

Wittmann

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innovations

Techniques – Markets – Trends

Volume 12 – 2/2018



*Showing
a new way
through*

Battenfeld

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Michael Wittmann

Dear Reader,

In the course of my life, some dates have become so firmly fixed in my mind that I could quote them immediately at any time. One such date is the 1st April 2008, the day when BATTENFELD Spritzgießmaschinen GmbH was officially taken over by the WITTMANN Group. Since then, 10 dynamic, active years lie behind the new company named WITTMANN BATTENFELD. During this time, we have completely redesigned virtually all our machine series, and with our *PowerSeries* we are offering the most modern product portfolio in the injection molding industry today. In the same way, the machinery for our own production facilities has also been renewed, and our central production facility for injection molding machines in Kottlingbrunn is currently undergoing a massive overhaul and expansion of capacity. It is now absolutely vital to meet the planned completion deadline for this entire building project, because it immediately precedes our big WITTMANN BATTENFELD 10th anniversary celebration, which will take place on 13 and 14 June 2018. Of course such a “milestone birthday” and simultaneously such a pleasant event must be duly celebrated. We would ask you to keep these dates free to take part. It would give us great pleasure if you could join us to spend these days of celebration together with us.

Economic theories state that higher interest rates lead to capital transfer and make the relevant currency increase in value. What I find impossible to understand, however, is the way the exchange rates between the euro and the US dollar have developed during the first days of this new year. The USA can point to excellent economic growth and low unemployment rates, and the US Federal Reserve has just recently increased its base rate for the third consecutive time. Although Europe currently shows better growth rates, it is still lagging behind the USA in other areas. So in theory the dollar should be rising and the euro should be falling. Yet the euro is proving to be the stronger part – and keeps rising. Not really a great pleasure for us, since, as an export-oriented company with our headquarters and production plants in Europe, we are naturally very strongly dependent on the fluctuations of the exchange rates of the most important currencies in relation to the euro. We must certainly continue to keep a watchful eye on this development.

In this issue of *innovations*, we have again included some interesting contributions from different parts of the world, which I would like to bring to your attention. I wish you very pleasant and informative reading.

Yours cordially, Michael Wittmann

Injection Molding

Perfect surfaces



Gabriele Hopf
on Boryszew in Germany and their galvanized parts ...
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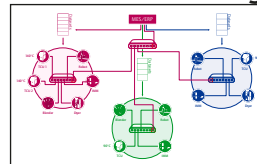
Innovative molding technology



... and on the Italian Oldrati company and their equipment.
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Control Technology

WITTMANN 4.0 Plug & Produce



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Automation

Green has 180 W818 robots



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Drying

Saving energy with FC plus



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News

On 10th October 2017, the WITTMANN W818 robot with the serial number 9,000 was officially handed over to HUH N Kunststofftechnik based in Wiehl, Germany.

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Boryszew, Germany: Perfect surfaces with galvanized plastic parts

Its specialist knowledge in the area of galvanizing plastic parts makes Boryszew, based in Prenzlau/Germany, an important strategic partner for leading automobile manufacturers. In plastics injection molding, Boryszew has been relying on molding technology from WITTMANN BATTENFELD for the last 10 years.

Gabriele Hopf

Today's Boryszew Oberflächentechnik Deutschland GmbH was established in Prenzlau as UBR at the end of 2005. In 2012 it was taken over by the Polish Boryszew Group. Following a fire in April 2015, which destroyed most of its premises, the company has now moved into its new building in April 2017.

Boryszew Oberflächentechnik Deutschland currently employs about 350 workers and had planned to reach 34 million Euros in sales in 2017. The company's main market is Germany, its export markets are located in America and Asia. Boryszew Prenzlau realizes 90% of its sales with automotive parts for both interiors and exteriors of vehicles, such as decorative strips or door handles. The remaining 10% of sales are achieved with products for the sanitary installation and aviation industries. The company's customer base includes more or less all major German automobile manufacturers, its most important customer being the VW/Audi Group.

Boryszew Oberflächentechnik's range of products and services includes the design and development of the parts, prototyping, series production and surface finish as well as the assembly of complex components.

Galvanizing as a challenge

The company possesses specialist knowledge in the galvanization of injection-molded parts, for which materials are used whose galvaniza-



Decorative strips manufactured with the WITTMANN BATTENFELD MacroPower 700 injection molding machine.



Injection-molded door handles.

tion presents a major challenge. One example is the use of ABS PC T65, which is hard to galvanize due to its high PC and low ABS content, since the butadiene contained in ABS is an important supporting ingredient for galvanization. Other examples of materials hard to galvanize, which are processed by Boryszew Oberflächentechnik Deutschland,

Uwe Matteit, responsible for plastics injection molding at Boryszew in Prenzlau, adds: "Absolute reliability and repeatability in the production of the plastic parts are our most important considerations. But easy operation and of course low energy consumption of the injection molding machines in use are also important to us."



Machinery and processes

Boryszew Oberflächentechnik Deutschland is operating 25 injection molding machines with clamping forces ranging from 400 to 7,000 kN, 13 of which have come from WITTMANN BATTENFELD.

The first machine was already delivered ten years ago, the first robot from WITTMANN three years later. Boryszew in Prenzlau also uses the WITTMANN BATTENFELD AIRMOULD® internal gas pressure technology from WITTMANN BATTENFELD, since the weight of automotive components plays an important role. Variothermic technology from WITTMANN BATTENFELD is used for particularly sensitive surfaces.

The most recently supplied machines are three units from the all-electric EcoPower series, two with 1,100 kN and one with 1,800 kN clamping force, plus two servo-hydraulic MacroPower machines with 4,000 and 7,000 kN clamping force, equipped with WITTMANN robots, safety barriers and conveyor belts. The machines from the MacroPower series and one of the EcoPower models already come with the new UNILog B8 control system running under Windows® 10 IoT, which possesses several additional features and is even easier to operate. In addition to their high energy efficiency, the machines offer primarily the high standard of precision and repeatability re-

Door handles, chrome-plated, embedded in a complex assembly.



Lutz Suhrbier, CEO, and Uwe Matteit, Department Manager Plastics Processing at Boryszew Oberflächentechnik Deutschland, with WITTMANN BATTENFELD salesman Ottmar Brüggemann in front of the most recently delivered MacroPower 700 (from left to right).

are fiberglass-reinforced PA6 GF30 and glass-ball reinforced PA6 GB50. Perfect interaction between the injection molding and galvanization processes is the prerequisite for successful application of the surface finish to materials with these types of composition.

Since galvanized parts reveal even the most minute flaws on injection-molded parts, Boryszew Oberflächentechnik's demands on the surface quality of the plastic parts are very stringent.

Accordingly, the company has set high standards of precision and reliability for its injection molding machines. Lutz Suhrbier, the CEO of Boryszew Oberflächentechnik Deutschland, explains: "Our injection molding machines must above all be highly accurate in every cycle, so that the part surfaces meet the quality standards we need for subsequent galvanization."

quired by Boryszew. With the MacroPower 700/3400 delivered in April 2017, on which decorative strips are manufactured, a robot from WITTMANN's new W8 pro series, a W843 pro, is used, which offers the special benefits of compactness, quiet running, operator friendliness and energy efficiency.

Sticking to WITTMANN BATTENFELD

At Boryszew, Uwe Matteit is very satisfied with the most recently delivered machines: "These machines recommend themselves by their high standard of precision and easy handling," Lutz Suhrbier also praises the cooperation with WITTMANN BATTENFELD. "Fast, reliable and competent service is vital for us. Our business relations with WITTMANN BATTENFELD are characterized by mutual trust. If any problems occur, they are solved quickly, simply and expertly." ♦

WITTMANN BATTENFELD impresses Oldrati with molding technology

In 2015, WITTMANN BATTENFELD established itself as a supplier to the Oldrati Group with the delivery of injection molding machines, an AIRMOULD® system and WITTMANN robots. Eight of the delivered injection molding machines are equipped with LSR technology.

Gabriele Hopf



Views of the Oldrati production (see also opposite page).

(Photos: Oldrati)

The Oldrati Group based in Villongo, Italy, founded by Vanni Oldrati in 1964, is engaged in manufacturing products made of rubber, silicone and thermoplastic resins. The range also includes multi-component products, such as composite parts consisting of metal and rubber, thermoplastic resins combined with silicone or components made of metal, plastic and rubber, and many others. The Oldrati Group, which currently employs more than 1,300 associates and realized 119 million euros in sales in 2015, supplies its products to many different branches of industry, such as the automobile industry, the household appliances industry, the oil and gas sector and the heating industry.

Rubber seals for a wide range of applications are the main product line in the portfolio of the Oldrati Group, which, in addition to its Italian facilities, operates one plant in Slovakia and one plant in Turkey. In 2007, Oldrati acquired Silital Europe, one of the leading Italian manufacturers of liquid

and solid silicone products, thus expanding substantially its capacity in the area of silicone processing. Oldrati sees its main strength in its high vertical diversification. The company's activities include material development and production, mold making, product development and manufacturing, as well as packaging and logistics. To manufacture its products, the Oldrati Group uses a total of more than 400 injection molding machines with clamping forces ranging from 500 to 40,000 kN. In buying new machines, Oldrati's main considerations are energy efficiency and a good price-performance ratio, as well as good service.

WITTMANN BATTENFELD as Oldrati's supplier

In 2015, WITTMANN BATTENFELD Italia was able to establish its first business relationship with Oldrati with the delivery of WITTMANN robots. The company's interest

in machines from the WITTMANN Group was sparked off at the Fakuma 2014. There, Oldrati associates saw the servo-hydraulic *SmartPower* adapted for LSR processing from WITTMANN BATTENFELD and were impressed by its machine technology.

WITTMANN BATTENFELD subsequently provided a machine to Oldrati for test purposes. In addition to this *SmartPower* 120/525, Oldrati and Silital have now acquired more machines of the same model as well as a machine from the all-electric *EcoPower* series, an *EcoPower* 110/350, and machines from the hydraulic HM series with 1,800 kN clamping force and equipped with energy-saving servo motors.

of energy efficiency, precision, user-friendliness and compact design, combined with generous mold fixing dimensions, high speed and cleanness.

They come with a highly efficient servo-hydraulic drive as standard. Like the *EcoPower* forerunner series, these machines use the KERS technology (Kinetic Energy Recovery System). This technology uses the released deceleration energy for barrel heating, thus providing optimal energy efficiency.

Eight of the WITTMANN BATTENFELD machines supplied to the Oldrati Group are adapted for liquid silicone processing, which means that they are equipped with cooled barrels and a cooling plate mounted on the

moving platen, as well as a dosing pump. What is more, the *SmartPower* already offers excellent attributes for liquid silicone processing in its standard version, due to its extremely clean and generously dimensioned mold fixing area.

To facilitate handling of the WITTMANN BATTENFELD machines for operators on the production floor and for maintenance staff, and to ensure optimal utilization of the machines' features, WITTMANN BATTENFELD Italia or-

ganized a training program on the machines with operators and maintenance engineers, a service which Oldrati found very valuable and helpful.

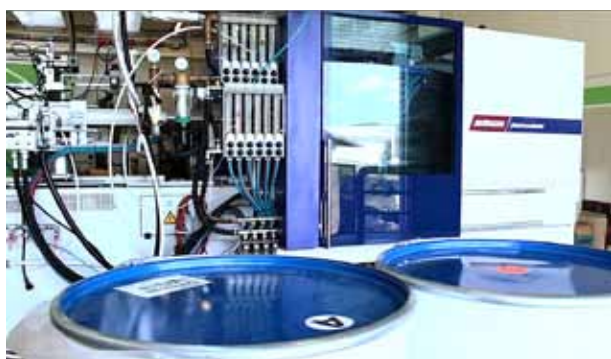
Meeting all requirements

What Oldrati appreciates about the machines from WITTMANN BATTENFELD apart from their special suitability for LSR processing and excellent energy efficiency, is primarily their high precision and repeatability, as well as their user-friendliness. These machines meet in every respect their stringent requirements for technical perfection, environmental friendliness and easy operation. These aspects, combined with the option of acquiring both machines and automation from a single source, and the excellent service provided by WITTMANN BATTENFELD Italia, are for Oldrati a good starting point for further fruitful cooperation. ♦

SmartPower injection molding machine operating at Oldrati Guarnizioni Industriali S.p.a. in Villongo, Italy.

(Photo: Oldrati)

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



Oldrati has also installed an AIRMOULD® system to use the WITTMANN BATTENFELD injection molding process with internal gas pressure. The machines from the *SmartPower* series, which make up the majority of the machines purchased by Oldrati and Silital, stand out by their high degree

Breakthrough in control technology: WITTMANN 4.0 Plug & Produce

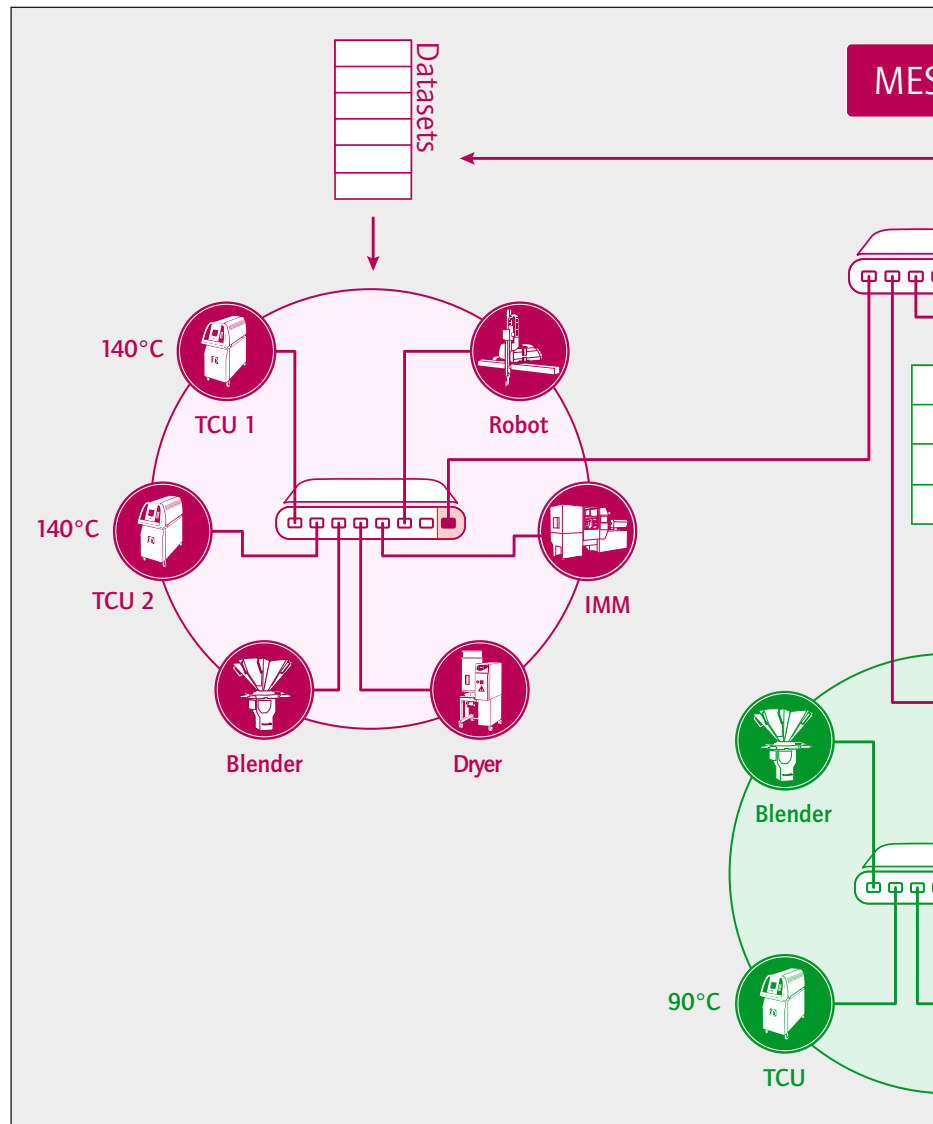
A new and important feature of WITTMANN 4.0, the Industry 4.0 solution from the WITTMANN Group, is known by the name of "Plug & Produce". The term "Plug & Produce" in WITTMANN 4.0 stands for the fact that this innovative concept is able to make mold change easier and safer.

Johannes Rella

To make a plastic part in the required good quality, a number of peripheral appliances are normally needed in addition to the processing machine, which work together with the injection molding machine in various ways. These include primarily mold temperature controllers and chillers, material dryers and gravimetric or volumetric blenders. The injection molding machine and the appliances connected to it – where necessary also including a robot with downstream automation and quality inspection – are all combined with each other to form an injection molding production cell. To ensure faultless production of a part, all these individual appliances within the production cell must be programmed with the correct mold-specific parameters.

In a WITTMANN 4.0 production cell, these parameters – together with those of the mold itself – can be saved in the injection molding machine's UNILOG B8 control system. As soon as a given mold data set is selected on the machine's control system, the appropriate settings are transmitted to all other appliances in the production cell. The means of communication used in this case is an Ethernet network operating with the standardized Industry 4.0 OPC UA network protocol.

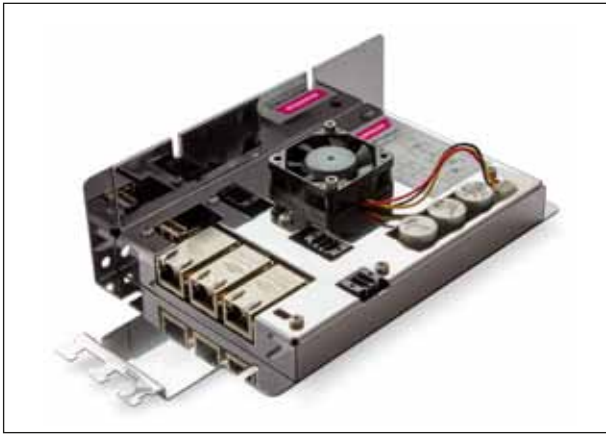
A special characteristic of the plastics industry is that injection molding production cells are formed in an extremely flexible way when it comes to the peripherals included. Depending on the part to be produced in each case, that is, depending on the mold connected with the machine, several different peripherals or peripherals with different settings are required. For example, the injection molding machine must be provided with a number of temperature controllers equal to the number of tempering zones inside the mold.



Schematic representation of the production network's hierarchical structure, as created through the WITTMANN 4.0 Router.

No specialized knowledge needed

Thanks to WITTMANN 4.0 Plug & Produce, there is no need for machine operators to acquire any knowledge in the area of IT technology, except to realize that the network cables of the required appliances must be plugged into the network switch of the production cell. They are thus free to concentrate on the mechanical work such as connecting the peripherals via tempering hoses or material feed lines. The IT configuration of the production cell, which is



This enables the injection molding machine to respond immediately to any appliances which have been added. Address conflicts and rigid configurations with fixed IP addresses have become a thing of the past.

The hierarchal structure of the production network established by the WITTMANN 4.0 Router assigns the appliances used unambiguously to a specific production cell. In this way, the coherence of the relevant data is also ensured for any MES system which is required to collect data from an injection molding machine and the peripherals connected to it, without the risk of having the data of, say, a temperature controller in another production cell erroneously assigned to a given injection molding machine. In the opposite direction, the WITTMANN 4.0

WITTMANN 4.0 Router.

Router also makes sure that an injection molding machine can only recognize those peripherals which are present in its own production cell.

As soon as a production cell has been equipped with the necessary peripherals for a new product, the data set with the production parameters can be distributed within the production cell. If this data set is not already recorded in the injection molding machine, the machine can also retrieve it from an MES system to which it has access. In this case, the data are routed via the firewall integrated in the WITTMANN 4.0 Router. The parameters (e.g. dosing formulation, robot teach program, drying parameters, settings for tempering and cooling) are subsequently distributed from the machine to the peripherals and the robot in the production cell. Once this is done, production can start immediately.

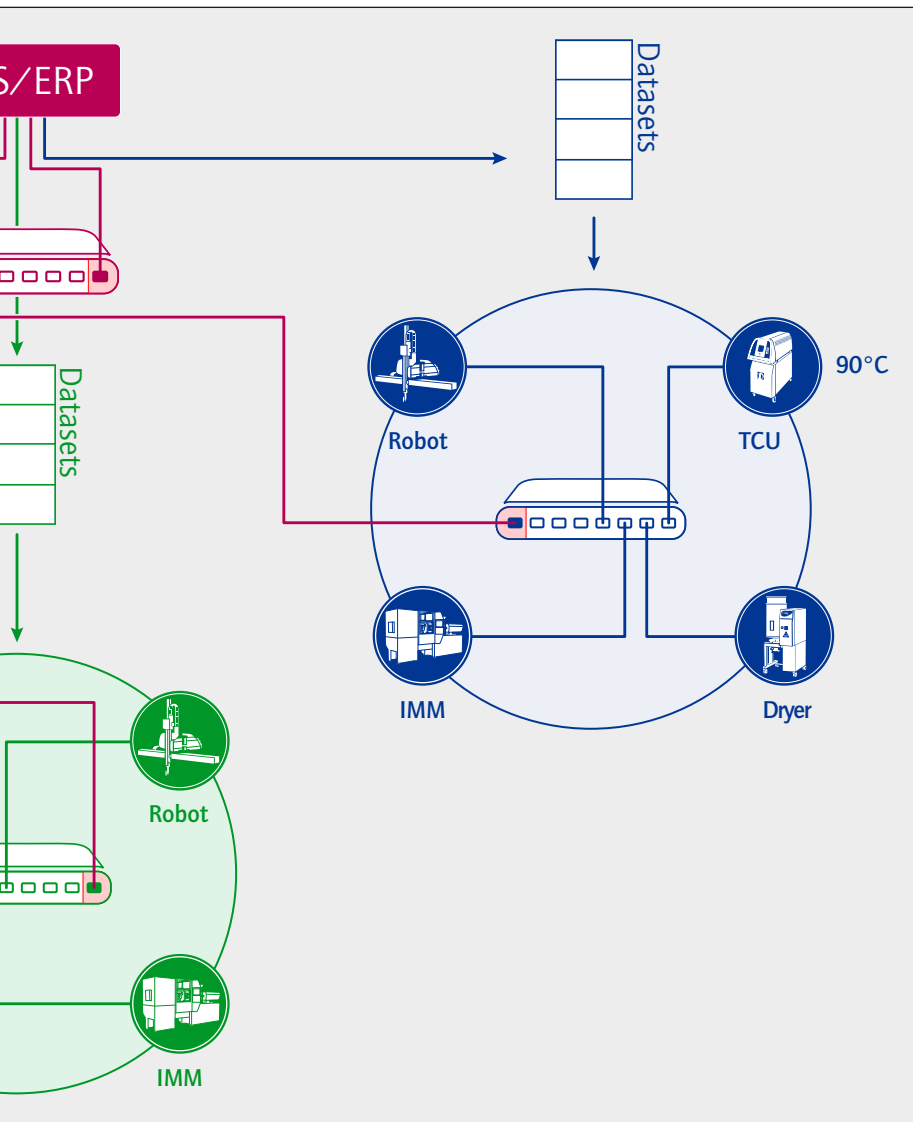
Simple, safe, and profitable

In the event of any parameters assigned to a given peripheral appliance not being compatible with the layout of that appliance, the appliance affected triggers an error signal, which is displayed on the terminal of the injection molding machine and recorded

in its event log. The same applies to any faulty deviations of actual values and status values from tolerances during production. For the purpose of simple documentation and complete traceability of parts quality, the relevant parameters are continuously saved in a quality table on the machine's control system.

All in all, WITTMANN 4.0 Plug & Produce leads immediately to substantially faster and easier product changeovers, consequently to a significant reduction in downtimes and ultimately more competitive production. ♦

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still necessary, is handled by the WITTMANN 4.0 router specially developed for that purpose. The WITTMANN 4.0 Router combines all appliances in the production cell and represents the entire production cell externally with a single IP address.

During start-up, the appliances connected to the switch of the production cell network log in on the router. The latter assigns a suitable local IP address to each appliance and introduces the appliances which are present in the production cell to each other.

Green in China operates 180 sets of WITTMANN W818 robots

Last year's CHINAPLAS show, May 2017, saw WITTMANN BATTENFELD China sell the W818 robot with the worldwide serial number 8,888. This robot was purchased by Guangdong Green Precision Components Co. Ltd (Green), and Green also then announced the purchase of an additional 16 units of this model. The number of W818 robots now operated by Green stands at an impressive 180 units.

Terry Liu

Founded in 2002, Guangdong Green Precision Components Co., Ltd. located in Huizhou, Guangdong, China, covers an area of 120,000 m² today. Since its foundation, Green has been dedicated to the design and manufacturing of precision structured parts for IT equipment and related accessories. With a business philosophy of high technology, high efficiency, and

W818 series robots from WITTMANN in the production workshops of Guangdong Green Precision Components Co., Ltd in Huizhou City (see also opposite page).

high quality, Green has provided design and manufacturing services for many branded smart terminal manufacturers in China and abroad. Past customers include Nokia, Sony Ericsson, Motorola, Siemens, Flextronics, Perlos, Samsung, Bird, Eastcom, UTStarcom, TCL, ZTE, Konka, and also Lenovo, and Hisense.

Green's precision structured parts see usage in smart phones, tablet PCs, e-book readers, laptops, intelligent home furnishing, wearable intelligent devices, financial payment terminals, unmanned aerial vehicles (UAVs) and other applications. Green is striving to be the major supplier of multi-functional precision structured parts for smart terminals, offering clients one-stop value-added services for their products. Currently, the company deploys a number of integrated process technologies. These include; structural design, mold design, precision injection molding technology (IML, IMD), precision metalwork process technology (CNC), lens manufacturing technol-



ogy, environment-friendly automatic coating, sputtering and evaporation technologies, finishing and aesthetics as well as structured part assembly automation technology. Green uses advanced production equipment and also applies comprehensive quality inspection systems to achieve its goals.

Guangdong Green Precision Components Co., Ltd, Huizhou City, China.

Green's view of WITTMANN robots

Wu Baoyu, President of Guangdong Green Precision Components Co., Ltd says that the robots from the WITTMANN Group are highly effective and reliable: "Green is currently experiencing a transformation towards fully automated production. The application of robotics is therefore absolutely crucial to us. We produce high-precision parts and we are in need of fast and precisely working manufacturing tools. We have hundreds of precision injection molding machines in use, therefore we need these to be equipped with precision robots in order to realize a varied and complex series of removal and insertion procedures. Before we selected equipment from the WITTMANN Group we extensively tested the robots of some

showed excellent performance, featuring high precision and high speed, and they also ran steadily without any difficulty. We then purchased many WITTMANN robots thereafter. Our WITTMANN robots keep running every day. The units never shut down due to technical failure, and there is never any positioning deviation – not even when the robots are running for a long time without interruption. We are deeply impressed by the premium quality of the WITTMANN Group's robots, and we have now decided to replace our equipment step by step with WITTMANN robots – thus establishing full automation in our production plant. In a word, WITTMANN robots give fresh impetus to our vision of stable, highly efficient and precise production systems. The close cooperation between Green and WITTMANN BATTENFELD China has

resulted in a clear win-win situation." Jonathan Ching, the Managing Director of WITTMANN BATTENFELD China, talks of the partnership that was established with Green as a very successful one. Then he refers to the robots themselves: "Programming WITTMANN robots is very simple and convenient. And these devices are especially designed for use with the injection



molding process. Taking into account that Green is specialized in the high-end production of electronic products, the W818 robots represent the best possible choice for the company, offering high precision, stability, and operation at high speed."

From left to right: Terry Liu, General Manager of WITTMANN BATTENFELD (Shanghai) Co., Ltd.; Wu Baoyu, President of Guangdong Green Precision Components Co., Ltd; Jonathan Ching, Managing Director of WITTMANN BATTENFELD (Shanghai) Co., Ltd.



The WITTMANN Group in China

The Chinese branch of the WITTMANN Group – with a production plant in Kunshan and a sales office in Shanghai – started operations in 2001.

Since then, it has solved many production-related problems for plastics processors in the area. WITTMANN

other manufacturers. However, in these cases we found that positioning deviations occurred after these robots had been in operation for some days. In fact, their stability couldn't be guaranteed." Wu Baoyu adds that "initially we decided to purchase 5 sets of robots from WITTMANN BATTENFELD China as a trial. These robots immediately

robots especially have been widely applied by a variety of plastics industry sectors, such as the electronic industry, automotive, medical technology, and packaging industry – not least due to the widely known professional customer service that the WITTMANN Group offers everywhere in the world. ♦

Terry Liu is General Manager of WITTMANN BATTENFELD (Shanghai) Co., Ltd. in China.

Intertech Medical (USA) takes next step in automation and reaps rewards

With the help of robots from WITTMANN BATTENFELD, INC., the US branch of the WITTMANN Group, Intertech Medical wins first place for MAPP Innovations Award 2017.

Jason Cornell

In August 2017, MAPP, the Manufacturers Association for Plastic Processors, awarded Intertech Medical first place for their 2017 Innovations Award for their work-cell automating quality inspection, de-gating, and packaging. Intertech Medical, located in Denver, Colorado, is the region's premier full service injection molder and contract manufacturer, specializing in medical devices.

The changes began after Intertech had been molding a medical part with complex geometry and features that was difficult to trace defects on using conventional inspection methods and sampling. With the part's critical application and an expectation of zero defects, this was particularly problematic. After three customer complaints within six months, it was clear to both Intertech and their customer that a solution was needed.

To solve the problem, Intertech designed and built a machine-side, automated work-cell that utilized integrated process control and quality control to get to zero defects. The solution primarily centered on integrated process control, automated quality inspection, and the reduction of bioburden from part handling and packaging. Rather than just adding more operators and increasing the number of times quality inspections, Intertech took a leap forward in their automation and inspection technology and were able to achieve the best results possible.

Successful WITTMANN automation

Intertech already had robots, but the supplier they had been using was limiting their ability to program and customize their process. Knowing that WITTMANN robots had a reputation for open architecture and flexibility, they

reached out to see what they could do. WITTMANN BATTENFELD, INC., USA, initially setup a few complete automation cells, including robots, EOAT, downstream part orientation stations, and tray filling conveyor systems, to demonstrate their capabilities. The WITTMANN BATTENFELD employees stayed on site for a couple weeks, allowing them to provide extensive training on their systems. Intertech was then off and running, taking the reins from WITTMANN BATTENFELD. Their in-house engineering, automation, mold shop, and maintenance department used the programmability they had lacked before to create a new process and system that could exceed their customer's needs.

"We love what we are able to do with the WITTMANN robots," said Kevin Clements, Director of Engineering at Intertech Medical. "The capabilities far exceed anything else we see in the market, from their *SmartRemoval* technology to the training and support that's available when needed.

With this automation in place, our company achieved ROI on the complete automation system in less than 9 months."

Since the completion of this work cell, Intertech has had zero returns from their customer, and was ranked by their customer as a preferred supplier. The design was so successful that they have replicated the technology to three additional work cells, and they now have nine WITTMANN robots in their plant. ♦



Intertech Medical released a video showing their automation cell with the WITTMANN robots in action – see it here: <https://www.youtube.com/watch?v=q6cYID0LsKY&feature=youtu.be>

The open architecture of WITTMANN robots allowed Intertech Medical to customize automation workcells that resulted in zero defects and exceeded their customer's needs.

Jason Cornell is Western Regional Manager Robots and Automation of WITTMANN BATTENFELD, INC. with headquarters in Torrington, USA.

White Horse Plastics partners WITTMANN BATTENFELD UK for success

WHP (White Horse Plastics) Ltd, WITTMANN BATTENFELD and systems integrator Adept Automation have collaborated on a successful automation and production cell, quadrupling the previous production capacity of an intricate over-molded automotive bearing used as part of a four stage door checker.

Adrian Lunney

The automation work was centered on the need to align 4 off-inserts with micron-accurate location into the mold tool, involving sixteen moving cores, an 18-second cycle time, and next to no tolerance on the 2 × 3 mm keyways into the bearing. The PA66-MoS2 filled part was then to be over-molded within a metal based component before being shipped to the automotive customer.

Paul Bobby, WHP Factory Manager, says that “this was a very challenging project, and took us through a number of process iterations. Without the determination that is the WHP trade mark – equaled by the persistence of WITTMANN BATTENFELD – we would not have succeeded in automating the work.” Bobby adds that “because of the complexity of the new tooling we were presented with a major automation alignment challenge. A 3 mm slot opening was the datum point for the whole assembly and allowed next to no dimensional tolerance.” A customized WITTMANN BATTENFELD injection molding machine was specified and commissioned together with a WITTMANN W818 3-axis robot. The downstream process was assisted by the work of Adept Automation leading to an effective fulfillment of the project.

Bobby notes that “the current state-of-the-art of plastics processing automation is now nothing short of incredible. However fantastic the technology, automation requiring this level of investment still requires a positive business case in order to proceed. In this instance we were more than happy to identify the same and to work with our partners to achieve the production solution.”

About WHP (White Horse Plastics) Ltd

WHP Ltd specializes in the development and production of tight-tolerance technical injection moldings and sub-assemblies, using materials ranging from standard polymers, nylons, acetals, polycarbonates, ABS and TPEs etc. through to the more exotic engineering polymers. WHP Ltd has over forty years of experience tackling the most challenging aspects of technical molding. Its mission and objective is always to provide complete manufacturing solutions for its clients.

The company is located in the Vale of the White Horse in Stanford-in-the-Vale, mid-distance between Swindon and Oxford. The business was founded in 1973 and its current technical competencies include a fleet of over thirty injection



Paul Bobby, WHP Factory Manager conducts final checks before the start of automated production.



SmartPower technology is helping White Horse Plastics compete in medical and technical molding markets.

molding machines, CAD/CAM facilities, CNC optical measurement, CMM systems, insert loading and camera inspection, a fully equipped tool room and dedicated med-tech manufacturing space.

In addition to ISO9001, the environmental standard ISO 14001 and the automotive quality standard TS 16949, WHP recently achieved (August 2016) the ISO 13485 for the production of medical devices. ♦

Adrian Lunney is a press and public relations agent who specializes in media work for companies in plastics, medical and packaging sectors.

Future-oriented energy savings at the Ernst Stadelmann company

Ernst Stadelmann GmbH in Eferding, Upper Austria, is a member of the Exacompta-Clairefontaine group (www.exacompta.com) and specializes in top-quality school and office supplies. The Exacompta-Clairefontaine group produces materials such as paper and cardboard in-house and then processes these into high-quality end products. In this way, the group has been able to guarantee the high quality of its products since its foundation.

Christoph Schweinberger

Exacompta not only stands for high quality, but also makes a special point of being close to its customers. With a brand awareness of 28% (Ipsos, September 2012), Exacompta is the best-known brand for diaries, filing systems and office supplies in France, its country of origin. Its products accompany all age groups in their daily lives and contribute to making their lives easier.

In the course of continuously pursuing high quality standards as well as future-oriented sustainability, Ernst Stadelmann GmbH decided in 2015 to take a close look at optimization potentials in its manufacturing processes. In addition to potentials for improvement in materials handling and masterbatch dosing, it was found that the existing material drying equipment still delivered acceptable drying results but, due to its advanced age (year of manufacture 1987), it was no longer up to the state of the art. Here, a higher power consumption than required for modern drying equipment was suspected.

To examine this matter more closely, the power consumption of the entire material drying system was monitored for several days in cooperation with the local energy supplier.

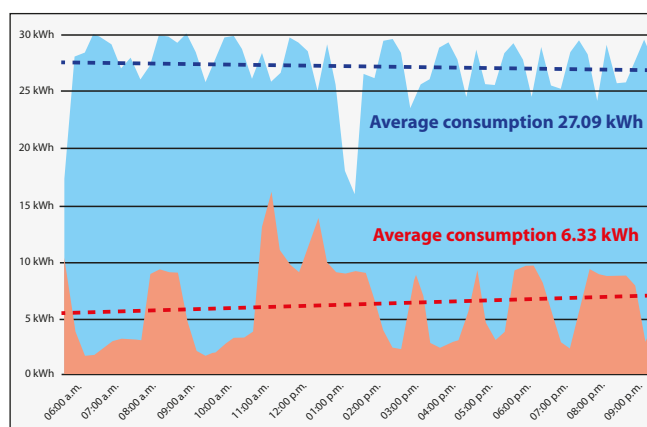
The measurement data collected were analyzed and revealed that the power consumption of the drying battery remained on virtually the same high level regardless of the actual drying demand, a clear sign that the regulation of the drying parameters followed a rigid pattern not in line with the actual drying demand of the individual materials or throughput rates. This involved a high energy consumption (and in the worst case also caused over drying of the plastic

granulate). This effect was very clearly revealed when the average consumption of a drying aggregate with 800 m³/h drying capacity and 1,800 l hopper volume was measured; here, a consumption of 27.09 kWh per hour was found. As a

consequence, the existing equipment was replaced at the beginning of 2016 by a new WITTMANN drying battery with modern frequency control (FC plus).

The maximum drying capacity was left unchanged, thus providing optimal conditions for a second series of measurements, which now followed.

Visualization of the results of both series of measurements: energy consumption of the older drying battery (in blue) compared to the new equipment with the FC plus module (in red).



View of the drying battery at Ernst Stadelmann GmbH in Eferding, Upper Austria.



New WITTMANN drying battery

The new drying battery from WITTMANN comes with some special functions, such as temperature-controlled regeneration (*SmartReg*) and automatic air flow control (*SmartFlow*) which, in combination with the material protection function, prevent over drying of the granulate.

In addition, this drying battery is equipped with an FC plus module, which enables it to adjust the drying performance optimally and fully automatically to changing demand – without any operator intervention. When the drying demand changes, the drying performance automatically follows that change,

so only the amount of power input must be supplied which is required to maintain a constant process.

Whenever the demand drops below 50% (for example with partial loads or weekend operation), one of the two dry air generators is not only throttled, but fully automatically cut out entirely by the FC plus module. During such phases,

the dry air supply is controlled via the frequency control of the dryer. As soon as the drying demand rises again, the dryer which is operating in stand-by mode is reactivated. The operation of this function is comparable to the start/stop system installed as standard in many modern motor vehicles.

Thanks to this functionality, the WITTMANN battery dryer achieves maximum energy efficiency with simultaneous assurance of a reliable material drying performance. Since these adjustments take place fully automatically, the operating effort is also reduced, and inefficient manual parameter setting is completely dispensed with.

Reduction of power consumption

After the new equipment had been in operation at Ernst Stadelmann for several weeks, the local power supplier measured the power consumption again. As on the previous occasion, the entire power input into the drying system was monitored – and the results were impressive.

With the same material throughput and virtually identical conditions in all other areas as well, the average hourly energy consumption was reduced from 27.09 kWh to 6.33 kWh. This adds up to energy savings of more than 76%, compared



to the previous power consumption level. In terms of energy costs, this amounts to annual cost savings of roughly 6,000 Euros. Since this project was classified as a future-oriented energy saving scheme, it was also eligible for a relevant grant from the federal state of Upper Austria.

Apart from energy optimization, machine uptime was also a vital aspect for Ernst Stadelmann GmbH. Due to the advanced age of the previous equipment, the availability of spare parts could no longer be guaranteed, which had become a major concern.

Thanks to the new drying battery and the integrated FC plus module, the equipment can now continue to operate even during maintenance work or if one of the dry air generators fails. Moreover, very fast response has become possible if required without risk of negative effects on the production process, thanks to

guaranteed availability of spare parts.

Early detection and implementation of effective actions to increase efficiency often leads to a competitive edge in crucial situations. Ernst Stadelmann GmbH has now secured such a competitive edge for itself – and will benefit from it in future. ♦

www.exacompta.com

Ernst Stadelmann GmbH is a member of the Exacompta-Clairefontaine group (www.exacompta.com).

Christoph Schweinberger is the Peripheral Appliances Sales Manager Austria at WITTMANN Kunststoffgeräte GmbH in Vienna.

The 9,000th WITTMANN W818 robot goes to ... HUHN Kunststofftechnik!

On 10th October 2017, the WITTMANN W818 robot with the serial number 9,000 was officially handed over to HUHN Kunststofftechnik in Wiehl, Germany.

HUHN Kunststofftechnik was established in the year 1987 by Andreas Huhn in Gummersbach, North Rhine-Westphalia, Germany. In the year 1991, the first injection molding machine was commissioned to complement the company's module assembly and plastic parts finishing equipment. Housed in a neighboring garage to start with, the HUHN Kunststofftechnik's production floor space and workforce have seen continuous growth ever since.

At the end of 2013, the entire production was moved from Gummersbach and Bergneustadt to a new building in the nearby town of Wiehl-Marienhagen.

Currently, the company's machinery includes 60 plastics injection molding machines with clamping forces ranging from 35 to 275 tons. With its manufacturing equipment, HUHN Kunststoff-



technik covers a wide product portfolio, including parts for the household appliance, electrical and automotive industries.

Its cooperation with WITTMANN started in October in 2017 with the acquisition of its first W818 robot – which was simultaneously the 9,000th robot from this series shipped by

WITTMANN. Until the beginning of February 2018, six more W818 robots were commissioned. In order to continue the course of expansion this company had embarked on, fast and highly flexible automation solutions for the 200 t injection molding machines had become a must.

Finally, HUHN Kunststofftechnik's decision in favor of robots from WITTMANN reflects its quality awareness – as expressed by its company motto: "Anyone who does not deliver 100% quality as fast as possible today has already lost tomorrow!" ♦

www.HUHN-Kunststofftechnik.de

Inside view of the HUH N Kunststofftechnik production hall in Wiehl-Marienhagen, North Rhine-Westphalia.

Joachim Merk (left), Sales Manager of WITTMANN Robot Systeme in Nuremberg, presents Andreas Huhn, founder of HUH N Kunststofftechnik in Wiehl, with the certificate during the handover of the 9,000th W818 robot.

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