

By adding low-pressure plasma cleaning to a wet chemical cleaning system, film-type contamination can be minimized for unsurpassed cleanliness. (Image source: Ecoclean GmbH)

Effective fulfilment of changed demands in part cleaning

Innovative solutions for fine cleaning, digitalization and services

Apart from the particulate cleanliness of industrial components, the removal of film-type contaminants is moving ever more sharply into the focus. The digitalization of cleaning systems also plays an increasingly important role. Addressing these altered requirements in part cleaning, Ecoclean will be presenting diverse new developments at this year's part2clean (Hall 3, Stand B 31), including some live displays and forward-looking service solutions.

Manufacturing processes such as coating, adhesive bonding, sealing, painting, welding or even heat treatment call for very clean part surfaces. Even minimal re-

sidue of film-type contaminants – e.g., oils, greases, metalworking fluids, corrosion inhibitors, preservatives, mould parting agents – and other auxiliary production

Effective fulfilment of changed demands in part cleaning

compounds have a quality-impairing effect.

For the ultra-fine degreasing treatment that commonly follows wet chemical cleaning with a solvent or aqueous medium, Ecoclean (formerly Dürr Ecoclean) has developed an innovative solution. It permits an additional low-pressure plasma cleaning step to be performed in the working chamber of the wet cleaning system. By means of this combination cleaning cycle, the free surface energy that is key to optimum adhesive strength can be raised from 60 to 80 mN/m in virtually one single process. At the upcoming parts2clean this breakthrough will be presented by way of example on an EcoCore solvent-based cleaning system.

Another innovation at the cleaning equipment manufacturer's booth will be an automated compact application carrier for diverse uses in the partial cleaning and activation of metal and plastic workpieces. Depending on the objective, this lean platform can be fitted with plasma, EcoCsteam, laser, CO2snow jet or EcoCbooster technology for integration into a production line. It can thus be employed to perform various tasks - e.g., in the electromobility, supplier industry and medical equipment segments - efficiently using a partially dry process.

When it comes to fine and ultra-fine cleaning, e.g., in the optical industry, precision mechanics, medical equipment making and machine tool production, the ultrasonic cleaning systems made by UCM AG, a member company of the SBS Ecoclean Group, shine with diverse advantages at both the machine and process techno-

logy levels.

Over and beyond these highlights, an innovative cloud-based solution for the digitalization of cleaning systems will be exhibited. It is designed to deliver optimized process reliability, plant availability and overall equipment efficiency. This digitalization solution is also capable of generating an batch- or part-specific end-to-end documentation of equipment and process conditions of the kind required in the aircraft, medical equipment and automotive industries. To the plant operator, it thus yields a range of value-adding benefits that include improved productivity and superior production planning.

Another prime subject at the Ecoclean booth will be forward-looking service solutions. On the "Service Island", experienced after-sales support staff will provide information on aspects such as predictive maintenance, tailor-made service concepts, trainings for customer employees, and equipment modernization / adaptation.

23rd - 25th October 2018: parts2clean, Stuttgart (D)

Ecoclean GmbH
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Dear subscribers,

after „Lounges on tour“ in Vienna were a complete success according to the organizers, we are now looking forward to the „Lounges on Tour“ in Berlin on October 9th and 10th.

We are also excited about the „Cleanzone“, which will take place in Frankfurt on October 23rd and 24th, where the cleanroom specialists will meet again. Cleanroom Online will of course also have a stand at the fair and we are looking forward to meeting you. Take advantage of the opportunity for a personal exchange - we are eager to hear your ideas and information as well as your feedback. Perhaps you would also like to be represented in our next Cleanroom Online Yearbook, which will be published in January 2019 and will ensure year-round visibility in the industry.

In case you don't yet have an admission ticket to the Cleanzone, please take part in our raffle on page 16. We have tossed 80 tickets into the pot, the lucky fairy is already waiting for YOU. See you in Frankfurt.

Yours sincerely,

Reinhold Schuster

Cleanroom Award 2018: The nominees have been chosen



The nominees for the Cleanroom Award 2018 have been chosen. The award sponsored by Reinraum Akademie from Leipzig acknowledges innovative, sustainable and energy-efficient concepts for cleanroom technology and is annually conferred during the trade fair Cleanzone. The five members of the expert jury have chosen five submissions from Austria, Turkey, U.S.A. and Germany.

In 2018, Reinraum Akademie will confer the Cleanroom Award for the seventh time. The award acknowledges the best concepts regarding innovation, sustainability and energy-efficiency in cleanroom technology. Companies, organisations, research facilities and individuals were invited to submit their applications until the 31st of July 2018. A jury consisting of five renowned expert members chose five nominees from all submissions. The selected candidates will have the opportunity to present their concepts in their own dedicated areas to an expert audience at Cleanzone, an international trade fair for cleanroom technology. The fair will take place on the 23rd and the 24th of October 2018 in Frankfurt am Main. The award is an audience prize. The winners will be chosen by the fair's visitors by means of a voting. In addition to the award, Frank Duvernell – who is the founder of Reinraum Akademie and the initiator of the award - will present the winning company with a cheque in the amount of 3,000 Euros.

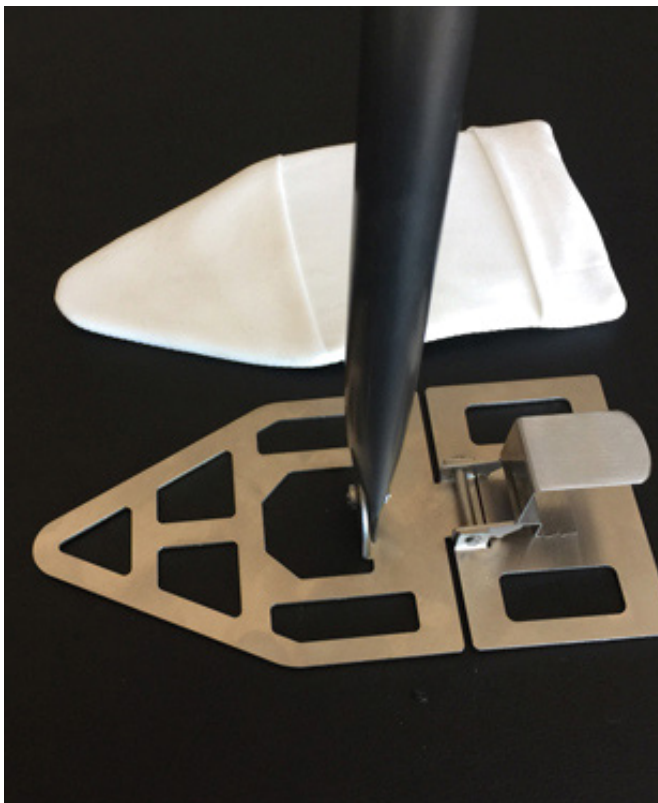
This year's submissions cover a wide variety of topics and include novel types of devices, new cleanroom furniture and flexible, textile cleanrooms. The nominees are from Austria, Turkey, U.S.A. and Germany.

Die Nominierten:

Company: Apex Protect-Hamit Cincin, Turkey

Product: AP ICT Apex Isolator Cleaning Tool

Concept: The mop AP ICT was developed to clean insulators and LAF workbenches as well as all parts made from autoclavable stainless steel as easily as possible. The device is shaped like a flat iron and is able to clean even hard-to-reach corners better than previous mops by means of its contoured apex.



AP ICT Apex Isolator cleaning tool / Apex Protect-Hamit Cincin, Turkey

Company: Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany

Product: CAPE Flexible Cleanroom Module

Concept: The CAPE Cleanroom Module is a mobile cleanroom tent that can be implemented particularly quickly and that warrants cleanroom classes 1 to 9 according to ISO 14644-1. It can be configured individually and is energy-efficient, washable, recyclable and space-saving regarding its storage.



CAPE Flexibles / Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA, Germany

Cleanroom Award 2018: The nominees have been chosen

Company: Innerspace GmbH, Austria

Product: VR Process- und Behavioural Training

Concept: With this concept, users can train actively in realistically simulated production areas by means of Virtual Reality. The training programme includes integrated body tracking and repeatable training units.



VR Process and Behavioural Training / Innerspace GmbH, Austria

Company: KEK GmbH, Germany

Product: Foldable Table for Service Technicians

Concept: This concept represents a table for temporal use that can be folded particularly quickly, for example for service technicians. It can be stored and transported extremely space-savingly and even in very narrow places and can be cleaned quickly and simply.



Foldable Table for Service Technicians, KEK GmbH, Germany

Company: Steris Corporation, U.S.A.

Product: Aero Alcohol Dispenser, Disinfectant Dispenser

Concept: A flexible standing unit for hand disinfection that can be handled simultaneously by elbows, hands or feet. It is autoclavable, safe, efficient and flexible in its installation within production facilities or places/work environments in which hands have to be disinfected regularly or occasionally.



Aero Alcohol Dispenser, Disinfectant Dispenser / Steris Corporation, USA

Expert Jury 2018:

- Egon Buchta, Egon Buchta GmbH
- Frank Duvernell, Reinraum Akademie
- Dr. Roy Fox, ReinraumTechnik/GIT Verlag
- Prof. Gerhard Winter
- Josef Ortner, Ortner Reinraumtechnik

23.10. - 24.10.2018: CLEANZONE, Frankfurt am Main (D)

cleanzone

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Safely packaging pharmaceutical products: Bosch's horizontal flow wrapping machine Sigpack HML allows products such as blisters to be reliably hermetically packaged. (Picture: Bosch)

New Sigpack HML horizontal flow wrapping machine



Hermetic packages for pharmaceutical products

- Output of up to 350 packages per minute
- Compact size combined with ease of use
- Greater product protection thanks to reliable sealing technologies

Hermetic packages protect pharmaceutical products from external influences like humidity, oxygen and light. The new horizontal flow wrapping machine Sigpack HML from Bosch Packaging Technology, allows products such as blow-fill-seal vial cards, blisters and various medical technology products including pens and inhalers to be reliably hermetically packaged. "Thanks to its compact size, the Sigpack HML can be optimally employed even where space is limited," explains Rolf Steinemann, product manager at Bosch Packaging Technology. "The machine not only can seamlessly be integrated into their lines, it is also suited as an excellent stand-alone solution. This means customers benefit from even greater flexibility in the packaging process."

Automatic splicing

The Sigpack HML is suitable for the production of both small and large batches. Depending on the desired output volume, the film reels can either be changed manually during short machine stops or with the help of a splicer. The improved splicer fully automatically connects the old and new film to avoid disturbances, such as at the film former.

Safe product processing

Products are delivered to the flow wrapping machine via a transport chain. The transverse and longitudinal film sealing uses the proven Longdwell heat sealing technology. "This ensures an extra-long sealing time, resulting in guaranteed tightly sealed seams, which means optimal protection for pharmaceutical products," Steinemann says. The machine achieves an output of up to 350 sealed packages per minute.

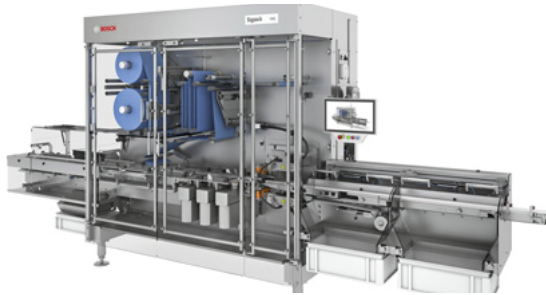
The sealing rolls used for horizontal wrapping can be opened from both sides. This prevents the film from coming into contact with the heated sealing rolls, and from being damaged during machine downtime. For particularly temperature-sensitive products, the cover plates at the sealing station can be cooled. The Sigpack HML is also available with ultrasonic sealing, allowing customers to gently package heat-sensitive products.

Options for highest product quality

Upon request, the Sigpack HML can be equipped with options for additional product protection, such as the "no gap no seal"

New Sigpack HML horizontal flow wrapping machine

function. This is especially used for product piles in blister or BFS packages, which is checked once again shortly before it reaches the cross sealing. If the pile is not in the correct position, the cross sealing stops. This avoids product rejection or damaged sealing jaws. The optional MAP module (Modified Atmosphere Packaging) offers optimal product stability by removing residual oxygen from the hermetic packages. Sensors precisely monitor and regulate the gas content of the packages.



Sigpack HML: compact and versatile: Whether as a stand-alone solution or integrated into a line, Bosch's new horizontal flow wrapping machine ensures flexible processes and absolutely safe hermetic packages. (Picture: Bosch)

Consistent systems competence

Based on the Bosch systems competence, the Sigpack HML can be combined with other equipment, like cartoning machines as well as track and trace systems for seamless traceability of the packaged products.

Interested customers can have a look at the new Sigpack HML horizontal flow wrapping machine at the Bosch site in Beringen, Switzerland.



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A new chapter begins with the ground-breaking ceremony for our new site



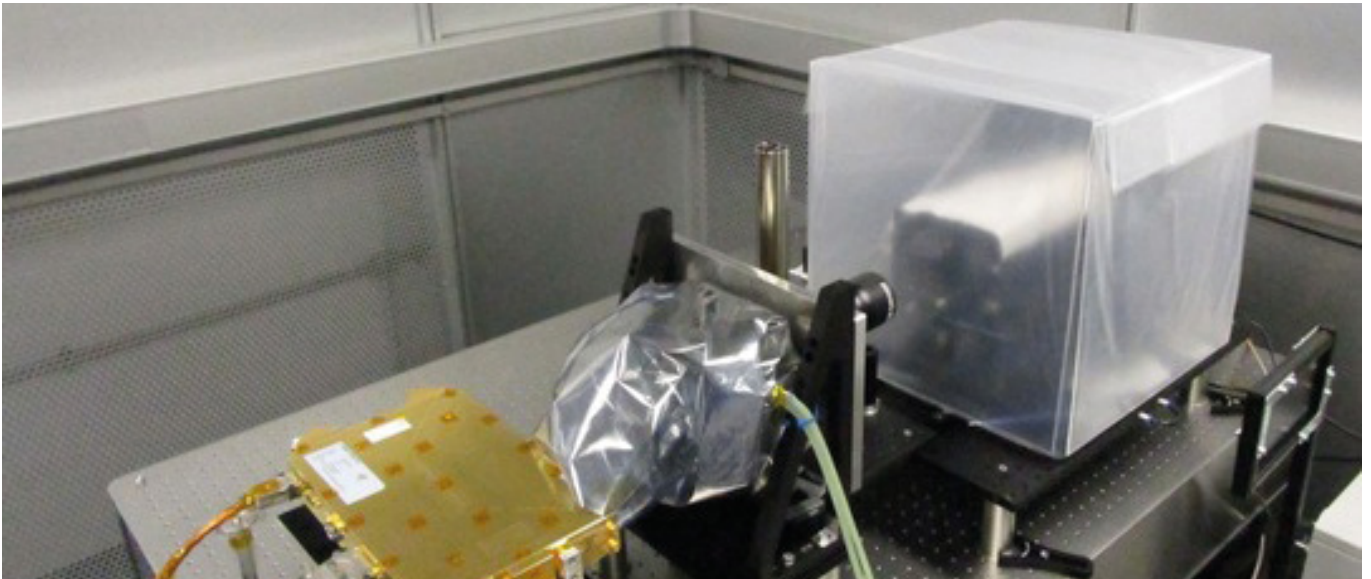
On July 24, 2018 the official starting signal was given for construction of our new headquarters. Guests were invited along with our employees and project partners to join us in celebrating the ground-breaking ceremony for the Linder Technologie Campus (LTC), which will be sharing with the companies Cluetec, Endosmart, enOware, Systec & Services, Traxeed and Werum.

From January 2020, this 11,000 sqm site will offer space for more than 250 creative minds. With its sustainable design and focus on ensuring an attractive, future-oriented work environment, the Linder Technologie Campus is setting new standards at Technology Park Karlsruhe.

Spacious rooms, numerous terraces and a courtyard offer scope for creativity and inventiveness, so creating perfect conditions for growth and development. The personnel of the companies based there will also benefit from a staff canteen, as well as childcare and gym facilities. The plan is to build the LTC to KfW Group energy standards with the help of cutting-edge technology and methods.



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Protection of measuring equipment and hardware. (© OHB System AG)

Small but packs a punch!

Flexible clean-room mini cover µCAPE® offers temporary protection for high ISO-class clean-room facilities.

Little brother's got some moves: OHB System AG, a subsidiary of listed space and technology company OHB SE, together with the Fraunhofer Institute for Production Engineering and Automation IPA, has designed a mobile and certified mini clean-room cover for protecting particularly sensitive products in clean-room facilities. Known as the µCAPE®, it is the smaller version of the CAPE®, which has been on the market for several months.

"Our µCAPE® is ideally suited for protecting sensitive hardware in a high-purity-class clean rooms while no direct work is being carried out on it for a foreseeable period of time or if the activities to be performed expose the surroundings to the risk of contamination," explains Dr. Axel Müller, OHB System AG's Cleanliness Officer. "A certified and space-saving solution is required to protect products or measurement equipment in clean rooms swiftly and effectively," Müller adds.

In developing µCAPE®, the team were able to leverage the expertise,

measurement instrumentation and validation of its big brother, the CAPE® solution, a flexible certified textile clean room. A prototype was developed together with OHB's partner Fraunhofer IPA in Stuttgart. After lengthy measurements of materials, a stable foldable cover made of ultra-

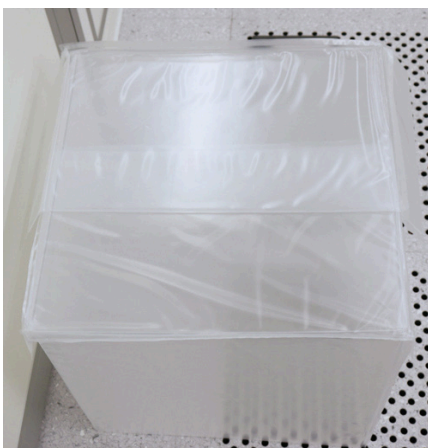
ra-pure film was engineered and can be fabricated in accordance with customer specifications. The µCAPE® is a well documented and certified solution thanks to the ease with which it can be set up and the measurable reductions in the risk contamination (cover protection against particulate and molecular external contamination) according to Dr. Axel Müller.

With the µCAPE®, it is possible to protect hardware on an area of about 5 x 5 cm² to 1 x 1 m² in the shortest possible time and to store the protective device within easy reach. In addition to the space industry, OHB and IPA also see potential in the pharmaceuticals, optics, food, medical and semiconductor industries wherever customers require documented protection of hardware or measuring equipment or for quality assurance purposes.

Testing successfully completed

µCAPE® was used for the first time in an ISO5 clean room at OHB's Space Center "Optics & Science" at the beginning of 2018. "The system not only worked perfectly but also showed potential for other applications and extensions," says Dr. Müller, going on to say that "µCAPE® was implemented by IPA extremely professionally. It is increasingly becoming the standard for OHB projects. Contamination loads can be estimated more realistically and duly lowered, thus reducing the effort required and improving performance. Risks and time estimates in normal and special activities are minimized for this standard solution and its availability."

Companies interested in buying µCAPE® are welcome to contact OHB System AG or IPA Fraunhofer Stuttgart.



Unfolded box ready for use. (© OHB System AG)

E+E Elektronik Certified According to IATF 16949



The IATF 16949 certification confirms that the Austrian sensor specialist meets the quality requirements of the automotive industry.

The Austrian sensor manufacturer E+E Elektronik has recently completed the certification according to IATF 16949:2016. It confirms that the company's quality assurance system complies with the high requirements of the automotive industry. The new standard follows the previous ISO/TS 16949 and is recognised by the world's leading automotive manufacturers.

E+E Elektronik develops and produces sensors and transmitters for humidity, temperature, CO₂, air velocity, dew point, moisture in oil, mass flow and pressure. The highly accurate measurement devices are used all over the world in various applications, such as building automation, process control, meteorology, environmental technology, agriculture and clean rooms.

Humidity Sensors for the Automotive Industry

In the automotive industry, the humidity sensors from E+E Elektronik are part of control systems for the fuel mixture, the air conditioning or the windscreen fogging prevention. For quantities of several millions of units, highest quality level is a must. Therefore, the company has already been certified according to the automotive standard ISO/TS 16949.

„With the IATF certification, E+E Elektronik qualifies as a reliable partner for the automotive industry. This is proof that we strive and are able to offer our customers the highest quality standards“, states E+E Managing Director Josef Hartl.



Image 2: E+E Elektronik Managing Director Josef Hartl
(Photo: E+E Elektronik GmbH)

ISO 9001 Certified since 1993

Already 25 years ago, E+E Elektronik established a quality assurance system in compliance with ISO 9001 and thus anchored the quality aspect in the corporate strategy. The company is now certified according to the latest ISO 9001:2015, which is also mandatory for the new IATF standard.

Commitment to Environmental and Climate Protection

Besides innovative products and high quality standards, E+E Elektronik also takes environmental protection and the sustainably use of resources very seriously.

Membership in the Austrian Climate Alliance and an environmental management system according to ISO 14001 are therefore a matter of course for the company.



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Image 1: The Austrian sensor manufacturer E+E Elektronik now also complies with IATF 16949. (Photo: E+E Elektronik GmbH)

Handle with Care: Sustainability Interim Report 2018

Sustainability is a central element in CWS-boco's business model and corporate strategy. The measures in this area extend across all company departments. The service provider of professional textile services and washroom hygiene solutions has been documenting the measures and their effectiveness since 2013. The latest results can now be found in the 2018 Sustainability Interim Report.

Central organisation for QESH

Safety and quality are key components of the Group's sustainability strategy. That is why, in 2017, CWS-boco established a central organisation for Quality, Environment, Safety and Health (QESH), with the aim of exceeding the internal and external requirements in the fields of health & safety, compliance and corporate responsibility.

There is a particular focus here on occupational health and safety. Together with the TÜV Rheinland occupational health service and the Freiburg research centre for occupational sciences (FFAW), the Group has analysed and minimised the challenges faced by staff at three pilot sites. The experience gained from this project will now be channelled into systematically further optimising occupational health and safety across the group over the next three years.

Sustainable production

When producing and developing new products, the CWS-boco Group takes social, ecological and economic aspects into account. The company purchased in excess of 529 tonnes of certified Fairtrade cotton for workwear in 2017 making it the largest provider of Fairtrade cotton workwear in Germany and thus also one of the largest in Europe. Overall, the share of Fairtrade cotton has been increased from 9.5% in 2016 to 19.6%.

The CWS-boco Group also ensures sustainability in terms of consumption, for example via the efficient use of resources such as water and energy. The changeover from oil to biogas, for example,

led to a 60% drop in oil consumption in 2017. At the same time, CO₂ emissions fell from 56,789 t in 2016 to 52,593 t.

Three Gold awards in succession

Our commitment to sustainability has also been acknowledged by external experts. We have been awarded gold in the EcoVadis ranking for our ecological and social sustainability for the third time in a row. CWS-boco Deutschland GmbH is among the top 3% of tested companies worldwide across all sectors.

"With this report, CWS-boco gives insight into its three areas of activity Customer & Employee, Products & Origin, Laundry & Logistics for the sixth time. With it, we reveal our business activities in the non-financial field too and create transparency about our actions. This also shows that we take corporate responsibility seriously and that we develop and drive sustainable concepts along our supply chain systematically," explained Dr. Maren Otte, Head of Corporate Communications & Responsibility at CWS-boco International.



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Hanley Technology is our new partner for Ireland and Great Britain

To be able to offer our customers top quality, high-speed service throughout the world, as well as giving them the opportunity to get to know and try out our operating units, we are constantly expanding our global network of partners. In Hanley Technology

we have found an excellently qualified partner for Ireland and Great Britain.

To mark the start of the new association, Andreas König (Managing Director of Systec & Solutions, left) paid a visit to Gavin O'Driscoll (Sales Director of Hanley Technology, right) in Ireland.

We look forward to a successful working relationship with our new partner.



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Maximum hygiene and user-friendliness

New generation of direct web printers

Last year MULTIVAC Marking & Inspection launched the DP 230, the first model in a new generation of direct web printers, for integrating into R 08x and R 1xx thermoforming packaging machines. From the 4th quarter of 2018 onwards, the new models of direct web printers will also be available for the R 2xx and R 5xx thermoforming packaging machines.

When the new generation of direct web printers was developed, there was a particular focus on meeting the latest hygiene and safety standards. As with the machines of the previous generation, the new direct web printers are based on a stainless steel and anodised aluminium construction. All exposed edges are chamfered and dead space has been systematically avoided. This means that liquid can easily drain away during cleaning.

Product improvements

The innovations include hygiene cylinders with stainless steel connections on the film brake and hybrid cables for all connections to the packaging machine. The cover plates are specially designed for use in the food sector and are perforated for ease of

cleaning. Since security against loss of product has a high priority in the medical and pharmaceutical sectors, the DP 230 direct web printers for these industries are supplied with solid cover plates and plexiglass windows.

MULTIVAC currently differentiates between two models: the DP 210 is equipped with an x-axis propulsion indexer, which enables the printer to move at right angles to the film running direction, so that multiple packs in a pack row can be printed. The DP 230 on the other hand is equipped with an x-axis and y-axis propulsion indexer. This means that the printer can move not only at right angles to the film running direction but also in the film running direction itself, enabling all the packs of a particular format to be printed.

Thermal transfer and thermal inkjet printers are used as the printing technology.

The models are available in each version for cut-off lengths up to 400 mm and 900 mm. This means that the direct web printers are ideally designed for each film width and for all the available formats on the thermoforming packaging machine. State-of-the-art servo motors ensure that maximum speed and printing accuracy are achieved.

Compact design

The compact design and user-friendliness of both series also offer significant benefits. Since the direct web printers are fitted above the sealing station before the control cabinet, the loading area remains completely free. In the case of the larger thermoforming packaging machines from the R 1xx series onwards, both the DP 210 and DP 230 can be equipped as an option with a mobile holding device, so that they can easily be pushed to the side when changing the sealing die. This means that the sealing station is then easily accessible. When the machine is to be put back into operation, the direct web printer is simply pushed over the safety guard again, and the loading area is once more completely free.

In order that the direct web printer has a high degree of user-friendliness, MULTIVAC has equipped the printer mounting with a quick-changing device, so that it can be dismantled easily when changing the thermal printhead for example. All removable covers are provided with ergonomically arranged handles, which enable the covers to be handled easily from the operating side.



Coperion offers new pharma extruder design with maximum flexibility

Pharma extruder for wet and hot melt extrusion processes

Coperion GmbH, Stuttgart, Germany, has launched a completely flexible continuous pharma extrusion system suitable for research and development, as well as for small-scale production. This ZSK 18 MEGAlab extruder fulfills the requirements for both wet extrusion and hot melt extrusion (HME) processes. The first of these ZSK 18 MEGAlab extrusion systems with an 18 mm screw diameter has recently been delivered to a major international pharmaceutical company and is in use for a variety of different continuous process tasks. It offers higher efficiency and uniformity than batch processes.

Besides the extruder the system comprises two Coperion K-Tron gravimetric loss-in-weight feeders with superior accuracy in API and liquid feeding, a cooling belt, and a Coperion Pelletizing Technology strand pelletizer.

Extrusion system offers maximum process flexibility

With a maximum throughput rate of 10 kg/h, the ZSK 18 MEGAlab is suitable for both wet extrusion and hot melt extrusion (HME) on

a laboratory scale. For wet extrusion processes the system comprises more than ten different die plates with various numbers of die holes and die hole diameters. For hot melt extrusion applications Coperion has equipped the ZSK extruder with a die head that has several exchangeable nozzles to provide different strand diameters. The die head offers additional bore holes for PAT (Process Analytical Technology) sensors.

The Coperion K-Tron liquid gravimetric loss-in-weight feeder fulfills ATEX requirements and can be connected to each of the barrels of the extruder process section. This flexibility in feeding also applies to the Coperion K-Tron API gravimetric loss-in-weight feeder. It can be mounted on the first barrel or fourth barrel of the process section. This allows the use of the ZSK extruder for processes requiring process lengths of 32 L/D as well as of 20 L/D.

The Coperion K-Tron gravimetric feeders also offer flexibility in their ability to handle a wide variety of materials, with even difficult flow characteristics and variable feed rates. This flexibility, coupled with Coperion K-Tron's superior digital weighing and controls technology, ensures high accuracies in materials feeding, all critical to the continuous pharmaceutical process.

The ZSK extruder itself and all peripheral equipment are very compact in size and are movable on wheels for optimum usage in laboratory conditions. The GAMP control system, as well as the water cooling manifold, is integrated into the stainless steel base frame of the ZSK extruder. Thanks to plug & play connections commissioning is possible in the shortest times.

Due to geometrical consistency within the ZSK series the ZSK 18 MEGAlab system allows proven scale-up to bigger ZSK extruder sizes and higher throughput rates. This is one of the most important requirements for successful laboratory installation.

Stefan Gebhardt, General Manager of Business Unit Food & Pharma at Coperion, says: "We have designed an extrusion system that optimally meets two very important requirements of the pharma industry. The system offers a large number of features for various application processes and at the same time fulfills all state-of-the-art GMP requirements. This way the ZSK extrusion system can be used with maximum flexibility – for a wide range of research and development tasks as well as for clinical trials and small-scale production processes."



Coperion's ZSK 18 MEGAlab twin screw extruder with Coperion K-Tron gravimetric loss-in-weight feeder, suitable for research and development as well as for small-scale production. (Photo: Coperion, Stuttgart)

Optimized, digital and globally connected

Freudenberg Filtration Technologies expands filter-testing laboratory

The three-month conversion work has now been completed and the filter laboratory on the industrial park in Weinheim is shining in new splendor. In the newly named "Filtration Science Lab", Freudenberg Filtration Technologies will continue testing and investigating products for the automotive, industrial and consumer markets. Filters have been put to the test here for more than five decades. In the course of a two-stage renovation, what used to be a filter laboratory characterized by "functional industrial flair" has become a modern and innovative competence center – not just visually but also with optimized processes and improvements for the people who work there. The sum invested in the conversion works is in the six-figure range.

Innovative products are tested here in a facility that extends to around 1,000 square meters. Laboratory manager Matthias Schilling and his team are able to examine the performance of filters on more than 20 test benches. Has the filter reached its dust storage capacity? Can air still pass through it easily enough without using more energy than permitted? These are the sorts of questions to which the filter measurement team at Freudenberg Filtration Technologies finds answers. In 2017, around 10,000 measurements were carried out with the aim of finding concrete answers to customers' questions.

Nothing is left to chance

National and international standards play a decisive role, with the filters being tested precisely in accordance with DIN, EN or ISO specifications. The test benches and the substances used comply with all standards, down to the smallest grain of dust. In addition, the laboratory team carries out defined incoming goods inspections of the materials used, for example, the nonwoven filter medium or the activated carbon that binds odors and gases. Particularly

selected filters are scanned before delivery to detect any possible damage. Last but not least, the product development team calls on the services of the laboratory when it comes to testing filter innovations or optimized products. "In general terms, the demand for measurement results is increasing. In this respect, we can draw on many years of experience and a wide range of skills. It is also important to us to respond flexibly to the concerns of our colleagues", Schilling explained.

Communication among colleagues is increasingly taking place digitally. An online platform allows both sides to view the status of orders. The test benches are also connected to the laboratory's IT infrastructure – everything is interconnected. Measurement results are fed directly into the company's internal network and can be exchanged internationally. The coordination of filter measurement technology at all locations is centrally coordinated in Weinheim. Further laboratories are located in Hopkinsville USA, Suzhou, China and Pyeongtaek in South Korea.

Freudenberg Filtration Technologies SE & Co. KG
D 69465 Weinheim



Have opened the new Filtration Science Lab (from left): Dr. Andreas Kreuter, Dr. Thomas Caesar, Matthias Schilling and Dr. Joerg Sievert. (Source: Freudenberg Filtration Technologies)

Precise pressure monitoring in systems and piping

GEMÜ's new 3140 series pressure gauges facilitate precision measuring across a wider range of pressures and temperatures. With these latest additions to their product portfolio, Ingelfingen-based valve specialists GEMÜ are modernising their range of measurement systems.

As part of this update to their range of pressure measurement systems, GEMÜ will be replacing the type 3120 with the new pressure transducers and pressure switches of the GEMÜ 3140 series. Compared to its predecessor, the new product range impresses with a far broader measuring scope, as well as a number of electrical design features and important approvals.

The GEMÜ 3140 series is designed for both liquid and gaseous media at pressures of between 0 and 40 bar and temperatures of between -40 and +125 °C. The integrated high-quality ceramic sensor reliably converts the pressure into a proportional electrical signal – at an accuracy of 0.5% FSO in accordance with IEC 60770.

IO-Link for intelligent networking

In order to optimize adaptability for different applications, all the standard electrical and mechanical connections are provided. With an IO-Link interface, the GEMÜ 3140 pressure transducers/switches can be used centrally to automate and mo-



onitor processes. This means leakages and gauge pressure can be detected early for instance.

Versatility

The pressure measurement devices in the GEMÜ 3140 series can be used for a

variety of industrial applications. Besides calculating the process pressure and measuring a pressure differential, the GEMÜ 3140 pressure transducers/switches can also be employed to reliably control, measure and monitor the level during filling processes. The integrated sensor is suitable for use with both highly viscous and contaminated media and, thanks to its high-quality material selection, it can even be used with corrosive media, such as for demanding applications with acids and alkalis.

GEMÜ 3140 products have been certified in accordance with UL, SIL2 and IECEx. Both the explosion-proof and the SIL versions are available as options. Depending on the version, the product can also feature a rotatable LED display. This means the user can easily view the current operating parameters via a 4-digit display, no matter where the device is installed.

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
D 74653 Ingelfingen

Where can you put a label printer in a cleanroom?



To permit the best possible integration of printers in cleanrooms we have developed the easy-to-clean stainless steel PRINTER BOX. This enables printers of almost any size to be installed in a sterile environment whilst satisfying GMP standards.

The PRINTER BOX is designed in accordance with protection class IP66. The printer is placed on a pull-out platform and is connected up inside the PRINTER BOX.

A door with toggle lock on the front secures the PRINTER BOX during operation. The printed labels can be removed by way of a small flap with viewing window in the door. Safe and convenient operation is thus guaranteed. Power, USB, RS232 and Ethernet connections are provided on the back of the PRINTER BOX. All our stainless steel printer enclosures can be placed or screwed onto a shelf or integrated into a wall.

New product: PRINTER BOX S

With dimensions of W 360 mm / H 320 mm / D 405 mm, the PRINTER BOX is of particularly compact design. It is perfect for use with the Zebra GX430 printer. The S version is a new alternative to the existing PRINTER BOX M (W 400 / H 400 / D 600) and L (W 450 / H 540 / D 600) models.



PRINTER BOX S - Closed and with opened viewing window for the removing of printed labels



PRINTER BOX S - Closed and with opened viewing window for the removing of printed labels



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A new approach to service

Learning for the future with virtual reality

The high-quality valve, measurement and control components that GEMÜ produces are important elements of a technical processing plant. Proper installation and maintenance are therefore necessary in order for the plant to operate efficiently and in optimal cycles. In this regard, the best possible form of interaction between manufacturers, plant designers and operators is required so that the product can be operated faultlessly throughout its entire life cycle, from the commissioning through to the servicing.

GEMÜ's Service Business Segment bundles together the activities in the after-sales sector, which can currently be divided into three main areas:

Technical training

Through a multi-stage training system and individual training models, customers are introduced to the functional principle of GEMÜ valve, measurement and control components in thorough detail. This consequently ensures that assembly and service personnel have all the necessary knowledge and tools to install and service these high-quality products.

Exceptionally skilled technical trainers with many years of experience in the sector continue to pass on knowledge using the latest teaching methods, whether this takes place in the GEMÜ training centre at our site in Criesbach or at our customers' sites all over the world.

An innovative and specially developed VR (virtual reality) training programme for GEMÜ CONEXO is just one example of how we are facilitating even more in-depth (i.e. immersive) learning among our partici-

pants. Using an application, the necessary actions can be performed, studied and subsequently tested. Thanks to the complete immersion in the learning content, the knowledge that is passed on can then be summoned even quicker in the field.

The training courses are carried out fully in line with the customer's individual requirements with regard to time, location



and content. Training courses that accompany servicing, or take place directly in advance of this, are also possible.

In-house and field service

A well-trained squad of service engineers is not only in an ideal position to advise the customer on site in all matters relating to the commissioning of valve, measurement and control components, but can also support customers in inspections, servicing and upgrades. Repair and maintenance of GEMÜ components can be carried out at the Criesbach service centre or directly on site. To ensure the comprehensive efficiency of your machines, our service specialists are available for valve-related plant screenings and technical questions. If you wish, GEMÜ's qualified fitters can also assume responsibility for the component inventory, data management and retrofitting for CONEXO. For all questions relating to after-sales service, our experts at GEMÜ can be contacted by telephone or e-mail.

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
D 74653 Ingelfingen

Installation and removal of integrated displays is child's play

Integrated displays make ideal status indicators for clean rooms. Being flush-mounted, they are no problem to clean. But is it possible to remove and install them without any bother? We have developed an innovative mounting concept

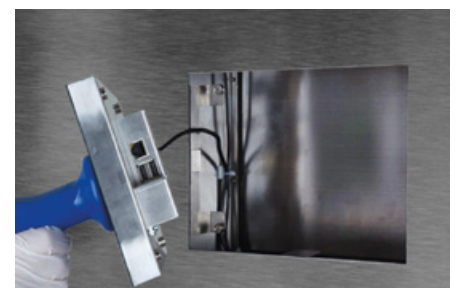
for our VIEWSION display range that permits installation from the front. The display is flush-mounted with magnetic holders and then sealed with silicone. The seal can be removed as required and the display simply lifted out using a suction cup.



systec &
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Strengthening competencies in technology at Weidmüller

Volker Bibelhausen to become Chief Technology Officer at Weidmüller Group



Volker Bibelhausen
©Alex Waltke Fotografie

Volker Bibelhausen is to become Chief Technology Officer (CTO) at Weidmüller Group in Detmold, Germany, as of September 1, 2018. He will be part of the three-person Executive Board team along with Jörg Timmermann (Speaker of the Executive Board and CFO) and José Carlos Álvarez Tobar (CSO). Elke Eckstein is leaving the company at her own request as of August 31 2018.

Over the last five years, Ms. Eckstein has led the operations functions extremely successfully and has thus contributed significantly to Weidmüller's positive development. As Chief Digital

Officer (CDO), she has conceptually started and driven forward the strategically important topic of „digital transformation“. The Cabinet Products Division also performed very well under her leadership. All of this has contributed to the growth of recent years and has further improved Weidmüller's competitiveness. "We much regret Ms. Eckstein's decision to leave Weidmüller. She is leaving behind a strong team that will ensure the high quality and delivery standards in the future, as Weidmüller remains its customers' excellent partner", explains Christian Gläsel, Chairman of the Supervisory Board of the family-owned company.

As a consistent next step of implementing the corporate strategy and further strengthen the customer- and technology-focus, the Supervisory Board and the Executive Board have decided to newly introduce the position of a Chief Technology Officer (CTO). "We are very happy that Volker Bibelhausen has decided to take over duties as CTO at Weidmüller. With Mr. Bibelhausen, we will gain an internationally experienced technology expert with excellent industry knowledge for our globally operating Group", explains Gläsel. "Volker Bibelhausen's experience and competence will further add to Weidmüller's position as technology partner of its customers'", adds Jörg Timmermann, Speaker of the Weidmüller Executive Board.

Mr. Bibelhausen has more than 25 years of successful leadership experience in automation technology and electronics as well as in the automotive supply industry. Lately, he has been vice president sales original equipment at Robert Bosch Car Multimedia GmbH and has led global sales teams. Previously, Bibelhausen had held leadership positions at Bosch Rexroth GmbH since 2013. At Weidmüller he will continue to advance the pioneering product development as CTO.

About:

Volker Bibelhausen (52) started his career in 1990 as design engineer for electronics at former Aqua Signal AG. Following various career steps in Germany and the U.S., he went into international sales at former Felten & Guillaume Energietechnik AG. From 1997 to 2013 he had a variety of functions at Phoenix Contact GmbH & Co. KG, in his last position as Head of the Division Control and Industry Solutions and member of management at Phoenix Contact, with worldwide responsibility for their systems and solutions business. In his latest position, he worked as Vice President Sales Original Equipment at Robert Bosch Car Multimedia GmbH and before that in a leadership position at Bosch Rexroth GmbH since 2013. Mr. Bibelhausen is married, has three children and lives in Detmold.

Weidmüller GmbH & Co. KG D 32758 Detmold

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CLEANROOM
YEARBOOK
FOR A CLEAR
VIEW IN THE
CLEAN ROOM



www.cleanroom-online.com

The essential guide to greener, more sustainable laboratories

Lab Innovations, the UK's only trade show dedicated to the laboratory industry, will have a new focus this year on the increasingly important aspect of the "Sustainable Laboratory". Taking place on 31 October & 1 November 2018 at the NEC, Birmingham, Lab Innovations attendees can visit the new Sustainable Laboratory area to see and discuss the latest developments in environmentally-friendly products. The sustainable initiatives theme is also a core topic running through the agendas in both the Royal Society of Chemistry theatre and the "Insights and Innovations" theatre run by Laboratory News.

Why is lab sustainability so important? "In a nutshell, if every lab achieved more sustainable practices, in the UK alone we'd be saving hundreds of millions in costs every year. Funding would go further, research could grow and our impact upon the environment would be reduced," explains Andy Evans, Green Light Laboratories, who is overseeing the new Sustainable Laboratory area. "Any organisation can easily improve their lab sustainability. At the exciting new area, visitors to Lab Innovations 2018 will be shown how improvements in technology, procurement and best practice can reduce running costs whilst safeguarding the science."

With over a decade of experience in lab equipment sustainability, Andy Evans works with scientific organisations to reduce energy consumption, minimise carbon emissions and reduce wasteful practices. He is currently working with Scientific Laboratory Supplies and Liebherr (see them both on stand, H13) on a sustainability study of their -80C freezers with and without racking with Warwick University. Andy is drawing on his knowledge in collaboration with technical specialists and leading universities for the Sustainable Laboratory area. Here, there will be guided tours of a lab filled with equipment which will deliver savings in running costs. Every item of equipment will have its own case study carried out with renowned institutions who will also be on hand to discuss their experiences.

'Reduce, reuse and recycle' is regularly repeated advice to people to reduce their impact on the environment, but the methods to reuse and recycle things are not always clear. To give just one example, although modern electronic waste contains a wealth of precious metals, recovering it is sadly not yet economically feasible. Day two of the Lab Innovations 2018 conference in the Royal Society of Chemistry theatre will focus on the environment. Here speakers from Tradebe toxic waste disposal and Bio Bean Biochemistry will talk about their approaches to help reuse, recycle, or at least safely dispose of waste.

Visitors to the main exhibition will also discover new environmentally-friendly products and examples of sustainable techniques on exhibitor stands. For example, labs can use a colossal amount of energy - three to five times more than an equivalent office space, so manufacturers have been working hard to develop equipment that uses less electricity and is more environment friendly. One area involves use of LED lighting instead of fluorescent lighting inside plant growth & stability cabinets. As an example of success in this field, on stand J12, Alphatech will be demonstrating an Aralab FitoClima 600PLH plant growth/stability/photostability chamber featuring LED

31st October - 01st November 2018:
LAB Innovations, Birmingham (UK)

lights, which reduce electricity use by 40%-60% compared to conventional fluorescent lighting.

"By working closely with our scientific advisory board, exhibitors and other industry experts, Lab Innovations 2018 will give visitors a well-rounded overview of the possibilities and opportunities of sustainable lab practices and environmentally-friendly products," said Alison Willis, Divisional Director, Lab Innovations. "Any laboratory can make significant savings. Come to Lab Innovations 2018 to find out from the experts how you can make your lab 'greener' and save money too."

For free advance visitor registration for Lab Innovations 2018, click 'Register Now' on the Lab innovations home page.

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The cleanroom trade fair Cleanzone increases its scope

Some 80 companies will be presenting their products and services at Cleanzone on 23 and 24 October 2018 in Frankfurt am Main (2017: 64 exhibitors). 34 percent more exhibition space has been booked than at the previous event, and nearly one third of trade visitors are coming to Frankfurt from abroad.

With approx. 80 international exhibitors and over 30 percent more exhibition space, Cleanzone will be showcasing an even greater range of products and services on 23 and 24 October in Frankfurt am Main. The trade fair is benefiting from optimism in the industry as the areas of application for cleanroom technology continue to increase. Technical change is creating new high-tech products such as low-emission automotive drive systems, high-resolution image recognition systems and highly complex medications, all of which are produced in ultra-clean environments. As an interdisciplinary event, Cleanzone is aimed at all industries in which cleanrooms are utilised.

The event again features a large international component, with some 30 percent of the exhibitors coming from outside Germany. Besides Germany, the most important exhibitor countries include Austria, Switzerland and Great Britain, with other companies travelling to Frankfurt from Korea, Hong Kong, Italy, Belgium, the Netherlands and Turkey. The German Cleanroom Institute (DRRI), a group under the aegis of mycleanroom.de and the Austrian Cleanroom Society (ÖRRG) will also be hosting large joint stands.

Market leaders from every area of cleanroom technology – including planning, operation, qualification and validation – will be presenting their wares in Hall 5.1 at the trade fair. In the consumables and clothing product area, exhibitors including Alisco, Alisco Hightech, basan/VWR, Clear & Clean, Contec, CWS-boco, Freudenberg, IAB, MEC Industries and Micronclean will be presenting their new products and innovations. The list of leading companies exhibiting in the field of construction and commissioning includes Colandis, Daldrop, Kelvin, MK Versuchsanlagen, Ritterwand, Spetec and Viessmann Technologies, while a roster of firms such as Asys, BSR, Cleanroom Technology Austria, Dittel Engineering and Ingenieurbüro Buchta will be showcasing their innovations for

planning cleanroom systems. Measurement and monitoring specialists exhibiting at the event include Beckman Coulter, Briem Steuerungstechnik, Siemens, TSI and vali.sys. The roster of companies with new cleaning processes in their portfolios includes Pfennig Reinigungstechnik, Piepenbrock and profi-con, while Fraunhofer IPA, the Hermann-Rietschel-Institut at the Technical University of Berlin and the Swiss Federal Institute of Metrology (METAS) will all be presenting their latest research findings at the fair.

The trade fair's areas of focus are based on trends in the industry, meaning that modern personalised medicine, biotechnologically produced pharmaceuticals, digital process simulations for construction and production, and various aspects of data and counterfeit protection will all be addressed at the event. At the Cleanzone Conference, four presentation series – 'Cleanroom for life', 'Upgrade your cleanroom efficiency', 'Clean life sciences – the next level' and 'Cleanrooms: Modelling the future' – will be tackling the top themes from the fair, delivering expertise for cleanroom operators in fields ranging from life sciences to microtechnology for experts and newcomers alike.

In addition to the scientific and academic presentations at the conference, Cleanzone Plaza, located right at the heart of the trade fair, will be the scene of panel discussions, exhibitor presentations, the presentation of the nominees for ReinraumAkademie's Cleanroom Award 2018 and the awards ceremony itself. The international character of the trade fair is also evident in the Cleanzone Plaza programme. The country profiles, which were launched with great success in 2017, are being continued. In 2018 the topics in focus include opportunities and risks for entering the Russian market, with a presentation being given by respected Russia expert Alex Stolarsky from the Schneider Group. Other highlights at the Cleanzone Plaza include a panel discussion on the future of cleanroom technology entitled 'Cleanroom technology 5.0', the use of mobile laboratories for the development of substitutes for antibiotics and a presentation on international product liability law.

23rd - 24th October 2018: CLEANZONE, Frankfurt am Main (D)

cleanzone

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Messe Frankfurt/Sandra Gätke



Innovations and know-how for reliable and efficient parts cleaning – now and in years to come



- parts2clean showcases all the latest solutions and trends
- Industry Forum, special displays and guided tours add value for visitors

In all sectors of modern industry, the effective cleaning of parts and components is essential for ensuring consistent, high-quality manufacturing results. But new trends are posing fresh challenges for parts cleaning technology. In order to remain competitive in tomorrow's world, manufacturers need to know now what standards of surface cleanliness will be demanded in future in specific industry sectors. They can find all the information they need at parts2clean, the leading international trade show for industrial parts and surface cleaning, which takes place from 23 to 25 October in Stuttgart.

“parts2clean not only has the world's largest range of exhibits for efficient and reliable parts cleaning, but also pays particular attention to coming trends and future challenges,” says Olaf Daebler, Global Director for parts2clean at Deutsche Messe AG. The supporting program that accompanies the exhibitor displays is likewise designed to offer expertise and know-how to meet all present and future cleanliness requirements.

Some six weeks ahead of the start of the show, now in its 16th year, more than 180 companies have already booked their stand space in Halls 3 and 5. This means that the net display area already totals approx. 6 500 square metres.

Innovative solutions and technical advances in all display segments

According to Daebler “many exhibitors use the show to present new and improved products and services to an international trade public for the first time”. Amongst other things, that includes a new solvent-based cleaning line with an integrated low-pressure plasma

cleaning stage. This innovative development makes it possible to meet the highest standards for the removal of surface films – typically required prior to adhesive bonding, coating or sealing – in a single, continuous process. Various new developments and technical refinements for the dry cleaning of individual parts address the growing awareness that film-type contaminants can critically affect the quality of the finished product. Also on display will be various innovative, cloud-based solutions for the digitization of cleaning plant and processes. These ensure that the production process remains stable, while helping to increase productivity and reduce costs. Exhibitors at this year's parts2clean will also be showing solutions for deburring and cleaning parts in a single work stage. And participating companies will be unveiling their latest products and systems in all other display segments, too, including cleanliness checks following the removal of particulate residues and surface films, cleaning media, bath monitoring and bath maintenance, cleaning baskets and workpiece carriers, and accessories.

Wide-ranging supporting program: a key knowledge resource

The supporting program at this year's parts2clean offers more new solutions and valuable know-how. The organizers of the special presentation “Automation and Digitization of Cleaning Processes”, for example, will be demonstrating with the aid of a Stäubli TX2-CS9 industrial robot how easily process and equipment data can be made available. Visitors will also be shown how these data can be defined and edited for specific requirements and purposes. And experts will explain how operating and teaching interfaces can be



Innovations and know-how for reliable and efficient parts cleaning

flexibly adapted to specific production goals and employee profiles, and how helpful “smart data” can be for sustainable production.

The special presentation “Process Flow in Parts Cleaning, Including Cleanliness Checks”, organized in conjunction with the CEC (Cleaning Excellence Center), has live coverage of the different process stages, from deburring and cleaning to cleanliness checks in clean-room environments and the logging of results. Another special presentation, organized by the German Industrial Parts Cleaning Association (FiT), has as its theme “QSRein 4.0 – Opportunities for Industrial Parts Cleaning”.

“Our English-speaking guided tours led by industry experts give visitors the opportunity to gather information about specific areas of interest in industrial cleaning by talking directly to selected exhibitors,” explains Daebler. The three-day Industry Forum that

forms part of parts2clean, and whose program is coordinated by the Fraunhofer Cleaning Technology Alliance and FiT, functions effectively as a further training event for industry professionals. The talks by senior industry experts and research scientists will be given in simultaneous translation (German <> English), and offer new knowledge and field reports on various aspects of industrial parts and surface cleaning, as well as on innovative developments in cleaning technology. Admission to the Industry Forum is free of charge for visitors attending parts2clean.

23rd - 25th October 2018: parts2clean, Stuttgart (D)

Deutsche Messe AG D 30521 Hannover

Leading pharmaceutical trade show CPhI worldwide 2018



Bosch Packaging Technology showcases laboratory competence in R&D and Industry 4.0

- Laboratory device Xelum R&D – the shortest way from development to continuous manufacturing
- Bosch Pharma Service Solid: from formulation and analytical development to stability tests and bioequivalence studies
- Fast and affordable failure analysis thanks to new data mining service

09th - 11th October 2018: CPhI worldwide, Madrid (Spanien)

At the leading pharmaceutical trade show CPhI worldwide in Madrid, Bosch Packaging Technology, one of the leading suppliers



Xelum R&D by Bosch: The R&D device for the production of oral solid dosage (OSD) forms ensures short time to market and an optimum dosing of smallest amounts of API.

(Picture: Bosch)

of process and packaging technology, showcases its laboratory expertise for oral solid dosage (OSD) forms. The new laboratory device Xelum R&D for continuous manufacturing is on open display for the first time. Moreover, visitors can see how the Bosch Pharma Service and Industry 4.0 solutions support pharmaceutical manufacturers in increasing transparency and efficiency of their laboratory processes. “With our wide range of laboratory solutions, we offer our customers an ideal starting position for a fast time-to-market of their pharmaceuticals,” says Fritz-Martin Scholz, product manager at the Bosch subsidiary Hüttlin.

Reduced development time thanks to continuous production

The Xelum R&D offers pharmaceutical manufacturers an ideal start to continuous OSD production. “The Xelum R&D is the first R&D machine to combine charging, dosing of several ingredients and blending with granulation, drying and discharging in one unit,” Fritz-Martin Scholz explains. In contrast to continual mass flow, the Xelum R&D doses excipients and active ingredients as a discrete mass. This way, customers can dose even smallest amounts of APIs of less than one percent. Individual packages, so-called X-keys, continuously run through the process chain and are removed successively from the machine as packages into bins.

Moreover, the X-key approach makes the product traceable at all times. It reduces the system’s failure susceptibility and process complexity, while increasing the product’s accuracy and quality. Ti-

Leading pharmaceutical trade show CPhI worldwide 2018

me-consuming scale-up is not needed, since the laboratory device uses the same components as the Xelum production platform. The identical process parameters can be directly transferred 1:1, which leads to a reduced development time. Additionally, the customer has the opportunity to move his product to continuous production or to a conventional batch process.

Customer support starts with the formulation

Bosch's laboratory portfolio supports customers in all development and production phases of OSD forms. Every year, roughly 1,000 experiments with substances for various indications are conducted at the company's competence center in Schopfheim, Germany. "The key to achieving a fast time-to-market while meeting the highest quality standards is extensive experience and know-how," says Dr Marcus Knoell, Head of Pharma Service Solid at Hüttlin. "We offer customers everything from a single source: from formulation and analytical development, to stability tests and bioequivalence studies and dossier preparation." A specific focus is on scale-up and technology transfer: every product that is developed at the Bosch laboratory is tailored to the customer's machines, so that they can later manufacture the product in-house.

Seizing the data treasure

At CPhI worldwide, Bosch also showcases its new data mining service which evaluates existing machine data more effectively to

identify and eliminate root causes. "Machine deviations are often classified as 'human error' due to misinterpretations or missing information," Dr Marc Michaelis, expert for continuous production and process verification at Hüttlin, explains. "Yet we assume that this is true for no more than ten percent." Bosch's new data mining tool makes it possible to examine large amounts of data for the smallest effects using statistical methods. "This way we can recognize hidden connections and eliminate failure causes. Large investments are not required. What it takes is technical expertise and extensive process know-how," Dr Michaelis says. "Our experts can support pharmaceutical manufacturers all over the world to make the most of their existing data."



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The shortest way from the lab to continuous production: With the Xelum R&D, Bosch allows pharmaceutical manufacturers an ideal start to continuous manufacturing. (Picture: Bosch)

POWTECH 2019 – mechanical processing technology for tomorrow's megatrends



The next POWTECH will take place from 9 to 11 April 2019 at Exhibition Centre Nuremberg, where innovations and new approaches for the processing industries take centre-stage in six exhibition halls. Powder and bulk solids experts from around the world are invited to see the technology and solutions offered by exhibitors live in action. Two forums and an interactive knowledge zone provide expert knowledge for the food, pharmaceuticals and chemicals, glass and ceramics, non-metallic minerals and recycling segments. Here, and in the course of professional-level dialogue at the trade fair stands, visitors will get reliable answers to the challenges they face. PARTEC, the international congress for particle technology, will run parallel to POWTECH 2019 under the theme "Particles for a better life".

At POWTECH 2019, exhibitors will showcase their latest developments for mechanical processes like size reduction, agglomeration, separation, screening, mixing, storage and conveying. The equipment and machinery on display are fundamental to the production processes of numerous industries. "Current industry megatrends such as energy storage or additive manufacturing (3D printing) are inconceivable without mechanical processing technology. At POWTECH 2019, we will be exploring these new application scenarios among others," says Beate Fischer, Exhibition Director POWTECH. She draws a positive interim conclusion from the preparations so far: "Currently, around eight months before the start of the trade fair, more than 80 percent of the display area has already been booked. Companies who would like to take part in 2019 should contact us now."

Exhibitors and visitors from around the world

Once again, visitors to POWTECH will encounter market leaders and innovative companies from all over the world. Registrations have been received from 27 different countries to date, and pavilions from Japan, China and Spain have already been announced. No less than 29 percent of exhibitors and 40 percent of visitors travelled to POWTECH 2017 in Nuremberg from other countries. The internationally renowned PARTEC Congress will also once again attract particle scientists and researchers from universities, insti-



The dynamic energy of POWTECH: large machinery in action and dialogue among experts.

tutes and companies worldwide to Nuremberg. More than 500 delegates are expected at the congress, which takes place every three years in the spring parallel to POWTECH. PARTEC is sponsored by VDI-GVC (Association of Process and Chemical Engineering).

Preview: new hall configuration, packed programme of presentations

At POWTECH 2019, Hall 5 will provide an extra display area alongside the usual halls 1, 2, 3, 4 and 4A. In Hall 2, the Expert Forum provides the venue for presentations and a supporting programme focusing on food and chemicals. Hall 3 will accommodate the Pharma.Manufacturing.Excellence Forum, where, as the name suggests, pharmaceutical production processes will be put under the spotlight. The presentations in this forum are put together by the APV (International Association for Pharmaceutical Technology). APV members will once again have access to the APV Lounge at POWTECH 2019. In addition, all trade visitors can look forward to new, interactive presentation formats as part of the Networking Campus. Daily live explosion demonstrations in the exhibition centre's park will yet again draw attention to the important issue of explosion protection.

For registration documents and more information on POWTECH please go to: www.powtech.de.

Processing engineering worldwide

POWTECH World is a global network of trade fairs and conferences related to mechanical processing technology. The events of POWTECH World form the ideal platform for global knowledge-sharing and new, worldwide business connections. Other forthcoming POWTECH World Events:

- POWTECH India

India's Leading Technology Expo for Processing, Analysis and Handling of Powder & Bulk Solids, 11 to 13 October 2018, Mumbai, India

- IPB China

International Powder & Bulk Solids Processing Conference & Exhibition, 17 to 19 October 2018, Shanghai, China

09th. - 11th April 2019: POWTECH 2019, Nuremberg (D)

CPD-certified conference programme for Lab Innovations 2018



Two days of free science focused presentations

Lab Innovations, the UK's only trade show dedicated to the laboratory industry, has announced the programme for its 2018 open conference streams, complementing its showcase of lab products, technologies and services. The laboratory industry is constantly evolving with new technologies, regulations and ways of working, and visitors can keep up-to-date with over 35 hours of CPD-accredited content. This will be freely available from the Royal Society of Chemistry conference, the Laboratory News 'Insights & Innovations Theatre' and the new Clean Room Hub at the Birmingham NEC, 31 October to 1 November 2018. The programmes for all three streams are available at www.lab-innovations.com.

Back by popular demand, the Royal Society of Chemistry (RSC) will again be hosting a thought-provoking scientific lecture series, with this year's themes focusing on human health and the environment. Key-note speakers include broadcaster Maggie Philbin, highlighting 'Hidden Innovators', and science presenter Steve Mould, anecdotally discussing 'What it means to be a nerd'. Basic science has greatly improved the health of people across the world, but

what does the future hold? Developments in technology will drive a revolution in wearable devices that could continuously monitor, and even improve, our health. Amongst many others, on Day 1 Tim Brownstone of Kymira and Matthew Furber of Nutricia will inspire the audience with talks on performance-enhancing wearables and wearable health tech.

Picking up on the environment theme, Day 2 will see speakers from companies such as Tradebe Toxic Waste Disposal and Bio Bean Biochemistry talk about their approaches to help reuse, recycle or at least safely dispose of waste. "The RSC lectures will cover some of today's most significant opportunities in healthcare, while also considering major issues faced by lab scientists and how these can be addressed", said Phillip Broadwith, Chemistry World Business Editor at the RSC. "In addition, our 'Career Hack' lectures will be of particular benefit for anyone working in a laboratory environment."

The Laboratory News 'Insights and Innovations' theatre sponsored by PerkinElmer, will focus on 'The Practice of Science'. The theatre will feature key developments

in technologies and their practice in the laboratory, and feature talks by the Science Council and UKAS. Topics on the agenda include 'A new generation particle accelerator', 'Antibodies and the reproducibility crisis' and 'Sustainability in the modern lab' and delivered by experts including Professor Carsten Welsch, University of Liverpool, Dr Giancarlo Barone, University of Sheffield and Andy Evans of Green Light Laboratories. "We want to provoke and drive dialogue around science, the challenges we face as we conduct that science, and how we might improve the way we go about it - and I think our speakers are excellently placed to do that", said Phil Prime, Managing Editor, Laboratory News.

The Cleanroom Hub - in association with Cleanroom Technology - is new for 2018, and offers a dedicated focus on cleanroom solutions. Specialist companies and speakers will be on the agenda, including Rebecca Smith of C2C looking at 'Reusable vs single use cleanroom garments', Matthew Cokely of Ecolab discussing 'Contamination control in cleanrooms', and Joe Huges of Clean Air Solutions helping attendees to 'Prepare for a GMP audit'.

"Thanks to the input of our highly knowledgeable conference partners, this year's Lab Innovations conference agenda, running alongside our lab-dedicated product showcase, will certainly be comprehensive and captivating," said Alison Willis, Divisional Director, Lab Innovations. "The combination of renowned speakers, dynamic sessions, panel discussions and practical learning makes attendance an essential part of both days. Places will be limited, so we are advising attendees to register now and start planning their time."

**31st October - 01st November 2018:
LAB Innovations, Birmingham (UK)**



Gx[®] InnoSafe: Greater protection against needle stick injuries



Gerresheimer to present an integrated and passive safety system for avoiding needle stick injuries at CPHI Worldwide in Madrid.

With their exposed cannulas, used syringes are a source of risk at physicians' surgeries, laboratories, and hospitals the world over. Although existing needle protection systems reduce the risk of injury for the end user, they are more complex for pharma companies to fill and must be handled by medical specialists. With the Gx InnoSafe, Gerresheimer is now offering a syringe with an integrated passive safety system that avoids inadvertent needle stick injuries, prevents repeated use, and is designed with pharmaceutical companies' production processes in mind as well as being optimized for simple and intuitive use by medical specialists.

"For health care workers, handling used hypodermic needles is part of their day-to-day job. In some cases, this leads to serious diseases being transmitted. It is estimated that around one million needle stick injuries occur in Europe every year," explains Maximilian Vogl, Product Manager Injection Devices, adding that in the worst case, it can lead to serious infections. There is also the risk of used syringes being used for a second time by accident.

Gx InnoSafe reliably protects against inadvertent needle stick injuries and prevents repeated use. Unlike many existing solutions, the needle shield mechanism is activated automatically and does not require

any additional manipulation by the end user.

It is therefore known as a passive needle protection system. The processing of the Gx InnoSafe syringes, which can be carried out without any major changes to existing lines in a nested state, is just as beneficial to pharmacists. This eliminates the need for an additional step to assemble the safety system, as is currently standard on the market.

The user wants a safety system that does not change the familiar injection procedure, that is intuitive and ergonomic to handle, and that requires no additional manual activation to secure the cannula before it is disposed of. As part of the manufacturing process, the Gx InnoSafe safety system is installed on Gx RTF glass syringes in the clean room like a standard needle shield. The syringe body is completely visible so that the presence of the active ingredient, its purity, and its administration can be observed and monitored ideally. The injection itself is also administered as usual. After removing the ergonomic sealing cap with an integrated, flexible needle shield, the syringe is placed on the injection site, the cannula is inserted into the tissue to

be administered, and the active ingredient is injected as with a common syringe. The safety system cannot be activated inadvertently because the mechanism is not preloaded before the injection. The system is only activated when the cannula is inserted and it automatically ensures that the safety mechanism is permanently locked when the syringe is removed from the injection site. This guarantees that the cannula is reliably covered and the syringe cannot be reused.

Gx InnoSafe provides advantages for pharmaceutical companies in the filling process of ready-to-fill syringes. The safety system is installed during the RTF process entirely automatically and fully checked for any punctures and positioning with a visual inspection. The syringes are then packaged into trays of 100 (nests) and tubs, including the safety system, and are then sealed and sterilized with ethylene oxide gas. They can be processed on existing filling lines without any additional preparation or assembly steps.

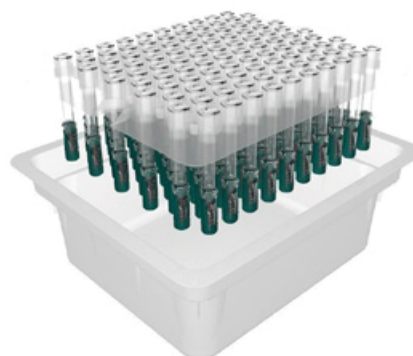
The design of the safety mechanism avoids inadvertent activation during filling, packaging, and transport. The flexible needle shield part is available in all standard market elastomers for pharmaceutical applications. With the introduction of the new product line, Gx InnoSafe is available for the 1.0 ml long RTF glass syringe with 1/2" cannula. Further needle variants will follow.

Gerresheimer will showcase its product and services from October 9-11 at CPHI Worldwide in Madrid, IFEMA, Hall 4, booth C30.

Gx[®] and RTF[®] are registered trademarks of the Gerresheimer Group. InnoSafe is a pending trademark of the Gerresheimer Group.



With the Gx[®] InnoSafeTM, Gerresheimer is now offering a syringe with an integrated passive safety system that avoids inadvertent needle stick injuries, prevents repeated use, and is designed with pharmaceutical companies' production processes in mind as well as being optimized for simple and intuitive use by medical specialists.



The needles are packaged in trays and standard tubs, including the safety lock, and sterilized with ethylene oxide gas. They can be processed on existing filling lines without any additional preparation or assembly steps.

Focus on heat pumps



Experts from the Fraunhofer Institute for Solar Energy Systems (ISE) will give presentations throughout the Chillventa exhibition on current research topics as part of the forum on heat pumps, and will be available for direct discussion afterwards at the special display area "Heat pumps, one key technology for the successful energy transition". This is something that heat pump experts should not miss.

16th - 18th October 2018: CHILLVENTA, Nuremberg (D)

Heating and cooling account for some 40 percent of all German energy consumption. Indoor heating and hot water play a major part in this, accounting for more than 80 percent of the energy consumption in households. There is thus an urgent need to cover requirements for heating and, increasingly, cooling as efficiently and as sustainably as possible. Heat pumps represent a key technology that helps to meet these requirements.

The heat pump market for detached and semi-detached houses is growing; the market for commercial and industrial applications in Germany could benefit from further expansion, however. Also in commerce and industry, building heating and cooling as well as process optimisation play a major role. Heat pumps meet these requirements and are an important factor in integrated energy, which is essential for the success of the energy transition. Even so, there are a number of important tasks for R&D to overcome.

Practice and professional knowledge in combination

Experts from the Fraunhofer Institute for Solar Energy Systems

(ISE) will give presentations on the following topics in the Heat Pumps forum, Hall 4A, Stand 4A-405, at 11:40 and 14:40 on all three days of the exhibition:

- Heat pumps in the energy system
- Component and device development
- TestLab Heat Pumps and Chillers
- Material development and coatings
- System analysis and optimisation
- Measurement campaigns
- Testing and certification

Following each presentation, visitors can discuss the topics with the experts from the Fraunhofer Institute and learn about the research in detail at the adjacent special presentation area in Hall 4A, Stand 4A-407.

Who should attend these special presentations?

These presentations are aimed especially at employees of heat pump manufacturers working in R&D, marketing and retail.

NürnbergMesse GmbH
D 90471 Nürnberg



Windsor boosts individual injection moulding solutions



During Fakuma WINDSOR demonstrates unusual entrepreneurial diversity with three exhibits: The SD300SV from FCS further expands the company's offer of servohydraulic injection moulding machines (IMM). Adjacent to it, a fully electric J100ADS from JSW works with an actuator mould for medical device applications. A special highlight is WINDSOR's own product: the PxP73 is an independent injection unit which virtually sets no limits to upgrading an IMM towards multi-component injection moulding. Obviously, WINDSOR's exhibits are compatible with the requirements laid down in Industry 4.0 and/or Euromap 77.

In 2016, Fu Chun Shin Group (FCS), Taiwan, and WINDSOR Kunststofftechnologie GmbH in Hanau, Germany, signed an agreement under which FCS committed to construct and supply hydraulic and servo-hydraulic IMMs according to European standards and specifications as prescribed by WINDSOR. In return, WINDSOR acquires, based on its established sales network developed over 65 years, responsibility for long-term sales, trading, installation, replacement parts supply and service for these 300 to 37,000 kN clamping force IMMs in all EU and EFTA countries. "We have been making great progress with FCS since. The technological status of the machines passes the comparison test with European brands," says Peter Kochs, WINDSOR's managing director.

The new FCS machine: WINDSOR operates the servohydraulic SD300SV - 3,000 KN clamping force - with a mould made by Kiranda/Turkey. "The ornamented dish we mould in PP weighs 120 grams and takes a cycle time of barely 15 seconds. A SEPRO robot demoulds the bowls and deposits them on a conveyor belt directly to the visitors", explains Kochs and adds: "We offer servohydraulic IMMs from FCS because they use the latest and high-end technology in this special segment." The machines' quality meets European standards. However, their price level is comparatively low: "The price/performance ratio of the FCS machines is unequalled", maintains Kochs. After acquiring the pan-European distribution rights for FCS, WINDSOR has been quite successful in marketing toggle SGMs and two-platen machines from FCS and relies on these proven large machines in the future. FCS machines are the choice a great number of applications: they produce components for household appliances, white goods, electronics, toys and also automotive parts to name only a few. Kochs: "There are practically no limits for applications." The FCS toggle IMMs are available with clamping forces ranging from 30 to 1420 tonnes - complemented by servohydraulic two-platen machines with clamping forces from 500 to 4000 tonnes. Kochs promises: "We strive to improve quality even further and maintain the low-price level."

The JSW machine: Japan Steel Works (JSW) has contributed a fully electric J100ADS injection moulding machine providing 100 tonnes of clamping force. It is equipped with an actuator mould

from KEBO/Switzerland. The machine produces the mentioned actuator components in transparent PP, the parts weighing only 6.8 grams each. They are switch elements for medical devices such as sphygmomanometers and blood glucose meters. The two-cavity mould operates at a cycle time of barely seven seconds including part demoulding. "We have integrated the SEPRO robot control, responsible for demoulding and transportation of the parts, into our IMM control system", explains Kochs. A special feature of the plant is its data visualization on a 15" android system: regulation and control is effected with a software version used in mobile phones. "JSW was the first IMM supplier offering an android surface", says Kochs. Control commands such as for instance closing or opening etc. are integrated which are comparable to apps of standard smartphones. This instrument offers the user extremely easy control operations. A predominant advantage of the JSW machines - for which WINDSOR holds the distribution rights for Germany - is their reliability: "The technology is namely state-of-the-art and widely proven. The occasions where wear parts have to be exchanged are very rare, the machines work year in, year out impeccably", states WINDSOR's managing director and concludes: "JSW develops and builds fully electric injection moulding machines since 1985. So, their technology is quite sophisticated."

WINDSOR's own product: At short notice, WINDSOR decided to also showcase its own product during Fakuma: PxP 73 is a new version within the PlugXPress® range. PxP 73 is a self-contained injection unit comparable to an IMM without clamping system etc. WINDSOR's great strengths are custom-designed adaptations: "We provide solutions which fit exactly in the plant configuration", Kochs states. The results are individual systems with individual units. PxP communicates with the IMM via an interface. The customer can attach the PxP easily to the IMM without major changes in the machine. This injection unit operates a three-zone screw available from 16 to 105 mm and uses a B&R control system equipped with a 15" touchscreen. The PlugXPress® injection unit for multi-component injection moulding can be attached to any IMM. Kochs: "One of our customers produces tooth brushes in three different materials and four colours." This way, six-component IMMs are not unusual. The rising demand in the multi-component sector and the success of the PxP is said to be the reason why its sales volume in 2017 has more than doubled compared with the previous year. "Our strengths are individual custom solutions and we differentiate ourselves from the competition by realizing a great deal of flexibility. PxP works where standard solutions fail", comments Peter Kochs.



16.10. - 20.10.2018: FAKUMA 2018, Friedrichshafen (D)

Overcoming the challenge



Chillventa 2018 will feature a number of special presentations that are essential viewing for trade visitors. On all three days of the event, speakers from the Bundesfachschule Kälte-Klima-Technik (Federal Technical College for Refrigeration and Air Conditioning Technology) will present valuable information on all aspects of hygiene in air-cooled heat exchangers, and will offer practical guidance on how to perform cleaning and inspection work in accordance with VDI 6022.

VDI 6022 is a guideline issued by the Technische Gebäudeausrüstung (Technical Building Services) Division of the Verein Deutscher Ingenieure (Association of German Engineers, VDI). It describes the state of the art for hygiene requirements for ventilation systems and devices, and for determining ambient air quality.

In practice, not all operators and specialised companies are as familiar as they should be with the maintenance and inspection activities needed to ensure hygiene in air-conditioning and ventilation systems. In the future, however, operators of ventilation systems will need to concern themselves much more with this subject. The revised version of Hygiene Guideline VDI 6022 Sheet 1 defines new or expanded tasks for the operation and maintenance of ventilation systems and devices; these relate principally to the protection of human health. The Guideline thus states that thorough cleaning of components is preferable to disinfection. Targeted disinfection may be performed only when there is a demonstrated need.

Clear presentation of practice and background knowledge

At the special display area in Hall 4, stand 4-503, speakers from the Federal Technical College for Refrigeration and Air Conditioning Technology will begin by presenting important basic back-

ground information about the changes and additions contained in the new VDI 6022 compared to the previous version. Together with manufacturers of ventilation components, they will then show how the necessary cleaning and inspection work should be performed.

The necessary tasks will be illustrated using plant units made available as examples. These tasks include cleaning and inspection work on dehumidifier-coolers (for commercial refrigerator rooms and ventilator systems), adiabatic spray humidifiers and hot-steam humidifiers, and water treatment systems.

The presenters will then deal with the required documentation and paper trail for cleaning and inspection activities.

Who should make a point of attending these presentations?

These presentations are aimed especially at foremen, engineers, refrigeration plant manufacturers, operators, and employees in the service field.

16th - 18th October 2018: CHILLVENTA, Nuremberg (D)

NürnbergMesse GmbH
D 90471 Nürnberg



From Virtual DoE to Hands-On Virtual Molding



Virtual Dimensioning of Challenging LSR-Processes

At Fakuma 2018, SIGMA Engineering will present in a joint project the real and virtual production of a complex silicone part with EMDE and Momentive. The focus is the early design and optimization of mold and processes. SIGMA accompanied the whole development process of the pot cloth and assisted to determine the ideal configuration for production.

From October 16th to 20th, SIGMA Engineering GmbH, Aachen (Germany), is again exhibiting at Fakuma 2018 in Friedrichshafen, Germany. At booth A5-5105 SIGMA demonstrates the latest application of its SIGMASOFT® Autonomous Optimization. As a consistent further development of the SIGMASOFT® Virtual Molding technology, Autonomous Optimization not only offers users the opportunity to perform virtual design of experiments (DoE) but the software also determines automatically the optimum process configurations to achieve the given target: e.g. short cycle time or balanced part filling with low pressure requirement, with the help of a fully automatic optimization.

The capability of the technology was used during a joint project with Momentive Performance Materials GmbH, Leverkusen (Germany), EMDE MouldTec GmbH, Oberbachheim (Germany), Wittmann Battenfeld GmbH, Kottlingbrunn (Austria), and ACH solution GmbH, Fischlham (Austria), for the design of a pot cloth from LSR (Liquid Silicone Rubber). In the process, the simula-

tion was used alongside the whole development of part, mold and process starting from the part design phase. In the further course it helped to answer important questions, such as what is the optimal connection via the cold runner or how to design an appropriate heating cartridge concept to achieve a homogenous temperature distribution.

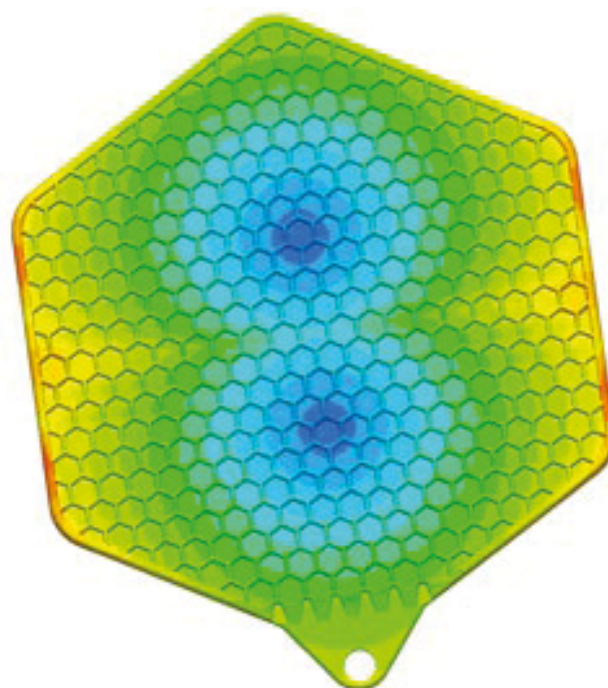
The pot cloth is a complex part with a shot weight of 95 g and a flow length of 135 mm (Fig. 1) with a predominantly maximum wall thickness of 1 mm. A uniform part filling without the premature start of a curing reaction is therefore critical to part quality. Due to this fact, at first the number as well as the best positions for the cold runner nozzles were determined in a virtual DoE. With this approach any number of variants can be calculated in a single simulation and afterwards can be compared and evaluated on the basis of predefined target values, e.g. pressure requirements and risk of air entrapments. In the further course of the project, not only the ideal process settings were determined with the help

of SIGMASOFT® Virtual Molding, but also the complete heating concept of the mold was optimized. Based on the results of the virtual analysis the mold was then built by EMDE MouldTec (Booth A4-4307).

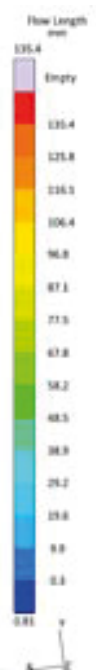
At Fakuma, interested parties will not only experience the complete design and virtual production at the SIGMA booth, but will also be able to follow the real production of the pot cloth. The realized mold will run live at the Momentive booth A4-4307. It will be produced with Silopren LSR 2650 on a Smartpower 90/350 UNILOG B8 machine of Wittmann Battenfeld (Booth B1-1204), who also provide the handling system. The mold and cold runner block from EMDE are combined with a pump and mixing unit ACH „MaxiMix 2G“ from ACH solution GmbH (Booth A4-4307).

16th - 20th October 2018: FAKUMA,
Friedrichshafen (D)

SIGMA Engineering GmbH
D 52072 Aachen



Circle 26: Filling, Flow Length
8.149s, 100-00%



SIGMASOFT
Virtual Molding

A Flow length of 135 mm with a fine honeycomb structure and a wall thickness of 1 mm in the majority of the part – Interested visitors can experience the virtual as well as real production of the pot cloth at the booths of Momentive and SIGMA Engineering.

Sumitomo (SHI) Demag at Fakuma 2018



Precision. Power. Productivity. - Presentation of high-performance exhibits at Fakuma

At Fakuma 2018, Stand 1105, Hall B1, Sumitomo (SHI) Demag Plastics Machinery GmbH has chosen the motto of "Precision. Power. Productivity." to showcase the company's commitment to continuity and its high level of expertise in three core target markets. This year, the IntElect S will run a medical engineering application to demonstrate the new all-electric machine series for high-speed parts. An EI-Exis SP 200 will run a high-speed IML application from the packaging segment and a versatile Systec Servo with advanced IMD technology, a new design and functional integration for the core segment of automotive applications.

Medical application live: IntElect S with Medical package

At its Fakuma stand in Hall B1, Sumitomo (SHI) Demag will premiere an IntElect S 130/520-450 with a package of options specially developed for medical engineering requirements, ensuring a clean production environment (Good Manufacturing Practice). The 32-cavity pipette application focuses on quality assurance, traceability and supports customers with their product validation. For this system, manufacturer Waldorf Technik of Engen/Germany has supplied its VarioTip solution, one of the most compact automation systems with 100% camera inspection for sorting pipettes according to cavities into the corresponding racks. The system is equipped with a Max Petek laminar flow hood and connected to a master computer from bfa solutions, which ensures the perfect traceability of process data as well as monitoring changes to the set machine data. "The machine design with minimal surface areas and encapsulated mould space and our expertise in the all-electric segment are the recipe for our success as an innovative system supplier for medical engineering applications," says Pietro Scattarreggia, Director Business Development Electronics & Medical at Su-

mitomo (SHI) Demag. "The special solution that was tailored to our NC5 control and delivers real-time visualisation, and traceability guarantees maximum product safety for our system," Anatol Sattel, Key Account Manager Medical Applications at Sumitomo (SHI) Demag explains. "Not only does this solution provide a better overview of the process, it also facilitates the normally very complex documentation tasks for quality management and assurance." The customer benefits from a significantly more convenient validation process that prevents uncontrolled external process interferences.

myConnect digital services

At the Fakuma stand, Sumitomo (SHI) Demag has designated a self-contained section for all issues of network integration and digital services. There, customer can access an internet platform for on-line support and diagnostics and documentation, select remote monitoring of their production and order spare parts. Visitors can use the terminals to find out more about the myConnect services.

Sumitomo (SHI) Demag D 90571 Schwaig



New all-electric IntElect S machine series for high-speed applications. (Photo by Sumitomo (SHI) Demag)

Step away from peel-off mat ...



Are you still using peel off mats to protect your controlled or sterile environment? Are they not working the way you'd like? Have you thought about a non-disposable option?

Many businesses are now choosing to switch to a longer term solution than peel off or tacky mats, not just because of the environmental implications.

Dycem Contamination Control floor mats service various companies in the Pharma, Biomedical, Nutritional, Packaging, Healthcare, Electronics, Optical sec-

tors, as well as many more.

Contamination Control-Zoning and coverage are two factors for the flooring in many establishments that have cleanrooms or facilities requiring protection from contamination. Having clear visual communication technology that signals the difference in areas in changing rooms, entrances and hallways can help to encourage better practices, avoid human error and actively guide footfall to allow for the maximum possible decontamination of foot & wheel traffic.

This is not just vital in Pharmaceutical or Biomedical facilities. Even for food processing and packaging facilities there is a clear need to mark out areas where staff must pay additional attention to their hygiene.

Our floor mats fully customisable. Dycem can be customised to reflect not only the differences between zones through the use of colour but also with VCT to guide footfall, company logos/branding and custom edging to suit all needs.

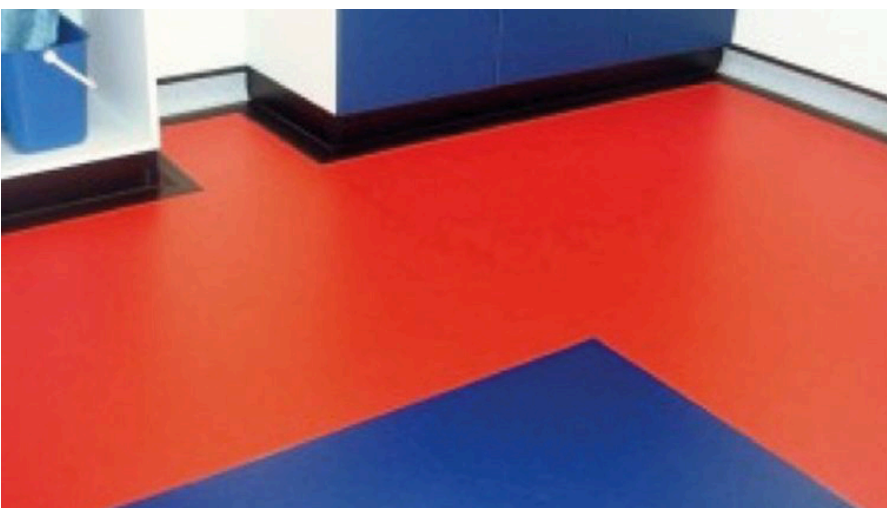
The flexibility of Dycem products also extends to size. Because Dycem can be a fitted long term solution, or a customisable mat available in a number of sizes, there is a Dycem solution designed to meet the needs of your facility.

Do peel off or tacky mats effectively cover your entrance/exit points between controlled areas? Are you getting 3 full footsteps in order to remove the maximum amount of particles?

If the answer to all these are no, then Dycem is the solution you need.

The daily peeling of mats can make your standard operating procedures complicated and time consuming. Not only do daily peels require the attention of a member of staff, they must also be disposed of properly and safely. Dycem CleanZone and WorkZone floor mats are a washable flooring solution, which are easy to clean. Less waste to manage, better for the environment and less time consuming.

All of our products are protected by Biomaster; a silver ion technology that actively inhibits the growth of bacteria. Our custom made and washable systems can easily be built into your protocol, to simplify your SOPs and provide a complete and sustainable zonal concept. No more daily peels and complicated disposal procedures. With Dycem you have total control.



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Gerresheimer and Sensile Medical to attend CPhI Worldwide together for the first time

By acquiring Switzerland-based Sensile Medical AG in July this year, Gerresheimer is expanding its business model to become an original equipment manufacturer (OEM) for drug delivery platforms with digital and electronic capabilities. Sensile Medical develops innovative drug delivery products and platforms, including digital connective functions, for pharmaceutical and biopharmaceutical customers. The company will be joining Gerresheimer's team of experts and sales specialists at CPhI Worldwide in Madrid for the first time.

“Pooling Gerresheimer's and Sensile Medical's expertise is an ideal move for any of our customers looking for innovation,” says Sandra de Haan, Chief Business Officer at Sensile. Sensile Medical's

leading position in micro pump technology combined with drug delivery devices featuring electronic and connected capabilities for medical applications is progressing to market readiness in specific customer projects with pharma companies. Sensile Medical is involved with pharma companies in the early stages of drug and therapy development. The company is to become the Development Division, covering the field of innovative devices for the entire Gerresheimer Group. It is already working very successfully on projects with customers to develop devices for diabetics and patients with heart disease.

The micro rotary piston pump – a key component

Sensile Medical AG developed a new kind of micro pump, which is the key component of all products. SenseCore is small, very precise in dosage, and inexpensive to manufacture as it is only made up of two plastic parts. Thanks to its high degree of flexibility, it is compatible with a variety of drugs. It is the key component in a range of pump platforms. Sensile Medical's current product range stands out thanks to its high dosage accuracy, easy handling, and safe drug delivery mechanisms.

Gerresheimer will be presenting all of these products at booth 4C30 at CPhI, hosted by the IFEMA congress and events center in Madrid.

09th - 11th October 2018: CPhI worldwide, Madrid (Spain)

Gerresheimer AG
D 40468 Düsseldorf



From left to right: Small-volume infusion pump, large-volume patch pump, reconstitution system, and pen.

Efficiency potentials fully exploited



Fakuma 2018: Sophisticated LED lenses made of LSR

Liquid silicone rubber (LSR) can be processed efficiently in injection moulding and also scores with excellent material resistance. LSR is therefore becoming increasingly important as a material for optical lenses. At Fakuma 2018, from October 16 to 20 in Friedrichshafen, Germany, system partners ENGEL, ACH-Solution and Dow Silicones will be presenting, for the first time in Europe, an integrated solution for cost-effective production of LED lenses with a highly demanding geometry.

At the Dow Silicones (Wiesbaden, Germany) stand in Hall B2, Stand 2220, lenses for LED headlamps will be produced on a tie-bar-less ENGEL e-victory 310/120 injection moulding machine, with an integrated ENGEL viper 40 linear robot, in a two-cavity cold runner mould by ACH-Solution (Fischlham, Austria). The lenses are representative of a wide range of applications. Apart from the automotive industry, LSR is

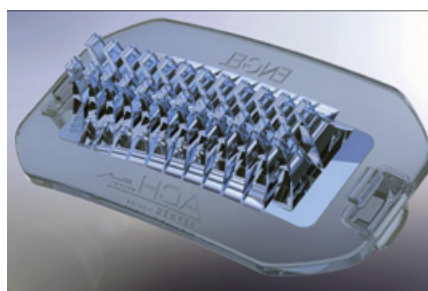
becoming increasingly important for building and street lighting. The reason for this is the material characteristics. Highly transparent grades for optical applications have a lower yellowing index than conventional thermoplastic lens materials. They are extremely resistant to environmental influences such as UV radiation and can be used over a wide temperature range from 40 to +200 °C. In addition, they allow particularly flexible design. DOWSIL MS-1002 Moldable Silicone will be processed at Fakuma; it creates smooth and very hard surfaces much like thermoplastics. The headlamp lenses, with their extremely filigree structure, are moulded with highest reproducibility. The lenses leaving the production cell are ready for installation.

demands on the processing technology. In general, to be profitable in the production of high-tech products made of LSR, the process must be automated and the product must be rework-free. Injection moulding machines with tie-bar-less clamping units already provide the optimum design for this. Free access to the mould area enables particularly efficient automation concepts and compact production cells. Since the mould mounting platens can be fully utilised right up to the edge, the high-volume lens mould fits on a comparatively small 120-ton injection moulding machine.

One of the reasons for the tie-bar-less e-victory's accurate reproduction of surface detail is the outstanding parallelism of the mould mounting platens. The patented force divider ensures that the moving platen follows the mould precisely while clamping force is building up and that the force is evenly distributed across the platen face. When multi-cavity molds are used, all



A MaxiMix G2 from ACH-Solution is used for metering the liquid silicone rubber. The entire process can be conveniently controlled via the CC300 operating panel of the ENGEL injection moulding machine. (Picture: ACH-Solution)



With their complex structure, the silicone LED lenses place high demands on the injection moulding process. (Picture: ACH-Solution)

Compact and high-precision

Not only by the complex part geometry, the production of LED lenses places high



Thanks to its barrier-free clamping unit, the tie-bar-less e-victory injection moulding machine opens up enormous efficiency potential in liquid silicone rubber processing. (Picture: ENGEL)

Efficiency potentials fully exploited

cavities within the parting line experience the same surface pressure, which prevents flash even when processing very low-viscosity silicones.

Intelligent assistance

To guarantee the required precision during injection, the e-victory machine is equipped with an electric injection unit. In addition, iQ weight control improves process stability. This intelligent assistance system from ENGEL's inject 4.0 product programme is able to detect fluctuations in the ambient conditions and raw material, and to compensate for them automatically

during the shot.

The electric valve gates in the mould are also automatically self-regulating. The Servoshot system by ACH-Solution makes it possible to control each electric valve gate individually.

As a system supplier, ENGEL integrates all of the production cell components with the injection moulding machine's CC300 control unit; the entire process, including the MaxiMix G2 type LSR metering equipment by ACH-Solution, can therefore be set up and controlled in an uncomplicated way. Control integration reduces complexity and enhances ease of use.

A special feature at Fakuma: visitors

can be guided through the work steps required to start the production cell with AR (Augmented Reality) glasses from AVR Tech Innovations (Fischlham, Austria). In the form of texts, animated objects or short video sequences, the glasses display helpful additional information on system operations, describing what needs to be done where and how.

16th - 20th October 2018: FAKUMA,
Friedrichshafen (D)

ENGEL AUSTRIA GmbH
A 4311 Schwertberg

Intelligent Battery Monitoring for cost-effective and environmentally friendly usage of batteries

Battery-powered, mobile HMI systems offer full flexibility in production environments. We developed the cloud-based Battery Monitoring solution to help users with proper application of batteries and ensure cost-effective, environmentally friendly usage that is easy on resources.

Cost-effective, resource saving & environmentally friendly - Extending battery life time

Battery Monitoring supports the best use of TROLLEY systems and their batteries by your operators. Advices and warnings regarding battery level, capacity and

signs of aging allow the optimal use of batteries. Thus the battery life time can be extended.

Intelligent, proactive & energy efficient - Intelligent monitoring for system downtime prevention

The intelligent analysis of physical values can indicate atypical operating conditions and critical trends, e.g. deep discharge immediately. This allows quick elimination of the detected issues and permits permanent operation with sensors working at the highest energy efficiency.

Cloudbased, easy & safe access from anywhere - All important values at a glance

The Battery Monitoring portal can be accessed by any end device. Thanks to responsive design it is easy to operate and clearly structured. The different views provide centralized information on charging level, capacity, and many more for all connected devices, at different locations.

Retrofittable, universally usable & battery type independent - Monitoring for every battery-operated system

The intelligent Battery Monitoring solution can be easily retrofitted for all TROLLEY systems independent of the integrated battery technology.



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New NFC-Label by Schreiner MediPharm for Digital Authentication of Autoinjectors

EU FMD-Compliant Digital Tamper Evidence

The EU Falsified Medicines Directive (FMD) requires pharmaceutical manufacturers to serialize their products and to provide secondary product packaging with an anti-tampering device. Primary containers or devices such as pens and autoinjectors for self-medication, however, are not included in these requirements yet. Schreiner MediPharm has developed an NFC-Label for autoinjectors that enables digital tamper evidence on primary packaging and makes it possible for pharmaceutical manufacturers to close this risk gap.

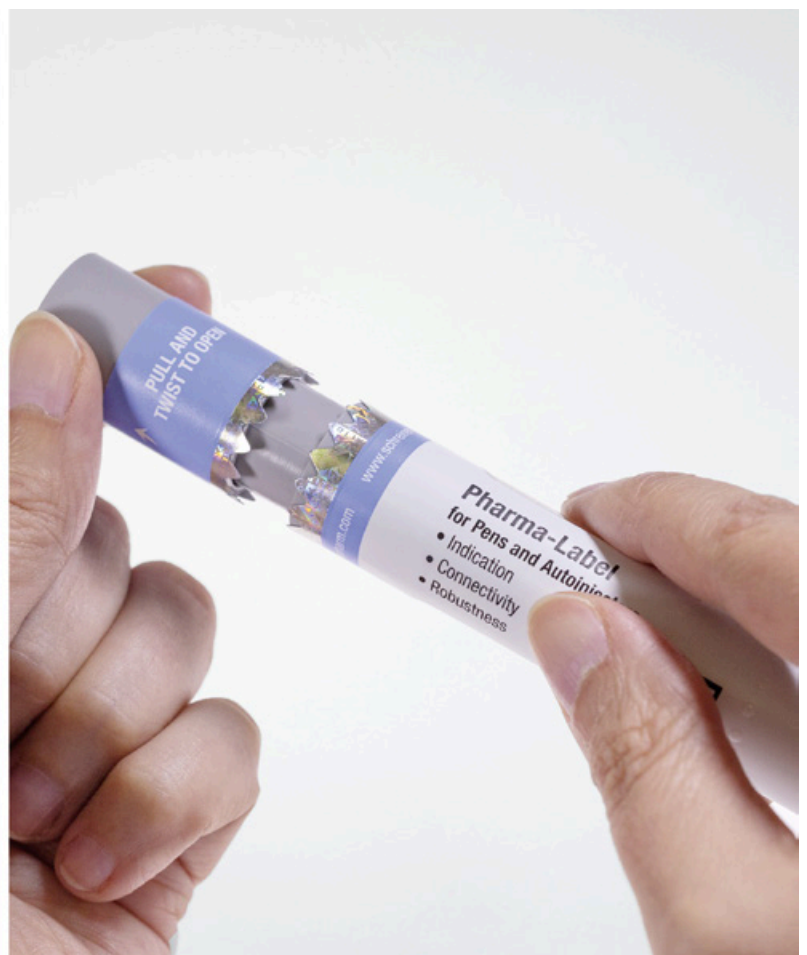
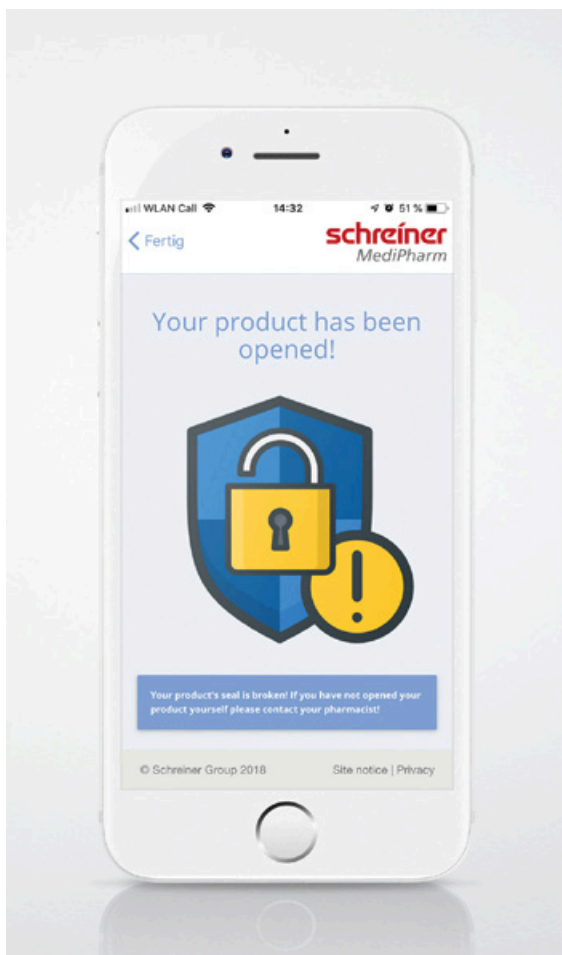
Schreiner MediPharm's novel Autoinjector-Label wraps around the autoinjector including the cap and has an integrated NFC chip that can be read very easily via a smartphone app. Before opening the cap for the first time, the patient checks if the product is an original and receives respective confirmation. After opening the cap and label, and subsequently reading the NFC chip once more, a warning will appear on the smartphone that indicates whether the product was previously opened and may have been tampered with. Thus, patients are able to easily and quickly check the intactness of their injection aids anywhere, anytime.

Pharmaceutical manufacturers are able to integrate additional interactive applications in the label such as product information, demo videos or special apps to optimally support patients during self-medication. Additionally integrated geo-tracking makes it pos-

sible to detect potential gray market activities in local markets. The digital Autoinjector-Label for NFC-based tamper evidence can easily be adapted to existing label designs and does not affect the normal application of the device by the patient.

For pharmaceutical manufacturers, Schreiner MediPharm's smart label solution enhances product and patient safety and also supports the integrity of the supply chain. At PDA Universe of Pre-filled Syringes and Injection Devices in Orlando/Florida in October, Schreiner MediPharm will present its new development to a professional audience for the first time.

Schreiner MediPharm
D 85764 Oberschleissheim



The new NFC-Label and corresponding smartphone app make it possible for users to unequivocally verify if the product is still in its originally sealed condition or has been opened before.



HVAC Air Flow Transmitter with Digital Interface

The EE650 air flow transmitter is now available with RS485 interface and Modbus RTU or BACnet MS/TP protocol.

The EE650 air flow transmitter from E+E Elektronik is dedicated for building automation and process control. The highly accurate device allows for reliable control of the air velocity in ventilation ducts and air conditioning systems. Besides the version with analogue output, the transmitter offers now RS485 interface and Modbus or BACnet protocol.

The EE650, available for duct mount as well as with remote sensing probe, measures air velocity up to 20 m/s (4000 ft/min). The new version features RS485 interface with Modbus RTU or BACnet MS/TP protocol, which facilitates the integration into a bus system. The EE650 with analogue output provides the measured data either

as current or voltage signal. The measuring range, the output signal and the response time are user selectable.

Robust, Pollution-Resistant Sensing Element

The E+E air flow sensing element employed in EE650 operates on the hot-film

anemometer principle. State-of-the-art transfer molding technology gives the thin-film sensor a high mechanical stability. Due to its innovative flow profile, the sensing element is particularly resistant to contamination, which leads to excellent measurement accuracy and long-term stability.

Easy Installation and Adjustment

The functional IP65 / NEMA 4 enclosure and the mounting flange included in the scope of supply facilitate the installation of the transmitter.

With an optional adapter cable and the free EE-PCS product configuration software, the user can adjust the EE650, set the output scale and select the interface parameters.



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The EE650 air flow transmitter now features an RS485 interface with Modbus or BACnet protocol. (Photo: E+E Elektronik)

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