

The Insider

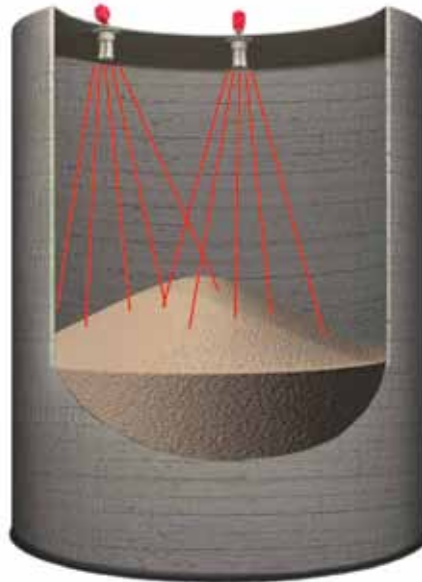
Third Quarter 2010
Volume 23, Issue 3



...because it's what's inside that counts

Better Inventory Accuracy for the Biggest Bins

If you have a very large bin, tank or silo... there is now a way to get more accurate inventory data. The BinMaster MVL is a multiple scanner system that integrates the multiple point measurement data from two 3DLevelScanners to cover a very wide surface area and then provide inventory volume with greater accuracy than previously available from any level measurement device. Using advanced processing and software, the MVL also displays a visual representation of the material surface that shows high and low points in the bin such as cone up, cone down, sidewall buildup or bridging.



Two scanners map the entire material surface.

How does the MVL system work?

Two scanners are mounted on the top of the vessel in locations optimized to most effectively cover the entire surface area of the material being measured. Generally, one scanner is mounted near the center and one eight to ten feet from the outer perimeter. The 3DLevelScanners are connected via a daisy chain using an RS-485 protocol. The scanners take multiple measurements of the material surface using dust-penetrating, acoustic-based technology. A controller combines the data from the two scanners and generates a single merged visual representation of the topography of the material and displays the image on a PC loaded with the 3D Vision software. It can also send a synchronized 4-20mA output to a PLC or DCS. The MVL provides diverse data including estimated volume, as well as minimum, maximum and average distances to material in the bin.

Why are there multiple 3D scanners in an MVL system?

A single 3DLevelScanner is capable of taking measurements within a 70° beam angle. This allows a single device to cover a surface area up to about 45' in diameter. To account for the entire material surface when the bin is wider than 45', multiple devices are needed. The MVL is ideal when a very high level of inventory volume accuracy is desired in vessels that are more than 45' wide.

What type of data does the MVL system provide?

- Volume as a percentage, in bushels, or cubic feet or meters
- Maximum, minimum and average levels or distances to product
- Weight in US tons, pounds or metric tons
- Real-time 3D images and historic 3D image movies
- Historical logs of bin measurements

What's Inside



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A single visual representation depicts material topography.

Better Inventory Accuracy for the Biggest Bins

- Synchronized 4-20mA output
- Vessel name, ID and material

Plus, the MVL system can be used to generate historical inventory reports based upon a variety of criteria such as historical volume, minimum and maximum levels and distances.

What are the benefits of mapping and visualization?

The MVL visualization feature provides information that helps maximize storage capacity and can be used as a guide to know where to fill or where to pull material to optimize operations. Visualization also serves as an early warning of sidewall buildup or bridging that can lead to inaccurate inventory estimations or maintenance problems.

What are the components of an MVL system?

- Two model MVL 3DLevelScanners
- A controller that aggregates the data
- 3D Vision software loaded on a PC
- A 3DLinkPro modem for remote access to the scanners

What are some applications for an MVL system?

This MVL system can measure virtually any bulk solid material, and is designed to provide accu-

rate volume measurements critical for inventory control in large bins in many types of industrial applications such as:

- Grain storage
- Ethanol processing
- Cement plants
- Milling operations
- Food processing
- Soy biodiesel plants
- Feed mills
- Aggregate storage

What are the financial benefits of the BinMaster MVL?

Inventory is money. Say you have a 500,000 bushel bin of corn. The value of the inventory in that bin could be upwards of \$1.5 million. If corn is \$3 a bushel, just one percentage point represents over \$15,000 of inventory value. A few percentage points of inventory in many industries can represent tens of thousands of dollars, which in today's economy can mean the difference between making money and losing it. The MVL system allows financial, plant and purchasing management to base their decisions on more accurate inventory data. The data from the MVL multi-scanner system can be used to better understand profitability and inventory shrink in an operation.

Calendar

See BinMaster® at these upcoming events.

Soyatech / Midwest Specialty Grains / Global Soybean & Grain Storage

October 4 to 6, 2010
Hyatt Regency Minneapolis
Minneapolis, MN USA

Southeast Biomass Conference

November 2 to 4, 2010
Booth 113
Hyatt Regency Atlanta
Atlanta, GA USA

Midwest Biomass Conference

November 16 to 18, 2010
Grand River Center
Dubuque, IA USA



MVL measures and maps storage silos at cement plants.



Large grain storage silos can be accurately measured.

3DLevelScanner

Addressing Accuracy Issues Across Industries

In March of 2009, BinMaster installed its first 3DLevelScanner in the United States. With more than 200 installations across the US and Canada, BinMaster is the leading applications specialist for 3D technology in North America.

When BinMaster gets a call on 3D technology, it's all about accuracy. Although there is no device that will provide 100% accuracy, the 3DLevelScanner will provide greater volume accuracy than any single-point device. When properly applied in approved applications, 3D technology has achieved accuracies of .5% to 3%.

Plus, 3D dust-penetrating, multiple point measurement technology accounts for "cone up" or "cone down" in volume estimates, detects sidewall buildup in the bin, maps a material surface that is uneven and prone to bridging and addresses accuracy in bins with multiple fill and discharge sites.

Here are just a few examples where BinMaster has helped companies address accuracy challenges.



POWER

Description: Coal-fired power operation with multiple, very active storage bunkers.

Material: Sub-bituminous Coal

Bin Details: 32' tall x 23' x 17' rectangular concrete bunkers with offset cone bottom

Model: M

Challenge: Improve inventory accuracy for active bunkers filled twice daily and emptied continuously. Coal is wet, sticky and prone to bridging and sidewall buildup, reducing the capacity of the bunkers.



FOOD PROCESSING

Description: Food processing operation with material prone to dust and sidewall buildup.

Material: Rice

Bin Details: 100' tall x 27' diameter carbon steel silo with cone bottom

Model: MV

Challenge: Provide highly accurate volume measurements and stability as bin was emptied almost completely before refilling. Desired more precise headroom than a single-point device.



PLASTICS

Description: Plastics reclamation silo at food packaging manufacturer.

Material: Plastic flakes

Bin Details: 18' tall x 15' diameter galvanized steel silo with deep cone bottom

Model: M

Challenge: Customer desired maintaining inventory levels >30% and <90% in bins. Single point measurement was highly inaccurate in deep cone silo.



ETHANOL

Description: Tall, wide concrete corn storage silo for ethanol production.

Material: Corn

Bin Details: 150' tall x 75' diameter concrete silo with flat bottom

Model: MV

Challenge: Increase volume measurement accuracy versus existing single point technologies. Eliminate breaking sensing cable problems associated with guided wave radar system.



STEEL

Description: Heavy industrial manufacturer of steel beams and angle iron.

Material: Carbon black

Bin Details: 60' tall x 13' diameter steel silo with cone bottom

Model: MV

Challenge: Inconsistent material profile was resulting in inaccurate volume levels with single-point device. Goal was to order truckloads of material at optimal times.



ANIMAL FEED

Description: Manufacturer of live-stock feed with very wide bin, wider than it is tall.

Material: Shell corn

Bin Details: 60' tall x 105' diameter galvanized steel bin with cone top and center fill

Model: MV
Challenge: The customer had no level controls and was looking to manage inventory. Wanted more accuracy than a single-point device as the bin has multiple pull-out locations.





Established in 1953, Garner Industries is home to the BinMaster® level control business. Additionally, our state-of-the-art ISO 9001:2000 certified facility in Lincoln, Nebraska USA offers jobshop and precision tooling services for a wide variety of industries including automotive, refining, electronics, aerospace, and telecommunications ... to name but a few. Visit www.garnerindustries.com to find out about our full suite of services.



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"From simple point level controls to advanced computer-based inventory management, I call BinMaster."



SmartBob2



Vibrating Rods



3DLevelScanner



Rotaries



Diaphragm Switches



BINMASTER LEVEL CONTROLS

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