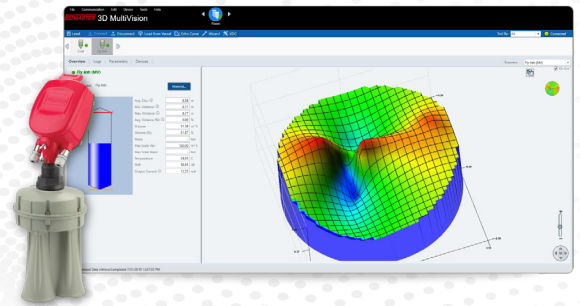


Bunker, pies & oh my 3DLevelScanners

Some bulk material applications are straightforward. Others, not so much. BinMaster's 3DLevelScanner works well in most bins and silo storage. Let's dive into some more unique applications. Uneven loading can be "seen" with 3D so operators can adjust before major failures. Bulk material tends to pile in uneven ways in a pie-shaped bin. 3DLevelSensors are the best solution for measuring these bins as well. Finally, material stored in bunkers can be measured accounting for the ups and downs of piles.



Plugin binmaster.com

KEYWORDS

level sensor, bulk inventory,
storage bunker, pie-shape
bin

OBJECTIVE

Measuring hills and valleys
of bulk material meets
multiple needs.

CONSIDER

Manual bulk measurement is
risky, production stops and
material spillage costly, and
labor short.

ONLINE

<https://www.binmaster.com>



<https://www.binmaster.com/support/sales/contact-form>

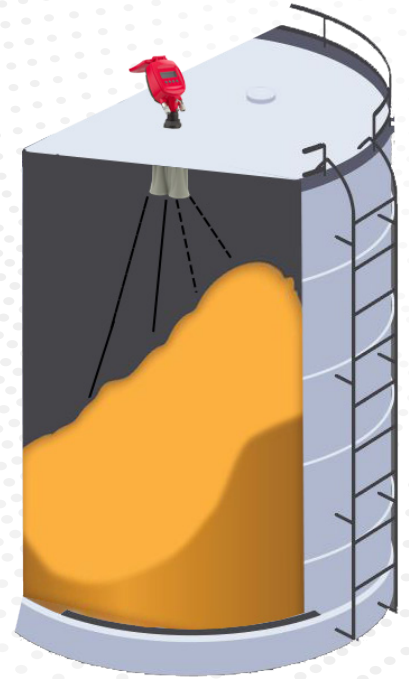
Measure volume in a wedge or pie-shape silo

Operations burdened with managing inventory in pie-shaped segments of silos now have a solution that provides very accurate volume data—thanks to 3DLevelScanner acoustic sensor. The sensor measures and models topography of material contained in these unusually-shaped wedges. BinMaster firmware then applies the measured distances to a 3D model of vessel dimensions and converts it to a highly-accurate volume measurement.

Other measurement sensors, such as non-contact radar, guided wave radar or weight and cable style sensors measure only a single point.

The location of the filling or emptying points or lack of material flow may cause uneven piling of material, which could cause inventory estimates based upon a single measurement to be inaccurate. By comparison, the 3DLevelScanner maps the material surface accounting for variations then factors in the radius and height of the segment being measured, making the volume accuracy very precise.

Having accurate data about the amount and dollar value of material on hand can help reduce safety stocks, increase inventory turns, and pay for itself by freeing up cash that could be tied up in inventory. Additionally, buildup on the outer perimeter of the silo or along on the walls can be detected, accounted for in inventory, and addressed by maintenance if needed. The same 3DLevelScanner can be used for either segmented or round silos, making it a versatile choice over its long sensor life.



Prevent silo collapse using 3DLevelScanners

Walls of steel and concrete silos have been known to wear or fail causing cracking, denting, buckling, and bending that can lead to catastrophic collapse (like the front cover picture). BinMaster 3DLevelScanners identify the location of the center of gravity, display it graphically, and alert when the center of gravity falls outside of a predefined area.

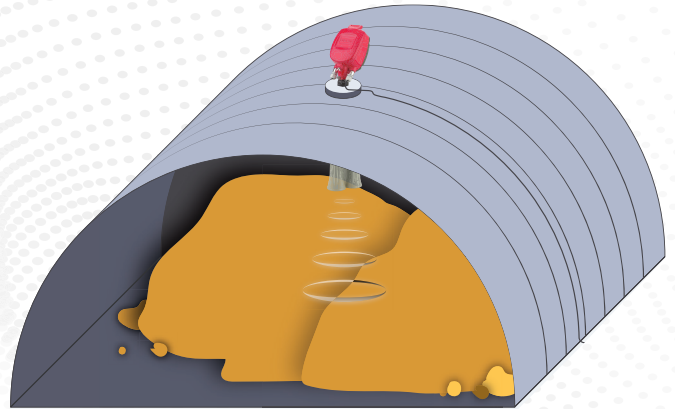
A 3DLevelScanner is mounted on the roof of the silo in an optimal location to view the material surface in the silo. Level measurements are used to determine the X, Y, and Z coordinates of the center of gravity based upon the material topography. The coordinates are processed in the 3DMultiVision software via a proprietary RS-485 communication protocol. Users define the alert parameters and accepted area into which the center of gravity must fall. A 3D visual will indicate where the center of gravity is located and show the acceptable area.

Operations can use this unique solution to help reduce structural stress when loading or emptying a silo. It is a valuable preventive maintenance tool that can alert to the need for inspection or cleaning. Use over time can prolong silo integrity and create a safer environment by alerting to potential structural stress caused by uneven loading.

Level monitoring in covered storage bunkers

Mining, aggregate, and cement operations often manage inventory in covered storage bunkers. BinMaster's leading-edge software and 3DLevelScanner measures the level of materials piled under structures. Multiple sensors measure and map levels across the material surface, while MultiVision software separates the piled material into virtual sections. Minimum, maximum, and average levels per section are reported for up to 99 unique sections. The data is aggregated to output a visual showing the topography of the entire storage bunker.

This first-of-its-kind solution can estimate inventory and improve production efficiency. Identifying high and low sections allows for automating process control and managing the filling or extraction of materials through cone-shaped hoppers in the bottom of the bunker. In proven installations, up to 20 3DLevelScanners have been mounted in the upper structure of the bunker roof. The bunker is virtually divided into sections as small as 1.5 by 1.5 meters with the 3D sensors continuously measuring changes across the surface and providing unique visual and data reporting of inventory in the massive structure. This cutting-edge technology is ideal for copper, alumina, coal, or other ores or aggregates stored in covered structures.



Get connected to your inventory with the only level sensor that measures and maps multiple points on the material surface. A 3D image representing the topography inside the silo indicates buildup, cone up or down conditions. 3DVision software accounts for irregular material surfaces when calculating volume. The 3DLevelScanner's acoustics-based technology penetrates dust ensuring reliable measurements. This non-contact technology accurately measures solids and powders, including low dielectric materials.

And you can get it only from BinMaster.

