

Comments on S&T Items 3200-1 and 3600-3 Regarding Batching Scales

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Position: I am opposed to these items and the items should be withdrawn. The proposed definitions will confuse the categorization of scales, rather than clarify the distinction between batching scales, hopper scales and automatic bulk weighing systems. What type of scale is a scale that automatically weighs a single commodity in multiple drafts for a single transaction? I hope that the answer is that this type of scale is an automatic bulk weighing system.

Explanation:

The objective of the submitter is to get automatic bulk-weighing systems used in seed treatment systems classified as batching scales so that these scales do not have to comply with the Automatic Bulk Weighing Systems Code or have to incorporate the safeguards considered necessary to ensure accurate weighing. All scales that automatically weigh single products in successive drafts of predetermined amounts should be required to comply with the Automatic Bulk Weighing Systems Code.

The background and discussion section on page S&T - A13 explains why the submitter wants this change. KSi Conveyors Inc. has installed these scales in seed treatment systems, but the scales don't comply with the Automatic Bulk Weighing Systems (ABWS) Code. KSi believes that their scales "...do not need to meet some of the stringent requirements of the ABWS Code." Most of these installed scales do not record the load and no-load weights of each draft cycle. Rather than bring the scales into compliance, they want the NCWM to change Handbook 44 to give them a way to circumvent the Automatic Bulk Weighing Systems Code.

If the proposed change to S.1.2. is adopted, then digital electronic batching scales and batching systems would be allowed to have scale divisions that are a binary submultiple of a specific unit of weight. This should not be allowed. This exemption was included in S.1.2. for large capacity mechanical dial scales for which the maximum number of scale divisions on the dial could be perhaps 500 or 1000. Hence, if the scale had a capacity of 4000 lb, then the scale division on the dial would be 8 lb or 4 lb. This is completely unnecessary and undesirable for digital scales. This example is an indication of how poorly developed this issue is and is just one reason these proposals should not proceed.

The proposed definition of batching scale is a scale that is used for proportioning. What is proportional weighing? Is proportional weighing 50/50? Is it 99/1? Is it 100/0? The KSi scales measure 100% of a single commodity (i.e., only one type of seed grain) for a single transaction and the weighing or measuring of the other components needed for the seed treatment process (which is done subsequent to the weighing of the seed grain) are measured by other scales or meters. Hence, the KSi scales used in seed treatment systems are NOT batching scales.

The proposed definition of a batching system is “One in which materials are measured in pre-determined quantities by weight and/or liquid measure.” If someone prepays \$20 to purchase mid-grade gasoline from a retail fuel dispenser that uses a 50/50 blend of premium gasoline and regular gasoline to achieve the mid-grade, does that make the fuel dispenser a batching system or is it still a retail fuel dispenser? Is there a separate tolerance for batching systems?

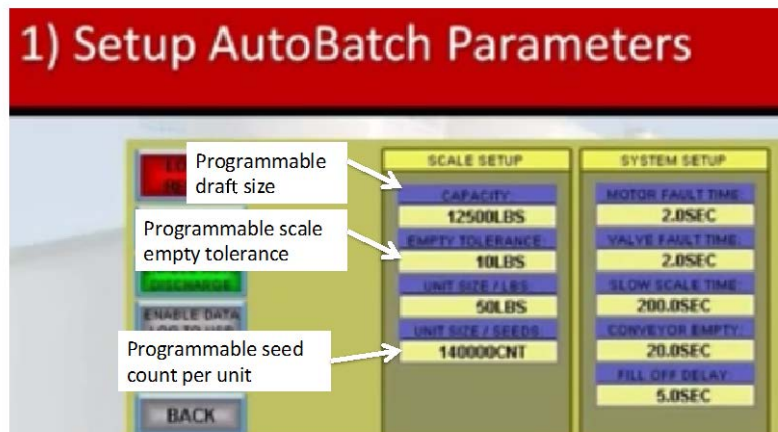
What are the differences between a hopper scale, a grain hopper scale, an ABWS, and a batching scale? Grain hopper scales have a smaller tolerance than hopper scales that weigh sand and gravel, because grain is significantly more expensive than sand and gravel. Seed grains are considerably more expensive than feed grains. If these proposed changes are adopted, then which tolerances apply to “batching” scales used in seed treatment systems?

Are loss-in-weight scales considered batching systems? Typically, they weigh only a single commodity. In normal use, most, if not all, of these scales rarely empty completely, so they do not return to zero. Should these scales record the start and end weights to document the transaction and then compute the difference as the weight used in the transaction? Under the proposed definitions, would these types of scales be batching scales or are they hopper scales? Which tolerances apply? If these scales are weighing small quantities of expensive chemicals in seed treatment systems, should the scales be Class II scales?

Furthermore, KSi has a YouTube video to provide training on their V2 AutoBatch seed treatment system (<https://www.youtube.com/watch?v=xQvuN5rwFh4>). In this video, they describe some features of their system that do not comply with any code in Handbook 44.

1. They have a programmable “tolerance” on the return to zero so that the automatic weighing operation will not be interrupted if the hopper does not empty completely and does not return to zero.

KSi Autobatch V2 Scale Setup Single Scale



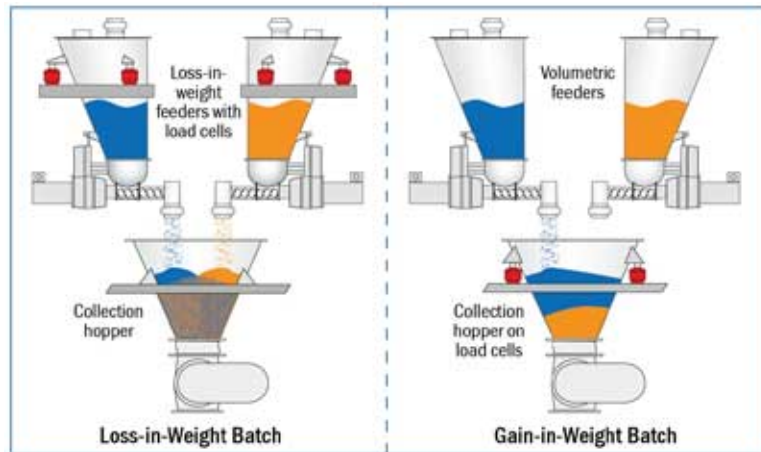
2. The system allows the sale of each type of seed grain by “seed unit,” which is not a legal unit of measure.
3. The programmable tolerance for the “empty” hopper is programmable, accessible during the normal operation of the weighing system, and is not a sealable metrological parameter.
4. The seed count per weight unit is programmable, accessible during the normal operation of the weighing system, and is not a sealable metrological parameter (if the use of seed unit were legal for trade). Hence, this feature facilitates fraud.

Items 3200-1 and 3600-3 are the same issues that have been proposed to the S&T Committee over the past two years. My comments on these issues submitted previously and dated December 23, 2014, December 15, 2015, April 22, 2016, and the information contained in the presentation to the S&T Committee during the 2015 Interim Meeting still apply.

The proposed definitions do not provide sufficient criteria to categorize the following scales. Consequently, the definitions are ill conceived and inadequate. The proposed definitions will make the proper categorization of scales more difficult, not easier. As an exercise, apply the proposed definitions to the following scales. The following is taken from by April 22, 2016, comments.

The proposed definition for batching scales does not provide a clear distinction as to whether or not these scales are batching scales or some other types of scales. Which criteria are used by a weights and measures inspector categorize the following scales as either hopper scales, grain hopper scales, batching scales or automatic bulk weighing systems?

1. Hopper scales that manually weigh sand and gravel in single drafts for individual transactions.
2. Hopper scales that manually weigh grain in single drafts for individual transactions.
3. Hopper scales that automatically weigh grain in single drafts for several individual transactions in sequence.
4. Batching scales that weigh two or more materials in a single weighing cycle for a single transaction. See the illustration for “Gain-in-Weight Batch.” Consider the cases where the scales could be manually controlled for single transactions or automatically controlled for sequencing though multiple recipes for several customers.



5. Scales that weigh out of a single hopper in increments, that is, weigh a single material into a collection hopper. See the illustration for “Loss-in-weight feeders with load cells.”
6. A hopper scale with a very large-capacity hopper that can automatically weigh a single material into a railroad car in a single draft, but the weighing system can automatically fill many cars in sequence with the same or different materials for a single or multiple customers.

7. The same large-capacity hopper scale as referenced in point 6 and that can automatically weigh a single material into the hold of a ship, but now multiple drafts of the same material are weighed and the total weight is accumulated based upon the weight of the individual drafts.
8. Weighing systems that automatic weigh a single material in successive drafts and accumulating the net weight of each draft.
9. Weighing systems adapted to the automatic weighing of a commodity in successive drafts of predetermined amounts automatically recording the no-load and loaded weight values and accumulating the net weight of each draft.

The proposed definition for batching scales does not provide enough guidance and distinction in order to classify each scale described above into the proper category. A hopper scale in any application could be called a batching scale.