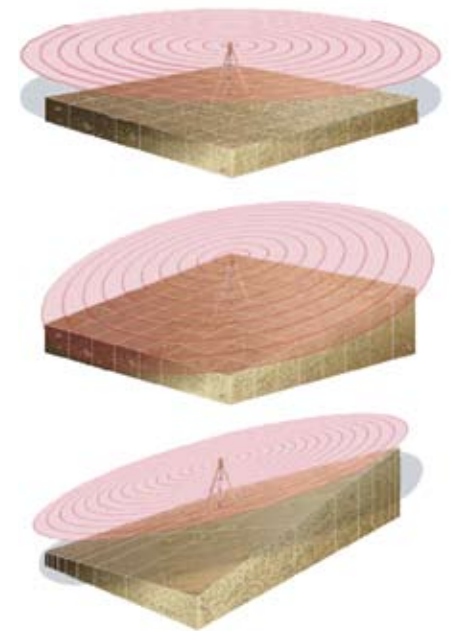
**Controls.** System controls are integrated into the machine controls and levers for easy access and control. Push button operation allows the operator to easily switch from manual mode to automatic mode.



**Automatic/Manual Mode Button.** Allows the operator to toggle between automatic and manual mode.

- In automatic mode, the system automatically controls blade elevation adjustments.
- In manual mode, the operator manually controls the blade while using cut/fill information on the in-cab display and grade indicators to guide blade movements.

**Remote Offset Switch.** Allows the operator to set elevation offsets at a preset distance from the design plan to optimize cutting depth in various soil conditions or accommodate sub base fill requirements.



**Applications.**

- Flat Planes
- Single Slopes
- Dual Slopes
- Building Pads
- Parking Lots
- Sports Fields
- Indoor Applications

## AccuGrade® GPS for Track-Type Tractors and Motor Graders

Global Positioning System satellites provide precise location information for elevation control with centimeter-level accuracy.



**Operation.** AccuGrade GPS uses advanced Global Positioning System (GPS) technology to deliver precise blade positioning information to the cab. Using machine-mounted components, an off-board GPS base station and Real-Time Kinematic (RTK) positioning, GPS provides the information necessary for the system to accurately determine blade positioning with centimeter-level accuracy.

AccuGrade GPS computes the positioning information on the machine, compares the position of the blade relative to the design plan and delivers that information to the operator via an in-cab display. Information, such as blade elevation, necessary cut/fill to achieve grade, visual indication of the blade's position on the design surface and a graphical view of the design plan with machine location.

AccuGrade GPS puts all the information the operator needs to complete the job in the cab, resulting in a greater level of control. Vertical and horizontal guidance tools visually guide the operator to the desired grade.

Automated features allow the hydraulic system to automatically control blade adjustments to move the blade to grade. The operator simply uses the light bars to guide the machine for consistent, accurate grades and slopes, resulting in higher productivity with less fatigue.

### Single GPS System with Blade Slope.

The single GPS system with blade slope provides 3D grade control across the full width of the blade. The system uses a 3D position from the GPS receiver in combination with information from the blade angle sensor to automatically control blade elevation and blade slope.

**Dual GPS System.** The dual GPS system provides 3D grade control across the full width of the blade. Dual GPS receivers allow the system to automatically control blade elevation.



**GPS Receivers – MS980C.** The receivers are mounted on masts above the cutting edge. GPS satellite signals are received by the GPS receivers to generate a 3D position. This information, in conjunction with machine dimension information, is used to determine the precise horizontal and vertical position of the blade in real-time.

**GPS Receivers – MS990C.** The all-new MS990C is the next generation GPS receiver designed as a modular component in the AccuGrade grade control system. Its rugged design includes features to maximize the new modernized GPS signal structure including L2C and L5 tracking capabilities. The MS990C is also able to use satellites in the GLONASS satellite constellation to augment the GPS solution and provide increased availability and up time to the operator. The MS990C includes improved technology that provides faster RTK initialization times, better tracking and accuracy characteristics over a broader range of operating environments.

**Mast.** A rugged steel mast is used for mounting the GPS receiver above the blade's cutting edge for optimum GPS satellite reception.

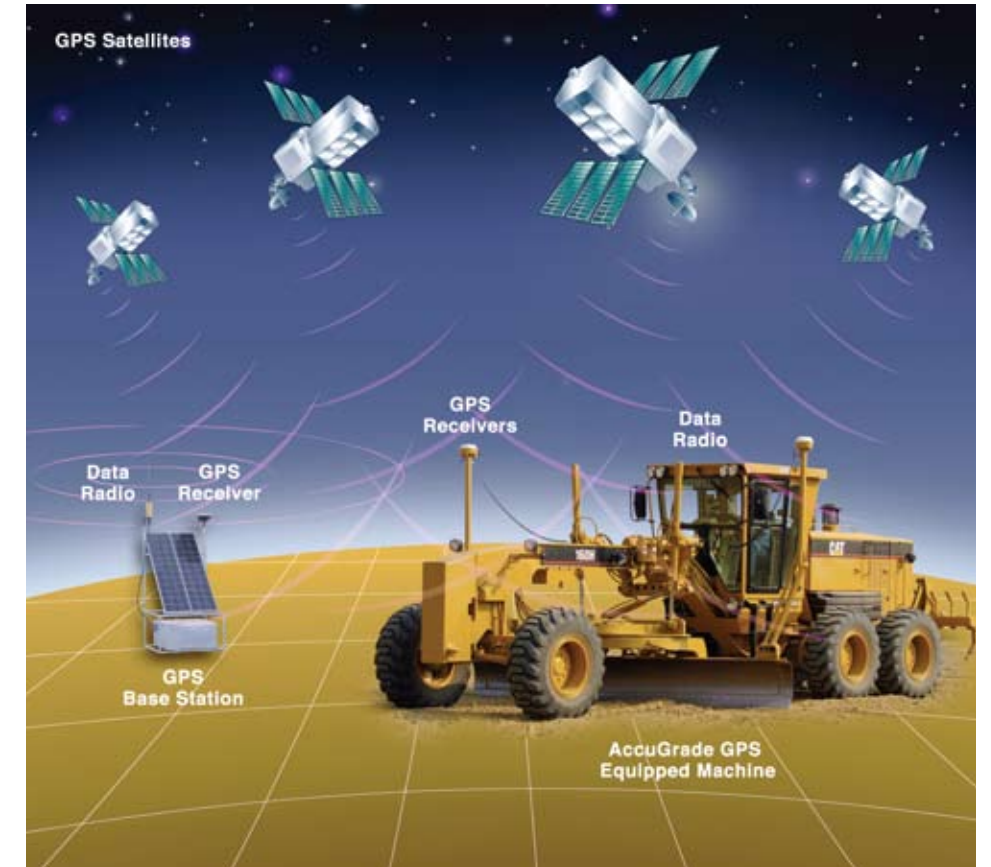
**Radio.** The communications radio is mounted on the cab of the machine to ensure maximum signal reception. The radio receives real-time Compact Measurement Record (CMR) data from the GPS base station radio for calculating high accuracy GPS positions. Radio broadcast frequencies work in all weather conditions and can penetrate clouds, rain and snow. This allows AccuGrade GPS to accurately control blade operation in fog, in dust and at night.



**In-Cab 3D Display.** An all-new display has a 27 percent larger screen, with a processor that is five times faster and improved display buttons. The display with keypad allows the operator to interface with the system using push buttons and a color monitor. As the machine operates the operator can view real-time information, such as machine location, blade position and elevation relative to the design plan. The system uses 3D design files that are stored on a compact flash data card and inserted into a slot next to the keypad. The new display provides improved access to the data card, with a quick-release door and environmentally sealed card slot.

**Light Bars.** Three light bars are mounted in the machine cab and provide vertical and horizontal guidance to the operator.

- Two vertical guidance light bars visually indicate where the blade tips are relative to grade.
- The horizontal guidance light bar indicates blade location relative to the selected horizontal alignment.



**Controls.** System controls are integrated into the machine controls and levers for easy access and control. Push button operation allows the operator to easily switch from manual mode to automatic mode.

**GPS Satellites.** Positioning information from GPS satellites is received by the GPS base station and the machine-mounted GPS receivers. The satellites constantly transmit their positions, identities and times of signal broadcasts.

**GPS Base Station.** The GPS base station is located within radio range of the work site. It consists of a GPS receiver, GPS antenna and radio. The horizontal position (latitude and longitude) and the vertical position (height) of the base station are fixed to known reference points. The base station receives information from the GPS satellites. This information, along with the

base station's known position, is sent to the machine via the communications radio and is used by the machine's GPS receivers to calculate centimeter-level accuracy positioning.

**3D Design Software.** Flat and sloping planar surface design files can be created on-board the machine. More complex designs require 3D design software.

**Office Software.** The office software manages and converts engineering survey data for use in machine format. It is the interface between the machine system, site managers and design engineers. Design data is exported from the office software onto a data card for use by the AccuGrade system. AccuGrade Office software is the recommended software for managing and converting design files.

## AccuGrade® Universal Total Station (UTS)

Active target technology allows the system to reliably lock onto and track the intended target.

AccuGrade UTS is a high accuracy dynamic tracking system that uses a Universal Total Station (UTS) to track a machine and monitor blade positioning. An UTS instrument on the work site is used to track a target, which is mounted on the blade of the machine, to determine precise 3D positioning.

Active target technology allows the system to reliably lock onto and track the intended target. This ensures the correct machine is being tracked and eliminates false lock-ons to other active machine targets, survey crews, or reflective surfaces. Built-in search intelligence allows the system to quickly search for and find the target when the lock is lost due to a passing vehicle or other interruption.

The UTS instrument continuously measures the target's position and transmits real-time positioning data to the operator via the in-cab display, which shows the exact position of the blade in relation to the design. The system combines the position of the target with the known position of the instrument, machine measurements and sensor outputs to calculate precise positioning of the blade tips. The system uses the positioning data to calculate desired elevation and cross slope. Cut and fill values are computed by comparing the position of the blade with the design file. The system makes automatic blade adjustments typically performed by the operator and provides automatic blade control to one or both cutting edge tips.

AccuGrade UTS puts the information the operator needs to complete the job in the cab. The operator simply steers the machine to achieve fine grade surfaces with high-precision accuracy.



## AccuGrade® Cross Slope for Motor Graders

Combines automated controls with manual adjustments to achieve desired cross slope.



**Operation.** AccuGrade Cross Slope is a grade control system designed to control surface cross slope. Machine-mounted sensors are used to calculate necessary blade slope positioning to achieve desired cross slope of the surface. The system makes automatic adjustments to the left or right lift cylinder, typically performed by the operator. The in-cab display delivers all of the AccuGrade Cross Slope information the operator needs to quickly and easily spread or cut material at the correct cross slope. The operator can select which side of the blade to control automatically and swap direction on the return pass without readjusting the settings. Elevation is controlled manually by matching grade, or automatically by adding an elevation control device.



**Cross Slope System.** The basic cross slope system automatically controls the slope of the blade to maintain desired surface cross slope.

### Cross Slope with Elevation Control.

AccuGrade Cross Slope can be combined with one or more of the AccuGrade elevation control technologies, such as AccuGrade Sonic, AccuGrade Laser, AccuGrade GPS, or AccuGrade ATS for automatic control of elevation and cross slope.

**Machine-Mounted Sensors.** AccuGrade Cross Slope uses three machine-mounted sensors – a blade slope sensor, mainfall sensor, and rotation sensor – to calculate necessary blade adjustments to achieve desired cross slope of the surface perpendicular to the direction of travel.



• **Blade Slope Angle Sensor.** The blade slope angle sensor is mounted at the back of the circle. It is used to measure the slope of the blade.

• **Mainfall Sensor.** The mainfall sensor is mounted to the machine frame or chassis. It measures pitch of the machine, which is used to calculate the cross slope. This is the same type of sensor used to measure blade slope angle.



• **Blade Rotation Sensor.** The rotation sensor is mounted on the hydraulic hydra-valve swivel and measures circle rotation or blade rotation to calculate cross slope.

**System Accuracy.** The cross slope system offers selectable accuracies for matching tolerances to specific grade and application requirements.

### Applications.

- New road construction
- Road maintenance
- Road ditches
- Embankments
- Sports fields

## AccuGrade® GPS for Hydraulic Excavators

Global Positioning System satellites provide precise location information for accurate digging control.



**Operation.** AccuGrade GPS computes the positioning information on the machine, compares the position of the bucket relative to the design plan and delivers that information to the operator via an in-cab display. Information such as: bucket elevation, how much bucket tip is necessary to achieve the appropriate depths, visual indication of the bucket's position on the design surface and a graphical view of the design plan with machine location.

AccuGrade GPS puts the information the operator needs to complete the job in the cab, resulting in a greater level of control. Light bars visually guide the operator to desired depth.

The operator simply uses the light bars to see where to position the bucket for consistent, accurate depths resulting in higher productivity with less fatigue.



**Dual GPS System.** The dual GPS system provides precise elevation reference and position of the bucket tip.



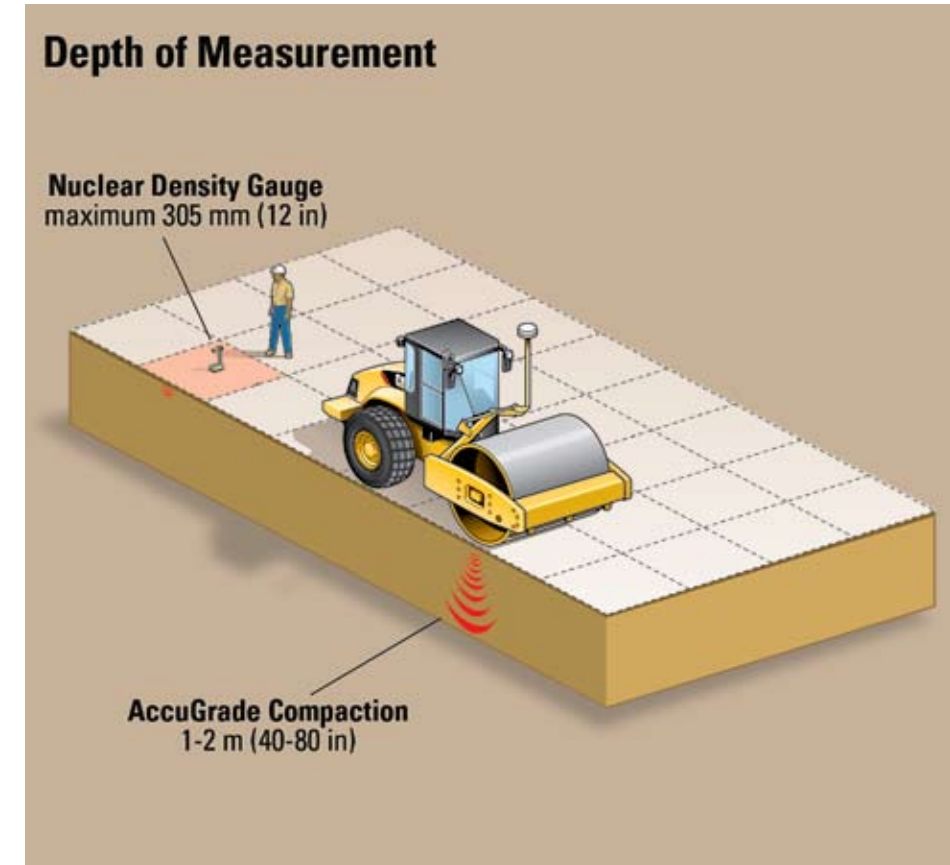
**In-Cab 3D Display.** The display with keypad allows the operator to interface with the system using push buttons and a color monitor. As the machine operates the operator can view real-time information, such as machine location, bucket position and elevation relative to the design plan. The system uses 3D design files that are stored on a compact flash data card and inserted into a slot next to the keypad. The new display provides improved access to the data card, with a quick-release door and environmentally sealed card slot.

**Light Bars.** Three light bars are mounted in the machine cab and provide vertical and horizontal guidance to the operator.

- The top vertical light bar provides cut/fill guidance based on elevation of the bucket tip.
- The horizontal light bar indicates the left or right alignment of the bucket tip relative to the design plan.
- The bottom vertical light bar shows the operator what forward/backward bucket movement is necessary to achieve grade.

## Compaction Measurement System

The Compaction Measurement system measures compaction to optimize machine productivity and improve job quality.



**Depth Measurement.** The Compaction Measurement system measures deep into the soil – typically 1 to 2 m (40 to 80 in) down, depending on soil characteristics and machine operation. This provides a better overall picture of soil stiffness than other compaction measurement devices, such as a nuclear density gauge or lightweight deflectometer, which measure to a depth of typically about 305 mm (12 in). Depth of measurement validates your compaction work and ensures that the entire lift meets stiffness requirements.

**Compaction Measurement System.** The Compaction Measurement system measures stiffness, or the ability of a material to resist deformation under a load, rather than density, or the weight of a material per volume. A controller package collects data from an accelerometer, which measures drum movement. The controller package converts the measurements into stiffness values, called Cat® Compaction Values, or CCVs.

The Compaction Measurement system helps the operator determine when the proper level of compaction has been achieved, but it can provide other benefits as well. The Compaction Measurement system can help the operator identify potential problems in the construction materials, such as hard spots, soft spots or moisture-related problems beneath the surface.

By alerting the operator to the presence of these anomalies, the contractor has the opportunity to investigate and, if necessary, fix the questionable areas, increasing the uniformity of the compacted materials. This results in overall job site savings in time and cost, eliminating potential rework. It also improves the quality of the work, as well as the life cycle of the subgrade, base and sub-base that support the paved surface.

AccuGrade Compaction, with its GPS mapping and measurement system can provide Quality Control/Quality Assurance documentation on a one-to-one basis, which can eliminate the need for test rollers and decrease the number of manual tests.



The Compaction Measurement system includes an accelerometer and a controller package.

- **Accelerometer** – The accelerometer measures drum movement. The data collected is sent to the controllers, where it will be converted to stiffness values.
- **Controller Package** – The Compaction Measurement system uses a controller package to convert data collected from the accelerometer to stiffness values, which are then sent to the graphic display unit.

## AccuGrade® Site Reference System for Backhoe Loaders

Advanced technology simplifies excavation, improves accuracy, increases efficiency and lowers production costs.



**AccuGrade Site Reference Operation.** The AccuGrade Site Reference System enables the operator to excavate to predetermined coordinates. The intuitive layout and controls allow the operator to set target grades relative to points on the work-site. The in-cab display provides bucket position and grade settings to ensure the operator excavates to those parameters. Additional feedback is provided through LED lights and sound. The basic system consists of five components:

- Inclinometer (pitch and roll sensor)
- Cylinder position sensors (boom, bucket, stick/e-stick)
- In-cab display
- Swing sensor
- Wiring harnesses

The AccuGrade Site Reference System is fully functional from the factory and is easily upgraded to the optional AccuGrade Laser Reference System.

**In-Cab Display.** The AccuGrade monitor allows the operator to enter slope and dig depth parameters while providing realtime, continuous feedback.

The in-cab display with easy to read grade indicator and elevation display delivers all system information to the cab for easy viewing by the operator. The display shows all ECM diagnostic data for the machine. Within the AccuGrade system there are three different modes of operation: grade mode, layer mode and measure points.

The following measures are displayed throughout the system:

### Main Digging Screen

- Cut
- Slope
- Pitch
- Roll
- Distance to Target Grade
- Bucket Position (relative to grade line)
- Laser Mast Height

### Measure Points Screen

- Reach
- Offset
- Elevation
- Rise
- Run
- Distance from Set Point
- Swing

### Weatherproof Design

All components are ruggedly designed for dependable performance in harsh environments.

### Applications

- Foundations
- Footings
- Curb cuts
- Water and sewer lines
- Slopes
- Pads
- Basements
- Vaults

## AccuGrade® Systems for Backhoe Loaders

### Machine



Equipped with the AccuGrade Site Reference System



In-Cab Display



Swing Sensor



Position Sensing Cylinders



Inclinometer

### Laser System



Laser Receiver



Electric Mast



Power Module

# AccuGrade® Systems for Track-Type Tractors

## ARO Machine



AccuGrade Attachment Ready Option (ARO) Machine

### Single Laser System



### Dual Laser System



### Single GPS System with Blade Slope



### Dual GPS System



# AccuGrade® Systems for Motor Graders

\*Requires Cross Slope System

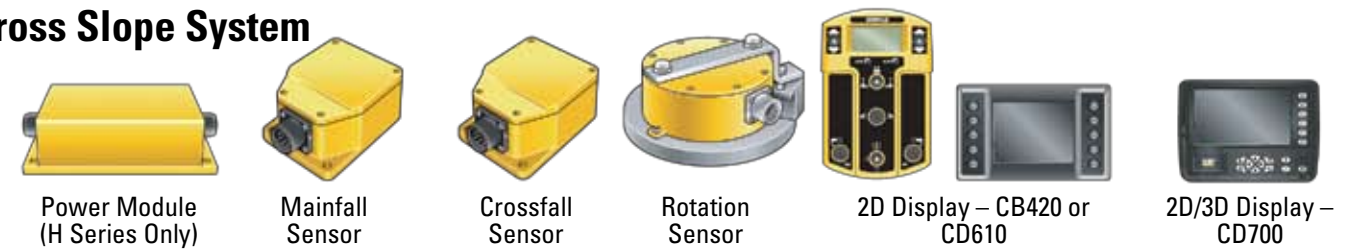
Note: Displays and communications radios must be ordered separately from system kits.

## ARO Machine



AccuGrade Attachment Ready Option (ARO) Machine

### Cross Slope System



### Single Sonic System\*



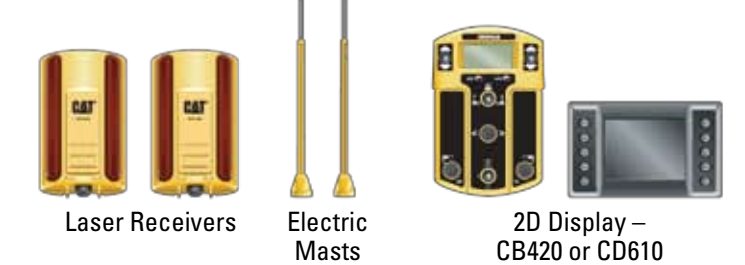
### Dual Sonic System\*



### Single Laser System\*



### Dual Laser System\*



### ATS System\*



### Single GPS System\*



### Dual GPS System\*



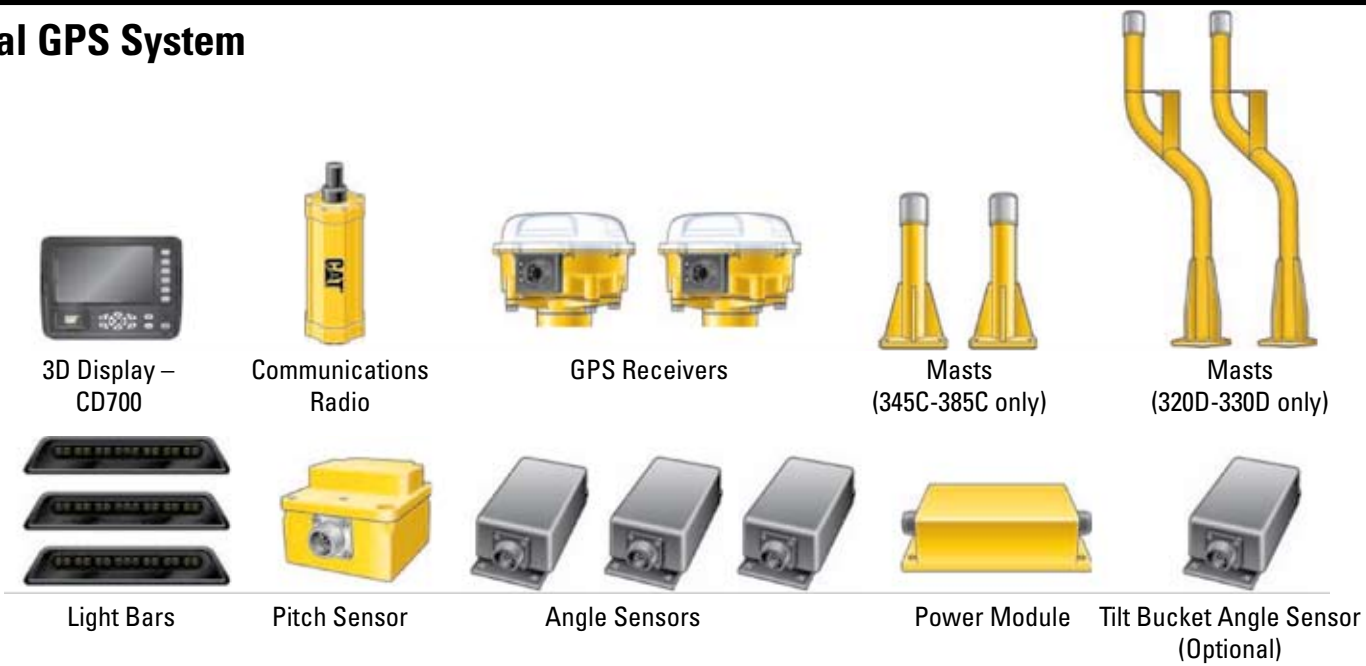
## AccuGrade® Systems for Hydraulic Excavators

### ARO Machine



AccuGrade Attachment Ready Option (ARO) Machine

### Dual GPS System



## AccuGrade® Compaction

### Compaction Measurement System and AccuGrade Attachment Ready Option (ARO) Machine



### Single GPS System



## Trimble Infrastructure

### Laser Transmitter and Tripod

To use and calibrate the AccuGrade laser grade control systems, an off-board laser transmitter and tripod are required. The tripod should be adjustable and capable of elevating the laser transmitter above the cab(s) of the AccuGrade equipped machines. The laser transmitter that must operate at a minimum of 600 RPM, is capable of working with multiple AccuGrade equipped machines at the same site. Caterpillar recommends using one each of the following items that are available through your local Trimble dealer.

- GL722 Transmitter, case, and accessories
- Tripod Leg Set
- Elevating Base
- Base Adapter



### GPS Base Station and Off-Board Radio

A Caterpillar AccuGrade GPS system requires and is designed to work specifically with a Trimble “off-board” radio network and base station matching the frequency of the Caterpillar on-board radio(s). Use of the Trimble SPS850/851 Extreme GPS Base Station is recommended.

### Trimble Total Station

Trimble Universal Total Stations can be used with an on-machine target for even greater accuracy when performing fine or finished grading, with blade guidance to 2-5 millimeters (0.007 to 0.016 ft.).

- GCS9000: For applications requiring extreme accuracy, or for jobs where GPS is not the ideal solution because of overhead obstructions. For use on dozers and graders. The positioning components include a single on-machine active target control box, rugged on-machine radio, and Universal Total Station.



## AccuGrade® Office Software

Import data, create designs, and document productivity with AccuGrade Office software



**AccuGrade® Office Software.** The system joins previously released Caterpillar on-board machine solutions to make a total solutions package for end users. Caterpillar on-board machine solutions include 3D technologies, such as AccuGrade GPS and AccuGrade ATS, as well as the 2D technologies, such as AccuGrade Laser, AccuGrade Cross Slope and AccuGrade Sonic.

**Data Import.** Importing data into AccuGrade Office software is the first step in preparing data for use with the on-board machine control and guidance systems. Imported files provide data for the designs, site maps, avoidance zones, display configurations, background data and coordinate systems exported to a grade control system.

A number of surface, road, linework and field data/file formats can be imported into AccuGrade Office software.

To ensure the integrity of imported data, a copy of the file being imported is copied to the site folder before it is converted and an import report is created to indicate that the file was successfully imported.

**Create Designs.** Although the majority of design data is imported into AccuGrade Office software, the software also provides the capability to create new designs including:

- Level surface designs – Flat designs that represent a constant elevation.
- Sloping surface designs – Simple slope designs that use data to define a sloping

surface, with the option to define a left and right cross slope thus creating two sloping surfaces.

- Road design using integrated RoadLink utility – A road file describes a road surface using horizontal and vertical alignments. A series of templates or standard cross-sections are applied to these alignments to define the road surface itself. Road design information includes station

information, which is the distance in meters or feet from a nominal start point at the beginning or along a given road alignment.

**Organize Data.** Once data has been imported into AccuGrade Office software, it is organized into the following categories:

- Design surfaces
- Background site maps
- Avoidance zones
- Display and machine configuration files
- Coordinate system
- Data Cards

**Data Validation.** Validating the data is critical for machine control and guidance systems. AccuGrade Office software includes several tools to validate the data:

- Import checks and reports
- Properties display
- Memory checking of data relative to onboard allowance
- Machine simulator and display emulator allow thorough review of design data in office
- Multiple views of data, including a plan view, cross section view and profile view

**Data Export.** Once data has been imported, organized, and validated in AccuGrade Office software, the final step is to export

the data for use with on-board machine control and guidance systems.

Data cards can be exported to the following machine control and guidance systems:

- AccuGrade CD700 v10.0 and up
- AccuGrade CD550A v5.5, v6, v6.1
- Trimble GCS900 v5.5, v6, v10.0 and up
- Trimble SiteVision v3 through v5.5
- CAESbasic v3 through v5
- Trimble SCS900 systems
- Trimble BladePro 3D

Exporting can be done directly to hard drive or to a compact flash card, E-mailed to selected e-mail addresses, or wirelessly to a machine.

**Additional Utilities.** Several utilities are also included with AccuGrade Office software. These utilities include:

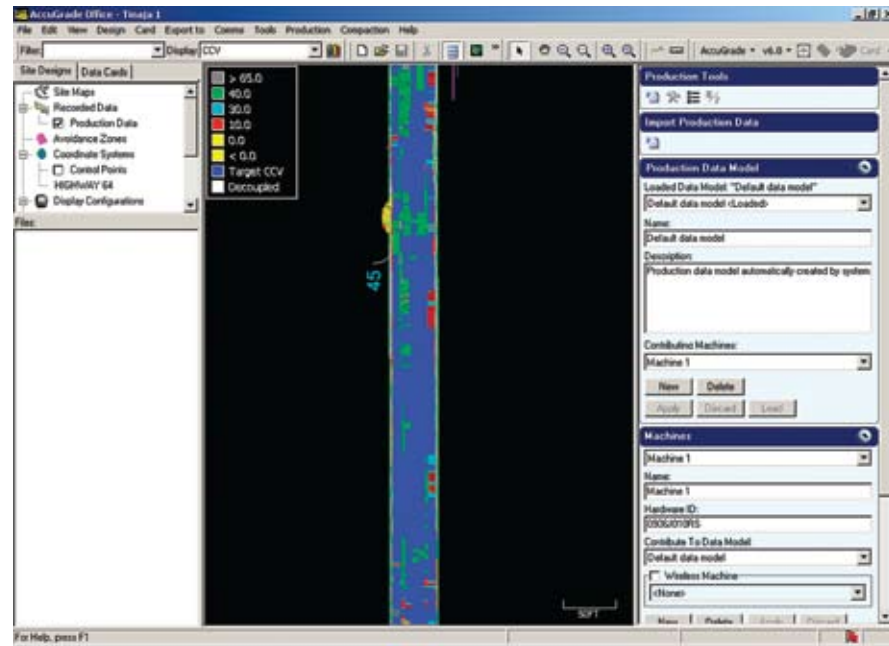
- Planning – Software used to predict GPS satellite availability
- DC (Roads) file editor
- Configuration Toolbox – Used to create coordinate system (\*.cfg) files for use with Trimble GPS receivers
- MS Controller – Used to communicate with Trimble MS series GPS receivers

**Documentation.** AccuGrade Office software includes the following documentation:

- Integrated context sensitive Help file – Clicking F1 while running AccuGrade Office software will launch the Help File to the section relevant to the user's current selected feature.
- Getting Started Guide – Comprehensive manual included with AccuGrade Office software in Adobe .pdf format. The manual also includes a Tutorial for users new to AccuGrade Office software.
- Release Notes – Document that typically summarizes the changes in AccuGrade Office software between the current and previous release.
- AccuGrade Office software includes a tutorial for new users learn the basics of the office software.

## AccuGrade® Office Compaction Option

View compaction data, including Caterpillar Compaction Value measurements and number of passes, with the AccuGrade Office Compaction Option



### AccuGrade Office Compaction Option.

AccuGrade Office Compaction Option permits the user to view compaction data from compactors equipped with AccuGrade Compaction.

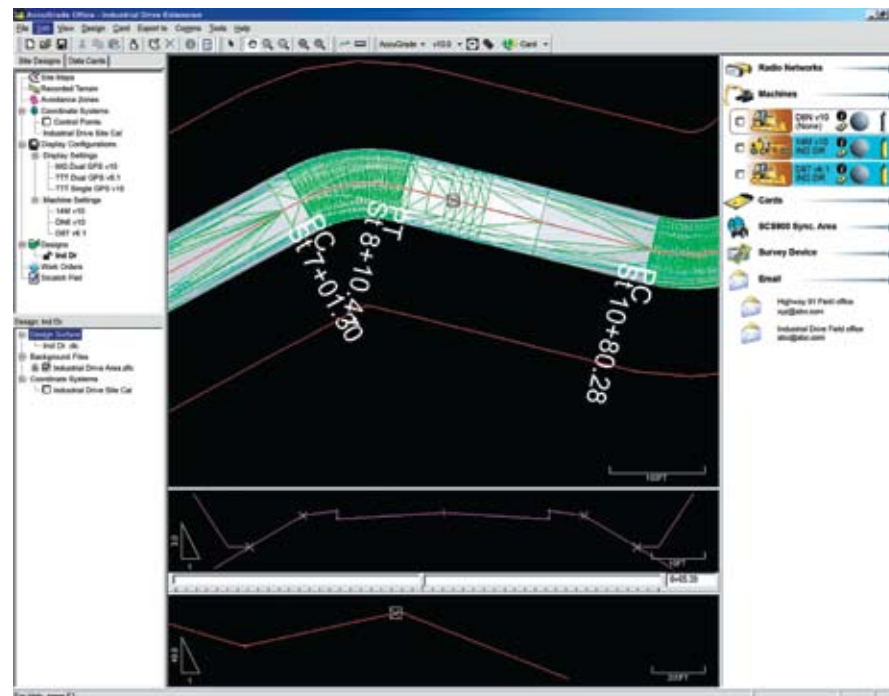
Specific features of AccuGrade Office Compaction Option include:

- View Caterpillar Compaction Value (CCV) measurements in plan view.
- View number of passes made by compactor in the plan view.
- View details of compaction data for each cell.
- Filter compaction data by compactor and date.

The Compaction Option is enabled through an optional add-on component to AccuGrade Office software. The component is distributed separately and is installed as an add-on to the base AccuGrade Office software.

## Specifications

Determine requirements for AccuGrade Office



**AccuGrade Office Software.** AccuGrade Office software is a Windows Operating system compatible software application. The minimum requirements for running AccuGrade Office software are:

- Pentium IV 1.6 GHz or faster computer
- 512 MB RAM (1 GB RAM for Microsoft Windows Vista operating system)
- Graphics card with 32 MB or more of video memory and Direct 3D acceleration support
- Approximately 5 GB spare disk space
- Microsoft Windows 2000 (Service Pack 4 or later), Windows XP (Service Pack 2 or later) or Windows Vista operating system
- Internet Explorer 6 or later
- Internal or External Compact Flash Card port to prepare data cards
- Ethernet port is required for wireless sites

A serial port may be required to program radios to support the Wireless Easy IP site infrastructure.

### AccuGrade Office Wireless Option.

AccuGrade Office Wireless Option requires a Wireless Easy IP Site Infrastructure. For more details contact your Cat® dealer.

## Notes

# Thompson



[www.thompsontractor.com](http://www.thompsontractor.com)

<b>Attalla</b> (256) 570-1100	<b>Montgomery</b> (334) 215-5000	<b>Tuscaloosa</b> (205) 247-2800
<b>Birmingham</b> (205) 841-8601	<b>Opelika</b> (334) 749-3359	<b>Tuscumbia</b> (256) 381-2771
<b>Decatur</b> (256) 353-7721	<b>Oxford</b> (256) 831-4104	<b>Crestview, FL</b> (850) 682-6510
<b>Dothan</b> (334) 671-1040	<b>Shelby County/ Alabaster</b> (205) 664-4833	<b>Marianna, FL</b> (850) 526-2241
<b>Huntsville</b> (256) 532-1776	<b>Thomasville</b> (334) 636-0420	<b>Panama City, FL</b> (850) 785-4007
<b>Mobile</b> (251) 626-5100		<b>Pensacola, FL</b> (850) 471-6700

# Thompson



# THE Rental STORE

## COMPACT CONSTRUCTION EQUIPMENT AND ALLIED EQUIPMENT

<b>Birmingham</b> (205) 326-0334	<b>Mobile</b> (251) 452-1180	<b>Pensacola</b> (850) 471-6710
<b>Calvert</b> (251) 829-5777	<b>Montgomery</b> (334) 262-1101	<b>Shelby County</b> (205) 664-9489
<b>Dothan</b> (334) 673-3300	<b>Oxford/Anniston</b> (256) 835-5737	<b>Tuscaloosa</b> (205) 247-3402
<b>Huntsville</b> (256) 532-3001	<b>Panama City</b> (850) 235-9624	



- Thompson CAT
- Rental Locations

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