

Metals

Industrial weighing and measurement



2 News

Reliable Weighing is Critical for Metal Processor

As scrap metal prices reach record highs, the cost of weighing errors has risen considerably. PSC Metals is responding by making sure that its facilities use the most accurate and reliable scales.

With headquarters near Cleveland, Ohio, PSC Metals is the ninth largest scrap metal processor in the United States. It has more than 30 sites throughout the Eastern United States and Canada. The company's strategically located recycling operations handle every aspect of scrap processing from collection and sorting to shredding, shearing, and baling.

METTLER TOLEDO and its distributor, Carlton Scale, supplied truck and floor scales to four PSC Metals facilities in Eastern Tennessee. The Knoxville Central, Knoxville Richards, and

Harriman Recycling facilities use METTLER TOLEDO steel-deck truck scales, while the Rockwood Recycling facility uses a concrete-deck truck scale. Each scale is equipped with a JAGXTREME® terminal, which provides accurate weight data to the company's computer system.

Each facility takes in a mixture of scrap metal from managed industrial accounts, individuals, and dealers. Knoxville Central and Knoxville Richards process all types and grades of ferrous and non-ferrous metals. Harriman Recycling specializes in



METTLER TOLEDO



ferrous metals, and Rockwood Recycling handles non-ferrous metals. The Knoxville Central and Harriman Recycling facilities have shredders that allow them to process automobile bodies efficiently.

Receiving and Shipping

Weighing is an integral part of the receiving and shipping processes. When a truck with a load of scrap metal enters one of the facilities, it is weighed on the truck scale. It then drives to a specified area to dump the load, after which it is weighed again to determine the net weight of the scrap metal. Small quantities and high-value, non-ferrous metals are often removed from trucks and weighed on a floor scale.

Auto body scrap is usually run through a shredder to separate the metal from other materials. In some cases, a spectrometer must be used to determine the type of metal that is being weighed. Once the type of metal and the final weight are known, a dollar value can be assigned to the scrap.

To prepare the metal for shipping to local mills, PSC Metals processes it by shredding, shearing, torching, or baling according to the customer's specifications. An empty truck is weighed to determine its tare weight. Then it is loaded with the processed metal and weighed a second time to determine the net weight of the metal. The scales at the four recycling facilities typically handle a combined workload of more than 1,200 weighments per day.

Peace of Mind

Reliability is critical for PSC Metals. Robust products from METTLER TOLEDO and regularly scheduled service checkups from Carlton Scale combine to ensure peace of mind. The facility managers cite those two factors as reasons for purchasing the scales. According to Jason Bullington, Non-ferrous Manager at Rockwood, "We couldn't be happier with the scales and only want to purchase METTLER TOLEDO products." Gene Cutshaw, Non-ferrous Manager at Knoxville Central, adds, "Service is great – can't be beat."



Floor scales are used to weigh small quantities and high-value metals.



PSC Metals uses truck scales for weighing the scrap metal it receives and the processed metal it ships.

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Vehicle Scale Testing Provides Proven Performance

Are you confident that your new truck scale will last for its expected service life? At METTLER TOLEDO, we use the most extensive testing program in the industry to give you that confidence.

We start testing our truck scale modules during the design stage, using computer calculations and finite element analysis to evaluate the designs. But we do more than just theoretical calculation. Our engineering and manufacturing facility in Columbus, Ohio, uses a custom-designed test stand that we call the module masher to verify that our scales meet the real-world demands of vehicle weighing.

Module Masher

The module masher is an accelerated-life-cycle test stand for truck scale modules. It can simulate 20 years of weighing within a few months, providing reliable test data quickly. The module masher has four hydraulically operated feet, which apply forces

up to 120,000 pounds. Attached to the bottom of each foot are two rubber pads spaced 8 inches apart.

For a typical test, the feet are positioned to simulate the load applied by a dual tandem axle (two truck axles spaced 4 feet apart). To reproduce the conditions of an actual installation, the module is supported only at the four points where it would normally rest on load cells. The module masher's feet are then set to apply a force equal to the scale's dual-tandem-axle rating.

Test Procedures

Stage one is stress testing. We attach strain gages to the module at key locations on the deck, end plates, and underside. Then with the load applied to the module, we take readings from each strain gage. Loads can be applied in different locations to verify that the stress levels are acceptable across the entire module.

Stage two simulates the amount of traffic that would pass over a scale during its expected service life. This requires applying a load repeatedly to the same location on the module. The feet press down on the module and then are raised, simulating a loaded truck driving onto the scale to be weighed and then driving off the



The module masher tests truck scale modules by simulating 20 years of traffic within 2 months.

scale. The module masher can complete one load/unload cycle in 3 seconds. The stress is the same whether the load is applied for several seconds or several minutes. With the module masher running constantly, a test of 1.5 million cycles can be completed in 52 days. That means that the module can be subjected to the equivalent of 20 years of truck traffic within 2 months.



The module masher simulates how a load is applied by a truck's dual tandem axle.

By testing every design with the module masher, we can verify that each truck scale we make is durable enough to stand up to the real-world demands of vehicle weighing for a service life of 15 to 20 years.



Each foot is equipped with two rubber pads spaced like a pair of tires.

Weighing Vehicles without a Scale Operator

Truck drivers can complete their own weighing transactions in seconds with an unattended scale terminal. Equipping a scale with one of these terminals makes it possible to weigh trucks at any time without having a scale operator on duty.

The terminals are ideal for scales in remote locations, scales that operate 24/7, and facilities with multiple scales. They can be set up to work in conjunction with traffic lights, gates, and other peripheral equipment to manage traffic flow.

Increased Efficiency

Unattended weighing can make an operation more efficient:

- It eliminates the need for a scale house and operator.
- It weighs trucks quickly to keep traffic moving.
- It allows efficient 24/7 operation.
- It lets drivers get tickets without leaving their trucks.
- It can control gates to restrict access to a facility.

Rugged Design

METTLER TOLEDO unattended scale terminals have rugged stainless steel enclosures that are designed for use in the harshest environments. They provide protection against rain, snow, dust, and tampering. An optional heater can be installed to keep printers and other internal components working in freezing temperatures. An optional fan provides active cooling in hot environments.

Completing a weighing transaction can be as easy as using a magnetic or proximity card to identify a truck. You can program scale software to link the card to all the information that is needed for a transaction. In other cases, you might want to require drivers to enter additional information.

Software Options

The software used to run the terminal can be customized to meet your facility's needs. For basic applications, terminals can be preloaded with VSU inbound/outbound vehicle weighing software. For more advanced applications, we offer OverDrive™ vehicle scale software. This fully configurable software provides complete control of weighing operations with extensive data management capabilities.

If you require a system that is flexible enough to handle both attended and unattended weighing, we can connect a terminal to a JAGXTREME operator interface. That makes it possible to process transactions from a scale house or at the terminal, depending on the volume of traffic or the time of day.



Unattended driver terminals keep traffic moving over scales by allowing drivers to process their own transactions in seconds.

Communication

Unattended scale terminals can be equipped with a variety of systems for entering data and communicating:

- Card or badge reader
- QWERTY keyboard
- Voice intercom
- Ticket printer
- SmartPass® truck tag ID system
- Wireless communication with nearby building



Rail Scales for All Applications

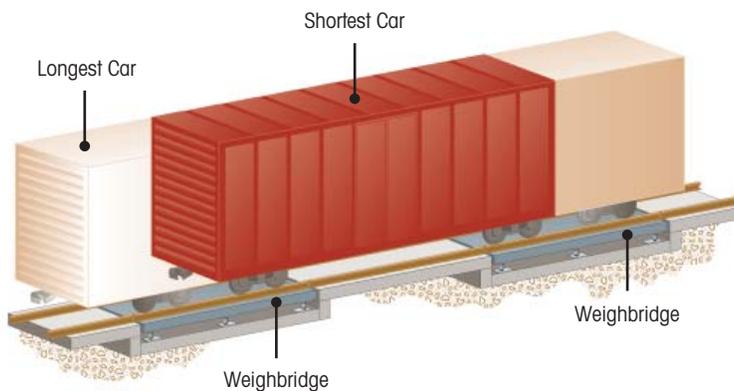
Shipping products by rail allows you to move very large amounts quickly and economically. When the products are sold by weight, a reliable rail scale is essential.

METTLER TOLEDO weighbridges are durable enough to stand up to heavy-duty use. Their main I-beams are positioned to support the full weight placed on the rails. Because the strongest components support the load, our weighbridges are designed to outlast other weighbridges that direct stress to weaker parts of their structures.

We offer a complete line of rail scales to meet your weighing needs:

Static Weighing

Our static rail scale is designed to weigh an uncoupled rail car that is stopped on the weighbridge. A typical installation uses two separate weighbridges that are spaced to accommodate rail cars of varying lengths. The scale terminal sums the weights from the two weighbridges and displays the total weight.



The two weights are summed by the scale terminal to display total weight.

Coupled In-Motion

Our coupled in-motion (CIM) rail scale is designed to weigh rail cars that are coupled together and moving across the weighbridge at speeds of 3 to 5 miles per hour. It can make weighing quicker and safer by eliminating the need to couple and uncouple rail cars. Our CIM rail scales feature robust check rods that keep the rails properly aligned at all times.

Truck/Rail Scale

This model combines a static rail scale with a concrete platform for weighing trucks. The rails are recessed, allowing trucks to drive across the weighbridge. If your operation weighs both trucks and rail cars, this solution can reduce both the initial cost and ongoing maintenance costs. It also requires less space than separate scales.

Benefits

- Robust weighbridge design: For a long service life
- POWERCELL® MTX® load cells: For accurate and reliable weighing
- Custom scales: All rail sizes and gauges are available
- Rail fasteners: Pandrol e-clips or bolt-and-clip fasteners for secure installation
- StrikeShield™ system: The ultimate protection against lightning damage



Coupled in-motion scales weigh rail cars that are coupled together and moving across the weighbridge.

Tailored Service to Protect Your Investment

METTLER TOLEDO vehicle scales are designed for years of dependable operation. But constant use and exposure to harsh environments can affect any scale's performance. To get the most out of your investment, make sure that your scale is installed, calibrated, and maintained by experts.

Installation and Configuration

Our project managers coordinate all the work, equipment, and contractors needed to install your vehicle scale cost-effectively. We make sure that your scale is installed properly, ready on time, and meets specifications.



Calibration Certification

We help you maintain weighing accuracy by testing your scale periodically to ensure that it meets manufacturer's specifications and all industry and legal standards. Our calibration certificates document regulatory compliance.



Proactive Maintenance

A vehicle scale is a significant investment, and its dependability is critical to your facility's productivity. We can provide the factory-specified maintenance needed to keep your scale weighing accurately and safely.



Our ServiceXXL program includes an extensive range of services to help you preserve the value of your investment. Let us tailor a service agreement that meets the needs of your business.

ServiceXXL
Tailored Services



Our service technicians provide scheduled maintenance and emergency repairs to keep your scale operating.

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