

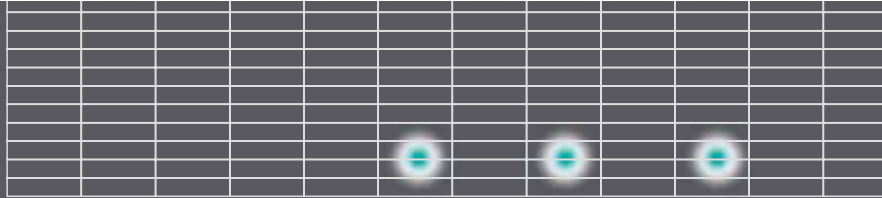
Technology. Innovative and intelligent.

Precision that pays ...

WIPOTEC



W Ä G E T E C H N I K



Wipotec Weigh Cells - outstanding in precision and speed

Wipotec is the leading manufacturer of high-precision, dynamic Weigh Cells and weighing systems used in industrial production processes. Wipotec places great emphasis on independent development for all the technologies and core competencies required. To this end, development and design are all done in-house. Individual customer system packages can be implemented rapidly and efficiently. Innovation and customer focus have the highest priority in Wipotec. Wipotec Weigh Cells work based on the Electro Magnetic Force Restoration (EMFR) principle and are designed for demanding, dynamic weighing tasks. The Weigh Cells are capable of suppressing exterior vibrations and delivering precise weighing results even under difficult environmental conditions, even at that high speed. A wide range of capacities at high resolution are available. The measurement range of the Weigh Cells, depending on the series, covers from μg up to 120 kg. Along with integration into checkweighers, filling/large and small quantities and price labelling systems, Wipotec Weigh Cells are also used in packaging machines of all types. Applications for demanding usage such as weighing systems for the pharmaceutical industry (weighing capsules, pills, injections and vials) deliver the same high precision at very high speeds.

Benefits of Wipotec Weigh Cells

- ▶ Dynamic weighing with active self-damping and short response times
- ▶ Trouble-free multi-track application requiring compact design
- ▶ Outstanding resolution
- ▶ Exact measuring sensitivity
- ▶ High linearity and reproducibility
- ▶ Flexible communication through versatile interfaces
- ▶ Suitable networking
- ▶ Electrically adjustable deadload range to accommodate customer's attachments (without restricting the weighing range)
- ▶ Software-based configuration
- ▶ High precision and long-term stability through monoblock technology
- ▶ Industrial grade protection, rated up to protection class IP 67
- ▶ Numerous application-oriented options and special models
- ▶ OIML certificate R60/R76
- ▶ Development and manufacture of customer-specific solutions
- ▶ Customer-specific weighing range

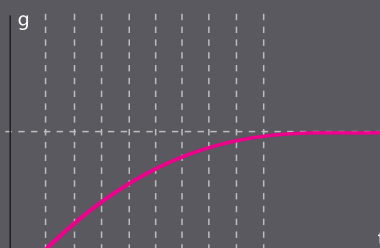
Speed

Response Times

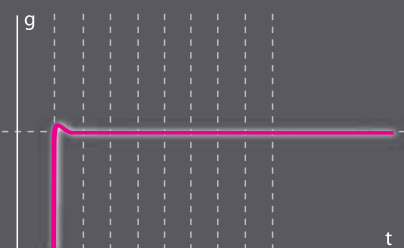
Conventional Weigh Cells



Conventional Weigh Cells, oil damped



Wipotec Weigh Cells



Real time



Lift up technology

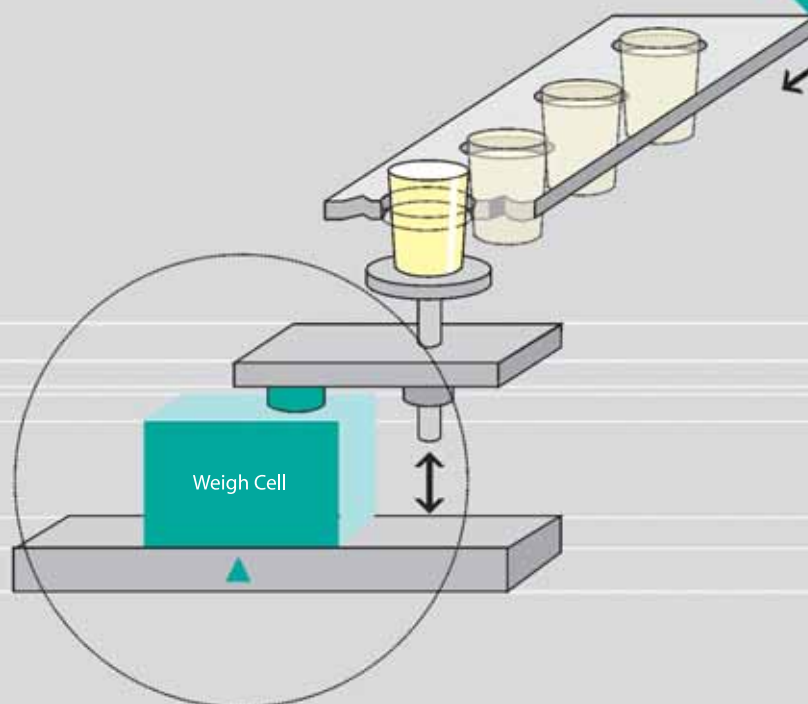
Vertical weighing in the production machine

The **Lift up** weighing technology implements fast and precise weighing of products, such as cups, which are conveyed in form sets. This technology is based on vertical releasing and is perfectly suitable for an application in filling systems, e.g. for tubes or cups, and for rotary indexing tables.

The weighing process does not involve any movement of the Weigh Cell, only the weighing sample is temporarily lifted out of the form set. The **Lift up** weighing technology, applied directly after the filling system, can monitor and control the filling process as well as its result.

- ▶ Weighing and releasing in the production machine
- ▶ Throughput up to 80 cycles per minute
- ▶ Different systems for dry or wet applications
- ▶ Simple integration – also in existing systems
- ▶ Track spacing ≥ 70 mm (Multi-track applications)
- ▶ High weighing accuracy
- ▶ Simple constructive solution

Lift up technology



AVC technology

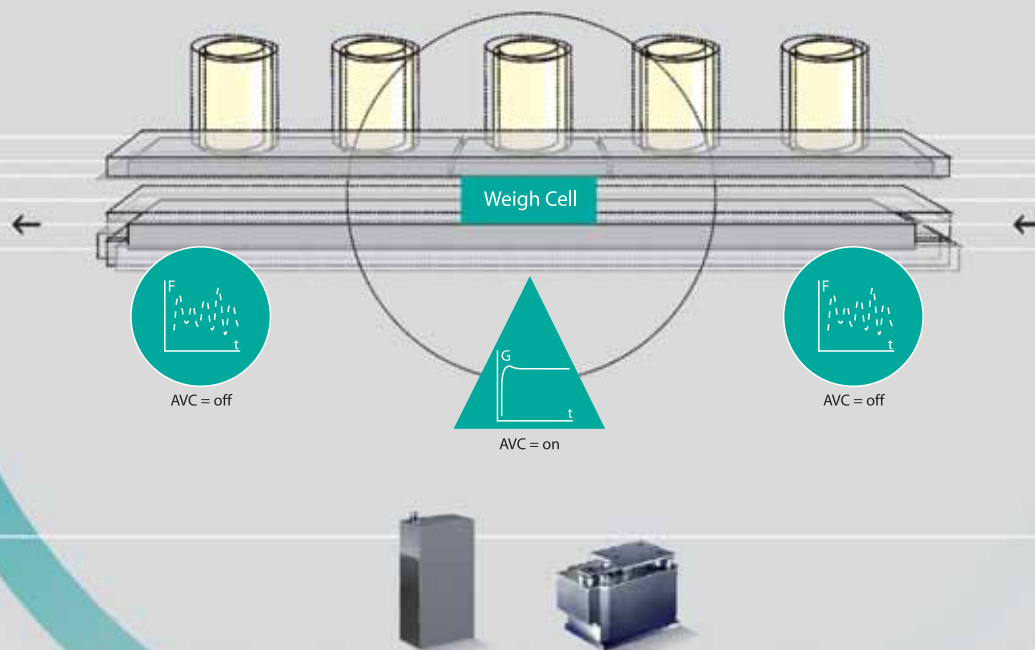
Weighing in environments with vibrations and interferences

In all production areas there are disturbances which can interfere with the accuracy of the weight determination. Wipotec weighing systems with electronic **Active Vibration Compensation** work perfectly in such environments. Vibrations can neither affect the speed, i.e. the throughput, nor the precision of the weighing process. This insensitivity towards ground and floor vibrations is achieved by active filtering of the interfering vibration signal.

Possible interfering factors include:

- ▶ Vibrations in the machine frame caused by moving parts, motors, linear axes, etc.
- ▶ Sporadic floor and ground vibrations caused, for example, by fork-lift traffic, dropping of palettes, truck traffic
- ▶ Permanent floor or ceiling vibrations caused by production machines such as presses, punches, compressors, vibration transporters

Active Vibration Compensation (AVC) technology



Push over technology

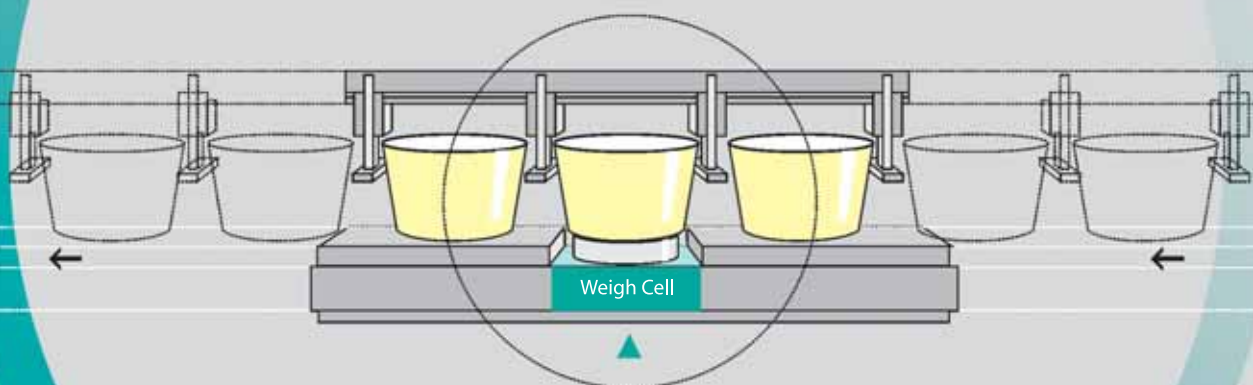
Horizontal weighing at the filling process

The **Push over technology** implements fast and precise weighing of products in timed transport systems. This technology is based on horizontal releasing on top of the Weigh Cell and is perfectly suitable for clocked machines.

The high throughput and the extremely high precision is achieved by a fixed installation of the Weigh Cell. Only the weighing sample is pushed over the Weigh Cell by a transport mechanism.

- ▶ Weighing during or directly after the filling process
- ▶ Throughput up to 120 cycles per minute
- ▶ Various Weigh Cells can be applied
- ▶ Simple integration – also in existing systems
- ▶ Track spacing from 25 mm
- ▶ No conveyor belts necessary
- ▶ High weighing accuracy
- ▶ Integrated design including transport system possible

Push over technology



Weighing kit technology

Space-saving and cost-effective integration

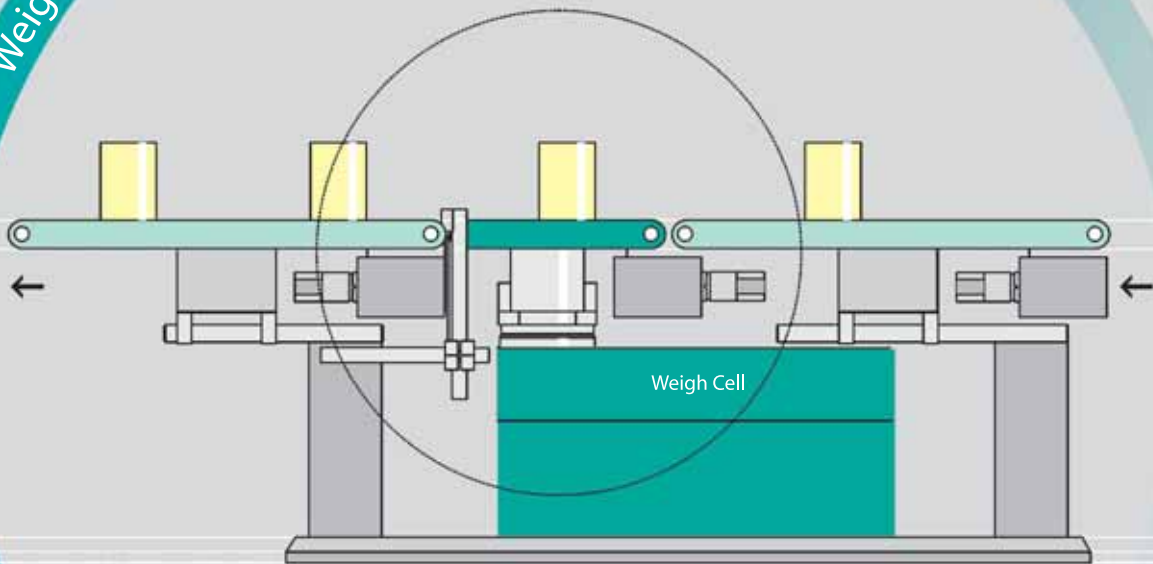
In many production lines, sufficient space for the integration of a complete checkweigher is not available. That's why Wipotec has developed the **weighing kit**.

The **weighing kit** is a compact and cost-efficient unit comprising a Weigh Cell and a weighing conveyor, which can be fast and easily integrated into existing mechanic and electronic systems. Depending on the control system, calibratable and high-throughput applications are feasible.

- ▶ Space-saving, dynamic weighing unit
- ▶ Direct connection to control systems via a wide range of interfaces
- ▶ Simple integration in existing systems
- ▶ High weighing accuracy
- ▶ Calibratable

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Weighing kit technology

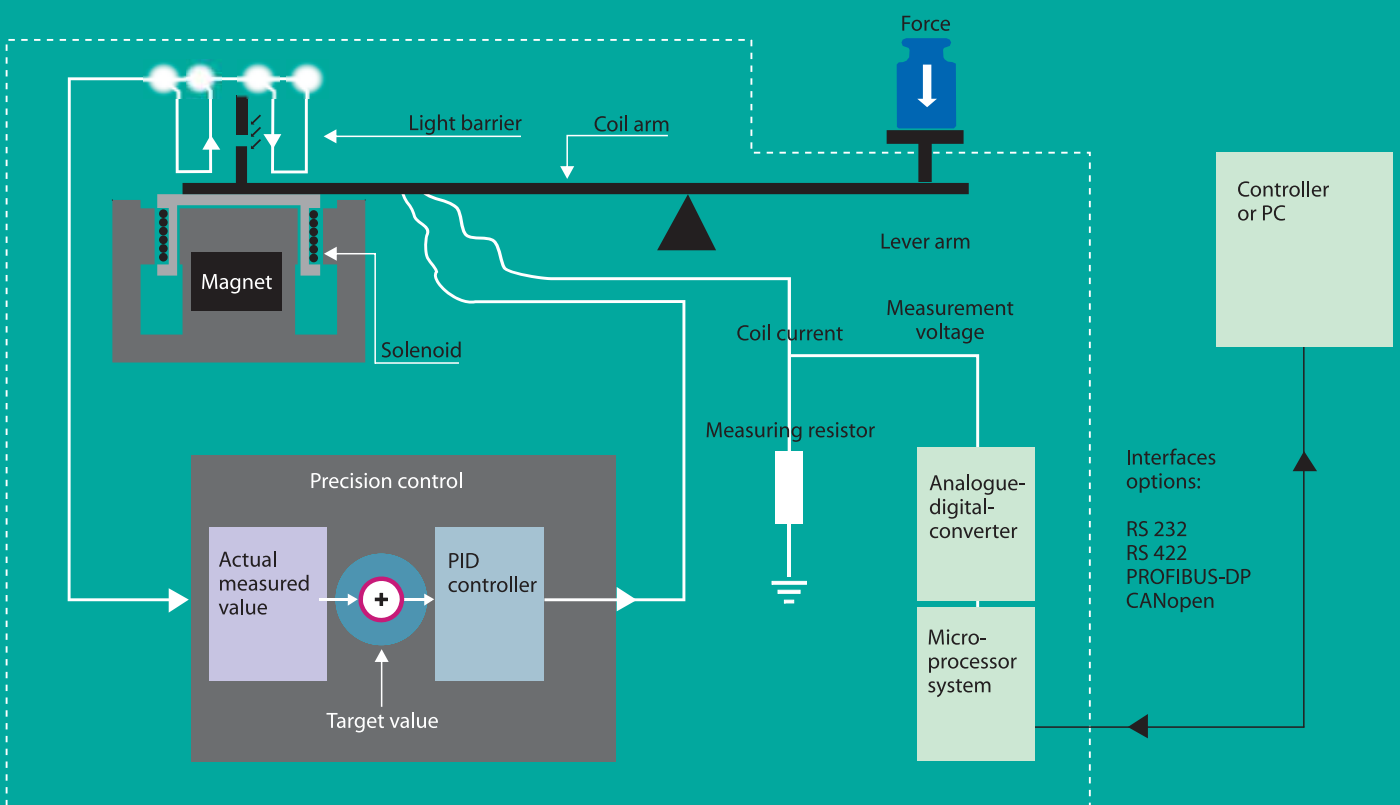


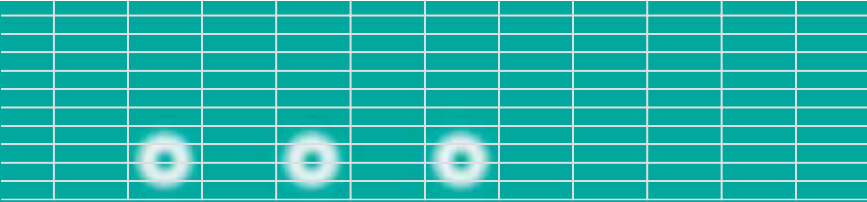
Electro Magnetic Force Restoration (EMFR)

The Wipotec Weigh Cells uses technology superior to conventional systems providing a guarantee for highest precision and measuring speeds. They are based on the Electro Magnetic Force Restoration principle (EMFR). The basic principle of EMFR can be compared to a simple beam scale. The weight is placed on one side of the beam (coil arm). That causes the coil attached to the other side of the beam to try to lift up out of the magnetic field. An optical detection system recognises even the tiniest deflections in the coil arm and reports that to a high-precision position controller that controls the coil current so that the weigh beams remain balanced. All this takes place within milliseconds, limiting the maximum deflections amount to just a few nanometres. The applied load is thus compensated by the coil current. The amount of the current is proportional to the weight. The current is measured through a precision resistor, converted into a digital signal using an analog-digital converter, and processed in a signal processor system for direct output as a digital measurement.

Weigh Cell

User





Competence in weighing technology

Lift up technology
AVC technology
Push over technology
Weighing kit technology



1,9 mg

10,1 mg

230 mg

150 µg

0,01 g

8,57 g

38 g

500,07 g

1 g = 1.000 mg = 1.000.000 µg

100 µg = 0,1 mg = 0,0001 g

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