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Non Automatic Weighing Devices	Issued: 2004-03-01	Revision Number: Original	

STP-14 LOAD DISCRIMINATION TEST

REFERENCE

Sections 14 and 15 of the Non Automatic Weighing Devices Specifications.

PURPOSE

The load discrimination test is used to determine whether the device is capable of sensing a small change of load and of changing its registration accordingly. Frictional forces, binding or system inertia can prevent a mechanical device from sensing the prescribed "Load Discrimination Test Load". Frictional forces, binding, the use of oversized (capacity) load cells, the use of an electronic indicator with an inadequate display sensitivity (μ Volts/Display Digit) or inadequate digital filter algorithms could cause an electronic weighing device to fail to detect the addition of the prescribed "Load Discrimination Test Load". This test is performed at no load and near Max.

NOTE: the load discrimination test is based on " d " and not " e "

PROCEDURES

For Automatic Digital Indicating Devices

NOTE: the following **official procedure** is performed at the time of approval and initial inspection at the factory.

- If the device is equipped with an AZTM, put a small load on the platter to bring the scale out of its AZTM range. The indication is near zero. Otherwise the test can be performed at zero.
 - Successively add small weights equal to 0.1 d until the low end of the Zone of Uncertainty (ZU) is reached; remove one small weight to obtain a solid indication; the indication is at the high point of the scale interval.
 - Smoothly add a load equal to 1.4 d. Record the indication.
- Repeat the test near the maximum capacity.

This test can be performed backward. The indication must be brought at the low end of the scale interval, instead. Then a load equal to 1.4 d is removed.

NOTE: the following **simplified procedure** is applied when a device is initially inspected on site and at the time of subsequent inspections. The official procedure remains the one above. In case of a dispute over the results or when an inspector judges it appropriate, the official procedure described above is used.

- If the device is equipped with an AZTM, put a small load on the platter to bring the scale out of its AZTM range. The indication is near zero. Otherwise the test can be performed at zero.
 - Note the indication.
 - Smoothly add a load equal to 1 d. Record the indication.
- Repeat the test near the maximum capacity.

For Weight Classifiers

The same test is performed on weight classifiers. However, inspectors must take into consideration that the ZU (turning point) follows immediately the interval.

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INTERPRETATION OF THE RESULTS

In the case of the official procedure, the addition or the removal of the load must cause a change of indication of 2 d. In the case of the simplified (on site) procedure, the addition or the removal of the load must cause a change of indication of 1 d.

For Automatic Analogue Indicating Devices (dial, fan type)

- At no load condition, press on the platter to generate a motion of the indicating element (pointer). Allow the indicator to stabilize.
- Smoothly add (or remove) a load equal to 1.4 d; allow the indicator to stabilize. Record the indication.
- Repeat the test near the maximum capacity.

INTERPRETATION OF THE RESULTS

The addition or removal of the load must cause a change of indication of at least 1 d.

For Non Automatic Indicating Devices - Beam scales with no additional means of indication

- Set the device to zero (Horizontal position and mid distance between the trig loops or limiting stops).
- Add or remove a load equal to 1 d (in-Service limit of error), when the test is performed near zero.
- Repeat the test near Max. Add or remove a small load corresponding to the in-Service limit of error applicable to the load on the platter, without exceeding 2 d.

INTERPRETATION OF THE RESULTS

The addition or removal of the load must cause the weighbeam to change from the center position to the outer limit of the trig loop or limiting stops.

For Non Automatic Indicating Devices - Beam with additional indicating element (Over/Under Indicator having graduations without values)

- Set the device to zero.
- Add or remove a load equal to 1 d (in-service LOE), when the test is performed near zero.
- Repeat the test near Max. Add or remove a small load corresponding to the In-Service LOE applicable to the load on the platter, without exceeding 2 d.

INTERPRETATION OF THE RESULTS

The addition or removal of the load must cause the position of the indicator to change by the applicable value indicated below:

- **1 mm** for Class I and II devices
- **2 mm** for Class III and IIII devices with Max \leq 30 kg
- **5 mm** for Class III, III HD and IIII devices with Max $>$ 30 kg

REVISION

Original document