# MEASURE LEVEL BY WEIGHT

Noncontact measurement method eliminates contamination.

*By Ted Kopczynski, Hardy Instruments*

Measuring level or inventory by weight provides high accuracy. The weight is not affected by ingredients that foam or settle unevenly or by changes in density or the shape of the tank.

Weight is weight, regardless of percent solids, bridging, rat-holing, or whether your ingredient is conductive or sound-absorbing. Because weighing is a noncontact method of measuring level, there is no chance of contamination. You don't have to worry about a caustic ingredient damaging the weighing system.

## Equipment

To weigh a storage vessel, it must be supported entirely by load points. For example, a silo would have a load point assembly under each leg. A frame is constructed to transfer the weight of a skirted silo to three or more load points (load cells and mounting hardware). Horizontal storage tank saddles are retrofitted with load points to accommodate vessel expansion and contraction with changes in temperature.

## Calibrating Large Vessels

Hardy's C2 Second-Generation Calibration enables electronic calibration without using test weights or material transfer methods.


Conditions for calibrating often are not ideal, but measuring level or inventory by weight provides the highest accuracy.

Each C2-certified load point contains digital information detailing its performance characteristics. The C2 system uses these characteristics to electronically calibrate the scale. When power is applied, the weight controller automatically searches for load points and saves the data to memory. The operator enters a reference point and the scale is fully calibrated. The reference point can range from zero to the scale's capacity. C2 is designed to reduce downtime for installation and repairs, and eliminates test-weight-related injuries. In addition, it ends material substitution problems, including contamination and waste disposal issues.

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## Data Security

Hardy weight controllers include a Secure Memory Module (SMM), which automatically stores and protects critical data such as calibration, setup and operating parameters. If the instrument ever needs replacement, the SMM can be transferred to another weight controller and all critical data are restored.

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