

What kind of maintenance will keep my weighing equipment accurate?

SUPPLIERS' TIPS

Accurate and repeatable weighing systems depend on knowledge and control of all outside forces that affect the scale. Outside forces are those exerted on the load-cell system by means other than the scale equipment and the materials being measured. Any variation in these outside forces can cause the scale system to become inaccurate.

Many causes of outside forces are easily identified. They come in the form of load-cell mount binding; nonflexible scale connections to the scale, equipment, or structure touching the scale; and excessive vibration or electrical anomalies. Other causes are more difficult to identify. For example, pressure and vacuum variations inside the scale hopper are difficult to identify since they can't easily be seen.

Most scale systems are equipped with a ventilation system, which is typically equipped with a filter apparatus. When the filter apparatus is clean, the scale breathes freely as material is added to or taken out of the scale. This keeps the pressure in the scale neutral. If not properly maintained, the filter can become dirty and clogged. A clogged filter doesn't allow air to freely pass in and out of the scale. This restriction can result in inaccurate weighing.

*Jason Johnson,
electrical engineering manager,
Nol-Tec Systems,
651-780-8600*

The first thing to keep in mind that's most often forgotten is that you're working with a scale. Whether it's a hopper on load cells for weight indication or a screw feeder operating in a traditional gravimetric feeding mode, it's still a scale-based system. Everything that's connected to the scale will affect how accurately it performs. During initial installation, it's important that all process connections to the scale are flexible, electronic component wiring isn't rigid, and the scale's mechanical components are properly vented. Over the life of the scale, these items should be checked and

maintained on a regular preventive schedule. Additionally, you should perform periodic system accuracy checks using the tare, span, and linearity functions in your weighing electronics. Finally, it's important to work with a weighing equipment supplier that provides qualified technicians to work with you on installation, startup, operator training, and routine preventive maintenance.

*Alan Homan,
field service manager,
Schенck AccuRate,
800-558-0184*

To keep your weighing equipment accurate, perform periodic check-weighing. If the end product's quality requires a high level of accuracy, then more frequent recalibration, such as every 6 months, is recommended. Visual load cell and floor scale inspections help ensure no material, debris, water, or other buildup that would affect performance.

*Tony P. Branco,
engineer,
Vac-U-Max,
800-822-8629*

Equipment suppliers are a valuable source of information about equipment and processes. In light of this, we occasionally ask suppliers a question of concern to our readers. Answers reflect the suppliers' general expertise and don't promote the suppliers' equipment. If you have a question you'd like suppliers to answer, send it to Alicia Tyznik, Associate Editor, Powder and Bulk Engineering, 1155 Northland Drive, St. Paul, MN 55120; fax 651-287-5650 (atyznik@cscpub.com).