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innovations

Technics – Markets – Trends

Volume 8 – 3/2014

Battenfeld

Articles that appeared in *WITTMANN innovations* so far

Conveying/Drying

- Central system at BOSCH *1/2007*
- Quality control of dryers *1/2007*
- Kromberg & Schubert's system *2/2007*
- Cost efficient material drying *2/2007*
- FEEDMAX for the clean room *3/2007*
- The new DRYMAX ED80 *3/2007*
- Focus on material feeding *1/2008*
- The WITTMANN network control at Arge2000 *2/2008*
- Changing parameters when conveying different materials *2/2008*
- Optimizing a conveying system *3/2008*
- Dryers with energy rating *3/2008*
- The Metchem central system *4/2008*
- Auxiliaries at Delphi in China *1/2009*
- LISI COSMETICS' central system *2/2009*
- Perfect planning of central systems avoids downtime *3/2009*
- Testing WITTMANN energy claims at FKT *4/2009*
- The new FEEDMAX B 100 *1/2010*
- Greiner is saving energy by using WITTMANN dryers *2/2010*
- The A.C.S. conveying system *3/2010*
- FEEDMAX Primus conveyor *4/2010*
- The new DRYMAX Aton *2/2011*
- The BKF conveying system *2/2011*
- WD Kunststofftechnik and its central system *4/2011*
- PET processor uses a WITTMANN conveying system *1/2012*
- The PLASTICOM system *2/2012*
- The NICOMATIC system *3/2012*
- Saving energy in material drying *4/2012*
- The Bespak material handling *2/2013*
- Vision Technical Molding: Prescription for efficiency *3/2013*
- WPC injection molding *1/2014*
- New Pollmann central system *2/2014*

Automation

- Production and quality control in medical engineering *1/2007*
- The handling of large structural foam parts *2/2007*
- The new R8 robot control *3/2007*
- High-end: The production of seat adjustment rods *1/2008*
- Drive engineering for robots *1/2008*
- Automating the production of transponder pins *2/2008*
- Automated production of remote control keys *3/2008*
- Automation at Carclo, UK *4/2008*
- The flexible automation cell as ABA-PGT *1/2009*
- The cultivation of growth with WITTMANN robots *2/2009*
- Bruder toy wheel production *4/2009*
- Production of pallets at Georg Utz in Poland *1/2010*
- EcoMode helps getting energy efficient robots *2/2010*
- Automated production of oil level sensors *2/2010*
- Automating rotation welding *3/2010*
- The new R8.2 robot control *4/2010*
- Linear robots in the clean room *1/2011*
- Super-fast part removal *2/2011*
- Automation of cups and lids *3/2011*
- Superior multi-component molding *4/2011*
- Automating insert molding *1/2012*
- The expert automation of lids *2/2012*
- LSR parts at Silcotech, Switzerland: Quality through automation *3/2012*
- Zero-reject production *4/2012*
- JENOPTIK: Handling of smallest parts *2/2013*
- The Schramberg automation *3/2013*
- The Busch-Jaeger automation *1/2014*
- Automating In-Mold Decoration *2/2014*

In-Mold Labeling

- WITTMANN IML stack mold systems *3/2007*
- The WITTMANN 2 + 2 stack mold *1/2008*
- ATM d.o.o. in Serbia grows with WITTMANN systems *3/2009*
- Quadrangular IML design at PLASTIPAK in Canada *4/2010*
- Tea Plast in Albania wants to become the Number One in IML *3/2012*
- EcoPower: fourfold IML *1/2013*
- IML as a multifaceted process *4/2013*

Temperature Control

- The advantages of pulsed cooling *1/2007*
- Comparing water to oil *2/2007*
- The new temperature controllers of the TEMPRO plus C series *3/2007*
- COOLMAX cooling units *2/2008*
- Temperature controller "guarding" injection molding machines *3/2008*
- Temperature controllers with DUO cooling *4/2008*
- Variothermal tempering *1/2009*
- The new TEMPRO plus C180 *2/2009*
- The new TEMPRO direct C120 [C250] *3/2009*
- WFC: Water Flow Control *4/2009*
- TEMPRO plus C180 *1/2010*
- TEMPRO: Universal benchmark *2/2010*
- BFMOLD™ mold cooling system *3/2010*
- The new TEMPRO plus D temperature controllers *4/2010*
- Online-thermography *1/2011*
- Tempering and injection molding at Fuchs & Sohn *2/2011*
- TEMPRO plus D in the automotive sector *1/2012*
- Oscilloscope function *2/2012*
- Compact temperature controller *4/2012*
- Quality assurance through the optimal tempering process *1/2013*
- The Starlinger special solution *2/2013*
- New WITTMANN tempering and flow control equipment *4/2013*
- TEMPRO uses heat waste *1/2014*

News From The Subsidiaries

- Australia *2/2008, 2/2013*
- Austria *2+3/2008, 1/2010, 3/2011, 4/2012, 3/2013*
- Benelux *3/2008, 2/2009*
- Brazil *3/2007, 1/2009*
- Bulgaria *2/2009*
- Canada *1/2007, 1+2/2008, 3/2009*
- China *2/2010*
- Colombia *2/2012*
- Czech Republic/Slovakia *4/2009*
- Denmark *1/2009, 1/2013*
- Finland *4/2008+1/2012*
- France *2/2007, 3/2008*
- Germany *1/2007, 3/2012, 4/2013*
- Great Britain *2/2009, 2/2010*
- Greece *2/2014*
- Guatemala *1/2013*
- Hungary *1/2008*
- India *2/2008, 3/2010, 2/2012*
- Israel *1/2012*
- Italy *4/2008, 1/2010, 4/2011*
- Mexico *3/2007, 3/2009, 1+2/2011*
- Poland *2/2013, 3/2013*
- Russia *4/2012*
- Slovenia/Croatia *1/2010*
- Southeast Asia *2/2007*
- South Kores *3/2010*
- Spain *3/2007*
- Sweden *2/2009*
- Switzerland *1/2008, 2/2012*
- Taiwan *4/2009*
- Turkey *3/2008, 2+4/2011*
- USA *2/2008, 3/2009, 1/2011, 4/2013*

Injection Molding

- WITTMANN BATTENFELD: One stop shopping for injection molding *4/2008*
- Metal injection molding at Indo-US MIM *4/2008*
- Cost optimization: EcoPower *1/2009*
- IT assisted services *1/2009*
- Water injection for all-plastic parts *2/2009*
- Krona Indústria and WITTMANN BATTENFELD *2/2009*
- Molding micro-parts with the Microsystem 50 *3/2009*
- Multi-component process at wolfcraft *4/2009*
- Process data acquisition: partnership with Wille System *4/2009*
- The new all-electric EcoPower injection molding machine *4/2009*
- Thomas Dudley and WITTMANN BATTENFELD *1/2010*
- IML with TM Xpress *1/2010*
- AIRMOULD® and AQUAMOULD® Mobile *1/2010*
- Design Molded Plastics and their molding machines *2/2010*
- Stadelmann relies on Wille and WITTMANN BATTENFELD *2/2010*
- The new MicroPower *3/2010*
- AQUAMOULD® and projectile injection technology *3/2010*
- New benchmark: MacroPower *4/2010*
- STELLA relies on WITTMANN BATTENFELD machines *4/2010*
- The ServoDrive technology *1/2011*
- The 75th machine for Krona *1/2011*
- Packaging specialist TM Xpress *2/2011*
- WAVIN (Czech Rep.) and WITTMANN BATTENFELD *3/2011*
- SANIT molding a success *3/2011*
- WEPPLER Filter using BATTENFELD machines *4/2011*
- MacroPower for the production of cable ties *1/2012*
- The CELLMOULD® process *2/2012*
- ESMIN uses 43 WITTMANN BATTENFELD machines *3/2012*
- Remote connectivity *3/2012*
- Foamed high-quality parts *4/2012*
- LECHNER' MacroPower *4/2012*
- MacroPower at GT LINE *1/2013*
- Praise for the standard machine! *1/2013*
- Vertical machines at Electricfil *2/2013*
- BECK's molding technology *2/2013*
- ESCHA using HM machines *3/2013*
- Hoffer Plastics' HM machines *3/2013*
- Guppy using the EcoPower *3/2013*
- The Backhaus success *4/2013*
- Incapsulation: clean and safe *4/2013*
- Multi-component parts *1/2014*
- Success through versatility *1/2014*
- Philips perfecting the tried and tested *2/2014*
- Light-weight foamed parts *2/2014*

Blending

- The new GRAVIMAX series *2/2007*
- Blender economics *3/2007*
- GRAVIMAX 14V blender *3/2009*
- The art of blending regrind *3/2011*
- Dosing on the highest level *1/2013*
- Precision for safe rail traffic *4/2013*

Granulation

- Inline recycling of sprues *1/2007*
- Giant granulator MCP 100 *2/2007*
- The new MAS granulator *3/2007*
- Challenging recycling process *1/2008*
- The MC 70-80 at Centrex *2/2008*
- Gibo Plast enforces recycling *2/2009*
- MC granulators with AF auger *4/2009*
- Grinding of ferrite *1/2010*
- Grinding critical material *3/2010*
- The TMP CONVERT solution *1/2011*
- Inline recycling with Minor 2 *3/2011*
- Granulators under the press *2/2012*
- Large solutions for large parts *1/2013*

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Editorial

Michael Wittmann

Dear Reader,

Only the first half of this year is behind us, but still the WITTMANN Group has already presented its range of products and services at numerous trade fairs. Just to mention the most important trade exhibitions in which we have already taken an active part this year, the various venues read like the possible stops on a trip around the whole world: Lucerne, Moscow, Shanghai, Guadalajara, Parma – with the next major destinations already in view, Barcelona and Friedrichshafen, where the Fakuma will be held again in October.

A great trade fair is always something like a successful party for us. But the pleasant atmosphere was not just limited to the fairs. Many of our subsidiaries also had various reasons to celebrate besides.

One example would be the Czech subsidiary of the WITTMANN Group, which has now been offering its services to Czech and Slovakian plastics processors for 10 years – and very successfully, too. To celebrate this anniversary, the Open House 2014 was staged in Písek on April 10, and it was very well attended.

Also on April 10, WITTMANN BATTENFELD Germany extended an invitation to Meinerzhagen for the first CELLMOULD® "Foam Symposium" on "Physical Gas Injection". 100 guests came to witness the high-caliber presentations and take part in the subsequent discussions with experts.

On April 28, it was time for a very special meeting: on this day, Paul Heinz Bruder, Managing Director of BRUDER, was presented with a certificate commemorating the commissioning of the W818 servo robot with the serial number 3,333. The W818 is one of our top sellers, with more than 100 units shipped every month.

June had only just started, when the next activities came up on our agenda. On June 4, it was the turn of the German WITTMANN headquarters for robot systems and automation equipment in Nuremberg to hold an Open House. Here too, the speeches and presentations were attended by 100 interested customers.

And finally, on the very next day, WITTMANN BATTENFELD USA opened its doors in Torrington, Connecticut, to celebrate the company's 25th anniversary in an appropriate way.

After all, anniversaries and Open House events are largely those moments which remind us again and again of how far we have already come, and which inspire us with the motivation to do our jobs even better.

Sincerely, Michael Wittmann

Content

KRESZ & FIEDLER relies on WITTMANN

KRESZ & FIEDLER Kft., based in Pécsvárad, Hungary, operates with injection molding technology from WITTMANN BATTENFELD. Szabolcs Kresz, co-owner of KRESZ & FIEDLER and Head of the Injection Molding Department, was pleased to give information about the company and its special strengths. – An interview.

József Nemes

József Nemes: Here I am to the east of the Mecsek mountain range, on a visit to KRESZ & FIEDLER, a family-owned plastics processing company managed by its owners. – Mr. Kresz, what is your main business?

KRESZ & FIEDLER injection molding production in Pécsvárad.

Szabolcs Kresz, co-owner and Head of the KRESZ & FIEDLER Injection Molding Department (right) and József Nemes, Regional Manager West Hungary at WITTMANN Robottechnikai Kft.

Szabolcs Kresz: KRESZ & FIEDLER GmbH was established in 1990 and is 100 percent Hungarian-owned. Our plant here in Pécsvárad is located in scenic surroundings and has a good infrastructure. As a plastics processor, our main business is injection molding. Additionally, we are engaged in mold construction and assembly, and we also handle product development and the assembly of components. All of this enables us to provide comprehensive solutions to our customers. Our main goal is always to achieve the best possible quality in injection molding, and our in-house mold-making shop helps us to reach this goal, but we are also engaged in mold making as an independent business area.

József Nemes: What figures can you quote to give us a more detailed view of your company?

Szabolcs Kresz: Our sales figures have tripled over the last ten years, so that we realized about 700 million HUF (2.4 million EUR) last year. Since the foundation of our company, its growth has continued uninterruptedly. The number of employees we have has increased tenfold. We currently employ 63 workers, so that we could be described as a medium-sized company. We supply most of our products to the automotive industry, the sports, leisure and electronics industries, and, last but not least, to the medical technology sector as well. Our company's dynamic growth has led to a massive expansion of our customer base. Export business has developed very positively, and our products are in demand worldwide (in Austria, Germany, the UK, the USA, Brazil and China).

József Nemes: Can you tell us some more about your production?

Szabolcs Kresz: We normally manufacture technically sophisticated plastic parts that have to meet special demands in terms of high quality standards and reliability. The engineering plastic materials we most frequently use for this purpose are the following: PA6, PA66, PBT, PPS, PET, PC, ABS, POM, TPE and TPU. KRESZ & FIEDLER pays special attention to the production of spare parts for the automotive and electronics industry. We manufacture both small- and large-scale series, with small lots, however, being in the majority. Our product range is extremely diversified. In planning for our machinery and equipment, the consideration of a smooth production process has always been a top priority for us. Our customers come from a wide variety of different markets and repeatedly present us with new challenges. Our most important goal is to satisfy their requirements with regard to part geometry and attractive outward appearance of our products.

József Nemes: Which technologies are in use at KRESZ & FIEDLER?

Szabolcs Kresz: Traditional thermoplastic injection molding with high cavity pressures, two-component injection molding and hot-melt processes.

József Nemes: What requirements had to be met by the machinery?

Szabolcs Kresz: We have injection molding machines ranging from 25 to 270 t in clamping force, including HM, TM and CDC models with UNILOG B4 and B6^{S} control systems. We require quality and energy efficiency from our processing machines, and they must be easy to operate and support short cycle times. In selecting our machinery and peripheral appliances, we always try to be guided by the conditions required for the parts we want to produce. And in view of the constant fluctuation in material prices, it is also more necessary than ever to minimize scrap, so the correct choice of peripheral equipment is of particular significance. In this area, we receive optimal support from WITTMANN BATTENFELD.

József Nemes: What are the advantages of cooperation with WITTMANN Robottechnikai Kft.?

Szabolcs Kresz: In 1990, at the time when our company was established, we already had machines from BATTENFELD in operation. Our first contact with WITTMANN was established via the sales bureau of WITTMANN Robottechnikai Kft. in 2007. In that year, we acquired a W721C robot and two W702 sprue pickers. To provide optimal conditions for our production structure, which was becoming ever more complex, we subsequently purchased a variety of additional equipment, including two WITTMANN BATTENFELD injection molding machines: an HM-S B6 180/525 and an HM 110/525. From WITTMANN, we acquired a W811 robot for parts removal, and, from the portfolio of peripheral equipment, several different models of TEMPRO basic C90 temperature controllers, ES40-70M and E60-150M DRYMAX dry air material dryers, and several DOSIMAX MC Basic volumetric blenders. The price-performance ratio is a vital consideration for most companies, and here WITTMANN stands out as an excellent partner. Moreover, WITTMANN is capable of flexible response to our needs, its expert support by well-trained staff is unrivalled, and, finally, WITTMANN also has a production plant in Hungary. From that plant, we invariably receive excellent advice concerning technology and efficiency whenever we wish to buy new machines, start a new project or try out a new technology.

József Nemes: What benefits have you gained from the equipment supplied by the WITTMANN Group?

Szabolcs Kresz: We benefit strongly from their automation technology, the insertion processes, and the fact that we are less often required to intervene manually in injection molding processes. The processes have been further stabilized, and we are now producing less scrap.

József Nemes: What would you say makes KRESZ & FIEDLER stand out in particular? What sets your company apart from competitors?

Szabolcs Kresz: We are certified according to ISO 9001, ISO 14001 and ISO/TS 16949 standards. We strive to continue shaping the relationship between humans, machinery and the environment in a positive way. Our customer base is continuously expanding. Although our workforce has increased rapidly, the atmosphere within our company can still be described as familial. We have an extremely low fluctuation rate among staff, people like to work here, and this will ensure further uninterrupted growth for the future.

A selection of high-quality plastic parts manufactured at KRESZ & FIEDLER (from left to right): armrest, fire alarm box, roll core and plastic filter (spare part for a special appliance in dentistry).

József Nemes: As we have heard, you have already won several different awards?

Szabolcs Kresz: In the year 2002 the KRESZ & FIEDLER company won first place at a regional quality contest in the category of small and medium-sized industrial enterprises. In the years 2000 and 2008, the Chamber of Industry and Commerce Pécs-Baranya awarded the title of Businesswoman of the Year to our Managing Director, Erika Kresz. And finally, in the year 2010, she also received the Innovation Award of the Baranya Region.

József Nemes: How would you define the basic corporate goal of KRESZ & FIEDLER?

Szabolcs Kresz: We see our corporate strategy to be always keeping ourselves one step ahead. We are constantly on the lookout for innovative ideas and new opportunities. With this vision constantly in our minds, the ongoing development processes in various areas are coordinated. This not only applies to our products as such, but also to our organization, software, service – and of course to our high-tech equipment as well.

József Nemes: Thank you very much, and best wishes for the future! ◆

***József Nemes** is the Regional Manager West Hungary at WITTMANN Robottechnikai Kft. in Mosonmagyaróvár, Hungary.*

Advanced plastics technology made to measure for SMEs

With Autenrieth Kunststofftechnik, based in Heroldstatt, Baden-Württemberg/Germany, all enterprises, especially small and medium-sized ones, are in good hands. Autenrieth takes meticulous care of its customers' demands taking care of everything from expert counseling to production and logistics. The equipment used in production includes the latest injection molding technology from WITTMANN BATTENFELD.

Gabriele Hopf

The pictures show a selection of typical Autenrieth products: a signature pad, insert molded connectors forming a cable loom, and loose connector elements (from the top). *(Photos: 1A Autenrieth Kunststofftechnik)*

Autenrieth Kunststofftechnik GmbH & Co. KG, established in 1977 under the name of Hewiplast, has been managed and owned by Steffen Autenrieth since 2006. The main market for Autenrieth Kunststofftechnik, which employs 40 associates, is Germany, but some of its products are also exported to other European countries.

Autenrieth distinguishes itself primarily through its comprehensive, targeted customer counseling service. From counseling, product design, material selection and prototyping right up to production and logistics, customers are supplied with everything from a single source. In this way, they can be sure that they get exactly what they need. Additionally, Autenrieth Kunststofftechnik's customers truly appreciate the company's high degree of flexibility and short response times.

Production – from small lots of 500 or 1,000 per annum to yearly quantities of several million units – is located at the Heroldstatt facility. The company's product range is virtually unlimited. Autenrieth makes both low-priced commodities and high-tech products, and it places great weight on having a well-balanced mix of the two. The branches of industry supplied are just as diverse as the company's product range. Whether for the automotive industry, medical technology, electronics, building construction, consumer goods or the furniture industry – Autenrieth does not limit its customer base either. High-precision injection-molded parts are one main product line within this diverse portfolio, and it includes both visually attractive parts and complex combinations of plastics with metal. In the near future, Autenrieth expects increasing trends towards plastics replacing steel and aluminum, as well as heat-conducting materials, and more stringent demands in regard to electrostatic discharge.

Strong partner for SMEs

Autenrieth Kunststofftechnik sees itself primarily as a service provider and supplier for SMEs and aims to strengthen this position further in the coming years. The Autenrieth production floor is equipped with 19 injection molding machines ranging from 50 to 420 t in clamping

force, all including state-of-the-art automation. Steffen Autenrieth makes a point of keeping his machinery up to latest standards. Resultingly, the machines at Autenrieth are consistently replaced after being in operation for ten years. Autenrieth and WITTMANN have already been cooperating for some 15 years. The beginning of their partnership was made by a delivery of robots, followed by peripheral equipment for plastics injection molding, and culminating in a central material loading system supplied 4 years ago. The first injection molding machine from WITTMANN BATTENFELD was delivered in 2012. The successful entry into the machinery business was made with a model from the all-electric *EcoPower* series, an *EcoPower* 180, and a hydraulic machine from the HM series. In the first quarter of 2014, WITTMANN BATTENFELD was able to install another machine from the *EcoPower* series. The machines come with an enlarged mold height and are equipped with WITTMANN robots and peripheral appliances.

Central material conveying system from WITTMANN, installed at Autenrieth in Heroldstatt: DRYMAX battery dryers and SILMAX drying hoppers with material conveyors.

Energy efficiency as an obligation

At Autenrieth, electric machines are increasingly in demand, as manufacturing processes with economical use of resources are a top priority for Steffen Autenrieth. "We utilize the entire waste heat within our company and are seeking the energy-efficiency and environmental certifications for our company in the course of this year. This means that our injection molding machines are also required to meet the most stringent standards of energy efficiency and economical use of resources." Economical resource management in production is more than just a cost factor for Steffen Autenrieth, he also regards it as an obligation to society. The machines from the *EcoPower* series are uniquely suited for this goal, since their sophisticated drive system allows reclaim of the deceleration energy within the machine itself for power supply to its control system and for barrel heating.

HM 90/525 injection molding machine from WITTMANN BATTENFELD, and to its right in the background, an EcoPower 180 – both machines equipped with WITTMANN automation.

Steffen Autenrieth, Managing Director and Owner of 1A Autenrieth Kunststofftechnik GmbH & Co. KG (left), Jenny Pfohl, Autenrieth Sales Department, and Manfred Nerz, Sales WITTMANN BATTENFELD.

Apart from energy efficiency, the most important points for Steffen Autenrieth are the machines' user-friendliness – by which he means ergonomic operation throughout the entire manufacturing process –, high precision and implementation of customized solutions.

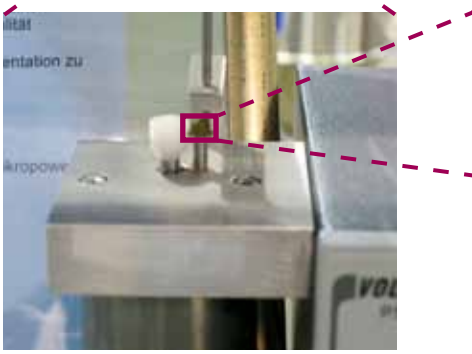
WITTMANN BATTENFELD is exceptionally capable of meeting all of the customer's demands in these areas too. "These machines show excellent workmanship, are easy to operate, and the customized solutions we need are well implemented." Steffen Autenrieth also appreciates WITTMANN BATTENFELD for its short distance from them, prompt service to solve any problems and the option of procuring the entire package, including the machine, automation and peripheral equipment from a single source. ◆

Gabriele Hopf *is the Marketing Manager at WITTMANN BATTENFELD in Kottingbrunn, Lower Austria.*

Top micro parts for patient benefits

Küng AG, based in Uznach, Switzerland, has specialized in the production of high-quality small-sized and nano parts through engineering plastics for many years. With support from BATTENFELD Schweiz AG – and using a MicroPower injection molding machine from WITTMANN BATTENFELD – the company has now ventured into the next step in micro production.

Thomas Robers



The WITTMANN BATTENFELD trade fair booth at the Swiss Plastics in Lucerne in January 2014. Pictures right: Explaining and visualizing the functionality of the finished micro parts which are needed to measure the penetration force of needles in a special testing procedure.

From left to right: Georg Tinschert (WITTMANN BATTENFELD Managing Director), Felix Küng (Küng AG Managing Partner) and Thomas Robers (Managing Director BATTENFELD Schweiz AG) and their joint trade fair exhibit, a WITTMANN BATTENFELD MicroPower 15 with a mold from Küng AG.

Eugen Küng, the founder of Küng AG, specialized in the production of technical nano parts made of plastics at an early stage in the industry. In this way, Küng AG has experienced rapid growth and ample success ever since its foundation in 1973. The company is still family-owned and owner-managed today, and is now in the second generation.

Entry into micro technology

Felix Küng, son of the company founder, recognized the enormous potential of advanced micro technology at an early stage. Simultaneously, he realized that a successful entry into this demanding business segment would require much more than just the acquisition of a micro injection molding machine. A sound business could only be created by continuous, targeted and dedicated involvement with the product. This must also include analysis of the applications and techniques being used, as well as attention to the special needs of customers in this market segment.

In automation, Küng cooperates successfully with WITTMANN Kunststofftechnik AG in Kaltbrunn (Switzerland). Its stock of machinery, which is continually being expanded, now also includes three all-electric injection molding machines from WITTMANN BATTENFELD. For some time, one of these machines has been a *MicroPower* 15/10 with 15 t clamping force, capable of injection-molding parts weighing no more than a few milligrams. This processing machine was delivered by BATTENFELD Schweiz AG in Volketswil. Here, Felix Küng's long-standing, keen interest in micro technology was already well known.

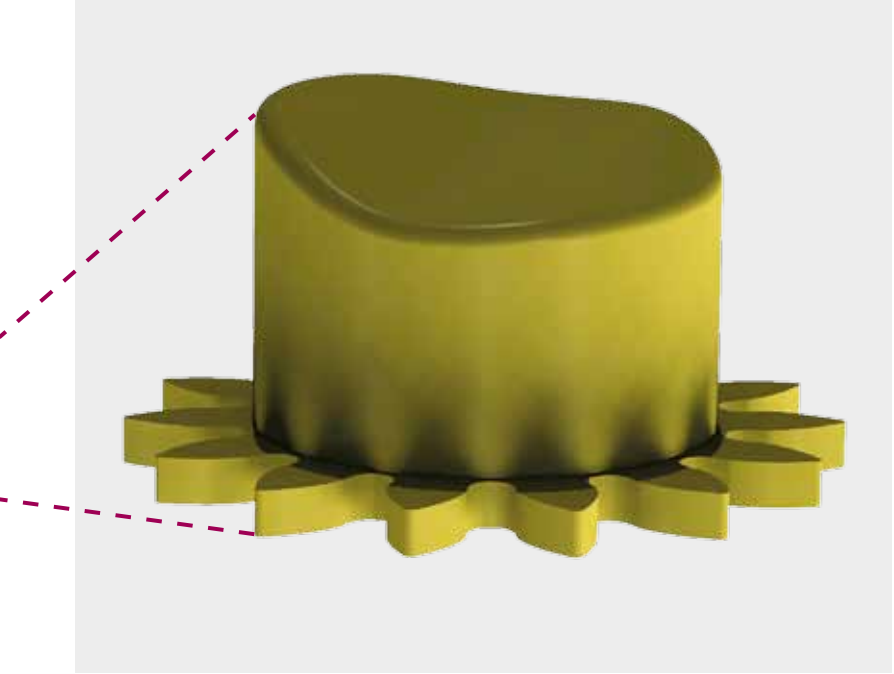
In particular, they were familiar with his repeated remarks that if Küng received a first order to manufacture genuine micro parts, the company would actually invest in such a machine – regardless of whether or not the machine could be utilized to capacity right from the beginning. No sooner said than done: since the beginning

of 2014, Küng's first *MicroPower* has been producing micro parts under clean-room conditions for the medical industry.

Presentation at the Swiss Plastics

In January 2014, the successful cooperation between Küng and WITTMANNN BATTENFELD led to a presentation at a joint exhibit, which attracted a lot of attention, at the booth of WITTMANN BATTENFELD during the Swiss Plastics show in Lucerne. Küng AG contributed a very elaborate micro mold and the suitable material, WITTMANN BATTENFELD provided the necessary processing machine, a *MicroPower* 15. This gave the visitors of the Swiss Plastics trade fair an opportunity to experience the production of complex micro parts first-hand.

The micro parts were manufactured with rotary disk technology, using a 6-cavity mold with one top and two bottom parts. The material used was POM. Parts removal was handled by a vertical W8VS2 SCARA robot, the model WITTMANN had specially developed for the *MicroPower*. Following removal, the robot presented the parts to a camera of an image processing system integrated in the machine where they could then be examined and compared to pre-defined critical dimensions before finally being deposited in the machine's stacking module and separated according to cavities. Wherever the optical inspection revealed deviations that were too large, the parts were deposited – again separated according to cavities – in their respective scrap compartments. This highly differentiated approach enables, for example, quick detection of a possible defect in the relevant cavity of the mold following a high occurrence of defective parts.



Greatly enlarged photograph of an injection-molded micro part. The cylindrical segment is 4 mm in diameter; with the gear ring included, the diameter reaches 5.5 mm. The total height is 3 mm. This is a high-precision element made of POM which serves to adjust the penetration depth of medical needles. With the help of a drive gearwheel, the rotation angle position of the rotating cam can be set via the outer gears of this part. On the cam-shaped surface of the plunger, the axial position of a ball with a hinged injection needle is shifted, thus making it possible to adjust the penetration depth of the needle. In this way, it has become possible to adapt the needle with a high degree of precision to the varying skin thicknesses of different patients. Picture below: Micro parts with sprue compared in size to a conventional writing utensil.

A micro part with a special function

These injection-molded micro parts are destined to fulfill a function of particular interest in medical technology. They are used for penetration force tests with special medical injection needles, which are incorporated, for example, into insulin pens. To maximize the comfort of patients, as well as minimize injury to the epidermis and the hypodermic tissue, smooth penetration and subsequent extraction of the needle must be ensured. Insufficiently sharp needle tips can cause unnecessary pain during penetration. The development of reliable high-quality products makes it possible to prevent such effects. Needle penetration forces are measured in order to identify the sharpness of the needle tip and to ascertain the frictional forces along the needle shaft – and consequently the efficiency of the beveled needle tip. For this purpose, the needle is pushed through a piece of film at a constant speed.

This single-use testing system delivers real-time data about the maximum force with which the needle tip pierces the film. The way in which this test system functions was shown to trade visitors at the Swiss Plastics 2014 by an experimental setup to demonstrate the penetration force test. Not only the technical aspects of this special exhibit attracted the visitors' attention, but the opportunity to gain insights into micro technology process as such met with at least as much interest.

Résumé by Küng AG

Today, Felix Küng sums up the experience he has gained through his entry into micro technology as follows: "This technology is not a secret science by any means. But it does require sound expert knowledge and persistent dedication. It also requires a certain amount of basic equipment in the area of mold making and measurement engineering, as well as courageous decision-making in terms of the investments that need to be made."

And ultimately – together with WITTMANN BATTENFELD – he expresses great confidence that further growth in micro production at Küng AG will not be long in coming. ◆

***Thomas Robers** is the Managing Director and CEO of BATTENFELD Schweiz AG in Volketswil.*

Harborcreek, PA: Port Erie Plastics is all in on automation

Using primarily WITTMANN BATTENFELD robots, Port Erie has automated 50% of their 90 injection molding machines. The results? Decreased costs, improved part quality and consistency, and winning work back from overseas.

Tom Schaffner

A collection of plumbing fittings molded at Port Erie Plastics.

Port Erie Plastics in Harborcreek, PA is a third generation, family owned company celebrating their 60th anniversary this year. They are a custom molder that thrives on its ability to mold nearly anything from nearly any industry. The company has 90 injection molding machines running on their production floor. Forty-five of those machines are optimized through the use of robots, and of those 48 robots, 40 are from WITTMANN BATTENFELD.

This degree of automation is not the status quo around the industry. Normally, most plastics molders automate only about one in five of their machines, or less. Many unjustifiably believe robots are too difficult to operate, too expensive, and not adaptive enough for their applications.

One of the biggest challenges for WITTMANN can be convincing a molder to buy their first robot. Once they do, they see the benefits almost immediately. At Port Erie, they believed that to be competitive in the market while maintaining high quality, they needed to automate. So, after being impressed with their first WITTMANN robots purchased in 2000, they met with WITTMANN to discuss taking their automation efforts to the next level.

"It was at that point that we started talking with WITTMANN to explore how to implement robots and automation on each new molding job we took on," said Phil Witkowski, Automation Engineer, at Port Erie Plastics. "Fourteen years and 40 robots later, we've worked with them for all kinds of molding jobs, from very small to very large parts.

Applications have included in-mold labeling (IML), custom end-of-arm toolings, insert molding, and structural foam molding, to name a few. In each case, the cost savings for our company have been phenomenal."

WITTMANN robots immediately excelled when integrated into Port Erie's different applications because they defied the typical anti-automation critiques. They were intuitive to program and set up, as well as backed by WITTMANN BATTENFELD's stellar customer service and support team.

The robots included easily adjustable settings to adapt to new applications, allowing the operators at Port Erie to reprogram them in-house and customize their usage however they were needed. And above all, the cost savings from automating were huge, easily justifying the initial expense of the robot.

"We were impressed by every aspect of these robots," says Phil Witkowski. "They had more capabilities, greater flexibility, higher quality, and much better support and service than any robots we had previously used. We've been able to save costs setting them up and running them through labor and time reduction, increase quality with better consistency and less part damage, and increase worker safety by keeping them out of the dangerous parts of machines. Overall, automation has been a huge boon for our company and we hope to continue to expand our use of robots as we move forward."

A technological advantage

The newest WITTMANN robots have state-of-the-art software features that allow them to become even easier to learn to operate, and better at their applications.

One example of this is WITTMANN's *SmartRemoval* technology. When implemented on one of Port Erie's applications, molding a clear K-Resin® lid, *SmartRemoval* reduced their mold-open-time from 2.87 seconds to 1.67 seconds – resulting in over 40% increase in productivity. This improved cycle time on the K-Resin® lid application will allow Port Erie's W821 robot to pay for itself in just 12 months. Ease of operation is critical, and even as WITTMANN has added new and improved technology to its robots, the updates are not difficult to grasp. New WITTMANN controllers are far more intuitive than their competition's, and their similarity to older WITTMANN models makes it easy for workers to learn and use them effectively almost immediately.

Port Erie is proud to employ 350 people at their plant in Harborcreek. While the company continues to implement robots and automation throughout their plant, they are also one of the leading plastics industry employers in the greater Erie, PA area.

"Our technicians are highly trained, and focused on secondary operations and quality control," said Joe Deutsch, Manufacturing Manager at Port Erie. Employees are regularly sent to WITTMANN BATTENFELD USA's headquarters in Torrington, CT to train on new robots and improve their own abilities. "Our techs really like the WITTMANN robots, they consider them user-friendly and WITTMANN's customer service and response times are great," said Deutsch. The resulting heightened quality, along with the cost savings from automation, gives Port Erie a competitive advantage.

Port Erie is winning work back from overseas because of their more competitive pricing, higher quality, and faster turnaround on projects. "The reshoring is not a myth, it's very real," said Port Erie's Marketing Manager, Jon Connole. "We have at least two jobs here now that we didn't have a few months ago, that came to us from China." Quoting levels have increased and is "much higher" in the past six months at the company.

Port Erie is an impressive operation that, due to its success, could be seen as an example that other companies should be following. WITTMANN BATTENFELD USA is proud to work with them and happy that WITTMANN robots can contribute to their success. ◆

An all-electric 330-ton molding machine fitted with a WITTMANN robot.

A structural foam machine fitted with a WITTMANN robot, removing large molded trenches for concrete production.

Left to right: Phil Witkowski, Automation Engineer, Port Erie; Tom Schaffner, National Sales Manager, WITTMANN BATTENFELD; Joe Deutsch, Manufacturing Manager, Port Erie; Jon Connole, Marketing Manager, Port Erie; and Dan Spohr, Robot Division Sales Engineer, WITTMANN BATTENFELD.

***Tom Schaffner** is National Sales Manager of WITTMANN BATTENFELD Inc. in Torrington, CT, USA.*

WITTMANN supporting HELLA Mexico to continue "giving light"

HELLA Automotive Mexico develops and manufactures electronic components and lighting systems for the automotive industry. The company has more than 3,200 employees, five manufacturing plants, and a Design & Development Center. This year, the new Mexican HELLA PL7 facilities opened in Irapuato, Guanajuato, with an investment of 90 million dollars, including a new material handling system from WITTMANN BATTENFELD Mexico.

Francisco Almaguer

The RFID coded CODEMAX coupling station – as the interface between the drying system and the material consumers – allows for highest flexibility. The M7.3 IPC system control visualizes and monitors every single connection of the coupling station.

FEEDMAX conveyors mounted on SILMAX drying hoppers.

Rolf Breidenbach, the President and CEO of the HELLA Group, recently said about their ambitious expansion: "We are making substantial strategic investments in the main centers of production and distribution of cars worldwide. Mexico ranks at the tenth overall position in the production of motor vehicles, and is number two in Latin America. This investment is key to the continuing growth of our company. And also, we are contributing to the further development of Irapuato and the federal state of Guanajuato, Mexico."

This step in industrial development is one of the most advanced that the HELLA Group is undertaking worldwide, and it is involved in all of the aspects of infrastructure, technology, design, performance and sustainability. This is a clear response to Mexico's position as a strategic point of production and distribution within the global automotive industry. One of HELLA's most successful strategies is its investment in equipment. This has become an absolute necessity – not least due to HELLA's claim to be using the latest technology all the time. Investment in the most modern equipment is also a key to achieving energy efficiency, and thus protection of natural resources.

A new central material handling system

To discuss the new HELLA material handling system, the representatives of HELLA PL7 and WITTMANN BATTENFELD Mexico had their first meeting in a mobile office, because the new HELLA premises they were discussing were still far from completion. Of course, there were many ideas about how HELLA wanted to work with and use the new facilities once they were finished. HELLA also wanted to utilize the outcome of the research they had done in their other plants so far. All things considered, the HELLA and WITTMANN BATTENFELD engineers developed the entire project by focusing on the best possible performance of the new equipment.

Drying equipment

The now finished drying system consists of a DRYMAX E battery dryer with a dry air capacity of 1,200 m³ and eight SILMAX E drying hoppers. The DRYMAX E 1200 battery dryer combines production reliability and helps to save energy. The dryer's two desiccant beds get regenerated in reverse direction to the process air flow. This counterflow regeneration reduces the regeneration time as well as the heating time. Beyond that, the entire regeneration cycle time can be reduced to a minimum because of the integrated *SmartReg* function.

SmartReg refers to the time-optimized control of the regeneration and cooling of the desiccant beds. The system monitors the temperature and recognizes immediately when the desiccant (bulk filled molecular screen) is ready to absorb moisture. To avoid any dew point spikes, cooling after the regeneration is done via dry air, whereat the switch-over between the two desiccant beds is operated pneumatically.

All SILMAX hoppers are equipped with the patented WITTMANN *SmartFlow* valve. These maintenance-free valves arrange for automatic air distribution to adjust to different materials and fluctuating material demands of each drying hopper.

And, as another means of creating the best process reliability, SILMAX hoppers are protecting any material from over-drying and thermal degradation through short term lowering of the drying temperature during the production stoppages of the processing machine.

And finally, the entire material drying and conveying installation at the new HELLA PL7 facility was divided into two sub-systems for the separate supply of different machine types.

Conveying equipment

The new plant was planned with a special area dedicated to storage of material. A platform was erected on which the complete drying system and the coupling station were installed, which nearly doubled the available floor space. Underneath the platform, the vacuum pumps were placed, as well as the raw material bins. This arrangement allows for an easier material handling, including material changes that can now be executed much faster.

To make the vacuum system more efficient, every filter station includes a dust bin. The dust bin is independent from the vacuum system and can be cleaned during operation. The unique WITTMANN discharge bell separates the dust bin from the vacuum area. Maintenance is possible without loss of conveying performance, and thus productivity. The discharge bell is closed by compressed air during every loading cycle, and its special construction prevents clamping of granules through the closing device. WITTMANN FEEDMAX material loaders are also equipped with this advantageous solution.

An important design challenge of this system was the huge amount of resin that would be conveyed to the machines, as well as the fact that the distances to the processing machines were very long. The WITTMANN BATTENFELD team – along with the HELLA engineers – worked hard to design an efficient and easily configurable system that meets all requirements in regard to the variety of resins processed, the residence time, and energy consumption. The new WITTMANN material handling system that was installed in the HELLA PL7 facilities in Irapuato also has an electronic communications system that allows for the comprehensive control of every aspect of the material flow: the WITTMANN M7.3 IPC control, which even offers remote control possibilities.

A tremendously important point for the HELLA engineers – namely Dominique Boulegue and Jose Luis Martinez – was to develop a customized WITTMANN CODEMAX coupling station. For HELLA, it is crucial not to have any mistakes with regard to the feeding of the machines. Because of the many different materials processed, HELLA preferred to invest in equipment that was undeniably reliable – not just a simple manifold. All the material connections of the CODEMAX coupling station are RFID coded.

Thus, the CODEMAX avoids any erroneous connection of the wrong material to the processing machine. The M7.3 IPC control displays the status of every conveying action, and indicates if any change at the coupling station has to be made.

At the HELLA PL7 facilities, the main system control devices were not installed in the material storage space, but nearby the processing machines where the machine operators are working. In case it would be eventually needed, an additional computer in the material storage space also gives full access to overview and manage the entire system. ◆

Perfect cooperation in the project phase: Francisco Almaguer (WITTMANN BATTENFELD), Dominique Boulegue and Jose Luis Martinez (HELLA), Hector Chavez (WITTMANN BATTENFELD) – from left to right.

View of the drying system, placed on a platform. This system can be easily controlled via the central M7.3 IPC control, or via any computer using VNC.

Due to much higher throughputs, the claw pumps had to be much stronger.

Francisco Almaguer *is National Sales Manager Material Handling Systems & Peripheral Equipment at WITTMANN BATTENFELD México.*

Ten years of WITTMANN BATTENFELD CZ

For ten years, the Czech subsidiary of the WITTMANN Group has very successfully served plastics processors in the Czech Republic and Slovakia. To celebrate this anniversary, the "Open House 2014" was staged on April 10.

The team of the WITTMANN Group's Czech subsidiary: 28 colleagues take care of the markets in the Czech Republic and Slovakia.

Corporate headquarters of WITTMANN BATTENFELD CZ spol. s.r.o. in Písek. Picture right: Visitors to an event during the "Open House 2014".

The response to this event far exceeded expectations. 110 visitors from 55 companies came to Písek. During the course of various presentations, the guests had the opportunity to get a detailed overview of the WITTMANN Group's entire product portfolio: processing machinery, automation systems and all other types of peripheral appliances for the injection molding process.

The most prominent exhibits were an all-electric *EcoPower* 110/350 injection molding machine with a W818T robot equipped with a telescopic axis, and a hydraulic HM 65/210 injection molding machine with an energy-efficient *ServoDrive* drive system and a W808 robot. TEMPRO temperature controllers and COOLMAX chillers were also presented, as well as DRYMAX dry air dryers and FEEDMAX material loaders, the state-of-the-art solutions for the drying and transport of plastics granulate.

Another important item on the agenda was the information provided in a series of presentations about new developments in the plastics processing industry. It covered some of the latest technologies such as magnetic clamping devices, but also some general questions, including forms of and options for equipment financing.

The WITTMANN Group in the Czech Republic and Slovakia

WITTMANN products have been known in the Czech Republic and Slovakia since the 1990s, and machines from BATTENFELD have been known there since the 1970s.

The growth in plastics processing technologies from the 1990s onwards and the strong development of the Czech automobile industry prompted the foundation of WITTMANN CZ. The subsidiary in Písek has been managed by its CEO, Michal Slaba, since its foundation and currently employs 28 people. In 2009, construction of a new building was started, which was ready for occupation at the beginning of 2011. This important move led to further quality improvement in the service offered to Czech and Slovakian customers. In addition to office rooms and a spare parts depot, the new building, with a floor space of more than 1,000 m², also offers sufficient room for a large training facility and a hall to demonstrate machinery and equipment.

The Písek facility has its own engineering department as well. Here, for example, customized solutions can be devised for injection molding processes or robot grippers for special automation tasks can be designed – options which are welcomed by customers in the local markets.

The highly developed product range and the fast, reliable service from a dedicated team ensure continuing success, with the result being sales figures that have doubled over the last two years. ◆

CELLMOULD® Foam Symposium in Meinerzhagen

For the first ever Foam Symposium on "Physical Gas Injection" on April 10, WITTMANN BATTENFELD Deutschland in Meinerzhagen, Germany, was able to welcome 100 guests. This impressive number of participants shows the great significance of "Physical Foaming" in the plastics industry. Numerous speakers approached this topic from a wide variety of different perspectives. The views of product developers, researchers and machine manufacturers were expressed, as well as those of foamed product manufacturers and material suppliers.

The series of presentations was opened by Dr.-Ing. Norbert Müller, the owner of Schaumform GmbH in Hutthurm, who explained the effect of density reduction on the development of mechanical attributes. Dipl.-Ing. Mike Tromm from the Institute of Materials Engineering, University of Kassel, reported the results of his research on the "pull-and-foam" process, which enables the production of thin-walled foamed parts with partially foamed areas of larger wall thickness. Subsequently, Dipl.-Ing. Dieter Kremer presented the CELLMOULD® process developed by WITTMANN BATTENFELD for physical gas injection, including the machine technology specially designed for this purpose. Dag Hagby, a representative of the EBG Group and Schröder Kunststofftechnik in Kierspe, and Dipl.-Ing. Thomas Olschewski from LANXESS Deutschland in Dormagen then discussed their experiences as manufacturers of foamed parts and the mechanical attributes of foamed sheet.

During the Foam Symposium, CELLMOULD® technology was demonstrated on two exhibits. The picture shows an HM 240/1330 with CELLMOULD® equipment. There was opportunity for subject-related discussion throughout the event.

Following every presentation, there was ample opportunity for discussion. The participants were also able to witness the quality of parts produced with CELLMOULD® through live demonstrations of various applications in production. A *MacroPower* 650/5100 injection-molded a lock connector made of PP-TV 20, using a 4-cavity mold supplied by Schröder Kunststofftechnik. On an HM 240/1330, a similar thin-walled component was foamed in a 2-cavity mold. And an *EcoPower* 180 produced a seat adjustment bracket with AIRMOULD® gas injection technology from WITTMANN BATTENFELD. Finally, WITTMANN robots and peripheral equipment were also on display. Together with food and drink, the guests were then offered an opportunity for further subject-related discussions with the experts.

Klaus Ehlig, Managing Director of WITTMANN BATTENFELD Germany in Meinerzhagen, and Andreas Hollweg, Sales Manager for WITTMANN Group products in Germany, were enthusiastic about the general response to the symposium, but particularly enjoyed the high level of the discussions which took place there. ◆

BRUDER receives the 3,333rd W818 servo robot

April 28th of this year was the day: a representative of BRUDER Spielwaren GmbH + Co. KG, the company's Managing Partner Paul Heinz Bruder, received a special certificate from the hands of Michael Wittmann to commemorate the delivery of the 3,333rd W818 servo robot. The W818 with this serial number will from now on be in operation at the production plant of BRUDER in Fürth, Germany.

Michael Wittmann (on the left in each picture) and Paul Heinz Bruder during the presentation of the certificate – and with a product of BRUDER Spielwaren GmbH + Co. KG in Fürth.

The W818 is the optimal robot for flexible, future-proof automation on smaller-sized injection molding machines. Because of this, it has advanced to become one of WITTMANN's top sellers. Michael Wittmann expressed his pride in the great success of this model, of which some 100 units are shipped every month. The W818 can cope with handling weights of up to 6 kg, and its short removal times have proved to be a special asset when combined with smaller-sized injection molding machines.

High precision and top quality – these are the two aspects which have been uniting WITTMANN and BRUDER in successful cooperation for more than twenty years. "We have been able to rely on each other in the past, and this will also be the case in future", says Paul Heinz Bruder. ◆

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