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Corona Virus: interpack 2020 postponed

New date 25 February to 3 March 2021

25th February 2021 - 03rd March 2021: interpack 2021, Duesseldorf (D)

Messe Düsseldorf is postponing the leading international trade fair interpack. It will now take place from 25 February to 3 March 2021.

In doing so, Messe Düsseldorf is following the recommendation of the crisis management team of the German Federal Government to take into account the principles of the Robert Koch Institute when assessing the risk of major events. Based on this recommendation and the recent significant increase in the number of people infected with the new corona virus (SARS-CoV-2), including in Europe, Messe Düsseldorf has reassessed the situation. In addition, there is the general ruling issued by the city of Düsseldorf on 11 March 2020, in which major events with more than 1,000 participants present at the same time are generally prohibited.

„The decision was taken in close consultation with our advisory board and sponsoring associations,” emphasises Werner M. Dornscheidt, Chairman of the Board of Management of Messe Düsseldorf GmbH. It also reflects the wishes of individual industries: „As their partner, we are currently doing everything in our power to reduce the economic losses suffered by our exhibitors“.

„The city of Düsseldorf is following the instructions of the state government. Our aim is to slow down the spread of the corona virus so that the health system can continue to function properly,” emphasises Thomas Geisel, Lord Mayor of the state capital of Düsseldorf and Chairman of the Supervisory Board of the Düsseldorf trade fair company.

Delaying the spread of the virus as much as possible is also a declared goal according to the Robert Koch Institute (RKI). In order to fulfil Messe Düsseldorf's responsibility for risk prevention, the company primarily had to minimise the increased risk of infection at major events. Measures to reduce the risk of transmission at major events, which the Robert Koch Institute has clearly defined - such as ventilation of the venue appropriate to the risk of infection, the exclusion of persons from risk groups and the comprehensive installation of entrance screening, were practically impossible to implement. Also comparable

measures were and are unreasonable in view of the unforeseeable rapid development and the size of the various events with up to 60,000 participants.

interpack's industry partners support the decision to postpone the fair and together with those responsible, are counting on a successful event next year. „interpack is the absolute top event for the international packaging industry and related processing industries. The trade fair thrives on personal encounters and direct exchange between people from all over the world. This is only possible if there are no health risks involved. Therefore, the postponement is responsible and right. We are looking forward to next year's event to discuss the issues that are defining the industry, such as sustainability, and to present appropriate solutions,” comments Christian Traumann, President of interpack 2020 and Managing Director & Group President at Multivac Sepp Haggenmüller SE & Co. KG.

„The corona virus and the associated restrictions now represent a major challenge for the entire mechanical engineering sector. The possible and currently unforeseeable effects of the pathogen with an incalculable risk of infection, the threat of quarantine for returnees, general travel restrictions in some countries, but also considerable travel restrictions on the part of many companies unfortunately make it impossible to successfully hold the interpack in May. The VDMA, as a supporting association of interpack, welcomes a postponement under the given exceptional circumstances. The new date now ensures reliability in planning” says Richard Clemens, Managing Director of the VDMA Food Processing and Packaging Machinery Association.

Werner M. Dornscheidt is pleased about the general consensus and encouragement in this special situation: „We would like to thank all our partners for their excellent cooperation in making these difficult and time sensitive decisions. We are pleased that together a date was found so quickly in order to allow all those affected to reliably plan.“

Messe Düsseldorf GmbH D 40001 Düsseldorf

New date 2020 for MedtecLIVE together with MedTech Summit Congress & Partnering

On 10 March 2020, the Bavarian Ministry of Health was instructed by the Council of Ministers to prohibit major events with more than 1,000 participants initially up to and including 19 April 2020. On this basis, MedtecLIVE GmbH has decided to postpone MedtecLIVE in together with MedTech Summit Congress & Partnering to a new date from Tuesday, 30 June to Thursday, 2 July 2020.

30th June - 02nd July 2020: MedtecLIVE, Nuremberg (D)

The protection of the health and safety of exhibitors, visitors and employees is a top priority for MedtecLIVE GmbH. In awareness of this responsibility and in accordance with the protective measure taken by the Bavarian State Government to prohibit major events for the time being, the management of MedtecLIVE has decided to postpone the event to the date of 30 June to 2 July 2020. Rolf Keller, Managing Director of MedtecLIVE GmbH: „We would like to expressly thank all customers, partners and media representatives for the understanding they have shown. We are pleased that the industry continues to support the event with great unity. In coordination with our partners and Forum MedTech Pharma as the honorary sponsor of the trade fair and congress, we have now chosen a date for the industry event“.

MedtecLIVE in conjunction with the MedTech Summit is a leading industry event for the medical technology supply chain in Europe. „Maintaining and expanding business relations and networking with experts are currently more important than ever. The new date gives

our exhibitors, visitors and congress participants planning security,“ says Alexander Stein, Head of MedtecLIVE at NürnbergMesse. „In view of the current situation, MedtecLIVE is under a much better omen at the new date. The entire medtech community will benefit from this“.

„We are delighted that we have succeeded so quickly in finding a new home for the MedtecLIVE trade fair and the MedTech Summit Congress & Partnering,“ says Dr. Matthias Schier, Managing Director of Forum MedTech Pharma e.V., the honorary sponsor of MedtecLIVE and the MedTech Summit. „On the part of the speakers at the congress, but also on the part of the exhibitors, the organiser teams and the entire community, a great deal of energy and passion has already gone into preparing the event. With the date of the event from 30 June to 2 July, we have once again created good conditions for a broad-based exchange of knowledge.“

NürnbergMesse GmbH D 90471 Nürnberg



April 2020

Dear subscribers,
Corona changed everything. Wherever this newsletter reaches you, in your office or home office, we wish you good health.
Since many events have been cancelled, the German newsletter is without events this month. More information about events can be found here:
<https://www.reinraum.de/events.html>

In the current newsletter you will find among others the following articles:

Titanium material: Pump manufacturer sets up its own clean room for sensitive welding processes

PIA Automation helps to overcome bottlenecks in face masks supplies

Liquid, supercritical, gaseous: Cleaning silicon wafers with supercritical carbon dioxide

...

Yours sincerely

Reinhold Schuster

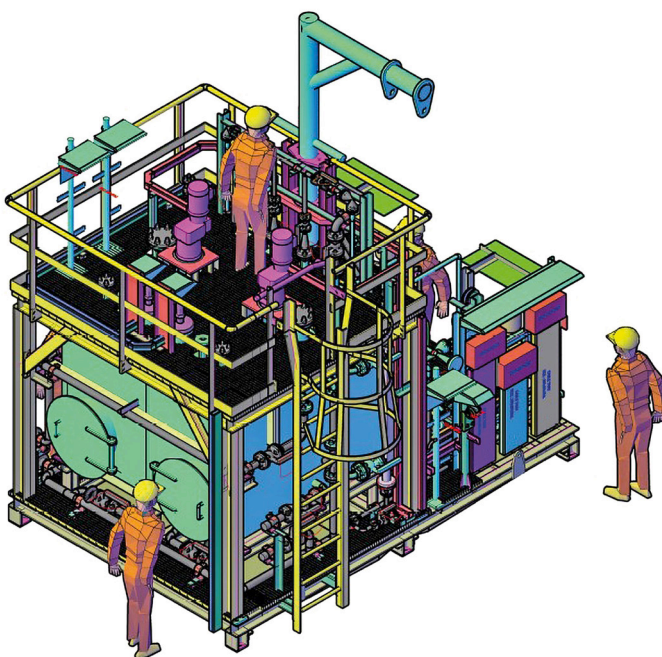
Titanium material: Pump manufacturer sets up its own clean room for sensitive welding processes

Special chemical injection package for a sulfur recovery plant - 98.82 % of 339 welding joints pass strict inspection for integrity and surface contamination

In June 2016, the operator of a sulfur recovery plant in the United Arab Emirates inquired the experts at LEWA NIKKISO Middle East for 13 chemical injection packages. One of the packages presented a particular challenge: it was intended for pumping sodium hypochlorite solution at a temperature of 85 °C, a highly corrosive fluid, which meant that wetted parts had to be manufactured from titanium - a very distinct material. Based on the stringent specifications of the customer, the subsidiary of the German-based LEWA GmbH decided to build its own climate-controlled 45 m² clean room to create an appropriate environment for titanium welding. All relevant welding parameters such as current, gas flow rate and temperature were jointly tested and adjusted by in-house welding engineers and appointed welders to meet all requirements. The customer wanted to ensure the quality and longevity of all welding joints. This was done by adding an extra requirement that a careful visual inspection be carried out after each welding joint was completed. Special attention was paid to prevent potential surface contamination in the heat-affected zones. 98.82 percent of all welding joints passed the rigorous visual and radiographic inspections. The titanium chemical injection package was successfully accepted and delivered in January 2019.

The chemical injection package designed and built for pumping sodium hypochlorite (NaClO) solution was delivered by LEWA NIKKISO Middle East to Zirku Island in the United Arab Emirates. It was part of

an order that included a total of 13 injection packages. The two-compartment sodium hypochlorite tank was made of fiberglass-reinforced plastic (FRP). All other wetted parts were made from corrosion-



The two-compartment sodium hypochlorite tank was made of fiberglass-reinforced plastic (FRP). All other wetted parts were made from corrosion-resistant titanium material. This material is especially well-suited for the pumped fluid at the design temperature of 85 °C. (Source: LEWA NIKKISO Middle East FZE)



The chemical injection package for pumping sodium hypochlorite solution was delivered by LEWA NIKKISO Middle East to Zirku Island in the United Arab Emirates. It was part of an order that included a total of 13 injection packages. (Source: LEWA NIKKISO Middle East FZE)

Titanium material: Pump manufacturer sets up its own clean room

resistant titanium material. This material is especially well-suited for the pumped fluid at the design temperature of 85 °C. In addition to two API 675-compliant NaClO dosing pumps, the package is fully equipped with titanium valves, strainers and a complete set of instruments.

These pumps are hydraulically actuated diaphragm metering pumps of the type Ecoflow LDC1 from LEWA. Thanks to their robust design and the resulting longevity, they can be used for difficult application conditions and fluids. Moreover, the pumps are hermetically tight to ensure safe handling of hazardous fluids. „For the project in the United Arab Emirates, we made the wetted parts – such as the pump heads and piping – out of titanium, to further increase the resistance of the units,” explains Senthil Nathan, Project Manager at LEWA NIKKISO Middle East. The material used for piping is titanium material (Grade 2), in total 58 meters of pipe ranging from ½ to 2 inches diameter with 339 welded joints have been completed.

High customer requirements for titanium components

Manufacturing the piping system from titanium was the biggest challenge involved in this project. “Welding titanium is very different from welding any other material,” explains Nathan. „During the welding process, the material is extremely sensitive to surrounding conditions, in particular to temperature and cleanliness. In addition, the necessary inert gas atmosphere around the welding point is very specific and requires constant attention in order to obtain a satisfactory result.” However, the German pump manufacturer and system integrator LEWA had already gained the necessary expertise in working with titanium from past projects. In 2015, LEWA used titanium materials to build pumps and piping systems for the largest chemical injection module in the company’s history used on a Floating Production, Storage and Offloading (FPSO) vessel. „For the sulfur recovery plant project, we built on this expertise and added in-house titanium piping manufacturing to the portfolio of LEWA’s own capabilities,” explains Nathan.

The customer wanted a system that was suited for the sodium hypochlorite application, and as a result, very high requirements were placed on manufacturing the components. „All the titanium welding processes had to be carried out in a separate welding room with its own special climate control,” says Nishar Parakkunnath, Head of production at LEWA NIKKISO Middle East. „The surfaces being welded were supposed to have a temperature of at least 15 °C and no more than 90°C. After the welding, all welding joints had to be checked by a visual inspection before any cleaning.” The inspection focused specifically on the heat-affected zones (HAZs) and on the potential surface contamination of the welding joint. „Based on prior experiences with other manufacturers, the customer had laid out very stringent acceptance criteria with respect to the discoloration of the joint during welding,” explains Venkatesh Chidambaram, QC Manager at LEWA NIKKISO Middle East. „For this reason, the joints had to be pure silver in color before brushing.”

Extensive adaption of production to the challenging material

To meet the required criteria, LEWA NIKKISO Middle East built its own 45 m² clean room at its factory in the UAE. Furthermore, the company purchased special welding equipment and accessories for the titanium welding process. „After that, we adapted the direct and indirect welding parameters for the gas tungsten arc welding method that was used,” says Parakkunnath. „These parameters included energy input, travel speed, gas flow rate for inert, return and follower gas, as well as the preheating and intermediate flow temperature.”

The welders paid special attention to the gas shield around the connection. Without specific precautions, titanium material becomes contaminated right away from the atmosphere. „This type of contamination potentially reduces the service life of the welding and base material. Our customer wanted to eliminate any chance of this happening by imposing stringent specifications,” explains Chidambaram. This is why it was critical to protect the welding pool adequately by



The material used for piping is titanium material (Grade 2), in total 58 meters of pipe ranging from ½ to 2 inches diameter with 339 welded joints have been completed. To meet the stringent requirements for welding joint quality, LEWA NIKKISO Middle East built its own clean room. (Source: LEWA NIKKISO Middle East FZE)



During welding, an auxiliary welder held the shield diffuser, ensuring optimum coverage of the heat-affected zones with pure argon gas. (Source: LEWA NIKKISO Middle East FZE)

Titanium material: Pump manufacturer sets up its own clean room

consistently maintaining the gas shielding to cool down metal surfaces and prevent oxygen ingress.

High-quality welding results

The results of these welding tests were monitored in each case by the welding supervisor and quality inspectors. Based on these results, LEWA NIKKISO Middle East worked out improvement criteria to attain the required welding joint quality. This is how the company subsequently reached such an outstandingly high proportion of flawless welding joints: 335 out of 339 in the project. „After all inspections were conducted, the total rejection rate amounted to a mere 1.18 percent,“ says Chidambaram. „This result has been recognized and validated by our customers.“ The titanium welding work was completed in a time frame of 30 days and the complete chemical injection package was delivered early 2019. The package will be in full operation in 2020.

In a brief interview:

Sylvain Latuilerie, Managing Director of LEWA NIKKISO Middle East, on the titanium package challenge and the growth market Chemical Injection Packages in the Middle East.

Mr. Latuilerie, LEWA NIKKISO Middle East is a wholly owned subsidiary of the German LEWA GmbH and specializes in the design and manufacture of Chemical Injection Packages. How many injection packages do you currently produce at your facility in the United Arab Emirates?

„We currently deliver 150 to 200 packages per year, which we produce from various materials such as CPVC and PVDF, carbon steel, stainless steel, super duplex SS, Inconel, Hastelloy and Titanium. We have developed in-house welding qualifications and processes for all these materials and are ASME U, U2 and R stamp certified. Although our main geographical area of responsibility is Middle East and India, we design and build packages for other LEWA Group companies which is always creating great opportunities.“

In 2016, you received the request for the Titanium Package for the sulphur recovery plant. Was this the first request of its kind to your company? If so, how did the decision to produce the package in-house come about?

„LEWA Group has had some experience with Titanium Packages before 2016 using sub-contractors. This project was actually the first request to us



Sylvain Latuilerie, Managing Director of LEWA NIKKISO Middle East, on the titanium package challenge and the growth market Chemical Injection Packages in the Middle East.



„Welding titanium is very different from welding any other material,“ explains Nathan, Project Manager at LEWA NIKKISO Middle East. „The material is extremely sensitive to surrounding conditions during welding process, in particular temperature and cleanliness. In addition, the inert gas atmosphere around the welding point is very specific and requires constant attention in order to obtain a satisfactory result.“ (Source: LEWA NIKKISO Middle East FZE)

specialists in Chemical Injection Packages. First, we surveyed the local market and looked for existing companies involved in titanium welding. After a few unfruitful audits, we decided to take up this challenge and implement the project in-house. We have invested a lot of time to acquire the specific competences related to handling titanium – in the end, the agility, professionalism and perseverance of our team has made it possible. We have delivered a package which complies with all the requirements and expectations of our client“.

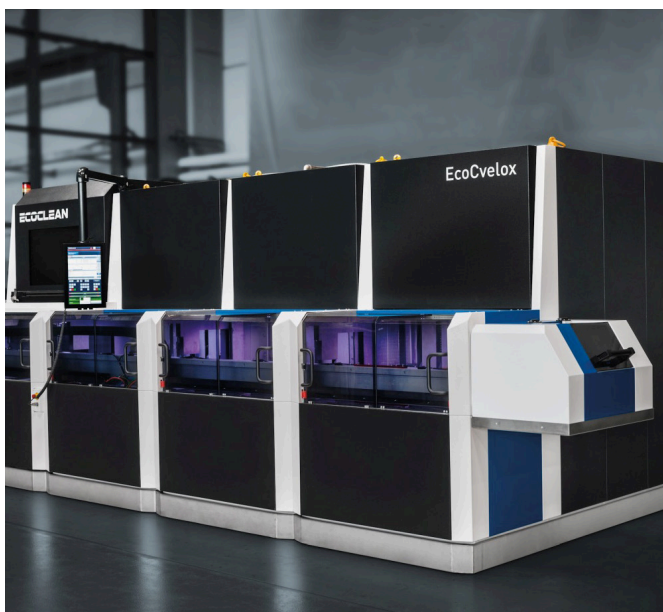
LEWA GmbH
D 71229 Leonberg

Reliable part deburring, cleaning and drying on a 15-second cycle

EcoCvelox provides an innovative combination of high-pressure water jet deburring and low-pressure parts cleaning processes

As a cost-efficient answer to continually increasing demands on the absence of burrs and particulate cleanliness, Ecoclean has developed the EcoCvelox system. Its modular design allows a custom configuration and subsequent expansion, at any time, of equipment from a single source to provide a combined high-pressure deburring, cleaning and drying capability. Cycle times of only 15 seconds per pallet can thus be achieved. Further standard-setting features of the EcoCvelox system include a CAD/CAM interface for rapid and easy offline programming of the high-pressure deburring function plus highly dynamic part handling technology.

Hydraulic and pneumatic system components, engine blocks, pump and valve housings, nozzles, transmission parts, steering and brake elements and other, mechatronic components – these are just some examples of parts subject to ever more stringent specifications regarding deburring and technical cleanliness. Formerly, meeting both requirements in an optimum manner called for the use of equipment from diverse manufacturers. Now, with its innovative EcoCvelox concept, Ecoclean GmbH has developed a modular solution that combines 5-axis high-pressure deburring with various part cleaning and drying processes in an efficient and space-saving manner. Moreover, in addition to flexibility, the new system sets standards in terms of the process-to-cycle-time ratio, equipment level, operating convenience, ease of maintenance, and plant availability.

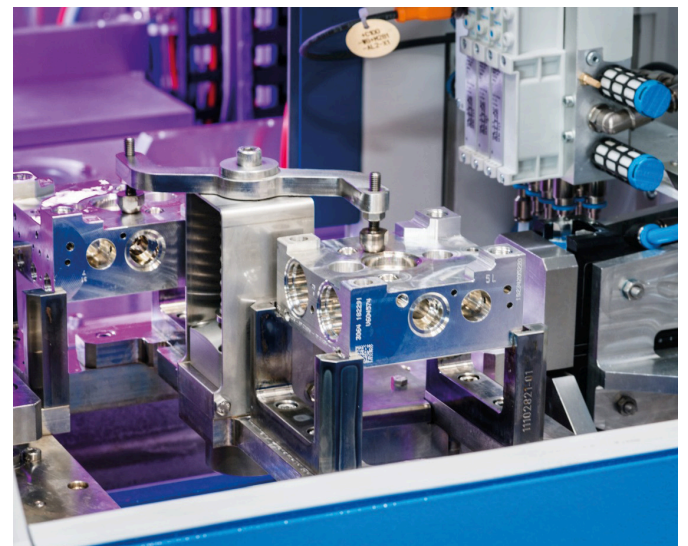


The new EcoCvelox combines deburring, cleaning and drying processes with a highly dynamic and quick parts handling technology. This enables that these processes can be executed efficiently in one machine from a single source.

Maximum flexibility makes for optimum adaptability to user needs

The modular design allows users to configure individual systems that merge high-pressure deburring, part cleaning and drying from a single source, and to expand them as needs evolve. A combination with other products from this machine manufacturer, e.g., solvent cleaning prior to deburring in applications involving high oil drag-in, is also possible. The diverse standard modules of the EcoCvelox are rated for parts measuring 200 x 200 x 200 mm which are supplied on pallets. This format covers most general industry applications.

Tooling configuration for the various processes is likewise adaptable to the specific parts. Thus, high-pressure deburring can be performed using the standard single spindle at up to 1000 bar pressure (or a maximum of 3000 bar should the need arise). An optional HP turret



High pressure deburring can be performed using the standard single spindle or an optional HP turret accommodating up to five different tools. Cycle times of only 15 seconds per pallet can be realized.

Reliable part deburring, cleaning and drying on a 15-second cycle

accommodating up to five different tools supports complex deburring operations. It provides a tool-to-tool changeover time of only 1.5 seconds. The tools for the spindle and the HP turret can be custom-designed to match the given part and can be made by 3D printing. For part cleaning, the processes of injection flood washing, spray cleaning and selective rinsing are available and can be combined. Drying can be achieved by high-velocity air blow-off and/or vacuum, with the air blowing solution being integrable into a cleaning module as well.

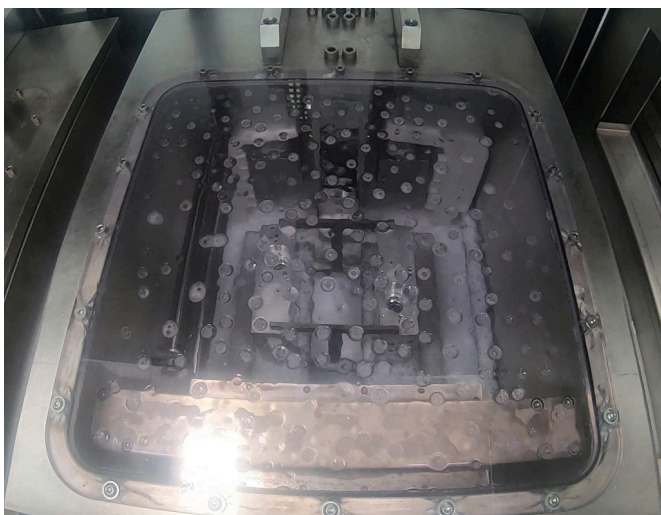
CAD/CAM interface for easy programming of deburring operations

An absolute novelty in deburring systems, although a common feature on today's machine tools, is the CAD/CAM interface that can be integrated into the equipment. It allows a transfer of part design data for purposes of programming the high-pressure deburring step. This can be done offline to load the data into the machine controller, which is easier and faster than any conventional teach-in method. Moreover, this capability helps to set up deburring processes for new parts in minimum time and at low cost. For part identification, a camera system can be integrated. The result is an effective and cost-efficient deburring operation, even with 'lot size one' parts.

14.5 seconds process time in a 15-second cycle

Part handling for the deburring process takes place in one Y-axis in the basic version. However, for high throughputs and the associated exacting cycle time requirements the module can be fitted with a second Y-axis. This allows loading and unloading to proceed in parallel with deburring. The process time, at 14.5 seconds, thus becomes almost equivalent to the 15-second cycle duration. The same can be achieved for the cleaning and drying module by integrating a second, concurrently operating work chamber.

Pallets are moved between the individual processing stations by means of a linear drive system integrated as standard that is characterized by its highly dynamic performance and wear-free motor. It conveys the parts from one station to the next at a speed of 4 to 5 meters per second, thus contributing further to the system's operating efficiency. The loading process can be automated by means of a gantry system or robot.



The workpieces are also cleaned and dried as single parts. For these processes injection flood washing, spray cleaning and selective rinsing as well as high-velocity air blow-off and/or vacuum drying are available.

At least 50 percent increase in tool life

For process-inherent reasons, all tools used for deburring are subject to wear, which in turn results in a pressure drop. This means that tools need to be replaced after a certain number of operating hours. On the new EcoCvelox, a patented software and a VFD-controlled high-pressure pump ensure that the process pressure is readjusted for this effect. This smart solution, providing a continual adaptation of the high-pressure level, extends tool life by at least 50 percent and thus boosts plant availability at the same time.

For a fast and efficient tool change, the deburring module has a lateral maintenance door. This provides easy access to both the lance of the single spindle and to the turret-mounted high-pressure tools.

A smart solution for easy and effective operator control

Another feature contributing to the equipment's high process reliability and availability rates is its new intuitive operator guidance system. On the 19" flat screen monitor (HMI), all of the system's modules are presented separately and clearly in a complete overview diagram, similar to a smartphone display. If a problem occurs, this is indicated by a colour change of the affected module, e.g., to a shade of yellow or red. As the digital documentation is integrated into the HMI, it suffices to touch the image of the respective module briefly on the touch screen to view a process technology diagram, flow diagram or electrical circuit diagram in which all installed components are neatly shown, with the „malfunctioning“ component (e.g., a pump) highlighted in a different colour. A detailed view of this item can in turn be pulled up at the touch of a finger. Various functions such as activating or deactivating this component not merely support fast intuitive troubleshooting but also supply clear problem solving information. Moreover, the lists of wear parts and spare parts featuring in the digital documentation will facilitate part ordering if necessary.

Due to its high flexibility in terms of both equipment configuration and process design, the EcoCvelox is an efficient, one-stop solution for all deburring, cleaning and drying needs. To avoid exhaust air, the system can optionally be equipped with an energy efficient air recirculation system.

Ecoclean GmbH D 70794 Filderstadt



On the 19" flat screen monitor (HMI), all of the system's modules are presented separately and clearly in a complete overview diagram, similar to a smartphone display.

20 years of success in plant construction

Ruland starts the anniversary year with a look ahead

In 2000, Günter Ruland and Jürgen Kutzer founded Ruland Engineering & Consulting GmbH together with Bernhard Scheller and Mathias Nauerth. Thanks to its cross-industrial structure and high quality standards, the owner-managed plant engineering specialist was quickly able to establish itself in the industry. Today 320 employees at 5 locations in 3 countries work for Ruland. With the principle „We set unique standards“, Ruland has also established itself internationally. The company has completed projects in more than 60 countries so far.

More than engineering

Consulting is a central issue at Ruland. After all, the basic requirement for the plant manufacturer is to record the actual customer requirements. In this way, individual plants are created for each customer that meet the respective production requirements. On this basis, Ruland designs the plants, procures the components and manufactures completely automated modules that are assembled and commissioned at the customer's premises. Ruland also supplies piping systems for complete factories and production areas.

Plants for liquid products

Already in its first year, the plant manufacturer handled projects in various industries. Producers from the beverage, food, pharmaceutical and health care sectors are still among the company's most important customers today. „Our plants can be found wherever liquid products or liquid sub-products are processed,“ says Bernhard Scheller. „The demands on plant technology and product safety are increasing in all sectors. At the same time, manufacturers want more flexibility for rapid product changes. With our well-founded know-how and con-

sistent plant design, we can supply tailor-made plants that meet the requirements for product safety, quality and hygiene as well as legal regulations“.

„We set unique standards“ company guideline in past and future

Florian Klein, who has mainly taken over the company shares from its namesake Ruland, is optimistic about the next few years: „We will continue to stick to our cross-industry approach in the future. We want to continue providing our customers with individually manufactured solutions. With this quality standard and a strong team, we are heading into the future. After all, our employees implement our quality on a daily basis and make the company what it is“.

About Ruland Engineering & Consulting

Ruland Engineering & Consulting GmbH plans and implements process plants worldwide. The owner-managed company offers its customers plant engineering of the highest quality. It supplies individual, innovative and practice-oriented solutions in the areas of tank farms, mixing and dosing systems, thermal plants as well as vacuum degassing plants, filtration plants, fermenters and CIP plants. Complete automation with our own control cabinet construction has been our speciality for many years. Ruland assembles its plants itself and also carries out commissioning, piping installation and documentation. Services such as maintenance and repair round off the plant construction spectrum.

Ruland Engineering & Consulting GmbH D 67435 Neustadt



Ruland system for drop creation

Ruland inspection of pipelines with the endoscope.

PIA Automation helps to overcome bottlenecks in face masks supplies

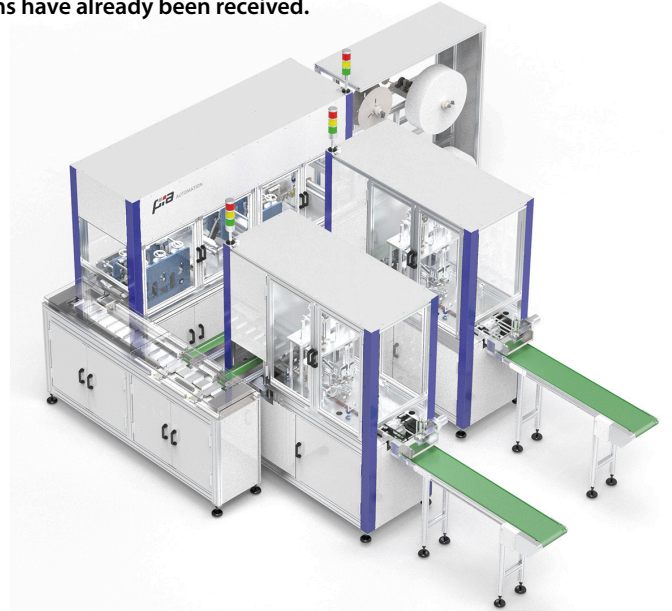
The rapid spread of Covid-19 in most parts of the world is creating a rising demand for surgical masks and other personal protective equipment (PPE). PIA Automation will help to overcome these bottlenecks and offers fully automated assembly lines for the high-speed manufacturing of face masks. Orders for 21 of these systems have already been received.

Each equipment will be able to produce up to 140,000 pieces per day – capable to cover multiple product variants of disposable two-, three-, or four-layered masks. The manufacturing process includes feeding of filter material, folding and pressing, nose bridge clamp feeding, mask forming, mask cutting, ear band welding, packaging and other auxiliary processes.

To meet increasing global demands, machines will be manufactured at PIA facilities in China, Germany and the U.S.A. The standardized equipment design in connection with proven in-house knowhow in qualification and documentation will allow shorter delivery times and competitive pricing.

Healthcare requires an uncompromising willingness to perform at the highest level in order to achieve maximum patient safety and quality standards. With the mask manufacturing devices PIA has proven that it not only can deliver the highest levels of product safety but also offer quick solutions for special demands.

PIA Automation Amberg GmbH
D 92224 Amberg



Fully automated assembly line for production of surgical masks.

Hohenstein advances textile sustainability with microfiber analysis

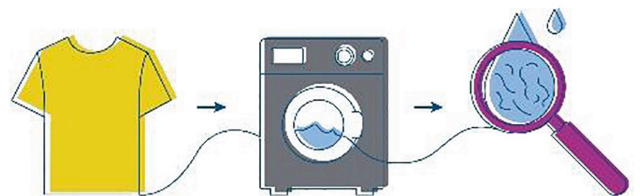
Hohenstein has completed the development of its new method for analysing microfibre shedding from textiles. Using dynamic image analysis, the method quantifies shedding behavior and reveals previously unattainable data with practical implications for material development throughout the supply chain.

The new method is the result of four years of research at Hohenstein, published in an article by lead scientist Jasmin Haap. The research team developed, refined and validated an analytical method that goes beyond current approaches of measuring the shedded mass to quantify fibre count, length, diameter and shape.

Further analysis can reveal the distribution of these attributes and even generate separate results for cellulosic fibres (e.g. cotton) and non-cellulosic fibres (e.g. polyester). This analysis is currently available exclusively through Hohenstein.

With this level of detail, researchers can now quantify in more detail which types of fibre and material constructions contribute most to microfibre release, leading to informed decisions in development of more sustainable textiles that shed less.

Synthetic microfibres are tiny pieces of plastic released into water during mechanical stress, particularly washing. Wastewater containing microfibres eventually flows through sewage into larger bodies of water. Along the way, synthetic microfibres attract harmful substances and pollutants from the environment, thus being able to reach sea



Microfibres are tiny pieces of plastics released in the water during mechanical stress, particularly washing. Wastewater eventually flows into sewage and larger bodies of water, remaining indefinitely or entering the food chain. (© Hohenstein)

life and entering the food chains of larger sea life and even humans.

Dynamic image analysis of wastewater is non-destructive, allowing additional tests, such as filtration, to be performed for further analysis. Filtration, the most common method to date, involves filtering the wastewater from textile laundering, then weighing the remaining particles.

In November 2019, Hohenstein joined the Microfibre Consortium (TMC) as a contributing research member.

Hohenstein Laboratories GmbH & Co. KG
D 74357 Hohenstein

Liquid, supercritical, gaseous: Cleaning silicon wafers with supercritical carbon dioxide

CO₂-cleaning with diaphragm pumps

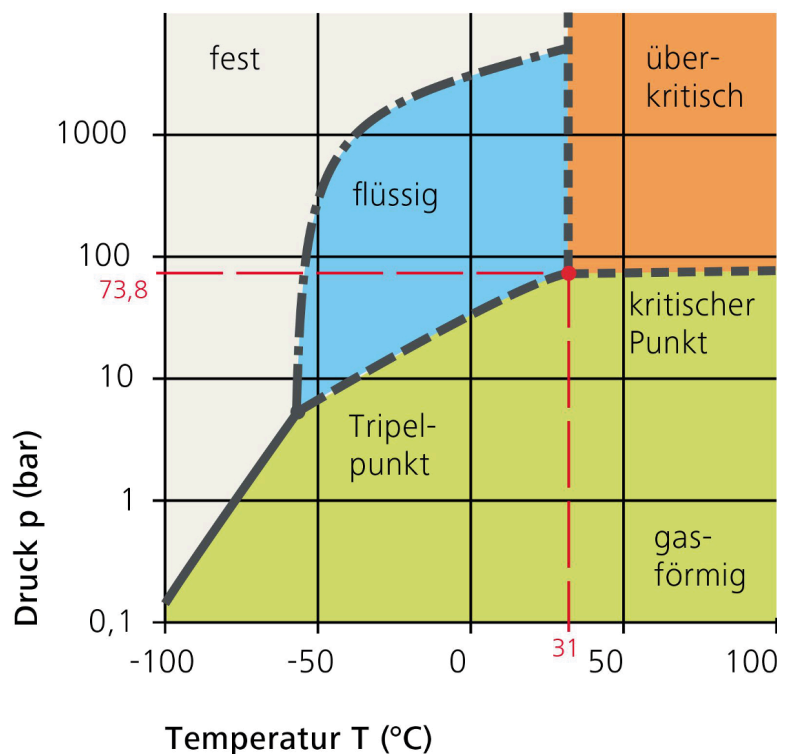
Cleaning plays an essential role in the production of silicon wafers. It ensures the proper conductivity and function of the integrated circuits (ICs) produced in this process. The wafers have to be processed to just a few nanometers through many steps and cleaned multiple times during processing. The advanced cleaning process using supercritical CO₂ (SCCO₂) offers several advantages especially in the metal particles elimination, which is difficult by using wet processes established that work with ultrasonic bath with solvents / water. LEWA diaphragm pumps have proven their reliability for wafer cleaning with SCCO₂ in the Semiconductor Industry. The cleaning process proceeds as follows: CO₂ is compressed to at least 75 bar using a diaphragm pump in a cleanroom and then heated to at least 35 °C. Above this temperature, the CO₂ transitions from the liquid state to the supercritical state. Experience in handling liquefied gases is essential for reliably meeting the requirements for this process. LEWA GmbH has this know-how. Its product range includes customized Ecoflow and Triplex diaphragm pumps – the perfect pumps for this application. The certificate for cleanroom compatibility from the Fraunhofer Institute (Fraunhofer IPA - TESTED DEVICE®) confirms the pumps' cleanroom compatibility in accordance with recognized standards and directives.

Electronic components such as integrated circuits (ICs) are produced from silicon wafers. They are the basic components of all electronic devices, including laptops, tablets, smartphones, cameras, and LCD televisions. Wafer production is based on a complex process that includes more than 100 production steps and takes several weeks. Cleaning takes place repeatedly at various production stages. It is an essential, consistently implemented process. In the past and even sometimes today, cleaning was primarily done using an ultrasonic bath with solvents / water. This method consumes a great deal of resources. It requires high fluid consumption and a range of chemical additives. In addition, the cleaning result is not always perfect. Cleaning with supercritical CO₂ offers several advantages for the semiconductor industry. „The wafer cleaning process involves ongoing development,“ explained Joachim Bund, Head of Sales Division Process Industry & Downstream at LEWA. „Many renowned manufacturers in the semiconductor industry have completely converted to the carbon dioxide cleaning process with our diaphragm pumps.“

CO₂ cleaning process with diaphragm pumps in the cleanroom

LEWA offers cleanroom-compatible metering pumps with PTFE sandwich diaphragms that are especially well-suited to

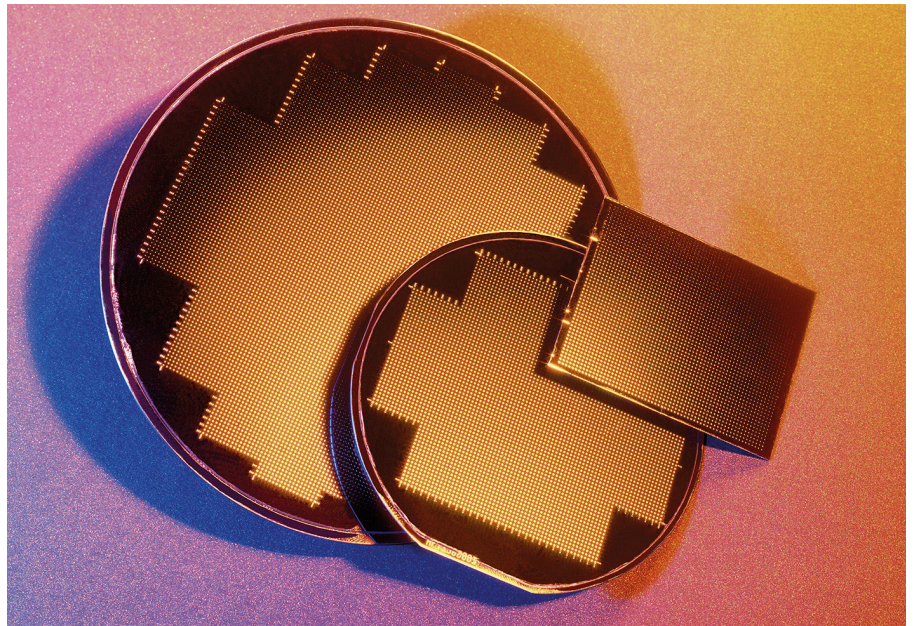
p.T-Diagramm von CO₂



By heating to at least 35°C the CO₂ has reached its supercritical state, means SCCO₂ – between that of gas and liquid. In this state, it has excellent solvent properties against certain non-polar impurities such as resin and particles. (Source: LEWA GmbH)

Liquid, supercritical, gaseous

this process. Reliability, the option of cleaning, and metering accuracy are essential aspects of this application. A specially developed diaphragm rupture signal delivers additional process safety. The diaphragm pump is installed in a wafer cleaning cabinet where it compresses the liquid CO₂ to at least 75 bar in order to attain the appropriate cleaning properties. „In the next step, carbon dioxide is heated to at least 35°C by a heat exchanger and injected into the pressure chamber,“ said Claudia Schweitzer, Product Manager at LEWA, to describe the process. At that point, the CO₂ has reached its supercritical state, means SCCO₂ – between that of gas and liquid. In this state, it has excellent solvent properties against certain non-polar impurities such as resin and particles, and can penetrate the smallest gaps in the wafer thanks to its low viscosity. After cleaning, the wafer is flushed with pure CO₂ to ensure that absolutely no residue remains on it. The pressure is then lowered, which causes the sublimation of the CO₂. All components are completely dried after cleaning thanks to this direct transition into the gas phase. Upon drying, they are free of solvents. Cleaning with SCCO₂ has the advantages of being more environmentally friendly and more economical than conventional cleaning processes.



Electronic components such as integrated circuits (ICs) are produced from silicon wafers. They are the basic components of all electronic devices, including laptops, tablets, smartphones, cameras, and LCD televisions. (Source: LEWA GmbH)

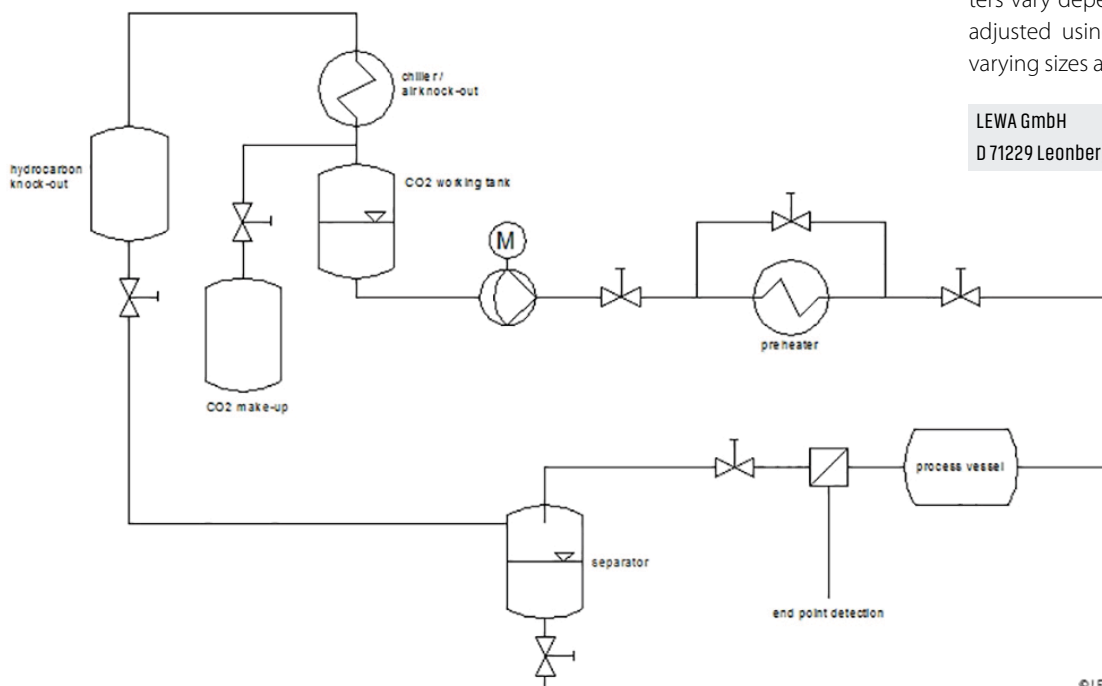
Additional cooling jacket due to resulting compression heat

Based on its years of experience in the area of liquefied gas conveyance, LEWA knows to take the generation of unwanted compression heat into account. „Cooling is always a key theme when dealing with liquefied gases,“ said Bund. „Heat can form during compression in the pump head. Once the liquid is near its vapor pressure, it transitions

into the gaseous state. This may cause cavitation during the suction stroke, which makes it necessary to use an additional cooling jacket for the pump head.“ Cooling also improves the pump’s hydraulic efficiency.

The material selection for wetted parts is adapted to the specific process. For example, they include reducing the proportion of metals that come into contact with the fluid and special requirements for the surface quality of the pump head. These individual parameters vary depending on the process and are adjusted using special materials as well as varying sizes and connections for the pumps.

LEWA GmbH
D 71229 Leonberg



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parts2clean 2020: The international hub for component cleanliness



parts2clean (27-29 October 2020), Stuttgart, Germany

The transformational wave sweeping across numerous industrial sectors and markets is presenting companies with new and ever-shifting challenges, and this is also applies to industrial component and surface cleaning. This trend is fully reflected by parts2clean 2020 (27-29 October). For virtually every high-tech application in the fields of manufacturing and reprocessing, parts2clean is the information and procurement platform of choice for users of industrial cleaning technology.

27th - 29th October 2020: parts2clean 2020, Stuttgart (D)

New product requirements as a result of alternative drives and the turnaround in energy policy, among other factors; innovative manufacturing technologies and processes, such as additive manufacturing, digital transformation and AI; stricter regulatory requirements and climate protection targets – these are just a few examples that have triggered a number of far-reaching transformative processes in a wide variety of industries. Manufacturing steps such as component and surface cleaning are becoming increasingly important, both in production and in reprocessing. In short, component cleanliness is critical to the satisfactory quality of subsequent processes and for ensuring that products function optimally on a sustained basis.

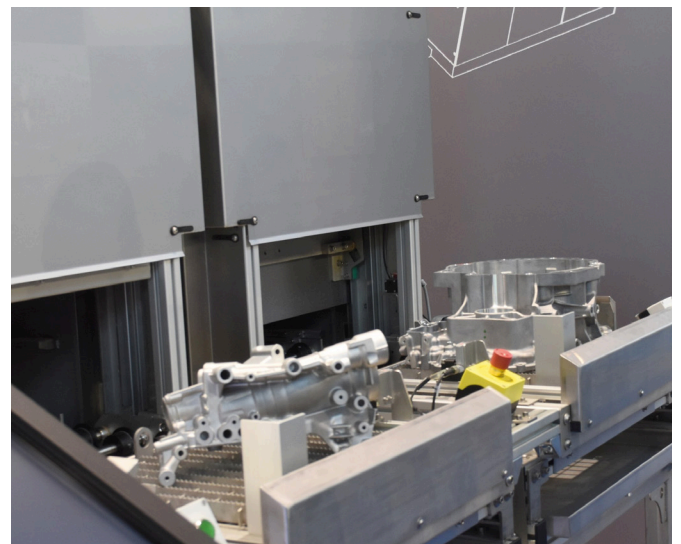
The current changes underway in industrial component cleaning therefore require sustainable solutions tailored to the specific range of products and tasks and to the individual situation. To make appropriate investment decisions, however, a comprehensive overview of development trends, technologies, methods, processes and suppliers is necessary. "In the field of component cleaning, parts2clean facilitates comprehensive monitoring in an effective and efficient way," says Olaf Daebler, Global Director of parts2clean at Deutsche Messe. "It's the world's largest event featuring every aspect of industrial cleaning technology, with all the relevant suppliers on board."

Providing decision-makers with the input and choices they need

For 18 years, now, parts2clean has served as the number one information and procurement platform for users from a wide variety of industries and countries. The 2019 visitor survey revealed that for over a third of the trade visitors, parts2clean was their only source of input on available solutions. At 86%, the percentage of attending professionals who play a role in their company's investment decisions is above average. A good three quarters of them indicated they had come to the show with specific investment and purchasing intent, with 39% indicating they were planning to invest more than €100,000. For participating exhibitors, this added up to very promising conditions for lead generation. "parts2clean is attended by solution-seekers with specific objectives in mind. Within the following one- to two-year period, we've been able to generate orders from roughly 30% of the contacts made at the show," reports Karl-Heinz Menauer, Sales & Technology at acp Systems AG.

Special formats and attractive supporting events add value

Spanning industries and technologies, the various solutions along the process chain of industrial component and surface cleaning pro-



parts2clean 2020: The international hub for component cleanliness

vide users from all manufacturing sectors and reprocessing with specific and useful information about processes, methods, media, procedures and suppliers. In addition, the upcoming parts2clean will focus on issues such as cleaning in optoelectronics, medical technology and electronics manufacturing. Other topics featured at the 2020 flagship trade fair will include the automation and digitization of cleaning processes, the increasingly important removal of filmic-chemical contamination, precision cleaning and quality control in the cleanroom, and the selective treatment of functional surfaces. "The presentations focus not just on the current state of the art but also on future requirements and solutions," says Daebler.

Special formats such as "Process flow component cleaning with cleanliness control in the cleanroom" and QSREIN 4.0 provide visitors with information about particular fields and encourage discussion about innovations.

With its three-day expert forum, held in collaboration with the Fraunhofer Cleaning Technology Alliance and the German Industrial

Parts Cleaning Association (FiT), parts2clean features one of the most internationally renowned sources of knowledge. The presentations, with simultaneous German <> English translation, focus on trends, innovations, topics and reports from all fields of industrial component and surface cleaning.

The Guided Tours given in English on a twice-daily basis provide insight into various aspects of component and surface cleaning along the process chain, which is particularly useful to visitors with little experience in the field. This enables them to efficiently learn about solutions, innovations and suppliers for their individual needs. Exhibitors included in the Guided Tours have the chance to impress an interested audience of professionals with their products and latest solutions, thus generating additional leads.

parts2clean will be held from 27 – 29 October 2020 in Stuttgart, Germany.

Deutsche Messe AG D 30521 Hannover

ATC by Pfeiffer Vacuum receives FDA Approval for Pharmaceutical Package Leak Testing

Companies utilizing this technology do not need to submit leak testing approval application to FDA

Pfeiffer Vacuum, one of the world's leading providers of vacuum technology, has announced that the ATC by Pfeiffer Vacuum Mass Extraction leak testing process meets FDA standard F3287 for leak testing. This shortens the FDA approval process for pharmaceutical products that require leak testing significantly. Companies that utilize the ATC leak testing process will save hundreds of hours of paperwork for the approval application.

When a pharmaceutical company launches a new product or changes an existing product, FDA approval is required. Normally, companies have to submit extensive documentation. However, with

ATC being added to the FDA standard, companies do not need to submit paperwork regarding leak test, test procedure, water ingress, and package testing manufacturers can simply declare that their product is leak tested in accordance with FDA F3287 by using ATC equipment, thus adhering to the standard.

"It is a tremendous advantage for companies in the pharmaceutical market that utilize ATC's technology since they save time and costs," said Brian Pahl, President of the ATC by Pfeiffer Vacuum product line.

Mass Extraction

USP 1207 and ASTM (F-3287-17) recognized ATC Mass Extraction Technology works on the principle of rarefied gas flow. Testing takes place in vacuum conditions to attain higher sensitivity. This patented technology is particularly suitable for pharmaceutical packaging such as IV-bags, pouches or glass vials. Larger defects and defects as small as 1 µm can be detected with this method. The technology is thereby suitable for laboratory applications as well as for use in production environments allowing stability control as well as 100% automated testing (also in inline machines). FDA laboratories in the US and major pharmaceutical companies have been using the Mass Extraction instruments for over 10 years.



Mass Extraction test instrument ME2 from ATC by Pfeiffer Vacuum.

Pfeiffer Vacuum GmbH
D 35614 Asslar

Pfeiffer Vacuum introduces extremely quiet, dry pumps

- Dry vacuum pumps
- Best in class for noise level
- Intelligent pump controls

The HiScroll models from Pfeiffer Vacuum's new range of scroll pumps are oil-free, hermetically sealed vacuum pumps with high nominal pumping speeds of 6 to 20 m³/h. The new pumps are characterized by their compact design and quiet, low-vibration operation (<47 dB[A], and <42 dB[A] in stand-by mode).

Excellent water vapor tolerance thanks to the two stage gas ballast. As a result condensation in the vacuum pump is avoided. With these features, the pumps are ideal for use in many applications in analytics, biomedicine, pharmaceuticals and research and development. They are used in mass spectrometry, electron microscopy, surface analysis, accelerators and laboratory applications, but also in the semiconductor industry, coating processes and gas recovery.

The HiScroll's active temperature control ensures optimal cooling and guarantees the lowest noise level. Jürgen Keller, Pfeiffer Vacuum Market Manager for Analytics says: "We are proud of the fact that our new scroll pumps have the lowest noise emissions in their class. These dry pumps can also be easily connected to other Pfeiffer Vacuum products, such as turbopumps, or operated by higher-level controls via the RS-485 or ProfiNet interface. We drive sustainable solutions and



Pfeiffer Vacuum scroll pumps from the HiScroll range.



help to reduce the environmental impact and carbon footprint with our new engine concept".

An intelligent interface makes it possible to define specific pressure ranges or a rotation speed setting mode, so that the pump can be optimally adapted to suit the application. This minimizes wear in the pump resulting in longer to service time intervals. The proven quality of Pfeiffer Vacuum products with first-class, durable components also ensures a long service life as well as lower operating costs. The pumps are easy to maintain, which not only reduces the time to service but also ensures the highest level of reliability. The integrated safety valve and the selfregulating operation of the pump guarantee safe and reliable use.

The powerful motor is up to 15% more efficient than conventional drives. This ensures outstanding performance while keeping temperatures low, which in turn simplifies the cooling of systems and plants.

Pfeiffer Vacuum GmbH
D 35614 Asslar



Spiral used in HiScroll pump system.

Lab equipment for more flexible work: New mobile table series for lab devices withstands large mechanical loads

Stable construction and a surface resistant to chemicals ensure safe work

The modern laboratory is home to a range of different devices that vary in size and build, depending on their designated task and process. As this equipment is often extremely heavy and to be used in multiple labs at a given institute, it is best to set it up on a mobile workbench specially fitted for the device. The workbench should also offer sufficient flexibility so, for example, co-workers of different heights could all use it comfortably. For these reasons, Sonation GmbH has developed a new series of tables specifically designed to meet such challenges presented by lab equipment. The models' reinforced base provides secure positioning for the apparatuses without sacrificing flexibility in the daily lab work. Additionally, a chemical-resistant tabletop prevents solvents and scratches from doing any permanent damage. The table can be fitted for use in any work situation thanks to its electric and infinitely variable height adjustment with freely configurable position memory, plus its modular design and optional expansions. The new lab bench has been certified according to the safety requirements of DIN EN 61010-1 and was presented at this year's analytica trade fair in Munich.

Such complex procedures as HPLC have become matter-of-course separation and research methods in testing, research and industry laboratories, and in the industries of analytical and clinical chemistry and biochemistry. "The devices sometimes comprise different modules, which can make their size and weight a bit daunting. That's why the location and specifically the stability of the storage space are so critical," says Christof Völkle, a managing director of Sonation GmbH. "The weight can quickly bend the tabletop, for example, affecting the calibration of the apparatuses and leading to malfunctions." The modern laboratory has seen increased demand for equipment that is not only stable, but flexible. Some of the more complex test series require that devices be quickly manoeuvred into other set-ups without having to be reconfigured or completely dismantled. Sonation GmbH has met this challenge by developing a laboratory bench that can be implemented in exactly such scenarios: this mobile solution works safely and flexibly in HPLC environments and any other lab arrangement thanks to its exceptionally stable construction, chemical-resistant tabletop and modular range of functions.

Steel-reinforced tabletop supports loads up to 250 kg

The HPLC series sets itself apart from standard alternatives with its steel-reinforced base that can support an evenly distributed load weighing up to 250 kg, or lopsided loads of up to 150 kg. This stability is ensured by such design measures as V-shaped reinforcements under the tabletop. The series offers the extra advantage of Trespa® TopLab®PLUS table panels, which provide maximum surface protection. "The tabletop is totally chemical-resistant and its surface remains protected even after sustaining scratches or other superficial damage," Völkle explains. "Solvents won't be absorbed even if they drip onto a scratched-up part of the surface." Swelling and deformation of the

surface, which would otherwise impact the device's calibration, are thus eliminated.

The workbench series must also offer mobile installation, though, and still be movable even under heavy workloads. That's where the castors come in, ball-bearing mounted and made by a premium German manufacturer. On these castors, the table can be moved smoothly and effortlessly under even the heaviest structures. The locking mechanism stops both the wheels and the slewing bearing, gua-



The tabletop is totally chemical-resistant, and its surface remains protected even after sustaining scratches or other superficial damage. (Source: Sonation GmbH)

Lab equipment for more flexible work

guaranteeing a strong hold with minimal play. "The table is also available with electronic height-adjustment for more flexible use. This option ensures that lab workers can work comfortably and ergonomically irrespective of height, and that tasks that require both sitting and standing can be carried out," Völkle adds. "Also, solvent bottles that are usually stored higher on HPLC installations can be swapped out more easily." The tabletop can be raised and lowered through a front-fixed control panel, and the robust lifting columns allow quick movement. Co-workers of different heights who are sharing the device have the advantage of being able to store up to four different positions. For safety reasons, the key must be pressed until the target

position is reached. This eliminates the risk of damaging the device on wall units and other obstacles. The lab benches meet all the requirements of the DIN EN 61010-1 laboratory-equipment standard and were tested and confirmed by an independent test lab.

Accessories broaden area of application

The workbench is available in several dimensions. The height-adjustable models come in five different height ranges, allowing the table to be adjusted according to individual requirements. Furthermore, each model can be fitted with such accessories as drawer modules, deposit trays and fixed shelves. Deposit trays, for example, safely store waste bins by moving automatically

and ergonomically any time the height is adjusted. The fixed shelves, on the other hand, are ideal for holding a computer or other device in place. Cables are well-protected and housed in a spacious duct on the back for safe, discrete routing. A feedthrough at the rear of the tabletop lets the connection cables be inserted into the duct, which is situated directly underneath, and plugged into the integrated power strip. Different types of strips are available: 12 cold-device sockets are standard, but other configurations and country-specific versions can be built in according to the customer's request. Wiring can also be fixed with integrated hook-and-loop fasteners to allow safe, unobstructed work. Last but not least, Sonation can deliver the table with a suitable uninterruptible power supply (UPS), particularly helpful for keeping the devices running while the table is being moved, and thus making the entire system more flexible. "We wanted to make this table series as modular and adaptable as possible to account for the many requirements in modern analytical laboratories. While we do offer certain standard models, they can easily be designed differently according to height and accessories. For example, we currently offer tables with widths ranging from 60 to 120 cm," says Völkle.

Sonation GmbH
D 88400 Biberach



Four different positions can be stored by the control-panel. This option ensures that lab workers can work comfortably and ergonomically irrespective of height. (Source: Sonation GmbH)

The tabletop can be raised and lowered through a front-fixed control panel, and the robust lifting columns allow quick movement. Co-workers of different heights who are sharing the device have the advantage of being able to store up to four different positions. (Source: Sonation GmbH)



„Leveraging the opportunities offered by big data and artificial intelligence to greater effect“

ENGEL medical engineering conference med.con in Stuttgart

Full house at med.con 2020: With more than 100 guests, the medical technology conference hosted by ENGEL Deutschland at its Technologieforum Stuttgart in mid-February was a huge success. Patient safety through advanced technology was the overriding topic; it was discussed from the various perspectives of plastics processing in the clean room and conveyed in a tangible way using live machine exhibits. Artificial intelligence and Big Data formed one focus; after all, the potential for more quality, safety and cost efficiency in medical technology has not yet been fully exploited.

„The volume of data generated is increasing, but the use of the data is not“, said Uwe Herbert, IT Manager with Ypsomed, a manufacturer of injection systems for self-medication, in his keynote summing up the massive challenge. „We are passing up opportunities here.“ In order to improve the quality of the products while at the same time reducing unit costs, Herbert advocates linking the IT systems of the individual departments in the company and giving employees the freedom they need to experiment with the new possibilities. However, the complexity of these projects is often underestimated according to Herbert.

„We need to shift up a gear when it comes to artificial intelligence,“ emphasised Christian Pommereau, Principal Engineer with pharmaceutical company Sanofi-Aventis Deutschland, who has witnessed within his own group of companies how far ahead the drug production industry is in this field. To avoid the plastics processing industry losing touch, we need everyone around the table.“

Both speakers sparked lively discussions, and it became clear that the industry has long recognised the great potential that Industry 4.0 offers. But barriers often remain in terms of adapting the new technologies to reflect the specific requirements of cleanroom production. For example, the validation of dynamic process control with the help of intelligent assistance, which is an essential feature of the smart factory, has to be planned in detail and designed safely.

Dynamic process control despite validated processes

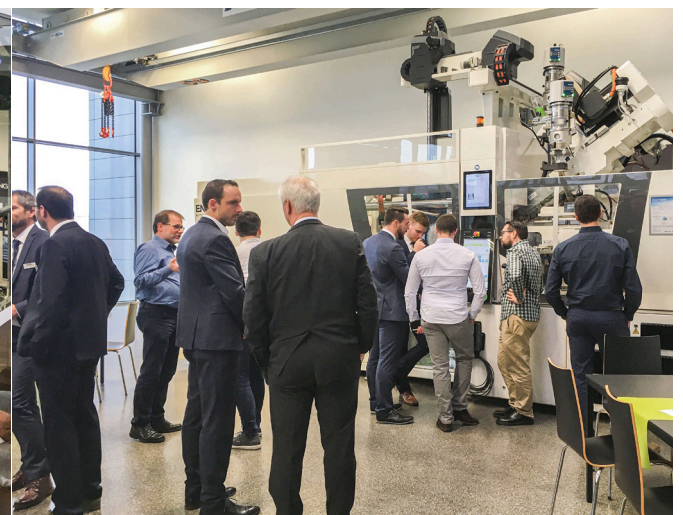
Christoph Lhota, Vice President, ENGEL medical, reported on how ENGEL's iQ weight control assistance system can be integrated into rules and regulations accepted by the auditors, based on ongoing development work. The ENGEL developers have investigated various approaches to the validation process and ultimately derived a procedure which defines process windows for the parameters to be retroactively adjusted, enabling the validation of dynamically controlled processes in conformity with both EN ISO and the FDA.

In his keynote, Christoph Lhota gave an outlook on other topics that are gaining in importance in medical technology and on which ENGEL's developers are working intensively. They include the injection moulding of liquid silicone rubber in the clean room, efficient injection moulding of very small batch sizes and sterile injection moulding, as clean room class ISO 5 is increasingly required in plastics processing. „ISO 5 is a totally different planet. The opening speed of the injection moulding machine is significant here“, said Lhota. ENGEL operates its own clean room at its headquarters in Schwertberg in order to specifically adapt its machines, robots and technologies to this new class of requirements.

All told, the keynote session comprised eight presentations. The other speakers were Martin Maier from Waldorf Technik, Reinhard



The mix of keynotes, live exhibits and the partner exhibition makes med.con a desirable networking event for plastics processors in medical technologies. (Picture: Engel)



Eight prominent keynote speakers offered the more than 100 guests at med.con both food for thought and practical tips for their daily work. (Picture: Engel)

„Leveraging the opportunities offered by big data ...

Steger from Braunform, Martin Jungbluth from Max Petek Reinraumtechnik, and Jörg Leonhartsberger and Claus Wilde from ENGEL.

Greater cost-efficiency in the clean room

There was plenty of networking at med.con. In the breaks, and following the talks, ENGEL opened up its technology centre with live exhibits and a partner exhibition.



Eight prominent keynote speakers offered the more than 100 guests at med.con both food for thought and practical tips for their daily work. (Picture: Engel)

ENGEL's high level of expertise in systems solutions again became apparent in the clean room injection moulding applications. Sophisticated medical products were manufactured in highly-integrated and automated production cells throughout the event. On the one hand there were thick-walled housing parts which can be produced in an 8-cavity mould using servo-electric Vario-Spinstack technology from Hack Formenbau in particularly short cycle times, and with a correspondingly low unit cost, thanks to the two-component process. On the other, there were needle holders for 1 ml safety syringes in a 16-cavity mould by Fostag Formenbau with a particularly low shot weight of 0.08 grams per part. The needle holders' very thin and different wall thicknesses require extremely precise process control, which ENGEL ensures with iQ weight control. The needle holders are taken off by a viper linear robot and transferred to the pipe distribution system, developed by ENGEL and made completely of stainless steel, in order to package the filigree moulded parts sorted by cavity.

The attendees of med.con 2020 at the ENGEL Deutschland Technologieforum Stuttgart were not just from the subsidiary's sales area, but also from other regions of Germany, from Switzerland and from Austria. Since the first ENGEL med.con ten years ago, the medical technology conference has become an integral part of the injection moulding machine manufacturer's event calendar. It is one of the most important networking events in the industry.

ENGEL AUSTRIA GmbH
A 4311 Schwertberg

Syntegon Technology brings interpack booth to customers' desks

- After interpack is postponed, Syntegon Technology launches virtual booth.
- Digital presentation of the latest processing and packaging technology and the new Syntegon Technology product design.
- Syntegon Technology experts provide information about intelligent and sustainable technologies.

Following the announcement by Messe Duesseldorf that interpack 2020, which was scheduled for May, will be postponed to next



Syntegon Technology launches its interpack booth online.

year, Syntegon Technology will present its latest processing and packaging technology on a virtual exhibition booth from 7 to 13 May 2020. The online presence will cover digital product presentations and individual contact opportunities with the experts from Syntegon Technology, who will inform both customers and media representatives about the company's intelligent and sustainable solutions.

On this occasion, Dr. Michael Grosse, CEO of Syntegon Technology, says: "We regret the postponement of interpack, but consider this to be the right decision under the given circumstances. As a reliable partner for processing and packaging technology, we of course have an alternative plan: our customers can look forward to our virtual exhibition booth. Here, they will soon be able to learn all about our latest technologies, get to know our new product design and experience the new Syntegon brand."

Syntegon Technology
D 71332 Waiblingen

PaintExpo will take place at a later date in 2020



8th international leading trade fair for industrial coating technology in Karlsruhe (Germany) postponed

FairFair GmbH, the organizer of PaintExpo, has decided to hold the world's leading trade fair for industrial coating technology at a later date in 2020 due to current developments in connection with the corona virus Sars-CoV-2.

The safety and health of exhibitors, visitors, guests and employees, as well as the general public, are the organizer's top priority.

Therefore, after re-evaluating the situation together with the exhibitor advisory board and Messe Karlsruhe, the decision has been

made not to hold PaintExpo as planned from 21 to 24 April 2020, but rather at a later date in 2020. The health measures recommended by the Robert Koch Institute for large-scale events such as trade fairs would have been associated with severe restrictions both for exhibitors and visitors.

The organizer will announce the new date for the international leading trade fair for industrial coating technology as soon as possible.

FairFair GmbH
D 72644 Oberboihingen

The entrepreneurial families Hehl and Keinath take over German RepRap

- Start-up and large family-owned company now in the same hands
- Two mutually complementary portfolios
- German RepRap remains a separate company

The notarised signing of the purchase contract on 12 February 2020 officially confirmed the takeover of German RepRap GmbH, based in Feldkirchen, by the entrepreneurial families Hehl und Keinath. The new partners are the owners of Arburg, a major and globally active German manufacturer of plastic injection moulding machines, which also develops, offers and sells systems for additive manufacturing as part of its product range. Founded near Munich in 2010, German RepRap is a German manufacturer of industrial 3D systems "Made in Germany" and will continue to operate as a separate company at its location in Feldkirchen.

The partners consider additive manufacturing to be an important complementary production method for plastics processing which holds significant promise for the future. Due to the successful market entry with the Arburg Freeformer in 2013, the Arburg officials feel confirmed in this assessment. The majority of the applications that use this open system for the processing of commercially available plastic granulates can currently be found in advanced settings such as those encountered in medical engineering and where prescribed material requirements have to be met.

A start-up with experience

German RepRap develops and produces 3D systems based on FFF technology (fused filament fabrication). In 2016, the company added the innovative and globally unique Liquid Additive Manufacturing technology (LAM) to its portfolio, which allows for materials such as Liquid Silicon Rubber (LSR) to be processed. The new x500pro, which processes engineering plastics such as polycarbonate (PC), complements the innovative product range of German RepRap.

An interesting addition

The intensive exploratory talks between German RepRap and Arburg included discussions about how the two companies might complement each other as well as possible synergies. It

became clear that the range of products and services each of them offers to the market was complementary. Having given the proposition careful consideration, the new owners concluded that the flexible and dynamic nature of the Feldkirchen start-up made it a promising acquisition.

Technological links

The technological links are clear to see: Arburg's Freeformer works with droplet discharge and standard granulate for individual applications and the German RepRap x500pro works with filament discharge for standard applications. Further developments will include the processing of liquid plastics (e.g. LSR).

New owners, familiar start-up approach

According to the will of the new owners, the company will continue to operate as a separate start-up company at its location in Feldkirchen. The change of ownership will not mean any operational changes for German RepRap's 23 employees. Founder and Managing Director Florian Bautz will continue to run the business in the same way. German RepRap will continue to manage its sales, application engineering, production and administration activities independently. After the takeover, Arburg will work in close collaboration with German RepRap, drawing on its wide-ranging resources to offer support when asked to do so.

ARBURG GmbH + Co KG
D 72290 Loßburg

Laboratory of the future: “It is not sufficient just to buy new equipment”



In an interview, Dr.-Ing. Felix Lenk explains what a good digital strategy looks like—and what changes the laboratory of the future will bring to the daily work in the laboratory. Lenk heads the SmartLab Systems research group at the Technical University of Dresden. With his team, he is organizing and designing the Action Area dedicated to the topic of Laboratory 4.0 at the upcoming analytica 2020, the world’s leading trade fair for laboratory technology, analysis and biotechnology.



Dr.-Ing. Felix Lenk (© Mann)

Dr. Lenk, what changes does digitization bring to the laboratory?

“In the laboratory of the future, the key topics are digitalization, miniaturization, and automation. Digitalization means a complete rethinking of workflows and processes. This is coupled with novel devices that are capable of running processes without user intervention, i.e. automatically. And because laboratory workplaces are actually among the most expensive workplaces in the world, you need equipment that is more compact in order to make better use of this valuable space.”

What does this mean for laboratory planners?

“Laboratory planners need to completely rethink. Traditionally, a laboratory is a fixed installation, similar to a fitted kitchen. In most cases it should be in operation for 20 to 30 years. However, projects in the development laboratory are usually planned for up to three years only. It is difficult to predict what demands will be placed on the facility afterwards. So you need a flexible laboratory: With modules that can be combined to create

ever new workflows and devices that are functionally integrated and easy to operate.”

What does this mean for the daily work in the laboratory?

“Studies have shown that scientists in development laboratories spend 70 percent of their time preparing, following up and, above all, searching, and only 30 percent of their time on real science. On the one hand, this can be changed by a stronger division of labor. On the other, new technologies—for example assistance systems—will give scientists more time to gain real insights.”

Will fewer people work in the laboratory of the future?

“Everyday life in the laboratory will change for employees, but we do not expect any job losses. Laboratories are generally well utilized. Sample numbers have been growing steadily for years. To cope with this increase, we need new technologies. However, the contents of the work will evolve considerably. Currently, a laboratory employee is carrying out processes. In the future, he or she will primarily check that devices operate within defined parameters. He/she will rectify error conditions and check the data obtained for authenticity and correctness.”

Will this make laboratories more efficient?

“Yes, in the laboratory of the future you will be able to have work done around the clock—this has a positive effect on operating costs. Currently, laboratory operation after 8 pm is absolutely unusual. In the future, night shifts will be the norm. They will be running in fully automated fashion – without human supervision.

Will the laboratory of the future work more sustainably?

“Digitization, miniaturization and auto-

mation can indeed increase sustainability. Thus, miniaturized laboratories or more experiments in the same space lead to energy savings. Another example: If cell cultures examined by new inspection methods need to be incubated for only three days instead of ten, the incubators likewise need to run for only 30 percent of the original time.”

How do I make an existing laboratory fit for the future?

“An important starting point for the digital transformation of a laboratory is a well-done workflow analysis and a plan derived from it. The starting point should be the “low-hanging fruits”: Processes that tend to be reiterated in the same way at high rates are the first candidates for digitization. Usually it is not sufficient just to buy new equipment. The transformation also comprises a digital superstructure, i.e. various questions of sample retrieval and sample nomenclature must be clarified in such a workflow analysis. In this way, a customized solution is created across manufacturer boundaries, allowing synergies to be leveraged very quickly.”

How do I experience the laboratory of the future at analytica 2020?

“The special show Digital Transformation will show for the first time how the laboratory of the future will work very specifically. To this end, 18 partners from science and industry have joined forces. Two workflows, which will be presented in a moderated manner, demonstrate device networking, collaborative robotics and user interaction. Connected to this there are six smaller workflows that visitors can try out for themselves for the first time. The laboratory of the future can thus be experienced at close quarters.”

Fakuma 2020: Digitalisation and Circular Economy



Roughly 2000 exhibitors are expected to participate at the 27th Fakuma international trade fair for plastics processing in Friedrichshafen from the 13th through the 17th of October, 2020. They'll provide expert visitors with a comprehensive overview of all plastics technologies – from injection moulding, in which Fakuma occupies an internationally leading position, right on up to extrusion technology, thermoforming and 3D printing. In addition to current processes, technologies and tools covering all aspects of plastics processing, the event will also deal with the issues of digitalisation, resource conservation and circular economy.

13th - 17th October 2020: FAKUMA 2020, Friedrichshafen (D)

Fakuma will occupy all available hall floor space in the modern exhibition centre on Lake Constance. 1933 exhibitors from 40 countries and nearly 48,000 expert visitors from 126 nations came to Lake Constance in 2018. The event is highly esteemed within the industry sector. "As the traditionally largest exhibitor and cofounder of the trade fair, Fakuma is highly significant for us. It's distinguished by its highly practical approach combined with technical expertise, it's favourable location where Germany, Austria and Switzerland meet and a friendly atmosphere. And this recipe for success still works very well today," confirms Dr. Christoph Schumacher, head of marketing and corporate communications at ARBURG GmbH + Co. KG.

Conservation of Resources, Responsibility and Recycling

Arburg will focus on the issues of digitalisation, resource conservation and circular economy at this year's event. The company intends to provide answers to important and pressing questions for the world of plastics processing and usage. "Always with the goal of increasing our customers' production efficiency," says Dr. Christoph Schumacher.

Sandra Füllsack, CEO of motan holding gmbh in Constance, Germany, will above tackle the issue of circular economy at this year's Fakuma. "We'll present new products, as well as optimisations, which contribute to energy efficiency and resource conservation in the field of materials management." Sandra Füllsack refers explicitly to contributions the industry sector can make in the complex area of sustainability: "Responsible use of plastics starts with product design and doesn't end until we finally go full circle at the end of the product's lifecycle. Making it possible to process recyclates and new bio-based or biodegradable materials is the job of mechanical and plant engineering, while at the same time fulfilling the end product's strict quality requirements. There are numerous possible solutions, not all of which involve the material itself or its processing. For example, digitalisation also contributes to the recycling process by furnishing the end product with its material data along its journey through life. It's important to consider the entire value chain in everything we do."

High Levels of Technical Expertise, Direct Practical Relevance, Valuable Visitor Benefits

Exhibitors and expert visitors will be able to engage in technical discussions and exchange ideas in a pleasant and inspiring environment at Fakuma. Dr. Christoph Schumacher stresses the great visitor benefits: "Fakuma visitors benefit from the event's practical orienta-

tion. Attention is not only focused on visionary concepts for the future, but rather on practical solutions as well, which customers can use directly to increase the efficiency of their production lines. Personal contact also plays an important role. The visitors appreciate being able to scrutinise the exhibits live and discuss concrete projects directly on-site."

Fakuma, held by trade fair promoters P. E. Schall GmbH & Co. KG, is the leading trade fair for injection moulding. The internationally distinguished industry event will take place in Friedrichshafen from the 13th through the 17th of October, 2020.

P. E. Schall GmbH & Co. KG
D 72636 Frickenhausen

MEDICA 2020: High rate of repeat bookings confirms acceptance of new hall structure



Global, innovative and focussed – matchmaking along the entire value chain is a central success factor

16th - 19th November 2020: MEDICA 2020 + COMPAMED 2020, Duesseldorf (D)

In Düsseldorf, the planning stage for the world's leading medical trade fair, MEDICA 2020 (16 to 19 November), is well underway. Based on exhibitor registrations, a participation of once again more than 5,500 exhibitors from around 70 nations is to be expected. The booked floor space corresponds to the high level achieved in the previous year, with approx. 114,000 square metres. Registrations for the parallel trade fair for suppliers in the medical technology industry, COMPAMED 2020 (16 to 19 November), have been just as positive, with around 800 exhibitors expected to participate in Halls 8a and 8b at the exhibition centre.

"The high rate of repeat bookings emphasises that exhibitors are satisfied with the events and, with regard to MEDICA, also accept the new, thematic hall structure we implemented last year," explains Wolfram Diener, Operative Managing Director of Mes-

se Düsseldorf. In the course of this concept, the large national and international joint exhibition areas were given more space in Halls 15 to 17. The manufacturers of surgical instruments were moved from Hall 13 to Halls 10 and 11 so that they could be closer to the suppliers of complete OR solutions and imaging processes, given the common ground they share thematically. And for the first time, the MEDICA health IT segment was presented with its exhibitors and highly frequented specialist forums in Hall 13 (previously in Hall 15), linking it directly with the halls dedicated to medical technology and electro-medicine. In keeping with the prevalent digitalisation in care, many innovations are software-driven (increasingly with the use of artificial intelligence) and equipped with the necessary interfaces for secure integration into network structures.

The revised thematic allocation in the

halls, which is aligned with market developments, also does justice to the increasingly important role MEDICA has in supplier matchmaking, as Wolfram Diener emphasises. "Medical suppliers have always been a key target group, and that has not changed. However, MEDICA, in combination with COMPAMED, has become increasingly important in the past years when it comes to business relations between manufacturers and service providers, as the fair is globally aligned and covers the entire value chain including suppliers."

Finding partners for future-oriented projects

Many participating countries at MEDICA rely on just this effect at their joint stands, as Marie Catherine Lundstand of Innovation Norway confirms. "Norwegian companies have always been good at research and development. Now we support them in gaining a foothold in the health sector and ease their entry into the international market." Innovation Norway joined MEDICA for the first time in 2019 (in Hall 15). Based on exhibitor satisfaction, Messe Düsseldorf plans to expand its stand space this year.

Especially young companies can benefit tremendously from participating in MEDICA, as Jörg Dräger, Head of Sales at Werth Systems, an IT company founded in 2016, highlights. "As the world's largest trade fair in the healthcare sector, MEDICA is the ideal starting point to strengthen relations to our international customers in particular and to connect with industrial partners for future projects and partnerships."

In 2019, long-standing company Beurer, a specialist for electrical devices for domestic use, teamed up with start-up 8sense and proved that the combination of established



(Photo: Messe Düsseldorf, Constanze Tillmann)

MEDICA 2020: High rate of repeat bookings confirms acceptance of new hall structure

providers and creative start-ups can achieve ideal results. Together, they presented a smart clip and coaching app to fight back pain at MEDICA. The clip can be attached to the user's shirt or t-shirt and is connected to the smart phone app via Bluetooth. It is then used to execute a precise scan of the wearer's posture and movement. If users remain in one position for too long, the sensor emits gentle vibrations to encourage them to move more and change their sitting position.

"MEDICA offers the best opportunities to present our innovative products in the medical field to a broad audience and to strengthen our markets. Platforms such as this one are particularly inspiring when it comes to exchanging information with customers, suppliers and experts, and are great places to identify fresh impulses for new developments and market trends," says Georg Walkenbach, CEO of Beurer GmbH, summarising good reasons to participate.

Mobile health between the poles of creative solutions and sophisticated approval procedures

In future, we can expect cooperations between start-ups and renowned market players to gain importance. This is especially true for mobile digital health solutions, which are currently trending. "They are successively capturing the first health market. However, we will not be seeing prescriptions for apps until their benefits have been proven in com-

plex procedures, and product approvals and certifications have been completed; a fact that discourages a lot of small companies," explains Dr. Claudio Bucchi, Senior Project Manager and Trend Scout within the MEDICA team at Messe Düsseldorf. "However, if a creative product idea is combined with the approval know-how and marketing power of a large supplier, we have a win-win situation for both sides. This is one reason why the MEDICA START-UP PARK and pitching formats within our forums are widely accepted. They allow us to bring business partners together, who then go on to launch joint projects," says Dr. Bucchi.

Trade fair, forums and conferences

The forums are integrated into the trade fair's thematic segments and this year once again include the MEDICA CONNECTED HEALTHCARE FORUM (which includes the MEDICA App COMPETITION), the MEDICA HEALTH IT FORUM, the MEDICA TECH FORUM, the MEDICA LABMED FORUM as well as the MEDICA ECON FORUM, initiated by Messe Düsseldorf in cooperation with German health insurance company Techniker Krankenkasse (TK).

Focuses of the MEDICA trade fair include: Medical technology and electromedicine (2019: 2,600 exhibitors), commodities and consumables (1,150 exhibitors), laboratory technology and diagnostics (922), physiotherapy and orthopaedic technology (468) and

Health IT/information and communication technology (385).

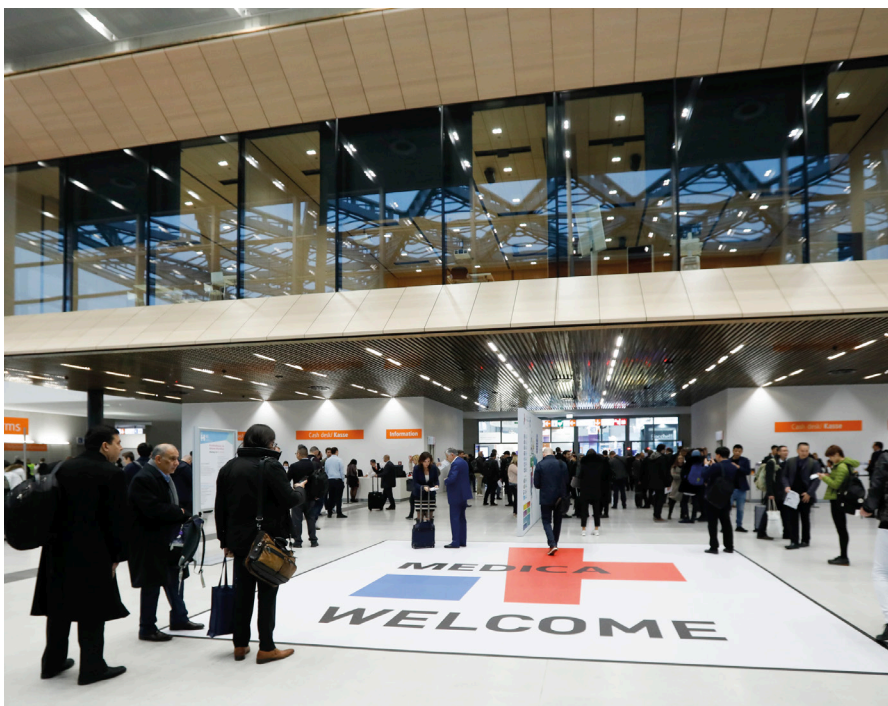
MEDICA's conference programme is aligned with the interests of key target groups and also ensures a content-related connection to the trending topics on the market and at the trade fair. An example of this includes the 43rd German Hospital Day, a leading event for the directors and management of German hospitals that, in addition to current political topics, sheds light on best practices (e.g. digitalisation projects in clinics) as well as aspects of human resource management and financing.

Other examples are the two English-language conferences that address an international audience: DiMiMED, the Conference on Disaster and Military Medicine, and the MEDICA MEDICINE + SPORTS CONFERENCE for the who's who of sports medicine and science.

Providers as key pace setters in the process chain

For professionals looking to stay up-to-date on the developments that drive medical technology in particular and, above all, on how suppliers can provide vital momentum for medical progress as players in upstream stages of development and manufacturing, a visit to COMPAMED 2020 is also well worthwhile. Around 800 exhibitors use the internationally leading market platform in this sector to present their technology and service solutions. Components, microsystem technology, material processing and coating, additive manufacturing/3D printing, manufacturing engineering and machines as well as packaging and services are focal points that are reflected in the programmes of the two integrated forums. Miniaturised components and procedures in the context of digitalisation are currently trends particularly worth mentioning, as they are the key to ultra-precise manufacturing and the foundation for light-weight, portable and interconnected devices.

This globally unique combination means that both MEDICA and COMPAMED will reflect the entire medical technology value and process chains and present a comprehensive range of medical products, devices and instruments. The two trade fairs fill the entire exhibition centre in Düsseldorf (19 halls) and in 2019 drew a total of 121,369 visitors that travelled to the trade fair from around 170 nations.



(Photo: Messe Düsseldorf, Constanze Tillmann)

Tried and tested and versatile – GEMÜ 1436 cPos with new Profinet fieldbus interface

GEMÜ is now expanding its tried and tested GEMÜ 1436 cPos positioner to include additional options in fieldbus environments.

With the new Profinet fieldbus interface, the GEMÜ 1436 cPos positioner achieves a transmission rate up to 8 x higher. However, the option to perform all setting options easily via the fieldbus interface instead of having to enter these locally on the operating unit remains unchanged. In this way, the process data for controlling the valve position is also transmitted digitally. The new fieldbus type with Profinet also offers other practical benefits for the user, such as a more stable connection and additional configuration options.

In addition to the „standard“ versions

with analogue signals (0/4...20 mA) and the already available DeviceNet versions and Profibus DP, the electro-pneumatic positioner is now also available with Profinet, the industrial Ethernet standard, which will increasingly become the established standard in the near future in the automation sector.

GEMÜ is therefore expanding its product range in the area of positioners for pneumatically operated equipment. To achieve the widest range of control tasks, the valve specialist now offers a complete product range of positioners. In doing so, the individual series each have specific features and charac-



Intelligent positioner and integrated process controller
GEMÜ 1436 cPos.

teristics whereby a balance must always be struck between wide-ranging functionality and cost/benefits.

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

GEMÜ globe valves are granted USP Class VI certification

The GEMÜ globe valves 507, 550 and 554 with stainless steel valve bodies and PTFE seals from the valve specialist GEMÜ have been awarded approval in accordance with USP Class VI. They now comply with the prerequisites for application in the medical and pharmaceutical industries.

The U.S. Food and Drug Administration (FDA) divides the plastics used in the medical and pharmaceutical industries into six biocompatibility classes in the American Drugs and Medicines Register (USP). The most stringent of the six categories is the USP Class VI classification. It is the prerequisite for use of the materials in the medical and pharmaceutical industries.

With immediate effect, the GEMÜ globe valves 507, 550 and 554 with PTFE gland packing (GEMÜ code 5P) and stainless steel valve bodies (GEMÜ code 37, 34 or C2) now have certification in accordance with USP Class VI and are therefore approved for use in the medical and pharmaceutical industries.



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

4 in 1 Probe Measures CO₂, Humidity, Temperature and Pressure



The EE872 is suitable for measuring CO₂, humidity, temperature and pressure in demanding environment and also for CO₂ measurement under high humidity.

The EE872 from E+E Elektronik measures the CO₂ concentration up to 5 % (50 000 ppm) as well as relative humidity, temperature and ambient pressure. Additionally, the 4 in 1 probe also calculates the dew point temperature. It is perfectly suited for use in harsh and aggressive environment, such as agricultural applications. The active pressure and temperature compensation ensures a very high CO₂ measuring accuracy. A heated probe version is available for CO₂ measurement in high humidity applications.

For Harsh Environmental Conditions

The CO₂ measurement is based on the pollution-resistant E+E dual wavelength NDIR measuring principle. It automatically compensates for aging effects, which leads to outstanding long-term stability. Thanks to the E+E proprietary coating, the humidity sensing element is suitable even for aggressive and corrosive environment. The robust IP65 stainless steel or polycarbonate enclosure as well as various filter caps optimally protect the sensing module from contamination. The probe is therefore particularly suitable for use in agriculture, for example in life stock barns, hatchers, incubators and green houses.

High Measuring Accuracy

The multi-point CO₂ and temperature factory adjustment ensures high accuracy over the entire working range of -40...60 °C (-40...140 °F). Due to the active pressure and temperature compensation with

on-board sensors, the EE872 offers a particularly high CO₂ measuring accuracy, independent of altitude or environmental conditions.

Heated Probe Version for High Humidity

The heated version of the EE872 can be used especially for CO₂ measurement in high humidity or condensing conditions. The heating prevents condensation on the sensing module, which makes the probe work reliably even in the high humidity range. Additionally to CO₂ and pressure, the heated version provides the dew point temperature.

Easy Service and Configuration

The EE872 has a modular design. The pluggable sensing module can be replaced in just a few seconds without requiring any tools. Also the filter caps (PTFE or catalytic for H₂O₂ sterilization) can be quickly replaced if necessary.

Configuration and adjustment of the EE872 can be easily performed with the free configuration software together with an optional adapter cable.

Analog or with RS485 interface

The CO₂ measured data is available simultaneously on the analogue voltage and current outputs. Depending on the version, the EE872 with RS485 interface also provides the data for relative humidity (RH), temperature (T), pressure (p) or dew point (Td).



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Besides CO₂, the EE872 from E+E Elektronik also measures relative humidity, temperature and ambient pressure. (Photo: E+E Elektronik GmbH)

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