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PLAST® IMAGEN LIGHT

MEXICO 2021

MARCH 9-11

Centro Citibanamex / Mexico City

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PLASTIMAGEN® LIGHT is the most complete and important plastic exhibition in Latin America to meet the needs of industries looking for sustainable solutions.

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smart-molding international 2/2020

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Arburg has responded to the Corona crisis very early on with great prudence and excellent know-how. Thanks to that, the machine manufacturer based in Lossburg considers itself well-positioned for the future after the pandemic, in terms of technology, know-how and organisation: production continues to progress and the development of innovative solutions for injection moulding, industrial additive manufacturing and progress in digitalisation is being driven forward.

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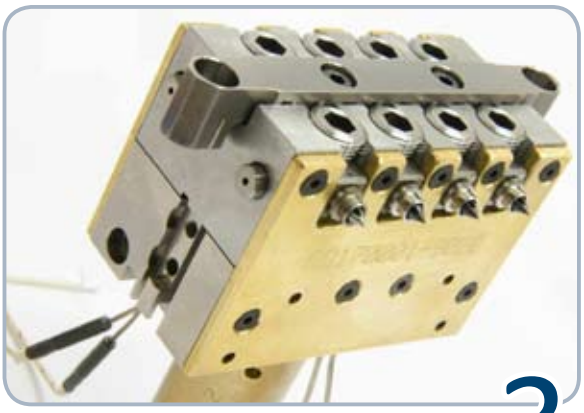
With the introduction of the new biomaterial, the specialty chemicals company Evonik is launching a new product line of next-generation, PEEK-based implant materials that it will market under the brand name VESTAKEEP® Fusion. The osteoconductive properties of the new PEEK material were achieved by using a special functional additive -biphasic calcium phosphate - and allow bone cells to adhere to implants more quickly, thus positively influencing fusion, so called osteointegration, at the boundary between the bone and the implant. This, in turn, will accelerate bone fusion and convalescence.



Thermoplay unveils its new thermal hot-runner nozzle for direct side injection. This new open side-gate TFS hot runner nozzle is available in radial or linear layouts (TFS-Radial and TFS-Linear). The TFS nozzles are particularly suitable for injection molded parts requiring a cosmetic injection point as well as parts for which the optimal injection position is from the side – i.e., at a right angle to the direction that the mold opens. These applications include syringes, caps, tubes, medical sharps, as well as personal care, caps & closures, packaging products, electronic, and technical components.

The new generation of collaborative lightweight robots from FANUC has arrived. After presenting the first prototypes of the CRX-10iA at IREX in Tokyo in December 2019, the company is now bringing the first production units to Europe. The key features of the CRX-10iA are its safety, ease of use and extremely high reliability. If it hits a hard object, the robot automatically backs away from it. Operators can also manually push three axes of the robot away. The smooth and elegant design also provides protection from pinching, making it an ideal partner for production workers.

Thermoplastics with easy-flowing properties are usually somewhat more expensive than comparable standard materials; however, they offer advantages that ultimately pay off in terms of processing, production costs and freedom of design. This can be seen in the highly integrated bolster produced in plastic-metal composite technology (hybrid technology) for the Ford Kuga SUV. In addition to steel panels, the production of the highly loaded structural component includes polyamide 6, the easy-flowing, fiberglass-reinforced Durethan BKV30H2.0EF from LANXESS.

Additive Manufacturing Technologies Ltd, leader in industrial automated post-processing solutions for additive manufacturing (AM), and Leering Hengelo, internationally recognized producer of blasting equipment for the metal and plastics processing industry, have partnered together to bring two new de-powdering systems called PostProDP and PostProDP Pro to the market. The PostProDP range has been specifically designed for the AM industry, and provides a standalone high throughput industrial de-powdering solution.

Postponement did not affect success of the show

Held at the China Import and Export Fair Complex in Guangzhou, SPS – Industrial Automation Fair Guangzhou (SIAF) and the concurrent Asiamold – Guangzhou International Mould & Die Exhibition welcomed 655 exhibitors occupying 40,000 sqm of exhibition space and attracted 50,369 visits. Covering a variety of intelligent industrial automation solutions, mould-making, 3D printing, metalworking, foundry, die-casting, laser and bearing technologies, both fairs presented a one-stop sourcing platform for manufacturing industry players looking to recover and reconnect, following the suspension of numerous global businesses and production lines.

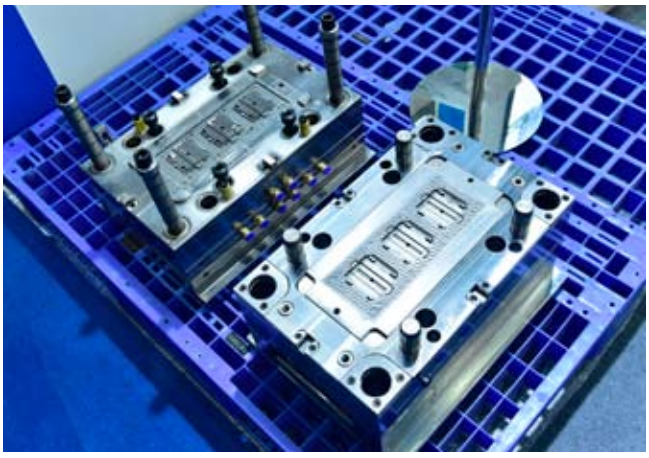
SIAF Guangzhou and Asiamold are the first Guangzhou fairs to be hosted by Messe Frankfurt since the beginning of the year. Both under the smart manufacturing cluster, the fairs served as an important tool for the resumption of business-to-business and in-person interactive events in China. The events were welcomed by the industry who depend on the platform for business exchange, market information and most importantly new found business opportunities brought forth by manufacturers who wishes to upgrade their supply chain with the latest and most innovative automated technologies.

"As large scale events are gradually resuming in China, we are excited to be back to facilitating business interactions for the manufacturing industry, particularly within the South China region. The shows marked the first Guangzhou events to be held by Messe Frankfurt since January, when trade fairs were forced to be postponed due to the global pandemic. We are pleased that SIAF Guangzhou and Asiamold were able to go ahead as planned, offering a trusted one-stop platform for manufacturing industries and helping them resume their normal operations," said Mr Hubert Duh, Chairman of Guangzhou Guangya Messe Frankfurt Co Ltd after the conclusion of the fairs.

Mr Duh added: "The overall positive response from participants has shown that the manufacturing industry is slowly recovering from the economic impact in the first two quarters of this year. Protective gear and other health equipment continue to be in high demand, and Asiamold's new Mould and 3D Printing Epidemic Prevention Technology Display Zone, among various other thematic zones, proved to be popular. To further support the Chinese government's new infrastructure and manufacturing development initiatives, this new zone along with other smart manufacturing solutions on display have reconfirmed strong business potential for exhibitors at the fairs."

"With SIAF Guangzhou and Asiamold 2020 successfully concluded, we look forward to preparing the 2021 editions on 3 – 5 March to further reactivate and reconnect international exhibitors and visitors once air travel becomes more accessible so they are able to participate," Mr Duh concluded.

Asiamold
www.asiamoldchina.com



Course Charted for K 2022

The first meeting of the exhibitors' advisory board marked the kick-off to the next 'K' in Düsseldorf to be held from 19 to 26 October 2022. The body of experts has met now to chart the course for the most important trade fair for the plastics and rubber industries worldwide and to enter into the concrete planning stage. The exhibitors' advisory board supports Messe Düsseldorf in the preparations for 'K 2022' and provides consulting on basic conceptual and organisational issues. Here particular attention is paid to considering current developments as well as to the global economy and the discussion of forward-looking trends and technologies.

The advisory board of 'K 2022' is composed of representatives from the exhibiting industries and leading trade associations. It mirrors the complete spectrum of ranges represented at 'K' in Düsseldorf, mechanical and plant engineering, raw and auxiliary materials as well as semi-finished products, technical parts and reinforced plastic products.

left to right: Erhard Wienkamp (Managing Director Operative Trade Fair Business), Petra Cullmann (Executive Director Operative Trade Fair Business), Ulrich Reifenhäuser (Chairman exhibitors' advisory board) and Thomas Franken (Project Director for the Portfolio Plastics & Rubber)

Acting as the Chairman for the exhibitors' advisory board again will be Ulrich Reifenhäuser, Managing Partner of the mechanical engineering company of the same name and Chairman of VDMA's Plastics and Rubber Machinery Association. The communications committee of 'K 2022' will be headed by Thorsten Kühmann, Managing Director of VDMA's Plastics and Rubber Machinery Association.

'K' in Düsseldorf is the most relevant global meeting point for the plastics and rubber industries bringing together exhibitors and trade visitors from all over the world every three years. There is no other trade fair allowing such a broad-based array of developments, solutions and trends to be experienced in a direct, international comparison and no other offering the opportunity to discuss these with experts in this way. The diversity and international origin of the companies ensure that such topical issues in the sector as digitalisation and the circular economy are addressed in as great a depth as the special segments.

In 2022 the world's leading suppliers of products and services from the plastics and rubber industries will again be expected as exhibitors. The invitations to exhibitors will be sent out in early 2021.

At Messe Düsseldorf responsibilities have changed over the past few months but the familiar faces will be around for 'K' in Düsseldorf: Erhard Wienkamp, acting as an Executive Director at Messe Düsseldorf since 2002, was appointed Managing Director of Operative Trade Fair Business at Messe Düsseldorf in late 2019. Petra Cullmann took office as a new Executive Director in July 2020 and therefore forms part of the Board of Managing Directors at Messe Düsseldorf. The position of Project Director for the Portfolio Plastics & Rubber was filled by Thomas Franken who is also thoroughly familiar with the industry as a long-standing member of the K Team.

Messe Dueseldorf
www.k-online.com

Formnext Connect succeeds as the digital heart of the international AM industry

From 10-12 November 2020, Formnext Connect demonstrated its credentials as the international, digital hub of the AM world, highlighting, even in challenging times, the continuing importance of the world's leading exhibition for the AM industry and the next generation of industrial production.

Formnext Connect attracted 203 exhibitors with about 2200 representatives, and showcased 1412 products. 8541 active participants from more than 100 nations (1/3 national, 2/3 international) made great use of the intelligent and modern matchmaking function, which managed to generate more than 450000 recommendations for products and other participants. Further, 23311 new contacts and 4733 business meetings in the form of video calls were enabled. The 221 lectures and presentations of the high-profile program of stage events and sessions were watched by 45000 spectators. Here, experts from all over the world discussed current and future trends, developments and applications in various webinars and discussion panels.

With international product launches, amongst them numerous new materials, a SLM machine with 12 lasers as well as post-processing solutions for finishing, depowdering and curing and exciting new developments on show, Formnext Connect demonstrated that the AM industry remains highly innovative, even in this year of corona, and urgently needs an international platform for business opportunities and networking. "The newly developed digital format of Formnext Connect has enabled us to meet the demand from the AM community and target industries for dialog, business, and innovation," commented Sascha F. Wenzler, Vice President Formnext at Mesago Messe Frankfurt GmbH. "Formnext has thus demonstrated that, even in a purely digital format, it is indispensable as a globally important catalyst for the technological and economic development of this future-oriented industry."

Following the conclusion of the live Formnext Connect program, the platform will continue to be accessible until 31 December 2020 and will still offer opportunities to engage with others via text-chat as well as a wealth of on-demand content.

Formnext 2021 is scheduled to return to Frankfurt am Main from 16 to 19 November 2021.

Formnext
www.formnext.com

PLASTIMAGEN® announces new dates and launches digital extension

PLASTIMAGEN® MÉXICO in its full version, will be held in March 2022 at the Centro Citibanamex in Mexico City, Mexico. However, given the current pent-up demand amongst exhibitors and the pressing need to support the re-opening of the plastics industry, Tarsus Mexico will also host PLASTIMAGEN® LIGHT, a hybrid exhibition from 9-11 March, 2021 in the same venue. PLASTIMAGEN® LIGHT will comprise both a live, in-person component as well as a digital component for visitors and exhibitors who may be unable to travel to Mexico City due to the current health situation.

The decision to launch PLASTIMAGEN® LIGHT came about from results of extensive surveys to the event's customer base and feedback from association partners. Taking their combined voices into account, Tarsus Mexico made the decision that best reflected the needs of the industry, while recognizing the power of

face-to-face interaction for the successful generation of sales and developing commercial relationships, allowing for the continuation of promoting the plastics industry while adjusting to the dynamic needs of all companies involved.

"This new hybrid event is the result of a thorough survey and evaluation with exhibitors and with the main players in the plastics sector, including the members of the ANIPAC Board. PLASTIMAGEN® LIGHT will display different solutions, services and innovations for the plastics industry in the face of this global health pandemic and resulting travel restrictions", said José Navarro, Director General of Tarsus Mexico.

PLASTIMAGEN® LIGHT will be held as a hybrid event with the full support of ANIPAC, featuring a concentrated physical floor plan along with a robust digital platform enabling both domestic and international exhibitors to choose their preferred format to interact and promote their solutions with potential buyers and partners before, during, and after the event.

"The National Association of Plastic Industries (ANIPAC) welcomes PLASTIMAGEN® LIGHT 2021, an event that responds to today´s reality and supports the business opportunities that the plastics industry requires. PLASTIMAGEN® is the forum that the plastics industry in Mexico needs to restart business in 2021 and we are ready to be present at the event", said Aldimir Torres, President of ANIPAC.

Tarsus Mexico will continue to actively monitor the ongoing health and safety situation worldwide. In addition, the event team will be focused on implementing all necessary measures and protocols to safeguard the well-being of both national and international communities. As organizers of Mexico's leading events, Tarsus Mexico's highest priority is to organize safe, healthy, and effective exhibitions for the industries the business serves.

PLASTIMAGEN®
www.plastimagen.com.mx

Husky appoints Tony Black to lead Customer Success Management organization

Husky Injection Molding Systems appointed Tony Black to the position of President, Customer Success Management (CSM). Mr. Black joins Husky's senior leadership team leading the company's global CSM organization.

"Since forming our consolidated CSM organization in 2017, our goal has been to provide the industry's most exceptional service and support to help customers elevate their Husky investments, as well as protect and improve their bottom lines," said John Galt, Husky's President and CEO. "I am excited to have Tony join our team and am confident he has the experience, skills and expertise to take our CSM organization to the next level, especially as we move to accelerate development innovation around evolving consumer and market demands."

"Husky is a company with a strong team clearly dedicated to providing the industry's most responsive and effective customer service and support," said Tony Black. "The organization is poised for innovative change and I look forward to applying my existing knowledge to help strengthen our capability to deliver proactive, optimized support to all customers around the world."

Mr. Black brings more than 25 years of experience in global business development and operations and has a record of accomplishment for consistently improving customer satisfaction and service-oriented performance. Prior to joining Husky, he was most recently Vice President Service Business for Otis Elevators, a large multi-national organization where his accomplishments include developing and deploying a service transformation strategy and establishing best practice sales and field processes to improve the customer experience. Mr. Black holds a Master of Business Administration from the University of Virginia Darden School of Business and a Bachelor of Science degree from Florida Atlantic University.

Tony Black, President, Customer Success Management

Husky
www.husky.co

Professor Helmar Franz resigned as a member of the Haitian Iternational board

Professor h.c. mult. Helmar Franz has resigned as Member of the Board of Haitian International Holdings Ltd. He joined the Haitian Group as Executive Vice President Strategic Business Development in 2005 and after the listing of Haitian International Holdings Ltd. at the Stock Exchange in Hong Kong for a total of 13 years he acted as Member on the Board, including as Chief Strategy Officer and most recently as Non-Executive Director.

With his 48 years of experience, Professor Franz is a respected personality in the plastics industry. Thanks to his exceptionally high level of industry expertise and his profound sense of trends, he has contributed significantly to the strategic growth of Haitian International. Now, at the age of 70, the visionary and deserving strategist has handed over one of his areas of responsibility to the new generation of managers.

At the same time as Prof. Franz, other directors left the Board of Directors, the Board of Haitian International was intentional reduced in size, also in order to be able to operate more efficiently. In addition, various management tasks are being innovatively and newly structured in the course of digitalization. Professor Franz will continue to support the new generation with his experience as Chairman of the Strategy Development Committee – a Board of experienced managers.

Mr. Zhang Jianming, Chief Executive Officer of Haitian International: "Professor Franz has played a key role in the strategic development of our company and is one of the major contributors to our success today. On behalf of the entire Board of Haitian International, I would like to thank him most sincerely for his dedication and look forward to receiving his creative and valuable input as part of our Strategic Development Committee".

Professor Helmar Franz

Haitian International
www.haitianinter.com

DESMA makes personnel adjustments and investments to secure the future

Since the beginning of 2019, the injection moulding machine manufacturer DESMA has already been experiencing the economic downturn, especially in the automotive industry, at increasing intensity and pace. For this reason, and additionally increased by the effects of the corona crisis, DESMA will cut 48 of the 281 jobs at its Fridingen location during the rest of this year. Of these, 16 jobs will be cut due to natural fluctuation.

The establishment of a transfer company financed by DESMA for further qualification and outplacement enables the 32 employees to separate from DESMA in a socially acceptable way, especially in these difficult times. This measure is part of the ‚Resilience' project meant to reorganise the company and complements the short-time working, which has already been ongoing since last September, the voluntary salary waiver of all executives and the extensive process cost optimization measures initiated.

"While preparing and implementing this personnel adjustment we prudently and responsibly keep a close eye on the future, not only for those employees who continue to be employed, but equally for those who have been participating in the company's growth so far and are now leaving. We are also continuing the significant investment in the SAP project for the standardization of the business processes encompassing the 5 international DESMA locations", reported Managing Director Martin Schürmann on the occasion of the works meeting already held on 11 May via internet conference. His colleague, Dr. Harald Zebedin, in charge of technology, added that the focus of development is on new products that are currently being built to secure the future of the company.

The DESMA company group operating at 5 international locations will, according to corporate planning, employ a staff of 517 worldwide at the end of the year, 233 of them in Fridingen. Due to the current situation, the company is unable to make a sales forecast for the current fiscal year. DESMA is the market leader in the production of injection moulding machines used for the manufacture of demanding technical silicone and rubber articles used, for example, in the automotive, electrical and medical engineering industries.

DESMA
www.desma.biz

Bonnie Tully named President Evonik Corporation

Bonnie Tully has been named President of Evonik Corporation, effective June 1. As president of Evonik Corporation, Tully is responsible for the North America region, which recorded sales of €3 billion in fiscal 2019.

Tully replaces John Rolando, who is retiring after 33 years with Evonik and its predecessor companies. Prior to becoming president, Bonnie was chief financial officer of the North America region.

"Bonnie Tully's leadership skills and broad experience within the organization make her the right person to head the North American region as we continue to position Evonik as a world-leading specialty chemical company driven by innovation and sustainability," said Ute Wolf, Chief Financial Officer and member of the Executive Board of Evonik Industries AG who is responsible for North America. "I also want to thank John Rolando for his efforts in leading the region through tremendous growth and helping transform Evonik's portfolio and culture into the best-in-class organization we know today."

Tully began her career with Rohm & Haas as project engineer in 1996. Between 1998 and 2006 she worked as materials manager and technical manager at Evonik Oil Additives (Rohmax) in Houston, Texas. She subsequently transferred to Singapore to work as plant manager for Oil Additives supporting the Asia-Pacific region. In 2011, Tully became the head of Site Service in Mobile, Ala., Evonik's largest site in North America, with more than 800 employees.

Bonnie Tully, President Evonik Corporation

Tully holds a bachelor's degree in mechanical engineering from Texas A&M University.

Evonik
www.evonik.com

Anniversary machine: KraussMaffei delivers 100th injection molding machine to Polycom

With the 100th injection molding machine, KraussMaffei is delivering a special machine to a special customer – Polycom, a family-run company founded 35 years ago by two brothers, which has established itself as a leading plastic processor for the automotive component supplier industry. The all-electric PX 50-55 with the special paint is part of the modern smart production at the new location in Dobje, Poljane nad Skofjo Loko/Slovenia.

"We have been benefiting from the innovative products and the tailored service provided by KraussMaffei for decades. We are now delighted with the 100th injection molding machine from our long-term partner," explains Iztok Stanonik, founder and Chairman of the Management Board of Polycom. "This is a powerful symbol both for our good cooperation with KraussMaffei and its Slovenian agency KMS, and for the sustained growth of our company, adds Igor Stanonik, Member of the Management Board.

KraussMaffei delivered the first injection molding machine to Polycom 25 years ago. The new all-electric PX 50-55 (clamping force 500 kN) now supports the modern production at the new location in Dobje, which was built in 2017. With its portfolio, Polycom serves above all the automotive component supplier industry, and increasingly also other branches of industry. The focus is on smart produc-

Anniversary machine in special design: Polycom owners Igor and Iztok Stanonik, CEO Iztok Novak and KraussMaffei VP Sales EMEA Tobias Daniel at the ceremonial handover of the 100th injection molding machine (left to right). Photo: KraussMaffei

tion, transparency and the tracking of data throughout the entire process, in order to meet the increasingly high quality requirements. It is therefore all the more important that the injection molding machines produce precisely and reliably. In addition to the proven machine function APC plus (Adaptive Process Control), the new PX 50-55 also has the DataXplorer, a data analysis tool which records at least 500 and up to 800 signals every 5 ms as absolute values and curve progressions, depending on the configuration, and thus comprehensively documents the production processes. In event of service cases, the new service app provides virtual and rapid support via smartphone or tablet, thus ensuring continuous production.

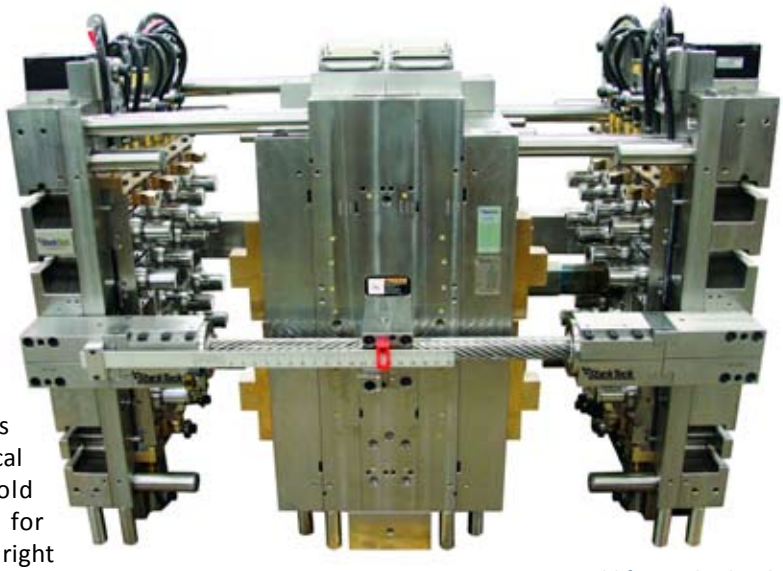
"Digitalization, smart production and rapid connection to the Euromap 63 are important components of our company and growth strategy. We will therefore invest here in a targeted manner in future," said Igor Stanonik. And the next investment wasn't long in coming: In the course of the ceremonial handover of the 100th anniversary machine, Polycom ordered four more injection molding machines from KraussMaffei.

KraussMaffei
www.kraussmaffei.com

Medical high-volume molds in demand for 2020

StackTeck Systems Ltd. (Brampton, Ontario, Canada), has been responding to market demands for high volume injection molds for medical applications. According to Jordan Robertson, VP Business Development & Marketing: “Never before have we seen such a wave of inquiries for high volume medical applications. These are big projects that have arisen very suddenly, driven by the new demands of the COVID-19 pandemic, and typically with challenging lead time requirements.”

StackTeck offers broad experience in the medical area, offering solutions for medical disposable items, labware, testing and diagnostic plastic components. In many cases, these components are very intricate requiring complex mold ejection sequences and/or designs, as well as quality optical finishes. Stack mold technology allows for the creation of the right medical solution using it in combination with any other applicable technologies that are part of StackTeck’s offerings: multi-material, collapsing core, servo unscrewing, and quick product change as well as in-mold functions such as in-mold closing (IMC) for flip top closures.



2×16 mold for medical vial

Medical parts needed in high volumes

Now more than ever, high volume molding technology is proving to be the most efficient and cost-effective way to reach high levels of productivity using:

— advanced cooling designs for optimal cycle times;

— specialty hot runners for tight pitches to maximize cavitation;

— stack molds to increase productivity of each injection molding machine.

Stack mold designs have evolved to successfully fill the needs of a wide variety of injection molding medical applications. As the need for high production volumes are climbing, there may never have been a better time to review the present-day features and capabilities of stack mold technology.

StackTeck
www.stackteck.com

Sumitomo (SHI) Demag modernises production logistics and training centre

Since 2016, Sumitomo (SHI) Demag Plastics Machinery has invested almost EUR 20 million in modernising facilities and equipment at its two German sites in Schwaig and Wiehe. On 29 June 2020, a groundbreaking ceremony was held to mark the next project phase within the growth strategy of the Japanese-German injection moulding machinery manufacturer: the construction of a new lightweight warehouse with 1,600 m2 of floor space in Schwaig.

"The optimisation of our internal logistics is the logical consequence of the capacity expansion and modernisation of production. We can further increase production efficiency and throughput times and achieve faster delivery times," says CEO Gerd Liebig.

The new hall location enables a direct material flow from goods receipt and the dispatch loading zone to production. Future plant expansions have also been accounted for in the planning of the building. Notably, the new hall houses the central collection point for production waste in order to make sorting, disposal and recycling even more efficient.

Expansion of training centre completed

The expansion and modernisation of the training centre in Schwaig is now also completed. Doubling capacity for customer training, the expansion of new training rooms provides direct connection to the applications technology department. As a result, the company's training team has expanded to eight team members, providing training in machine technology, application technology and robotics. The rooms are equipped with the latest media technology, including digital boards with touchback function and an online studio, which enables course participants from all over the world to benefit from professional online training.

Ground-breaking ceremony for the construction of the new warehouse at Sumitomo (SHI) Demag location, Schwaig; Dr. Thorsten Thümen (Senior Director Technology), Shoichi Ohira (COO), Gerd Liebig (CEO), Robert Josephus (1st Chairman of Works Council), Martin Fischer (General Manager Operations & Supply Chain) (f.l.t.r.)

"With our modular training concepts and the worldwide integration of training material, our solutions can be used in an even more target-oriented and efficient way," explains Liebig.

"We can now tailor the training courses to suit individual needs. As a result, customers are more readily prepared and can immediately utilise the competitive advantages of new machinery and application technologies from the start. Thanks to modern media technology, we now offer efficient online training which reduces the time people need to allocate to professional skills development and performing practical exercises," adds Dr. Thorsten Thümen, Senior Director Technology at Sumitomo (SHI) Demag.

Sumitomo (SHI) Demag
www.sumitomo-shi-demag.eu

Ultramid® for high-quality surfaces in the car interior

Numerous trends are influencing the automotive industry: automated driving, electromobility, sustainability, lightweight construction, energy efficiency. In addition, the interior is getting into the focus by designers and developers. The transformation into a feel-good space on four wheels is increasing very fast. The haptics and visual appearance of components are becoming even more important. BASF is presenting innovative materials for premium and appealing surfaces to give the interior a distinctive look.

After the successful market launch in 2017 of Ultramid® Deep Gloss, a special polyamide for durable high-gloss trim parts, a new generation of surface-improved structural materials is now following with Ultramid® B3E2G6 SI BK23353 and Ultramid® B3E2G10 SI BK23353. The glass fiber reinforced types based on polyamide 6 impress with very low emission values and good UV stability and are therefore ideally suited for the use in functional visible parts in the interior.

"With the newly developed SI grades for functional parts in the car interior with premium surface quality, we are offering a new solution to the existing portfolio," explains Rainer Xalter, product developer in

the Performance Materials division at BASF. “Structural components with plain, matt and textured surfaces can be produced in just one process step. An additional painting of the component to upgrade the surface is not necessary." Visible fiber turbulences, which are commonly observed on surfaces of standard types, are largely suppressed by the new SI grades. Due to the variable glass fiber reinforcement, parts with medium to very high stiffness can be manufactured.

Numerous applications are possible with the new material

Ultramid® B3E2G6 SI BK23353 and Ultramid® B3E2G10 SI BK23353 are therefore suitable for air ventilation lamellas, steering column levers, armrests, cup holders or even door handles. The good intrinsic material properties of Ultramid® enable high long-term use characteristics. In addition, the new materials are insensitive to commercially available cleaning agents. An important property with regard to the increasing popularity of "shared mobility", which requires frequent professional cleaning of the interior.

“Thanks to our expertise in research and development, we can cover the increasing demand for versatile materials for the interior and support the trends towards more design and atmosphere in the car. Since the demands of designers and automobile manufacturers are constantly growing, we try to provide the right solution for every application with our products,” adds Ragnar Stoll, Interior Marketing Manager in the Performance Materials division at BASF.

BASF
www.basf.com

DAHL Automation becomes member of the HAHN Group

Effective March 27, 2020, DAHL Automation GmbH became part of HAHN Group GmbH. DAHL Automation is an integrator for robotics, cobots, as well as AMR (Autonomous Mobile Robot) and AGV (Automated Guided Vehicle). 30 employees are currently employed at the headquarters in Meinerzhagen, Germany. The company has extensive experience in the development of products and solutions with cobots, grippers, image processing systems and standardized training cells. With its expertise in the field of robotics and intralogistics projects, DAHL Automation is expanding the HAHN Group's portfolio.

Detlev Dahl, founder and managing director of DAHL Automation, will continue to lead the company. "We are delighted to be joining the HAHN Group as a strong, long-term partner," explains Dahl. “The combination of international orientation and proximity to the customer is very promising for us. We look forward to expanding our range of services together with the sister companies in the HAHN Group, as well as opening up new industries and markets."

"DAHL Automation is a pioneer in the field of collaborative robotics and has established itself with well-known customers, providing innovative automation solutions. The company’s its expertise fits perfectly into the HAHN Group portfolio," comments Thomas Hähn, founder and CEO of the HAHN Group. "With the solutions from DAHL Automation, harmonious teams of people and robots can be created in the long term. This ensures better production conditions and offers specialists the opportunity to develop their full potential in demanding areas of activity."

HAHN Group
www.hahn.group

Increased clamping force for the largest BOY-Insert moulding machine

BOY - specialist of injection moulding machines up to 1250 kN clamping force - has modified its largest vertical injection moulding machine. At the end of this year the insert moulding machine with 600 kN clamping force instead of the previous 550 kN, will be available.

"The increased clamping force is initially only available for the BOY 60 EVV with injection unit SP 215 (maximum stroke volume of 166.3 cm3)" explains Martin Kaiser, Head of Mechanical Design at BOY. In a further step the three smaller injection units SP 56, SP 69 and SP 82 will also be readily available for this model according to his announcement. Overmoulding of insert components of different sizes is easily possible with a total of eight different screw diameters.

Like all BOY insert moulding machines, the 4-tie bar BOY 60 E VV scores, particularly with the fixed lower plate, an ergonomically favourable table height of 975 mm and optimal access to the mould from all four sides. Compact dimensions of 3.21 m² and plenty of space on the rear machine frame for peripheral devices and accessory equipment guarantee a wide range of integration options for automation devices. An energy-efficient servo drive and the high-end control Procan ALPHA are standards of the BOY 60 E VV. The energy-efficient plasticizing unit BOY-EconPlast is available as an option starting from a screw diameter of 18 mm.

Dr. Boy
www.dr-boy.de

New virtual FAT from GEFIT

In this recovery phase after the emergency caused by the COVID-19 virus, before everything returns as before, it's necessary to find out new solutions to meet the new needs caused by the pandemic.

For this reason GEFIT successfully finalized its first online factory acceptance testing (FAT). By using cameras and permanent connection, customers have been able to actively participate in the FAT of an index assembly machine, remaining constantly in audio visual contact with GEFIT engineers working at their plant.

Customers just had to download an app on their devices and then follow all operations on the machine in real time, being also able to interact directly and ask our technicians for specific interventions.

This way it has been possible to monitor the performances and communicate with GEFIT team in real time, with a complete remote interaction and without any impact on the previously agreed time schedules for the machine delivery.

A successful experience that will be also extended for the testing of moulds, until the situation gets finally back to normal.

And that's not all! Thanks to the use of special smart glasses equipped with wearable headset, a new frontier will be torn down: GEFIT will be able to provide customers from all over the world with an innovative remote assistance service, complete with audio and video, that makes the operators on site completely free to move and put the received indications into practice.

GEFIT
www.gefit.com

Virtual FAT and SAT ensuring continuity for SACMI customers worldwide

Remote factory acceptance tests and the ability to provide a true remote start-up service (SAT - site acceptance test), ensuring customers maximise the opportunities provided by 4.0 technology and our expertise, wherever they are. SACMI, then, is leading the re-opening of international markets by providing customers with close support worldwide.

Sensors, cameras and virtual reality have taken remote plant acceptance tests (FAT, factory acceptance test) out of the realms of science fiction... and into the real world! With several contracts already signed across a range of businesses and industries, this is a field in which SACMI leads the way as it seeks to eliminate the distance separating customer and supplier.

During acceptance tests, the customer experience is 'total': audio-visual links and real-time data extraction from machines allow for streamlined interaction with guaranteed results and optimal customer satisfaction. SACMI, after standing shoulder to shoulder with customers all over the world since the earliest stages of the emergency, has now proven it's ready for the post-COVID phase, when virtual assistance will be an increasingly essential element during the design, start-up and after-sale assistance phases.

This epochal challenge – the remote start-up of a complete, automated line - extends beyond the SACMI factory acceptance test to include the subsequent SAT, a delicate, complex phase that includes assembly of the machines at the customer's facility, followed by their start-up and testing. Thanks to the widespread diffusion of new 4.0 technologies, training local technicians step-by-step to assemble individual components and guiding personnel - who may not necessarily be trained to manage a certain type of machine - as they start up new lines is taking assistance to a whole new level.

Following several successful test completions with leading international customers in recent weeks, the remote start-up of complete, highly automated lines has taken on the form of a structured package of solutions and procedures. SACMI provides such packages for both customers who take delivery of plants in situ (SACMI machines and plants requiring assembly and start-up) and, more generally, customers who, in this new scenario, make new investments where they can rely on a sole provider capable of 'virtualising' every single stage of supply (shipping, assembly, start-up and testing) with guaranteed results.

This strategy is underpinned by the partnership principle, which lets SACMI work with customers to meet shared challenges. It has ensured that customer investments in new machines and plants (equipped with cutting-edge sensors capable of inter-communicating and interacting with the remote assistance platform) have, in recent years, yielded outstanding returns. Moreover, customers can also count on advanced virtual reality assistance packages, provided by the SACMI Customer Service Division; these are constantly being upgraded to ensure the highest levels of innovation.

SACMI's successful completion of the first fully remote SATs in the field has sent the market a clear message: the way forward is to work together on the best practices needed to accelerate the re-opening of industry and bring our expertise directly to the customer’s premises.

SACMI
www.sacmi.com

Dyemansion raises $14M to drive the transformation of manufacturing

Philipp Kramer, CTO & Co-founder DyeMansion GmbH and Felix Ewald, CEO & Co-founder . DyeMansion GmbH

The COVID-19 pandemic showed in almost any industry that traditional supply chains are under pressure and many even failed. Digital manufacturing got into the spotlight as a solution for that. This is certainly one reason why the Munich-based tech company DyeMansion secured $14M funding even in times like these from new and existing investors, who support their mission. The new funds raise the company's total funding to $24M.

To make 3D-printed products a part of our everyday life, there are still some challenges to overcome. The industrial and automated post-processing of 3D-printed parts is one of the key drivers on this journey. With its unique three-step Print-to-Product workflow, DyeMansion helps users of industrial 3D-printing to turn their raw plastic parts into high-value products. Its high-end post-processing equipment is used by over 600 customers worldwide including companies like BMW, Daimler, Under Armour, or Jabil. With 46 production and sales partners worldwide, DyeMansion has recently launched the world's largest post-processing platform for industrial 3D-printing and is leading post-processing in terms of finishing quality, automation and industrialization.

"We are super happy to have Nordic Alpha Partners on board for our growth journey. They are a perfect fit for the current phase we are in with DyeMansion. Their unique approach and expertise will help us to further strengthen our position as a global industrial leader. It makes us proud that all our existing investors are continuing with their support as well. This will help us and our customers worldwide to drive the transformation of manufacturing to digital production and the factory of the future," tells Felix, CEO & co-founder of DyeMansion.

The new funds will be used to speed up the shift to digital manufacturing in all matters. On the organizational side, the funding will further strengthen DyeMansion's global presence and fulfillment capabilities via new demo facilities, regional application consultants and commercial business infrastructures. The aim: Enabling global accounts, local customers and partners to get started with 3D-printing or move to the next level of serial manufacturing with their application and factories almost anywhere.

"At Nordic Alpha Partners (NAP) we strive to invest in the technology leaders spearheading the industrial transformation, but it is rare that we come across a company like DyeMansion that is not only clear category leader, but with a position that is truly accelerating the transformation," states Laurits Bach Sørensen, Value-Creation Partner at NAP and he is followed by Rasmus Lund, Investment Partner at NAP "Great companies can always get funding and furthermore we believe that Covid-19 will be an accelerator of the 3D-print adoption, so we are thrilled that the management team and the other investors both embraced NAP's value creation model and allowed us to join DyeMansion's mission."

Chief Venture Officer of AM Ventures, Arno Held, states: "We at AM Ventures are very proud to have been part of the DyeMansion success story from the very beginning. 6 years ago, we jointly realized the great potential of post-processing 3D-printed parts. Since then, this unique team has not only created its own segment within the AM industry. DyeMansion has unlocked the gate to colorful and aesthetic 3D printed applications in numerous verticals with manufacturing volumes beyond imagination."

DyeMansion
dyemansion.com

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www.smart-molding.com

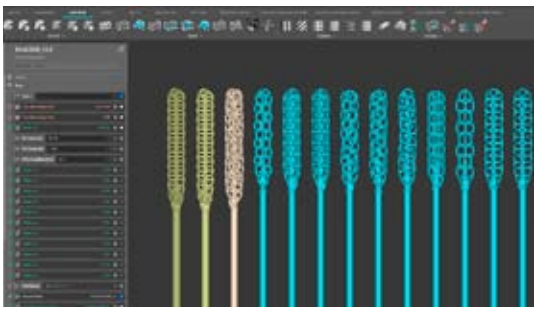
Henkel and Origin collaborate to help meet demand for COVID-19 NP swabs

With the onset of the COVID-19 pandemic, the demand for medical supplies, including testing kits has outpaced supply. The primary protocol involves conducting a nasopharyngeal (NP) swab test, which collects viral material from inside a person's nasal cavity. Globally, there are very few companies that manufacture the swabs commercially, and all are overwhelmed with demand. In collaboration with Origin, Henkel is leveraging its ability to carry out biocompatibility and robust mechanical testing at its facility in Concord, California, and has provided a range of 3D printable medical photopolymers designed for use on Origin's material development systems.

Traditionally, the swabs are made from multiple materials and adjoined prior to sterilization and packaging. Working cooperatively with Origin, Henkel supplied knowledge and technology to help design a swab that could be 3D printed at scale.

"From inception, the vision behind Henkel's Open Materials Platform was to enable collaboration all along additive manufacturing's value chain," says Ken Kisner, Head of Innovation - 3D Printing at Henkel. "Working together with Origin, we were able to develop a product which is very effective as its mass-produced counterparts. With the constraints commercial medical suppliers are facing, this presents a significant opportunity for the 3D printing industry to demonstrate its capabilities, beyond prototyping."

Several iterations of an intricate lattice designs were evaluated that would act like a brush to collect adequate samples needed for COVID-19 testing



Origin's programmable photo polymerization (P3) technology enabled the company to test different materials, print parameters, and designs in parallel to find an optimal solution in just a few days. The final clinically validated swab utilizes an intricate lattice design to collect the virus sample. It balances patient comfort with the ability to collect a reliable and sufficient sample.

The development effort also leveraged Henkel's Albert software platform, which accelerates the innovation of new products by determining the materials that are utilized. With its ability to access Loctite's vast material and post-processing knowledge and data, Albert allowed Henkel to recommend the best performing material for the NP swab application.

"Nasal swabs are actually very complex instruments," says Nick Talken, CTO of Albert Software at Henkel. "The head of the swab utilizes a detailed lattice structure that's designed to maximize the amount of virus collected. The whole thing has to be flexible and strong, not to mention safe for medical use. With the help of Henkel's Albert Software, we were able to quickly match the best Loctite material for this specific application."

Leading the effort, Origin also collaborated with Beth Israel Deaconess Medical Center (BIDMC) on the swab's development. BIDMC conducted a rigorous initial clinical evaluation for human factors, materials testing and ensured that the final product would be compatible with the polymerase chain reaction (PCR) method that is used in laboratories to test for COVID-19.

"By working collaboratively and utilizing each other's technologies, we identified, optimized and scaled the manufacturing process to bring an application to market extremely fast," says Chris Prucha, Founder and CEO at Origin.

Origin's NP swab is classified as a sterile device and is considered a finished medical product. This means it must adhere to "current good manufacturing practices" (cGMP) which are regulations enforced by the FDA and documented in the Code of Federal Regulations (title 21, part 820.) Both Henkel and Origin collaborated to conduct testing and validate each step in the sterilization process, which includes Ethylene Oxide (EtO) and autoclave sterilization. They also performed mechanical testing and intensive packaging validation which determined the product's FDA compliant shelf life. smi

Henkel
www.henkel.com
Origin
www.origin.io

Compact, flexible, cost-effective

In October 2020, ENGEL is presenting the next generation of its all-electric e-mac injection moulding machine series in a challenging application for the manufacture of pipette tips. Offering maximum flexibility for individual customer requirements, the e-mac is now even more compact.

The now even more compact, all-electric ENGEL e-mac machines are exclusively equipped with particularly powerful servo-motors for optimum overall efficiency.

The quality of pipette tips largely depends on the precision of the injection process. At the same time, the long cores in the mould require absolutely precise movements of the mould mounting platens during opening and closing. All-electric injection moulding machines are therefore the preferred solution in this application segment, where cost-effectiveness is a decisive factor in choosing a machine. In the form of the e-mac, ENGEL has an all-electric injection moulding machine in its portfolio that combines high output and energy efficiency with an extremely compact machine design, ensuring the lowest possible unit costs even in a clean-room environment. ENGEL has now reduced the footprint of the e-mac machines even further. Thanks to an optimised toggle lever geometry, the e-mac 265/180 presented for market launch is 450 mm shorter than the previous 180-ton version, without reducing the opening stroke. Among the all-electric machines on the market, the e-mac machines of the new gener-ation are the most compact worldwide in their respective performance segment across the entire series.

All movements of the ENGEL e-mac – including the nozzle movement and ejection – are performed by servo-electric drives. This means that the machine achieves very high overall efficiency. If required, a servo-hydraulic unit can be integrated into the machine frame without requiring additional space.

The ENGEL e-mac injection unit was developed from scratch with a focus on even better dynamics. It is available in three performance classes. As a result, the machine can be precisely adapted to requirements in order to achieve the highest overall efficiency for the widest variety of applications.

Fully automated on the smallest footprint

The e-mac 180 is demonstrating the performance of the next generation machine with the production of pipette tips made of polypropylene in a 64-cavity precision mould by Tanner (Feuerthalen, Switzerland). The cycle time is six seconds, which is exactly the range in which the e-mac machines fully play to their strengths. For precision applications with cycle times of more than four seconds, the e-mac is often the most economical solution in the field of all-electric injection moulding machines. Apart from medical technology, the machine is deployed in the fields of packaging, teletronics and technical moulding.

The automation makes an additional contribution to the very small footprint of the production cell on show. An ENGEL viper 20 linear robot removes the 64 pipette tips from the mould and transfers them to the integrated compact cell for cavity-sorted depositing. ENGEL's new automation cell can be custom designed. It houses all automation components and downstream process units, such as quality control, a tray server or box changer, and is significantly narrower than conventional safety guarding. Its standardised build-up allows for speedy mould set-up of the production unit in case of a product change. ***smi***

ENGEL
www.engelglobal.com

For the market launch of the next generation machine, an e-mac 265/180 is producing pipette tips. Pictures: ENGEL

Arburg despite corona: “Wir sind da.”

Arburg has responded to the Corona crisis very early on with great prudence and excellent know-how. Thanks to that, the machine manufacturer based in Lossburg considers itself well-positioned for the future after the pandemic, in terms of technology, know-how and organisation: production continues to progress and the development of innovative solutions for injection moulding, industrial additive manufacturing and progress in digitalisation is being driven forward. In order to contain the pandemic, Arburg produced high-quality masks and safety goggles very quickly at its headquarters in Lossburg as proof of its technology.

Arburg produces high-quality protective equipment

In recent months, Arburg has very quickly initiated several specific projects to contain the corona pandemic. Since spring, four injection moulding machines and turnkey systems have been producing high-quality safety goggles and multifunctional LSR masks at the Lossburg headquarters. The protective clothing and equipment were distributed to employees as well as to nursing staff in charitable and medical facilities in the region. The two sophisticated applications also show how the original Arburg know-how in automation and digitalisation can contribute to increasing production efficiency.

Safety goggles “ready to wear”

Arburg implemented the "safety goggles" project within a very short time together with the Swiss speciality chemicals group Ems-Chemie and the German protective and safety glasses manufacturer Uvex. Because it was possible to build on the experience of the K trade fair: Arburg had already presented the fully automated production of sunglasses there as a trade fair demonstrator. Thanks to first-class and unbureaucratic coordination between the parties involved, the sunglasses could also be used to produce safety goggles quickly, using the same tools and thus the same design. Ems agreed to the use of the tool and Uvex made the goggles usable for the new application with a quick certification. Since 16 April, safety goggles have been produced at Arburg in Lossburg and thus bottlenecks during the corona pandemic have been immediately eliminated. The goggles are produced in one piece on an electric Allrounder 570 A with the Gestica control system in a cycle time of about 50 seconds. Handling and depositing are carried out with a six-axis robot. The packaging is done manually downstream via a packaging station.

In the comparable trade fair application, it was shown by way of example how processes can be visualised using the Arburg Turnkey Control Module (ATCM) and how all relevant process and quality data can be merged for specific parts. With the help of this Scada system for turnkey systems, individual parts or installed assemblies can be 100 percent traceable.

From the prototype to the certified high-tech mask

On 11 May, Arburg started production of LSR and PP mouth and nose masks for everyday use. The project impressively shows how "time-to-market" can be accelerated in exceptional cases – namely when all partners pool their competencies, technologies and equipment. The companies involved in this project are Sigma Engineering (LSR component and mould simulation), Polar-Form, Foboha and Wilhelm Weber (mould), Ewikon (cold runner), Männer und Günter (hot

Two Allrounders manufacture the LSR and PP components. The individual parts are manually assembled to form the high-quality, high-tech mask, which Arburg developed itself and realised with partners. The soft LSR component is produced by an electric Allrounder 570 A.

Arburg is involved in the corona crisis (from left to right): Manuel Frick, LSR Sales Manager, the Managing Directors Gerhard Böhm (Sales) and Guido Frohnhaus (Technology & Engineering) and Dr. Thomas Walther, Head of the Application Technology Department, present the first high-tech LSR and PP mouth and nose mask, developed by Arburg itself and realised with partners.

runner technology), Barth Mechanik (grippers), Wacker und Borealis (materials), Karl Küfner (filters), Herrmann Ultraschall (welding technology) and Packmat (packaging technology).

Arburg developed the high-quality and sustainable masks made of flexible LSR and PP itself and produced the first prototypes with its Freeformer additive. The flexible multifunctional masks consist of a soft LSR mask, which is put over the nose and mouth, and a fixed holder made of PP with eyelets for fastening elastic bands. To prevent infection in everyday life, the mask opening is closed with a cover so that the breathing air is discharged downwards. To reliably protect the carrier themselves from the coronavirus, a disposable filter can be placed on the opening.

In April, a trade fair demonstrator became an application for safety goggles – distributed to nursing and medical staff during the corona pandemic. The glasses are manufactured on a turnkey system built around an electric Allrounder 570 A.

Mask production set up in record time

The injection moulds for the LSR and PP components were built in a record time of only five weeks. The very special corona pandemic situation certainly played a role here. Since mid-May, a Allrounder 570 A with a clamping force of 2,000 kN has been producing the LSR masks with a 4-cavity mould from Polarform in the Arburg Training Center, while a Allrounder 520 E Golden Electric with a clamping force of 2,000 kN and a 2-cavity mould from Foboha is simultaneously producing the associated PP shields in the Customer Center. The larger injection moulding machine operates with an LSR dosing unit from Elmet and a six-axis robot from Kuka, which removes the flexible masks from the mould in a demanding moulding removal process and places them on a conveyor belt. In the second machine, a linear Multilift Select robotic system takes over the easier handling of the PP shields. Finally, the PP label is manually placed on the silicone mask with form closure, the mask is completed with the corresponding elastic straps and packed. As a next step, it is planned to produce the disposable filter, which can be placed on the opening, also at Arburg. Arburg is in contact with the partners Karl Küfner (nonwovens) and Wilhelm Weber (mould) for this purpose.

With know-how and turnkey solutions against coronavirus

The application shows how complex turnkey systems can be implemented within the shortest possible time, if necessary, in order to efficiently manufacture high-quality products. Arburg does not want to earn money with the masks and safety goggles project; they are therefore not sold individually to end customers. The aim is rather to use the know-how and machine fleet to support hospitals and care facilities with protective clothing and equipment in the fight against the coronavirus as well as to show the injection moulding market the huge amount of know-how available at Arburg that allows them to design and supply highly complex systems for economically efficient and technologically advanced production in the shortest possible time, even in high-wage countries. **smi**

ARBURG
www.arburg.com

Finished FACEshields

WITTMANN BATTENFELD molding technology for FACEshield fasteners from FT-TEC

FT-TEC, domiciled in Neutal, specializes in the development and production of high-tech solutions for the automotive industry, railway engineering and the security sector. As an answer to the current COVID-19 situation, FT-TEC has developed a high-grade protective face shield. Injection molding technology from WITTMANN BATTENFELD is used to make the fastening devices for the shields.

FT-TEC, a medium-sized company based in the Austrian province of Burgenland, was founded in 2005 by its present Managing Partner Friedrich Trobolowitsch. The company has been located at its present address in Neutal since 2012. On its production floor, 8 injection molding machines from WITTMANN BATTENFELD are used, ranging from 650 to 4,000 kN in clamping force and equipped with robots and auxiliary appliances from WITTMANN. According to Friedrich Trobolowitsch, WITTMANN BATTENFELD owes the exclusive use of WITTMANN BATTENFELD technology at FT-TEC not only to its excellent personal support and fast response, but also primarily to the availability of machines, robots and auxiliaries all from a single source thanks to the company being a member of the WITTMANN Group. "For me, it is important to have just one contact partner for machines, automation and auxiliaries, especially for international projects," says Friedrich Trobolowitsch. Another great advantage for Friedrich Trobolowitsch is the possibility to access the machines via WebService in the event of any problems.

FT-TEC basically specializes in three main business segments.

Firstly, it develops and manufactures high-tech products for the automotive industry and is one of about 200 companies worldwide which are certified according to the IATF 16949 automobile standard.

The company's second line of specialization is railway engineering products, such as components for concrete sleeper production, fastening systems and dowel anchors.

In this sector, FT-TEC holds the HPQ certificate (Manufacturer-related Product Qualification) from the German railway company Deutsche Bahn AG.

Thirdly, FT-TEC supplies emergency systems for the shipping industry and special fishery products. Worth mentioning in the fishery sector, for example, is an inductively rechargeable crab catcher which operates with light, sounds and vibration and partly replaces the bait fish which would otherwise have been used. For this product, FT-TEC won an innovation award in 2019. The emergency devices for the shipping industry are man-over-board (MOB) systems. The appliance developed by FT-TEC is the world's smallest MOB system licensed for professional navigation.

Friedrich Trobolowitsch, CEO of FT-TEC, with a finished product ready for shipment

From the left: Christoph Schweinberger, Sales WITTMANN Kunststoffgeräte, Roland Pechtl, Sales WITTMANN BATTENFELD and Friedrich Trobolowitsch, CEO FT-TEC, with fasteners made of recycled POM for the FACEshield (Photos: WITTMANN BATTENFELD)

A new high-tech product FT-TEC is currently working on is an emergency device for 5G networks in the NB IoT (Narrowband Internet of Things) segment. The company's project partner is Deutsche Telekom AG, the customer is T-Mobile.

The COVID-19 crisis prompted FT-TEC to develop a protective face shield covering the eyes, nose and mouth. In this context, it was important for Friedrich Trobolowitsch to stick to his philosophy of creating a high-quality product which is not only fit for everyday use, but also meets the most stringent requirements for medical technology and is thus also suitable for use in hospitals and nursing care environments. Consideration of its environmental impact was not neglected either.

With the help of 3D printing, an appropriate design was created which differs from other models on the market primarily by the fact that the shields are less strongly bent and consequently offer more freedom of movement. Series production was started in mid-April.

To meet the high quality requirements, exclusively face shields made of PETG are used. This type of PET modified with glycol offers extremely high transparency, low viscosity and high impact resistance. The attributes of this material allow the exchangeable and recyclable face shields to be cleaned with disinfectants containing alcohol. The shields are cut to size from rolled sheet and given the required form by a laser cutter.

FT-TEC makes the fasteners for the shields by injection molding with equipment from WITTMANN BATTENFELD. The material used is POM, a resin ideally suited for the production of high-precision parts due to its excellent dimensional stability. Fasteners are currently produced from recycled POM in white, red, black and blue. The respective molds, a single-cavity mold used on a machine with 650 kN clamping force and a 4-cavity mold fitted onto a machine with 1,100 kN clamping force, have come from the Burgenland-based company HWB Horitschoner Werkzeugbau.

The face shields can be printed individually with an alcohol-resistant UV printing toner. In addition to the standard models, the company makes special models to fit children. The present daily production capacity stands at about25,000 units.

As a next step, FT-TEC is planning to develop a new product for the medical sector. These models will be suitable for intensive care medicine, where protective goggles are required to be worn as well. ***smi***

WITTMANN BATTENFELD
www.wittmann-group.com

Friedrich Trobolowitsch, CEO of FT-TEC, with a finished product ready for shipment

SABIC accelerates order fulfillment amid COVID-19

Lifesaving medical equipment, from ventilators and defibrillators to auto-chemistry analyzers, is essential in overcoming COVID-19. To meet urgent requests from global customers that manufacture these products, SABIC has taken extraordinary steps to expedite order fulfillment for its specialty thermoplastic resins.

As an example, the company rapidly supplied significant quantities of thermoplastics to two Chinese medical device manufacturers, Mindray and DIRUI. Despite shutdowns and exponential increase in demand, SABIC has worked to ensure fast and steady supply of desperately needed medical equipment to hospitals on the front lines.

"The coronavirus pandemic has spotlighted the critical role of material suppliers in the face of urgent demand for high volumes of medical devices, supplies and personal protective equipment," said Martin Tam, SABIC director, Customer Fulfillment APAC, Specialties. "As a leading plastics manufacturer in the medical products supply chain, SABIC has risen to the challenge of supporting the healthcare industry during this difficult time. Our agility, seamless scalability and broad global resources are allowing us to do our part to reliably deliver the specialized materials needed for healthcare applications used to diagnose, monitor and treat patients."

10,000 Medical Devices for Italy

Mindray Medical International Limited is a global medical instrumentation developer and manufacturer based in Shenzhen. When Mindray received an urgent order from Italy for 10,000 units of its ventilators, defibrillators, monitors and in vitro diagnostic (IVD) machines, the manufacturer contacted SABIC for a range of its high-performance specialty materials. Mindray's order included LNP™ EXL copolymer, internally lubricated LNP™ LUBRICOMP™ and anti-static LNP™ FARADEX™ compounds, and ULTEM™ resin. SABIC delivered these materials to Mindray's contract molder within weeks.

Further, Mindray urgently needed high-performance SABIC materials to produce 3,000 pieces of medical equipment for

When Mindray received an urgent order from Italy for 10,000 units of its ventilators, defibrillators, monitors and in vitro diagnostic (IVD) machines, the manufacturer contacted SABIC for a range of its high-performance specialty materials

In March 2020, the company DIRUI Industrial Co., Ltd. requested expedited delivery of two grades of SABIC's NORYL™ polyphenylene ether (PPE) resin. SABIC quickly mobilized to manufacture, fulfill and supply DIRUI's order

two new hospitals being constructed in China. The SABIC team worked around the clock for two days to produce much-needed thermoplastics for Mindray, primarily for device housings.

"As COVID-19 cases spiked in China and Italy, we faced intense pressure to produce and ship essential medical equipment as fast as possible," said Timmy Tong, procurement business director for Mindray. "SABIC went above and beyond to deliver the materials we required, in a very short timeframe, with the high quality and consistency we expected. Particularly in this crisis situation, our strong, long-standing relationship with SABIC is demonstrating its priceless value."

1,000 Auto-chemistry Analyzers for China

DIRUI Industrial Co., Ltd., a leading provider of high-quality diagnostic equipment and reagents in China, also faced urgent customer requests for equipment to support COVID-19 care. In March 2020, the company requested expedited delivery of two grades of SABIC's NORYL™ polyphenylene ether (PPE) resin. These advanced thermoplastic materials were needed to produce 1,000 auto-chemistry analyzers for Chinese hospitals. The analyzers are used to measure patients' kidney and bladder function, among other tests. Although SABIC's Shanghai facility was shut down to contain COVID 19, SABIC quickly mobilized to manufacture, fulfill and supply DIRUI's order.

Of the two grades of NORYL™ PPE resin, one provides dimensional stability and chemical resistance for the analyzer housings, while the other delivers the hydrolytic stability needed for the water channel.

"We are thankful to SABIC for the tremendous job they did in fulfilling our critical order so that we could rapidly produce the auto-chemistry analyzers needed to help control the pandemic," commented Henry Chen, supply chain development manager of DIRUI. "We look forward to continuing our seamless and efficient collaboration with SABIC in the future."*smi*

SABIC
www.sabic.com

EnvisionTEC to 3D print mass quantities of nasopharyngeal swabs for COVID-19 testing

EnvisionTEC is proud to announce they have successfully completed a clinical trial to use the EnvisionTEC 3D printed Nasopharyngeal (NP) Swabs for COVID-19 testing. EnvisionTEC, as well as a growing number of their Envision One cDLM customers who have also registered with the FDA to take part in this endeavor, have the mass production capabilities to produce up to a million of the desperately needed swabs per day.

One of the biggest immediate needs in the fight against the global pandemic known as COVID-19 is simply identifying those who have been infected as early as possible. Globally, the testing kit availability has been vastly inadequate for the large-scale testing needed in order to identify and isolate known cases of the virus and get ahead of its spread within each community both in the United States and across the globe. The traditional manufacturing method for the swabs is tedious and limited, with the final testing swab needing to exhibit unique properties of softness and flexibility that are difficult to produce. EnvisionTEC worked with Beth Israel Deaconess Medical Center (BIDMC) to develop a swab design and material to be printed on their bestselling Envision One cDLM 3D printer.

The Envision One, launched in early 2019, has been EnvisionTEC's best-selling 3D printer to date, with over a thousand units currently in use among dental labs, orthodontic practices, universities, medical device manufacturers and more. Many of the owners of these units are accustomed to producing medical-grade products, making them the ideal production partners for this enterprise. The Envision One is capable of producing up to 2400 swabs in 24 hours. This leads to a production capacity of EnvisionTEC and its Envision One user network of up to a million swabs per day.

EnvisionTEC engineers have designed a collection tip for a flexible nasal swab that has completed testing in an IRB-approved clinical trial for use in this unprecedented time. In order to be given this approval, a rigorous testing procedure was required to be passed. This testing of both the design and the material included several rigorous mechanical and chemical tests. This was done to ensure that the swabs pick up viral RNA particles and do not interfere with PCA/reagents, that they are chemically safe, that they would bend 180 degrees without breaking, and that the design would be able to safely collect enough virus particles from the nasal passage to effectively test.

One of the major advantaged of the EnvisionTEC NP swab is that it continued to perform mechanically the same after being sterilized by steam at 270°F at 27 Pa in an autoclave. Other 3D printed swabs have shown deterioration following autoclave procedures. According to Dr. Ramy Arnaout, MD, DPhil, Associate Director of the Clinical Microbiology Laboratories at Beth Israel Deaconess Medical Center, "Analytical results were positive, with a high level of concordance with the reference swab and with subjective results showing that [EnvisionTEC's] swab performed neutrally or better than other test swabs".

During the clinical trials performed by BIDMC, the EnvisionTEC swabs received positive comments from study staff for comfort, flexibility, and ease of insertion, which we attribute to the use of EnvisionTEC's E-Guide Soft material.

E-Guide Soft, a biomedical 3D printing material from EnvisionTEC, and the EnvisionTEC tampon design have been tested. EnvisionTEC partnered with the Beth Israel Deaconess Medical Center (BIDMC), which performed these tests. *smi*

EnvisionTEC
www.envisiontec.com

Evonik launches next-generation PEEK biomaterial for medical technology applications

With the introduction of the new biomaterial, the specialty chemicals company Evonik is launching a new product line of next-generation, PEEK-based implant materials that it will market under the brand name VESTAKEEP® Fusion.

Evonik is developing a new osteoconductive implant material based on polyether ether ketone (PEEK) for medical technology applications

Improving quality of life by helping bones heal faster

The osteoconductive properties of the new PEEK material were achieved by using a special functional additive - biphasic calcium phosphate - and allow bone cells to adhere to implants more quickly, thus positively influencing fusion, so called osteointegration, at the boundary between the bone and the implant. This, in turn, will accelerate bone fusion and convalescence.

As the first biomaterial in Evonik's new Fusion product line, VESTAKEEP® iC4800 will impress customers with its outstanding mechanical properties, which are similar to those of human bone. Like all other PEEK-based, high-performance polymers for medical technology applications, the newly developed biomaterial does not produce any artifacts in imaging processes such as X-ray or MRI. However, the additives provide a natural desired shadow for accurate placement and observation of the fusion process.

Left, cells against virgin VESTAKEEP® biomaterial; right, cells against VESTAKEEP® Fusion

Development of customer-specific biomaterials

"Introduction of the new VESTAKEEP® Fusion product line represents an important step in the strategic development of our portfolio. This work draws upon our decades of expertise in polymer chemistry and on Evonik's global innovation and production network. That foundation means we can offer patients a one-of-a-kind product and significantly improve their quality of life," says Marc Knebel, Head of the Medical Systems market segment at Evonik.

In addition to VESTAKEEP® iC4800, Evonik will offer to its customers within the new PEEK Fusion product line the development of further exclusive, customer-specific materials with bioactive properties as so-called VESTAKEEP® Fusion Select products. They are developed from a library of established osteoconductive substances with close involvement with each customer.

Excellent processing characteristics in injection molding

Consciously developed for processing using a variety of production technologies, VESTAKEEP® Fusion will come both as a granulate and as a semifinished stock-shape product. Like all previous PEEK products, it can be milled, compression molded, and extruded as usual.

Evonik's new osteoconductive PEEK biomaterial can also be injection molded in the proven manner. It has been specially designed so that the functional additives are available on the surface and no film formation occurs. In collaboration with Samaplast, a Swiss company specializing in plastics engineering, Evonik has successfully demonstrated and documented the processing characteristics of VESTAKEEP® Fusion in injection molding.

Evonik's polymer experts are also studying the possibility of developing a 3D printable filament with VESTAKEEP® Fusion for next-generation PEEK that could be processed using the fused filament fabrication (FFF) additive production technology.

Evonik has been the world's leading manufacturer of high-performance polymers for medical technology applications for over 20 years. The specialty chemicals company offers an extensive portfolio of biomaterials suitable for use in manufacturing medical devices intended for both temporary and long-term contact with the body. *smi*

Evonik
www.evonik.com

ENGEL presents the next generation e-cap

Even faster, even more stable, even more efficient: ENGEL presents the next generation of the all-electric e-cap injection moulding machine series for beverage caps. The production of 29/25 lightweight caps on a new e-cap 380 machine makes it clear how continuously increasing requirements can be combined with the shortest cycle times, the highest precision and lowest energy consumption.

ENGEL set new standards with the presentation of the first all-electric e-cap injection moulding machine at K 2010. Until then, hydraulic machines using accumulators for the injection movement were the standard for the production of caps. The all-electric drive technology in this field of application was a revolution at the time. To date, the e-cap is the most energy-efficient cap machine on the market and at the same time the only high-performance machine tailored to the requirements of the caps and closures industry providing all-electric operation even with a clamping force range as high as 4,200 kN. With an average ROI of less than two years, the e-cap has quickly established itself worldwide since its market launch.

Highest dynamic performance with frequent load changes

"Since 2010, the requirements for beverage caps have changed substantially", as Friedrich Mairhofer, Product Manager for all-electric injection moulding machines at ENGEL, explains. This is why the continuous further development of e-cap now is being integrated into a next generation machine. Continuous part weight reductions play a central role. "For still water, caps with a weight of significantly less than one gram are produced today," says Mairhofer. "As a result, the cooling and cycle times have continued to drop. Where the cycle times ten years ago were still 2.5 seconds, today's cap machines need to be able to produce at 2-second intervals and faster." When developing the new generation of machines, the main focus was therefore both on performance and on stability. The new e-cap achieves even faster mould opening and closing movements and is designed with an even more stable machine bed for more frequent load cycles.

Ejector drives amplified with booster

An e-cap 2440/380 is demonstrating the series' new performance achievements by producing 29/25 caps in a 96-cavity mould by Plastisud. The shot weight is 1.3 grams per cavity with a cycle time of less than 2 seconds. An HDPE from Borealis/Borouge is processed. The system is equipped with camera-supported 100 percent quality inspection by IMDvista and a dry air system by Eisbär. Further system partners are Piovan, PackSys Global and PSG.

The reinforced frame and the reinforced mould mounting platens on the new e-cap ensure excellent stability of the machine movements even with extremely short cycles and very small shot volumes. The result is outstanding reproduction of surface detail and a maximum number of good parts.

The fast dry cycle times of 1.3 seconds with the e-cap 380, for example, and the parallel movements included in the standard right from the outset make an important contribution to achieving cycle times of less than 2 seconds. Ejection occurs parallel to the mould opening. What is new is that the ejectors can be amplified by a switch-

Caps are becoming lighter and lighter, causing increasingly tough challenges for the injection moulding machine technology. (Pictures: ENGEL)

With extremely short cycle times of less than two seconds, the new e-cap ensures very high precision and repeatability. (Pictures: ENGEL)

able hydraulic booster on demand. This ensures that the machine operates with the best possible efficiency both during running production and during start-up after a production interruption. While the caps are not yet completely cooled and very easy to demould during ejection in ongoing production, the ejectors have to apply more force in stop situations to remove caps that have already cooled down in the mould. Since production interruptions are rare, it is more efficient to use servo-hydraulic drive amplification than to generally equip the machine with more powerful ejector drives. High forces only when they are actually needed – that is ENGEL's motto.

The new e-cap generation is offered with two different ejector drive technologies. The machine works with hydraulic ejectors as standard. Servo-electric drives are available as an option, which require around ten percent less energy.

More powerful plasticising unit for poor-flowing HDPE

The plasticising unit was completely redesigned in the course of the e-cap's further development, as the properties of the materials to be processed have also changed. The raw material manufacturers have adapted the materials to the lower cap weights. For CSD (carbonated soft drink) caps, the melt flow index (MFI) of today's HDPE grades is between 0.8 and 1.4 g/10 min. Very short cycle times require particularly high plasticising rates. ENGEL has increased the torque of the plasticising drive accordingly and developed both a new plasticising screw and a new highly wear-resistant sliding ring non-return valve specifically for cap manufacture. Both products are part of the standard scope of supply of the new e-cap machines. With its new design, the barrier screw processes high viscosity HDPE in a particularly gentle way, even given high throughput levels, while ensuring a very good melting rate and homogeneity of the melt. This further contributes to the high process stability and repeatability of e-cap machines.

Optimising energy consumption across the entire system

Cleanliness and energy efficiency have been essential characteristics of the series right from the outset. With an encapsulated toggle lever and a very clean linear guide of the moving platen, the e-cap machines reliably meet the requirements of strictly regulated production in the food industry.

The machines' all-electric drive technology makes a major contribution to their outstanding energy efficiency. In addition, braking energy is recuperated, reliably preventing the need for expensive peak power. Thanks to the very high efficiency of the drives used, the e-cap machines also only require a minimum of coolant. The e-cap 380, for example, operates at high speed with a specific energy consumption of 0.37 kWh per kilogram of pellets processed.

As a system supplier, ENGEL precisely coordinates all the components of the production cell right from the start of the project. “This allows us to fully leverage the efficiency potential throughout the entire production cell,” as Mairhofer emphasises.

The new e-cap is available in the sizes 220, 280, 380 and 420 with clamping forces from 2,200 to 4,200 kN. **smi**

ENGEL
www.engelglobal.com

World premiere of the all-new NETSTAL PET-LINE: Re-shuffling the cards in the PET market

The all-new NETSTAL PET-LINE celebrates its world premiere. The first NETSTAL PET system featuring lateral removal offers full compatibility with existing side-entry molds and after-cooling stations. The all-new NETSTAL PET-LINE also impresses with a superlative output, excellent energy efficiency, optimized processing of PET recyclates and a new operating unit. Customers can now personally check out the benefits of the all-new NETSTAL PET-LINE through a variety of channels.

KraussMaffei HighPerformance launches the all-new NETSTAL PET-LINE: "By switching to side-entry we are re-shuffling the cards within the PET world. The NETSTAL brand is now also a perfect alternative for users whose production layout focuses on machines with lateral removal and who have a corresponding stock of injection molds," explained Renzo Davatz, CEO of KraussMaffei HighPerformance AG. The all-new NETSTAL PET-LINE offers full compatibility with legacy side-entry molds and associated post-mold cooling stations. Kicking off the new series is the machine model equipped with a clamping force of 4,000 kN and a 6000 injection unit that consequently enables the use of molds with up to 128 cavities. The coming years will see the launch of further models to optimize coverage of all common beverage applications.

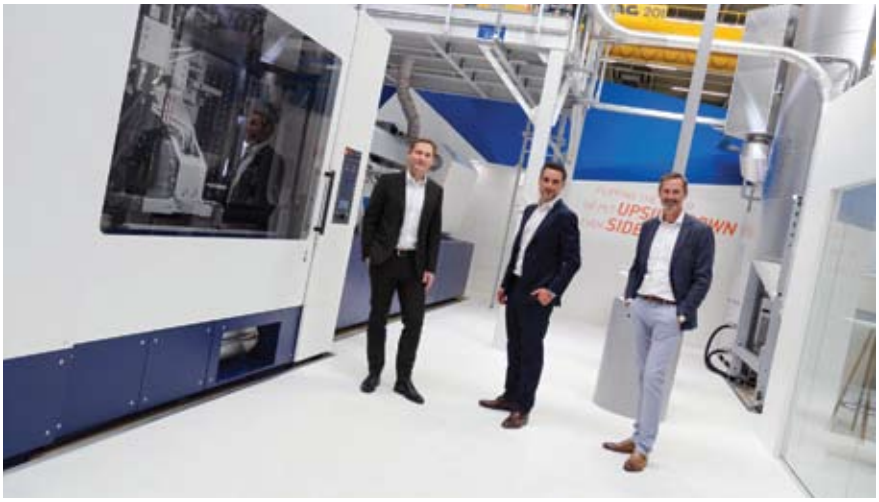
High performance for efficient and environmentally friendly production

At first glance, the laterally positioned post-mold cooling station is the most obvious feature of the new preform system; however, a closer look reveals numerous other optimizations. "The NETSTAL brand is a promise! Our customers expect us to provide high-performance machines that they can reliably, sustainably and successfully work with for many years. Fully in line with our value proposition, we have finely tuned the all-new PET-LINE to deliver minimum operational and unit costs," stressed Davatz. "The proportion of recycled PET will increase further in the years to come. For this reason our focus in terms of application is centered on the optimized processing of rPET," explained PET systems product manager, Stefan Kleinfeld. A new screw design was developed for the high-performance, two-stage injection unit. Preform molders benefit from an expansive process window and a robust plasticizing process during the processing of up to 100% rPET. Intrusion and automatic metering ensure a homogeneous and consistent melt quality, low AA values, minimal IV drop and gentle material feed.

Maximum productivity at minimum power utilization levels

NETSTAL machines are equipped with toggle levers. This principle also applies to the all-new NETSTAL PET-LINE: Operating within the fully electric driven clamping unit is a dynamic 5-point dual toggle lever. At 1.9 seconds, the lock-to-lock time at 4,000 kN of clamping force is below the magical 2-second mark. Annual output is increased further through the shorter

cycle times. “Thanks to the particularly smooth, high-precision kinematics of the clamping unit, reliable and mold-friendly operation is guaranteed under production conditions,” said Kleinfeld. The exceptionally robust design ensures years of reliable continuous operation at high capacity and constant speed. All combined with the best energy efficiency available on the market. “The preceding model with top entry was ultimately by far the most energy-efficient machine on the market. Now, with the all-new NETSTAL PET-LINE, we have once again succeeded in significantly reducing energy consumption. A development that is not only easy on the pockets of our customers, but also on the environment,” explained a delighted Kleinfeld. Removal can be equipped with up to 4 post-mold cooling stations. The exceptionally efficient interior and exterior cooling guarantees a consistent premium and uniform preform quality.



World premiere in the temporary showroom: Renzo Davatz (CEO KraussMaffei HighPerformance AG), Eric Overbeek (VP Sales) and Stefan Kleinfeld (Product Manager PET Systems) present the all-new NETSTAL PET-LINE.

Intuitive and reliable operation

The new NETSTAL PET-LINE also sees the world premiere of the latest generation of aXos controller technology. aXos 9 marries the former aXos design with an innovative operation concept that once again considerably increases the level of user-friendliness. “The new operator panel comprises a central touchscreen flanked by haptic keys. Navigation between the individual settings occurs exclusively via the touchscreen. In contrast, all the axial motion is triggered exclusively via the haptic keys,” explained Kleinfeld. Experienced users will appreciate the advantage over pure touchscreen controlling as the distinct feedback from the haptic keys simplifies blind operation with regard to the moving axes.

SMART OPERATION is a series feature on the new NETSTAL PET-LINE. Unveiled two years ago, the feature comprises four keys that are used to intuitively operate the system within a production environment. Clear information and color indications enable simple, fast and reliable process control. “During production, operation using SMART OPERATION always follows the same principle, regardless of the preform being manufactured. Preform production is consequently prepared and started using just two keys. Production operators can therefore be quickly trained. “The volume of written process descriptions, checklists and instructions at the machine is drastically reduced,” said Kleinfeld. For customers that means a further augmentation of production readiness and system availability. Development of SMART OPERATION incorporated important insights gained from medical injection molding applications. “In medical technology, compliance with certified manufacturing processes is an essential criterion. SMART OPERATION now also effectively prevents operational errors in PET applications,” declared Kleinfeld.

World premiere

“Our customers benefit from NETSTAL's decades of experience in the construction and utilization of PET systems. With the new NETSTAL PET-LINE, you get what is currently the most powerful, environmentally-friendly and reliable preform system around,” stated VP Sales at KraussMaffei HighPerformance AG, Eric Overbeek, in highlighting the benefits.

The Corona pandemic has made the presentation of a new machine series enormously challenging. “Personal contact is an important factor in our business. The planned launch event in Näfels with several hundred guests unfortunately had to be called off early on. Instead we have organized exclusive presentations in Näfels and digital visits for all those customers and potential customers who are unable to travel to there,” explained Overbeek. The hybrid event is scheduled to cover a period of three months. With immediate effect, the new NETSTAL PET-LINE and the specialist team from KraussMaffei HighPerformance AG are available to carry out exclusive presentations in Näfels. Naturally all in compliance with a comprehensive safety concept. Alternatively, online meetings are also possible in which even the demonstration of a running machine can also be easily incorporated.

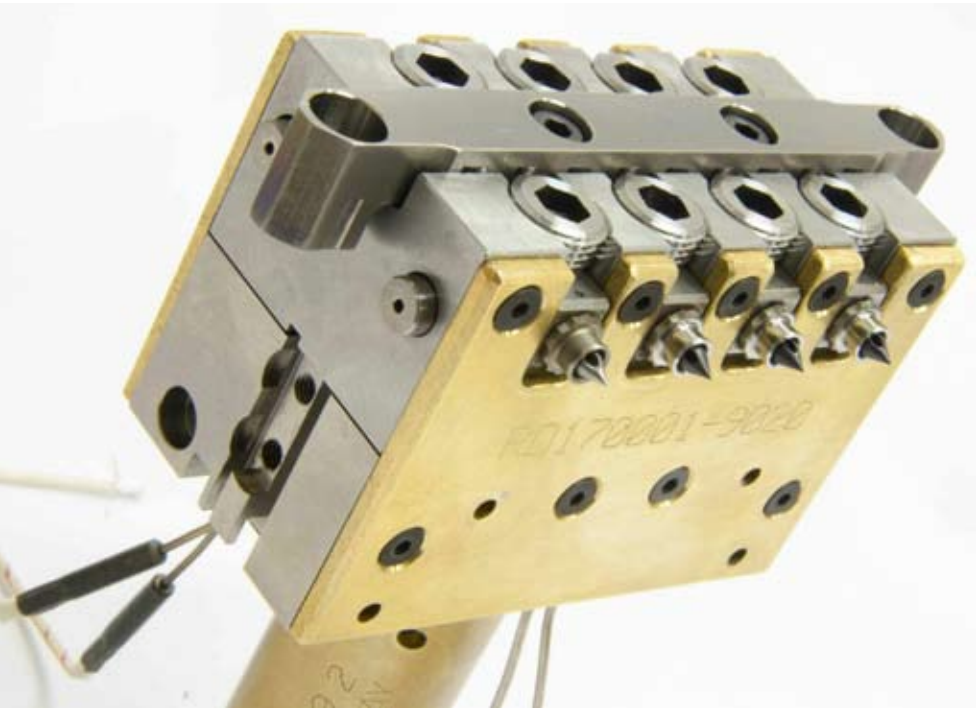
Preceding model available

The existing NETSTAL PET-LINE with top entry is also still available on the market. “As such, NETSTAL is the only brand in the PET sector that has preform systems with side and top entry in its portfolio,” emphasized Overbeek as a final observation. ***smi***

KraussMaffei
www.kraussmaffei.com

Thermoplay unveils its new thermal hot-runner nozzle for direct side injection

Molding Solutions, a strategic business unit within Barnes Group Inc., has expanded its portfolio of nozzles. In addition to the side valve gate nozzle "Edgeline" from Männer, Thermoplay will immediately offer a new, thermal side-gate nozzle.



The Thermoplay thermal side-gate TFS-Radial hot runner nozzle with 4 injection points (© Thermoplay)

This new open side-gate TFS hot runner nozzle is available in radial or linear layouts (TFS-Radial and TFS-Linear). The TFS nozzles are particularly suitable for injection molded parts requiring a cosmetic injection point as well as parts for which the optimal injection position is from the side – i.e., at a right angle to the direction that the mold opens. These applications include syringes, caps, tubes, medical sharps, as well as personal care, caps & closures, packaging products, electronic, and technical components.

The Thermoplay thermal side-gate TFS-Linear hot runner nozzle with 4+4 injection points (© Thermoplay)

16 mm between injection points

The TFS-Linear comes equipped with 2+2 or 4+4 parallel nozzle tips, with minimum injection point spacing of 16 mm. The radial design features hot runner nozzles with 1, 2, or 4 nozzle tips. Most commercially available polymers (PP, HDPE, HIPS, PMMA, POM, PC, and many others) can be processed using the Thermoplay TFS design.

Technology for safety and ease of installation

A special feature of the linear side-gate TFS-Linear nozzle is its thermal expansion compensation system in the longitudinal direction. The cylindrical sealed area between the nozzle tip and cavity ensures maximum reliability during the injection phase.

The attachment system makes both the radial and linear version remark-

Model of a 16-cavity mold with 8 TFS-Radial with 2 injection points (© Thermoplay)

A 16-cavity mold with two TFS-Linear with 4+4 injection points (© Thermoplay)

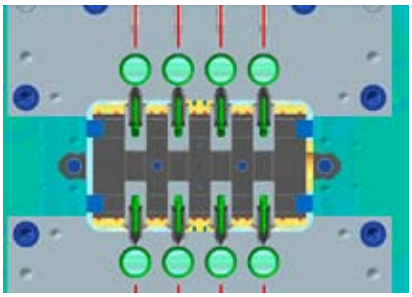
ably easy to install or remove rapidly. The nozzle tips can be easily replaced or maintained in the cold condition directly on the machine without disassembling the mold. First, the nozzle body is installed in the fixed-side (hot half) mold plate, and the nozzle tips are then inserted into the cavity. This procedure also offers the advantage of accommodating undivided mold inserts.

Uniform temperature distribution

Thermoplay sets high standards in the area of temperature homogeneity. That is why special emphasis was given to the heating design in developing the new side-gate thermal nozzle. Without exception, all patented heating elements are developed and manufactured by Thermoplay using their proven in-house process.

Direct connection delivers cost savings

Direct side-gating means no sprue is necessary, which eliminates the costs and efforts related to the removal of the sprue from the molded part for disposal or recycling. Direct side-gating without a sprue provides genuine added value to the processor in terms of efficiency and handling.



Model of a 16-cavity tool with two TFS-Linear nozzles with 4+4 injection points (© Thermoplay)

Easy handling & safe production

The thermal side-gate TFS-Linear and TFS-Radial nozzles from Thermoplay simplify planning, design, and maintenance of compact molds. These nozzles reflect the Thermoplay philosophy of supplying demanding mold makers with products that are efficient, safe, and easy to use. *smi*

Thermoplay
www.thermoplay.com

Ideal partner in production

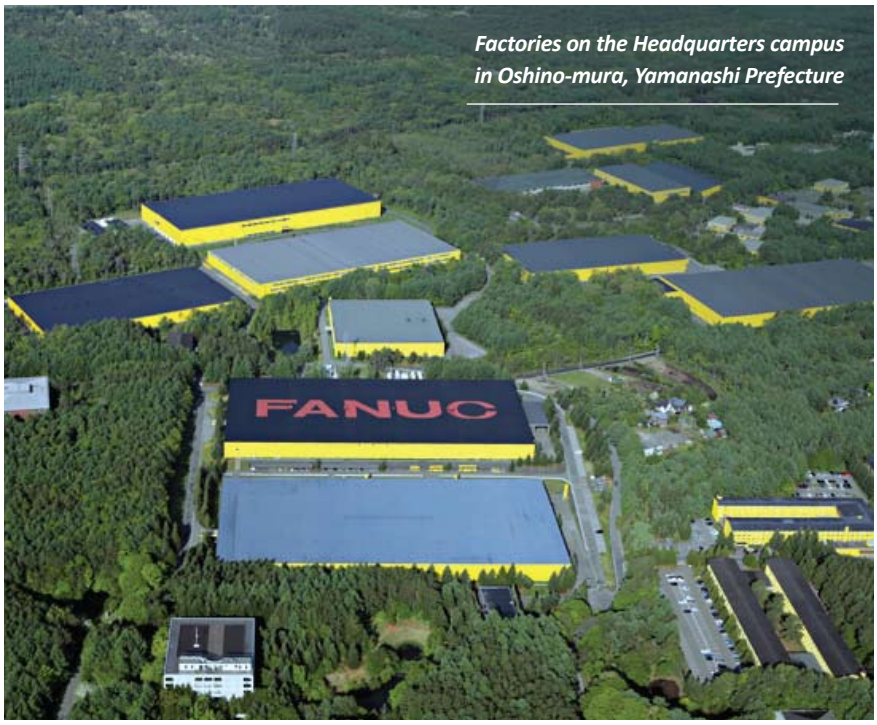
Collaborative robot CRX-10iA

The new generation of collaborative lightweight robots from FANUC has arrived. After presenting the first prototypes of the CRX-10iA at IREX in Tokyo in December 2019, the company is now bringing the first production units to Europe. From August 2020, the slim white robot with a payload of 10 kilograms installed in FANUC showrooms throughout Europe. Delivery to the first customers will begin soon after. The key features of the CRX-10iA are its safety, ease of use and extremely high reliability.
The FANUC developers have paid particular attention to the safety of the lightweight robot. The CRX-10iA stops moving with only very light contact with humans. If it hits a hard object, the robot automatically backs away from it. Operators can also manually push three axes of the robot away. The smooth and elegant design also provides protection from pinching, making it an ideal partner for production workers. The CRX-10iA is certified according to ISO 10218-1 safety standard.

Speed depending on mode

In order to make the robot as flexible as possible, it can work in cooperative mode with a maximum speed of 1000 millimetres per second as well as in stand-alone mode with speeds of up to 2000 millimetres per second. A mode change is useful at night or on weekends, for example, when the robot can carry out tasks alone without human workers around. A traffic light system on the robot indicates the active mode. Additional safety sensors can be used to slow down the speed to the permitted speed if a person comes within range.

The CRX-10iA's ease of use starts with installation. The robot, which weighs only 40 kilograms, and the 20 kilogram



Factories on the Headquarters campus in Oshino-mura, Yamanashi Prefecture

About FANUC

FANUC City is situated at the foot of Mount Fuji, near Lake Yamanaka. Covering 1.7 million square metres, it is home to all FANUC's unique production facilities. It also includes 12 research and development centres, administration buildings, staff accommodation, leisure facilities and even a clinic for FANUC employees and their families.

FANUC has consistently pursued the automation of factories since 1956, when it succeeded in the development of the SERVO mechanism for the first time in the Japanese private sector.

FANUC's business is comprised of three pillars of FA, ROBOT and ROBOMACHINE. The FA business encompasses basic technologies, consisting of NCs (numerical controls), servos and lasers, which are also applied to the ROBOT and ROBOMACHINE businesses. In addition, FANUC's flagship IoT product, "FIELD system," which is an open platform, has been introduced as a new business.

FANUC also offers services, with a policy for not terminating support of FANUC products as long as they are used by customers.

Through such activities, FANUC contributes to the development of manufacturing industry in Japan and overseas, by promoting automation and efficiency in customers' factories.

controller can be conveniently carried by hand to their place of use and set up. The new, intuitive touch panel has a clearly laid out user interface with graphic symbols, and programming is possible using the "drag and drop" function. This allows even robot beginners to create work programs in simple steps. To teach the robot the desired motion sequence, the operator can also manually guide the robot to the appropriate points.

Professionals can change the interface at the touch of a button and have a traditional teach pendant displayed or, alternatively, connect an iPendant to the CRX-10iA. With teach pendant mode and iPendant, even complex programming is possible.

Regular software updates

Another new feature is that customers will in future be able to update the software of the FANUC robot themselves and extend it with various application updates. For the adaptation of grippers, sensors or cameras, FANUC provides software development kits to enable quick and easy connection with third party accessories.

The CRX-10iA also meets the highest quality standards in terms of reliability. For example, it meets the demanding IP67 industrial standard, which allows it to load and unload machines in which there is moisture. Even very fine dust particles, such as those produced by polishing applications, are no problem. The controller and tablet are designed to meet the IP54 industrial standard and are therefore also ideally suited for use in industrial production.

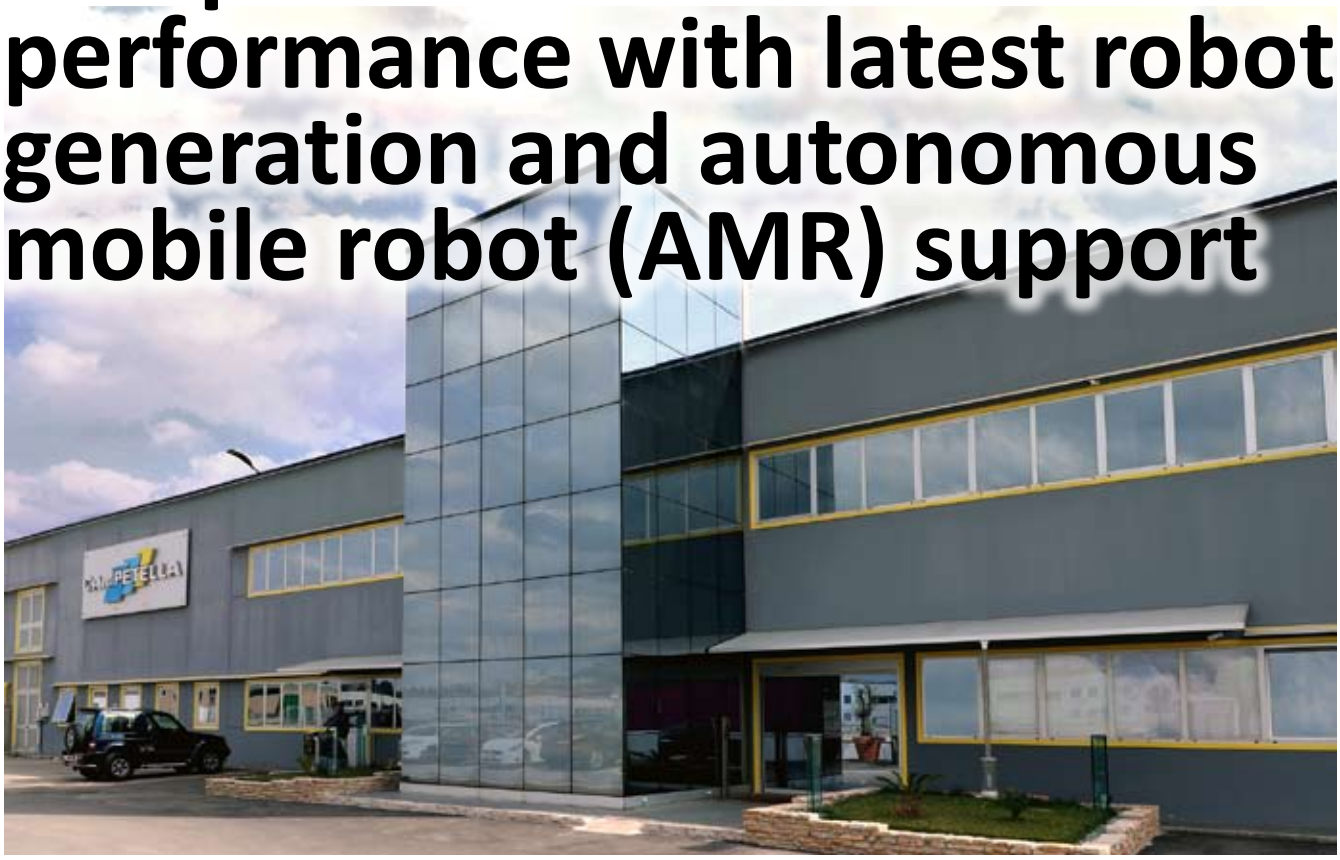
Service life

FANUC will provide the same excellent and comprehensive customer support for the CRX as for all its traditional yellow robots. Two of the company's most important principles are "lifetime maintenance" and "service first". This means that FANUC stores sufficient spare parts even of discontinued products and keeps providing service for all its products as long as customers continue to use them. The automation specialist maintains an extensive service and support network worldwide, maintaining 264 locations servicing 108 countries.

The CRX-10iA comes in two versions: a standard model with a range of 1249 millimetres and a long arm model with a range of 1418 millimetres. The long arm robot is designed so that it can swing its arm directly over its base. This enables it to pick up parts from a table in front of it, for example, and place them behind it on the table in a straight-line movement. In addition to palletizing tasks, the CRX-10iA is ideally suited for automating a wide range of tasks like screwdriving, welding, picking parts out of shelves or from conveyors and packing them into boxes or loading raw parts into a CNC machine and unloading them when finished. ***smi***

FANUC
www.fanuc.co.jp

Campetella intensifies IML performance with latest robot generation and autonomous mobile robot (AMR) support



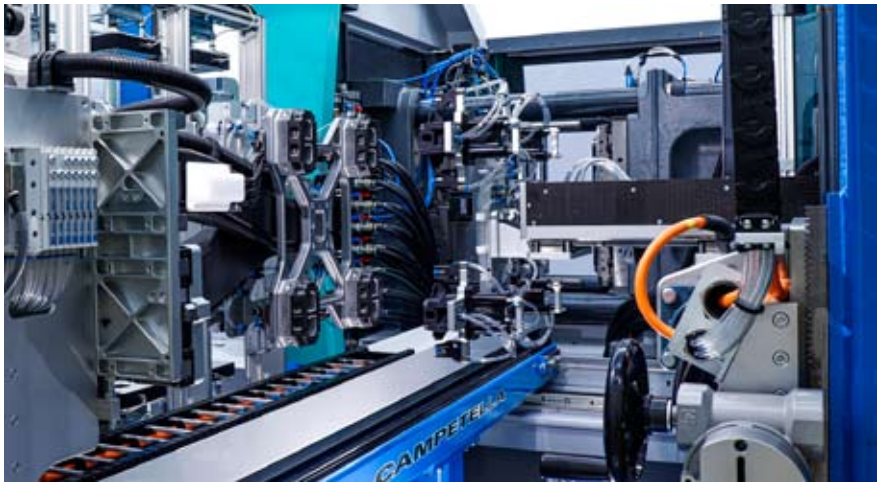
An expert of the scene once said: "When times aren't easy, robotizing is safer, no matter the circumstances!" With a certain amount of interpretation this would mean: people should keep their hands off some critical applications - leave them to robots - in the fields of food, electronics, medical device and pharmaceutical technologies, aerospace, etc. Whenever it is hygienically indispensable, dangerous or complicated. Today and in the future, robots are the only workers who handle, complete and finish products more safely, reliably, persistently, sustainably, economically and quickly. Requirements: sensible use and precise programming.

Campetella Robotics Calling! Trade visitors and media representatives visited the 45-day open house "Campetella Robotics Calling", which started on October 1, 2020.

At the Campetella Robotic Center Srl facilities in Montecassiano, Italy, two special applications attracted the interest of trade visitors, also because they are Industry 4.0 compliant.

Cup Championship

An X-Series Mini-MODULA compact side-entry robot from Campetella is used for IML (In-Mould-Labelling) of plastic yoghurt cups made of polypropylene (PP). The robot is equipped with a quick and compact horizontal arm, responsible for very fast label inserting and product take-out operations. A tilting axis guarantees a hygienic process which ends with the cups being stacked upside down with their openings on the conveyor belt. An additional advantage of the Mini-MODULA is its extremely small footprint. As if that was not enough, it cooperates with the new X-Series CO1 Cartesian robot. Its electric servo axis is the right hand to move the stacks of cups from the conveyor to a storage box. An Omron AMR (autonomous mobile robot) takes care of transporting the boxes to the finished goods warehouse. Full to the warehouse ... empty back to the belt! The entire system is a four-cavity application with a total cycle time of no more than 2.0 seconds. The IMM interlock time is 0.6 seconds only. The two Campetella robots work hand in hand, thereby serving an Arburg Allrounder 570 H hybrid injection moulding machine (an IMM with a clamping force of 1800 kN) and the inherent four-cavity mould from Simon, France,



IML application — the integrated system

respectively. The renowned Italian label manufacturer Viappiani is responsible for the "L" in the IML. Cup coefficients: height = 43 mm, diameter top = 73 mm, weight = 4 grams.

Watching Perfection

An X-Series MODULA high-speed side-entry robot from Campetella is the top solution for labelling plastic cheese spread tubs in Bazigos' four-cavity mould. Four Mevisco cameras monitor the product quality inline and continuously. A very fast label feeder with servo drive is used on the robot, which manages the 5-sided Viappiani labels. Here again, the tilting axis performs hygienic upside down stacking of the tubs on the conveyor belt. With its high payload reachability an X-Series SPIN3 Scara (abbreviation for Selective Compliance Assembly Robot Arm, which is a horizontal articulated-arm robot. Its structure resembles a human arm) robot grips the labelled stacks and quickly deposits them in a transport box. Finally, another Omron AMR is in charge of storing the boxes filled with cheese spread tubs in the warehouse. The entire automation system is used in and on an Arburg 630 H hybrid injection moulding machine (IMM) with a clamping force of 2300 kN. Labelling takes place within a 4-second cycle and/or an IMM interlock time of only 0.9 seconds. The polypropylene (PP) raw material treatment is carried out by Moretto ancillary equipment together with the centralized cooling systems for the event. Product parameters: length = 132 mm, width = 89 mm, height = 33 mm, weight = 7.55 grams.

Magic Speed

Campetella has designed the robot components in lightweight construction by making use of special materials originating from the aerospace industry or from competition vehicle construction. The robots are characterized by absolute precision, reliability, robustness, permanent load capacity and very high operational speed.

Warm-up Lap

The first "Campetella Calling" day (October 1, 2020) began at 10:00 o'clock with a 25-minute multimedia presentation about the company, its teams of experts, its competences and potential in the field of production automation. For safety reasons the 40 visitors per day were divided into the smallest possible groups. The participants thus experienced a guided tour through the workshops to understand how future-oriented robot designs are generated, assembled and tested in practice. Moreover, the guests could witness the work of the two IML systems. During this session and afterwards, Campetella's experts were available to the participants to answer their various questions.Performance at Pole Position: "We have spent the past months bringing new robot developments to series production readiness," explains Elia Campetella, "The focus is on precision, speed, versatility, reliability, application-specific programmability and safety."

"Safety First!", adds Marco Marconi, Area Sales Manager, "this is an indispensable part of the 45 Campetella Calling days: 40 registered guests per day, obligatory masks, social distancing, reserved seats and more - to protect our guests and our own teams." *smi*

Campetella Robotic Center Srl
www.campetella.com

IML product — decorated yoghurt cups

IML product 2 — labelled cheese spread tubs

Photo: Ford

Smartly designed with easy-flowing polyamide

Thermoplastics with easy-flowing properties are usually somewhat more expensive than comparable standard materials; however, they offer advantages that ultimately pay off in terms of processing, production costs and freedom of design. This can be seen in the highly integrated bolster produced in plastic-metal composite technology (hybrid technology) for the Ford Kuga SUV. In addition to steel panels, the production of the highly loaded structural component includes polyamide 6, the easy-flowing, fiberglass-reinforced Durethan BKV30H2.0EF from LANXESS.

Ulrich Dajek, hybrid design expert at LANXESS, explains: "Our easy-flowing polyamide 6 can be processed at lower injection pressures. For this reason, smaller injection molding machines with lower clamping forces can be used in the production of the hybrid bolster. This has a positive effect on the machine running costs and allows greater flexibility in terms of machine selection and production planning."

The bolster and the fully assembled front-end module were developed and are produced by Montaplast GmbH, a global system supplier of the automotive industry, which has its headquarters in Morsbach, Germany.

Four integrated active grille shutters

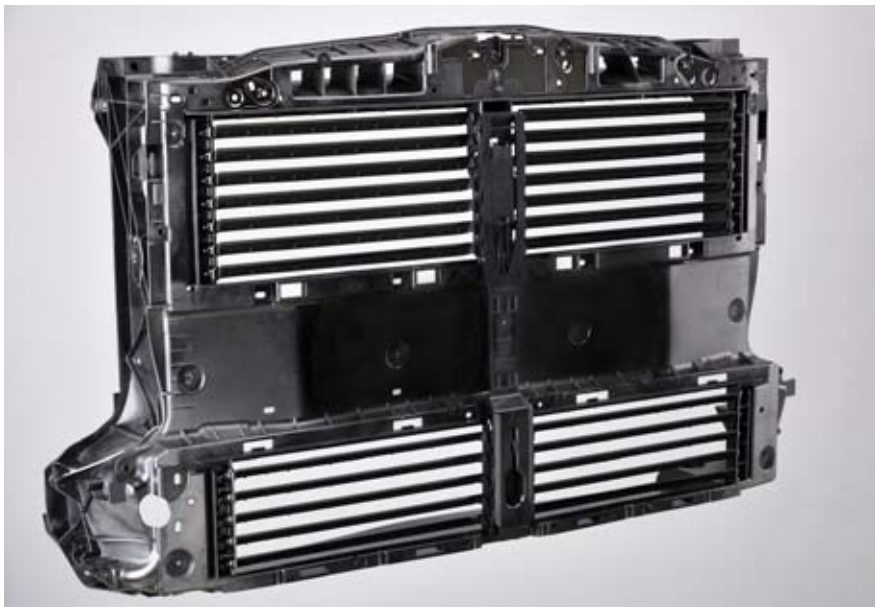
The bolster houses an actively controllable unit consisting of four active grille shutters that ensure a demand-oriented supply of air to the engine cooling system. The bolster contains reinforcing metal inserts at the sides and in the upper chord. The latter accommodates the highly loaded hood latch. The main task of the hybrid design is to support the cooling systems and hold them in position. Numerous additional functions are also integrated in the bolster – such as guides, mounts for the adjustment drive and fasteners. "Our development engineers have succeeded in integrating all these elements, functions and interfaces so that the functional and load requirements are met. At the same time, they have ensured that the entire front-end module can be produced in different region-specific versions in an automated high-volume process in a cost-efficient manner," comments Horst-Dieter Haltrich, Product Development Team Leader at Montaplast.

Direct threaded connections with greater stability thanks to polyamide 6

As a plastic component for the hybrid bolster, polyamide 6 has two main advantages over the possible alternative material, polypropylene (PP). The first advantage is that the component contains several direct threaded con-

About LANXESS

LANXESS is a leading specialty chemicals company with sales of EUR 6.8 billion in 2019. The company currently has about 14,300 employees in 33 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives, specialty chemicals and plastics. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.



The bolster houses an actively controllable unit consisting of four active grille shutters that ensure a demand-oriented supply of air to the engine cooling system. Photo: LANXESS AG

nections; these are more cost-efficient than using additional metal inserts. The threaded connections designed using polyamide 6 are significantly more stable, have a longer service life and are more reliable than with PP. The second advantage of polyamide is that it withstands the thermal loads that arise when the grille shutters are closed, in contrast to PP.

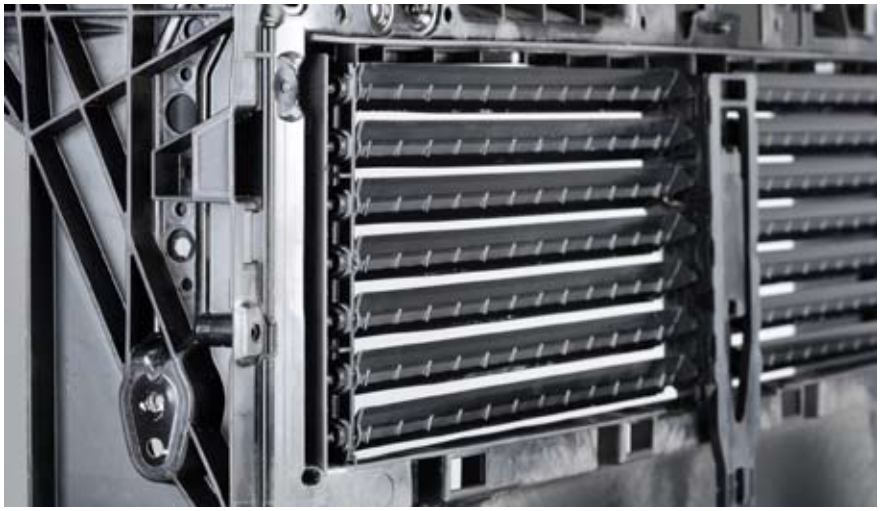
Easier to achieve filigree, thin-walled component areas

Due to the high flowability of polyamide 6, component areas with filigree geometries can be designed with thinner walls. “It was possible to reduce the wall thickness by around 20% in the areas subject to lower loads. Compared to a standard polyamide 6 with the same fiberglass content, this results in an appreciable weight saving,” according to Dajek. Due to the lower filling pressure, another benefit of the easy-flowing material is that components with lower stresses can be produced, minimizing the distortion.

Extensive HiAnt services

Ford, Montaplast and LANXESS worked closely together over the entire development process for the hybrid bolster right up to the start of series production. LANXESS also brought in its HiAnt engineering service. In one of several engineering studies, a component topology analysis was carried out to provide suggestions for the design and position of the reinforcing polyamide ribs that took account of the relevant load cases. Various calculations and simulations, such as analysing the rigidity of the radiator mount and the dynamic stability and noise vibration harshness (NVH) of the bolster, were also highly challenging. The load-bearing capacity of the metal-reinforced latch area (hood latch) as well as several insurance-relevant load cases – such as lower leg impact tests for pedestrian protection or the behavior of the overall assembly in the case of minor collisions, e.g. knocks while parking – were also simulated. In addition, LANXESS carried out tests on the prototype and series-production part to the specifications of Ford. Dajek: “For example, we allowed the complete assembly to ice up in a climatic chamber and tested the reliable opening and closing of the grille shutters.” **smi**

The bolster is also reinforced at the sides with metal inserts. Photo: LANXESS AG



LANXESS
www.lanxess.com

Central material supply system for producing pharmaceutical grade packaging materials

Heinlein, a successful company based in the town of Ansbach in Franconia, Germany, produces a wide range of closures and dosing systems, some of which are patented and predominantly designed for the pharmaceutical and cosmetics industry. When it came to expanding its production facilities, Heinlein opted for a modern and efficient material supply system from motan.

The company manufactures its products in controlled sterile environments up to class 7 cleanrooms and operates its injection moulding machines in conditions that meet very high cleanliness standards. This alone would be sufficient reason to consider the use of a near dust-free central material supply system a must. However, the fact that a central material supply system also prevents the materials, which are primarily supplied directly from the silos, are mixed up and the fact that the automated system is highly efficient, are also important points for the company.

When Heinlein built a new production hall for 20 injection moulding machines with clamping forces of between 250 and 2000 kilonewton, it drew on its extensive experience with the material supply system already installed in its existing production hall when it came to selecting a material supply system. This hall contains a central material supply system manufactured by motan-colortronic that directly supplies 35 injection moulding machines with material from ten outdoor silos. Based on the company's positive experience with this system and its low maintenance needs, Heinlein opted for yet another motan-colortronic system for taking care of all of the materials handling in the new production hall.

The machines in its new hall are supplied with material – which primarily comprises polypropylene as well as HD and LD polyethylenes – from a total of twelve outdoor silos. All of these materials are 1 A pharmaceutical grade certified materials. The old and new material supply systems are furthermore connected to each other, which makes for greater flexibility and security. This is because, if needed, the new and existing silos can be used for supplying both the new and the existing production halls. The system was also equipped with a loading station for bagged materials for processing small quantities, such as e.g. TPE or various special types of polypropylene.

All of the system's pipes – from those leading from the silos to the automatic METROLINK distribution station to those leading to the machines – are made of stainless steel and meet

About Heinlein-Plastik-Technik GmbH

Heinlein primarily specialises in multi-component and, in some cases, patented closures, dosing systems and drug administration devices. The company is currently also producing increasingly more complex products, such as tamper evident closures and/or child resistant closures and products in different colours. Heinlein predominantly supplies pharmaceutical companies, companies producing homoeopathic remedies, lifestyle and chemical companies. The company employs around 160 staff and has production facilities occupying 16 thousand square metres.

It currently exports over 60 percent of its products. Heinlein has tripled its output since 2008 and now produces up to 4,000,000 standard and custom-made closures a day over three shifts. The company is certified to ISO 9001, ISO 15378 and ISO 13485 and operates in line with the HACCP principles.

Heinlein's high hygiene requirements. They were installed on predefined sections along the hall's walls specifically designed and built to support the entire supply infrastructure such as power lines, compressed air pipes as well as cooling water supply and return pipes.

The entire system revolves around the METROLINK – the distribution station, which, once set up, automatically and without any risk of contamination connects all of the relevant material supply system pipes with those of the relevant machines to be supplied. This means that there is zero risk that a machine could be supplied with the wrong material. The material supply system chosen by Heinlein takes up very little space and has 2x10 material supply lines and 2x10 outgoing lines leading to the machines. In contrast to other distribution stations, there is no need for switching any connections or emptying operations during conveying thanks to the permanent pre-defined material allocations in the METROLINK system.

Heinlein also turned to motan-colortronic to meet its dosing needs and fitted its machines with volumetric MINIBLEND V disc dosing devices and METRO G conveying hoppers with de-dusting modules as the final items on the material conveying lines. These devices are of various sizes in line with the relevant throughput volumes. The system's two-component valves can be used to simply feed back any regrind material into the production process. The MINIBLEND V devices release the additives and colours into the base materials at the same time as they are drawn into the injection moulding machines. This means that there is no need for a mixer.

The company has also ensured that there is capacity for future expansion: The entire material supply system can easily be expanded to supply 40 injection moulding machines. *smi*

The METROLINK distribution station comprises two units that are able to automatically link ten incoming lines to ten outgoing lines respectively. The system has been designed in such a way that it can easily be expanded at any time. (Image: motan-colortronic)

The de-dusting modules enable the use of regrind without loss of quality. The dust is automatically separated into the central filter in a separate room. (Image: motan-colortronic)

motan-colortronic
www.motan-colortronic.com

AMT Launches PostProDP, an Automated De-powdering System for 3D Printing

Additive Manufacturing Technologies Ltd (AMT), leader in industrial automated post-processing solutions for additive manufacturing (AM), and Leering Hengelo, internationally recognized producer of blasting equipment for the metal and plastics processing industry, have partnered together to bring two new de-powdering systems called PostProDP and PostProDP Pro to the market.

Currently, up to sixty percent of the manufacturing costs of a 3D printed part are attributed to the highly manual steps of post processing the part after it has been printed. Current de-powdering methods are costly and time consuming.

The PostProDP range has been specifically designed for the AM industry, and provides a standalone high throughput industrial de-powdering solution. Both de-powdering machines are CE and ATEX certified. Differentiating features include an internally located adjustable and removable tumble basket to allow optimized part cleaning, as well as minimizing the fine particulate powder leakage after processing. Furthermore, ionizing nozzles leave the parts completely powder free after blasting. This unique design configuration allows for a safer and more efficient user experience. The systems are equipped with a recipe-controlled PLC controller preloaded with recipes for each common material combination, therefore offering a truly plug and play solution.

The PostProDP is 3D printer material agonistic and works with all powder-based printer platforms including HP Multi Jet Fusion, EOS, and 3D Systems, as well as a range of thermoplastic polymers such as polyamides and elastomeric materials. The system can be run with multiple medias, including steel balls, and takes 10 minutes to remove all the powder without damaging any of the parts. The PostProDP range complements AMT's existing range of PostPro3D vapor smoothing machines and contributes to AMT's vision of offering a full end to end post-processing workflow.

Joseph Crabtree, CEO of AMT commented: "AMT's vision is to develop fully automated safe and sustainable post-processing solutions to enable the industrial production of additively manufactured parts at scale. We first achieved this with the successful commercialization of the PostPro3D vapor smoothing system. De-powdering is the next key bottleneck in the post processing chain, and PostProDP goes a long way to mitigate many of the current issues with cleaning AM parts. We are delighted to be partnering with industry experts Leering on this industry critical mission."

André Gaalman, CEO of Leering commented: "Leering are experts in surface finishing with 80 years of experience in machine design and production for surface treatment. We export our machines, branded Normfinish, worldwide. The partnership with AMT will allow us to strengthen each other's positions in additive manufacturing and offer our joint customers globally the best solution for their post-processing needs. We're excited to offer our customers each other's solutions and bring a next generation of post-processing solutions to the market."

PostProDP and PostProDP Pro have been tested with customers across Europe and the USA. The systems are available to order now from AMT. smi

Additive Manufacturing Technologies (AMT)
www.amtechnologies.com

Precise and Quick Face Mask Production With Virtual Molding

Starting in April, SIGMA Engineering, Arburg and many other partners joint forces to work on a new project against the spread of the coronavirus. Now the production of injection molded masks made of LSR (Liquid Silicone Rubber) is running at full speed. SIGMASOFT® Virtual Molding was used to determine and optimize injection points, pressure requirements, temperature distribution, air entrapment, and the crosslinking of the LSR material.

SIGMA Engineering GmbH (SIGMA) based in Aachen, Germany, joined a cross-company project for a multifunctional face mask to help preventing the spread of the coronavirus.

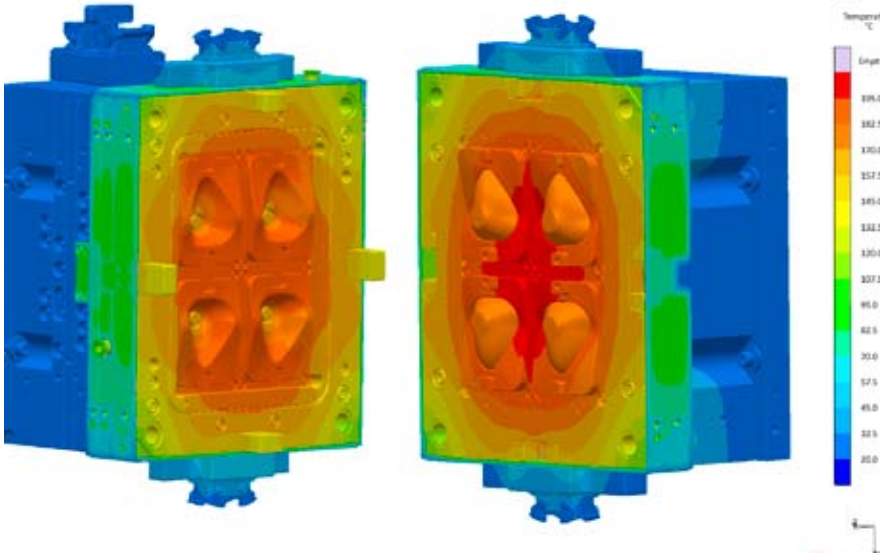
"We noticed a high demand for protective masks from the public as well as from our own employees, which made this project-cooperation highly welcome" says Thomas Klein, Managing Director of SIGMA about the current situation. "Due to the successful and focused cooperation with partners such as Arburg and Polar-Form we were able to simulate the layout of the complete LSR mold within shortest time and optimized the mold design for process-efficiency and robustness".

More Than Just a Feasibility Study

For a smooth production of the masks, Tobias Sonntag, project engineer at SIGMA, used SIGMASOFT® Virtual Molding to evaluate the position of the injection point, the venting system, and the thermal design even before the mold was cut. The prediction of the process parameters and required curing time was also an important result of the simulation.

"We examined a lot of different factors. But the focus was on component quality, optical properties and, of course, the safety of the user that comes with a perfect component free of air entrapments or other defects. But also, a fast and resource-saving process design was very important to us," says Sonntag about the requirements for the project and part.

The fixed (left) and the moving platen (right) at 180 °C after stabilization within ten cycles



Energy-Efficient and Resource-Saving Through Simulation

There is no need to guess how the mold reaches its thermal steady state. Since SIGMASOFT® Virtual Molding will precisely calculate the required number of cycles - the reliability of mass-production is secured. For an exact control of the temperature distribution, the number of temperature sensors in the mold was increased to six and their positions were optimized based on the simulation results. This allowed a focused regulation of the heating cartridges. In addition, an optimal insulation of the mold reduced the required energy to a minimum - energy waste was avoided.

SIGMA completed the project within 24 hours, from the mold setup to the filling calculations and the thermal layout. A total of four parts per cycle are injection molded at 180 °C from the nonpostcure LSR Elastosil LR 5040 supplied by Wacker. The required symmetrical temperature pattern of the four cavities was first created and optimized in a simulation using optimal insulation, six temperature sensors and regulatable heating cartridges, and then realized by Polar-Form in the mold construction.

"To design a mold under pressure without component and process references is the strength of SIGMASOFT® Virtual Molding" summarizes Thomas Klein. "The partners were under enormous pressure because everything had to run smoothly right away. We are highly pleased that the mold ran in the computer first and mistakes were avoided. This way, an efficient process was created very swiftly. Thanks to all partners for the joint success." **smi**

SIGMA Engineering GmbH
www.sigmasoft.de

YiMES: Begin the Digital Transformation Journey

In today's manufacturing industry, most enterprises have established their own standardized, process-based production methods. But the real dilemma before us is the rising costs with production efficiency approaching a "ceiling." Traditional, optimized production methods become increasingly inadequate to fulfill the ever-rising expectations of the market.

In the face of these challenges, the transformation toward digitalization is imminent for the enterprises world-wide. YIZUMI has launched the YiMES intelligent manufacturing execution system designed specially for the small and medium-sized enterprises in the field of injection molding, die casting and rubber molding, aiming to remove data silos, place the entire production process under control, and provide customers with digital factory solutions.

Full-process, Multi-level Digital Factory Solutions

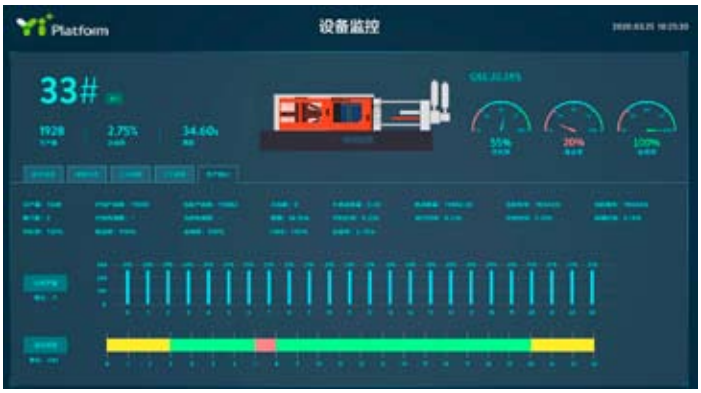
What is the need for digital transformation in molding and casting enterprises? Take one of Yizumi's customers as an example, after years of development, they now own more than 40 machines. The company has strict quality control requirements and strives for production management excellence. Their products are well recognized by international buyers. However, with the continuous growth of its business, bottlenecks in production management start to surface.

The difficulties on scheduling, capacity statistics, efficiency statistics and other analysis requirements have increased significantly. It is challenging for the management to further improve operational productivity. In the words of Jianwen Niu, Director of the Intelligent Interconnection Department of YIZUMI: "enterprises need new management tools and methods that allow to further enable the organization through information technology and data-based measures".

To tackle problems encountered by customers in the development of their organizational effectiveness, YIZUMI's YiMES intelligent manufacturing execution system integrates IoT, Cloud, Big Data, AI, and other new generation ICT technologies to various professional tools, including order management, production management, quality management, process management, production monitoring, energy consumption management, and mold management that fulfills the needs of small to medium sized enterprises in their digital and intelligent development.

By offering a full range of services, including PO fulfillment, pre-production preparation, output monitoring, defect detection, finished goods warehousing, and other processes, YiMES system helps you to achieve a high level of production control throughout the entire process. It enables you to have standards before production, control during production, and product tracing after production to prevent and remove defect products.

Upon the implementation of the YiMES intelligent manufacturing execution system in 2018, the above mentioned Yizumi customer achieved 100% product quality tracing and 100% PO progress system management after a short period of time. The efficiency of equipment increased by more than 10%.



YIZUMI YiMES intelligent manufacturing execution system is developed based on the Yi+ platform

YiMES system is developed to meet different needs of users at different levels. For instance, workshop operators can perform easy and simple operations via PC or mobile phones while production directors and supervisors are able to perform real-time monitoring over scheduling and production progress, machine status, establish efficiency statistics and analysis as well as carry out pre-production preparation for the complete value stream. At higher level, the management can manage the work floor through timely, transparent and data-based reports.

Machine operators can perform easy and simple operations via PC or mobile phones.

"YiMES provides customers with a full-process and multi-level professional solution for digital factory, helping customers to manage their pain points, improve quality, reduce cost, and increase productivity." said Jianwen Niu.

Intelligent Process Management

Unlike traditional MES systems, the YIZUMI YiMES intelligent manufacturing execution system is developed based on the Yi+ platform (YIZUMI Intelligent Equipment Industry Internet Platform). It also support die casting cell integration with standardized communication protocols between die casting machine and peripherals. Cloud management of all devices further reduces customers' costs on implementation, operation and maintenance activities.

Data collection has always been a headache for the injection molding enterprises. With a wide variety of product types and equipment brands, the amount of production parameters available is humongous. This makes data collection and analysis particularly difficult. As a platform specialized in injection- and rubber molding as well as die casting processes, YIZUMI's Yi+ has its unique advantages. Its Yi-CMS system can pick up parameters, overlying pressures, temperature, speed, time, and position of each molding cycle. Besides its benefits in improving injection molding processes, Yi-CMS may be applied to die casting as well as rubber injection molding processes.

Yi-CMS system can pick up parameters, overlying pressures, temperature, speed, time, and position of each molding cycle

According to Jianwen Niu, "The data collected is comprehensive. We understand what each parameter represents," and more importantly, how to use these data after collection. "The relationship between the process parameter of each mold opening/closing and the product yield will be the base for YiMES to optimize the process in the future." As Niu Jianwen said, with the collection of three years worth of data on each mold opening and closing, YiMES can calculate which parameter set will achieve the best yield possible. These parameters will then be recommended to customers. It not only will help the customers to improve their production yield, but also to avoid machine downtime in case there is no machine adjustment specialist available at the site.

Launched in 2018, YIZUMI's YiMES intelligent manufacturing execution system has significantly reduced the cost of digital transformation through its cloud-based services and created great excitement in the market. It has now been used in the fields of electrical equipment, 3C, 5G, automobile, packaging, and home appliances, providing customers with cost-effective digital plant solutions. ***smi***

Guangdong Yizumi Precision Machinery
www.yizumi.com

Milacron unveils new M-Powered applications

Milacron, a leading industrial technology company serving the plastics processing industry, is announcing its latest data-driven developments in Industrial Internet of Things (IIoT) predictive capabilities available to M-Powered users later this year.

M-Powered is an industry-leading suite of IIoT applications for operators, managers, and service technicians. The new applications take M-Powered predictive capabilities yet one step further. Focusing not just on point-failure prediction, next-generation of machine learning algorithms are used to continuously quantify the impact of wear-and-tear. Three applications made available to manufacturers beginning in June 2020 with the assistance of our data science partners, ei3.

"Our data science team has crafted algorithms that give operators valuable insights into the inner workings of the Milacron machine; for the first time, it allows us to quantify the impact of wear and tear as it progresses," said Dr. Stefan Hild, Director of Data Science at ei3. "Operators can then take smart decisions by weighing that cost against the cost of maintenance. This was only possible by close collaboration between our data scientist and the engineering team from Milacron. This is a true milestone for the industry."

Predictive analytics provides unlimited pathways to leverage data science to track machine condition and advise operators on providing actionable knowledge when it comes to triggering maintenance actions. Three new applications are being adapted from extensive research and testing on Milacron machinery in hopes to go beyond the typical break-fix methodology currently happening at scale in injection molding and extrusion.

"One of the most important movements in the last few decades is the evolution toward lean manufacturing. As manufacturers evaluate and reform their operations to reduce waste, efficiency can reach new heights," said Edward Jump, M-Powered IIoT Digital Analytics Leader at Milacron. "In real-world applications, true maintenance requirements are based on many variables. Through the adoption of machine learning and advanced analytics and AI, M-Powered can now monitor signals of impending failure. When combined, these are key indicators that allow manufacturers to deploy maintenance resources; improvements accrue to manufacturing in the form of cost savings and added efficiency."

Three new applications are being adapted from extensive research and testing on Milacron machinery in hopes to go beyond the typical break-fix methodology currently happening at scale in injection molding and extrusion.

Screw efficiency analysis

The plasticizing screw is an essential component that conveys a resin while generating and utilizing the mechanical and conductive energy necessary to melt the polymer and build a homogenous melt necessary to mold an acceptable part. With each unique application, this highly engineered

component can be expensive and often comes with a long lead time. As wear of this component occurs and the flight diameters of the screw begin to deteriorate, the screw's ability to efficiently convey material is reduced, consequently leading to increased recovery time, energy consumption, and increased melt temperatures.

As a result, productivity can be impacted as these conditions can translate into increased cycle times as well as potentially impacting part quality. For most manufacturers, wear occurs slowly and over a period of time, consequently, the deterioration of the process is also slow and over a period of time, therefore, making it oftentimes difficult to immediately detect and challenging to observe.

Our patent-pending system adopts an innovative energy-based assessment to provide awareness in the process. Its touch-free functions can yield insight on the screw's health without adding sensors to the screw or barrel. This allows M-Powered users to proactively order a new screw and replace it before wear and tear has a great impact on each cycle.

Fill case analysis

Another key component is the feed screw tip, based on its essential role as the link between the machine and the mold, containing a check ring or non-return valve critical to the molding process. For manufacturers, screw tips are a high wear item that often catches the brunt of the molding application but provides challenges to understanding and actively measuring wear-and-tear. This leading contributor has a direct impact on processing quality and repeatability, thus demands frequent replacement when compared to other injection end components.

M-Powered utilizes a proprietary shot-by-shot multivariate analysis to understand the state of the screw tip and indicate the effect of wear and tear on part quality, cycle time, and operating costs. This application will display and alarm when issues impact repeatability. Like our screw analytics, this is an evolving machine learning process, that accounts for distinct parts and operator adjustments.

Plasticizing screw efficiency analysis

M-Powered is an industry-leading suite of IIoT applications for operators, managers, and service technicians

Efficiency report

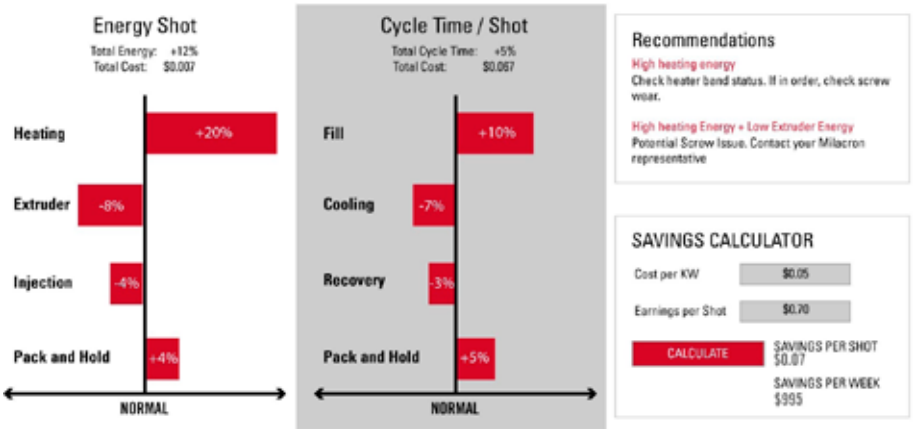
Intentional solutions can be derived from aggregated machine data and quantified wear-and-tear for manufacturers to summarize the operational efficiency of the machine to understand the impact on energy cost shot by shot. This resourceful application presents the leading variables in a single platform that increase the cost of production such as increased heating energy, extruder or injection energy, cooling time or recovery.

Using the application, operators can view a summary of their machine efficiency for each machine or their entire fleet in real-time. From this, costly offenders of cycle deviations can be corrected.

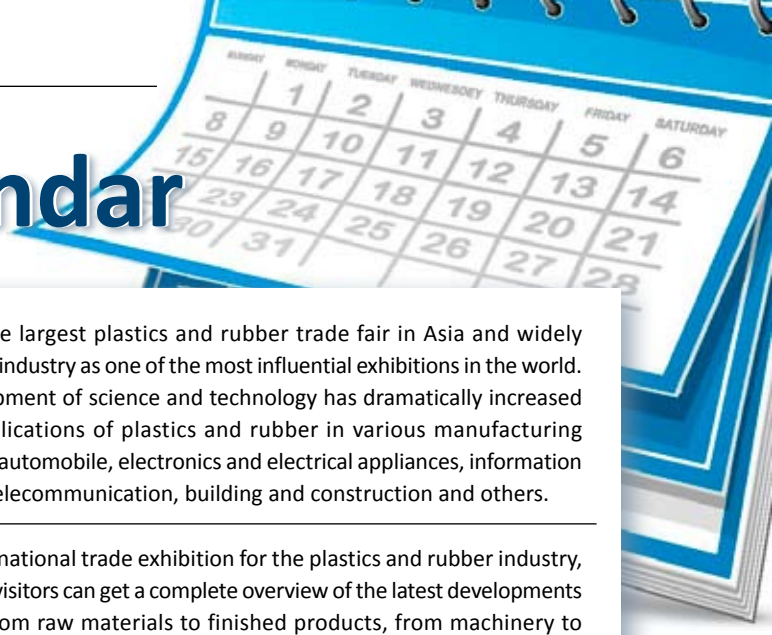
Milacron's goal is to reduce unplanned downtime by providing solutions to assess wear and tear and predicting failures proactively. This ensures plastics processors operate at the highest levels of cost efficiency, quality and sustainability. *smi*

Milacron
www.milacron.com

Using the application, operators can view a summary of their machine efficiency for each machine or their entire fleet in real-time



exhibitions calendar



Chinaplas
13-16 April 2021
Shenzhen, China
www.chinaplasonline.com

Chinaplas is the largest plastics and rubber trade fair in Asia and widely recognized by the industry as one of the most influential exhibitions in the world. The rapid development of science and technology has dramatically increased the range of applications of plastics and rubber in various manufacturing sectors, including automobile, electronics and electrical appliances, information technology and telecommunication, building and construction and others.

Plast
04-07 May 2021
Milan, Italy
www.plastonline.org

Plast is an international trade exhibition for the plastics and rubber industry, where interested visitors can get a complete overview of the latest developments in the industry from raw materials to finished products, from machinery to services. Plast will coincide with the exhibitions Ipack-Ima, Grafitalia and Converflex that are dedicated to packaging, graphics and converting.

NPE
17-21 May 2021
Orlando, USA
www.npe.org

NPE is one of the world's largest trade fairs for plastics and plastics technology. It covers the entire spectrum of the plastics industry: from raw materials and additives for the plastics manufacturing, plastics processing machines to plastic semi-finished and finished products. This makes NPE a must event for companies in the plastics industry, that want to get information about new products and developments. NPE is also host of the largest technical conference of the industry and various special exhibitions.

Plastpol
25-28 May 2021
Kielce, Poland
www.targikielce.pl/en/plastpol

Plastpol is one of the largest exhibitions in Poland and Eastern Europe dedicated to the plastics industry. It features all areas of plastics processing beginning with the first stages of plastic production and finishing with its disposal and recycling. Among the exhibits are plastics processing machines, moulds as well as a wide variety of plastics, recycling technologies and IT solutions.

Rosmould
15- 17 June 2021
Moscow, Russia
www.rosmould.ru

Rosmould is an international exhibition on manufacturing solutions of the next generation organized by Messe Frankfurt RUS. Exhibition covers such groups as design and product development, additive technologies, moulds, die moulds, stamps, materials, machinery and tooling.

Interplas
29 June - 01 July 2021
Birmingham, UK
www.interplasuk.com

Interplas is the UK's largest plastics exhibition and the only UK event to cover all of the manufacturing processes, technologies and services within the plastics industry. Held triennially Interplas showcases hundreds of exhibitors, the event features a wide range of technologies including injection moulding, rotational moulding, extrusion, blow moulding, thermoforming, vacuum forming, film extrusion, recycling, materials and design.

Equiplast
14-18 September 2021
Barcelona, Spain
www.equiplast.com

The Equiplast is a specialized trade fair in the field of plastic manufacturing. It is a meeting ground for manufacturers from Europe and South America. The Equiplast shows technical innovations and innovations of plastic and rubber production.

Taipei Plas
28 September - 02 October 2021
Taipei, Taiwan
www.taipeiplas.com.tw

Taipei Plas is a biennal international exhibition for plastics and rubber technology. You can see every facet of production, meet company representatives and industry professionals from across Asia and check out the vast array of breakthrough processing machinery, parts, finished products and materials.

smart_molding international 2021

everything about smart molding technologies

Planning Calendar 2021

Issue No.	Close date	Topics	Trade Shows
1/2021			
Ed. close date	30.11.2020	**Polymer industry on the anti-COVID frontline**	**Interplastica** • 26.01-29.01.2021
Ad. close date	07.12.2020		
Public date	04.01.2021		
2/2021			
Ed. close date	28.01.2021	**IML and IMD make the packaging brighter**	**Chinaplas** • 13.04-16.04.2021 **Plast** • 04.05-07.05.2021
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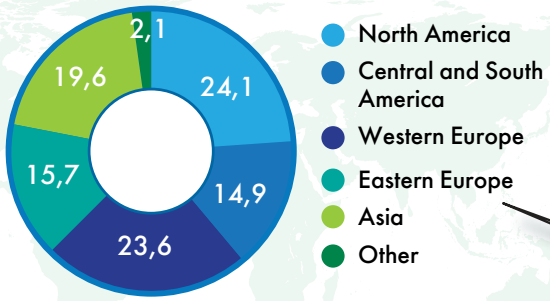

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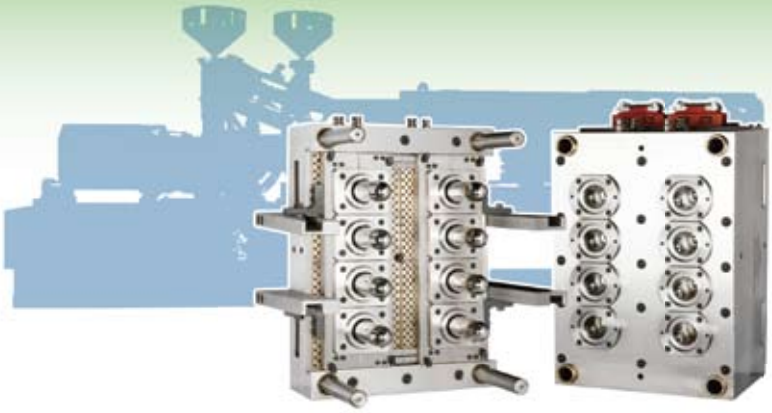

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