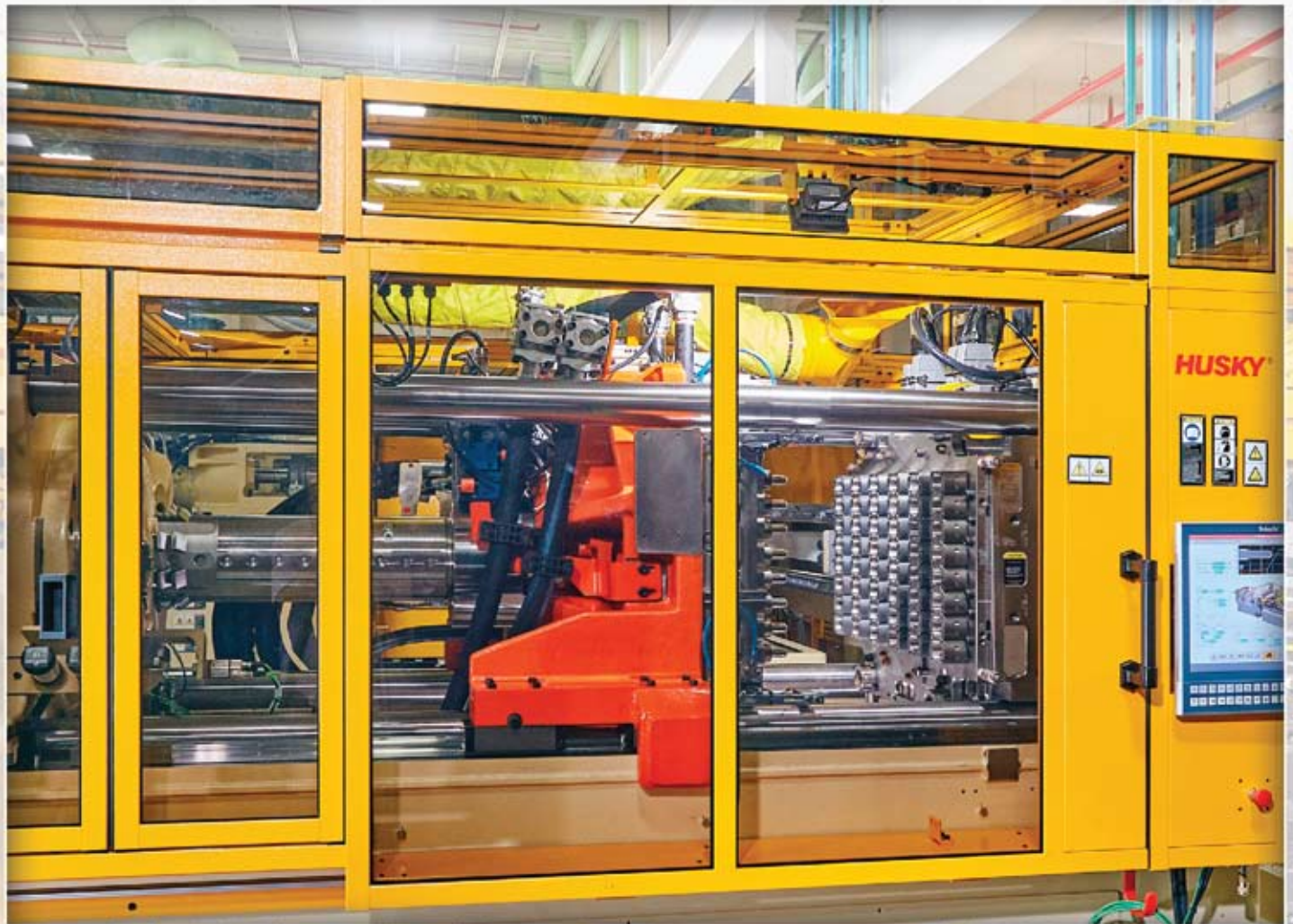


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**22** | Significant growth demonstrated in 2020 despite COVID-19

**27** | The global climate is forcing producers to adapt rapidly



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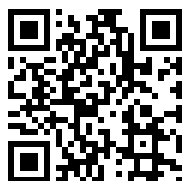
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# 20

True passion, real innovation, virtual experience – this was the message which ENGEL put out for the first edition of the ENGEL live e-xperience in mid-October 2020 – and ENGEL was true to its word. Several thousand customers, partners and interested parties from 90 countries took part in the virtual trade fair and online conference. The keynote, expert talks, one-on-one meetings and machine exhibits in the virtual showroom were very well attended throughout all four live days. All presentations are still available from the media library.



# 34

In early 2020, the COVID-19 virus was confirmed as a pandemic by World Health Organization (WHO) due to the significant spread around the Globe. While many industries have been impacted tremendously, the medical industry has been brought into the spotlight due to the soaring demand for medical devices. Considering the phenomenal demand driven by the pandemic, the growth rate is expected to be much higher than the previous estimation. Mastip continues to provide high-quality hot runner solutions to the global medical customers with minimum disruption.



26

With their relatively simple geometry, articles such as the cup lid are, in turn, especially suitable for thermoplastic specialists starting out in the processing of silicones. Here, they do not need their own process specialists, for the complete systems from KraussMaffei provide the necessary technical knowledge and an appropriate partner network: the moldmaker ACH Solution and the material producer Wacker Chemie, which provides temper-free low volatile formulations. The three companies are cooperating in order to make silicones and their processing more widely available.



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The J750 Digital Anatomy 3D printer produces anatomical models that mimic the actual feel, responsiveness, and biomechanics of human anatomy. Models can be punctured, sutured, cut, and physically manipulated like actual human tissue. This capability minimizes the use of animals and cadavers for clinical trials and surgical training. Hospitals, healthcare institutions and medical schools can use these lifelike 3D models to improve clinical evaluation for a wide range of pathologies, as well as bring new medical devices to market faster.



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"We couldn't just leave it all behind! We have to stay in the market, communicate and be proactive. This is what our customers expect from us, whom we have been asking," Marco Marconi underlines the CRC marketing strategy. "When it became clear to us that practically all plastics trade fairs worldwide will be cancelled in 2020, including FAKUMA, we changed course. We're not inviting interested parties to Friedrichshafen, but to Montecassiano, 800 km further south on the Adriatic coast." The FAKUMA exhibits were already built and in operation.



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So far, Sanner has successfully made it through the Corona crisis. In fact, the demand for solutions from the international manufacturer of pharmaceutical primary packaging and medical technology products has even increased by more than ten percent. Hence, the company has increased its capacities – and is doing everything possible to provide customers with the usual high delivery reliability and quality. As the market leader for effervescent tablet packaging, Sanner recognized the challenges early on and acted quickly.

## In times of Covid-19, Intersurgical relies on KraussMaffei technology

For many companies, Covid-19 means standstill, but for some a hard sprint. The UK company Intersurgical manufactures medical devices for respiratory support and because of the pandemic suddenly had to increase its capacity significantly. In this emergency situation, KraussMaffei has proved to be a flexible and reliable partner.

When Covid-19 became an issue at the beginning of 2020, Charles Bellm, Managing Director of Intersurgical, had no idea that the illness would have such a massive impact on their business. By February, things were different: the first factory had already

closed, and more and more governments and hospitals were contacting Intersurgical to secure deliveries of large quantities of the highly specialized articles for respiratory support "We could have increased our production twenty-fold, and it still wouldn't have been enough," remembers Bellm.

However, the production capacity was massively increased: with over 3,000 employees worldwide, 704 joined the teams during the course of the crisis, along with numerous new KraussMaffei injection molding machines being put into operation for Covid-19 relevant products.

At the location in Lithuania a CX 160 with an electric



*At the location in Lithuania, a CX 160 manufactures special filters that are integrated into the tube between a respiratory machine and the patient*

turntable is producing filters that are integrated into the breathing system between a respiratory machine and the patient. Before Covid-19, such filters were replaced routinely in intensive care every 24 hours, in some cases this can now be every one to two hours,

which has further increased demand. At Intersurgical, 26 injection molding machines alone produce the EcoLite oxygen mask around the clock, which are supplied globally.

**KraussMaffei**  
[www.kraussmaffe.com](http://www.kraussmaffe.com)

## Comar invests in the fight against COVID-19

Comar, a premier supplier of specialty packaging solutions and custom molded medical devices and assemblies is proud to announce the relocation and expansion of its West Bend, Wisconsin manufacturing site. This represents the third major site expansion announcement by Comar in 2020.

Comar's West Bend operation is moving into a 160,000 square-foot former plastic molding facility less than five miles from the current location. The new building will triple Comar's local footprint and eventually house over seven million dollars of capital investment in high tonnage

injection molding machines, large cavitation molds, and press side automation.

Mike Ruggieri, CEO of Comar, said, "The pandemic affecting our society has brought an unprecedented surge in demand for Comar's rigid packaging, especially for disinfecting wipes used in hospitals, homes and institutions. We recognize the critical role our injection molding and blow molding

solutions play in delivering essential supplies to the frontlines in the battle against COVID-19. This expansion shows our commitment to the fight and will position Comar to better meet demand while addressing the growth and service level needs of our customers. We will also be situated to support future injection molding and blow molding business opportunities

and partnerships with our extensive floor space."

James Spalding, West Bend Plant Manager at Comar, adds "In addition to the capacity expansion, our team members are looking forward to the improved floor layout, new break rooms, dedicated training facilities, and the planned investments in employee development. We anticipate an enlargement in our team as Comar is actively recruiting to fill immediate openings for skilled technicians and shift operators for the plant."

Comar expects to commence a full plant move during the first quarter of 2021.

**Comar**  
[www.comar.com](http://www.comar.com)



## Filter for Arburg mask rounds off coronavirus project

Arburg has been very active in the fight against coronavirus since the beginning of the pandemic. An outstanding example is the multifunctional face mask, which was developed in collaboration with partners and made ready for series production in only 41 days. May saw the start of production of face masks made from LSR (liquid silicone rubber) and PP (polypropylene), initially as versions for everyday use. To protect both the wearer of the mask and those in the surrounding area from the virus, this was followed by the next step: the design and manufacture of a supplementary disposable filter that can be easily attached to the mask opening.

"It was important to us not only to develop the mask as a product for everyday use, but also to prioritise personal protection with the additional filter," says Gerhard Böhm, Arburg Managing Director Sales. He mentioned a high level of wearing comfort, sterilisability and multiple use in

terms of sustainability and resource conservation as further requirements.

### Strong partners

Dr Thomas Walther, Head of Application Technology at Arburg adds: "The mask project clearly shows how the time-to-market for new product ideas can be accelerated in very special cases if all partners pool their expertise, technologies and equipment." The companies involved in the project were Sigma Engineering (LSR component and mould simulation), Polar-Form (LSR mould), Foboha and Wilhelm Weber (thermoplastic moulds), Ewikon (cold runner), Elmet (LSR dosing unit), Männer und Günter (hot runner technology), Barth Mechanik (gripper), Wacker und Borealis (material), Karl Küfner (filter design), Herrmann Ultraschall (welding technology) and Packmat (packaging technology).

### Multifunctional mask

The mask itself consists of a soft LSR component, which is put over the nose



*The filter can be easily attached to the Arburg mask, which thus protects the wearer and those in the surrounding area from coronavirus infection*

and mouth, and a firm PP holder with eyelets to attach the elastic bands. The LSR masks were injected on an electric Allrounder 570 A with a clamping force of 2,000 kN and a 4-cavity mould, and removed by a Multilift V robotic system. The associated PP holder was produced on an electric Allrounder 520 E Golden Electric with a clamping force of 1,500 kN and a 2-cavity mould. The injection moulded parts were removed here by a Multilift Select robotic system.

To prevent infection in everyday life, the mask opening is closed with a cover so that the breathing air can escape downwards. A disposable filter can be placed on the opening to protect the wearer and also people in the surrounding area from coronavirus.

### Filter for more safety

The filter was developed in collaboration with Karl

Küfner – a company specialising in the production of filters, which has been using Arburg machines in injection moulding production for decades.

Project manager Manuel Frick, who as Arburg Sales Manager LSR designed the face mask, explains the production of the mask filter: "We used an Allrounder 470 H with a clamping force of 1,000 kN and a 4-cavity mould to produce the thin-walled filter housings made of PP. As this hybrid high-performance machine is designed for high-speed applications, we can produce the parts in a cycle time of around 5.5 seconds." This makes it possible to very efficiently produce around 2,500 housings per hour, which are then ultrasonically welded to a high-performance fleece to form the finished filter.

*The complete Arburg face mask consists of the LSR mask, the holder and the filter (from right to left)*



## In a year with no trade fairs, Sepro Group launches a 'Virtual Showroom'

One of the world's largest suppliers of robots and automation solutions for plastics injection molding, Sepro Group has assembled a vast array of equipment and technical expertise in a 'Virtual Showroom' that will be online at least until the end of this year.

"Despite the cancellation of all trade fairs due to the Covid 19 pandemic, we feel it is important to keep in touch with our clients, our partners and all who seek to automate their production lines. Although it appears only online, we expect it to present a comprehensive view of Sepro technology... almost as if it were a real trade show stand." Xavier Lucas, Chief Sales Officer - Sepro Group.

In the Virtual Showroom, visitors can explore the entire Sepro robot portfolio, including:

- The completely redesigned Success Range of 3-axis, and now 5-axis, affordable general-purpose robots
- 3- and 5-axis robots in all sizes
- 6-axis robots, co-developed with industry leaders: Yaskawa Motoman and Stäubli
- Smart data services including Live Support, a live hotline support feature designed to reduce downtime

Perhaps the most exiting feature allows visitors to schedule socially-distanced face-to-face discussions



with Sepro technical experts on seven different topics about robots and automation in the plastics industry, or simply to share ideas about current and future projects.

Visitors can schedule presentations on the following subjects:

- How to reduce downtime with preventive maintenance
- Fast troubleshooting" best practices and tools
- What EOAT do I need for my application? Discover

er My Gripper, Sepro's comprehensive catalog of EOAT components that allow you to build tooling both simple to complex.

- New affordable robots: Success and Success Line X
- Why multi-axis (5 and 6 axis) robot solutions are more flexible.
- Solution by Sepro: the unique Sepro approach to complete turnkey automation systems.

**Sepro Group**  
[www.sepro-group.com](http://www.sepro-group.com)

## Arkema at Formnext Connect 2020

Arkema participated in Formnext Connect (10-12 November 2020), the virtual alternative of the exhibition, to present its latest innovations in specialty materials for all major 3D printing technologies and to exchange with the global AM community. Through digital seminars, Arkema continues to maintain a close relationship with its customers and partners to support the fast growing 3D printing market and to develop the new manufacturing technologies in these times of a global pandemic.

With the largest portfolio of specialty materials and innovative solutions for

the additive manufacturing, Arkema continues to grow its offering through its platform, 3D Printing Solutions by Arkema, and to partner with strategic innovative companies along the additive manufacturing ecosystem. With these innovations and partnerships, Arkema

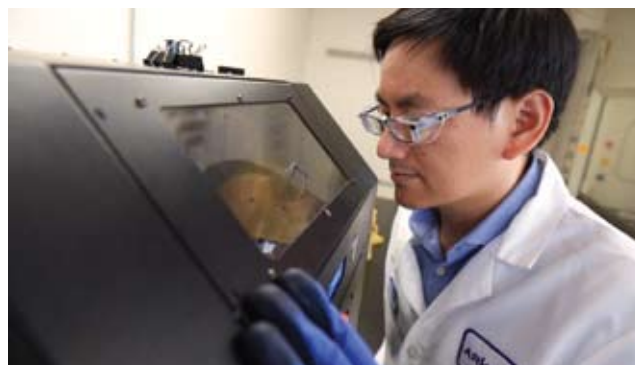
is investing in new capacities to address the fast growing worldwide additive manufacturing market and to accelerate the development of the disruptive manufacturing technologies.

"Thanks to our expert knowledge of end markets, our lab capabilities, our network of complementary partners and our broad line

of solutions, we can advise decision-makers and help them choose the material and printing technology best suited to their needs. Our goal is to position ourselves very early on at the heart of the technological options that are going to emerge." Sumeet Jain, Arkema's Senior Director for 3D Printing Worldwide.

Beyond offering an industry leading portfolio of materials, Arkema is committed to unlocking new opportunities by bringing comprehensive solutions and expertise along the additive manufacturing ecosystem and continue enhancing and expanding its strategic partnerships.

**Arkema**  
[www.arkema.com](http://www.arkema.com)





## Corona pandemic: interplastica and upakovka 2021 cancelled

The trade fairs interplastica, International Trade Fair for Plastics and Rubber, and upakovka, No. 1 Trade Fair in Russia for Processing and Packaging, scheduled for 26-29 January 2021 at the AO Expocentre exhibition centre in Krasnaya Presnya in Moscow, have been cancelled and will take place on their next regular dates, 25-28 January 2022. This is Messe Düsseldorf's response to the ongoing pandemic situation and the current tightening of quarantine regulations in Russia.

"The decision was taken by Messe Düsseldorf in close cooperation with Messe Düsseldorf Moscow," emphasises Erhard Wienkamp, Managing Director of Messe Düsseldorf, and

continues: "Moscow has taken stricter measures to contain the corona pandemic due to the drastic increase in the number of infections. Cultural, educational and other events are prohibited until mid-January. No one can say at the moment what will happen immediately afterwards." The current announcement enables all participants of the interplastica and upakovka to react in time, to reschedule and to concentrate on the event date in January 2022.

interplastica is the most important business platform for the Russian plastics and rubber industry. It offers a representative overview of machinery, raw materials and equipment, such as plastics



processing and recycling plants, welding machines, measuring and control technology, raw materials and supplies, as well as plastic and rubber products. interplastica is particularly aimed at representatives of the plastics, chemical and mechanical engineering industries.

As a member of the interpack alliance, upakovka with its offerings for the packaging and related pro-

cess industries is aimed at the target groups of food, beverages, confectionery and bakery products, pharmaceuticals, cosmetics, non-food and industrial goods.

The international orientation of both trade fairs enables visitors to find out about innovations from all parts of the world and obtain offers specially tailored to the Russian market.

**interplastica**

[www.interplastica.de](http://www.interplastica.de)

## TaipeiPLAS rescheduled till September 28, 2021

Affected by the COVID-19 pandemic, the "Taipei International Plastics and Rubber Industry Show (TaipeiPLAS), originally scheduled in September 2020, has been postponed to be held at Taipei Nangang Exhibition Center, Hall 1 from September 28 to October 2, 2021. Still, the new schedule will let manufacturers continue expanding their markets and seizing business opportunities after the pandemic.

In response to the pandemic, knowing that industry players have high demands for market ex-

pansion and new product launches, the show organizers, Taiwan External Trade Development Council (TAITRA) and Taiwan Association of Machinery Industry (TAMI), thus hosted in September this year the TaipeiPLAS Digital Week, including live online seminars, online interviews, online new product launches and online joint procurement



meetings. The week-long event has enjoyed more than 150,000 views and clicks, once again proving that TaipeiPLAS is one of

the leading plastics and rubber industry trade shows in Asia, especially its discussion topics and innovative technologies on display.

Since TaipeiPLAS has been rescheduled to the end of September next year, the organizers are introducing a hybrid of virtual and in-person events so as to connect suppliers and buyers around the world for more business opportunities.

**TaipeiPLAS**

[www.taipeiplas.com.tw](http://www.taipeiplas.com.tw)

## ENGEL extends machine portfolio for packaging

The new duo speed injection moulding machine sees ENGEL combine productivity and efficiency with short cycle times in the high clamping force range. Available with clamping forces from 5,000 to 11,000 kN, the new large-scale machine type is aimed at manufacturers of buckets and storage and transport containers.

The new injection moulding machine is based on the ENGEL duo platform, which has been tried and tested on global markets for more than 25 years, and has been specifically adapted to the requirements of packaging applications on both the clamping and injection unit sides. "Above all for buckets and logistics products, the duo speed extends the portfolio into the higher clamping force range", says Christoph Lhota, Vice President of ENGEL's Packaging business unit. "The development focus was on short cycle times." With dry cycle times between 2.35 and 3.4 seconds, the duo speed is the fastest dual-platen in-



jection moulding machine on the market.

ENGEL's compact dual-platen technology further contributes to excellent cost effectiveness. Across all clamping force sizes, the duo speed is shorter than comparable injection moulding machines used in this field of application, which saves expensive shop floor space. In addition, the platen geometry has been optimized for the special requirements of the packaging industry.

### Particularly clean and energy-efficient

Thanks to exposed tie-bars, injection moulding machines from the ENGEL duo series have a very clean

mould area and achieve high energy efficiency. The duo speed relies on ENGEL's energy-saving ecodrive servo-hydraulics with operating point optimisation and is equipped with an electric motor-driven screw drive. Optimised accumulators are used for particularly fast injection. They support demand-driven charging of the accumulators to further improve energy efficiency.

The duo speed already features a barrier screw and sliding ring non-return valve optimised for PP and HDPE as standard equipment.

### Leveraging the full potential

This extension of ENGEL's portfolio, puts ENGEL in a

*The new duo speed, tailored to packaging and logistics applications, is based on more than 25 years of experience with large dual-platen machines*

position to optimally leverage all efficiency and quality potentials, from thin-walled packaging and caps and closures to thick-walled large containers, with a perfectly matched solution in each case. In addition to the duo speed, the e-cap and e-speed injection moulding machine series were specifically developed for applications in the packaging industry.

**ENGEL**

[www.engelglobal.com](http://www.engelglobal.com)

## Plasman Group announces global rebrand

Automotive and manufacturing leader Plasman Group has announced they will now be known solely as Plasman™ in the automotive, consumer and medical markets. With a rich history dating back over 40 years, the change reflects the company's growth from a two-person tool shop into

a global industry leader. Plasman™ is a key supplier of exterior trim, bumpers/fascia, interior systems, and sub-components for major OEM automotive brands, and is a significant player in the consumer goods market specializing in precision molding. Recently, the Company fur-

ther diversified into the medical device and biotech industry.

Prior division names, including A-Brite Plating, A.P. Plasman, Build-A-Mold, Plastal and Thermotech, will now be united under one global brand name. It marks an exciting milestone for the company, as Plasman CEO

David Wiskel explains. "It is not only about the name change, but an opportunity to reflect on everything our history has afforded us and everything we aspire to become. In the 16 plus years I have been CEO, Plasman hasn't stopped growing. It is an exciting time for me personally, our entire team, and each of the customers we serve".



#### Plasman's rebranded signage

Plasman recently introduced Omniluxe™ to their

list of product offerings, dedicating a new factory in Gothenburg, Sweden

to its mass production for automakers. Omniluxe is a chrome alternative that meets the strictest environmental guidelines. Its flexibility gives designers the freedom to craft complex shapes, with endless gloss options and extensive color-matching possibilities. Omniluxe is durable and environmentally friendly without compromising beauty. It can also reduce noise, vibration and harshness in a variety of applications.

Environmentally friendly products like Omniluxe are a key part of Plasman's

commitment to sustainability. Through customer, supplier and team member partnerships, they've created a blueprint for collectively working toward a better, more sustainable future for all. "We carefully evaluate how we work and see the future," explained David Wiskel. "We embrace sustainability challenges as opportunities to innovate and continuously improve our product design."

**Plasman**

[www.plasman.com](http://www.plasman.com)

## StackTeck adds stack molds to its FastTrack™ program

StackTeck Systems Ltd., a global manufacturer of multi-cavity, high-volume production molds, has now added stack mold applications to its FastTrack™ program, a new approach to fast mold deliveries, using automated design capabilities that work with a pre-set, optimized set of mold design rules.

Stack molds for round lids and containers are now available for molds of up to 2×16 cavities, making them especially attractive to those companies in need of increased productivity as a response to sudden market demands for food packaging applications.

In recent weeks, StackTeck has achieved record lead times for round container and lid molds,

with deliveries in the range of 6-9 weeks. Considering two examples from the FastTrack™ leadtime matrix, the lead time for a round container mold in a 2×2 configuration is 6 weeks from order until mold test and at the same time, a 2×16 round container mold lead time is now 11 weeks under the FastTrack™ program. Round lid molds

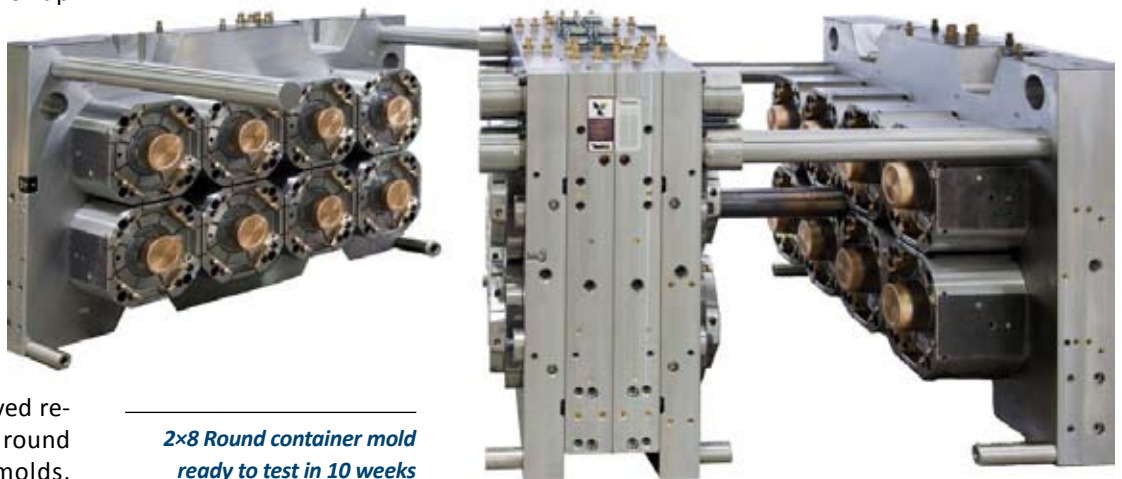
also average 6-10 weeks on stack mold configurations starting with 2×2 and up to 2×16 cavities.

Lou DiMauro, Sr. Vice President of Manufacturing stated, "We understand that our customers need reliable high productivity molds fast to satisfy rising market demands for consumer products, and we have taken

all the necessary steps to provide them just that. Our team has found the right avenues to compress engineering and manufacturing stages for stack molds, using automated design and product standardization, which in the end translates to huge advantages for our customers."

**StackTeck**

[www.stackteck.com](http://www.stackteck.com)



**2×8 Round container mold  
ready to test in 10 weeks**

## Milacron to aid development of industry standards for secure remote access

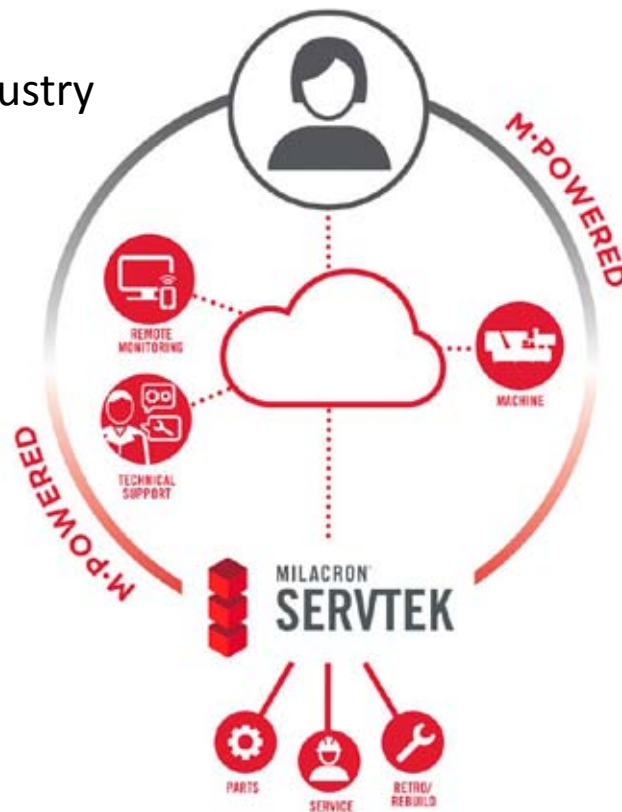
Milacron, a leading industrial technology company serving the plastics processing industry, joins its IIoT partner, ei3, in The Organization for Machine Automation and Control (OMAC) workgroup to establish best practices for remote access methods. The collective knowledge among this workgroup focuses on timing, safety and security that will ultimately be a model that is appropriated among the growing remote connections in injection molding, extrusion equipment and automation systems.

Adoption of remote access through Milacron's IIoT Platform, M-Powered, has been accelerating in the last 15 months including a 70% increase in connections, despite our technicians not being able to enter user facilities to connect new machines near the onset of the Covid-19 pandemic. This critical digital infrastructure among manufacturing companies allows reliable remote access for cloud computing insightful data of machines and automation systems across global machinery fleets in the plastics industry.

Milacron has observed a gap in industry requirements for secure remote monitoring services available on the marketplace. M-Powered customers own their data. Milacron's role is to keep data and assets secure, while it focuses on pioneering an industry leading IIoT platform for manufacturers that presents a competitive advantage. With the support of ei3 data scientists and their state-of-the-art equipment located worldwide, Milacron's mission is to exceed the demands of plastics processors by providing unique insights based on data to improve safety, quality, availability, cost and sustainability.

Working with OMAC, Milacron will leverage its experience from deploying M-Powered remote access to large user communities and the key features that made it possible: its inherent safety, industry-grade robustness, and the ability to accommodate requirements from both IT and OT.

The guidelines resulting from the OMAC workgroup are meaningful to Milacron's customers when dealing with the intricate inbound



connections that yield unique intelligence on current and future operations, sharp manufacturing quality, optimized uptime and OEE. Milacron is proud to help the workgroup carry out OMAC's vision to establish a robust framework that allows various organizations and applications to obtain their goals while maintaining safety and security.

### M-Powered

M-Powered is a portfolio of easy-to-use observational, analytical and support services that gives customers a competitive advantage. Leveraging Industrial Internet of Things (IIoT) technology, M-Powered runs sophisticated algorithms that utilize real-time machine learning to monitor machine operations and alert before any potential issues.

M-Powered yields unique intelligence on:

- Current and Future Operations
- Sharp Manufacturing Quality
- Optimized Uptime and OEE

The addition to your company's bottom line from implementing IIoT solutions are: maximum quality, availability, utilization.

M-Powered takes our entire suite of services delivered by our ServTek aftermarket brand to the next level of customer performance. M-Powered connects parts, service, rebuilds, retrofit and preventative maintenance service to our customers' machines to provide a unified, stronger offering: optimized uptime. ServTek delivers performance. Now, with M-Powered, ServTek provides competitive advantage.

**Milacron**  
[www.milacron.com](http://www.milacron.com)

"IIoT platforms are consistently emerging on the market with promises to drive smarter, more efficient operating environments. If the security and digital infrastructure are compromised it can carry damaging consequences that go well beyond data theft. In a joint partnership effort with ei3, we want to combine our knowledge to enhance current practices that mitigate risk and uphold customer trust."  
 – Edward Jump, M-Powered IIoT Digital Analytics Leader at Milacron

## The therapeutic art of creativity with TPEs

Ahead of the “new normal”, as a result of the Covid-19 pandemic, the Stay-at-Home economy is starting to unfold. This has seen lifestyles changing dramatically in compliance to national lockdowns, thus resulting in major activities, including work and recreation, being held indoors.

One way of spending quality time with children and also family members is to enjoy and inspire them to delve into the art and craft sector, which can help develop their creative and thinking skills, while improving interactive relations.

For the elderly, who are prone to cognitive decline, art and craft activities are believed to be able to improve cognitive health and motor functions.

Owing to its ergonomic and functional characteristics, TPE is a recommended material application for designing art and craft ac-

cessories, specifically for applications that require sealing, soft-touch surfaces and grips.

### TPEs for durability and comfortable handling

KRAIBURG TPE’s thermoplastic elastomers are frequently used as hard-soft combinations, for soft-touch design, or functional elements as well as impact resistance modifiers in art and craft tools and accessories.

The THERMOLAST® K TPE series has a wide range of hardness from supersoft <10 Shore A up to 60 Shore D. It can be processed by multi-component injection molding, with a wide range

of materials such as PP, ABS, PC, PC/ABS, PCT, PETG, ASA, SAN, PMMA, PA6/6.6/12, POM, PS, HIPS, etc.

The selected TPE compound range features materials that can come with properties such as thermal stability, abrasion resistance, or scratch resistance.

Thus, the THERMOLAST® K materials are ideal for use in producing knobs of stand drawing boards, handles of paper cutters, grips of stamping sticks, drawing pens and pencil sharpener surfaces and color pallets. Other applications are paddles of the pottery wheel ceramic machine, ring cutters, handle hooks, crochet needle handles,

yarn needles, and many other items.

### Adding variety to applications

KRAIBURG TPE materials, including the THERMOLAST® K materials are recyclable and free from latex, PVC, phthalates, or heavy metals. The TPE can be processed through both injection molding and extrusion.

Aside from the various color options available in-house, KRAIBURG TPE also ensures worldwide consistent color quality from experts, to inspire creativity in designing applications.

**KRAIBURG TPE**

[www.kraiburg-tpe.com](http://www.kraiburg-tpe.com)



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## ASPI DUO: Double production with reduced footprint

After just two years, ST BlowMoulding delivered the second ASPI 150.3 DUO machine to the USA.

The machine is equipped with parison suction technology, but like all models of the ASPI series, the DUO can also be used for conventional blowmoulding.

Customers who require higher production rate find the right answer to their

need in the ASPI DUO: a mobile extrusion platform shuttles over two clamping units and drops the parison alternatively into each one of the two moulds. This is the perfect solution to double 3D duct production, coupling this performance with ease of use, quick set-up, and process stability typical of single clamp machines.

Therefore, the main strengths of ASPI DUO are the doubling of the production of a single machine in a reduced footprint and the unique material handling system.



**ST BlowMoulding**

[www.st-blowmoulding.com](http://www.st-blowmoulding.com)



## A new, cutting-edge workplace to better serve the European market

The construction of the new HRSflow site is now drawing to an end with an area of approximately 3,000 sqm: a significant expansion for the San Polo headquarters (Italy). Entirely designed according to the lean manufacturing criteria, the new workspace completes the project with which the company has brought a re-appraisal and a re-design for the hot runners' assembly process. The goal is to guarantee an increase in the production capacity and more flexibility for the clients of the European market.

The internal business team dedicated to con-

tinuous improvement has reassessed the whole production process and division layout: this way they were able to deliver the application of the new assembly line. With a cutting-edge design the new working environment has been organized down to the smallest detail, to reduce where possible the slowdown of the production flow both for people and for goods.

Being geographically close to its customers has always been a key factor for HRSflow, hence the choice to invest in Europe to reduce the logistic chain

and delivery time for systems and spare parts. All this was possible thanks to a high automation level and an effective data exchange. Thanks to faster and more optimal corporate flows every request can therefore be processed in a fast and effective way to maximize performance and service levels.

The new production site has been designed according to the concept of a sustainable environment, a perfect combination of industrial requirements, quality standards and well-being of employees in their daily job. The energy pan-

els used for the roof are actually compensating the needs of the entire production line.

HRSflow Chief Operating Officer Umberto Santin states, "We have started the lean management path in 2017 with a significant increase in the quality and performance key measurables, whilst the productivity expressed in man-hours has improved from 20% to 50% according to the different areas. The involvement of all the personnel proved to be a key factor in improving performance and the workplace in a continuous and structured way. A warm thank you to our whole team, to their efforts and work; we are ready for the new future challenges".

Cycle time reduction, high throughput, new systems for Quality Assurance and digital development: all these have become key concepts for the company production line. Thanks to its strategy and persistence, HRSflow declares once again its ability to evolve and renovate in an international, ever-changing context.

**HRSflow**

[www.hrsflow.com](http://www.hrsflow.com)

## Vario TIP® system ensures maximum productivity and increased patient safety

Vario TIP® is the patented and worldwide leading system concept for the production of medical and diagnostic consumables such as pipette tips, cuvettes or

reagent vessels. These products are laboratory consumables with high quality standards and the need for cavity sorting in the packaging unit to ensure delivery



and patient safety in every case. With the Vario TIP® system, production runs

completely cavity-sorted for maximum efficiency and safety. The Vario TIP®

system is characterised by its unsurpassed degree of freedom for different mold configurations and packaging units, with an extremely space-saving design and complete cavity sorting. With Vario TIP®, high cavity numbers, up to 128, are possible with cycle times peaking at 3.8 seconds. The automation system handles all basic functions such as removal, transfer, screening, buffering and filling. In addition, the system includes a large number of unique functionalities that can be used according to customer specifications. These include camera inspections, cavity-sorted exchange of

bad parts/defective parts, filter assembly and customer-specific packaging of the finished parts.

The further development Vario TIP® FSS with its particularly narrow design, opens up the market to MedTec injection molders in new performance classes without requiring more room space. FSS stands for Floor Space Saving. As the name suggests, the outstanding advantage of the Vario TIP® FSS structure over the Vario TIP® standard model is the extremely reduced space requirement. Through a clever arrangement of the buffer areas required for the cavity separation, Wal-



dorf Technik has succeeded in reducing the area by half, compared to the basic system. The functionality and variability of the Vario TIP® standard model is of course still retained.

The system is also displayed on the Waldorf Technik company page within "FAKUMA Virtual".

**Waldorf Technik**

[www.waldorf-technik.de](http://www.waldorf-technik.de)

## SABIC at BIOMEDigital 2020



SABIC presented and exhibited at BIOMEDigital 2020, the virtual expo for the biomedical industry, which was taking place Nov. 4-5, 2020. Also at the expo, the company introduced a new semi-crystalline product in its recently launched family of LNP™ ELCRES™ CRX copolymer resins. These innovative materials offer exceptional chemical resistance to aggressive

healthcare disinfectants and can help prevent premature failure from environmental stress cracking (ESC) in medical equipment housings and devices. The new grade became the fourth product in the LNP ELCRES CRX portfolio, which comprises amorphous and semi-crystalline materials.

Nithin Raikar, SABIC senior business manager, gave a presentation, entitled

"Keeping Medical Equipment Clean and Durable: High Performance Copolymers to Address Infection Control Challenges", as part of the Tech Theater track. At its virtual booth, SABIC provided additional information on material solutions that address healthcare trends such as robotics, connected devices, infection control and sustainability.

### ESC resistance for longer device life

The application of increasingly aggressive disinfectants, such as alcohols, peroxides and quaternary ammonium compounds, to combat hospital-acquired infections (HAIs) can lead to ESC and failure in plastic parts. SABIC's proprietary copolymer technology can resist stress cracking and mitigate crack propagation to help extend the useful life of medical equipment

used in hospitals and clinics, as well as homes for remote healthcare devices. Further, LNP ELCRES CRX copolymers can serve as potential drop-in solutions for existing production tooling.

The new semi-crystalline LNP ELCRES CRX copolymer features UL V0 performance at 1.5 mm, good ductility and the portfolio's highest level of chemical resistance against leading hospital disinfectants. All current LNP ELCRES CRX grades are opaque and custom colorable, and they meet the requirements of limited compatibility according to ISO 10993 (parts 5 and 10). The full portfolio is now included under SABIC's Healthcare Product Policy, which specifies formulation lock for covered materials and a management of change process.

**SABIC**

[www.sabic.com](http://www.sabic.com)

## Ferris State University adds press to support in-person learning

The Ferris State University Plastics Engineering Technology Lab took delivery of a Zhaifir Zeres electric molding machine in the first week of October. The consigned ZE 400/120 (44 U.S. tons) is helping to address social distancing requirements posed by the COVID-19 pandemic. With the new ZE, the University has been able to add an additional lab section for applied learning with one student at each machine rather than two, reducing the number of lab partners.

Jason Holbrook, Absolute Haitian's Midwest Regional Sales Manager and member of the Ferris State Plastics Engineering Technology Advisory Board, facilitated the consignment machine. Although stock machines are

currently in high demand, Jason made the case for Absolute Haitian to deliver the ZE 400/120 to the university as quickly as possible.

Said Tom Van Pernis, Assistant Professor at Ferris State University, "Once we understood the machine requirements, it was a quick turnaround. We were pleased with how fast the new machine arrived. We had students running the molding machine the day after it delivered for six hours. Jason has been a great supporter of our program over the years."

Currently, the Ferris State lab is using the ZE for an Advanced Injection Molding course, and in the spring, they will add Introduction to Injection Molding on the Zeres.



*ZE 400/120 for an Advanced Injection Molding course*

The Zeres is an electric machine complemented by a hydraulic circuit dedicated to injection carriage movement, core pull, ejectors and valve gates, providing students with the opportunity to see both electric and hydraulic technologies in action.

"In my classes, I typically review the ins and outs of the molding machines first, focusing on the controller. Students in the advanced

class were all familiar with our existing machines. This semester, I've been able to simulate an actual work situation with the new Zeres," said Van Pernis. "Here's the manual now go to it. All the students have been successful, quickly understanding the control and making parts on their own."

**Absolute Haitian**  
[www.absolutehaitian.com](http://www.absolutehaitian.com)

## MTD Micro Molding doubles manufacturing space

MTD Micro Molding is a contract manufacturer that specializes in problem solving for the micro-medical device market and is a strategic partner for bringing

### *MTD Micro Molding expansion*



the smallest, most critical, cutting-edge devices to life. MTD is vertically integrated with tooling and molding in-house at our facility in Charlton. We are also uniquely specialized in micro-injection molding

bioabsorbable and drug-delivery applications.

In 2017, MTD announced the plans to expand the facility in Charlton to accommodate the fast-growing medical micromolding business. In 2019, MTD unexpectedly lost their president and leader, Dennis Tully, who was the mastermind behind the building expansion project. In his honor, MTD carried on Tully's vision and completed the project on schedule, despite setbacks from the COVID-19 pandemic.

As vice president Gary Hulecki explains, "We were nearing our capacity

in our existing manufacturing space and needed room to grow." The expansion measures 11,700 square feet, creating a new facility size of 27,450 square feet — effectively doubling MTD's cleanroom manufacturing space. The expansion is complete with a new tooling department, more material storage, a new conference space, additional offices, and even a fitness center for employees. MTD is a single-source supplier for customers, performing all micromolding services in-house, in a single controlled environment.



For example, the expansion allows MTD to better handle the logistics of the increasing need for custom packaging and assembly services. “The days of bulk

packing tiny medical parts are becoming a thing of the past. Custom packaging solutions are becoming a requirement for medical OEMs.”

At a time when many businesses are worried about their future, Hulecki admits that he does have one concern with this expansion project. “Our fear

is that we will grow out of this expansion, at the rate of growth we’re seeing.”

**MTD Micro Molding**  
[www.mtdmicromolding.com](http://www.mtdmicromolding.com)

## HTI Plastics manufactures face masks for employees and their families



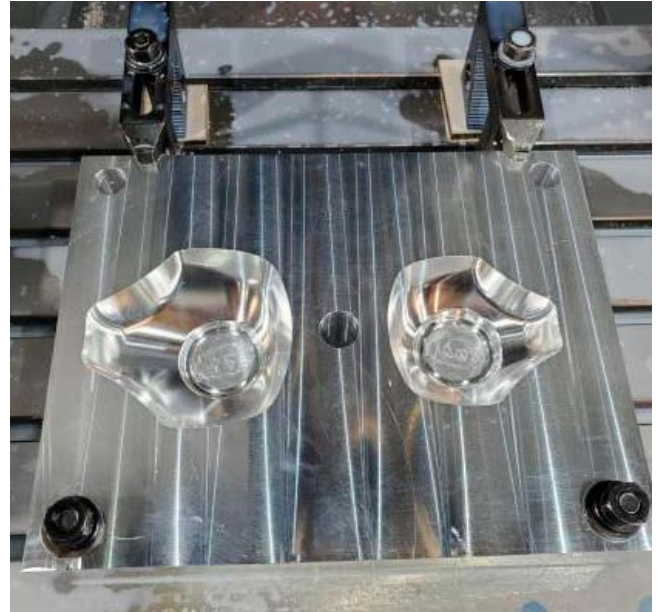
*HTI tool for a reusable face mask*

HTI Plastics created face masks for employees and their families to protect them from COVID-19. In the fight to stop the spread of the COVID-19, face masks became of top necessity to protect our employees and to continue operating during the pandemic.

Like many other businesses deemed essential to stay open during the pandemic, HTI faced difficulty finding masks for all the employees that kept the operations running. That is when our team of engineers and tools makers jumped into action. They quickly designed and made a tool for a reusable face mask with a replace-

able filter. Our production and set up team also played a significant role in getting the tool tested quickly for production.

“Our engineering, tool room, and production teams worked hard to get these tools into production quickly,” said Chris Reed, Director of Engineering at HTI Plastics. “Engineering had the design done within a matter of days. The tool room jumped right in to machining the tools and had the initial tools done within two weeks. We found that a quick adjustment to the design was needed, and the tool room turned around another insert within two



*HTI face mask mold half*

days. The Production group broke into their busy schedule to make sure we could run the tools. It was a great job by everyone.”

After the masks were ready, a team put together some “Face-masks kits.” These kits come in blue or red, with a large and small size mask, some filter material, strings to make ear loops, and detailed instructions on how to assemble.

“Our employees’ safety and well-being are our top priorities. With HTI being a critical company to run, due to our product lines, our employees’ hard work allows our company to stay open and meet our customers’

needs,” said Troy Just, President at HTI Plastics. “Everyone has worked extremely hard during these trying times, and I am thankful for everything they have done and continue to do.”

We have not produced these for retail sale. The masks are only for our employees and their families. We understand that our responsibility to protect our employees does not stop at the end of their shift, we also want to take care of them and their families outside, to help prevent the spread of COVID-19.

**HTI Plastics**  
[www.htiplastic.com](http://www.htiplastic.com)



*A successful event: More than 400 participants from more than 40 countries attended the virtual summit that was held on 19 November, 2020.*

Anyone seeking to get one step ahead and sniff out trends in medical technology, made a point of attending the Arburg Summit: Medical 2020 on 19 November. Thanks to the digital format of this summit meeting, twice as many guests were able to attend as were at the comparable, physical event in the previous year. More than 400 participants from more than 40 countries were there to inform themselves about current developments, innovative applications and visions, and to

exchange views at the highest level with many medical technology experts. The interactive response was intense and vibrant. The twelve lectures focusing on "Solutions", "Innovations" and "Visions" were accompanied by a high-calibre panel discussion. This special event was enhanced yet further by interactive breakout sessions with expert discussions and live presentations of exhibits in the Customer Center in Lossburg. The summit was chaired by Guido Marschall from plastics channel Plas.TV.

"Even before the start of our virtual summit, we received very positive feedback from our invited guests and were able to register many more participants than would have been possible at a present event, based purely on capacity," pointed out Gerhard Böhm, Arburg Managing Director Sales. "With this digital format, exceptionally challenging in terms of content as well as technology, has taken us down new paths. And feedback confirmed this: Our Arburg Summit: Medical 2020 was 'the place to be' in the field of medical technology."

#### **Keynote speech focused on the future of medical technology**

A particular high point of the event came with the keynote speech delivered by Prof. Dr-Ing. Marc Kraft, Head of Department Medical Technology at the Technical University Berlin and Chair of VDI's "Technologies of Life Sciences" association. On the basis of a few examples, he highlighted current trends in medical technology that are set to

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





*"Live Breakout Box" cleanroom: Arburg expert Sven Kitzlinger, Senior Application Manager Medical, answered questions from the participants about cleanroom technology and presented interesting features directly beside the injection moulding machine that was producing needle holders for insulin pens in a live demonstration*



*"Live Breakout Box" Freeformer: Martin Neff head of the Arburg Plastic Freeforming department, presented many practical examples directly at the Arburg Prototyping Center (All photos: Arburg)*

continue in the coming decades, laying the bedrock for the ensuing panel discussion. In this context, Prof. Ute Schäfer (University of Graz), Dr Andreas Herold (B. Braun), Niklas Kuczaty (VDMA Working Group Medical Technology) and Gerhard Böhm (Arburg) discussed the topic of "Medical technology – challenges and prospects for 2050". Everyone agreed that, by 2050, technology-driven companies would have a clear advantage. By then of course, many products would no longer come from factories but would instead be manufactured individually and close to the patient, e.g. directly in the hospital or even in the operating theatre. Nonetheless, quality would remain Job One. "We perceive a megatrend in the field of Additive Manufacturing and also a rise in the significance of digitalisation and sustainability", acknowledged Gerhard Böhm. "These are all topics that we are also intensively preoccupied with. Arburg is therefore very well prepared for a future in which plastic will remain a valuable material that is important to life."

### **Twelve informative lectures – something for everyone**

Earlier in the summit, four concurrent panel sessions were held, each containing three lectures on "Solutions", "Innovations" and "Visions" – there really was something for everyone. The topics ranged from concepts for the

production of LSR injection moulded parts and microfluidic systems to the challenges faced by the healthcare industry, details of the Medical Device Regulation (MDR) and digital methods for integrated parts documentation, as well as application examples of innovative high-performance tools and the additive manufacturing of customised implants. Many participants used this opportunity to ask their questions during the event using the chat feature.

### **Three interactive live discussions and presentations**

The Arburg Summit: Medical 2020 was rounded off with three "Live Breakout Boxes". Here, topics such as cleanroom, LSR processing and additive production could be discussed, with two Arburg experts in attendance for each topic. In addition, they were accompanied to the exhibits by camera teams to present the applications live. Things to see included the production of LSR masks on an electric Allrounder 570 A. At the beginning of the coronavirus pandemic, Arburg and its partners got this project off the ground in record time and developed the face coverings themselves. A stainless steel version of the electric Allrounder 370 A was used to show how clean-room technology can manufacture mass products such as needle holders for insulin pens. And lastly, a Freeformer 300-3X was used to demonstrate the additive

manufacturing of resorbable implants. Anyone wishing to know more was also able to make an appointment over the following days with one of the experts in the Online Meeting Lounge.

### **Positive feedback all round**

"Prestigious speakers from science and industry, as well as our own medical technology field and application experts didn't just present trends and innovations," said Gerhard Böhm, reviewing the virtual event. "They also answered exciting questing in live-stream sessions and, by ensuring that the Arburg Summit: Medical 2020 was a highly topical event, very successfully created a 'tangible' experience."

Juliane Hehl, Managing Partner and responsible for Marketing, was also extremely impressed by the Arburg Summit: Medical. "We successfully ventured into new territory here. We weren't interested in putting on fairly well-organised alternative for a cancelled trade fair – people are already finding that increasingly boring," said the Managing Partner. "And this boredom factor will grow rapidly in future. But in contrast to that, we will be focusing consistently on added value for our customers. And we shall certainly continue down this path with some interesting formats." **smi**

**Arburg**  
[www.arburg.com](http://www.arburg.com)



# First live e-xperience with several thousand participants

*True passion, real innovation, virtual experience – this was the message which ENGEL put out for the first edition of the ENGEL live e-xperience in mid-October 2020 – and ENGEL was true to its word. Several thousand customers, partners and interested parties from 90 countries took part in the virtual trade fair and online conference. The keynotes, expert talks, one-on-one meetings and machine exhibits in the virtual showroom were very well attended throughout all four live days. All presentations are still available from the media library.*

"The large number of participants and the very positive feedback from our customers more than fulfilled our expectations", says Ute Panzer, Vice President Marketing and Communications at ENGEL, drawing an extremely positive conclusion after the first live e-xperience. "We have made a quantum leap in the field of virtual exchange with customers and partners."

## Focus on personal contacts

"Even though no classic trade fairs are taking place, and restrictions apply to personal meetings, we still want to exchange ideas with our customers, partners and interested parties and present our solutions and innovations.

After all, Covid-19 does not mean that we are slowing down our development activities", says Dr. Christoph Steger, CSO of the ENGEL Group. Against this background, the injection moulding machine manufacturer developed a completely new virtual and interactive trade fair concept. Seven machine exhibits, an online specialist congress and one-on-one meetings with familiar local contacts and other experts ensured that the ENGEL live e-xperience was on a par with a physical trade fair. "We succeeded in making personal contacts the focus of attention, even in virtual format," says Panzer. Many customers booked appointments in advance and were guided through the virtual showroom during the meetings. ENGEL provided insights into

the new machine solutions and process technologies via video streams.

Both the concept and the content impressed the participants. There was also very positive feedback on the functionality of the platform and the excellent transmission quality. ENGEL had set up two streaming studios at its headquarters in Schwertberg.

## Participants from 90 countries

"The reach is astounding. The participants came from 90 different countries," says Ute Panzer, highlighting one of the main advantages of the virtual format. People who were unable to attend the event live still have the opportunity to visit the machine showroom, independently of their time zone, and

**ENGEL** is one of the global leaders in the manufacture of plastics processing machines. Today, the ENGEL Group offers a full range of technology modules for plastics processing as a single source supplier: injection moulding machines for thermoplastics and elastomers together with automation, with individual components also being competitive and successful in the market. With nine production plants in Europe, North America and Asia (China and Korea), and subsidiaries and representatives in more than 85 countries, ENGEL offers its customers the excellent global support they need to compete and succeed with new technologies and leading-edge production systems.



to view all keynotes and expert talks via the media library. This is another benefit compared with a physical exhibition.

"Despite the very good experience, we view it as extremely important to see, and look forward to seeing, our customers, partners and interested parties in person again soon," says Christoph Steger. "The virtual trade fair will not replace physical events in the future, but it will complement them in a

very good way. We are establishing the live e-xperience as a complementary, permanent sales channel. It opens up the opportunity to present ENGEL's solutions in a way that was previously only possible at trade fairs or at one of our locations, independently of distances, time zones and restrictions". **smi**

*The first live e-xperience by ENGEL was a huge success. Dr. Christoph Steger, accompanied by moderator Mari Lang, opened the accompanying online conference on the first day of the fair, for which ENGEL had set up two streaming studios (All pictures: ENGEL)*

**ENGEL**

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# Sumitomo (SHI) Demag: significant growth in 2020

*The German-Japanese injection moulding machine manufacturer Sumitomo (SHI) Demag ends the year 2020 with significant growth in order intake and market share despite the economic downturn in the plastics processing industry that has persisted since autumn 2018.*



*The all-electric IntElect series is the growth engine at Sumitomo (SHI) Demag*

**F**rom January to August 2020, the order intake of the Sumitomo (SHI) Demag Plastics Machinery GmbH with its production plants in Germany and China increased by 24 percent to 183.7 million euros, reports the headquarter in Schwaig, Germany. This positive development is primarily due to an extensive number of multiple machine orders in the packaging, medical technology and electronics sectors.

For the 2020 financial year, the management anticipates total incoming orders and sales to reach 275 million euros and 250 million respectively.

## **2020 the breakthrough year for all-electric machines**

Sumitomo (SHI) Demag is benefiting from the significant increase in demand

for all-electric machines. Compared to ten years ago when only one in five machines was fully electric, now the market share in Europe accounts for 50 percent of all small and medium-sized injection moulding machines.

The packaging industry is also increasingly ordering all-electric machines, especially for applications with low and medium injection speeds. Here, Sumitomo (SHI) Demag's market share has significantly increased to 30 percent.

Following the introduction of the new IntElect 2 machine generation and the expansion of its product portfolio, which now comprises the multi-component machines IntElect Multi and El-Exis Multi, Sumitomo (SHI) Demag offers customised solutions to suit the specific applications of each industry.

"We want to gradually close the price gap between hydraulic and fully electric machines. This will be achieved through global sourcing, optimisation of machine design and in-house production of drive technology optimised for the injection moulding process. These factors combined makes the costs and performance of our IntElect series highly competitive," says Gerd Liebig, CEO Sumitomo (SHI) Demag. Currently, more than 70,000 all-electric machines produced in Japan and Germany have been delivered worldwide.

Sumitomo (SHI) Demag focused early on the development and production of all-electric machines. Most recently, the Wiehe site initiated a number of production efficiency measures to increase its production capacity for this forward-looking technology. Concentration on one product range has



**Gerd Liebig, CEO of Sumitomo (SHI) Demag Plastics Machinery since 2017**  
(All photos: Sumitomo (SHI) Demag)

optimised cost reduction across the entire production process, resulting in considerably faster throughput times. As of 2020, the IntElect has also been manufactured in Chiba, Japan. Not only has this improved global availability, it has enabled Sumitomo (SHI) Demag to process large orders faster and more flexibly. To fulfil standard short-term order requirements, the company plans to maintain a level of IntElect machines in stock in the future.

### Medicine is booming, automotive remains flat

Demand for automotive industry solutions fell by almost 70 percent in 2020. In contrast, demand for medical technology solutions rose by almost 50 percent. Here, the focus was on applications for in-vitro diagnostics.

Sumitomo (SHI) Demag does not expect a significant correction of the market this year, which has fallen by approximately one third in the past two years. Rising replacement requirements from the automotive industry and the continuing high demand for machines from the packaging and medical technology sectors will slightly improve demand for injection moulding machines next year. However, full compensation

for the drop in demand is unlikely to be achieved before 2024.

### Solidarity before dismissals

Thanks to a solidarity package agreed between the management and the workers council at the two sites in Wiehe and Schwaig, Sumitomo (SHI) Demag has to-date not made any redundancies for operational reasons. "Our aim has been to defy the crisis with this solidarity package," says Liebig. At the heart of the agreement was a voluntary waiver of bonuses by the entire management team and all non-pay-scale employees, in addition to the introduction of temporary short-time working for all employees. "This enabled us to retain our workforce and adjust overall capacity to the economic crisis, allowing us to increase production capacity immediately when demand rises," adds Liebig.

As the evaluation of the Kununu evaluation platform shows, Sumitomo (SHI) Demag has made significant gains in employee satisfaction in recent years. The company now occupies a top ranking position in the European mechanical engineering industry. Liebig comments: "A kununu score of 3.9 and a recommendation rate of 81 percent demonstrates a high degree of loyalty and integration between employees and the company."

### Investments during the crisis

Since 2016, Sumitomo (SHI) Demag Plastics Machinery has invested almost 20 million euros in the modernisation of machinery at its two German sites. A new light-weight warehouse with 1,600 m<sup>2</sup> of floor space is currently being built in Schwaig. The new hall location enables a direct material flow from goods receipt and dispatch loading zone to production. Future expansion of the plant has also been considered. Additionally, the expansion and modernisation of the training centre in Schwaig has been completed. With new training rooms directly connected to the application technology, the capacity for customer training has doubled. To deliver this advanced devel-

The global development and production network of Sumitomo Heavy Industries and **Sumitomo (SHI) Demag** consists of four plants in Japan, Germany and China with more than 3,000 employees. The product portfolio includes fully electric and hybrid driven injection moulding machines with clamping forces ranging from 180 to 15,000 kN. With more than 145,000 machines installed, Sumitomo (SHI) Demag is present in all the world's major markets and is one of the largest global manufacturers of injection moulding machines.

opment experience, the training team has increased to eight, with experts sharing their know how on machine technology, application technology and robotics. All of the training rooms are equipped with the latest media technology such as digital boards with touchback function and an online studio. This enables professional training to be delivered to course participants from all over the world. **smi**

**Sumitomo (SHI) Demag**  
[www.sumitomo-shi-demag.eu](http://www.sumitomo-shi-demag.eu)



**IntElect: Maximum Efficiency – Highest Precision**

# SACMI IPS for sustainable PET packaging



*Performance and flexibility continue to drive the growth that has taken SACMI machines to the top of the market. Latest innovative steps include the ability to process recycled PET with standard machines and integration with AI vision systems.*

**E**ight years have gone by since the first SACMI IPS (injection preform system) for the manufacture of PET preforms made its debut. Thanks to its unique qualities of integration, performance, usability and low consumption, this 220 t, 48-cavity mould SACMI press has enjoyed worldwide success: for several reasons. First of all, SACMI is a truly global supplier both geographically (its Global Network consists of over 80 companies) and, above all, technologically, providing solutions designed to meet every manufacturing need within the packaging-beverage industry.

## Supply chain quality, service quality

Already a leader in the closures field, the SACMI Group has, in recent years, invested heavily in the development and expansion of its PET Solutions range.

SACMI's strategy of supplying combined cap-preform solutions and acting as "sole technology provider" has proved to be highly successful, especially where producers – for geographical, technological or market reasons – need to cover as much of the supply chain as possible with a reliable sole

partner who can ensure outstanding quality and service.

Wherever in the world SACMI has marketed and started up IPS solutions, suitable levels of local service have been established so that highly specialised teams can act promptly to ensure maximum plant efficiency at all times.

## More efficient than ever

One of the key advantages of the successful IPS 220 is its innovative mould-machine interface, designed to halve size changeover times with respect to alternative solutions. In other words: full machine-robot-mould-auxiliary unit integration, governed by SACMI-developed software that merges and simplifies machine control via a single user-friendly platform.

Since the introduction of the first IPS model - which made SACMI one of just a handful of complete preform plant suppliers - the company has invested in extending the range, developing two further 300 and 400 ton platforms (with up to 128 cavities per mould) that can house moulds by both SACMI and other approved suppliers such as MHT.

## Adaptive and versatile

Expansion of the range has, in part, shifted the focus from integration to adaptivity. On the IPS 300 and 400 models, in fact, the machine-mould interface has been designed to host existing moulds with ease. This means customers can enjoy unmatched versatility of use, starting with modular control and an investment that can be scaled up.

Where properly maintained, preform moulds can, in fact, have an extremely long working life, often longer than that of the presses on which they're installed. That's why SACMI has, on its higher-tonnage models, focused on mould interchangeability while maintaining some of the fast changeover solutions that were tried and tested on the IPS220.

## Sustainability 'as standard'

SACMI has always combined cutting-edge technology with extensive know-how on materials. Building on its leadership in the development of machines for the closures sector, SACMI has expanded its technological lab to provide advanced cap-preform design and test services in both the plastics and metal closures fields.



With over 50 years of experience in machine and plant engineering for the packaging industry, SACMI has developed proprietary technologies for each phase along the production line. These include the CCM continuous compression molding, currently an internationally acknowledged benchmark technology for the production of plastic capsules, intrinsically superior in terms of process quality, productivity and reduced consumption. Extending its advantages to similar industries is SACMI's challenge, which has developed CBF, the platform for the production of containers by compression, combining the best of alternative technologies and targeting in particular the food & pharmaceutical sector. SACMI CCM Multilayer is the latest new frontier in the production of single serve capsules for coffee, tea and other food products. The development of complete platforms for preforms by injection (IPS) and blow-moulding (SBF) has completed the product range of SACMI, the only company in the world capable of handling every step of the production line with solutions tailored to the needs of each individual customer and market.

In recent years, one of the key aspects of the SACMI range and the relative research work has been sustainability: this involves both light-weighting (overall weight reduction of the cap-preform system, performance remaining equal) and the development of technological standards that reduce environmental impact by using recycling-sourced materials.

Hence the development of a machine range capable of processing recycled materials in various forms (flakes and grains), a guaranteed feature on the standard IPS solution that requires no modification or adaptation.

A recyclable material par excellence, PET is an increasingly important

part of SACMI's sustainability-focused investment plans, the aim being to develop, in the near future, an integrated recyclable PET processing system.

#### Shared technical features

All SACMI IPS platforms are characterised by ambitious technological standards: these include high-performance plasticization units, equipped with shooting pot, and a wide range of combinations that lets operators optimise settings according to preform type and mould size.

Moreover, a 3 or 4-station post-cooling area with internal cooling and a Bosch linear brushless motor featuring K.E.R.S. technology contribute - right across the range - to minimisation of consumption (guaranteed in the order of just 0.2 kW/kg).



PET preforms (All pictures: SACMI)

#### Towards IA solutions

A further advantage of the SACMI range compared to competitors is that, alongside the machines, it provides integrated devices for total quality control of preforms, both in-line or in the lab.

For example, the broad SACMI PVS (preform vision system) range offers inspection rates as high as 72,000 preforms/hour.

Systems equipped with up to 8 HD image capture cameras, plus unique patented solutions (e.g. polarized light inspection that operates on proprietary software) that check 100% of output, provide detailed reports highlighting the origins of any defects thanks to a cavity number reading system.

Recent developments in this field include Artificial Intelligence Solutions that shift the inspection focus from individual product quality control to broader process monitoring. From this standpoint, preform vision systems are one of the first areas to apply the new SACMI D.R.I.V.A. (Drive and Recognise with Intelligent Vision Algorithms) system.

A pioneering autonomous size changeover solution designed for the packaging industry, this system

lets workers – even where they are not experts on the product – enact user-friendly, fully automated management of machine settings and adjustments, thus speeding up work and eliminating any human error. **smi**

**A further advantage of the SACMI range is that, alongside the machines, it provides integrated devices for total quality control of preforms, both in-line or in the lab**



# Sustainable enjoyment: With coffee lids made of LSR

*At present it is especially important: Everyone wants hygienic safety when eating and drinking out. For coffee on the move, there's a simple solution: Take your own lid for throwaway and multi-use cups, preferably made of silicone. Any thermoplastic processor can start production without risk, because KraussMaffei provides turnkey solutions.*

**S**ilicone is flexible, anti-bacterial, temperature-resistant, long-life, and it contains no plasticizers. These properties make it the ideal raw material for the lids of coffee cups, because they can be carried around easily and cleaned at home in the dishwasher later. Even with deposit cup systems, the lid usually has to be purchased separately for reasons of hygiene, and in the case of single-use containers, waste can be reduced in a practical way by using one's own lid.

With their relatively simple geometry, articles such as the cup lid are, in turn, especially suitable for thermoplastic specialists starting out in the processing of silicones. Here, they do not need their own process specialists, for the complete systems from

*Complete solution from a single supplier: The all-electric PX SilcoSet from KraussMaffei (All pictures: KraussMaffei)*

KraussMaffei provide the necessary technical knowledge and an appropriate partner network, for example the moldmaker ACH Solution and the material producer Wacker Chemie, which provides temper-free low volatile formulations such as the ELASTISOL LR5040 series. The three companies are cooperating in this project in order to make silicones and their processing more widely available.

## Two variants in a single shot

For example, on an all-electric PX 121-180 SilcoSet, two different lids are created simultaneously in one shot. One lid is for thick-walled porcelain cups and the other is for the familiar Recup deposit system, which has caught on in many cities and regions. The article weights are between about 38 and 50 grams, and the heavier Recup lid has a special decorative feature. The attached tab can be decorated with advertising or a brief message by laser.

The greatest challenge when processing liquid silicone is its low viscosity. The mold must close extremely tight in order to achieve a stable process. Very often, even a vacuum is applied. In addition, the temperature control is the reverse



*Two variants in a single shot: On the PX 121 from KraussMaffei, one lid is made for thick-walled porcelain cups and one for the familiar Recup deposit system*

of that for thermoplastics. The mold is heated so that the crosslinking process can start at all.

## Perfect seal between metering and injection units

On the machine side, a perfect seal between the metering and injection units is essential. As silicones are subject to relatively high batch fluctuations, thus also resulting in process fluctuations, special attention must be paid to the consistent weight of the manufactured components. During ongoing production, the machine function APC plus monitors the viscosity of the material and adjusts the filling volume in the cycle from shot to shot.

After removal and camera checking for complete demolding and geometric accuracy, the coffee lids are immediately ready for use. With the right partner, it is so easy and risk-free to participate in the growth market for silicone. Further growth has already been predicted. **smi**

**KraussMaffei**  
[www.kraussmaffei.com](http://www.kraussmaffei.com)



# Husky launches NexPET™ – new system offering infinite possibilities

*Flexible mid-volume system purpose-built to quickly and easily produce just the right output for multiple preform designs.*

**H**usky Injection Molding Systems, a leading technology provider to the plastics processing community, has launched its new NexPET™ system – a game-changing mid-volume PET preform molding solution purpose-built to help producers introduce multiple new applications into the market more quickly and cost-effectively than ever before.

Built upon Husky's industry-leading technology, the NexPET™ system is engineered to enable both established and emerging producers be more competitive by better responding to evolving consumer preferences – while achieving the highest levels of value, flexibility, reliability and sustainability. For established producers, NexPET™ delivers an agile, reliable solution to accommodate niche brands or smaller run SKUs. For emerging producers, it is a proven, cost-

effective solution that enables fast, low-risk entry into markets.

“Consumers are increasingly demanding more personalized products catered to their unique lifestyles and tastes. The global climate created by COVID-19 has amplified this trend, forcing many producers to rapidly adapt operations to scale up new applications like hand sanitizer, disinfectant and other health, personal care or cleaning related products,” said Robert Domodossola, Husky's President of Rigid Packaging. “Taking into consideration feedback from our customers, as well as assessing the current market landscape, we saw the need for a more flexible, adaptable PET preform molding solution. As we present NexPET to the market I look forward to continuing the conversation with our customers to gain an even better understanding of what solutions they need to remain successful and competitive – even during these unprecedented times.”

Husky's NexPET™ system supports a wider variety of applications, more SKUs, shorter production runs and more frequent design changeovers.

Husky Injection Molding Systems Ltd. is a leading global supplier of injection molding equipment and services to the plastics industry. The company has more than 40 service and sales offices, supporting customers in over 100 countries. Husky's manufacturing facilities are located in Canada, the United States, Luxembourg, Austria, Switzerland, China, India and the Czech Republic.



The system's flexible design is ideally suited to meet continuously changing production requirements, while maintaining the highest Six-Sigma part quality. NexPET™ can run up to a 48-cavity mold and is equipped with a number of unique features to enable producers to be more productive and adaptable, including:

- Up to 25 percent faster mold changeovers to support a multiple preform design environment
- Choice of different screw diameters to maximize production output flexibility
- Reflex® PET clamp to distribute the right amount of force and maximizing mold life
- Rotating end of arm tool with up to three cooling positions to ensure preforms are ejected at ideal temperatures
- Intuitive, easy-to-use controls that enable fast set-up, maximized uptime, optimal energy management and central control of auxiliaries
- Adaptive system pressure automatically adjusts oil pressure to suit specific applications while conserving energy
- Capability to run recycled PET pellets and varying quantity of flakes, supporting sustainability initiatives

NexPET™ – one system that offers infinite possibilities. **smi**

**Husky**  
[www.husky.co](http://www.husky.co)



*(All pictures: Husky)*



# Medical customers across the globe adopt Stratasys J750 Digital Anatomy 3D printer

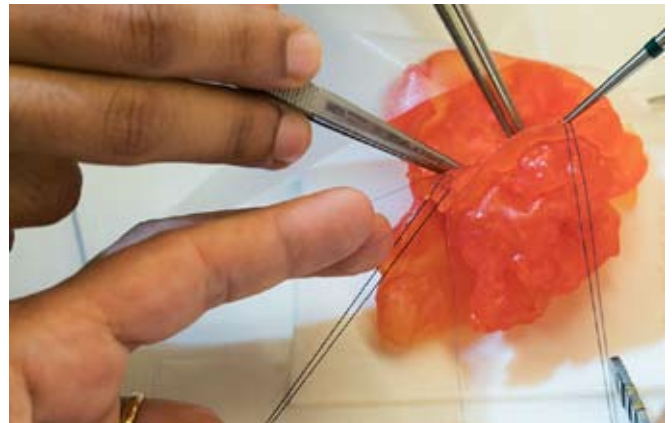
*3D-printed anatomical models replicate biomechanics of human anatomy to help improve training, transform surgical planning and bring new medical innovations to market faster.*

A year after the launch of its J750™ Digital Anatomy™ 3D printer, Stratasys Ltd. today announced it has successfully sold and installed the system at health-care institutions and medical service providers in major markets across the globe, including the United States, China, Italy, Spain, and Australia. Seattle Children's Hospital, VA Health Care System, Nicklaus Children's Hospital in Miami, Medilife and BIO3D-Model in Italy, and Tknika and AIJU in Spain all recently turned to the innovative new system to help improve patient care and accelerate medical innovation.

The J750 Digital Anatomy 3D printer produces anatomical models that mimic the actual feel, responsiveness, and biomechanics of human anatomy. Models can be punctured, sutured, cut, and physically manipulated like actual human tissue. This capability minimizes the use of animals and cadavers for clinical trials and surgical training. Hospitals, healthcare institutions and medical schools can use these lifelike 3D models to improve clinical evaluation for a wide range of pathologies, as well as bring new medical devices to market faster.

Seattle Children's Hospital purchased a J750 Digital Anatomy 3D printer early

this year and installed it in its new 3D Printing Lab. A major motivation for getting the printer was the ability to create very soft models in-house to duplicate things like airways, livers, and hearts. "The earliest prints using TissueMatrix material were instrumental for understanding the optimal fit for a custom tracheostomy tube, something that would have been impossible with the best materials that we had access to only six months ago," said Seth Friedman, Ph.D, Manager of Innovation Imaging and Simulation Modeling in the Improvement and Innovation Department. "I believe that by making models in parallel to a patient's care



journey we can truly make a difference. Now integrated into a systemic program called Custom Care, we have little doubt this new technology will help us provide the best care possible to our patients and families.”

Nicklaus Children’s Hospital upgraded to the new J750 Digital Anatomy 3D printer from an existing Eden 260 in the Cardiovascular Surgery Program. The upgrade was a collaboration between the NCHS Personalized Medicine Initiative and the Cardiovascular Surgery Advanced Research Projects Laboratory and was made possible by the support of the Bailey Foundation and donors to NCHS.

Dr. Redmond Burke, chief of Cardiovascular Surgery and co-director of the Heart Program, said it’s now a critical part of surgical planning. “It’s very valuable to be able to actually cut open a model to get a very clear vision of what we’ll see in the operating room,” he said. “We believe this is a significant advance that will allow us to reduce the trauma of patients undergoing complex heart surgery.” He said the new 3D printer also opens up completely new avenues in teaching and patient care.

In Spain, two technology institutions have invested in the Digital Anatomy 3D printer to pioneer their medical service offering. Both cite the unrivalled ultra-realism and tactile nature of the models as a significant competitive advantage.

Nacho Sandoval, Additive Manufacturing Lead at AIJU, said, “Previously, we could not produce models replicat-

ing the organic materials frequently requested by the medical sector, let alone realistically simulating the behaviors of human tissue. What is also remarkable is that the precision of the Digital Anatomy printer offers higher resolutions than those obtained with a CT or MRI, which are usually above half a millimeter. We’re already seeing vast interest from a wide range of medical practitioners for these types of models in real-world applications.”

Gorka Baqueriza, Additive Manufacturing Project Manager, Tknika, added: “We see this technology having a significant impact in several areas of healthcare – from medical training to pre-surgery planning to patient care. The level of realism that can be achieved for such a wide range of anatomical models and pathologies is incredible.”

In Italy, President of BIO3DModel, Eng. Roberto Rizzo, said he has witnessed particular interest in the Digital Anatomy 3D printer for surgical training. “This technology enables a drastic reduction in time training surgeons, in particular the ability to investigate for any specific pathological conditions prior to the actual surgery,” he stated. “For example, until now it was not possible to produce hollow vascular systems down to

1mm wall thickness and diameter. This incredible detail could be the difference between life or death for a patient.”

Emanuele D’Angeli, General Manager, Medilife, adds: “The models produced on the Digital Anatomy 3D printer offer the same soft touch and variable density of actual human tissues and organs, which today is impossible to achieve with any other existing 3D printing technology. We are currently testing several applications, including the creation of an artificial limb. The aim is to reproduce the natural external appearance of the limb in terms of texture and color shade, while also replicating the lifelike physical feel that we experience with human touch.” **smi**

**Stratasys**

[www.stratasys.com](http://www.stratasys.com)





*This shoe insole was printed by selective laser sintering from a partially bio-based thermoplastic polyurethane (TPU) by Covestro*

# 3D printing on the path to Circular Economy

*Covestro aims to accelerate the change towards circularity, especially in the chemical and plastics industry, and contribute to the goal of a greenhouse gas-neutral economy.*

Covestro creates materials the world relies on every day. These high-tech polymers are used in nearly every area of modern life and in a wide range of industries: Automotive, construction, healthcare, cosmetics, energy, electronics, sports and leisure. But the company doesn't just produce materials. Together with the partners and customers, Covestro is taking big steps to tackle a fundamental challenge: Shifting towards a Circular Economy. To achieve this bold goal, Covestro is innovating efficient ways to close energy and

*Shoes can be made from only two parts using 3D printing – the sole and the uppers. The shoe can be completely recycled at the end of its useful life (All pictures: Covestro).*



material cycles, pushing the boundaries of what is possible with polymers.

## Covestro at the virtual Formnext Connect

Covestro's presence at the virtual trade fair Formnext Connect 2020 was entirely dedicated to the Circular Economy. The company was presenting products made from alternative raw materials, such as recycled plastics and CO<sub>2</sub>-based cardyon® brand products which will contribute to the development of the 3D printing industry to become more circular.

This adds yet another sustainability aspect to the well-known ecological benefits of additive manufacturing – decentralized production, demand-driven manufacturing and lower waste. Covestro also provided an outlook to a versatile range of Addigy® materials for common 3D printing processes at Formnext Connect. The developments were presented in an interactive expert session in the virtual Covestro studio on November 10.

"Nowadays, superior manufacturing technologies are no longer enough to produce truly sustainable products,"

said Patrick Rosso, Global Head of Additive Manufacturing at Covestro. "We want to boost the circularity of our products while preserving their excellent properties. That's why we are currently developing new, more sustainable products which are already in the testing phase."

## Sustainable portfolio expansion

These include, for example, pellets and filaments made of partially recycled plastics. Some of the raw materials for the recycled plastics are post-industrial waste from Covestro's manufacturing facilities and can be used as filaments for 3D printing after reworking. One of the products developed from recycled plastic is a polycarbonate blend and, like other polycarbonate-based materials, is suitable for applications that require a high temperature resistance.

Equally promising as building blocks for sustainable 3D printing products are polyols of the cardyon® brand, in which CO<sub>2</sub> replaces some of the petrochemical raw materials previously used. These can for example be used to produce thermoplastic polyurethanes (TPU), which can be used as powders or filaments in additive manufacturing.

In addition, Covestro is currently developing partially bio-based products for 3D printing, in which almost 50 percent of the carbon content is derived from biomass. One such material

With sales of EUR 12.4 billion in 2019, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main industries served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, healthcare and the chemical industry itself. Covestro has 30 production sites worldwide and employs approximately 17,200 people (calculated as full-time equivalents) as of the end of 2019.

has already been used to print a shoe insole using selective laser sintering (SLS). TPUs generally contribute to increased sustainability in powder-based 3D printing processes, as up to 100 percent of the non-sintered powder can be reused in the process due to the low build room temperature.

Marketing Manager Katinka Honer-vogt welcomes the portfolio expansion: "With the new products, we are well positioned to meet the ever-increasing demand for sustainable materials for various applications, industries and printing processes. At the same time,

the expansion fully reflects Covestro's strong focus on Circular Economy."

#### The Circular Economy as a global guiding principle

With a strategic program, Covestro wants to fully support principles of Circular Economy. In doing so, the company aims to accelerate the change towards circularity, especially in the chemical and plastics industry, and contribute to the goal of a greenhouse gas-neutral economy. The focus is on using alternative raw materials, developing innovative and efficient recycling technologies,

cross-sector cooperation with partners and the use of renewable energies. Covestro has been active in the development of raw materials from biomass, CO<sub>2</sub> and waste for several years.

The additive manufacturing of plastic parts is carried out sustainably and efficiently by automated processes. This manufacturing method generates less waste than conventional production processes, especially when printing more complex structures. Small 3D printers – compared to traditional manufacturing units – allow parts to be produced locally anywhere in the world, saving on transportation costs. On-demand production reduces waste and stock levels. Considering the development of new materials based on alternative raw materials, additive manufacturing also offers enormous potential for contributing to full recyclability and closing material cycles in the future. *smi*

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# Braskem entered partnership to develop electromobility solutions

*Focusing on vehicle transmission components, the partnership involves the use of 3D printing.*

**G**erdau and Braskem have signed a partnership with the Technological Institute of Aeronautics (ITA) and Alkimat Tecnologia to develop innovative solutions for the electromobility segment using additive manufacturing, a technology popularly called 3D printing. The project will target components for vehicle transmission systems, with the potential to leverage the expansion of the country's electric vehicle industry.

The collaboration of organizations from distinct sectors will give the project a pioneering and complementary vision to strengthen Brazil's additive manufacturing chain. Gerdau will contribute with its knowledge in metallic materials, Braskem with its experience and knowledge in polymers, ITA will coordinate the project given its competency in manufacturing research, and Alkimat will collaborate with its expertise in 3D printing.

"Mobility is a leading trend in transformation, and solutions in the sector can make a significant contribution to resolving the challenges facing our society. At Gerdau, we believe in building networks, in open innovation and in encouraging partnerships with academia and institutions that strategically complement the effort to find disruptive solutions for the value chain," said Juliano Prado, vice-president at Gerdau and head of Gerdau Next.

Professor Ronnie Rego from ITA explains that the advent of electric mobility has shaken the order of stakeholders in automotive propulsion, and the existing gap results in the demand for disruptive solutions, rather than

incremental paths. "If we Brazilians want to escape for good the stigma of technological colony, there is only one path: cooperation between academia and industry. With this alliance, we join forces to deliver to the market and to society mobility solutions that the future will demand," he said.

For Braskem, innovation and sustainability walk side by side, contributing to the building of a better future. "We are carefully monitoring various sectors whose environmental impacts can be improved and, without a doubt, electromobility brings considerable gains, especially for reducing carbon emissions. Our expertise in polymers will make a robust contribution to developing solutions that leverage this sector through additive manufacturing, helping to improve people's lives," said Fabio Lamon, global manager of Innovation & Technology for Additive Manufacturing at Braskem.

"The changes arising from the post-covid recovery will mark the "new normal," in which strengthening the local economy, with lower external dependence, will be of crucial importance. Initiatives like this, driven by companies that are references in their industries, must be adopted by everyone and encouraged by governments," said Jose Mascheroni, executive officer at Alkimat.

"The changes arising from the post-covid recovery will mark the "new normal," in which strengthening the local economy, with lower external dependence, will be of crucial importance. Initiatives like this, driven by companies that are references in their industries, must be adopted by everyone and encouraged by governments," said Jose Mascheroni, executive officer at Alkimat.

## The potential of 3D printing

Additive manufacturing is a computer-controlled process that enables, based on a digital template, the cre-



Picture: Braskem

ation of three-dimensional objects by adding successive layers of material. That explains the popularity of the term 3D printing, which, despite the huge potential of being used in industry 4.0, is very simple, and can be used either by large companies in disruptive projects, such as this case in electromobility, or by ordinary people in their homes.

In Brazil, this market enjoys positive growth prospects, especially due to the strong appeal of transformational innovation, which drives the development of innovative solutions, while also considering sustainability aspects given that it is a completely decentralized manufacturing process, which minimizes losses and the disposal of materials, not to mention the impacts on logistics.

The main advantages of this technology include the integration of functionalities, shorter lead times, the possibility of reducing weight and the freedom of design that enables the manufacturing of complex geometric objects. In this context, additive manufacturing is a major ally in the development of solutions that meet the demands of the mobility market that arise due to issues involving electric, shared and autonomous mobility. **smi**

**Braskem**

[www.braskem.com.br](http://www.braskem.com.br)



# EnvisionTEC and Henkel to combine expertise for end-use parts

*Combination of EnvisionTEC 3D printers and Henkel photopolymers drives next level of additive manufacturing in industrial production.*

EnvisionTEC and Henkel have recently announced an expansion of their partnership agreement to further drive the adoption of production level 3D Printing. Over the past two years the companies already have collaborated on a variety of unique applications. With the launch of EnvisionTEC's next generation Xtreme DLP and Envision One cDLM HT printer technologies and the expansion of Henkel's industrial grade materials portfolio the companies are well-positioned to support the volume production of end-use parts.

Both companies have already engaged in printing parts for the medical and industrial sectors. Henkel's new materials are designed to create a shift in photopolymer material chemistry and to deliver FDM functionality with the surface finish and accuracy of SLA/DLP using EnvisionTEC's high-speed production systems. Together, the partners aim to tap into the huge potential to leverage this novel material know-how in accelerating the adoption of DLP technology in the industrial production. The combination of Henkel's material expertise and EnvisionTEC's printer technology enables the creation of parts that are stable over time without losing mechanical properties, becoming brittle over time, or changing color while maintaining accuracy and surface finish.

EnvisionTEC's patented continuous Digital Light Manufacturing (cDLM) High Temperature (HT) technology plat-



form will be included to Henkel's broad 3D printing ecosystem to leverage the company's customer base across more than 800 industry segments. Further, the partners will also collaborate for Loctite branded formulations validated for use on the Xtreme DLP Machine. This new large format 3D printer allows for the production of large 3D parts, built at fast speeds without sacrificing surface quality and part accuracy.

To kickstart the launch of this partnership, Henkel's Loctite-branded photopolymer materials have been validated on EnvisionTEC's continuous Digital Light Manufacturing (cDLM) High Temperature (HT) technology platform and XtremeDLP printer.

DLP technology, originally invented and commercialized by EnvisionTEC, can now progress to the next level of industrial production of end use parts with EnvisionTEC printers on a larger scale with Henkel's photopolymer materials.

"We are thrilled to expand our partnership with EnvisionTEC and their innovative cDLM technology," stated Dr. Simon Mawson, Senior Vice President and Global Head of 3D Printing at Henkel. "EnvisionTEC's new E1 High Temp

*EnvisionTEC and Henkel combine their expertise to drive the adoption of production level 3D Printing*

printer allows Henkel to move beyond the boundaries of viscosity limitations by enabling highly viscous or solid resins, such as Loctite 3955 FST, the first 3D photopolymer that passes vertical burn and aerospace FST standards and Loctite IND402, a single component elastomer material with high resilience and tensile strength, to be heated and printed under controlled conditions. These new generation Loctite materials combined with EnvisionTEC E1 High Temp printers will accelerate the adoption of industrial additive manufacturing."

"For 19 years EnvisionTEC has focused on delivering not just equipment or materials, but true solutions," stated Al Siblani, EnvisionTEC CEO, "We are pleased that our hard work and collaboration with Henkel over the past two years has resulted in the ability to now offer practical solutions to high-volume manufacturing applications that will disrupt traditional processes while offering a solid return on investment." **smi**

**Henkel**

[www.henkel.com](http://www.henkel.com)

# COVID-19 Era - Solutions for medical companies to win the protracted battle

*Mastip continues to provide high-quality hot runner solutions to the global medical customers with minimum disruption during the COVID-19 pandemic.*



*New multi-gates (Picture: Mastip)*

**E**valuateMedTech™ released a report in 2018 estimating that the global medical device industry achieved a compound growth rate of 4.4% from 2011 to 2018. The total market value in 2018 reached US\$440 billion. They forecasted that by 2024, the market size would reach \$595 billion with an average annual growth of 5.6%.

In early 2020, the COVID-19 virus was confirmed as a pandemic by World Health Organization (WHO) due to the significant spread around the Globe. While many industries have been impacted tremendously, the medical industry has been brought into the spotlight due to the soaring demand for medical devices.

Considering the phenomenal demand driven by the pandemic, the growth rate is expected to be much higher than the previous estimation.

As a leading hot runner supplier, Mastip is recognized as an "Essential service provider" by the New Zealand government. Leveraging manufacturing capabilities from factories in both China and New Zealand, Mastip continues to provide high-quality hot runner solutions to their global medical customers with minimum disruption during the COVID-19 pandemic.

Mastip supplies hot runner systems to a wide range of critical medical solutions including PPE (personal protective equipment) such as hand sanitizer packaging and face shields, diagnostic products such as nasal and

throat swabs, pipettes, blood tubes, and respirator components such as casings, connectors, oxygen masks and humidifiers.

Mastip understands the critical demand on medical products meeting their tight production schedules and ultimately reaching those healthcare services. Mastip has a vast global network ready to support the client's every need.

With decades of experience supporting medical customers, Mastip provides reliable and cost-effective solutions to ensure the customers maximise their productivity. Here are two examples:

## **Improved Wear Resistance**

During 24/7 high-volume production, hot runners tips can wear out prematurely resulting in several potential issues. For instance, flashing or stringing on the product, visible gate vestige, or excessive cold slug in the gate area eventually blocking melt from filling the cavity.

In response to mitigate those risks, Mastip provides medical customers with long-lasting solutions to extend the tool's service life.

Manufactured from hard wearing tungsten carbide material, the unique G5 tips provide excellent thermal performance.

Whether it's the first shot or the millionth shot, G5 tips ensure consistent gate quality and conformity every time.

## **Close pitch solution**

During COVID-19, the demand for disposable medical devices such as syringes, blood collection tubes and pipettes has increased with the growing number of infections worldwide.

For these thin-wall and long cylindrical products, the mould typically adopts a compact layout to maximise the number of cavitation.

Mastip's multi-gate solutions are engineered specifically for challenging applications requiring close-pitch gates in restricted areas.

Both axial and side gating are available with Mastip's multi-gate solutions, which optimize the mould layout to achieve cost-effective production.

In addition, the service-friendly design allows operators to service the tips without removing the mould from the injection moulding machine once cavity plate is removed.

Although many countries have enforced mandatory lock-down periods to reduce the spread of the virus, it has not disappeared but instead slowly evolved into a "protracted war." As a trusted hot runner solution provider, Mastip will continue to provide products and services to support their medical customers to win the battle. **smi**

**Mastip**

[www.mastip.com](http://www.mastip.com)

# Standardisation – a guarantee of sustainable success

*High-quality standardised components form a reliable basis for modern mouldmaking. Their consistent, continuous use makes it possible to achieve efficient processes.*

In a world subject to ever faster change and increasing digitalisation, standardisation constitutes a basic prerequisite for mouldmaking if a company is to remain competitive over the long term. Particularly advantageous is the fact that the use of standard components not only boosts efficiency in one area but also provides a great deal of added value over the entire added-value chain, thus guaranteeing sustainable success.

Attaining the highest possible productivity constitutes a decisive success factor in the face of increasing pressure of competition, especially in economically difficult times. Standardised components for mouldmaking guarantee sustainable success, since their consistent use will optimise the entire process chain. This starts at the development stage already, where native CAD data for standard elements and their installation spaces can be readily incorporated in the design by drag and-drop. When constructing an injection mould, the assembly time can be considerably shortened through the use of ready-to-mount standard components.

## **Standardised components guarantee an optimum value-added chain**

When standardised components are used, synergies similarly result in machining and assembly, since the tools required can be kept to an absolute minimum. In addition to these time and cost advantages, the use of standardised components also speeds up the time to market, which is of fundamental importance for a large number of new developments in an ever-faster world. In plastics processing, standard components that have proven themselves many thousands of times over guarantee maximum production reliability. In the event of planned maintenance, or wear or defects, standard mould components permit rapid repairs and keep downtimes to an absolute minimum.



Picture: HASCO

## **Shortest downtimes in plastics processing thanks to proven standard components**

Standardisation gives mouldmakers additional freedom to concentrate on cavity design and optimum production properties for their moulds and thus constitutes a guarantee of sustainable success. **smi**

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# Campetella's real Open House

All photos: Campetella

*Trade visitors were given an opportunity to explore economic IML solutions and new developments presented in an industrially realistic way.*

One opinion: it is both frightening and painful to know that this can happen - pandemic every century, the last one in 1918 i.e. the Spanish flu with over 20 million dead and now the Corona pandemic. Not to forget SARS 2002, 2008 and 2013! Corona 2019 changes many things, moves many things – also for the sensible and useful? People reflect more on what is valuable in life. One example: people have to avoid contact, especially in everyday working life. Robot manufacturers are taking their way of thinking forward here: where a human being can be spared dangerous, unsafe, tiresome and monotonous work, the automatic hand must come into action. Conclusion: machines at work, no human being in sight. Man develops and controls in the background. How a robot manufacturer in Italy is getting organized in these times could set a benchmark.

You have an application that requires the use of robots. You want to have your own picture (and not a digital one) of functions, price-performance

ratio etc. So you want to take the opportunity to explore in real time and on site what your potential equipment partner has to offer in terms of IML, IMD, insert-placing, pick & place, logistics and handling, parts assembly, palletizing, cartoning, packaging, quality control and comprehensive computerisation. After all, a lot of money is at stake. Campetella Robotic Center (CRC) has Open House – 1 October to mid-November 2020, so you register by email, you receive a confirmation and a QR code. The journey through half of Italy ends at CRC in Montecassiano.

In the lobby you look into a monitoring device for body temperature and mask. Short stop at the disinfection liquid dispenser. The registration display confirms your QR code. You sign it and you are directed to the workshop. Everything is well-organized and as far as possible Corona-safe. Your personal CRC partner will explain the procedure to you as a member of a small group of visitors guided according to a given plan. As the CRC management explains, these measures are based on the need to do everything possible to ensure that visitors receive the best possible care and information without harm.

A glance through the panoramic window on the first floor directs the eye down to the new 3D printing facility,





which produces labelling dummies, cable carrier links and other plastic components, hundreds of which CRC utilizes. The view is directed to the left and through the assembly hall. The new structure in segments and stations from incoming goods to dispatch provides a clear overview and insight into the status of the respective projects under construction. This is Carlo Campetella's latest contribution to Lean Management and Lean Production, also in terms of Industry 4.0 – from a visionary who would like to concentrate exclusively on new ideas, concepts and designs. He and his team of design engineers have made a lot of progress since the beginning of 2020. "We have used the past few months to bring new robot developments to series production readiness," explains General Manager and son Elia Campetella, "The focus is on footprint reduction, precision, longevity and speed – with standardized solution concepts in modular design, implemented on various robotic

and system innovations. Our corporate culture, our good reputation and our innovative strengths are our capital – also for you".

Interviewing the members of his CRC team provides insights into the company's medium-term prospects. This also includes a new service concept in combination with augmented reality. A specially equipped in-house stand in the immediate vicinity of the actual IML attraction gives an idea of how customer satisfaction can be redefined. For example: a virtual "walk" through a newly designed plant explains all functions, components, interrelationships, parameters and much more to the "VR headset wearer": He experiences similar results when he wants to order replacement and/or wear parts (e.g. labelling dummies) and find out how they are disassembled or assembled. Each procedure is visually demonstrated and trialled in three dimensions directly and virtually.



### Corona-effect – commercial situation?

"Yes, all of our 123 employees always wear their masks and observe the hygiene regulations. The same applies to our guests," says the receptionist.

The demand for Campetella robots and IML-systems has not suffered from the Covid 19 effects to date. The advantages of the company – serving a wide range of industries and sectors – had an inherently balancing effect: "The automotive sector has declined. We were able to compensate for this with growth in the industrial and food packaging and medical segments," confirms Marco Marconi, Area Sales Manager, and adds "packaging automation in the online dispatch sector has shown strong growth. This is particularly true in German-speaking Europe, where we have significantly expanded our Sales & Service presence". The company also took the opportunity – as a result of limited travel – to finally tackle projects that had "only" been on the agenda until then, with more verve.

### Campetella Calling Open House - calculation without risk?

"We couldn't just leave it all behind! We have to stay in the market, communicate and be proactive. This is what our customers expect from us, whom we have been asking," Marco Marconi underlines the CRC marketing strategy. "When it became clear to us that practically all plastics trade fairs worldwide will be cancelled in 2020, including FAKUMA, we changed course. We're not inviting interested parties to Friedrichshafen, but to Montecassiano, 800 km further south on the Adriatic coast." The FAKUMA exhibits were already built and in operation by mid-2020. The negotiations with ARBURG turned out positively, also in the context of their new subsidiary in Northern Italy – a clever win-win alliance of interests. **smi**

*To be continued in the smart molding international #2-2021*

**Campetella**  
[www.campetella.com](http://www.campetella.com)

# Creating smart plastics for happy pets



Moderna products -  
Reverse IML by Verstraete IML

*Moderna Products is a manufacturer of plastic accessories for pets. This global niche player has quality and sustainability firmly lodged in its DNA; precisely why the partnership with Verstraete IML is a conscious choice. Chantal Saelen, managing director, explains how Moderna Products works and what Verstraete IML means to them.*

## Belgian family business with global renown

A pet is a much-loved member of the family nowadays. Until quite recently, dogs and cats would roam, eat, and sleep outside – something we can hardly imagine today.

Moderna Products is all about making pets and their owners happy. This Belgian family business has certainly achieved just that, worldwide. We

are proud of our trophy cabinet and rightly so: we have won the Belgian SME Award, the Design X50 Award and several IMDA awards.

Chantal Saelen, managing director of Moderna Products: “In 1932, my grandfather started manufacturing buttons, a trend-sensitive product all about the right colors and materials. Moderna switched focus to plastic products for pets over 40 years ago

now. These products are just as sensitive to trends, colors, and materials. The trend for giving pets the attention they deserve started about fifteen years ago. Sometimes I even refer to it as the humanization of pets. Owners really consider them members of their family.”

## Creative and innovative

“Moderna designs and produces creative, innovative and durable plastic items for happy pets. Our products excel in functionality, choice of materials and design. This starts all the way back with the raw material: strong, sustainable, and recyclable. Of course our products are safe and easy to use, suitable for food, and dishwasher-safe. And – very importantly – Buddy or Felix will not be able to scratch off the Reverse IML labels by Verstraete IML.”

## Quality first

“Quality is one of our key principles. Quality in all areas, I mean. For our products and our service, as well as sustainability. We will not market a product until we are convinced that its integral quality is guaranteed. We always welcome change, but we will not rush into making changes overnight. Each change must represent an improvement. Otherwise it’s a no-go.

We have been working with IML supplier Verstraete IML since 2012. They have the knowledge we need and they also focus on quality and sustainability. The Verstraete IML labels guarantee the scratch resistance that is crucial for us.”

## Style and design

“As pets started living in the house with their owners, their litter trays

and food and water bowls also moved indoors. This made the design, color and look of these items more important: after all, they should match the interior and the lifestyle of the owners. We respond to this demand from consumers.

Thanks to in-mold labeling, we can market the same product more widely, with one and the same mold. Thanks to the variation in labelling, we can create different styles and looks and appeal to different types of consumers. An extra asset for sales and a formula that's catching on. After all, we all like different styles and colors. For example, Scandinavian consumers prefer calm colors with lots of grays, while consumers in South America welcome exuberant colors like fuchsia."

**Completely coordinated**

"Our range is completely coordinated. Litter tray, food bowl and drinking fountain are all styled the same. Luxurious Pets is our latest range. These premium products are completely black with luxurious printed metallic gold decoration. Applying these metallic colors is a delicate job. The Verstraete

**Verstraete in mould labels** has over 30 years of experience in offset-printing labels on polypropylene for injection moulding, blow moulding and thermoforming. In-depth understanding of materials, research and quality control has made Verstraete a world leader among IML label suppliers, producing over 50 million in mould labels every single day for numerous segments within the packaging industry, including dairy, salads, health care, and more.

**What is IML?**

The term "in mould labelling" is directly derived from the technique: a preprinted polypropylene (PP) label is placed in a mould. This mould has the shape of the end product, e.g. the shape of a butter tub. Then the molten PP is added to the mould. It fuses with the label, and while curing, takes the shape of the mould. Result: label and packaging become one.



IML labels are perfect for achieving the right finish. We're very happy with the result, and so are our clients."

**Sustainability is a permanent core value**

"Sustainability is one of our most valued principles. Yes, we manufacture plastic objects for everyday use. It doesn't mean these objects can't be sustainable too. For a start, a lot is gained by using the right materials, and especially by choosing the same material at every stage of production. Our product, the material we inject, and the labels have the same origin. There is no need for separate recycling. What's more, our products have a very long lifespan. Because they are sturdy and scratch-resistant, both owners and

pets will enjoy our products for years to come."

**Verstraete IML: our reliable partner**

"We value Verstraete IML as a reliable partner, an associate we can count on and identify with. Just like Moderna, they prioritize quality and service. Verstraete IML can rely on thirty years of experience and as such, has the required in-house expertise. They know what they're talking about, understand what we're asking for and pay attention to sustainability. Several departments – prepress, internal sales – work closely together and share experience and knowledge. Together we create sustainable and high-quality products: making our collaboration a success."

Jan Van Iseghem, Regional Sales Manager Europe, Verstraete IML: "Moderna Products is a global niche player in pet accessories. Their conscious choice for sustainability and reusability sets them apart from their colleagues. Our innovative Reverse IML fits perfectly into their philosophy: it guarantees the longevity of the products and the quality of the artwork." **smi**

**Verstraete IML**  
www.verstraete-impl.com



All pictures: Verstraete IML

# WITTMANN novelties in 2020

## Material handling and recycling



All pictures: WITTMANN

*After this year's FAKUMA has been canceled, WITTMANN decided to present the exhibits originally planned for the show by way of product videos, and to upload them on "Virtual Fakuma". The presentation of the videos is intended to take place primarily in personal meetings with customers. To present the product highlights as vividly as possible to a wide audience, the product videos will also be made available on the company's YouTube channel. An overview of novelties in the areas of material handling and recycling can be found below.*

### G-Max 13 beside-the-press granulator

The G-Max 13 completes the existing G-Max granulator series from WITTMANN, which offers cutting chamber sizes ranging from 130 × 260 mm to 460 × 235 mm and engine outputs from 2.2 kW to 4 kW. The models from the G-Max series can be used for material throughputs of up to 50 kg/h on injection molding machines with up to 500 t clamping force.

The G-Max 13 granulator is suitable for in-line recycling of soft to medium hard sprue consisting of PP, PE, ABS or PU, and can be used on injection molding machines with clamping forces of up to 230 tons.

The material screens of the G-Max 13 are available with screen perforation in different sizes: either 4 or 5 mm in diameter. This ensures suitability for varying materials and throughputs. The perforations in the

screens have a conical shape, so that soft and sticky granulate can pass through more easily. A feature which ultimately contributes to minimizing the accumulation of material deposits in the openings. The tiltable material hopper simplifies cleaning and servicing of the appliance enormously. For instance, a screen change can be carried out without tools, and the time required for servicing is reduced to a minimum.

The granulator has an open rotor with three knives. It is designed with openings between the knives and the rotary axis to ensure unhindered ventilation of the cutting chamber. Thanks to this type of design, this model is ideally suited for grinding materials which are sensitive to heat or parts not yet completely cooled. Exchanging knives is extremely easy and comfortable.

The new G-Max 13 can handle a material throughput of up to 35 kg/h (depending on the shape of the parts/sprues, screen size and quality of material), it operates with a low noise level and is extremely energy-efficient.

### CARD – small dryers with a great effect

The new compressed air dryers from the CARD series have been an integral part of the WITTMANN product portfolio since April 1 of this year. The first few months have shown that, in spite of the great variety of different models and sizes, three types of appliances have become particularly popular. These are the sizes CARD 6G/FIT, CARD 10S and CARD 20S. On these appliances, the desired drying temperature can be set via a touch



screen operating panel, and at the end of the pre-drying phase a signal is issued to release an automatic production start-up. The material drying data can be exported via a USB port or via OPC UA.

With the integrated week timer, the use of the dryers can be ideally adapted to ongoing production planning, and they are ready to run immediately as soon as dried material is required. In the CARD S models, the compressed air consumption is very finely and precisely adjusted to the actual demand by an intelligent digital air volume control system.

If a material loader is used to fill the dryer, this ensures a continuous material supply, and the dryer recognizes automatically when the drying temperature must be lowered.

If the interval between two conveying cycles exceeds a certain period of time, this is interpreted as “no material consumption”, and the dryer then starts the necessary actions to protect the material and to reduce energy consumption.

CARD dryers can be mounted directly onto the machine feed. In combination

with a claw flange, the appliances can be pushed into a parking or emptying position.

If quick-change adapters are used on CARD dryers, this will save time when transferring the dryers from one machine to another.

### M8 network control for central material handling systems

User-friendliness and functionality of control systems are a top priority for WITTMANN. With the revision of the current M7-IPC control system, the CAN-bus-based M8-IPC network control system has been introduced. It simplifies the administration of complex installations and shows a clear display of every appliance in modern design.

A new feature is a number of freely programmable modules – or “logical devices” – which support queries, counting functions, loops and much more, to enable logical switchover and connection of outlets. To give an example: as soon as one source of material runs out, the system switches over automatically to another source. These new possibilities to define logical operations offer users an easy way to program sequences perfectly geared to each individual process.

What is more, M8 comes with a “counting” functionality: whenever a user wishes to have a certain action triggered following the execution of a fixed number of switch cycles, this is now very easy to implement.

Another new feature is coded regrind recycling. If the regrind coming from several machines is not all processed in the same way, the regrind from individual granulators can be transported unmixed into separate containers. RFID-coded materials handling devices ensure that materials are only transported if the material line is correctly connected to the granulator and to the matching container. In this way, mixing of different types of regrind is prevented.

Something often requested – and now also made possible: residual quan-



CARD 20S air dryer

ties of material left on the machine can be transported back to the material source. If the production is interrupted, there is a risk of dried material being left on the machine during the time of standstill, which then causes start-up problems when the production is resumed. Or it happens during a material change that left-over material on the machine is (mostly) emptied out and then disposed of. With the help of the M8-IPC control functions, such residual quantities can be “reclaimed” and re-used.

The operating status of the individual appliances catches the eye immediately thanks to the different color codes. In case of error signals it is possible to have persons responsible notified by email.

Operators can choose between several different systems to perform the tasks assigned to them quickly and faultlessly.

For this purpose, several different views are available, showing the path followed by the material – through all stations right up to the consumer, that is, up to the machine and/or to the mold. *smi*

WITTMANN

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### G-Max 13 beside-the-press granulator



# How Polyfab trims its injection molding production to the highest quality



*Polyfab uses process monitoring systems from Kistler based on cavity pressure measurement to sustainably optimize the high-volume production of plastic parts for various industries. Thanks to them, it was possible to reduce the number of faulty parts in injection molding to a record-breaking 1 PPM (parts per million).*

Since 1971, Polyfab Corp. has been a custom thermoplastic injection molder. The American company supports the plastics molding industry needs of four major markets: medical, packaging, industrial, and commercial. In order to remain competitive in the ever-changing plastic molding industry, they must continuously adapt their monitoring processes with the ultimate goal of producing zero-defect quality assured parts.

Brian Burhop is a Project Engineer with over 16 years of experience at Polyfab Corp. located in Sheboygan, Wisconsin. He takes the quality of their molded parts seriously. Monitoring the molding process for suspect parts prior to packaging or assembly easily with guaranteed results is key. For ten years

now, cavity pressure technology with sensors and systems of Kistler have provided a highly effective, reliable basis for automated inspection.

## **Integrated quality assurance increases customer satisfaction**

Burhop says, "Our partnership with Kistler came about because Polyfab Corp. is very much a molder based on scientific principles which we employ to establish and monitor our molding processes. Process monitoring and containment is very important for our high-volume jobs. Our decision was based on very important factors, such as how user-friendly the monitoring equipment is, how easy it is to acquire and interpret the data, how easily configurable it is with our machinery, and how easy it is

to incorporate Kistler's sensors into the mold itself. Kistler's products were really hands down the best choice for us in all those categories. Approximately 66% of Polyfab Corp. machinery is now equipped with Kistler monitoring and sensor technology."

The first challenge Burhop and his team faced was to greatly improve the accuracy of short-shot monitoring for a dispenser lid with a living hinge. To reduce non-fills during the injection molding process, the pressure at end of fill was monitored with a flush mounted sensor directly in the cavity. This allows for more accurate setting of the required minimum pressure which is affected by process variables including injection speed, and melt temperature.

Burhop states, "Polyfab's customer return score prior to implementing Kistler in 2009 was above 10,000 PPM (parts per million). In 2017, we molded approximately 200 million parts and our rate for customer returns was 98 PPM, which is 'world class' performance. Our 2018 year-to-date PPM customer return rate is now '1 PPM'. This represents a drastic improvement after implementing Kistler's process monitoring systems (ComoNeo/ CoMo Injection), as well as Kistler's direct and indirect cavity pressure sensors into our machinery."

## **Automated assembly thanks to cavity pressure sensors**

Polyfab Corp. has also integrated Kistler's sensors into their automated assembly process, producing very positive results. Burhop explains, "For automated assembly in terms of parts which have a lot of value added as they step through the assembly process, Kistler's sensors ensure that we are not assem-



*Polyfab's cutting-edge production facility operates the ComoNeo and CoMo Injection process monitoring systems as well as cavity pressure sensors from Kistler*



*The technicians receive detailed real-time information about the cavity pressure profile thanks to ComoNeo (All photos: Kistler)*

bling parts with suspect (defective) plastic components. For example, we have a commercial inkjet cartridge that we have completely automated the assembly.

The cell incorporates two molding machines, six robots, and two 4-cavity molds. We have placed a Kistler sensor in each one of those cavities so if there is a suspect or questionable shot, it segregates it so that those parts don't enter the assembly process. This has proven very beneficial and valuable to our automated assembly application needs."

#### **Process monitoring systems of Kistler save valuable time, reduce costs, and increase ROI**

Kistler's process monitoring systems have been saving time, reducing costs, and increasing the Return on Investment (ROI). Burhop says, "From my perspective: reducing re-validations was key. For instance, if we need to validate a tool in another press, either for capacity reasons or for risk mitiga-

*Process monitoring systems from Kistler were deployed to automate production of a dispenser lid with a living hinge*



tion for a customer, Kistler's technology has made the process of duplicating a process much more straightforward and scientific in terms of the acquisition of data and the actual pressure curve data from the cavity."

Bob Hendricks, Product Sales Manager with Kistler, who worked closely with Burhop, further explains this time-saving benefit of incorporating Kistler's process monitoring systems and sensors: "When you have a reference curve that represents the part quality, and you need to move it from one machine to another, the benefit is you no longer have to revalidate the whole process every time because that reference curve remains valid on any machine."

#### **Shorter set-up times ensure optimized production**

According to Burhop, the set-up was quick and easy to learn and use. Kistler's contact elements for injection molds have also proven to be highly beneficial. Burhop says, "The use of Kistler's contact elements has greatly simplified our mold disassembly and maintenance process. At Polyfab Corp., we focus on lean production, set-up reduction and quick-change. By utilizing Kistler's multi-channel connectors, it's just one quick connection." This allows Burhop and his team to save a lot of time and reduce costs by greatly decreasing the molding defect rate.

"Kistler's piezoelectric sensor technology, in my opinion, is much more

straightforward and easier to use than a lot of the other sensors currently on the market. The installation of Kistler's monitoring systems with our molding machines couldn't be any easier. We can pick up just one signal and that's really all we need because it is so streamlined, and we are able to start collecting data quickly," Burhop adds.

#### **Customer satisfaction is key at Kistler**

Hendricks is also enthusiastic about the long, successful cooperation and emphasizes: "At Kistler, we are focused on fulfilling our customer's needs with the goal of ensuring that they are completely satisfied. Our aim is to help our customers achieve zero-defect in series production, offering specialized, expert advice and onsite technical support including calibration services no matter where you are in the world."

"We are very satisfied with Kistler's services and support," Burhop elates. "If an issue does arise, which is not often, Kistler's support team responds very quickly and their services are fantastic. With regard to the implementation and installation of Kistler's piezoelectric sensors, our tool shops have had no issues installing the sensors in the molds. The implementation is very streamlined and almost transparent." **smi**

**Kistler Group**  
[www.kistler.com](http://www.kistler.com)

# Safely packed and well prepared



*Primary packaging for solid and liquid drugs, as well as many other products, will benefit from the latest addition to the THERMOLAST® M series. But KRAIBURG TPE is also keeping abreast with the times organizationally: the service package that comes with the product ensures customers are always perfectly prepared for future rules and regulations.*

Patients and medical professionals usually remember the outer packaging of drugs, due to the variety of the design options. It is often easier and less costly to adjust the outer packaging than to adjust the primary packaging. However, the primary packaging is critical for the patient, as it protects the drug against unwanted environmental influences, alteration and contamination. The new compounds from KRAIBURG TPE have been specifically developed for these uses – for solid and liquid drugs, as well as sprays. Applications that benefit from this new series of materials include seals and gaskets, valves and flexible joints.

The compounds in this new segment of the THERMOLAST® M series have been specially developed for applications that require basic medical approval and have to meet food regulations. In addition, extraction tests in accordance with ISO 8871-1 have been successfully performed; all of the raw materials tested are certified under Regulation (EU) No. 10/2011 and US CFR 21 (FDA) standards. The biocompatibility of the materials series is certified in accordance with ISO 10993-4, -5, -10 and -11, as well as with ISO 8871-1 for parenterals and for devices for pharmaceutical use. The materials also meet the requirements of USP661.1 (plastic

materials of construction) as well as of USP661.2 (plastics packaging systems for pharmaceutical use).

Overview of important additional materials properties:

- The translucent TPEs can be colored
- Excellent mechanical properties
- Low compression set
- Sterilizable: Autoclave 121 °C and 134 °C,  $\beta/\gamma$  radiation 2×35 kGy, EtO
- Free of PVC, silicone and latex
- Free of animal ingredients

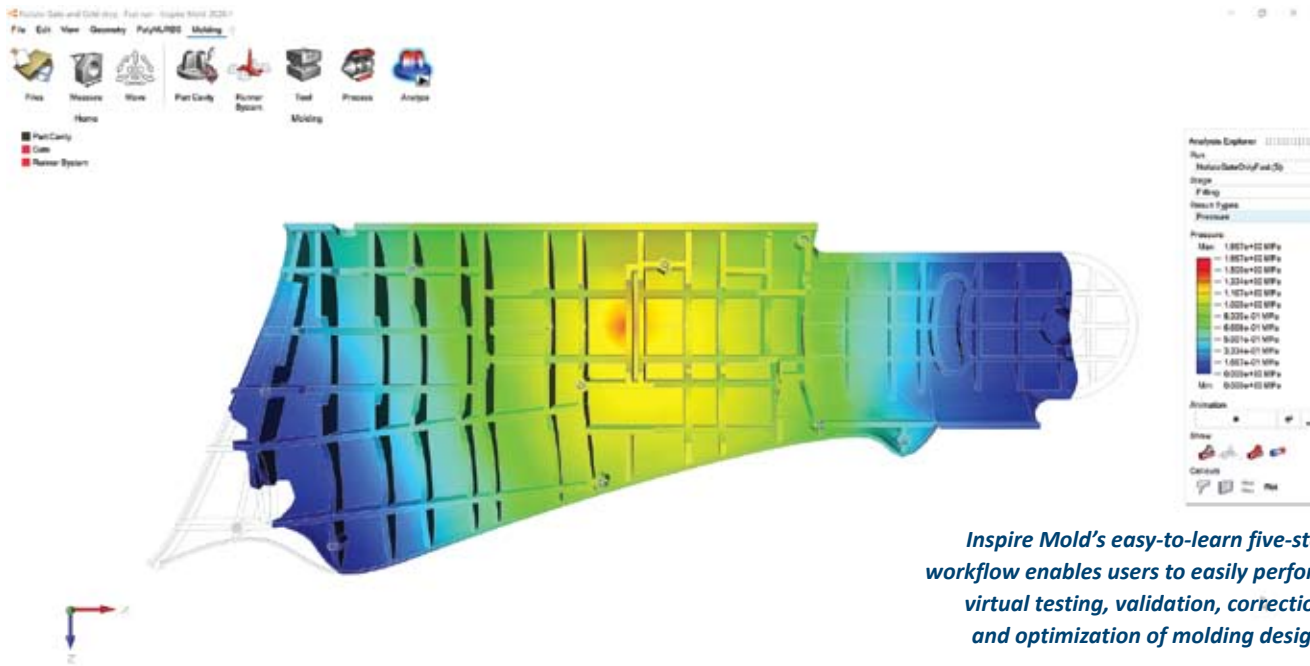
Another important criterion: Customers will benefit from the unique service package for medical-grade products, which provides advantages in view of the Medical Device Regulation that will be coming into effect from early summer 2021.

- Consistent production procedure; meets all requirements for a full-fledged medical-grade plastic in accordance with the VDI 2017 technical rule
- Guaranteed 24-month supply security
- Purity of the raw materials through commitment by suppliers
- Separate, permanently assigned production units for THERMOLAST® M

“With many years of experience and the approvals we hold, we are in a good position to compete in the pharmaceutical packaging market. But the human aspect also plays an important part, as customers can rely on our unique medical service package, with consistent materials supply as well as consistent quality and ingredients,” emphasizes Eugen Andert, Product Development Engineer at KRAIBURG TPE.

The product is now available and can be ordered from partners or distributors. **smi**

**KRAIBURG TPE**  
[www.kraiburg-tpe.com](http://www.kraiburg-tpe.com)



*Inspire Mold's easy-to-learn five-step workflow enables users to easily perform virtual testing, validation, correction, and optimization of molding designs*

# Altair inspire mold revolutionizes injection molding

*Next generation solution provides a modern, integrated approach to simulation-driven design for manufacturing (DFM) of injection molded components to reduce costs and delays.*

Altair, a global technology company providing solutions in data analytics, simulation, and high-performance computing (HPC), has launched Altair Inspire Mold, a revolutionary, end-to-end solution for simulating injection molding. For the first time, Inspire Mold brings Altair's core philosophies of simulation-driven design and democratization of simulation to this \$250 billion manufacturing sector. Injection molded plastic components play a critical role in a vast array of applications from toys and consumer electronics to high-performance, load-bearing components in sectors like aerospace and automotive.

Inspire Mold offers engineers fast, highly capable tools with unrivalled solver performance and unprecedented opportunities to make better design decisions earlier, reduce costs, speed time-to-market, and optimize

the quality and manufacturability of finished parts.

"Inspire Mold embodies everything we believe simulation should be. It puts designers and engineers firmly in control of faster, more intelligent, and intuitive evaluation of injection molded plastic parts," said James Dagg, chief technical officer, Altair. "Inspire Mold reduces the costs and delays traditionally found in the slow and laborious processing of design iterations, as well as the building and reworking of prototype molds."

Manufacturability of new components can now be evaluated at the outset of the development process, and the risk of defects such as warping, sink marks, and short shots are mitigated before any costly investments are made in molds. Design iterations are completed faster, and fewer are needed before an optimal solution is identified. Scrap, tooling, and rework

costs are slashed, and there are no requirements for specialized, GPU-computing hardware.

Other key features of Inspire Mold include:

- *Optimized user experience* – product designers and engineers can easily conduct virtual testing, validation, correction, and optimization of molding designs via an intuitive, five-step workflow.

- *Fast, next generation 3D technology* – experimental approximations of traditional 2.5D solvers are eliminated. Support for advanced physics empowers advanced and novice users with deeper insights and understanding.

- *Access to materials data* – data for 60 materials is embedded in Inspire Mold and the Altair Material Data Center (MDC) will soon be integrated, allowing MDC license holders direct, immediate access to reliable, high-quality material data.

- *Comprehensive end-to-end solution* – technology stretches from initial design through to material mapping of reinforced engineering polymers, analyzing and optimizing the structural and fatigue performance of complex parts.

Inspire Mold joins Altair's existing Inspire manufacturing simulation offerings including casting, forming, mold-filling, extrusion, and additive manufacturing. **smi**

**Altair**  
[www.altair.com](http://www.altair.com)

# Diversified Plastics meets the challenge of rapid global demand



*More than a year before the COVID-19 pandemic began, John Scrivener, a senior buyer from Nonin Medical, Inc., contacted Diversified Plastics, Inc. (DPI) to learn about the company's capabilities and capacity as part of a supplier selection process. That was the start of a mutual partnership in the fight against COVID-19.*

## **Nonin Medical's Onyx® Fingertip Pulse Oximeter**

The Nonin supplier selection team was looking for a long-term partner to manufacture components for its Onyx® fingertip pulse oximeters and other potential products. Onyx fingertip oximeters are small and lightweight. They measure and display functional oxygen saturation of arterial hemoglobin (SpO2) and the pulse rate of a person. Clipped to a finger or toe, the device is used in hospitals, clinics, long-term care facilities, emergency medical services and home health settings. The first fingertip pulse oximeter on the market, Onyx has a durable hard plastic case designed to withstand vibration, shock, bumps and drops. Manufactured in black, blue and red, it has plastic channels that hold the batteries

securely in place. In addition to Onyx fingertip oximeters, Nonin products are sold in 125 countries.

## **Supplier Selection Process**

DPI was one of three plastic-injection molding companies that Nonin considered. Prior to starting the review process, Nonin's team developed a vendor selection matrix. Key considerations included a robust quality control system and comprehensive validation process as well as a convenient location for easy collaboration. Each candidate company was asked to respond to a formal request for proposal and to provide a tour of their facilities.

"We were transitioning from another plastic injection molder," says Kristin Finberg, project manager at Nonin. "Searching for a new supplier

was a big step for Nonin. We needed to be confident that the chosen vendor could meet our needs today and in the future. We ranked the companies based on the selection matrix criteria. DPI came out on top as a great fit."

## **Tooling, Validation and a Rapid Surge in Demand**

After many years of use, the tools used to make the plastic-injection mold components for the Onyx fingertip pulse oximeters needed to be replaced. Moreover, there were a few design changes that Nonin wanted to integrate into the product. Alex Cromett, DPI's engineering manager, along with Aliza Alverson, sales engineer for DPI, developed an action plan and schedule for Nonin. To ensure good communication and a smooth process, the technical teams from both companies held weekly status meetings.

While Nonin had the product design completed, they relied on DPI's experienced team for tool design that would deliver maximum manufacturability and consistent, high-quality components. As part of its continuous im-

Diversified Plastics is a full-service custom injection molder for the filtration, electronics, medical, automotive, industrial, consumer and OEM markets. The company focuses on providing the highest level of quality and service for close-tolerance, small- to medium-sized injection molded components. A single source for molded plastic parts, Diversified Plastics offers assemblies and provides design assistance, mold construction, intricate molding to component assembly and 100 percent on-time delivery. Diversified Plastics, Inc. established in 1977 and headquartered in Minneapolis, is ISO 9001:2000 certified.



*Diversified Plastics  
Assembly Department  
(All pictures: Diversified Plastics)*

provement process, Nonin wanted to raise the bar for validation of the new tool. DPI delivered with an advanced validation protocol. Before the molds were made the teams reviewed the tool design. Once the tool was complete, prototypes were developed, and the first article inspection was successfully completed.

“Just as we were getting close to going into production, COVID-19 happened,” explains Finberg. “That’s when

*Nonin Medical’s Onyx®  
Fingertip Pulse Oximeter*



Onyx product sales rapidly accelerated. Fortunately, we were already working with DPI to manufacture, decorate and assemble components of the Onyx fingertip pulse oximeters.”

#### Silent Hypoxia

An early warning symptom of COVID-19, silent hypoxia, is a condition in which oxygen levels in the tissue have dropped, but the individual has no signs that something is wrong. A pulse oximeter, or pulse ox, identifies patients with silent hypoxia, alerting physicians early that treatment may be indicated. Early treatment can keep COVID-19 patients off ventilators—and alive. Common and as simple to use as a thermometer, a pulse oximeter is an electronic device that measures pulse rate and the saturation level of oxygen carried in red blood cells.

#### Meeting Increased Demand

“When we started the review process, we couldn’t have imagined that demand for the product would increase as much as it has. This sales growth was a result of the product’s ability to help diagnose and monitor silent hypoxia in COVID-19 patients, and of our effective marketing strategy,” says Finberg. “The team at DPI was able to quickly assess the surge in volume and develop a plan, including additional tooling, to increase capacity. DPI has done an amazing job meeting our needs for increased production, and DPI was in the right place at the right time. Everything is going well.”

Nonin’s marketing strategy regarding COVID-19, called All Together Now, is focused on serving the health care industry through education, recognition and thought leadership. Press coverage at NPR, in the Star Tribune, New York Times, CBS Morning Show, at Kare11 and others, generated as part of the campaign, contributed to the company’s recent success.

DPI is manufacturing everything that is plastic on the Onyx fingertip pulse oximeters, including the exterior or enclosure and the soft touch material that holds the finger. Some of the parts being manufactured require complex overmolding of different materials, which is one of DPI’s proficiencies. DPI also manages direct sourcing of lens components with one of Nonin’s other vendors. Additionally, the manufacturer is sourcing product decorating and completing some of the assembly. Once completed, the parts go back to Nonin to add the electronics, finish the assembly, and packaging. A second wave of COVID-19 is anticipated in late fall or early winter. As a result, demand will continue globally for Nonin’s pulse oximeters. To maximize capacity, DPI is investing in additional presses. **smi**

**Diversified Plastics**  
[www.divplast.com](http://www.divplast.com)

# Scaling production of complex medical parts



Picture: MGS

*Healthcare OEMs turn to MGS to deliver test kit and ventilator parts against accelerated timelines.*

Offering deep competencies in complex tooling, molding, and equipment solutions, contract manufacturing partner MGS is playing a critical role in supporting significant increases in demand for test kits and ventilators that are essential to reopening the American economy.

Moving quickly and efficiently to launch production, MGS' vertical integration across mold building, clean-

room molding, multi-shot equipment, robotics, and more has uniquely positioned it to successfully scale up production of critical plastic components.

Helping America meet the first, critical objective of supplying millions of COVID-19 tests, MGS is playing an integral role in the manufacturing of plastic consumable parts, scaling initial production nearly thirty-fold to rapidly supply components. Through its expertise in high-cavitation mold design and builds for challenging, tight-tolerance parts, as well as in multi-shot injection molding, MGS is serving a critical role in meeting nationwide demand for effective testing.

"Testing is a key factor in determining if communities can safely reopen their economies. In Wisconsin alone, the goal is to conduct 85,000 tests per week on an ongoing basis, with tests needed for tens of millions across the country every month," said Paul Manley, president of MGS. "The sophisticated tooling and cleanroom capabilities at our Healthcare Center of Excellence in Germantown are instrumental in helping major medical OEMs accelerate production while de-risking the manufacturing process. But noth-

ing has been more important than the passion of the MGS team in their relentless pursuit of this goal."

MGS also quickly pivoted to supply critical components to support production of approximately 30,000 ventilators in partnership with Ventec and GM. Scaling production to meet the rapid increase in demand, MGS was tasked with transferring a machined plastic valve – eight of which are needed for each ventilator – to an injection molding process that would produce parts in seconds, rather than the minutes needed for the original process.

With decades of experience in mold building for companies in healthcare and pharmaceutical industries, MGS engineered, built, and launched a tool in only eight days – demolishing what would traditionally be an eight- to ten-week timeline.

"The collaboration and cooperation across our customer, supply chain, and internal teams – including engineering, estimating, scheduling, supply chain management, sampling and metrology, and our production teams – was the key to ensuring we met our timeline with quality, assembly ready parts," said Manley. "I am blown away by the commitment of each member of our team, working round-the-clock and on weekends to help us succeed." **smi**

**MGS**

[www.mgsmfg.com](http://www.mgsmfg.com)

As a proven single-source of manufacturing expertise and accountability – in tooling, molding, and equipment technology – MGS knows how to deliver custom, integrated solutions that drive business performance and growth. MGS controls more of the supply chain in-house, minimizing risk, maximizing resources and delivering better performance at every phase of every job. MGS has 1,300 employees at six manufacturing facilities around the world that help customers improve performance, productivity and ROI. The company's Healthcare Center of Excellence is located at its Germantown, WI headquarters.



# Covid-19: Sanner increases overall production by more than ten percent



*So far, Sanner has successfully made it through the Corona crisis. In fact, the demand for solutions from the international manufacturer of pharmaceutical primary packaging and medical technology products has even increased by more than ten percent. Packaging solutions for effervescent tablets are particularly in demand. Hence, the company has increased its capacities – and is doing everything possible to provide customers with the usual high delivery reliability and quality.*

The demand for effervescent vitamin C tablets, as well as for other nutritional supplements is increasing and has led to supply bottlenecks, especially during the Corona crisis. As the market leader for effervescent tablet packaging, Sanner recognized the challenges early on and acted quickly. "We already expanded our capacities in May and were able to

meet the increased demand and maintain our delivery capability," says Dr. Johannes Willem van Vliet, Managing Director of the Sanner Group. As Peter Hülsmann, Head of Purchasing and Material Disposition at sanotact GmbH, confirms, "especially in troubled times, it becomes clear who is a reliable partner. Therefore, I would like to thank the entire Sanner team for their delivery reliability in Corona times."

*Dr. Johannes Willem van Vliet,  
Managing Director of the Sanner Group  
(All pictures: Sanner)*



## 30 percent more desiccant closures

In addition to an enormous sales increase of around 30 percent in the classic DASG 1 desiccant closure, Sanner also recorded a rising demand for tubes manufactured in the IML process and drop-in desiccant solutions such as AdCap® and AdPack®. In addition, medical devices such as components for corona and other rapid tests as well as inhalers are also in greater demand. In total, Sanner increased its global production by more than ten percent. The company and its employees have

been working extra shifts in both Germany and China since May. At the German site in Bensheim, three new machines for the production of desiccant closures were put into operation and additional staff were hired.

## Relocation in Bensheim planned for 2025

"We expect demand for our products to remain very high," says van Vliet. "In order to further expand our capacities and, above all, to produce with the latest digital and sustainable technologies, we are currently planning to move the Bensheim plant to the new Stubenwald II industrial park". In 2025, Sanner plans to fully commission the new site, which will cover an area of approximately 30,000 square meters. "Until then, we will of course continue to provide our customers with the quality and delivery reliability they are accustomed to – exactly as a partnership-based cooperation should be in times of crisis," says van Vliet.

## Cooperation in partnership pays off

Penny Humphries, Operations Manager at Aviz Laboratories in South Africa, confirms that the company is doing this excellently worldwide. "We have had a very successful relationship with Sanner for a number of years now, with constant supply and excellent quality. During Covid-19, the fantastic service from Sanner became even more apparent. We had a massive increase in demand. One phone call to Sanner was sufficient and within 24 hours we received a solid commitment on delivery despite their already overloaded production. There has never been a time where Sanner has let us down and they always work incredibly hard to find solutions for us." **smi**

**Sanner**

[www.sanner-group.com](http://www.sanner-group.com)

# exhibitions calendar



**Chinaplas**  
13-16 April 2021  
Shenzhen, China  
[www.chinaplasonline.com](http://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.



**NPE**  
17-21 May 2021  
Orlando, USA  
[www.npe.org](http://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.targkielce.pl/en/plastpol](http://www.targkielce.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](http://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.



**Plast**  
22-25 June 2021  
Milan, Italy  
[www.plastonline.org](http://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.



**Interplas**  
29 June - 01 July 2021  
Birmingham, UK  
[www.interplasuk.com](http://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](http://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](http://www.taipeiplas.com.tw)

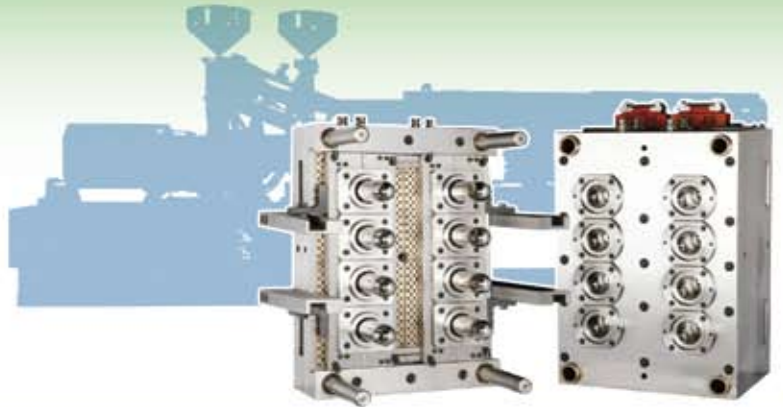
**Taipei Plas** is a biennial international exhibition for plastics and rubber technology. You can see every facet of production, meet company representatives and industry professionals from across Asia and check out the vast array of breakthrough processing machinery, parts, finished products and materials.

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