

target compaction in fewer passes

3D Compaction with Trimble CCS900

The asphalt compactor is the last machine to pass over your paving project, and mistakes during this phase can be very costly to fix. You can significantly reduce the need for re-work by installing the Trimble CCS900 Compaction Control System on your asphalt compactors.

The CCS900 system eliminates much of the guess work from asphalt compaction and helps achieve more consistent compaction to target design density. You will also be able to roll a more efficient pattern, increase productivity, and save fuel.

MAP IT AND GET IT RIGHT

Pass count mapping in the CCS900 system allows you to monitor the number of passes over an area and adjust your effort to avoid over or under-compaction.

Using the roof-mounted GNSS receiver or machine target, the system calculates the exact position of the machine and displays a color map indicating the current number of passes and where you have overlaps or gaps. When installed with two optional IS310 Infrared Sensors, CCS900 maps the surface temperature of the mat and pinpoints exactly where you need to be for ideal compaction timing.

CB460 or CB450 Control Box:

The Control Box graphically maps pass counts and surface temperature readings with high and low temperature warnings to indicate potential issues in real-time.

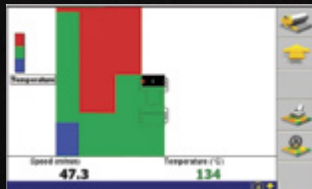


REPORTING AND DOCUMENTATION

In-field reporting and an in-cab printer allow on-site supervisors and quality managers to monitor compaction operations and correct possible issues immediately. Compaction data logs can be wirelessly transferred from the machine to the office for analysis using the web-based VisionLink fleet, asset and productivity management solution from Trimble.



Operator view of pass count mapping



Operator view of temperature mapping

MS972 GNSS Smart Antenna:

The Trimble MS972 Smart GNSS Antenna measures the position of the compactor using a base station or satellite delivered correction sources such as SBAS.

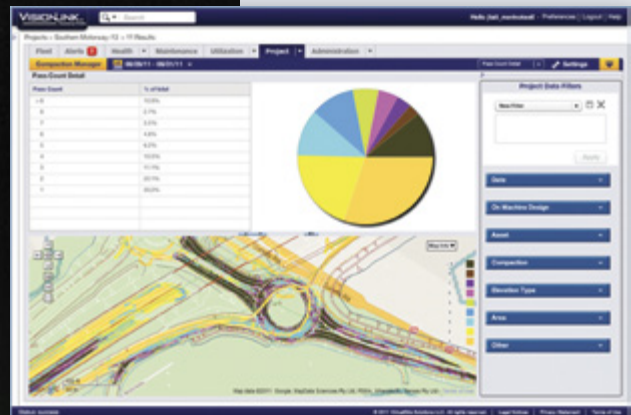
IS310 Infrared Temperature Sensors:

IS310 Infrared Temperature Sensors measure surface temperature of the mat in the direction of operation.

MONITORING COMPACTION IN VISIONLINK

For longer term analysis of compaction operations and productivity enhancements, VisionLink 3D Project Monitoring lets you:

- Continuously monitor pass counts and compaction meter values to improve testing success, reduce rework and lower ongoing maintenance costs.
- Reduce over-compaction to optimize fuel use and machine time.
- Monitor temperature maps to ensure compaction per the target temperature range.



affordable. easy to use

Pass count mapping with CCSFlex

The Trimble CCSFlex™ Compaction Control System is an easy-to-use and affordable compaction control system to help you increase your compaction efficiency in the most economical way.

Unlike CCS900 which requires a more permanent installation on the machine, the CCSFlex system is completely portable between compactors and requires no welding or drilling onto the machine. Designed specifically for compactors, CCSFlex cannot be installed on other earthmoving and paving machines.

GET STARTED QUICKLY

Straight out of the case, you can run the CCSFlex system without a GPS base station and without creating 3D designs. The highly intuitive CCSFlex software guides you to the exact number of passes required for the job and provides instant feedback on pass count and compaction quality. You simply can't go wrong.

CB450 Control Box:

The in-cab control box provides visual guidance regarding pass count and compaction by "painting" a map in real time, showing on a color scale the number of passes over each spot.



PORTABLE SYSTEM IN A CASE

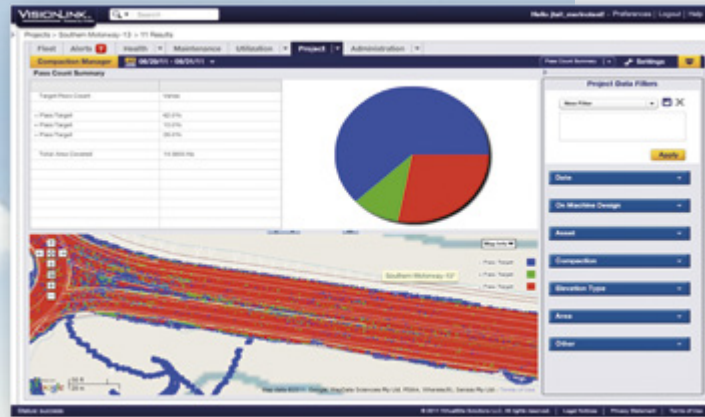
The CCSFlex "in a case" system is easy to install by the contractor in a couple of hours. This easy portability makes the system an ideal solution if you employ rented compactors or you want to move the system between compactors in your fleet. It can be installed on any asphalt compactor with open or enclosed cab.

MS972 GNSS Smart Antenna:

The MS972 provides sub meter accurate positioning of the compactor. Position information is used to display a pass count coverage map in real time on the in-cab control box.

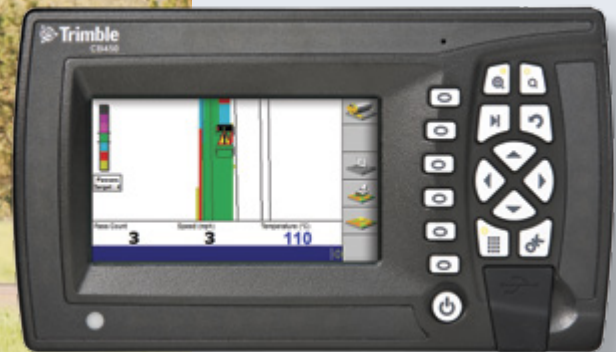


The Trimble CCSFlex system comes standard as a pass count system with an MS972 GNSS Smart Antenna, CB450 Control Box, moveable mounting brackets, and system cables.



VisionLink

VisionLink 3D Project Monitoring allows you to monitor pass counts and improve your compaction operations from the head office.



TRIMBLE CB450 CONTROL BOX

The CCSFlex uses the Trimble CB450 Control Box to guide the operator to the target number of passes at the optimal temperature.



dependability when you need it

DEPENDABLE TECHNOLOGY. DEPENDABLE SUPPORT.

Reliability is especially important in paving systems, because you lose money any time the process stops. Trimble components are built to withstand the heat, steam, tamping and vibration that are the norm on milling machines, pavers, and compactors. And while system durability prevents downtime, Trimble's extensive SITECH® dealer network ensures that training and support are always close at hand.

SITECH is the leading distribution network for the most reliable, rugged and complete portfolio of construction technology systems available to the heavy and highway contractor. The experienced construction professionals at your SITECH dealership will advise you on the right technology for your job and provide you with local customer service, personalized training and technical support.

With the addition of Trimble site-wide solutions to your heavy and highway projects, you're in a stronger, more competitive position. You'll experience new levels of productivity that will help you win the bid and be profitable, project after project.

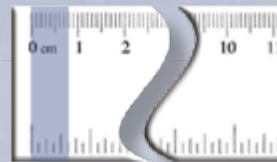


Recommended Technology for Your Application

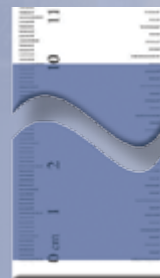
		Milling	Asphalt Paving			Asphalt Compaction	
		3D	Grade & Slope	Grade & Slope	3D	Passcount / Temperature Mapping	As-Built Cut-Fill Mapping
Application Description	Examples	PCS900	PCS400	PCS400 with averaging beam	PCS900	CCSFlex / CCS900 with GNSS	CCS900 with Universal Total Station
Road jobs with an accurate reference surface or curb	Roads, parking lots	Optional	Recommended			Recommended	
Road jobs with an accurate reference surface or curb and a stringent smoothness spec	Highways, airports	Optional		Recommended		Recommended	
Asphalt paving without stringlines or accurate reference surface but with stringent elevation, cross slope and/or smoothness specs	Airports, roller compacted concrete paving, base material paving, asphaltic base for concrete roads	Recommended			Recommended	Recommended	Optional
Asphalt paving with frequent cross slope changes	Highway exits and curves, parking lots, sports surfaces	Recommended			Recommended	Recommended	

SYSTEM ACCURACIES FOR EACH TECHNOLOGY EMPLOYED

Horizontal Accuracy



Vertical Accuracy



Trimble Total Station
Accuracy at 100 m is
3mm (0.01 ft) Horizontal
and 1mm (0.003 ft) Vertical

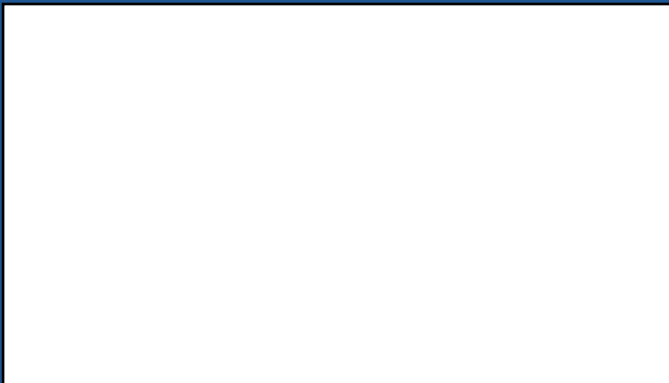
Trimble Precision GNSS
Accuracy is
8mm (0.03 ft) Horizontal
and 15 mm (0.05 ft) Vertical

Trimble Location RTK
Accuracy is 8 mm (0.03 ft)
Horizontal and 100mm
(0.33 ft) Vertical

Satellite Based Augmentation System (SBAS)
Accuracy is
approximately 0.5m (1.7 ft) in
both the Vertical and Horizontal

TRIMBLE: THE CONSTRUCTION TECHNOLOGY STANDARD

Trimble provides the tools and support to let you integrate planning, design, site positioning, machine control and asset management information throughout the construction life cycle for more efficient operations and higher profits. Visit your SITECH® technology dealer today to learn how easy it is to utilize technology that makes significant improvements in project workflow, dramatically increases your production, improves your accuracy and lowers your operating costs.



YOUR SITECH HEAVY CIVIL CONSTRUCTION TECHNOLOGY PROVIDER



NORTH AMERICA

Trimble Heavy Civil Construction Division

10368 Westmoor Drive,
Westminster, Colorado 80021
USA
800-361-1249 (Toll Free)
+1-937-245-5154 Phone
+1-937-233-9441 Fax
www.trimble.com

EUROPE

Trimble Germany GmbH

Am Prime Parc 11
65479 Raunheim
GERMANY
+49-6142-2100-0 Phone
+49-6142-2100-550 Fax

AFRICA & MIDDLE EAST

Trimble Export Middle-East

P.O. Box 17760
LOB 18 1606 / 1607
JAFZ View
Dubai
UAE
+971-4-886-5410 Phone
+971-4-886-5411 Fax

ASIA-PACIFIC

Trimble Navigation Singapore PTE Ltd.

80 Marine Parade Road, #22-06
Parkway Parade
Singapore, 449269
SINGAPORE
+65 6348 2212 Phone
+65 6348 2232 Fax

CHINA

Trimble Beijing

20F, Central Tower, China Overseas Plaza,
No.8 Yard, Guang Hua Dong Li, Chaoyang
District, Beijing, PRC
CHINA 100020
+86-10-8857-7575 Phone
+86-10-8857-7161 Fax
www.trimble.com.cn