

Proactive Maintenance For Long Truck Scale Life

Once your scale is installed, operational and certified for use, you may be ready to consider your truck scale project a success. However, taking the time to develop a scheduled maintenance program while the scale is still new can keep it performing optimally and increase its longevity. This is also the perfect time to utilize the expertise of your scale supplier to discuss plans for service and repairs to your scale – both planned and unplanned. It pays to think about how you will handle service and repairs before you actually need them.



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1 Responsibilities of the Scale Owner

Cleanliness. The scale owner needs to keep the scale clean and free of debris accumulation. The main goal is ensuring that foreign materials do not obstruct the necessary centering movements of the scale modules. Debris can include:

- Spilled goods and material (gravel, corn, scrap metal, etc.)
- Ice and snow
- Standing water (ensure drainage systems are working as intended)
- Mud, dirt and sand

Traffic control. Truck traffic driving on and off of the scale should be at a controlled pace. Your scale supplier can provide recommendations for entry and exit speeds based on your application. Most importantly, this ensures the safety of those working nearby, as

well as the driver and the truck. Secondly, hard stops and starts on the scale inflict heavy wear on scale components and the foundation. This will lead to inaccurate weights and scale breakdowns that will necessitate more frequent repairs.

Awareness. Scale owners should be aware of how their scale functions and the wear parts that will eventually need to be replaced. For example, the tires on your car will eventually need to be replaced, and most drivers do that before the tires have actually failed. The same can be true for scale components, such as load cell receivers, checking system parts and suspension linkages. Eventually the wear level will necessitate that parts be replaced to prevent a forthcoming failure. Usually the best person to evaluate those situations is a professional scale technician.



Keeping the scale area clean helps prevent weighing errors caused by debris

2 Scheduled Tests & Maintenance

There are two types of ongoing scheduled activities that need to be performed on a legal-for-trade truck scale:

- **Weights & Measures Checks / Calibrations / Recertifications**

In many locations, the scale supplier is permit-

ted to perform the initial calibration and accuracy check on the scale when it is installed. However, typically after 60 days the scale's accuracy will be verified with tests performed by the local Weights & Measures authority. W&M tests typically happen at predetermined intervals, most often once per year. Those tests are done in one of three ways:

- The W&M agency is equipped to perform those tests and does so with its own truck and technicians
- The tests are performed by a scale service provider but must be witnessed by a W&M agency representative
- The tests are performed by a scale service provider and the scale owner must provide proof of the test and the results to the W&M agency

Your scale supplier can tell you how this is done in your location.

Tip: Remember that standard calibration checks and recalibrations only ensure that scale's accuracy is within the legal tolerance. They do not ensure that the scale's accuracy is perfect. To monitor your scale's accuracy, ask your service provider to note the scale's accuracy "as found" and "as left". This helps you stay aware of problems with the scale's performance and minimize revenue loss.

• **Manufacturer's Recommended Preventative Maintenance**

Your scale supplier will probably offer you a maintenance program that includes periodic visits from a scale technician who will test and inspect the scale and perform preventative maintenance. While that type of maintenance may not be legally required, to many scale owners, the largest benefit is protection from costly unplanned downtime. This program may or may not cover the W&M requirements, depending on your location. Note that the manufacturer may require preventative maintenance as a condition of the scale's warranty.

Testing the scale

To test the scale, the technician or agency will bring a special truck equipped with certified test weights to the scale site. These weights will be applied to the scale in specific weight intervals and in different locations on the scale deck. The technician will monitor the weight indicated by the scale to check its accuracy and con-

sistency. The technician will provide the customer with a report noting the scale's level of accuracy, as well as findings from the inspection.



What happens if the scale does not pass the Weights & Measures accuracy test?

If the scale's error is beyond the legal tolerance, the W&M agency may issue a yellow tag or a red tag (or something similar). A yellow tag is a warning that gives the scale owner a period of time (often 60 days) to have the scale recalibrated by a service provider. The yellow tag allows the scale to be used normally during this time. In contrast, a red tag requires that the scale is closed immediately. It cannot be used until it is recalibrated. Avoiding that situation is another reason that a scale owner may wish to be proactive about preventative maintenance.

When discussing a maintenance program, ask the supplier exactly what services are covered. Also ask:

- How often should scales be inspected? How long does it take?
- How much time does a test require?
- How often should we test?
- How difficult is recalibration when we find an error?

Recommended preventative maintenance procedures can vary between the needs of a specific make and model of scale, as well as the application and amount of traffic using the scale. However, a universal recommendation is that, in addition to W&M tests, any truck scale should undergo a thorough service inspection at least once each year.

3 Inspection & Preventative Maintenance Procedures

The accuracy of your scale is undoubtedly important, but you likely want to ensure the reliability and longevity of the scale as well. When a scale breaks down or eventually wears out, the cause is typically related to the physical condition of the scale and its components.

Certain parts of a truck scale are designed to be replaced over time. Much like a set of tires on your car, responsible scale owners should replace worn parts before they actually fail. From a practical standpoint, this allows you to schedule these procedures when they are convenient, as opposed to paying a premium for emergency service at the worst possible time.

Consistent inspection and preventative maintenance procedures will reduce the cost of ownership and extend the scale's life. Although certain procedures will vary based on your scale's design and configuration, the following list includes many of the general inspection points that make up a thorough service visit.

Procedures may include, but not be limited to, the following:

Weighbridge & Foundation

- Inspect scale approaches for damage
- Check the scale and foundation for any binding between the deck and the foundation
- Inspect the edges of the scale for any foreign objects (stones, etc.)
- Examine the area under the scale for buildup of debris
- Test drain pumps (where applicable) and inspect drainage systems
- Examine the weighbridge for cracks, corrosion, stress patterns, and broken welds
- Inspect deck module couplers for damage
- Examine siderails for damage
- Check for appropriate freedom of motion
- Examine tolerances on suspension/checking system, both side-to-side and front-to-back and adjust as needed

Load Cells

- Raise weighbridge and remove load cells to inspect
- Inspect load cell wear pattern for off-center loading
- Lubricate load cell mating surfaces

- Check load cell mounting plates and tighten as needed
- Inspect load cell cables for damage and secure any loose cables
- Inspect grounding and lightning protection systems, where applicable

Junction Boxes (where applicable)

- Open each junction box to inspect for debris and moisture
- Ensure junction box cable connections are secure
- Inspect junction box seal and replace if needed

Terminal and Operations

- Check error messages and/or data logs, if so equipped
- Ensure terminal is properly grounded
- Check for appropriate W&M seals
- Perform any system integration tasks as requested by the customer



Periodically check load cells, receivers and other critical parts for wear



Some areas, such as load cell mating surfaces, require periodic lubrication

Who can perform service on my scale?

A reputable company that is qualified to perform scale services can typically do so on any make and model of truck scale. You may wish to gather multiple quotes for maintenance and service programs. Be sure to compare the content of those programs and not just the price. Just as the prices may vary, so too can the

level of service and expertise you receive. Good questions to ask can include:

- Are there fixed rates for service calls?
- Is there a guaranteed response time for service calls?
- What are the technicians' qualifications?
- How do they source common replacement parts?

Special Note:

Be aware that some scale companies generate most of their profit from performing scale service. Those companies may sell customers new scales at a very small profit margin, hoping that they will make their profit on servicing and repairing the scale later. Seeing a very low purchase price, some scale buyers purchase service-prone systems that leave them budgeting large amounts of money each year for service and repairs. That is one of the reasons to look at more than just the initial purchase price when buying a scale.

4 Emergency Service

If your scale is down unexpectedly, your business could be losing money with every hour that you wait for repairs. Ideally, you want a service provider with the right tools, equipment, knowledge, and replacement parts to fix a problem in a single visit.

Additional questions for your potential service supplier:

- What kind of parts inventory do they carry?
- What is the travel time from their location to your scale?
- What sequence of tests does the technician perform when they are faced with a scale that isn't operating properly? How long do they take?
- How long does it take to switch out a common part, e.g., a load cell, a cable or hydraulic line, a printer, etc.?
- Is service available 24 hours a day?
- How fast can the manufacturer get parts to the local service organization?
- What equipment does the local organization have, e.g., jacks, test equipment, test trucks, booms and welding equipment?
- Is it possible to perform remote diagnostics rather than traveling to the scale site?



Having a partnership with a reputable industrial scale service team can help any scale owner get the most out of their scales.

5 Warranties

Your scale should come with a manufacturer's warranty. As a customer, this is an area in which you should take time to evaluate options, as warranties can vary considerably. Some manufacturers offer a very limited standard warranty with expanded warranty coverage at an added cost. Take the time to actually read the fine print of the warranty and analyze the following categories.

What does the warranty cover?

Determine the specific level and duration of coverage for the following:

- Types of components covered
- Types of failures covered
- Replacement parts
- On-site labor
- Travel costs for technicians
- Lightning (typically addressed in its own section in the warranty)

There may be certain components that are excluded from the warranty, or that may be covered under their own separate warranty, such as printers.

How long is the warranty?

Some manufacturers prorate their level of coverage as the scale ages. That means their warranty may only cover a percentage of any covered repair after a few years.



How responsive is the manufacturer to warranty coverage?

Does the scale manufacturer have a local sales/service entity or distributor? If not, someone may need to be dispatched from another location. It may be up to you to consider the "what ifs" and determine how responsive you think a company will be in an emergency situation.

In summary, all truck scales will eventually require service. Most scale owners want to have a reliable partner for service and a plan to ensure the scale's performance. The time it takes to develop this plan can be well worth the effort in the resulting peace of mind.

Mettler-Toledo AG

Industrial
CH 8606 Greifensee
Switzerland
Phone +41-44-944 22 11
Fax +41-44-944 30 60

www.mt.com

For more information