Vehicle Weighing
Industrial Weighing and Measuring

14 News

Are Maintenance Costs Killing You?
Operate Your Vehicle Scale More Efficiently

What is the cost of owning and operating a vehicle scale? You might be surprised to learn how much the cost can vary. Depending on the weighing technology you buy, you could end up paying many times more for upkeep than your competitors pay.

A vehicle scale is a valuable asset to your business. While owning a scale contributes to your profitability, it also involves ongoing costs and risks. The decisions that you make when you buy a scale will affect your business financially for many years to come.

Total cost of ownership

To understand the total cost of ownership, look at what you will spend over the life of your scale. The life cycle can be divided into four stages:

- Acquisition
- Installation
- Operation
- Replacement

The initial purchase price includes the costs of acquisition and installation. Because those costs are fixed, budgeting for them is easy. Although the initial purchase price is significant, it is just one factor you should consider when buying a scale.

Of the four stages, operation has the greatest potential impact on your budget. While the other stages cover a few months of the life cycle, the operating life of a vehicle scale can last for 20 years or more.

What you don't know

Any equipment that is operated for 20 years requires periodic maintenance. By signing a service contract, you can set

METTLER TOLEDO

fixed costs for regularly scheduled maintenance and inspections. What you don't know is how much you will have to pay for unscheduled repairs over the life of a scale. If there is no way to predict those costs, there is no way to budget for them.

Reduce repair costs

One scale owner's experience will give you an idea of how much money is at risk.

A major aggregates supplier operates seven facilities, each with its own truck scale. When the company decided to add a new truck scale, its service provider analyzed the maintenance records for all seven facilities. With three METTLER TOLEDO scales and four from another supplier, the company was in a good position to compare costs for the two brands.

The table shows the stunning results. During the previous 5 years, the company spent almost $100,000 replacing failed load cells in the competitor's scales. By comparison, the company had paid nothing to replace METTLER TOLEDO load cells during the first 5 years of operation. In fact, not a single POWERCELL® load cell had failed in the 15 years since the oldest METTLER TOLEDO scale was first installed.

The differences did not end there. As other components failed during the first 5 years, overall repair costs rose to nearly $150,000 for the competitor's scales. Those costs were on top of the fees that the owner paid for regularly scheduled maintenance and inspections.

Avoid downtime

Keep in mind that the cost of ownership includes more than just repairs. When a load cell or other component fails, you also face downtime. How much money you lose when your scale is shut down depends on the length of the downtime and your contingency plans. Some companies spend extra time and money transporting material to a remote scale. Others shut down production until their scales have been repaired.

Scale maintenance is part of the cost of doing business. The problem is that few scale owners are aware of how much more some scales cost to maintain. Because they have no means of comparison, most scale owners assume that what they are paying is the norm.

	METTLER TOLEDO Scales (3 Scales)	Competitor's Scales (4 Scales)
Number of Load Cells Replaced	0 (in 5 years)	34 (in 5 years)
Load Cell Replacement Costs	$0	$99,399
Total Scale Repair and Replacement Costs	$0 (in 5 years)	$149,034 (in 5 years)

Comparison of repair and replacement costs during the first 5 years that two brands of truck scales were operated by an aggregates supplier.

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Industrial Division
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New Industrial Weighing Catalog

Find Your Required Solution with Our Full Product Portfolio

www.mt.com/ind-catalog-ve

Choose the right scale

A vehicle scale should contribute to your profits, not waste them. It pays to understand how different weighing technologies can affect your business. When shopping for a vehicle scale, factor in the total cost of ownership. Look for four things that make a big difference over the life of a scale:

- A track record of reliable operation and minimal downtime
- A strong warranty that eliminates replacement costs
- The ability to maintain high weighing accuracy
- Life-cycle testing that proves a weighbridge's longevity

Choosing the right scale will reduce operating costs significantly. In addition to saving money, you benefit from the predictable costs that allow you to make better budgeting and planning decisions.

▸ **www.mt.com/vehicle-ve**

The Reliability Difference

Find out how to reduce the total cost of ownership for your vehicle scale. Advanced weighing technology gives you the highly reliable performance that you need to keep maintenance costs low.

Watch a free webinar

▸ **www.mt.com/veh-pdx-reliability-matters-ve**

Take Control of Your Vehicle Scale
Three Options for Greater Productivity

A scale terminal is more than just a weight display. It is the control center for your vehicle scale, and it enables the scale to interact with other equipment. Selecting the right terminal is essential for maximizing the productivity of your weighing operation.

The new IND570 terminal is designed to meet the needs of many weighing applications. When configured for vehicle weighing, the terminal processes inbound/outbound transactions on one scale. Its ability to store 100 vehicle IDs and tare weights helps speed up transactions.

With the addition of the IND570, the METTLER TOLEDO line of vehicle-weighing terminals offers the perfect fit for any application. This product line is not a simple good-better-best range of options. All three terminals are high-performance units that provide fast and easy processing. The difference is their capability levels.

Key capabilities

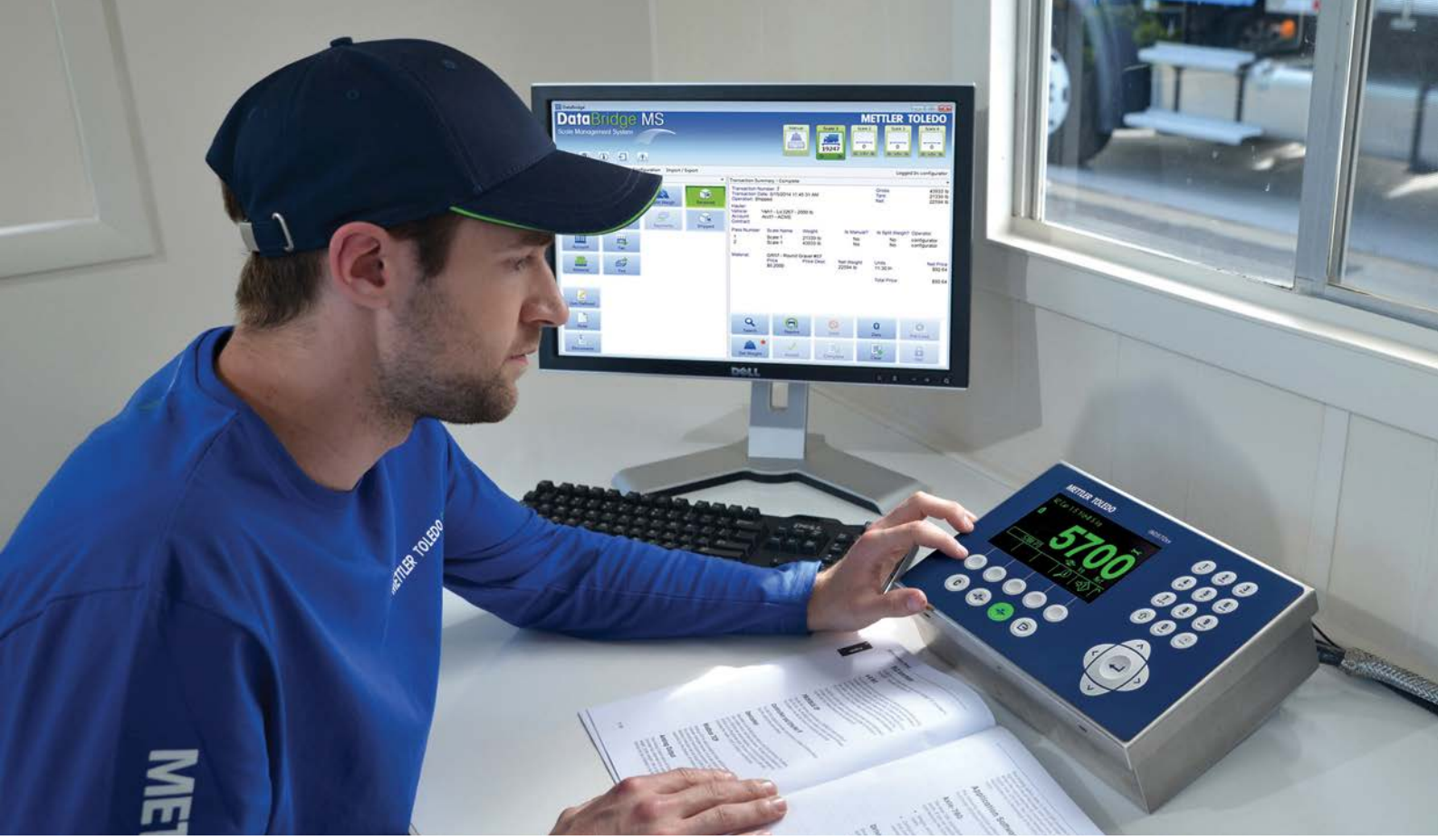
The first thing to consider is the number of scales that will be needed for inbound/outbound weighing. Select a terminal to handle your scales, or add DataBridge™ software to connect multiple scales to a shared database.

Diagnostic capabilities give you a window into a scale's operations. POWERCELL® load cells generate a wealth of data that can be used to verify weighing accuracy and diagnose problems. The terminal provides easy access to this information so that you can take proactive steps to keep a scale operating reliably.

Connectivity options range from basic serial and Ethernet communication to the ability to interact with programmable logic controllers.

▸ **www.mt.com/veh-terminals-ve**

An IND570 terminal can control external devices and share transaction data with a personal computer or network.



Vehicle-Weighing Terminals

By choosing the right METTLER TOLEDO terminal, you get the full capabilities of our POWERCELL® PDX® and GDD® load cells.

IND245/IND246 Terminal

- Inbound/outbound transactions on one vehicle scale
- Access to basic POWERCELL® diagnostic data
- Basic connectivity options for exchanging data

▸ **www.mt.com/IND245-ve**

IND570 Terminal

- Inbound/outbound transactions and filling operations on one vehicle scale
- Access to key POWERCELL® diagnostic data
- Multiple connectivity options, including interfaces with PLCs and other control systems

▸ **www.mt.com/IND570-ve**

IND780 Terminal

- Inbound/outbound transactions and filling operations on one or two vehicle scales
- Access to all POWERCELL® diagnostic data
- Widest range of connectivity and control options plus the ability to customize solutions

▸ **www.mt.com/IND780-ve**

Avoid Service Scams
Don't Pay Twice for Your Scale

Buying a bargain vehicle scale can seem like a good decision at the time. What you might not realize is that many suppliers who tempt buyers with low prices have hidden agendas. They count on high maintenance costs to force you to pay them twice for your scale.

One way that some suppliers keep costs down is to equip their scales with inexpensive analog load cells. Not only are these load cells notoriously inaccurate, they tend to have short lives. The suppliers expect to make big profits replacing failed load cells.

You can expect analog load cells to start failing after a few years of use, especially in harsh environments. Since most truck scales contain 10 to 12 load cells, there are plenty of opportunities for failure. It is not unusual to have to replace every load cell in a scale within five years.

Replacement analog load cells also have short lives, so the cycle is endless. Consider how many analog load cells you are likely to replace if you plan to keep a truck scale for 20 years. By the time your scale reaches the end of its life, you will probably have replaced enough load cells to pay for the entire scale a second time.

Why load cells fail

There are many reasons why analog load cells fail. A grain-storage facility in Illinois experienced several of them firsthand. The causes ranged from lightning strikes to rodents chewing through unprotected cables. With an average of one failure per month, the facility's maintenance costs exceeded $15,000 in a single year.

The problem got so bad that the company began stocking replacement parts to minimize downtime. After years of high repair bills, the owner decided to end the problem by converting to POWERCELL® PDX® load cells.

Replacing failed load cells can be a continual requirement that ends up costing more than you paid for the entire scale.

Will a warranty help?

You might assume that a warranty will protect you from the high cost of replacing analog load cells. Read the fine print. Instead of protecting you, a limited warranty can be part of a supplier's strategy to make its service department a profit center.

Too many warranties cover replacement parts only. Those warranties seem less valuable when you realize that 70 percent of the charges on the typical service invoice are for labor and travel. You get an inexpensive load cell while paying the high cost of having it installed.

What steps can you take?

Don't fall prey to suppliers who trap you in an endless cycle of high maintenance bills. There are two steps you can take to make sure you will not have to pay for your vehicle scale twice.

First, choose a weighing technology that is built to last. POWERCELL® load cells combine exceptional reliability with a comprehensive warranty that covers the full cost of replacement.

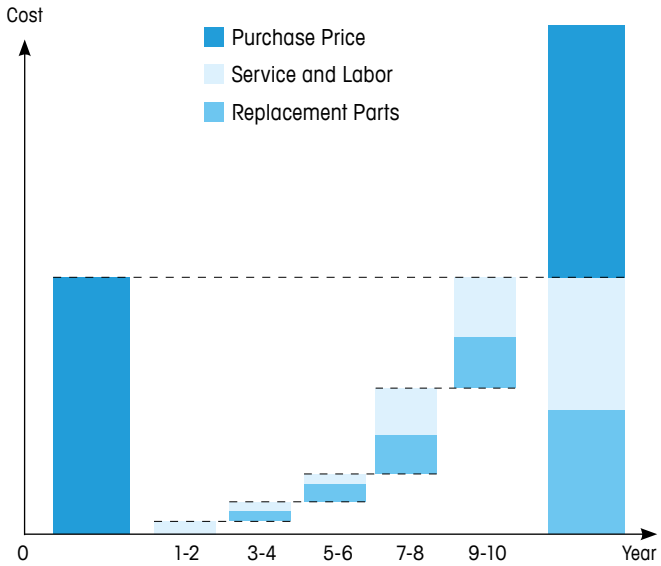
Second, choose a service provider who has your welfare in mind. Your service provider should have three goals:

- Extend the life of your vehicle scale
- Reduce unscheduled downtime
- Lower your overall maintenance costs

METTLER TOLEDO offers reliable equipment backed by essential services that keep your equipment operating at peak performance. Ask us to tailor a service program that meets your needs.

▸ **www.mt.com/veh-service-ve**

Total Cost of Ownership for Analog Truck Scale



Within 10 years, load cell replacement costs for a typical analog truck scale often equal the original purchase price of the scale.

Cut Unplanned Downtime

What are the best ways to eliminate costly downtime?
Download a white paper about reliable vehicle weighing to find out how advanced technology makes it possible to increase scale reliability and lower overall maintenance costs.

Download new white paper:

▸ **www.mt.com/veh-wp-reliable-weighing-ve**

Lifelong Corrosion Protection
Maintenance-Free Finish for 30 Years

Steel has one glaring weakness: corrosion. When faced with constant exposure to harsh environments, vehicle scales are especially vulnerable. A corrosion-resistant galvanized finish is ensuring that a unique vehicle scale has what it takes to last a lifetime.

A new bus-stop scale welcomes visitors to the Center of Science and Industry (COSI) in Columbus, Ohio. This full-length truck scale is the centerpiece of a permanent exhibit at COSI, an interactive science center and museum. It fosters the center's goal of giving visitors of all ages a better understanding of science, industry, health, and history.

The exhibit greets busloads of visitors at the science center's entrance, providing an interactive demonstration of how to determine net weight. A school bus arriving at COSI stops on the scale to display its gross weight. When the students exit the bus, they subtract the tare weight of the empty bus to determine the net weight of the entire group of students.

Corrosive chemicals

The scale's location on a city street creates special concerns. During the winter months, the city's road crews treat it for snow and ice just as they would any other local road.

A METTLER TOLEDO vehicle scale greets visitors at the entrance to the COSI museum in Columbus, Ohio.

Prior to a snowfall, trucks spray the roads with a salt/brine solution to prevent icing. Once snow has fallen, heavy-duty snowplows clear it from the roads and spread chemically treated salt on the plowed driving surfaces.

Galvanizing solution

Salt and other chemicals can be highly corrosive to the steel frame that supports the scale's concrete driving surface. To prevent corrosion, the entire frame was galvanized.

The scale was installed in a pit to make the scale deck flush with the surface of the street. Pits require regular maintenance to keep them from filling with water when drains get clogged by debris.

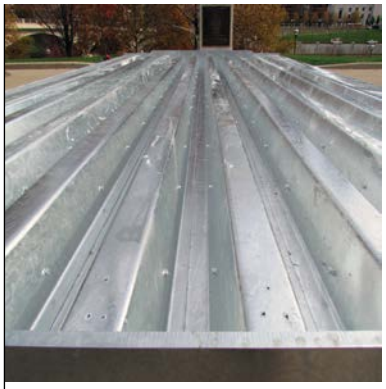
To ensure that the scale will continue to operate reliably, it is equipped with POWERCELL® PDX® load cells. This technology provides a watertight network that keeps working even if the load cells are immersed in water for extended periods.

▸ www.mt.com/vehicle-ve

Galvanizing Basics

Hot-dip galvanizing is a process used to coat steel with a protective layer of zinc. The steel surface is prepared by removing oxide and other residue. Then the steel is immersed in a bath of molten zinc at a temperature of about 860°F (460°C) for up to 10 minutes.

Complete Coverage
Immersing a scale structure in a galvanizing bath ensures that all exposed surfaces are fully coated, including corners and gaps that can be hard to paint.



Corrosion Protection
Galvanizing causes a metallurgical reaction, forming an alloy that acts as a barrier between the steel and the outside atmosphere. If the galvanized surface is damaged, the zinc sacrifices itself and reseals the steel against the atmosphere, effectively preventing it from corroding.

Maintenance-Free Finish
The American Galvanizers Association estimates that galvanized steel will need no maintenance for about 70 years. Galvanizing provides long-lasting protection in applications as diverse as mining, aggregates, chemical, waste, and seaports.

www.mt.com/veh-galvanized-ve

Are You Headed for a Breakdown?
Take the Risk out of Owning a Scale

There is more to a vehicle scale than meets the eye. Hidden beneath its driving surface are essential components that can shut down your operation if they fail. By taking one simple step, you can reduce your risk of scale failure.

Managing a facility's equipment requires many judgment calls. Should you spend money to upgrade the equipment? Can you get several more years of use out of the equipment before replacing it? To make the right decisions, you need to assess the risks that owning and operating a vehicle scale involves for your business.

Risk can be defined as a function of probability and impact:

Risk = Probability × Impact
(of failure) (of failure)

The cost of failure

The impact of a failed vehicle scale depends on the number of vehicles you weigh each day and the value of the material being weighed. A facility with several scales might have no trouble getting by without one for a few days. On the other hand, a second facility could depend entirely on one scale for buying and selling material. Any amount of downtime would have a big impact on the business.

After calculating the financial impact of downtime, you need to determine the probability of failure. A single scale failure that costs you two days of sales is bad enough. If a scale fails on a monthly basis, downtime can really hurt a business.

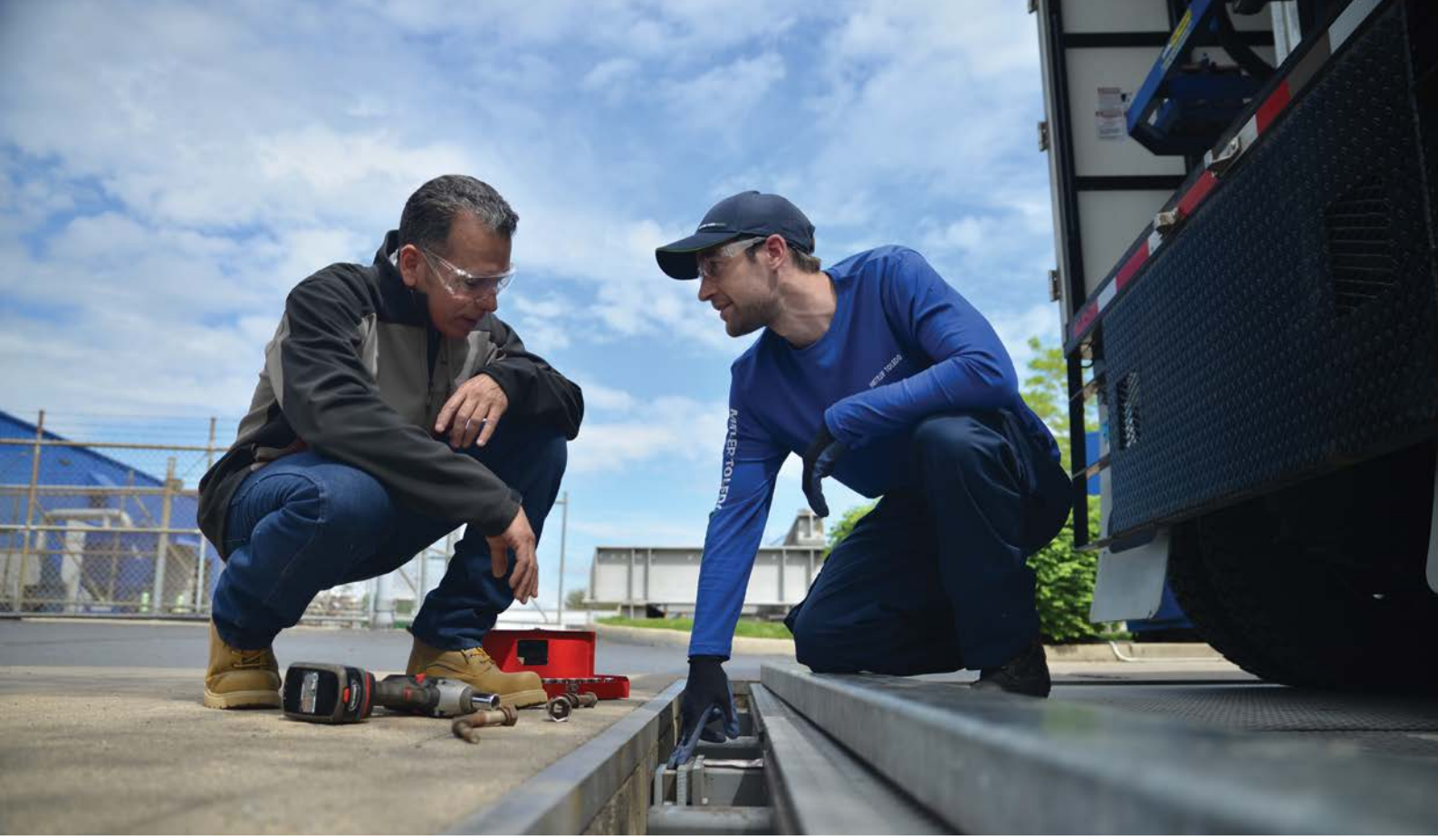
Risk matrix

The greater the impact of failure, the more important it is to take steps to ensure that the probability of failure is low. A risk matrix like the one shown in the table illustrates the relationship.

Determining the probability of failure is not always easy. Even if a scale looks fine

Probability \ Impact	**Negligible** 0-50 trucks per day	**Minor** 100 trucks per day	**Moderate** 200 trucks per day	**Significant** 300 trucks per day	**Severe** 400 trucks per day
Very Likely	Moderate	Moderate	High	High	High
Likely	Low	Moderate	Moderate	High	High
Possible	Low	Moderate	Moderate	High	High
Unlikely	Low	Low	Moderate	Moderate	High
Very Unlikely	Low	Low	Low	Moderate	Moderate

A risk matrix like the sample shown here is a useful tool for assessing risk as a function of probability and impact. You run the highest risk when there is a high probability of scale failure combined with a severe impact on your business.



on the surface, serious problems could be building up underneath it. To understand a scale's real condition, you need a careful evaluation by a qualified professional.

Assess your risk

METTLER TOLEDO will help you assess your risk. Our service technicians can give your vehicle scale a complete health check. They evaluate every aspect of the scale and provide a complete performance level update summary (PLUS) report report that covers the following:

- Weighing performance
- Scale condition
- Recommendations

The PLUS report contains information that will help you make decisions about the future of your vehicle scale. It provides recommendations about how you can reduce risks and proactive suggestions about how to improve weighing performance.

Find out how a vehicle scale health check can protect your profits by ensuring reliability and extending the life of your scale.

▸ **www.mt.com/veh-healthcheck-ve**

Four things that increase a vehicle scale's return on investment

- Proven reliability
- Full warranty coverage
- High weighing accuracy
- Tested and proven longevity

Calculate the Cost of Downtime

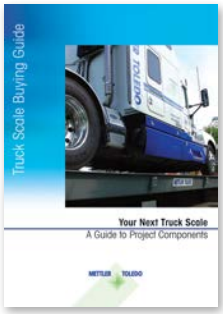
Don't be taken by surprise. Find out how much money you stand to lose if your vehicle scale shuts down temporarily. The METTLER TOLEDO return-on-investment calculator uses data about your weighing operation to determine your cost of downtime.

Make your calculations now:

▸ **www.mt.com/vehicle-roi-ve**

Make Profitable Decisions
Throughout Your Scale's Life Cycle

Download free guides that show you how to get optimal performance at every stage of your vehicle scale's life.



Initial Scale Purchase
Truck Scale Buying Guide
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Ongoing Scale Maintenance
Health Check Brochure
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