Wittmann

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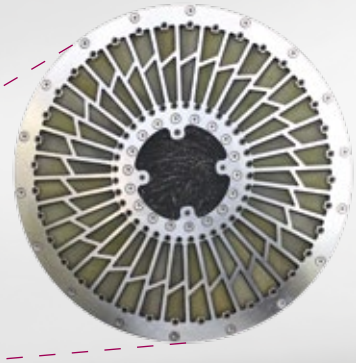
innovations

Technics – Markets – Trends

Volume 7 – 3/2013



The reinvention of the wheel:

DRYMAX Aton
Segmented Wheel Dryer

Battenfeld

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Editorial

Michael Wittmann

Dear Reader,

The topic which almost received more public attention in Central Europe at the beginning of June than the notorious banking and financial crisis was the cold, wet weather. For weeks, the sky was overcast due to a seemingly immovable bad weather front, and there was virtually no difference between driving through a car wash and driving out of doors. Therefore, the luck we had with the weather on the date we had chosen for our Competence Days seems almost like an act of providence granted to us. On 24 and 25 April, we were able to welcome more than 1,100 guests with warm summertime temperatures at WITTMANN BATTENFELD's injection molding machine manufacturing plant in Kottingbrunn.

From the feedback we have received, we are confident that we were successful in communicating our injection molding competence on a broad front. Numerous interesting applications using ultra-modern processes were demonstrated on 17 different processing machines. More than 30 exhibits from the automation and peripheral equipment sectors were showcased as well. Not only were the numerous exhibits met with lively interest, but also the new assembly hall for new machines, which was officially opened during this year's Competence Days and will enable us to speed up the production of our large *MacroPower* machines in the future.

On 13 June, WITTMANN Robot Systeme GmbH, based in Germany and specializing in automation, celebrated the inauguration of its new plant in Nuremberg – and simultaneously its 30th anniversary. Thirty years prior, the acquisition of the small Nuremberg automation company Küffner Technologie laid the foundation for WITTMANN Germany and ultimately led to the rise of WITTMANN to world market leadership in robot technology for the plastics industry.

On this occasion we were able to welcome numerous customers to our new facility in Nuremberg, primarily from South Germany. The main emphasis of the exhibition was on automation, although exhibits from our entire product portfolio were shown as well. Our guests were also given an opportunity to attend expert presentations on current plastics processing issues, and, of course, the event was accompanied by a culinary and social program as well.

Now I wish you great pleasure in reading this issue of *innovations*, in which we are again reporting about some interesting applications in use – whether in Germany, the USA, or in South-East Asia. A portrait of the WITTMANN representative office in the buoyant Polish market rounds off this issue.

Sincerely, Michael Wittmann

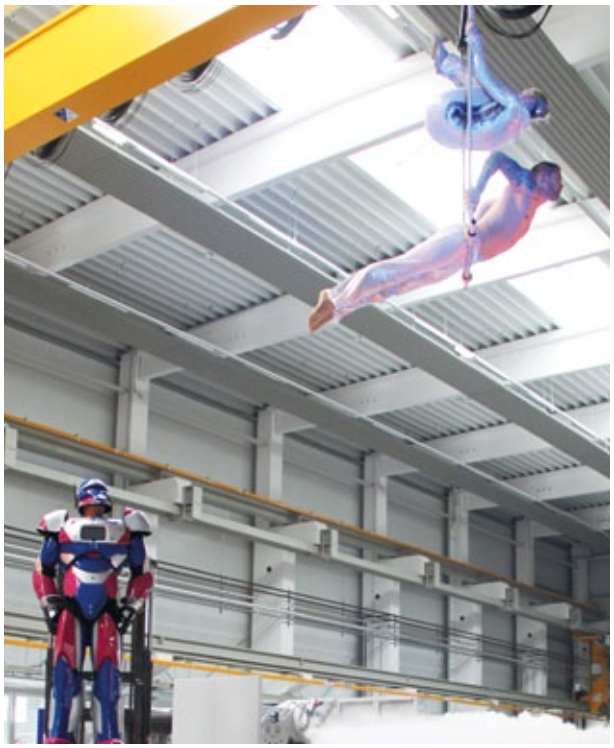
Content

WITTMANN BATTENFELD Competence Days 2013 – into the future with "power"

At the Competence Days 2013, WITTMANN BATTENFELD did justice to its motto "Power for the future" in every respect. This is what some 1,100 visitors, who found their way to the expanded Kottingbrunn plant in Lower Austria on April 24 and 25, were able to witness and experience first hand.

Gabriele Hopf

With 17 machines, over 30 exhibits from the automation and peripheral equipment sector, and interesting applications and processes, WITTMANN BATTENFELD truly demonstrated its competence and power over these two days. However, not only the exhibits were met with lively interest. The new assembly hall for large machines, which was officially opened during this event, also attracted many visitors' attention. After all, the new production facilities constitute a substantial move to secure the company's future as a leading partner for injection molding machinery ranging from micro machines right up to the *MacroPower*, the large machine model that is manufactured in this hall.



The machinery demonstration was opened with an impressive show program.

Lectures and discussions

The guests were given insight into the latest injection molding and process technologies by a number of expert presentations on special topics. The introductory speech in this series was held by Prof. Dr. Ansgar Jaeger, Professor of Injection Molding and Mold Technology at the Würzburg University of Applied Science, and was titled, "Megatrends reflected in injection molding technology". Dr. Jaegar's presentation was followed by another guest speaker, Helmut Kohake, Managing Director of Müller Technik, who discussed process combinations.

There were various other presentations dealing with the advantages of the *PowerSeries*, integrated production cells, technology for processing bulk materials, micro technology and the combination of variothermic technology with structured foam technology.

Refreshments and ample scope for lively conversation were also an integral part of the event.

Machines and technologies

The machinery demonstration was opened with an exciting show program, starting with drummers and followed by aerial acrobats, and visitors were guided to the exhibition by the WITTMANN BATTENFELD robot man. During the subsequent machinery demonstration, the guests were able to experience the company's "power" live on site.

One highlight among the machine demonstrations was the presentation of the first *MacroPower* E large hybrid machine model, consisting of a modern, servo-hydraulic two-platen clamping unit combined with an all-electric high-performance injection unit. This combination enables

Some 1,100 viewed the exhibits here in the new assembly hall for large machines.

Hockey stick manufactured using the AIRMOULD® gas injection process.

Rotary table machine with automation cell.

WITTMANN BATTENFELD MacroPower E 450/2250 hybrid large machine.

the design of a large, compact machine with a minimal footprint, which simultaneously offers maximum precision and energy efficiency together with high injection speeds. On the hybrid MacroPower E, the production of a B column for the automotive industry was demonstrated.

Other highlights included a *MicroPower* 15 with an LSR equipment package, on which a medical technology application was demonstrated, the presentation of the IMIW process (In-Mould Internal Welding) on an *EcoPower* 110 with a mold supplied by Barkley, UK, and an *EcoPower* Xpress 180 with IML and high-speed parts removal. IML technology was also presented on an *EcoPower* 180 producing credit cards from a biodegradable material, which has been developed by IFA-Tulln, Austria.

CELLMOULD® structured foam technology was demonstrated by manufacturing pallets on a *MacroPower* 800 with a mold supplied by Haidlmair. With great enthusiasm, the visitors watched the production of a hockey stick – also with a mold from Haidlmair – on a hydraulic machine from the HM series, an HM 300, using the AIRMOULD® gas injection process. BFMOLD® variothermic technology and multi-component technology were not neglected either. The machinery program was rounded off by a demonstration of a high-speed TM Xpress and a VM 110 rotary table machine.

The exhibition program was complemented with extensive automation equipment and the complete range of peripheral appliances supplied by the WITTMANN Group. Automation and peripheral equipment were demonstrated both mounted on the injection molding machines and as stand-alone solutions. ◆

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

The most consistent automation

Through planned automation in standardized production cells, MS-Schramberg, Germany achieves a very high degree of flexibility in manufacturing magnets and plastic parts.

Walter Klaus

The production cells are highly standardized and each automated with a WITTMANN robot.

With the foundation of Magnetfabrik Schramberg as a manufacturer of permanent magnets in the year 1963, the nucleus of today's MS-Schramberg GmbH & Co. KG, based in Schramberg-Sulgen, Germany was established.

The Black Forest-based company now supplies customers in all types of industries all over the world, from the automotive to the medical industry, with efficient assemblies containing special permanent magnets. There are hardly any products with permanent magnets on the market which have not been developed and manufactured by MS-Schramberg.

One of many examples is a transducer ring with permanent magnets that are positioned and polarized during plastic injection molding.

These transducer rings are part of a highly complex assembly used in the 8-gear automatic transmission systems that are manufactured by ZF Friedrichshafen and subsequently built into the premium-class models of the German automobile industry.

The company's development into a business with continuously rising sales figures and a present workforce of some 450 associates has been made possible by manufacturing methods centered on high quality standards and maximum flexibility, goals which have been given the status of a corporate maxim. MS-Schramberg secures the necessary flexibility by means of well-planned automation in standardized production cells, with the design of every cell following a very similar, simplified pattern. This enables every cell to manufacture a wide range of different products, provided the clamping force of the injection molding machine involved complies with the necessary specifications.

Such a production cell consists of an ARBURG injection molding machine and a robot from WITTMANN Robot Systeme GmbH in Schwaig, plus further processing equipment developed and produced by MS-Schramberg to its own standards.

From the beginning of each project, the in-house mold design and mold-making departments are in direct contact with the internal engineering department responsible for the automation equipment. This practice ensures that the molds are designed so that the parts removal grippers (or both insertion and removal grippers) can operate with maximum effectiveness, and the matching peripheral equipment can be kept as simple and cost-efficient as possible. An outstanding example for the results achieved in this way is the insertion of 20 individual parts per shot into a 4-cavity mold.

Peripheral equipment integrated in the robot's control system

Each MS-Schramberg production cell comes with the same externaldimensions and grid dimensions, and each is divided into six compartments where the necessary processing equipment is installed.

All peripheral appliances of the production cell – from material feeding and sorting equipment to the packaging station – are integrated in the control system of the WITTMANN robot, which provides 192 free input and output portals for this purpose.

Moreover, the latest-generation WITTMANN R8.2 control system is laid out as standard to communicate via its R8-CLI (Command Line Interface) with the central computer of MS-Schramberg, where all relevant production data is collected, processed and saved.

In this way, the system enables a 100% error analysis for every part that may be sorted out as defective later, thus providing seamless quality control. Here, quality inspection of the parts is already carried out inside the production cell. In many cells, this task is performed by camera systems installed at critical points. Since this process makes downstream quality inspection outside the production cells redundant, the products, which have been finished and checked inside the production cell, can also be packaged inside the cell and passed on to transport by material handling equipment. Such high-tech equipment, however, can only be utilized efficiently if the numbers of units per order exceed the one million mark.

This view shows a small selection from the great variety of products with permanent magnets manufactured by MS-Schramberg.

Photo: MS-Schramberg

The perfect adaptability of WITTMANN robots to the existing peripheral equipment at MS-Schramberg is the result of having the design of the necessary interfaces developed in close cooperation between both companies for a considerable time.

Apart from that, all mechanical and electrical plug-and-socket connections on the robot are still prepared in the WITTMANN production plant. Another principle adhered to by MS-Schramberg is the goal of keeping all steps that precede production in the company's own hands, from developing the mold, parts removal and insertion technology, to the construction and equipment of extremely complex production cells.

Thanks to this approach, planned down to the last detail, MS-Schramberg has reached a virtually unrivalled level of reliability, which prompts customers to more frequently involve MS-Schramberg in the development of their products from the very beginning. ◆

Walter Klaus *works as a consultant and technical author, until 2008 he was the Technical Manager of WITTMANN Robot Systeme GmbH in Schwaig, Germany.*

Medical molder's prescription for efficiency

Vision Technical Molding LLC in Manchester, Connecticut doesn't believe in standing still. This custom molder of tight-tolerance diagnostic devices, drug delivery systems, implantables, and many other medical devices, achieved double-digit growth in each year from 2006 through 2009 – never mind the recession – and has generated 25% growth in new sales in 2011. Vision is using a centralized material handling and drying system from WITTMANN.

Jonathan Fowler

All of Vision's production presses are housed in a Class 8 clean room with unique "pass-through" provisions for molds and equipment to avoid disturbing the clean environment.

In the year 2010, the molder (*www.visionmolding.com*) expanded its 54,000 sq. ft. in two neighboring plants to 81,000 sq. ft., splitting that extra production floor space between its molding operation and a sister mold making company, Advance Mold & Manufacturing, Inc. (*www.advancemold.com*).

Accomplishing this takes a "vision", as Zach Brodeur, business development coordinator, is quick to point out. It takes a willingness to shed old beliefs and apply resources in new ways to every phase of the process in order to improve production efficiencies and increase capacity.

Established in 1996, Vision focuses on minimizing tasks that add no value to the process, reducing redundancies, and optimizing use of advanced technology, from tool design to automation, to boost efficiency. Minimizing waste, be it material, labor, or machine time, is an imperative shared by all the firm's employees. "We do not have the opportunity to reuse or recycle materials, and scrap is a big metric here. Every dollar of scrap and waste saved is a dollar that can go into development", says Steven Arnold, President.

All this has paid off in measurable terms. Vision operates 28 injection presses from 28 to 330 tons on a 24/7 basis, but Brodeur says the cumulative effect of efficiency improvements over the past couple of years has given the firm the equivalent output capacity of four additional machines and three additional shifts per week.

Expanding capabilities

The expanded site houses all of its production presses in a new 10,000 sq. ft. Class 8 clean room. Across the street, in a separate dedicated clean room, are secondary operations such as pad printing, labeling, ultrasonic welding, heat staking, vacuum sealing, and custom packaging.

The clean room features separate staging areas for tools, people, and machinery coming into, or leaving, the clean environment. WITTMANN designed and installed a state-of-the-art material handling and drying system for their recent building addition. Because the building was under construction at the time, WITTMANN was able to conceal the piping and wiring behind the walls of the clean

rooms. This made for a very neat and almost unnoticeable clean room installation. Vision operates 28 presses, ranging from 28 to 330 tons in size, from this expanded space and operates 24/7.

There is room for about six additional presses within the existing clean-room space, and another 5,000 sq. ft. of unfinished space sufficient to house 15 presses is "clean-room-ready" with cranes, HVAC, and utilities already installed.

Hunting for efficiencies

Automation in materials handling plays a large role in factory-floor efficiency. A key source of efficiency is a centralized material handling and drying system from the WITTMANN Group. The system, mounted on a mezzanine level away from the molding floor, has a bank of vacuum loaders that can deliver materials to a bank of dryers of various sizes and then to the presses.

Having a full range of dryer sizes and a complete central system – rather than dryers that are tied to a specific machine – allows for more flexible and efficient use of drying capacity, says Arnold. The all-stainless system is operated from a central control panel. When a resin is selected for a job, the system automatically prepares the resin according to a stored recipe of drying time and drying temperature. Off-line material testing occurs every 24 hours to confirm accurate drying.

At each press, a WITTMANN material hopper calls for resin in a just-in-time fashion. After each loading cycle, a dry air blast is sent through the conveying tubes to ensure that no pellets are left behind.

Material protection on the drying hoppers helps prevent materials from being over-dried there by reducing material waste and saving energy. As the material dries, the return air temperature rises. The control on each individual drying hopper has an adjustable return air temperature set point. When the return air temperature set point is reached, the heating of the material is reduced. As cold material is conveyed into the hopper, the return air temperature drops, and the heating of the material is increased.

WITTMANN also uses *SmartFlow* technology on each of the drying hoppers. This consists of a motorized valve that automatically adjusts airflow to each hopper based on the water load requirements, which ensures proper drying and helps balance the drying system.

The WITTMANN M7.2 control system integrates both the conveying system control and the drying system control on a single 15" high-resolution touch screen. Changing between materials on a molding machine is achieved using a central manifold. The operator simply selects the molding machine on the M7.2 control and then selects the new material for the job. The M7.2 control will then tell the operator what tube to connect to what distributer. All of the materials used are stored in a database on the M7.2 central control system.

With the VNC option, two remote computers were installed in the clean room giving the operators complete control of the system without having to leave the clean room.

The M7.2 allows for completely customizable user levels that can be tailored to a group of users or individual users. The built in command log gives supervisors a view of who logged in, when they logged in, and what changes were made. Accountability is often a key element in medical molding.

Vision is constantly changing their configuration to meet their needs. Due to the flexibility of the M7.2 and the ease of modifying the program configuration, Vision is able to accomplish this without the expense of having a service technician on site, saving time and money. ◆

The Vision central system components

1	*M7.2 control system with 3 Line Servers*
3	*6.1 Horse Power regenerative blowers*
3	*SBF 1640 filter assies*
1	*DRYMAX 300 with dew point sensor and high heat option*
6	*SILMAX 100 hoppers*
4	*SILMAX 70 hoppers*
4	*SILMAX 30 hoppers*
2	*FEEDMAX B 206 loaders*
26	*FEEDMAX 106 loaders*
14	*FEEDMAX 206 loaders*
1	*FEEDMAX 324 loader*
6	*TEMPRO basic C200F temperature controllers*
1	*Single TEMPRO plus 285F temperature controller*
1	*Dual TEMPRO plus C360F temperature controller*

Centralized materials drying and conveying with this WITTMANN system on a mezzanine is another important component of automation at Vision Technical Molding.

***Jonathan Fowler** is Regional Sales Manager for the WITTMANN BATTENFELD U.S. branch.*

Innovative molding technology for innovative connection technology

In the course of expanding its production capacity in 2011, ESCHA Bauelemente GmbH, based in Halver, Germany acquired eight WITTMANN BATTENFELD injection molding machines from the hydraulic HM series.

Gabriele Hopf

ESCHA sensor plug-in connector (above) and valve plug-in connector.
Photos: ESCHA

ESCHA Bauelemente GmbH, a well-known manufacturer of plug-in connectors for sensor technology, celebrates its 30th anniversary this year. The company was founded in 1983 exclusively as a stamping plant, and the production of injection-molded parts was taken up in 1986. Today, it operates two production facilities in Halver, as well as its own separate logistics center and its mold-making facility, with some 500 associates and about 42 million EUR in sales (2011).

The company's General Manager, Dietrich Turck, comes from the Turck family, who are the majority shareholders of ESCHA. Its main market is Germany, but it is expanding vigorously into the European market as well. Thanks to a global network of distribution partners, its products are available worldwide. The company's key markets are in the automation industry and the mechanical and plant engineering sectors.

ESCHA's product portfolio is divided into 3 areas, Tailor-Made, Specials and Standard, with Tailor-Made contributing about 50 % to total sales. With this high proportion of customized solutions as well as special solutions, ESCHA has achieved a unique selling position on the market and is known as a trendsetter for plug-in connectors for sensor technology. Examples of customized solutions are detergent resistant or highly heat-resistant plug-in connectors, connectors with special data transmission functions and quick-connector technology, to name just a few.

The company's specific product range requires a high degree of innovative strength – ESCHA files numerous patent applications every year – as well as an extensive vertical range of manufacturing. Therefore, training is a top priority at ESCHA. ESCHA offers trainee positions for all trades and professions that are relevant to the company, such as industrial business management assistants, toolmakers, draftsmen, as well as plastics technicians and information technology officers. Further training for existing staff is offered on a continuous basis as well. ESCHA also makes extensive use of WITTMANN BATTENFELD's training program.

ESCHA and WITTMANN BATTENFELD

In the course of expanding its production capacity at the Oststrasse facility, ESCHA has invested in modern injection molding machines from WITTMANN BATTENFELD's HM series. These are hydraulic machines with clamping forces ranging from 65 to 180 t, consisting of four HM 65/60 machines, three HM 110/210 units and one HM 180/750.

"The new injection molding machines have enabled us to improve the coordination of our entire pool of machinery," says Jürgen Sikora, Head of Materials Management at ESCHA. "We have categorized our equipment into three sizes and laid out all machine models belonging to each category in a similar way. This enables us to freely combine the molds and machines from the same category with each other, which increases the flexibility and utilization rate of the equipment."

Due to the high proportion of customized products and the consequently small batch sizes, short changeover times were a vital consideration in the selection of the machines to be installed. Repeatability in injection molding and correspondingly high product quality are equally important for ESCHA. The actual task was to realize the specifications laid down by ESCHA concerning shot weights and injection pressure by means of an appropriate machine concept. Fast delivery of the new equipment was also an important factor in its selection.

WITTMANN BATTENFELD was able to perfectly satisfy all of these requirements with its hydraulic machines. Specifically, the excellent changeover properties of the machines weighed in favor of WITTMANN BATTENFELD as a supplier. Moreover, the option of eccentric, customized injection as required by ESCHA was implemented by WITTMANN BATTENFELD to the customer's full

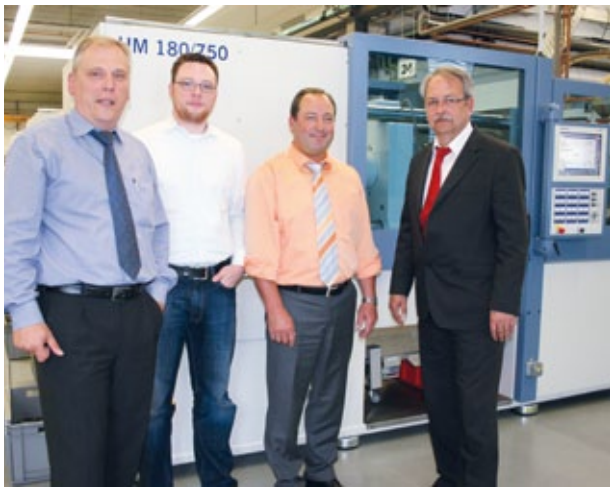
satisfaction through enabling the injection unit to move sideways. The Head of the Injection Molding Department at ESCHA, Jochen Rüschenbaum, speaks very highly of the company's cooperation with WITTMANN BATTENFELD: "WITTMANN BATTENFELD has been flexible in fulfilling our requirements and wishes. Our specifications have been complied with in every respect."

For instance, in addition to the option of eccentric injection mentioned above, a number of other customized adaptations were implemented, such as mounting several sockets that require a very high level of safety for the machines and the addition of high-temperature tubes and special water filters.

In addition to the machines from WITTMANN BATTENFELD, sprue pickers and temperature controllers were purchased from WITTMANN, thus utilizing the benefits of a well-coordinated overall package from a single source.

At the ESCHA plant in Halver, eight injection molding machines from WITTMANN BATTENFELD's HM series have been installed.
Photo: ESCHA

HM 65 machine with sprue picker and TEMPRO plus D temperature controller – everything from a single source: WITTMANN and WITTMANN BATTENFELD.



From the left: ESCHA's Jochen Rüschenbaum (Molding), Florian Schnell (Marketing), Jürgen Sikora (Materials Management); Frank Höher (WITTMANN BATTENFELD).

The HM machine series from WITTMANN BATTENFELD

The injection molding machines of the WITTMANN BATTENFELD HM series stand out above all by their modular diversity, ultimate precision and extensive range of options for virtually any application, which makes this series especially attractive for ESCHA.

The machines also feature an extremely small footprint thanks to their highly compact and extremely rigid 3-platen design. Other benefits include the machine's especially low noise levels in operation and the service-friendly structure. A generously dimensioned mold space and low-maintenance linear guides are additional highlights of the WITTMANN BATTENFELD HM series. ◆

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

Hoffer Plastics chooses WITTMANN BATTENFELD for plant expansion

The latest expansion at Hoffer Plastics, South Elgin, IL is up and running with the help of WITTMANN BATTENFELD. Hoffer purchased four HM 300 machines and other equipment that is operating in the new 8,000 square foot addition.

Brian Heugh

Hoffer Plastics' newest "focused factory" features four HM300 WITTMANN BATTENFELD machines, producing packaging related parts.

Another Hoffer "focused factory" with machinery and equipment from WITTMANN BATTENFELD.

Bill Hoffer, Hoffer Plastics President states: "With this state-of-the-art expansion, we are committed to enhancing the Hoffer experience for our customers and employees. The next year marks our 60th anniversary, and investments of this nature set the stage for the 3rd generation and their future direction and leadership of the company."

A new "focused factory"

Founded in 1953, Hoffer today operates out of a 365,000 square foot facility in South Elgin and has over 100 molding machines in operation. Back in the 1950s, Bob Hoffer, the company's founder, originated the *focused factory* concept. The idea was to literally divide their molding plant into smaller factories with an average of 12 presses each. Each of these *focused factories* are operated by a Plant Manager and managed as its own small company.

The focus of Hoffer's newest *focused factory* is packaging. While the company cannot share specifics, it will say that all four of the new WITTMANN BATTENFELD presses are operating in Plant #4, and the new factory is a state-of-the-art, industry showplace for high-speed, high-tech molding and automation. In addition to the new machines, WITTMANN BATTENFELD supplied Hoffer with robotics, automation and auxiliaries including a central material handling system for the new facility.

Eight new WITTMANN BATTENFELD machines

Rocky Brewer is the Director of Manufacturing at the South Elgin Hoffer Plastics production facility. He said that in addition to the four new WITTMANN BATTENFELD injection molding machines in Plant #4, Hoffer is running three 2-shot and one 240 ton HM injection molding machine in a separate focused factory at their plant.- These machines were purchased earlier in the year 2012, in addition to the new four-machine order. "We built this *focused factory* in less than three months," Rocky Brewer said.

"This *focused factory* is dedicated to producing parts for an important major appliance manufacturer. The 2-shot WITTMANN BATTENFELD machines are molding multi-component (PP and TPE) handles for appliance knobs. We use WITTMANN robots and auxiliary equipment in that factory as well."

Left to right: Rudolf Pichler (Sales Manager North and Latin America of WITTMANN BATTENFELD Austria), Brian Heugh (WITTMANN BATTENFELD U.S. Regional Sales Manager) and Rocky Brewer (Hoffer Plastics Director of Manufacturing), standing next to a WITTMANN BATTENFELD HM 240 2-shot machine at Hoffer's plant in South Elgin, Illinois, USA.

Service and responsiveness make the difference

Brewer said that Hoffer appreciates the responsive WITTMANN BATTENFELD service – WITTMANN BATTENFELD's Midwestern Parts and Technology Center is located in South Elgin, the same town as Hoffer Plastics – and the fact that this machinery is cost competitive. He also noted that Hoffer is taking advantage of the Web-Service features available with the new WITTMANN BATTENFELD machinery and equipment. "Response time has been tremendous with the WITTMANN BATTENFELD Web-Service we've used in the past," he said. "The convenience of it all for troubleshooting and communicating has been a real benefit for us. With the layout of our new addition, we made sure to drop Ethernet cables to all machines."

Hoffer Plastics has been a long-time customer of WITTMANN BATTENFELD, and in addition to the numerous WITTMANN BATTENFELD molding machines already in-house, Hoffer uses a wide variety of WITTMANN products including robotics and automation, material handling, temperature control units and granulators. ◆

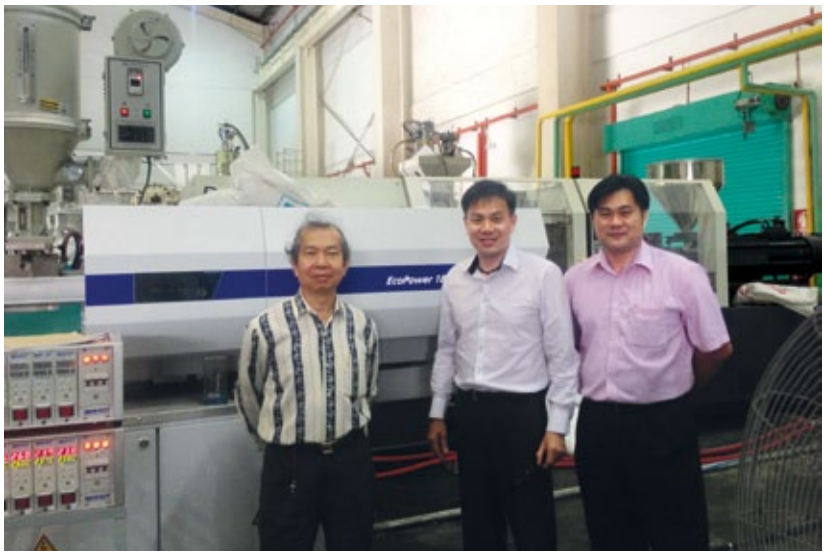
***Brian Heugh** is IMM Regional Sales Manager for the WITTMANN BATTENFELD U.S. branch.*

Guppy Malaysia, now 50 years old, relys on the WITTMANN Group

In addition to using WITTMANN auxiliaries, Guppy Plastic in Malaysia has again endorsed the reliability of the WITTMANN BATTENFELD EcoPower injection molding machine.
David Tan

Guppy Plastic Industries was founded from the shared passion for rearing fish of two business friends, Mr. KG Ng and Mr. CP Goh. Upon opening the Gombak Fish Farm, they encountered many difficulties when it came to sourcing essential plastic aquarium equipment.

It was this significant obstacle that spurred them to manufacture the products that they needed themselves – thus, the Guppy Plastic company was formed in 1970, becoming one of the biggest injection molders in Malaysia today.



From the left: Mr. KG Ng, Co-founder & Executive Chairman of Guppy, Jimmy Teo, Managing Director of WITTMANN BATTENFELD Malaysia, and David Tan, Business Development Director of WITTMANN BATTENFELD Malaysia.

Guppy has established an international market presence that spans more than 30 countries including the U.S., Canada, Australia, and New Zealand as well as numerous countries in Asia, Europe and the Middle East. Currently, 80% of Guppy's sales come from overseas exports.

The company's operations are located in Malaysia and China with a Sales Office in the U.S. There are four plants in total: the headquarters in Cheras & Taman Karunmas, Selangor, a second Malaysian plant in Penang, and one in Nantong in China. All of them are fully equipped with state-of-the-art manufacturing facilities, and they are investing heavily in Research & Development. The plants' combined area is approximately 625,000 square feet, housing over 220 injection molding machines that range from 50 to 3,000 tons.

The Guppy Selangor plant focuses primarily on producing consumer products, while the Penang plant takes advantage of its proximity to major companies in the fields of the automotive and electrical/electronic industry as well as the medical and telecommunications sectors to produce products for those industries.

The Chinese plant was developed to meet the demandsof the international fast food market for high-quality, disposable plastic wares.

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

WITTMANN automation and auxiliaries

From the beginning, Mr. Ng built his business on the belief that it would only be possible to meet the highest demands in quality and productivity by using the most innovative and high-performance equipment. Guppy Plastic was the very first robot customer of WITTMANN Malaysia back in 2001, buying a W633 with CNC3 control for use with a 1,300 tons injection molding machine.

Guppy was especially impressed by the WITTMANN robot's kick-stroke design, which offered the highest stability and flexibility when removing big parts from the machine. To date, Guppy Plastic has purchased more than 20 WITTMANN robots and controls. In addition to their linear robots, WITTMANN water flow regulators made a lasting impression. Guppy is ordering a water flow regulator from the 301 Series for the use with every new machine.

The company is continuously improving the manufacturing processes by using the reliable and precise WITTMANN TEMPRO mold temperature controllers. Ranging from 90 to 180 °C (pressurized water systems) and even up to 250 °C (oil as heating medium), they are meeting all process requirements. Today, Guppy Plastic is using more than 40 TEMPRO units.

The EcoPower injection molding machine

In 2013, WITTMANN BATTENFELD Malaysia supplied Guppy with their first *EcoPower* 180/1330. Mr. Ng, having a strong background in injection molding, is very positive about the machine's quality and superior performance. For Guppy Plastic – a company that is very familiar with many types of molding machines – the most important requirement is a high output at a fast injection speed.

With the *EcoPower*, Guppy gets an electric machine with a servo-hydraulic drive for ejector and nozzle movement. The injection unit has two highly dynamic servo motor drives enabling fast production cycles. And the *EcoPower* saves energy, thus reducing costs – another aspect that convinced Guppy that the *EcoPower* was the right choice. ◆

Poland (Part 2): DOPAK looking ahead very optimistically

For over two decades, the comprehensive expertise, passionate commitment and close relationship to the plastics processing industry have made DOPAK the leading distributor in the Polish plastics market. In the company's portfolio, apart from WITTMANN, other first-class producers are represented, such as KraussMaffei, ONI Wärmetrafo, Maplan, Coperion, Bekum, and Neue Herbold.

The company's founder and Managing Director Ulla Steiner (sitting mid) and the DOPAK team in Wrocław.

The company was established in 1992 by Ms. Ursula Steiner. Originally, the core business of DOPAK consisted of ONI chilling systems and KraussMaffei injection molding machines. In order to satisfy the Polish customers' needs for modern automation systems, DOPAK began a successful collaboration with WITTMANN in 1996. Today, DOPAK is the main provider of WITTMANN robots and other peripheral equipment to Polish injection molders. Since 2006, DOPAK has been based in a new building located in the southern district of the city Wrocław with easy access to both the airport and the A4 highway.

A dedicated team

Ten headquarter staff members are responsible for sales support, logistics, service coordination, and finance. Five mobile salesmen operating in the major Polish regions guarantee fast access to the customers, and they have contributed greatly to the establishment of close and lasting customer relations. In the service department, DOPAK currently employs twelve degree-qualified engineers, each with a professional attitude and wide experience in servicing equipment from WITTMANN, KraussMaffei, Bekum, and Maplan.

The new premises of DOPAK Sp. z.o.o. in Wrocław, Poland.

DOPAK and the Polish market

DOPAK has an excellent reputation for their development of complex turnkey solutions, where the respective customer gets both general advice and project support, as well as full, detailed assistance in the planning and development of entire work cells. Based on comprehensive experience, DOPAK also supports their clients by providing opportunities for collaboration with numerous different companies.

The large number of state-of-the-art production cells that are running with zero downtime are contributing to DOPAK's strong position on the increasingly competitive Polish market. With these production cells, DOPAK is often selling not just injection molding machines, molds, and robots, but also other peripheral equipment up to large-dimensioned chilling systems.

Numerous loyal customers are taking advantage of the personal interaction and flexibility of the DOPAK sales team. Due to the ongoing development of the Polish plants and their quest for optimization, the last few years have shown a constant rise in the number of sold WITTMANN robots. In general, this tendency is heavily increasing, and this trend was not affected by the economic crisis in 2008. DOPAK is offering innovative machines that help the Polish plastics processors gain a strong position in an increasingly competitive and developing global market.

All of this, in addition to an optimistic and friendly approach, have made DOPAK a wholly reliable partner for the Polish injection molding companies, today and in the future. ◆

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