

Wittmann

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innovations

Techniques – Markets – Trends

Volume 10 – 1/2016

*On the move
to an
all around
integrated
process*



Battenfeld

Articles that appeared in *WITTMANN innovations* so far

Flow Control/Temperature Control

- Advantages of pulsed cooling 1/2007
- Comparing water to oil 2/2007
- The new TEMPRO plus C series 3/2007
- COOLMAX cooling units 2/2008
- Temperature controller "guarding" injection molding machines 3/2008
- TEMPRO with DUO cooling 4/2008
- Variothermal tempering 1/2009
- TEMPRO plus C180 2/2009
- 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 3/2010
- TEMPRO plus D 4/2010
- Online-thermography 1/2011
- Tempering at Fuchs & Sohn 2/2011
- TEMPRO plus D in the automotive sector 1/2012
- Oscilloscope function 2/2012
- Compact temperature controller 4/2012
- Optimal tempering = quality 1/2013
- The Starlinger special solution 2/2013
- New WITTMANN equipment 4/2013
- TEMPRO uses heat waste 1/2014
- Clean solution at DELPHI 4/2014
- Blum using a special solution 1/2015
- The new FLOWCON plus 4/2015

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
- How to get to better blending 4/2015

News From The Subsidiaries

- Australia 2/2008, 2/2013
- Austria 2+3/2008, 1/2010, 3/2011, 4/2012, 3/2013, 2/2015, 3/2015
- 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, 3/2014
- Denmark 1/2009, 1/2013
- Finland 4/2008+1/2012
- France 2/2007, 3/2008, 4/2015
- Germany 1/2007, 3/2012, 4/2013, 3/2014
- Great Britain 2/2009, 2/2010
- Greece 2/2014
- Guatemala 1/2013
- Hungary 1/2008, 4/2015
- 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, 4/2015
- Russia 4/2012
- Slovenia/Croatia 1/2010
- Southeast Asia 2/2007
- South Korea 3/2010
- Spain 3/2007
- Sweden 2/2009
- Switzerland 1/2008, 2/2012
- Taiwan 4/2009, 4/2015
- Turkey 3/2008, 2+4/2011
- USA 2/2008, 3/2009, 1/2011, 4/2013, 4/2014
- Vietnam 4/2015



WITTMANN innovations (Volume 10 - 1/2016)

Quarterly magazine of WITTMANN Kunststoffgeräte GmbH and WITTMANN BATTENFELD GmbH. Appears to meet the informational demands of staff and customers. Editorial office: WITTMANN Kunststoffgeräte GmbH, Lichtblaustrasse 10, 1220 Vienna; tel. +43-1 250 39-204, fax +43-1 250 39-439; bernhard.grabner@wittmann-group.com; <http://www.wittmann-group.com>
Issue 2/2016 of "WITTMANN innovations" will appear at the beginning of the second quarter 2016.

Conveying/Drying/Entire Systems

- 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
- 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 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
- The HELLA Mexico system 3/2014
- The Procopi system, France 4/2014
- The SLM material management 4/2014
- Slovenian producer relies on the WITTMANN Group 1/2015
- Entire solution an Alliance Precision Plastics, USA 2/2015
- Our Spanish customer Fushima 2/2015
- Injection Molding at Tielke 2/2015
- The WiBa QuickLook App 2/2015
- FRANK plastic central system 3/2015

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 remote control keys 3/2008
- Automation at Carclo, UK 4/2008
- The flexible automation cell 1/2009
- The cultivation of growth with WITTMANN robots 2/2009
- Bruder toy wheel production 4/2009
- Pallet production at Utz, Poland 1/2010
- EcoMode for efficient robots 2/2010
- Automated 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 parts 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
- Smallest parts at JENOPTIK 2/2013
- The Schramberg automation 3/2013
- The Busch-Jaeger automation 1/2014
- Automating In-Mold Decoration 2/2014
- Automation at Port Erie Plastics 3/2014
- Automating STAR PLASTIK 4/2014
- Jones Plastic and WITTMANN 1/2015
- Robots at Greeland/Singapore 2/2015
- SEB tandem robots (F) 3/2015
- The Sacel automation (I) 3/2015
- Automation in Korea 4/2015
- Suzuki India and WITTMANN 4/2015

Injection Molding

- Injection molding one stop shop 4/2008
- Metal injection molding at Indo-US MIM 4/2008
- Cost optimization: EcoPower 1/2009
- IT assisted services 1/2009
- The water injection process 2/2009
- The Krona Industria equipment 2/2009
- Micro-parts: Microsystem 50 3/2009
- Multi-component process at wolcraft 4/2009
- Process data acquisition: partnership with Wille System 4/2009
- The new all-electric EcoPower 4/2009
- The Thomas Dudley company 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
- The STELLA company 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's molding machines 4/2011
- MacroPower producing cable ties 1/2012
- The CELLMOULD® process 2/2012
- The 43 ESMIN 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
- The tried and tested at Philips 2/2014
- Light-weight foamed parts 2/2014
- The KRESZ & FIEDLER Systems 3/2014
- SME molder Autenrieth 3/2014
- Top micro parts from Küng AG 3/2014
- Opening up efficiency reserves 4/2014
- HiQ Shaping 4/2014
- ServoPower saves energy 1/2015
- Best quality at hünersdorff 1/2015
- The Grip It Fixings success story 1/2015
- Gerresheimer system in China 2/2015
- MicroPower at Tussy (USA) 3/2015
- Molding at Interplex (China) 3/2015
- RT-CAD Tiefenböck (A) 4/2015
- Dieter Wiegelmann (D) 4/2015
- OneSeal ApS in Denmark 4/2015

In-Mold Labeling

- 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
- IML at AMRAZ in Israel 4/2015

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

Editorial

Content



Michael Wittmann

Dear Reader,

40 years of WITTMANN Group! – Some people may not be so keen to celebrate their 40th birthday with an exuberant party, because they get the feeling that they no longer belong to the world of the young. By contrast, our advancing age is no problem for us as a company. In fact, we intend to celebrate our anniversary in a big way. After all, we can look back on impressive growth, which spurs us on to strive for more growth in 2016 too. As we say these days – “Save the date!” Wednesday 8 and Thursday 9 June 2016, when we celebrate our 40th anniversary – in the Orangery of Schönbrunn Palace in Vienna, and in an exhibition hall of Messe Wien (the Vienna fairgrounds).

We will take this celebration as an opportunity to give our guests an overview of the WITTMANN Group’s history, to show them the path we have followed in the past four decades. Of course we will also present our current product range and provide some insights into future developments. Our guests will be invited to visit our Austrian production facilities in Vienna, Kottlingbrunn and Wolkersdorf, and the Hungarian plant close by in Mosonmagyaróvár. Let me also here today extend to you this invitation which will soon reach our customers through other channels. All further details will be announced in the near future.

But before we review the last 40 years, let us take a brief look back on the year 2015 which has just come to a close, and which developed much more positively than seemed possible at first. Compared to the previous year, we will be able to close the year 2015 with yet another increase in sales by 11%. In view of the general economic data in many countries, which do not suggest particular dynamism, our consistently stable growth rates since 2010 could almost appear somewhat unreal. But as long as favorable conditions for financing investments prevail and the competition for maximum efficiency in the plastics industry continues, more investments in the modernization of production plants and in their expansion will certainly take place – and so our growth will also continue unabated.

In 2015, we have extended our production floor space by 12,000 m². We now look into the year ahead of us with great optimism and expect another increase in our sales figures for 2016.

Let me take this opportunity to thank all associates of the WITTMANN Group for their dedication – and to thank all our business partners for their loyalty and excellent cooperation in 2015.

Yours cordially, Michael Wittmann

Injection Molding

Complex automotive parts



Gabriele Hopf visits Denk Kunststoff Technik in Germany ... **Page 4**

Liquid silicone molding



... and ELASMO Systems in Upper Austria. **Page 6**

Temperature Control

TEMPRO plus D excels



Jörg Schröer on testing the TEMPRO at Fischer Elektronik in Germany. **Page 8**

IML

IML with 3D design



Bogdan Zabrzewski reports on the new technique at VERTEX in Poland. **Page 9**

Automation

The automated ServoPower



Jassen Sterev on interesting solutions at IMI in Bulgaria. **Page 10**

Conveying

WITTMANN system in China



Hongwei Zhu interviews Yaqing Caon from Beijing Johnson. **Page 12**

Drying

Lek Sun counts on WITTMANN



David Tan on the innovative Malaysian customer Lek Sun. **Page 14**

News

The new agency of the WITTMANN Group in South Africa

P. 15

Molding complex plastic parts for the automotive industry

Absolute top quality and reliability in the production of technologically sophisticated parts tailored to customers' demands – this is the challenge Denk Kunststoff Technik, based in Gevelsberg in Germany, has set out to meet, since last year with the help of an EcoPower molding machine from WITTMANN BATTENFELD.

Gabriele Hopf

Picture left: Connector for charging air pipe: injection-molded part, O-ring, retainer ring and silver-colored spring circlip are fastened to it. Picture right: Retainer ring with ball bearing for the front suspension struts – TPU on polyamide with sheet metal insert.



Picture left: Polyamide door check housing with TPU buffers and inserts (left), supporting arm for door check, insert-molded with polyamide (right). Picture right: Resonator made of highly reinforced aromatic polyamide, infrared-welded.



Denk Kunststoff Technik was established 20 years ago. In 2009, the company, managed by the two brothers Falk and Lars Denk, moved to its present location in Gevelsberg. It now has a workforce of 80 and realized 15.5 million Euros in sales in 2014. Since the beginning of 2015, Denk Kunststoff Technik has also been operating a facility in Nanjing, China, where five associates produce parts on three injection molding machines.

On the road to international success

The company's customer base consists almost exclusively of well-known automotive suppliers in Germany, North America, China, Spain, the Czech Republic and Romania. In recent years, Denk was able to achieve an annual growth in sales of about 15%. The company owes this success primarily to its strong focus on meeting its customers' desires and requirements with simultaneous minimization of admin-

istrative procedures. In this way, it is able to offer sophisticated solutions geared to the special needs of its customers at competitive prices. An in-house mold making shop – capable of producing any required mold – and an in-house mechanical engineering department to make specialized machinery, ensure complete internal system integration within the company. Lars Denk sees his company as an “early follower” able to adapt to complex processes quickly and effectively. For both Falk and Lars Denk, it is important to find the best process for every application.

In addition to in-house mold making and mechanical engineering of special machinery, automation is also designed in-house. Jointed-arm robots are used almost exclusively. Interim process steps such as welding are also implemented in-house at Denk. Product development is project-related. Application technology with the objective of continuous process development and improvement plays a vital role at this company.



Quality and sustainable production

As an automotive supplier, the company must give top priority to the quality of its products and processes. Denk is certified according to DIN ISO 9001 and VDA 6.1. ISO/TS 16949 certification is planned for 2016.

The company's technologically complex products include 2-component parts such as door check housings, plastic parts with metal inserts, plastic hinges, parts for the engine compartment and much more.

Sustainable management is another special concern for Falk and Lars Denk. In this respect, the two brothers are really enthusiastic about the *EcoPower* 300/1330 delivered by WITTMANN BATTENFELD at the beginning of March 2014. Lars Denk comments: "This machine consumes next to no electricity and operates with an extremely low noise level and high precision as well. That was something we could not have imagined before." Falk Denk finds the KERS system (Kinetic Energy Recovery System) of the *EcoPower* particularly impressive, since it enables recovery of the released braking energy for re-use within the machine.

EcoPower 300/1330 from WITTMANN BATTENFELD with automation from Denk Kunststoff Technik.



WITTMANN BATTENFELD as a supplier

Important features from Falk and Lars Denk's point of view, in addition to the energy efficiency and precision of their machinery, are above all reliability and a long service life.

On this account, WITTMANN BATTENFELD has already proven its competence with a hydraulic HM injection molding machine with 150 tons clamping force delivered to Denk 10 years ago and equipped with a BATTENFELD automation system. This automation system is still in operation today, and a rotary table machine from the VM series with 110 tons clamping force.

Apart from the quality of the machinery, service and after-sales support by the machine manufacturer's sales team are also high up on Denk's list of priorities. Falk Denk comments: "The best machine is of no use to us if the service is not up to standard. Here too, we are fully satisfied with WITTMANN BATTENFELD." ♦

From the left: Falk Denk of Denk Kunststoff Technik, Frank Höher, WITTMANN BATTENFELD, and Lars Denk, in front of the EcoPower 300.



From the left: Frank Höher and Falk Denk in front of the VM R 110 injection molding machine.

Successful liquid silicone technology partnership

WITTMANN BATTENFELD and ELASMO Systems GmbH have now been cooperating successfully in the field of liquid silicone technology for more than five years. Two projects involving injection molding machines from WITTMANN BATTENFELD are currently in progress at ELASMO Systems.

Gabriele Hopf



*Various LSR parts,
produced by
ELASMO.*

(Photo: ELASMO)

ELASMO Systems was established in Fischlham, Upper Austria, in 2007. In 2011, the company relocated its headquarters to Schörfling/Attersee, where a 400 m² technical lab for customers was installed. ELASMO Systems operates internationally, with its main markets located in Germany, the Netherlands and France. The Middle East and Sweden are also significant markets contributing to the company's sales, and the US market is in the process of being developed.

The company, which realizes about 3.5 million Euros per year in sales, constructed a new building with a large technical lab in 2015. Construction started in January 2015, and the official opening took place in October.

Specialist for molds

ELASMO's team of 20 associates specializes in the development, design and production of injection molding tools. Their mold technology incorporates a needle shut-off system and a gating system specially developed for fully automatic

manufacturing of molded parts including elastomers, rubber, silicone and 2-component materials, which are burr-free, without sprue, and without need for any further downstream finishing. The molds are primarily used in the automotive, aviation and medical technology industries as well as in electrical and agricultural engineering.

Turnkey equipment, consisting of injection molding machines, tooling with 2, 4, 8, 16, 32 or 64 cavities, including needle shut-off systems and automation, are also provided by ELASMO.

For innovative 2-component blending and metering equipment and grippers for demolding and parts removal, ELASMO has found an expert partner in NEXUS Automation GmbH. The equipment of the ServoMix series from NEXUS used by ELASMO excels by its outstanding blending quality and repeatability, and promotes more stable manufacturing processes. The demolding systems from NEXUS are perfect companions for the molds from ELASMO Systems, which combine to make a highly productive unit.

Special requirements

The demands ELASMO places on its machinery are numerous. Managing Director Benjamin Fellingner requires accurate metering, precise closing, reproducibility of process parameters, user-friendliness, freely programmable input/output ports for peripherals, reliability of the machines and energy-optimized technology.

“First and foremost, we need user-friendly machines of excellent quality”, says Benjamin Fellingner. “The injection molding machines from WITTMANN BATTENFELD satisfy our requirements in every respect.” What Benjamin Fellingner appreciates the most about the cooperation with

WITTMANN BATTENFELD, apart from the quality and user-friendliness of the machines, is the good service and excellent technical support provided, as well as smooth order processing, which is vitally important in project business.

**Projects with
WITTMANN
BATTENFELD**

ELASMO Systems has already successfully completed several demanding projects with injection molding machines from

Technical lab at ELASMO Systems in Schörfling, Austria, with machines from WITTMANN BATTENFELD.

*Mold for the production of O-rings.
(Photo: ELASMO)*

the hydraulic HM series, and with machines from the all-electric *EcoPower* series and the *MacroPower* series of large machines as well.

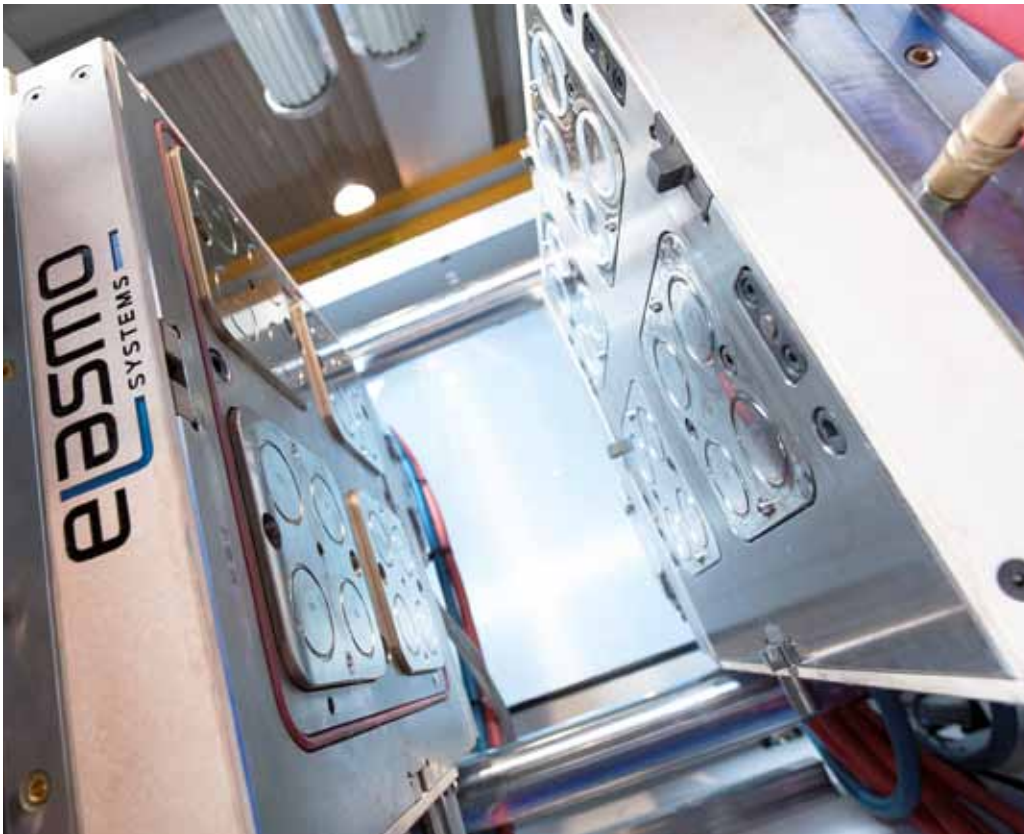
There are currently two projects with injection molding machines from WITTMANN BATTENFELD underway at ELASMO Systems.

Firstly, there is a 16-cavity LSR mold with a needle shut-off system for the fully automatic production of O-rings made from liquid silicone that has been installed on a WITTMANN BATTENFELD HM 110 injection molding machine. Demolding of the burr-free parts is affected by a vertically inserted brushing device with laminated metal brushes operating at a maximum distance of 0.2 mm from the hardened mold inserts.

Secondly, an LSR component for the automotive industry is being manufactured on another HM injection molding machine, an HM 180, equipped with a W832 robot from WITTMANN, using a 16-cavity mold with slide technology and a specially designed handling gripper mounted on the W832 robot. ♦

From left to right: Ing. Benjamin Fellingner, Managing Director of ELASMO Systems GmbH; Wolfgang Glawatsch, WITTMANN BATTENFELD Sales Department.

Gabriele Hopf is the Marketing Manager of WITTMANN BATTENFELD in Kottlingbrunn, Lower Austria.



As a system supplier of fully automatic injection molding lines, ELASMO precisely matches the individual components with each other. They are tested and optimized in the company's own technical lab before being shipped. The complete layout of every component is individually adjusted to each customer.

WITTMANN TEMPRO plus D under scrutiny

Fischer Elektronik GmbH & Co. KG based in Lüdenscheid, Germany, subjected the products from four manufacturers of temperature controllers to various tests. Unrivalled: TEMPRO temperature controllers from WITTMANN.

Jörg Schröer

Fischer Elektronik GmbH & Co. KG, founded as Norwe-Fischer in 1969, specializes in manufacturing various components for the electronics industry such as heat sinks, pin-and-socket connectors, card holders and optoelectronic parts. The company employs some 380 people today and realizes more than 40 million Euros in annual sales. Fischer exports its products to about 90 countries – with an export share of approx. 35% in total sales.

The products made by Fischer require constant monitoring of the manufacturing processes. The last time when the acquisition of new temperature controllers was planned, suitable models from several competitors were subjected to comprehensive testing.

Jörg Schröer (left) with Michael Reichel, Head of Injection Molding at Fischer Elektronik, beside two WITTMANN TEMPRO plus D160 temperature controllers operating at Fischer in Lüdenscheid.

Pin strips with pin contacts arranged in a row, which are used on electronic PCBs. The production of these parts from a high-performance engineering plastic material (polyamide 4.6 with 30% fiberglass content) requires comprehensive process monitoring.

Jörg Schröer is the Managing Director of Robomatik GmbH based in Lüdenscheid, which represents the WITTMANN Group in North Rhine-Westphalia.

Apliances thoroughly tested

In this direct comparison of different makes, special attention was paid to certain parameters. One of these was the accuracy of temperature control in high-temperature applications up to 160 °C and monitoring of extremely narrow tolerance margins in flow measurement; other criteria were user-friendliness in setting the monitoring functions and maximum maintenance-friendliness of the appliances. Following extensive testing and thorough examination of all appliances, Fischer Elektronik decided in favor of the latest WITTMANN temperature controllers from the TEMPRO plus D series.

Practical experience

According to Michael Reichel, Head of Injection Molding at Fischer Elektronik, two special features of the TEMPRO temperature controllers ultimately tipped the balance, namely the high precision of temperature control and the facilities for monitoring individual process parameters which TEMPRO offered.

“The temperature controllers are addressed via the interface of the injection molding machine. After setting the correct parameters on the temperature controller, we must

be able to rely on an extremely high standard of precision. We also need immediate alarms for the smallest deviation from the set values; this means, for example, for any variation in diameter inside the cooling channel or flow changes due to other causes, and for temperature deviations. We process high-performance engineering plastics and even minute deviations from the norm constitute reject criteria.” For example, the molded pin strips must possess a high dimensional stability and flexural strength. To achieve really 100% good parts here, special attention must be paid to mold temperature control. The latest generation of WITTMANN TEMPRO plus D temperature controllers enables absolute precision in all parameter settings.

Michael Reichel goes on to explain: “We fully exploit the various monitoring functions of the appliances. The simple operation via a fast-responding touch display and the self-explanatory navigation through the functions are further enormous advantages of these temperature controllers. And of course we have also tested them for easy maintenance. After removing the cover, the excellent technical workmanship and assembly of the components become obvious straight away, as well as the easy access to all components. This was a very important aspect for us with regard to performing our maintenance work. In servicing our entire machinery and equipment, we follow the intervals specified by the manufacturers.

Whenever WITTMANN temperature controllers are due for servicing, this is shown on the display.”

The standard features contribute to a stable process and ensure its comprehensive documentation. These include functions

such as programmable automatic exchange of the cooling water in the tank, automatic heat output control, the USB connection for saving the data and graphic visualization of the entire process. “These devices are often situated in areas where it is not always possible to keep an eye on parameters and displays. Here we can rely on the TEMPRO temperature controllers. As soon as there is trouble anywhere, we are notified immediately by an alarm signal from the temperature controller and via the interface on the injection molding machine”, says Reichel.

“The more processes we are able to monitor and have documented, the more accuracy we can get in our production. In fact, we are able to supply 100% production-monitored and quality-inspected parts to our customers. And here, the WITTMANN TEMPRO temperature controllers are making a vital contribution.” ♦



The brand new quality in packaging: 3D design by IML

The production of packaging by IML ranks among one of the most challenging tasks for plastics processors. The Polish company VERTEX based in Ozorków (north of Łódź) is one of the most innovative companies in this area. VERTEX started in 2012 with the production of IML packages featuring a 3D effect, achievable by a special process.

Bogdan Zabrzewski

Until recently, a 3D effect on printed material invariably required special (relatively expensive), thicker 3D labels, plus a special printing technique. VERTEX has now succeeded in developing a process which makes it possible to achieve a 3D effect with one-dimensional standard labels.

On conventional IML containers, the labels are attached to the outside of the packages. With the IML technology used by VERTEX, the label is affixed to the inside of the package. The 3D effect is then generated on the outside, which faces the viewer, and in this way the effect can be achieved with conventional standard labels.

The production costs of these very special IML packages are directly comparable with those for packages produced by traditional methods. The advantage of this approach is that the additional costs for this type of 3D effect are hardly noticeable.

How the 3D effect is created

If a conventional IML label is used, as is done at VERTEX, the 3D effect is generated by the special structure of the injection-molded part itself. This special structure is created directly on the surface of the plastic part by the injection molding process. This requires a special mold with the necessary structure incorporated in its cavity walls. From there, it is transferred onto the plastic part during injection molding.

VERTEX has already been using this technology successfully for some time in actual production and is continuously improving the process. Now applications for flat plates have become available, but achieving a 3D effect on curved surfaces is still a major challenge.

The use of this advanced technology, however, is not limited to food packaging only. VERTEX is constantly on the lookout for new applications. Meanwhile, a great variety



of plastic products are being manufactured with a 3D effect generated by this method, such as DVD and CD packages, toys (e.g. 3D puzzles) and costume jewelry.

The VERTEX injection molding equipment

To make these special 3D packaging products, twelve injection molding machines

from WITTMANN BATTENFELD are operating at the VERTEX production plant. The clamping forces of these injection molding machines are ranging from 180 to 240 t. All these machines are equipped with laterally operating single-axis W737 servo robots from WITTMANN; moreover with auxiliary equipment – machine and mold cooling equipment as well as FEEDMAX material loaders – also designed, built and delivered by the WITTMANN Group.

The processing machines are toggle machines from the WITTMANN BATTENFELD TM series. To produce the package lids, a TM 180/750

UNILOG B6 with 180 t clamping force is used; the tubs are injection molded on a TM 240/750 UNILOG B6 with 240 t clamping force. The IML systems are fitted with label magazines which can be exchanged between the individual production lines, and the manual mold height adjustment facility allows for extremely fast and flexible product changeovers.

For WITTMANN BATTENFELD, the cooperation with VERTEX is an outstanding example of realizing a comprehensive system solution, entirely true to the motto of “everything from a single source”.

Constructed in 2012, the VERTEX production plant in Konstantynów Łódzki was completely equipped by WITTMANN BATTENFELD with injection molding machines, automation systems, peripheral equipment and machine cooling systems. ♦

Packaging element made by VERTEX with 3D effect, produced with IML technology.



VERTEX production line at the plant in Konstantynów Łódzki.

Bogdan Zabrzewski
is the Managing Director of WITTMANN BATTENFELD Polska, based in Grodzisk Mazowiecki, Poland.

IMI Bulgaria relies on *ServoPower* machines and WITTMANN robots

IMI Bulgaria has chosen WITTMANN BATTENFELD Bulgaria as their main supplier for injection molding machines and peripheral equipment. It was not only high-quality machinery that was important to IMI, but also WITTMANN BATTENFELD's ability to provide modern, innovative solutions for getting to a cost-effective automated production process.

Jassen Sterev

IMI (Integrated Micro-Electronics, Inc.) was established in 1980 as a joint venture between Ayala Corporation and Resins Inc. Today, IMI is a widely recognized expert in providing electronics manufacturing services (EMS), as well as power semiconductor assembly and test services (SATS), for diversified markets including those in the automotive, medical, solar energy, telecommunications infrastructure, storage device, and consumer electronics industries.

IMI's global presence encompasses operations at 15 manufacturing sites and sales offices across Asia, North America, and Eastern Europe. The IMI Bulgaria plant in Botevgrad has a footprint of about 24,000 square meters and about 1,280 employees. The Bulgarian IMI branch is active in the automotive, industrial and consumer electronics markets.

Robot gripper, customized to meet the requirements of this particular application.

IMI and WITTMANN BATTENFELD

The collaboration between IMI and WITTMANN BATTENFELD Bulgaria started in 2011 with the development of a new project for the automotive industry. The material being processed was an engineering plastic, and the parts were very different in size and shape. IMI built the respective 4-cavity mold in-house according to their own design. In 2012, WITTMANN BATTENFELD Bulgaria delivered the first production cell consisting of an HM 300/1330 *ServoPower* injection molding machine with integrated Insider package, a WITTMANN W821 robot, and a material dryer with 2 drying hoppers.

Afterwards, the production cell had to be equipped with very special peripheral solutions that were needed for this specific application, including custom EOAT (end-of-arm tooling/gripper). Expert technical support was also needed for the programming of the cell. Several audits had to be held, and every one of these helped to improve the installation work that was done by WITTMANN BATTENFELD.



The additional technical solutions that WITTMANN BATTENFELD provided for the completion of this production cell included the following:

- W821 programming for part removal from the mold and for dropping the parts onto the integrated conveyor belt. The difficulty was to match that every time the machine had started up, the parts from the first five shots had to fall down and must not be taken by the robot.
- Designing the gripper was very difficult, because of the different height, the shape and weight of the molded parts. Also, the sprues had to stay off of the conveyor belt, so additional blowers had to be mounted on the gripper plate.



- ◆ The sprues and the bad parts that fell from the machine had to be collected, but only the sprues had to be granulated, not the bad parts. Thus, conveying equipment with sprue separation was delivered, as well as a WITTANN Minor 2 granulator.
- ◆ The mold had to be tempered to 60 °C, thus a large WITTANN TEMPRO plus XL 90 temperature controller with a power of 36 kW was delivered. The WITTANN BATTENFELD injection molding machine and the temperature controller had to communicate and had to give an alarm or shut down in case a problem occurred with the injection molding machine or the TEMPRO unit. The respective connection and programming were implemented.

Arrival of the injection molding machine for the second production cell. This WITTANN BATTENFELD HM 300/1330 ServoPower arrived at the IMI plant in Botevgrad in February 2014.



After this installation had worked well for some time, IMI decided in 2013 to order the same equipment again: a second HM 300/1330 ServoPower injection molding machine - for the production of similar parts. The only "little" difference was that the second production cell had to be mirrored in comparison to the first one, because the integrated conveyors of both production cells had to run into the same direction. The following additional solutions had to be executed for this second production cell:

The second (in the picture left), and already working first production cell (in the picture right), at the IMI Bulgaria plant.

- ◆ Instead of the W821, a W818 robot from WITTANN was installed. This robot had to remove the parts and the sprues, put the parts on the conveyor belt, and take the sprues to the already existing Minor 2 granulator.
- ◆ A completely newly designed gripper with more vacuum cups was needed, and this new device had to apply the *SoftTorque* function of the WITTANN R8 robot control. This became necessary because in this case, the mold had been made by another manufacturer, and this mold's ejectors were using springs.

Two views of the first production cell: from the operator's side (left) and from behind (bottom left). The left picture shows the Insider package, the picture at the bottom the additional conveyor belt with sprue separator, and the Minor 2 granulator.

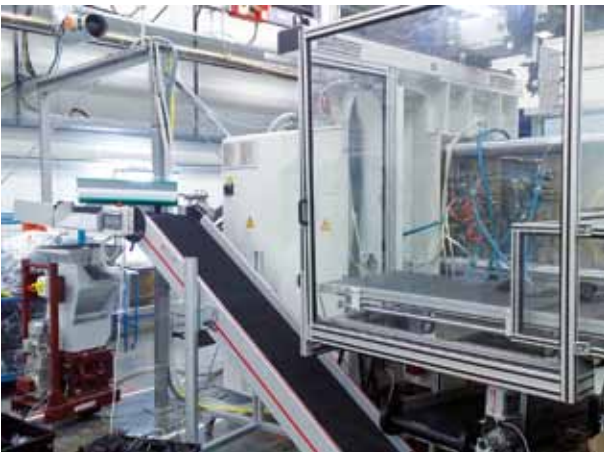


In between these two big projects, the WITTANN BATTENFELD experts provided IMI with two more injection molding machines for their plastic part production with 110 and 150 tons of clamping force. These machines were also equipped with proven WITTANN auxiliaries: dryers, loaders, and temperature controllers. At this juncture, IMI runs six WITTANN BATTENFELD injection molding machines in total.

The WITTANN BATTENFELD service technicians are always available, and they solve any problem that may occur with the production of plastic parts to ensure the customers' full satisfaction.

Of course, the Bulgarian WITTANN Group branch will continue its close and successful partnership with IMI Bulgaria, providing the company with highly developed technical solutions. Currently, IMI is building a new production hall where more injection molding machines will be operated. ◆

Jassen Sterev is the General Manager of WITTANN BATTENFELD Bulgarien EOOD based in Kalekovets in Bulgaria.



Automotive components producer in China uses WITTMANN equipment

Johnson Controls is a global diversified technology and industrial leader serving customers in more than 150 countries. The Caiyu Factory of Beijing Johnson Controls Automotive Components Co., Ltd. was founded in early 2013. This plant is mainly engaged in producing automotive interior parts for Beijing Benz Automotive Co., Ltd. Also in 2013, the company established a cooperative relationship with the WITTMANN Group and signed an initial procurement contract. – The following is a conversation with Yaqing Cao, Manufacturing Engineer of Beijing Johnson.

Hongwei Zhu

Hongwei Zhu:

What products does your company purchase from the WITTMANN Group?

Yaqing Cao:

Our company initially purchased the central material conveying system equipment from WITTMANN BATTENFELD in July 2013, and then ordered three WITTMANN W832 servo robots in total – the first one in November 2013, and the second and third ones in March and December 2014. The WITTMANN Group provides equipment for drying, material conveying, metering and mixing, as well as servo robots and some other products for our company. All of these devices represent the world's most advanced technology level in plastics machinery and automation manufacturing.

Hongwei Zhu:

Why does your company choose WITTMANN's and WITTMANN BATTENFELD's products?

Yaqing Cao:

We choose the WITTMANN Group's equipment mainly for the following three reasons. Firstly, the German Johnson plant in Luneburg adopted the central material conveying system equipment, which has demonstrated good performance for several years. Secondly, the WITTMANN Group's customer service attaches great importance. After making many visits to clients along with experts in charge of material conveying systems from Vienna, they provided us with a custom program. Furthermore, the one-stop products and services offered by WITTMANN are very

important for us. WITTMANN not only has central material conveying system equipment, but also has servo robots, which are one of their main products and which offer high accuracy and stability. After we purchased these robots and have begun using them in our production, we are very impressed by their design and functionality. Practice has proven that our choice of WITTMANN Group products is absolutely right.

Hongwei Zhu:

Which part do you think is the most critical one of the WITTMANN central material handling system that you have purchased?

Yaqing Cao:

In regard to the central material drying and conveying system, the most critical part is the control system. It seems somehow similar to the very part of peoples' brains that controls the execution of any action they undertake – you could say, the core of the nervous system.



Beijing Johnson Controls in Caiyu: View of a processing machine equipped with WITTMANN automation and material loader.

Hongwei Zhu:

What advantages does the system's control offer since your company has chosen to purchase a WITTMANN central system?

Yaqing Cao:

The M7.3 IPC network control system with color touch-screen from WITTMANN was developed for the administration of medium to complex network configurations with up to 320 network participants. Every participant is connected via a bus module to the network and can be configured for a specific task. This guarantees the maximum flexibility for the setup of customized material handling systems. The bus modules provide individual control of vacuum loaders, blower stations, central filters, dry air valves, purging valves, etc.

Hongwei Zhu:

In your company's central material drying and conveying system – what units do you control using the WITTMANN M7.3 IPC network control system?

Yaqing Cao:

We have two sets of drying equipment, each consisting of several drying hoppers. We also have central material dryers, five 5.5 kW vacuum pumps, filter stations, and nine blenders equipped with feeders that are used on our injection molding machines.

Hongwei Zhu:

Would you tell us a bit more about the WITTMANN equipment that you are using with the central material drying and conveying system?

Yaqing Cao:

We have two double-sets of DRYMAX battery dryers. The two DRYMAX E 900 battery dryers are providing six SILMAX drying hoppers (with a total volume of 4,400 liters) with dry air, and the two DRYMAX E 600 battery dryers are connected to seven drying hoppers (with a total volume of 3,600 liters). WITTMANN BATTENFELD has arranged the functionality of the drying system according to our very special requirements. When only a few of the drying hoppers are needed, and turned on, we can select and operate one of the dryers as the standard dryer. But when we operate most of the drying

hoppers because we need more material throughput, the other dryer that features an optionally available frequency control can automatically turn on and thus contribute to the dehumidification process. This functionality is a very important advantage, and of course means yet another contribution to an overall sustainable energy management system.

Hongwei Zhu:

Are there any other specific advantages that are provided by the WITTMANN Group equipment in the actual operation of your company?

Yaqing Cao:

You may say that the real "power source" for the conveying of the plastics material lies in the five 5.5 kW vacuum pumps that were supplied to us by WITTMANN BATTENFELD. These pumps are also meeting our special requirements with regard to air volume and pressure. Amongst other materials, we are also processing a very special material that is glass-fiber reinforced and that has to be conveyed at a relatively low speed (< 20 m/s). The vacuum pumps are perfectly coping with this requirement, as well as with our desire for a lower noise level (< 70 dB). We are also using the WITTMANN Group's GRAVIMAX blender series of gravimetric material blenders. Our GRAVIMAX B14 and GRAVIMAX B34 units can achieve an absolute precise material blend according to our recipes. And these material blenders also are perfectly handling the blending of plastic resin with color masterbatch and CBA foaming agents. The WITTMANN Group's unique RTLS technology (Real Time Live Scale) ensures batch-to-batch accuracy, and this means no overuse of high cost resins, optimizing the material consumption for the product requirement. Every batch is consistent and to the desired formula. Hundreds of recipes can be stored

on each GRAVIMAX's local memory, and from there, can also be stored on a USB flash drive. The unique flow-valves are extremely fast, efficient and consistently reliable – with a best possible accuracy level of 0.1%. The hemispherical spiral mixer provides a homogenous blend and allows for easy cleaning. The mixer's special geometry guarantees no dead spots or material hang-up. ♦



The WITTMANN central material drying and conveying system at the Caiyu Factory of Beijing Johnson Controls Automotive Components Co., Ltd., China.

GRAVIMAX material blender with FEEDMAX loaders mounted on a processing machine.

Hongwei Zhu, WITTMANN BATTENFELD Regional Sales Manager in China for Beijing's Northern Districts, Tianjin and Hebei.

From left to right: Hovey Han, WITTMANN BATTENFELD Sales Manager for the Chinese Northern Districts; Yaqing Cao, Manufacturing Engineer of Beijing Johnson Controls Automotive Components Co., Ltd.; and Domenik Nikollaj, WITTMANN International Key Account Manager.

Hongwei Zhu is the WITTMANN BATTENFELD Regional Sales Manager in China for Beijing's Northern Districts, Tianjin and Hebei.

Lek Sun in Malaysia relies on equipment from the WITTMANN Group

Lek Sun Manufacturing Sdn Bhd, with Headquarters in Sungai Petani in Malaysia, was founded in 1990 by Mr. Ho Chu, and offers their customers "one-stop shop" for the production of plastic components. For years now, WITTMANN has been one of Lek Sun's most important business partners.

David Tan

Lek Sun Manufacturing takes special care with every step from mold design to executing the production run, and they possess a full range of state-of-the-art tooling machinery for in-house mold design. The company provides not only injection molding, but also metal stamping, including secondary processes.

Lek Sun Manufacturing has two major plastic molding manufacturing facilities located at Sungai Petani/Kedah in Malaysia and in the Ho Chi Minh Province in Vietnam. The latter is registered under D&Y Technology Co. Ltd, and is one of the leading manufacturers of high precision automotive head lamps and lenses, electronic components, office equipment, stationery, and many other products.

Lek Sun is certified according to the ISO 9001 and ISO 14001 standards, and in addition, has recently obtained certification according to TS 16949:2009. One of the company's central missions is to strive continuously for the most excellent quality management system, and to build up long-term business relationships with their partners.

The founder of the Lek Sun company, Mr. Ho, strongly believes that the WITTMANN Group is the right partner to achieve these goals, being one of the leading manufacturers of peripheral equipment for the plastics industry.

View of the Lek Sun production plant in Sungai Petani/Kedah: processing machine with Aton dryers, FEEDMAX loaders, and servo robot from WITTMANN.

High-quality injection molded automotive parts, manufactured at Lek Sun Manufacturing in Malaysia, using WITTMANN Group auxiliary equipment and automation.

David Tan is the Business Development Director at WITTMANN BATTENFELD (Malaysia) Sdn Bhd in Selangor, Malaysia.

The Lek Sun drying equipment

Lek Sun benefits from the superior quality and excellent performance of WITTMANN Aton segmented wheel dryers. These make a strong contribution to optimizing productivity and increasing the product quality, as well lowering the rejection rate. The drying equipment from the WITTMANN Group applies the most innovative drying technology in the industry, providing the advantages of consistent dew point and maximum energy efficiency. Their *3-Save Process* combines three separate intelligent methods that use the existing heating energy of the dryer to significantly reduce energy consumption. The combination of counter airflow regeneration, radiant heat recovery, and efficient heater design make up the special WITTMANN *3-Save Process*. In addition, Aton dryers automatically optimize the drying process with regard to any climatic environment, applying the energy-saving *EcoMode* function, also originally developed by WITTMANN.

Lek Sun as a WITTMANN customer

Since 2010, Lek Sun Manufacturing has purchased about 35 WITTMANN dry air dryers, including the recently completed purchase of 11 Aton₂ F70 segmented wheel dry-



ers – and also 8 W818S/W808S servo robots from the same supplier. WITTMANN BATTENFELD Malaysia, being the Malaysian branch of the WITTMANN Group, has a permanent service engineer based in Northern Malaysia, providing the quickest possible service response to the needs of the Malaysian market. This is one of the reasons why the WITTMANN Group has become the preferred business partner of Lek Sun Manufacturing. ♦

The new agency of the WITTMANN Group in South Africa

As of October 2015, the WITTMANN Group is represented in the South African region by IPEX Holdings (Pty) Ltd. The company, based in Johannesburg, operates three sales offices in South Africa.



From left to right: Siegfried Köhler, Sales Director of WITTMANN BATTENFELD; Louis Kruger, Managing Partner of IPEX; Bruce Allen, Managing Director of IPEX; Edmund Kirsch, Regional Sales Manager of WITTMANN BATTENFELD. The picture was taken at the WITTMANN BATTENFELD plant in Kottlingbrunn, Lower Austria.

In view of the positive market development in the plastics industry in the South African region, the WITTMANN Group has decided to intensify its respective activities in this market. With IPEX, an agency has been found which is characterized by in-depth market experience and many years' practice in selling high-quality machinery.

IPEX was established in 1963 and traditionally sells machinery for the printing and graphic design sector. With its sales and service offices in Johannesburg, Durban and Cape Town, IPEX is able to supply the South African market as well as the neighboring countries of Namibia, Botswana, Zimbabwe, Lesotho and Swaziland ef-

ficiently, with short delivery times and excellent after-sales service. With its workforce of 50 people, the company has made high quality standards in customer management and technical service its primary concern. With this type of orientation,

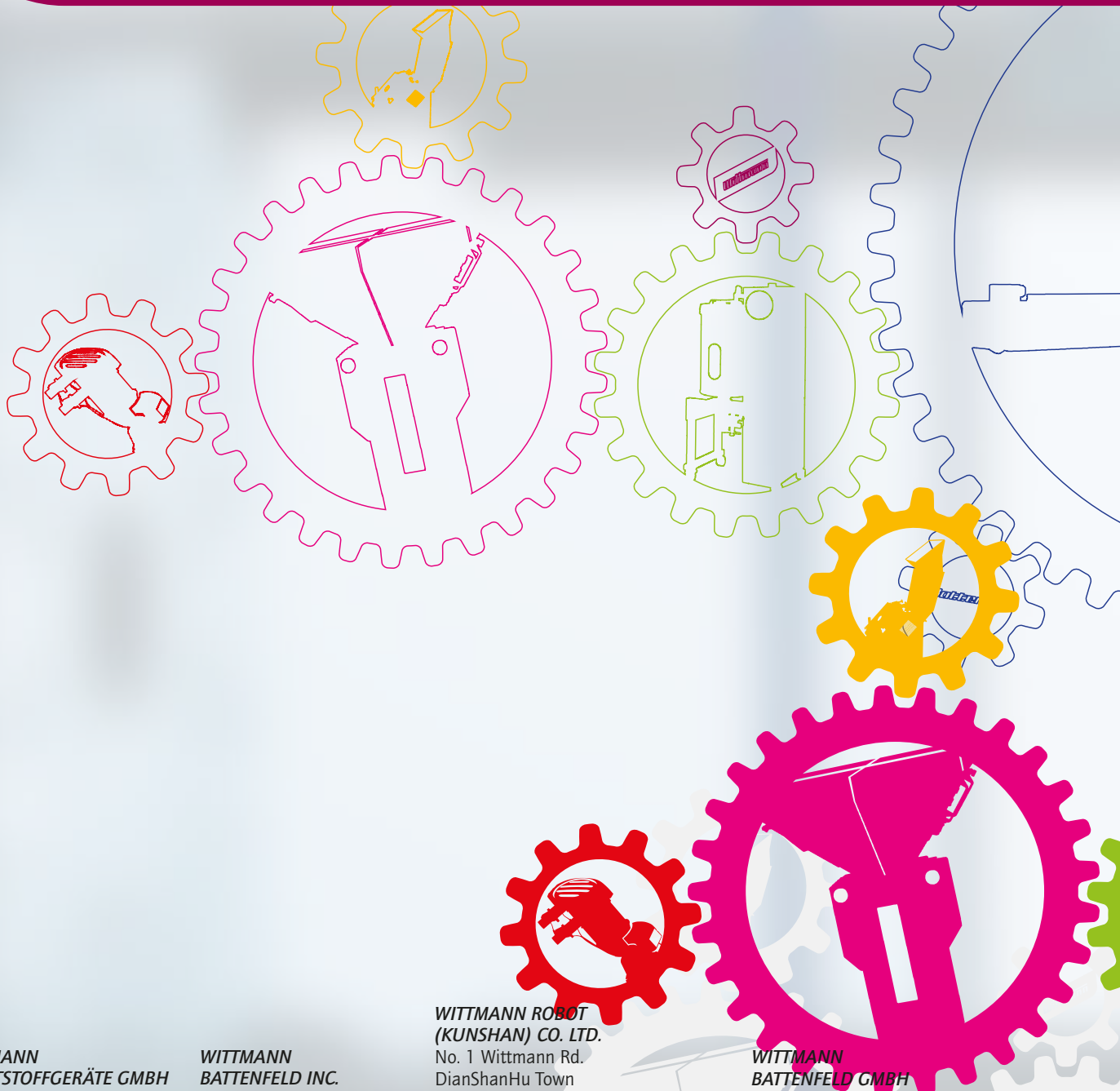
IPEX is an ideal partner for the WITTMANN Group, which has also given top priority among its corporate goals to high quality standards in all areas.

A welcome challenge

For IPEX, the product range of the WITTMANN Group – injection molding machines, as well as automation equipment and peripherals – consti-

tutes an interesting and challenging addition to the previously existing product portfolio. Bruce Allen, General Manager of IPEX Holding, comments: "IPEX is proud to be allowed to sell the WITTMANN Group's products. We look forward to a long-term partnership and will do our best to make the WITTMANN BATTENFELD brand the first choice for customers in our region."

Michael Wittmann, Managing Director of WITTMANN Kunststoffgeräte GmbH, also looks forward to the cooperation with IPEX: "We are confident that we have found in IPEX a partner who will optimally represent our interests in South Africa and adjacent markets." ♦



**WITTMANN
KUNSTSTOFFGERÄTE GMBH**
Lichtblaustrasse 10
1220 Vienna, AUSTRIA
tel.: +43 1 250 39-0
fax: +43 1 259 71-70
info.at@wittmann-group.com
www.wittmann-group.com

**WITTMANN
BATTENFELD INC.**
1 Technology Park Drive
Torrington, CT 06790, USA
tel.: +1 860 496 9603
fax: +1 860 482 2069
info.us@wittmann-group.com
www.wittmann-group.com

**WITTMANN ROBOT
(KUNSHAN) CO. LTD.**
No. 1 Wittmann Rd.
DianShanHu Town
Kunshan City, Jiangsu Province
215245 CHINA
tel.: +86 512 5748 3388
fax: +86 512 5749 3199
info@wittmann-group.cn
www.wittmann-group.com

**WITTMANN
BATTENFELD GMBH**
Wiener Neustädter Strasse 81
2542 Kottlingbrunn, AUSTRIA
Tel: +43 2252 404-0
Fax: +43 2252 404-1062
info@wittmann-group.com
www.wittmann-group.com

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Wittmann Battenfeld