Maximum Product Savings
On Coffee and Tea Packaging Lines

Drie Mollen group, Europe biggest producer of private label coffee uses Statistical Quality Software FreeWeigh.Net® and in-line checkweighers to ensure maximum product savings, based on given legal requirements.

'Drie Mollen sinds 1818 BV' was founded in 1818 as a shop selling goods from the colonies. Over the years, Drie Mollen group has taken over several coffee companies in various European countries. Their vision is based upon playing a leading role in two important coffee and tea market segments. First as best private label producer in the European retail market and second as a strong supplier for the 'Out of home' market. As a result Drie Mollen' has now become market leader in Europe for 'private label' coffee. Seven factories in Spain, England, Switzerland and the Netherlands roast 65 million kilos of coffee a year. The production sites are BRC higher level, IFS higher level and HACCP certified.

Broad Product Range

At the Dutch production plant in Bolsward coffee is produced in every conceivable type of packaging by 200 employees, including the production of coffee pods and instant coffee packages for vending machines. The plant also packages a range of fruit and herb teas in teabags.

Optimising Filling Quantities

In 1994 the first computer-based pre-packaging control system with connected weighing scales from METTLER TOLEDO has been introduced at 'Drie Mollen'. Mr Huitema, Product and Process Engineer comments: "The random sample checks provided a reliable representation of the pre-packaged quantities, and the results

METTLER TOLEDO

formed a good basis for optimizing the filling quantities by adjusting the packaging machine parameters".

Efficient Upgrade

In 2007 the tea lines were replaced and the number of coffee lines increased to six. This was the right moment to upgrade the existing single station based control software package, FreeWeigh with the advanced network solution FreeWeigh.Net®. At the same time Garvens S series in-line checkweighers were incorporated into four coffee pod packaging lines and linked to the FreeWeigh.Net® system. Mr Huitema explains: "An important aspect here was the option of taking random samples automatically on the static scales and adjusting the filling machines in proportion to the latest weighing results." This helps that the existing scales could remain in use and that other measuring equipment, such as residual oxygen meters, could be connected when needed.

Closed Loop Machine Control

An important user benefit of the new system is the ability to adjust the filling machine on the basis of weighed results. By setting the correct adjustment parameters for each line and product, the filling machines are adjusted in proportion by a 'closed loop' regulation system in order to always achieve the optimum filling weight.

Maximum Product Savings

The diversity of products and brands means that there are big differences in the size of production runs. The flexibility of the product database enables 'Drie Mollen' to perform this assignment quickly and clearly for all packaging lines. Mr Huitema concludes: "Thanks to the popularity of the METTLER TOLEDO FreeWeigh.Net® package, 'Drie Mollen' is able to satisfy current requirements and future needs. That ensures us maximum product savings, while we continue to fulfil all legal requirements."

- **www.mt.com/freeweighnet**
- **www.mt.com/garvens**
- **www.driemollenholding.com**

Sample station in the production process

FreeWeigh.Net®

Key Customer Benefits of FreeWeigh.Net®:

- Significant reduction of product overfill cost
- Compliance to legal fill requirements
- Standardized and simplified processes
- Online monitoring and alarming
- Short reaction time in production
- Automated reporting
- Scalable system implementation and enhancement
- ERP integration
- Fast ROI (<12 months)

Production line at Drie Mollen Bolsward

Publisher
Mettler-Toledo AG
Industrial
Heuwinkelstrasse
CH-8606 Nänikon
Switzerland

Production
MarCom Industrial
CH-8606 Nänikon
Switzerland

Röstfein Assures Quality with Dynamic Weighing Technology

From "Mocca Fix" to the organic coffee bean – an east German success story revolving around quality. Röstfein, based in Magdeburg, has been producing select coffee products for refined connoisseurs for 100 years.

The company's success is reflected in its performance figures. For example, in 2007 Röstfein achieved a turnover of approximately 44 million Euros, once again beating the results from the previous year. This is due, amongst other things, to the fact that the company is now much in demand as a partner to the German coffee roasting industry.

The Latest Trend: Coffee Pads

When it comes to the latest coffee trend, Röstfein is once again leading the way: "Nowadays people only want to make one cup of coffee, rather than an entire pot", explains Eike-Jens König, managing director of Röstfein Kaffee GmbH. "This development has also led to a change in the Röstfein product range. The emphasis is now on individual portions known as coffee pads."

Packs that contain too few coffee pads are detected by the checkweigher and immediately removed from the production process. Given that the checkweigher monitors whether there are enough pads in a packaging unit, a level of accuracy of 2 grammes is perfectly sufficient on this line.

XE3 – Cutting Edge Weighing Technology at an Attractive Price

The XE3 model offers cutting edge, dynamic weighing technology at an attractive price. The checkweigher features variable line height adjustment, a facility for changing the direction of travel and speed control as standard. What's more, this checkweigher can be tailored to the requirements of individual production lines thanks to an extensive range of options.

RÖSTfein

The Company Röstfein GmbH

- Headquarter in Magdeburg, Germany (for 100 years now)
- 140 employees
- Production volume: more than 10 000 tons of coffee per year
- Popular coffee makes: Mocca Fix, Rondo Melange, Mona Gourmet, O'Verde Biokaffee (organic)

Garvens checkweigher XE3 checking coffee packs

Dynamic Weighing Technology Supports Quality Management at Röstfein

"The company's distinctive quality management system is the key to Röstfein's success", explains Lothar Roebert, who is in charge of technical management at Röstfein. "As far as we are concerned, it is crucial that our packs are not underfilled and that customers remain satisfied with our quality at all times", he continues. "Thanks to its colour touchscreen display, the XE3 is very user-friendly and can be easily integrated into the existing Röstfein production line", concludes Lothar Roebert.

Thus, the checkweighers from Garvens ensure that the levels of quality demanded by the Röstfein brand remain consistently high and make for constantly satisfied Röstfein customers.

- **www.mt.com/garvens**
- **www.mt.pi**

The pusher with brush edge can reliably reject even very flat products

The economic solution XE3 protects consumers and your brand reputation

XE3 checkweigher

- Consumer protection and saving of raw material by automatic rejection of underweights or overweights, respectively
- Touchscreen display with clear, intuitive operator guidance
- Garvens offers several XE checkweigher models for different weighing ranges and applications. Up to 100 product setups (articles) can be stored, for ease of changeover. This makes the XE models particularly interesting for producers with a wide range of products.

POWERCELL™ PDX™
The Future Is Here

The all new POWERCELL™ PDX™ load cell sets new standards in vehicle weighing. It delivers new and innovative features to ensure that your weighbridge remains accurate and operational.

- **No more junction boxes, a primary cause of scale failure**
- **Unmatched lightning protection for your entire scale system**
- **Built in predictive diagnostics to avoid unplanned downtime**

No More Junction Box Wiring

Prior to the introduction of POWERCELL PDX, all load cell systems required a junction box to bring together all of the weighing signals and transmit them to the terminal. These boxes are wired at the construction site and are exposed to the weather. The process is riddled with potential errors and is the most common source of truck and rail scale failures. POWERCELL PDX load cells are connected together in series so that no junction box is required. The cables use submersible quick-disconnect connectors that provide an IP68 and IP69k seal. The entire network is a sealed system from the terminal in the scale house out to all of the load cells in the scale (see picture opposite).

The Legacy Continues

Back in 1988, METTLER TOLEDO introduced the POWERCELL load cell, the first digital load cell for truck scale applications. The innovations in POWERCELL were like none other in the industry. It provided accuracy and reliability beyond all other methods available for the harsh environments where truck scales are required.

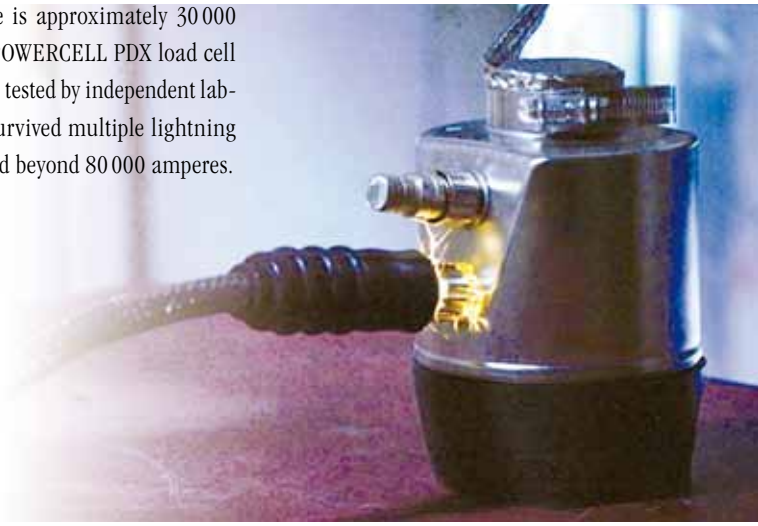
Nearly 1 000 000 POWERCELL load cells have been sold globally in every corner of the world and in every possible environment from deserts to the arctic.

The POWERCEL PDX load cell system is the latest generation of the POWERCELL legacy. The innovations provide another leap forward in reliability while maintaining the best accuracy in the industry and offering the security of predictive diagnostics.

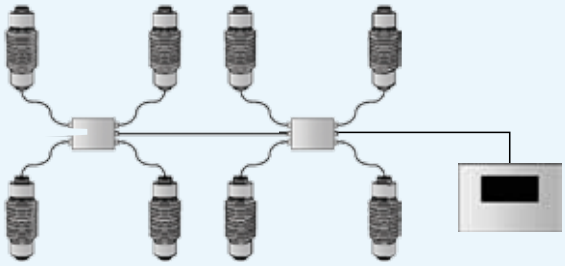
Unmatched Lightning Protection

A lightning strike can put a vehicle scale out of service in an instant. Lightning damage can be very costly, requiring the replacement of unprotected electronic equipment. Even if a warranty covers repair costs, you still face the cost of the business you lose every day that your scale is not operating.

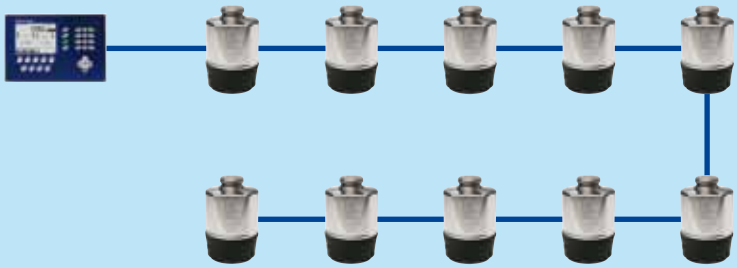
METTLER TOLEDO provides complete protection against lightning damage. The StrikeShield™ protection system is designed to be the main line of defense for your entire vehicle scale system: load cells, cables, and terminals. The average lightning strike is approximately 30 000 amperes. The POWERCELL PDX load cell system has been tested by independent laboratories and survived multiple lightning strikes up to and beyond 80 000 amperes.



POWERCELL PDX load cell under laboratory testing of a simulated lightning strike



Conventional Load Cell Wiring (Junction Boxes Required)



POWERCELL PDX Load Cell Network (No Junction Boxes)

Predictive Diagnostics

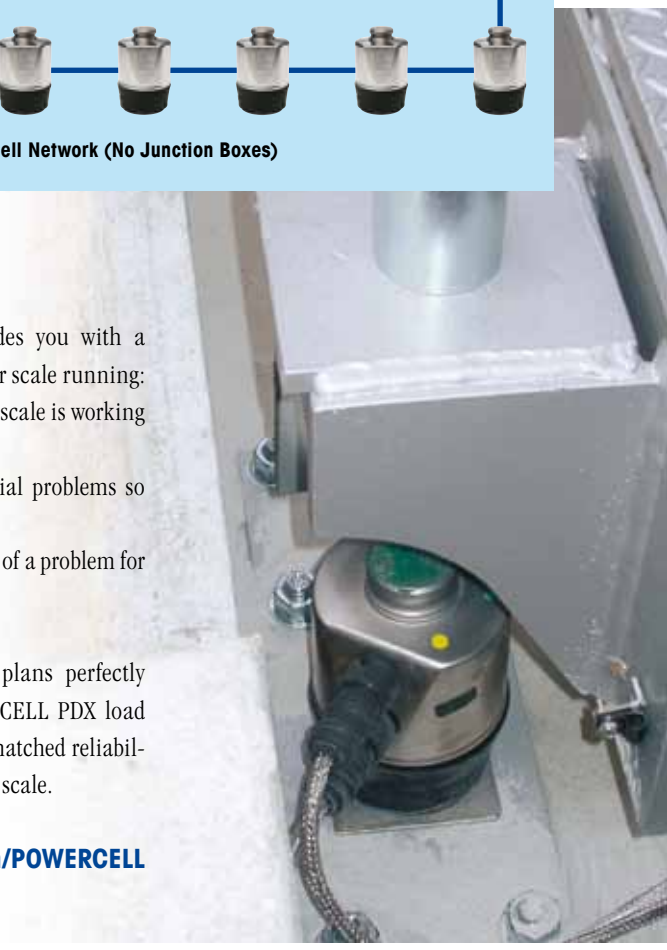
With other load cell technologies, problems can go undetected for long periods. In those cases, weighing errors add up until a load cell fails and shuts down your scale. The POWERCELL PDX load cell eliminates these concerns. The system has self-monitoring capability that is designed for proactive service, alerting you to potential problems before they occur. It helps you avoid unplanned downtime and inaccurate weighing. If these occur the diagnostic tools enable service technicians to make the right repairs the first time and make them quickly.

The scale system provides you with a proactive way to keep your scale running:

- Assuring you that your scale is working properly.
- Alerting you to potential problems so they can be prevented.
- Pinpointing the source of a problem for quick intervention.

Proactive maintenance plans perfectly complement the POWERCELL PDX load cell system to deliver unmatched reliability and longevity for your scale.

▸ **www.mt.com/POWERCELL**



X-ray Systems Boost Throughput and Ensure Safety on Metal Can Production Lines

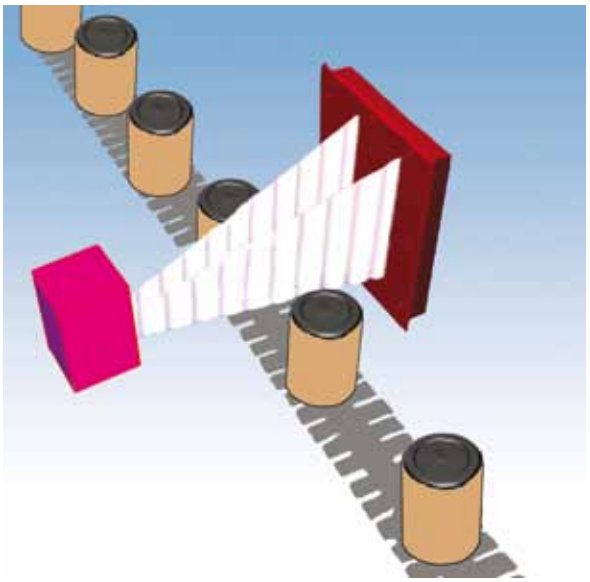
METTLER TOLEDO Safeline has released two new x-ray inspection solutions – the InspireX R50S 400 AFD and InspireX R50SB 200, to address the need for improved detection at higher production speeds on can manufacturing lines.

"The latest x-ray systems are able to inspect cans spaced rim-to-rim, allowing contaminant detection to take place at a rate of up to 1500 cans per minute (cpm). The new x-ray technologies feature reduced focal length and improved beam angles to enable faster throughput whilst maintaining optimal quality assurance."

The InspireX R50S 400 AFD (Adjustable Focal Distance) is an advanced single-beam solution able to detect contaminants on a wide range of can sizes. The system's focal distance (the distance the x-ray beam travels from the x-ray tank exit to the surface of the imaging detector) can be automatically adjusted for each can size, offering optimum detection and a higher level of operational flexibility. The InspireX R50SB 200 split-beam x-ray system has been specially designed for smaller metal cans – typically up to 400g/14 oz. in size.

Complete Solution

"Quality control for foods packaged in metal cans presents many challenges. The two new x-ray systems for metal cans allow manufacturers to select the best machine for their individual application. The small machine footprint, a choice of fully integrated high-speed automatic reject systems and in-feed product handling options make them a preferable turnkey solution for all sizes of metal cans on high-speed packing lines," said Niall McRory, Product Development & Sales Manager, METTLER TOLEDO Safeline.



These two new x-ray systems include METTLER TOLEDO Safeline's newly developed XTP contamination detection software tools that analyse products with the highest possible resolution, offering further improved levels of detection particularly in challenging areas of a metal can (base and ribbed side walls).

METTLER TOLEDO Safeline's latest offering provides high-quality image processing and a detection signal that is up to four-times stronger, ensuring more accurate contaminant detection. Both the InspireX R50SB 200 and the InspireX R50S 400

AFD can detect many different contaminants such as stainless steel, ferrous and non-ferrous metals, glass, mineral stones, and high-density plastics and rubbers.

The advanced x-ray technology can automatically synchronise the x-ray scan speed with the production line belt speed, keeping a one-to-one image ratio. No manual adjustments are required, ensuring maximum uptime of the production line.

Several features serve to reduce total cost of ownership, including low maintenance costs, ability to quickly accommodate product changeovers and elimination of the need for water cooling. The x-ray systems are user-friendly and easily integrated into existing production lines, reducing the need for lengthy training.

"Our two new x-ray systems are revolutionary for the metal can inspection process and provide manufacturers with an economically viable solution that delivers the peace of mind and reliability associated with any of our x-ray inspection systems," added Mr. McRory.

METTLER TOLEDO Safeline's product inspection technology portfolio includes x-ray, metal detection and checkweighing solutions.

- **www.mt.com/safeline-xray**
- **www.mt-xraycan.com**

Minimize Product Loss
at the Filling Line

The loss of milk at the filling line due to a delay in determination of water to product transition is a costly waste. On the other hand, switching too early means filling with contaminated product. With the InPro 8300 RAMS, both situations are easily avoided.

Greater Efficiency

Optimizing production is essential for remaining competitive. One part of achieving this is minimizing product waste at the filling line. Using a sight glass to determine when the water to milk or milk to water transition is complete can be unreliable, resulting in product or reusable water going to drain.

Optical Product Monitor

The InPro 8300 RAMS optical product monitor is unique, versatile, compact and inexpensive. RAMS (Reflection Absorption Multi-Switch) technology uses LEDs to measure the reflection and absorption of liquids. The absorption of near-infrared light is utilized to accurately and instantly determine when the separation of water to milk is complete. Using eight parameters determined by four LEDS, the InPro 8300 RAMS can identify up to eight differently colored liquids, making the monitor ideal for multiple-product filling lines.

Simple Installation, Minimal Maintenance

All members of the InPro 8300 RAMS product family are easily installed on Tuchenhagen VARINLINE® housings. They are further characterized by a reduced maintenance requirement thanks to the use of long-life LEDs and CIP resistant materials. Calibration, a simple in-line zero point correction, needs to be performed only once, at installation.

No Manual Operation

The InPro 8300 RAMS is connected to your supply valve via the PLS. When the RAMS detects that phase transition is complete, the signal from the RAMS immediately switches the supply valve.

Key Customer Benefits

Minimal product loss
- Instant recognition of pure product or water ensures neither are wasted

Low installation cost
- Fast and easy installation on Tuchenhagen VARINLINE housings

Reliable operation
- Use of silica gel in optical housings eliminates error-prone usage of air purge installation

Fast, easy calibration
- Simple in-line calibration correction with clear water

Very low maintenance cost
- Uses long-life LEDs, not bulbs

Excellent value
- Extremely attractive price/ performance ratio

Learn more at:

www.mt.com/InPro8300RAMS

Optical product monitor InPro 8300 RAMS

Trouble-free Conductivity Measurement
A New Team of 2- and 4-Wire Transmitters

Monitoring conductivity is an excellent way of ensuring product quality, reducing product loss and optimizing processes. The latest editions to our conductivity transmitter line feature Intelligent Sensor Management (ISM) for even greater productivity.

Important Measurement

Conductivity measurement with 2-e or 4-e sensors is common for monitoring water quality during water purification. For concentration determination through chemical processes, very often an inductive conductivity measuring approach is chosen.

M400 4-Wire Transmitter, a Versatile Solution for Standard Applications

Thanks to its multi-parameter capabilities, universal power supply, number of current output signals and relays, the M400 4-wire transmitter is a particularly versatile instrument. The Intelligent Sensor Management (ISM) Plug and Measure function and Quick Setup routine enables quick and simple commissioning; while the display provides measurement values from two sensors, and alarms for out-of-spec conditions, plus warnings of potential sensor failure.

ISM

Transmitter M400

M420 2-Wire Transmitter, a Reliable Solution for Hazardous Area Applications

Designed for hazardous area operation, the M420 2-wire transmitter is the perfect solution for advanced process control. Key features include the IP 67 rated enclosure and options for additional functions e.g. for extended logbook or a second output signal. As the 2-wire transmitter with its 4 - 20 mA output signal provides HART communication as standard, the M420 represents a future-proof investment for integration into your process control system.

Transmitter M420

ISM – the Leading Sensor Technology

METTLER TOLEDO's new transmitters all feature ISM technology for better process and maintenance control of measurement points, without compromising process reliability. The mixed mode input feature of the transmitters means that digital ISM sensors or traditional analog sensors can both be connected. The transmitters can be used in combination with 2- or 4-electrode sensors as well as inductive conductivity sensors. The large backlit display with its clearly structured menus ensures intuitive and easy operation.

The METTLER TOLEDO Solution

METTLER TOLEDO is a total solution provider with many years' experience in conductivity measurement. Our portfolio covers various transmitter lines, analog and innovative ISM technology digital sensors, as well as housings for a wide range of applications.

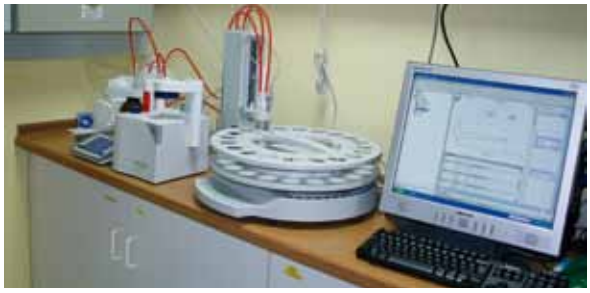
Discover more at:

www.mt.com/M400

www.mt.com/M420

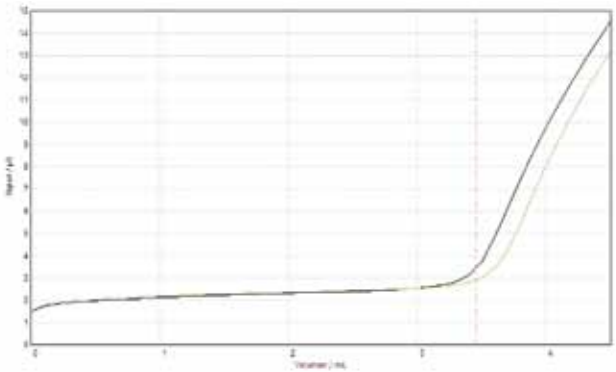
Tailored Titration System
for Automatic Alpha Acid Determination

The hop vine is a species of plant belonging to the hemp family. The high content of alpha acids (bitter substances) in hops makes it an essential ingredient in beer brewing. Variations of the amount added have a decisive influence on the taste of the beer.



Standard hops analysis with METTLER TOLEDO.

Finished product: hops pellets as they are used in breweries.



Typical titration curve of hops-extract.

Secrets behind the Unique Taste

To brew beer that always has the same taste, it is important to determine the exact content of alpha acids in hops. The content of these bitter substances is also one of the main factors that influence the amount paid by breweries to farmers. The European Brewery Convention (EBC) develops standards and analytical methods to ensure that chemical analysis is standardized. The EBC 7.4 method describes the conductometric titration of hops and pellets. In short, the sample material is extracted with toluene and an aliquot dissolved in methanol. This aliquot is then titrated conductometrically with lead acetate solution.

To determine the alpha acids, aliquots of the hop extracts are prepared depending on their type, the extract and its expected content. These are then transferred to the titration beaker. The solvent mixture is added quickly and reliably by means of a peristaltic pump. After a short conditioning time, the solution is titrated with lead acetate solution and consumption, up to the equivalence point, is calculated as a content percentage of alpha-acids.

Comprehensive Solution for Hop Analysis

The Hallertau region in Germany is the largest hop-growing region in the world and produces 85 % of German hops. In 2008, this represented a worldwide market share of over 30 %. Hop-processing companies need to be able to analyze large numbers of samples on a 24-hour shift operation. METTLER TOLEDO took up the challenge and our solution for improved hop analysis consisted of:

- Excellence titrator with conductivity board,
- InLab 718 sensor,
- Rondo 20 for high sample throughput,
- SP250 pump for rapid solvent addition,
- LabX® titration PC software for the control, evaluation and archiving of results
- Rainin pipettes for titer standard and sample addition.

Download UserCom 14 for more information about determination of alpha acids in hop extracts by titration:

- **www.mt.com/AC-UserCom14**
- **www.mt.com/one-click-titration**

Home Brewing Made Better
With Quick-Brix

When it comes to home-brewing, quality is just as important as it is to the large commercial brewers. Local home-brewing competitions are becoming popular and weekend brewers are stepping up their production requirements. Letting friends and neighbors taste the beer to judge its quality is not enough when the target is the title of 'home-brewer of the year'. In the case of Brandewie Brews, Mr. Scott Brandewie needed a reliable way to test his beer for competitions.

The SODZ is located in central Ohio and consists of about 60 members.

Brandewie won the 2008 SODZ British Beer Fest out of over 300 beer entries.

The Art of Brewing

At the beginning of a brewing process, grain is grounded and then mixed with water. After one hour, the starch in the grain is converted to sugar. The liquid generated, called wort is drained from the grains through the grain bed. After the first runnings are collected, Brandewie uses the Quick-Brix to test the brix of the solution to ensure that this conversion has successfully taken place and within the expected range.

The next process involves three to five gallons of water being added to the product at about 180°C. The mix is tested again after 10 minutes with the Quick-Brix to ensure that the runnings do not dip below 3 Bx, which is equivalent to 1'010 gravity. A measurement any lower runs the risk of extracting tannins from the grain which can lead to a harsh after-taste in the brew.

If this stage is successful, the runnings are combined into the brewpot and placed on the burner. A few drops of this mixture are again placed on the Quick-Brick to test the pre-boil gravity of the wort. Brandewie uses beersmith software which provides a pre-boil gravity target to be achieved. This allows him to adjust the amount of fermented sugar in the mix. If the Quick-Brix displays a measurement within a predefined range, Brandewie knows that he is on track. If the test is off, he will add malt extract to get the mixture back to the proper brix/gravity level.

Finally the yeast is added to begin fermentation. Throughout this process, the Quick-Brix is used to ensure that the yeast has fermented out the sugar and converted it to alcohol. "Prior to acquiring the Quick-Brix I would have to pull a sample in a test jar and use a hydrometer to check the specific gravity of my wort," Brandewie continues, "this would require me to pull about a half a cup of the wort and place it in a test jar and float a hydrometer in it. The biggest problem with this was that I had to wait for the wort to cool and, with the number of samples I was pulling, this added up to a substantial reduction to the amount of final product."

Quick Brix – A Great Helper

"I think, most importantly, the Quick-Brix has saved me time," Brandewie continues. "I only need to put three or four drops of sample onto the prism and with one keystroke the result can be read seconds later. It is so much easier than

the old method. The required precision is guaranteed and large amounts of testing sample are saved."

"Brewing is an art form and the Quick-Brix is my paintbrush! It enables me to check my brews every step of the way and correct any problems that might pop up. It has made my hobby so much more efficient, streamlined, and fun! The first beer that I made after I got the Quick-Brix won first prize at the Scioto, Olentangy and Darby Zymurgists (SODZ) British Beer Fest in Columbus Ohio. Without the Quick-Brix I would not have known to correct the gravity prior to the boil. Thanks to the Quick-Brix not only has my process improved, but my beer has improved too. You can't argue with results!"

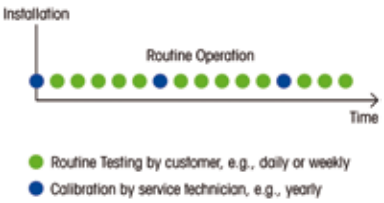
www.mt.com/quickbrix

Forged Stainless Steel
Safe Testing for Balances & Scales

Routine balance and scale testing is the most economical way to ensure accurate results and reduce weighing risks during daily work. The newly introduced Stainless Steel Grip Handle Weights are perfectly designed to respond to increased quality requirements and time pressure, allowing fast and safe balance testing.

Eliminating Process Risks

Weighing result accuracy and reliability can be improved by testing balances and scales at defined intervals and to specified process tolerances. Whilst equipment calibration is usually performed by authorized technician once a year, routine tests performed by customers are carried out more frequently. Frequent testing allows the detection of deviations from process tolerances at an early stage before any harm is done.



Stainless Steel Superior to Cast Iron Weights

The newest generation of rectangular stainless steel weights introduced by METTLER TOLEDO is forged instead of simply cast. The best, perfectly casted weight can never achieve the exact same properties as castings are rarely perfect. Casted weights often conceal hidden defects below the surface (cracks, porosity and sand inclusions) that would be exposed as defects in a forged weight. The forging of stainless steel weights improves its structure, closes porosity, avoids any sand inclusions from moulding and guarantees high corrosion resistance.

And Many Other Advantages

While knob weights cannot be stacked safely, the flat surface of rectangular weights allows secure stacking; a benefit that service technicians and other calibration personnel alike will appreciate. The mirror like surface makes these weights the ideal solution for wash down applications and clean room use. Weights are available in OIML class F1 and with nominal values of 1 kg, 2 kg, 5 kg, 10 kg and 20 kg.

Safe Protection and Traceability

To keep the highly polished surface in perfect shape over the entire life span, all weights are delivered in sturdy, stackable and lockable aluminium boxes. For appropriate weight handling, all boxes are equipped with clean-room approved nylon gloves. A unique serial number applied by laser technology ensures traceability to national or international standards and allows customers to track serial numbers and assign weights to weighing equipment.

▸ **www.mt.com/weights**

Best Practice

Accuracy no Longer Needs to be Guesswork with CarePacs®

Perform routine balance testing securely, with only two test weights and with the minimum of fuss. Save time and money with a METTLER TOLEDO CarePac® which includes tweezers, gloves and other accessories for professional weight handling.

Visit our website to discover the benefits of CarePacs® and to watch an informative video about CarePacs® and routine testing.

▸ **www.mt.com/carepacs**

All weights are delivered in sturdy boxes.

Weighing Data Integration
Flexible Installation and Unique Features

The IND131 and IND331 weighing terminals combine proven METTLER TOLEDO technology with new and innovative solutions. A unique feature: The same functionality and options are available in four different enclosure types, so any installation requirement can be met!

IND331 Harsh enclosure

IND131 Junction Box

IND331 Panel mount

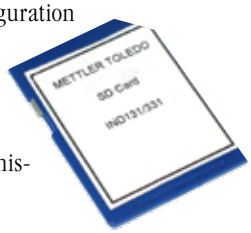
IND131 DIN Rail

Simple Panel Mounting

The IND331 panel version eliminates the need to laser cut the front panel. It only needs holes for fixing screws and one hole for passing the data cable. The distance between the IND331 display and its DIN Rail mountable electronics can be up to 18m (50 feet).

Secure and Portable Settings

The complete configuration is saved on an internal SD memory card. This ensures fast restoration or duplication of user settings and configuration on replacement terminals without the risk of configuration mistakes.



Fast and Accurate

Process applications need speed. The extremely high A/D update rate of 366 Hz is combined with proven TraxDSP™ filtering to make sure that you get updated weight information the very moment you need it for your automation process. TraxDSP™ is a patented combination of multi-stage filters. They filter out background noise and vibration, making them ideal for mixing, agitating or dynamic processes.

Connect to the World

Today's process automation environment with its legacy of different communication standards requires System Integrators to use equipment that can easily connect to multiple automation platforms. The IND131 and IND331 offer direct PLC and DCS connectivity using 4-20mA, digital I/O, RS232/485, Allen-Bradley® RIO, Profibus® DP or DeviceNet™, Modbus® TCP and Ethernet IP.

Choice of Calibration Methods

The IND131 and IND331 offer three different choices for calibration:

a) Traditional calibration method with independent zero and span calibration
b) Step calibration method using a combination of certified weights and substitute mass for large tanks.
c) CalFREE™ method for calibrating without test weights. The CalFREE™ calibration method offers an alternative to traditional calibration methods. This method is particularly useful for large tanks or silos where it is not practical to use test weights to calibrate the scale.

- **www.mt.com/ind131**
- **www.mt.com/ind331**

Clear OLED display
The first weighing terminal with Organic LED display technology brings you outstanding readability from all angles and under all lighting conditions.

A Wide Range of Solutions
to Improve Processes

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