

# Automotive Weighing Guide



**Increase Your Productivity**  
with Solutions from the Weighing Expert

**METTLER TOLEDO**

# Quality and Productivity are Key For the Automotive Industry

**Automotive parts suppliers have to comply with strict industry standards such as ISO16949, Odette, Galia or AIAG. Product quality and the amount of parts supplied must be perfect. At the same time, manufacturers have to focus on productivity as it has direct influence on their business performance. METTLER TOLEDO offers tailored, industry-compliant weighing and counting solutions to help manufacturers work more precisely and efficiently.**



## Be Compliant

Industry standards require efficient identification for tracking, tracing and process control to prevent errors. Label layouts and barcodes have to be in line with industry standards in order to allow fast identification of goods and recall of further product details throughout the value chain. Having a documented process for calibration and verification of your measuring devices is essential for helping you to pass audits easily.

### **METTLER TOLEDO Solutions:**

- Accurate counting and check-weighing solutions to avoid errors including documentation of results
- Label printing compliant to industry standards (Odette, AIAG, Galia, ...)
- Product identification at the scale with barcode or RFID scanners
- Database solutions to store and record product data
- Data transfer to IT systems for tracking and tracing purposes
- Professional installation, training and calibration
- Accredited calibration labs according to ISO17025
- Service contracts for on time recalibration with traceable weights
- Calibration and MinWeigh® certificates required according to ISO standards





## Deliver Quality

Manufacturers have to deliver consistent product quality and parts without defects. Efficient monitoring of your manufacturing processes and products, as well as an appropriate quality data management and quality assurance are required.

### **METTLER TOLEDO Solutions:**

- User-friendly and precise piece counting systems for completeness checks of both incoming and outgoing goods
- Reliable completeness checks of modules or parts using innovative checkweighing scales
- Fast discovery of production errors such as cavities in castings by weight
- Effective control of coating thickness or density checks with fast and precise checkweighing scales
- Formulation solutions efficiently guiding operators through recipes for consistent quality
- Statistical Quality Control (SQC) solutions monitoring weight and other quality parameters online
- Service contracts for on time recalibration to ensure accuracy of weighing devices

## Increase Your Productivity

Productivity can be increased if manual processes are fast and intuitive, give away and waste are reduced, order picking and shipping are precise and fast, the stock is reduced, material is controlled efficiently and production uptime is increased.

### **METTLER TOLEDO Solutions:**

- Easy to use scales with intuitive operator guidance for fast and error free operation
- Versatile, automated counting solutions for seamless and accurate production
- Counting or checkweighing scales integrated in production machines or IT systems (e.g. SAP)
- Label, strip or letter printing for efficient product recognition and tracking and tracing
- Database solutions for paperless data storage and time-saving management of (more than 10,000) data entries
- Barcode scanners and external keyboards for fast recall of data
- In warehouse operations scales keep track of stock movement and assure flawless storage of goods
- Smart shelf Kanban storage system for remote access to control inventory level





# Automotive Parts Manufacturing and Weighing

**Weighing solutions help you to be compliant to industry standards, guarantee quality and increase productivity.**

## Tires, Rubber, Painting



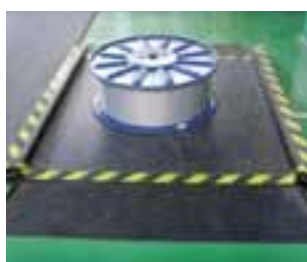
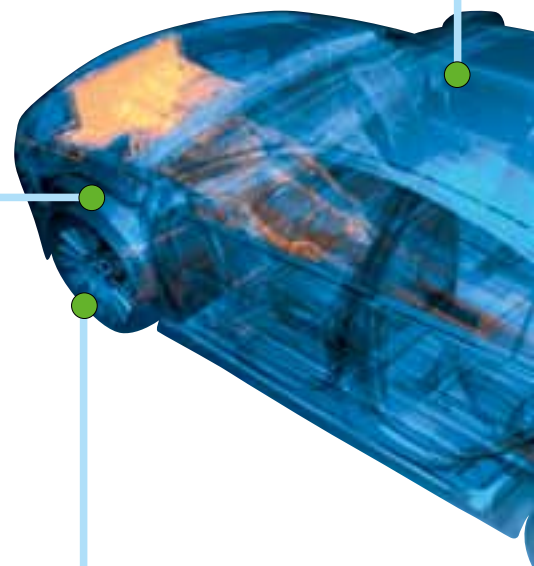
**Batching scales** mix raw materials automatically or semi-automatically according to predefined recipes even in difficult environments with vibrations.

**Paint Mixing** scales for automotive body shops easily integrate with the mixing software of the leading car paint manufacturers.

## Interior Parts, Dashboard Parts or Modules

### Over/Under Checkweighing

Scales check completeness of parts and modules fast, with high precision ( $<0.01\%$  deviation) and cost-effectively without the risk of damage.



## Cables, Wires

Cable length can be very quickly monitored by weight and the customized unit function. This function is integrated in advanced weighing terminals and allows the definition of specific units such as length.



## Weight compliance control

Improve your weight compliance control at the very end of the assembly line with repeatable and accurate weighing scales. Four weighing platforms attached to a programmable weighing terminal measures each wheel, axle and total weight at once and shows each result on the terminal's display.

## Wheel Rims, Die Casted or Coated Parts

### Over/Under Checkweighing

Scales discover production errors ( $<0.01\%$  deviation) such as cavities in castings, damage of coatings or if the parts are properly counterbalanced.



## Various Metal, Plastic and Electromechanical Parts: Fasteners, Springs, Locks, Engines, Motors, ...



**Piece Counting** scales make sure that the right quantity of parts is fast and accurately commissioned. They verify the completeness of a certain pack or container for just-in-time shipping and production. Industry compliant labels are provided for documentation.



**Semi-automated counting solutions** assure flawless packaging during production. Efficient counting during production requires a high degree of automation. The scale controls conveyor belts, sound or light alarms and redirects material flows.



**Inventory scale solutions** survey inventory level remotely. Integrated shelf scales transfer data to warehousing systems for efficient and transparent goods control.



## Warehouse Operations

Scales keep track of stock movement and assure flawless storage of goods. Article data can be stored in internal or external databases on a PC and imported or exported to Excel. Product article information (e.g. average piece weight, tare weight, ...) can be easily called up with a barcode scanner. Various interface options such as Ethernet, RS232, Bluetooth, WLAN, Profibus DP or DeviceNet allow flawless communication with other IT systems (e.g. SAP), automation systems or directly with a production machine. Labels can be configured according to industry standards (Odette, AIAG, ...) or customer specifications (e.g. with pictures, barcodes, customer logos, ...).

## Fuel Tanks, Molded Safety Relevant Parts

**Statistical Quality Control** software analyses, controls and documents quality parameters such as weight, density or wall thickness of safety relevant parts – including full documentation for tracking and tracing. Furthermore, the amount of raw materials and waste may be reduced by precisely filling molds.



## Brake Pads, Sinter Metal Parts

**Formulation & Recipe Weighing** scales guide the operator efficiently through their daily recipe weighing tasks. They guaranteed consistent quality and documentation for tracking and tracing requirements (ISO16949).



## Ball Bearings, Metal Parts and Modules

**Over/Under Checkweighing** scales check the completeness and correct amount of lubricants for each individual part (<0.01% deviation).



# Efficient Parts Manufacturing With Smart Weighing Solutions

## Over/Under Checkweighing Solutions



ICS4\_9 checkweighing terminal with colorWeight® display



K line high-precision platforms (3 kg x 0.01 g up to 300 kg x 2 g)



WMS high-precision weigh modules (120 g x 0.0001 g – 6200 g x 0.01 g)

► [www.mt.com/over-under](http://www.mt.com/over-under)

## Piece Counting Scales, Terminals and Platforms



BBA/BBK4x2 compact counting scales (0.6 kg x 0.001 g – 60 kg x 2 g) with printers, barcode scanner and external keyboard options.



IND690 counting terminal with various interface options (up to 4 scales) and internal or external database functionality.



Broad product portfolio of reliable second scale platforms (3 kg up to 12,000 kg)

► [www.mt.com/counting](http://www.mt.com/counting)

## Database, Data Integration and Printing Solutions



BBA/BBK462 scale with internal database for 1500 data records. SmartManager configuration and backup/restore software for central data management and flawless documentation of more than 10,000 data records.



Scales and terminals offer various interface options to connect to other IT systems or production machines:

- RS232, RS422, RS485
- USB, Ethernet, WLAN, Bluetooth
- Digital I/O
- Profibus®



A broad selection of durable direct thermal, thermal transfer and dot matrix label, strip, ticket and multipart form printers. Customer specific printouts can be created directly on the weighing terminal or with an external label creation software.

► [www.mt.com/industrial-printers](http://www.mt.com/industrial-printers)

## Remote Inventory Scale Solutions



Smart shelf scales and weighing pads for comfortable remote inventory control.

Smart shelves fit into standard racking systems (e.g. BITO or SSI Schaeffer) and consist of a shelf, integrated scales and an A/D board. The shelves have up to 8 integrated scales mounted on top. Digital communica-

tion allows checking the weight and quantity of any bin at any time from anywhere on the internet.

Weighing pads can be used to retrofit scales into existing shelf systems where not every bin requires a scale.

## Paint Mixing Scales



BBA242 – 7 kg Paint Mixing Scales with graphic display guides operators easily through the mixing process. Actual mixing protocols are stored inside the scale and can be uploaded to a PC. Automated correction modes allow recalculation of the formulas in case you add too much of a component.

► [www.mt.com/inventory](http://www.mt.com/inventory)

## Formulation and Batching Solutions



IND560 weighing terminal is ideal for high speed automated filling and batching applications



IND780 weighing terminal with user guidance for effective formulation, batching and customer specific applications.



Formweigh.net® dispensing and formulation system for accurate, user guided recipe weighing

► [www.mt.com/batching](http://www.mt.com/batching)

## Experts at Your Service

Service	Benefits
Consultation	<ul style="list-style-type: none"> <li>• Correct equipment selection and application consulting</li> <li>• Recommendations to ensure compliance with regulations (e.g. ISO16949)</li> </ul>
Installation & Setup	<ul style="list-style-type: none"> <li>• Proper installation for accurate, repeatable weighing results</li> <li>• Functions configured to meet needs</li> <li>• Installation that meets local regulatory requirements</li> <li>• Interfaces to other systems configured and tested for reliability</li> </ul>
Equipment Qualification	<ul style="list-style-type: none"> <li>• Documents that performance meets requirements</li> <li>• Provides procedures for periodic device testing in production</li> </ul>
Calibration	<ul style="list-style-type: none"> <li>• Concise and regulatory-compliant (digital) calibration certificates</li> <li>• Application of industry and regulatory tolerance standards</li> </ul>
Preventative Maintenance	<ul style="list-style-type: none"> <li>• Check critical components to identify and eliminate potential failure to increase longevity</li> <li>• Test operation for weighing and application performance to avoid unexpected expenditures</li> </ul>

Thousands of manufacturers rely on qualified METTLER TOLEDO professionals to provide timely local and personal service. We make sure your measurement processes deliver required results.

► [www.mt.com/ind-service](http://www.mt.com/ind-service)



# How Quickly Can You Get a Return on Your Investment?

## Piece Counting Scales

Even a minor overfill can have a major influence on the profitability of your production.

How much money can you save by improving the accuracy of your counting process?

Use our online ROI calculator to find out:

► [www.mt.com/counting-calculator](http://www.mt.com/counting-calculator)



## Recipe Weighing Scales

Precise formulation is critical in many automotive production processes. Formulation errors can make an entire batch unusable, losing you vast amounts of money. Download our online ROI Calculator now and calculate your potential for optimization.

► [www.mt.com/formulation-calculator](http://www.mt.com/formulation-calculator)

## Need to Know More?

Access comprehensive information about piece counting

► [www.mt.com/count](http://www.mt.com/count)

Profit from the METTLER TOLEDO On Demand Webinars:

Best Practices in Piece Counting

► [www.mt.com/ind-counting-webinars](http://www.mt.com/ind-counting-webinars)

Smart weighing solutions for lean production

► [www.mt.com/ind-manufacturing-webinars](http://www.mt.com/ind-manufacturing-webinars)



[www.mt.com/ind-automotive](http://www.mt.com/ind-automotive)

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