



The cover picture shows the covering cap of the Z-slide of a W818 robot from WITTMANN.

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Editorial

Dear Reader,

"We're getting back to normal!" This is the impression we have gained from the K 2022 that has just ended. The pleasure derived from seeing each other again and having some personal

exchange of experience was felt acutely by all participants. The social abstinence in recent years due to Corona had obviously created a great desire for face-to-face information and professional discussions about technological matters.

Consequently, both of our booths in hall 12 (focusing on automation and auxiliaries) and hall 15 (focusing on injection molding machines) were very well frequented at virtually every single hour, including the weekend, when the numbers of visitors would normally have been lower. Corona was still present in everyone's mind, but played only a very minor role in the conversations at our



booths. We would like to thank all of our visitors most sincerely for their visits, for giving us of their time, and for their extremely positive response to the numerous trade fair exhibits and novelties of our company. All our new tech-

nologies and products can be reviewed on our social media channels LinkedIn and Facebook. Please also take a few moments to view the entertaining videos about our latest developments in connection with the major trade fair topics of energy efficiency, circular economy and digitization. With the presentation of an injection molding machine powered by direct current from solar panels, our Holoverse mixed reality application, and direct calculation of the melt index during injection by means of the HiQ Melt Premium software, we have definitely broken new technological ground and triggered many lively discussions at the fair. This encouraging K fair, however, was staged against a less positive economic background.

The innumerable uncertainties resulting from the precarious energy supply situation in Europe, exploding raw material costs and the continuing difficulties in the supply chains are still persisting and will soon take us back to our normal daily routines. Yet, we still expect the memory of this successful K 2022 to be lasting.

Finally, I wish to express my very special thanks and appreciation to all colleagues of the WITTMANN Group for their tireless and successful efforts on stage and behind the scenes to make our trade fair exhibition run smoothly and all of our guests feel welcome.

May I also wish you great pleasure in reading this issue of our quarterly appearing *innovations* magazine to inform you about the latest news and activities of our company worldwide.

Very cordially yours, Michael Wittmann

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3-component technology from WITTMANN BATTENFELD at Wirthwein Crimmitschau

Since February this year, the German Wirthwein company has been producing technical parts for the automotive industry with 3-component technology at its plant in Crimmitschau. The equipment used is a MacroPower XL 700 injection molding machine from WITTMANN BATTENFELD. **Gabriele Hopf**

WWW in Crimmitschau GmbH & Co. KG is a company of the Wirthwein Group founded in 1949 by Walter Wirthwein in Creglingen. What started off at that time with the production of octagonal wooden pegs for railroad superstructure is today a family-owned and ownermanaged company with more than 3,500 workers on 22 production sites worldwide.

The company's entry into plastics processing took place in 1967 with the production of dowels for track fastening. Today's product portfolio of the Wirthwein Group includes components and assemblies for the automotive industry, railroad superstructure, the electrical and household appliances industries, medical technology and interior construction.

In Crimmitschau, fan propellers and frames for the automotive industry have been manufactured since 1993, since 2012 in the name of the newly established Wirthwein Crimmitschau GmbH & Co. KG. Today, this company manufactures technically advanced components for the automotive industry with 120 associates on corporate premises of about 21,000 m², of which almost half is used as storage and production area, with fan propellers and fan frames still constituting the company's core competences.

The range of fans includes both axial ventilators for thermal motor control and radial ventilators for conditioning systems in cars. These components are very demanding in terms of tolerances. The balancing requirements for radial ventilators are particularly stringent, since here even the slightest imbalance will cause unpleasant noises in car interiors.

Energy-efficient machinery

Wirthwein Crimmitschau uses a variety of technologies to manufacture its components, such as compact injection molding, physical foaming, multi-component injection molding, automation, fully automatic greasing and pre-conditioning of parts, right up to assembling complete structural components.

Of the 33 injection molding machines operating at Wirthwein Crimmitschau and ranging from 250 to 15,000 kN in clamping force, nine have come from WITT-MANN BATTENFELD. Since 2018, exclusively machines from the servo-hydraulic SmartPower series and the MacroPower series from WITTMANN BATTENFELD have been added. The matching parts removal robots have also come from the WITT-MANN Group.

Apart from their compactness and userfriendliness, the servo-hydraulic machines from WITTMANN BATTENFELD stand out primarily by their intelligent, economical energy utilization. Their high level of energy efficiency is primarily due to the combination of a fast-response, speed-controlled, air-cooled servo motor with a highly efficient constant displacement pump, known as the "Drive on Demand" system.

The MacroPower Combimould

The machine most recently delivered is a 3-component model from the MacroPower series with 7,000 kN clamping force and enlarged clamping plates. This MacroPower XL 700/3400H/350S/210V was installed at Wirthwein Crimmitschau in February of this year. The machine is used to manufacture a component for a car window regulator con-

sisting of PA, TPE and POM. The machine is equipped with a W843 pro robot from WITTMANN, which removes the finished parts and deposits them on a conveyor belt. Moreover, this machine comes with the HiQ Flow application software, which serves to detect and compensate viscosity fluctuations in the material.

A special feature of the MacroPower XL 700 installed at Wirthwein is its direct control of the mold's index plate by way of complete integration of the mold's servo motor in the machine's Unilog B8 control system. This enables high-precision rotary movements of the large-sized, heavy index plate and thus ensures an extremely safe production process.

Great attention was also paid to the cycle time. Independent, parallel movements of the three injection units are a standard feature of the MacroPower Combimould machine. Each injection unit has its own servo-hydraulic drive. The screw drives of the injection units are also equipped with servo motors. This enables dosing of all three aggregates parallel to the movement of the mold. So, an optimized cycle time is ensured even together with an extremely short cooling time.

Praise from the experts

Dr. Maike Gruschwitz, Plant Manageress of Wirthwein Crimmitschau GmbH & Co. KG, and Marco Windrich, Managing Engineer, are very pleased with the machines from WITTMANN BATTENFELD.

Particularly positive features are the userfriendly, self-explanatory machine control system, as well as the height of the machines. (continued on page 6)



MacroPower XL 700/3400H/350S/210V Combimould at Wirthwein in Crimmitschau, Germany.



From left to right: Marco Windrich, Managing Engineer of Wirthwein Crimmitschau; Dr. Maike Gruschwitz; Plant Manageress of Wirthwein Crimmitschau; Peter Zahn, WITTMANN BATTENFELD Sales. "Our machine setters like working with the WITTMANN BATTENFELD equipment", reports Dr. Maike Gruschwitz. Moreover, the service provided by WITTMANN BATTEN-FELD is said to be excellent. "The commissioning of this most recently delivered machine took a very positive course. All tasks were solved immediately, customers' wishes fulfilled straight away", Gruschwitz says.

And Marco Windrich adds: "The WITT-MANN BATTENFELD machines are less prone to failure than others, and in the event of any problems, these can very often be solved by telephone, or if not, the WITT- MANN BATTENFELD engineers are also quickly on site." According to Windrich, the equipment's low susceptibility to failure and the fast-troubleshooting service are important for Wirthwein Crimmitschau, since with more than 300 active products every machine standstill involves complex challenges.

Apart from the high quality and easy operation of the machines and the excellent service, the good energy balance of the machines is another important feature for Wirthwein. Marco Windrich comments: "The Wirthwein Group is currently working on a 'cost over lifetime' evaluation of its entire machine fleet at all of its production facilities worldwide. In addition to the purchase price, the calculation of these costs also includes technical availability and support, as well as the equipment's energy consumption and CO₂ footprint. We expect that the WITTMANN BATTENFELD machines will get good results here, due to their high energy efficiency and low susceptibility to failure."

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





A W843 pro robot from WITTMANN takes out the finished parts from the machine and puts them on a conveyor belt.



Christian Winter (left), Machine Setters Team Leader at Wirthwein with Marco Windrich.

Benoplast: automated packaging excellence

The Turkish Benoplast company prefers to use WITTMANN linear robots for the handling of their injection-molded foldable plastic boxes. For this project, the Turkish WITTMANN Group Team, based in Istanbul, harmonized the handling robots with Benoplast's automation system.

Cüneyt Kahraman - Birol Önderoğlu

B ased in Taskopru in the Yalova province, the Benoplast Group has a highly experienced workforce in different sectors of the plastics processing industry. The company runs a modern injection molding production plant of 80,000 square meters floor space together with a raw material recyling facility of 30,000 square meters. Benoplast creates a working environment that is based on mutual trust and aims to lead its field globally.

Since its foundation in 2005, Benoplast has been the brand of choice with many customers that also lead their fields in terms of innovation. The company offers a competitive cost structure, pursues ambitious investment strategies, and is deservedly proud of its original and functional product designs.

Benoplast offers creative packaging solutions that facilitate the transportation and storage of all kinds of goods. Benoplast products are designed to be always one step ahead – adding significant value and competitiveness to the many international brand customers. Much 'blue chip' client packaging, for example, is created bespoke. When this competence is added to Benoplast's very wide product range, the company is in high international demand for its expertise.

Products and philosophy

Benoplast's main product categories are: crates, foldable plastic boxes, both customized and as standard Euro boxes (some with special lids), stackable plastic pallets, and plastic containers with either four integral feet or two or three skids. *(continued on page 8)*



View of the Benoplast production in Taskopru in the Yalova province.



From left to right: Çağri Baydar, Benoplast Production Engineer; Birol Önderoğlu, Company Co-Founder of Benoplast and Operational Director; Muzaffer Engin, WITTMANN BATTENFELD Türkiye General Manager; Cüneyt Kahraman, WITTMANN BATTENFELD Türkiye Sales Manager.



WITTMANN W843 pro robot, handling the segments of a foldable plastic box injection molded at Benoplast.

In addition, Benoplast makes packaging solutions for special requirements that are used in transportation and storage. Benoplast not only leads the way in this sector, but is also a significant plastics recycler, actively reducing carbon footprint to protect the environment. Benoplast is identified as an environmentally friendly company, and is involved in many social projects. Its outstanding approach to service guarantees its leading commercial position and the company's production facilities and offices are always kept up to date with the latest technologies.

WITTMANN robots at Benoplast

Ten years ago, Benoplast bought two used W6 series robots from another WITTMANN customer. The Istanbul based team of the Turkish WITTMANN Group subsidiary supplied some necessary spare parts and commissioned these two robots which are still running at the plant today.

For the implementation of the latest important Benoplast project, WITTMANN delivered eleven robots in 2020: six W843 pro

robots, three Primus 48T, one W833 pro, and one Primus 26. Seven of these robots are designed as so-called L-versions. Five of the W843 pro robots are used in production cells together with injection molding machines with clamping forces of 1,080 tons and are molding a series of foldable boxes.

The W843 pro robots are all equipped with a special gripper for multiple parts, and remove the boxes to a pre-existing automated handling system where the boxes undergo further downstream handling. Within this automation cell, the boxes are also folded using two six-axis robots.

All the other WITTMANN robots that are running at Benoplast are used for pick & place applications and with Benoplast's 2020 investment, WITTMANN has become the company's main robot supplier.

Customer satisfaction

Birol Önderoğlu, Company Co-Founder and Operational Director of Benoplast is completely satisfied with the technical service offered by WITTMANN and the high reliability of WITTMANN robots. He says that "we have been working with WITTMANN for five years now and the company has become our key supplier for linear robots."

He points out that "we gain a continuous benefit from these robots. These units have been operating smoothly at a high speed for years and years now, the downtimes are very low, and the robots are very user-friendly. Looking at our latest investment in the foldable box family, we have also achieved great efficiency using WITTMANN robots together with 'Industry 4.0' techniques."

Birol Önderoğlu adds that "we really enjoy the strong support given by the WITT-MANN sales and technical office in Turkey. We will continue to work with WITTMANN in the future, and we are sure we will continue to achieve a phenomenal success with every new project."

Cüneyt Kahraman is the Sales Manager of WITTMANN BATTENFELD Turkey. Birol Önderoğlu is the Company Co-Founder and Operational Director of the Benoplast company.



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Yalova Plant



Successful Airmould 4.0 internal gas pressure technology

After WITTMANN BATTENFELD first presented the new generation of the Airmould internal gas pressure technology to its customers at the Fakuma 2021, the development targets have now been reached, and the competitive system has already been installed and tested on the premises of several customers. With the further development of Airmould, an even more compact and user-friendly system has been created, which meets the requirements of the industry and offers its users a number of advantages.

Gabriele Hopf

irmould is WITTMANN BATTEN-FELD's solution to meet the need for saving resources and for light-weight construction – and for extremely short cycle times as well. Airmould internal gas pressure technology is a process by which nitrogen is injected into a mold cavity either partly or completely filled with plastic melt to form an internal cavity structure. In this way, lightweight parts can be produced within a short cycle time and with high-quality surfaces, while also saving resources.

History of development

Since the end of the 1980s, WITTMANN BATTENFELD has been developing and producing the internal gas pressure technology at its facility in Meinerzhagen, Germany with the main focus on meeting the needs of its customers and markets. This applies equally to the new upgrade Airmould 4.0, by which WITTMANN BATTENFELD has taken an important step forward.

Airmould 4.0 is the only internal gas pressure system which functions without having a large control cabinet which takes up a lot of space on the production floor. The modules required are also about 15% smaller than previous versions; they are very compact and can be mounted and used flexibly on every type of injection molding machine.

Another great advantage of this system is that the technical expertise for the injection molding machine and the Airmould system both come from a single source, and Airmould 4.0 is optimally designed to meet the demands of the market. In fact, Airmould 4.0 can not only be integrated into the B8 control system of an injection molding machine for easier operation, but also into machines of other brands via the uniform operating panel of the WITTMANN Group.

For example, at the company's longstanding Airmould customer Oberland MV in Bad Wurzach in Germany, where Airmould 4.0 has already been in use on one of their existing machines since mid-April.

In use at Oberland MV

The team members of Oberland MV commit themselves daily to keep on inspiring their customers with innovative ideas and excellent performance. To achieve this, they rely on Airmould 4.0 every day.

Almost 80% of the reusable boxes produced by their company have been manufactured using the Airmould process for decades, so more than 120 modules from WITTMANN BATTENFELD are now in use there, from both the predecessor series and the new generation of Airmould 4.0. Weight reductions, component stability and minimization of sink marks are important arguments in favor of this technology, as these constitute an assurance of high-quality standards for the strong wall thicknesses of Oberland MV's products.

Innovative and ecologically sustainable, reusable solutions have made Oberland MV a leading manufacturer of packaging for the European beverage industry. They offer their customers system solutions which include product development, manufacturing and design as well as recycling. Prizes won such as the German Packaging Award and the World Star Packaging Award are tangible evidence of the company's commitment to high quality standards for more than 50 years.

Internal gas pressure for everybody

Satisfied customers using internal gas pressure every day have confirmed to WITT-MANN BATTENFELD that the development targets for Airmould internal gas pressure technology have been defined and pursued correctly.

WITTMANN BATTENFELD looks forward to opening up further market potential with Airmould 4.0, especially under present production conditions, and to convincing users of the advantages of this internal gas pressure technology. After all, who would not prick up their ears when there are buzzwords in the air such as saving resources, minimizing energy consumption, simple workcell concept, intuitive operation, low operating costs and short cycle times?

Where necessary, customers will receive application technology support in introducing Airmould. This support may range from assistance with the machine layout right up to the pilot series in production, depending on the customer's requirements, since WITT-MANN BATTENFELD not only offers the necessary components, but also application technology support, servicing of the equipment and spare parts.

Moreover, prospective buyers can see the advantages of Airmould 4.0 for themselves on Wittmann Interactive.

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



Airmould 4.0 modules, small and directly on the injection molding machine.



Fully automatic line to manufacture sanitary seals

Schauenburg Industrietechnik based in Nuremberg makes seals for wall-mounted cisterns on a machine from the servo-hydraulic SmartPower series with special automation equipment. **Gabriele Hopf**



he Schauenburg Industrietechnik Group is part of the Schauenburg International group of companies founded more than 100 years ago by Hans-Georg Schauenburg in Mühlheim/Ruhr, Germany and globally active today. Schauenburg Industrietechnik GmbH is operating in Germany with 150 associates at facilities located in Nuremberg, Bremen, Munich, Mühlheim, Stuttgart and the Rhein-Main Service Point. The company's main customer base consists of machine manufacturers and the automotive sector, where primarily products for car interiors are made. But a major focus is also lying on projects for futureoriented sectors such as renewable energy generation. Schauenburg Industrietechnik GmbH sees itself as a partner for its customers to supply technically sound, sustainable system solutions. The company is certified according to the ISO 9001 standard, and since July of this year also according to the environmental standard EN ISO 14001.

Schauenburg's activities include hose technology, sealing technology, profile technology, molded rubber parts, etching and precision laser technology, as well as plastics injection molding. Its service portfolio ranges from consulting, engineering, design and prototyping all the way to

Seals for wall-mounted cisterns on the conveyor belt.

series production and assembly manufacturing, as well as finishing and confectioning of parts.

In its injection molding department, parts with shot weights from 1 g to 600 g are manufactured on 25 machines ranging from 350 to 2,400 kN in clamping force. This includes processes such as 2-component injection molding, insert technology, galvanizing and printing. Some of the machines make their products in continuous operation around the clock seven days a week. To make this 24/7 production compatible with a 5-day working week, automation of the injection molding systems is of paramount importance.



Gripper for the handling of injection molded seals.



SmartPower 240/1330 with automation. (Photo: Schauenburg)



From the left: Ceyhun Halil, Schauenburg Production Manager of Plastics Injection Molding; Jaan Otsa, Head of Plastics Injection Molding and Mold Making at Schauenburg; Marcus Otto, WITT-MANN BATTENFELD Sales; Ralf Winter, COO of Schauenburg.



Rear view of the complete system (Photo: Schauenburg)

Schauenburg and WITTMANN

The WITTMANN Group has been cooperating with Schauenburg Industrietechnik for many years in the areas of automation, material handling and auxiliary appliances technology. In 2021, WITTMANN had the opportunity to offer Schauenburg a highlevel automatic injection molding line to produce seals for wall-mounted cisterns. A system autonomy time of 16 hours was required for this equipment, as well as a minimal footprint.

"An additional challenge here was the size of the parts that had to be handled", explains Jaan Otsa, the Schauenburg Department Manager of Plastics Injection Molding and Mold Making. The WITT-MANN BATTENFELD company won the contract with an overall sophisticated concept consisting of a SmartPower 240/1330 servo-hydraulic injection molding machine equipped with special hosing for the application of hot and cold water to the mold, and, in addition, an automation system with buffer storage for full and empty packaging units.

The space taken up by the buffer store with a total storage capacity of 70 cartons on 10 levels is no more than 6 m². A lift axis takes care of handling the cartons. Ralf Winter, the COO of Schauenburg Industrietechnik, comments: "WITTMANN BATTENFELD is well versed in automation technology and designed a technical solution to meet our requirements which inspired us with great confidence."

Hans-Peter Niederwald, CEO, adds: "We were looking for a partner who was able to offer us a conclusive overall concept. WITT-MANN BATTENFELD convinced us that they had the right solution."

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

Easier mold tempering with the Water Switch Box

The Water Switch Box, which enables time-saving changeover from heating to cooling in mold tempering, is a very simple, but highly effective solution developed by WITTMANN in response to customers' wishes.

Gerald Schodl

n the area of injection molding, attention is currently being focused on digitization and the integration of all processes and appliances essential for process reliability. But in spite of all technical advancement, there is still a need for manual control of some production steps for maximum efficiency and cost optimization.

Close cooperation with its customers and the resulting feedback from the markets have prompted WITTMANN to extend its product range to include a device known as the Water Switch Box, which is already in use in the field.

Simple and effective

The name Water Switch Box designates a manual changeover unit, which allows machine operators to switch over instantaneously from heating to cooling without a lead time. Where possible, this changeover device should be placed close to the mold between the temperature controller and a medium distributor, for example a flow controller.

In an arrangement similar to a star connection, the temperature controller, the flow controller and the cold water are then connected with each other. The changeover unit is designed for connection with two temperature control circuits and one cooling system, with the switchover being carried out via two laterally mounted ball valves. Depending on the setting of the ball valves, the Water Switch Box can be used in three different ways:

 Use of two temperature controllers which are optimally connected to the mold in a parallel configuration via a distributor. A short connection



On the left side: the Water Switch Box; on the right: the rear of a temperature controller. This installation arrangement makes it possible to keep the hose connections short. On both sides of the Water Switch Box, the manual levers for the ball valves are visible.



distance ensures low pressure loss and a maximum flow quantity. When a mold change is imminent, the Water Switch Box can be used to turn off the temperature controllers and switch over to the cooling water.

- The Water Switch Box can be used to make one temperature control circuit keep the temperature in a certain segment of the mold at a desired level, while cooling water is being applied to the remainder of the mold to cool it.
- The Water Switch Box makes it very simple to bring both mold halves down to the desired process temperature via the cooling channels – by using exclusively cooling water.

Schematic diagram of connection and switchover options:

- 1 from temperature controller circuit 1
- 2 to temperature controller circuit 1
- 3 from temperature controller circuit 2
- 4 to temperature controller circuit 2
- 5 to mold circuit 2
- 6 to mold circuit 1
- 7 from mold circuit 1
- 8 from mold circuit 2
- 9 fresh water inlet
- 10 fresh water outlet

Finally, this changeover unit offers the additional advantage of compact, lengthoptimized hosing.

The hoses are centrally grouped together in the Water Switch Box. In this way, any pressure loss which may occur is reduced to a minimum, to ensure a maximum flow rate for the heat carrier.

The disassembly of hoses and any subsequently resulting water leaks are now a thing of the past.

Once installed, the WITTMANN Water Switch Box ensures clean work, saves time and increases operational safety.

Gerald Schodl is Sales Manager for Temperature Control Technology at WITTMANN Technology GmbH in Vienna, Austria.

WITTMANN BATTENFELD Australia Pty Ltd

Since March of this year, the Australian subsidiary of the WITT-MANN Group has a new Managing Director. The company continues its ongoing commitment to sales and service of injection molding machines and auxiliaries across Australia and New Zealand.

Pty Ltd has a long history in both Australia and New Zealand, and offers strong technical support through service technicians and the company's spare parts division. These factors, combined with the reliability and longevity of equipment from the WITTMANN Group, ensure a bright outlook for Australian customers.

New Managing Director

Earlier this year, in March 2022, Michael Gibbs joined WITTMANN BATTENFELD Australia Pty Ltd as Managing Director. Michael Gibbs is familiar with the plastics processing industries for many years now.

Following studies of geological science, he joined his father's plastic injection molding business in 1981. From these beginnings, he then, in 1987, took up a sales and technical service role for a major supplier of engineering plastics in Australia.

After 25 years in this role, subsequent steps included a return to a management in injection molding, followed most recently by an account management role for a local polymer compounder.

Michael brings with him a strong technical knowledge of engineering thermoset and thermoplastics materials and their processing, by injection and extrusion methods. His in-depth experience with the molding processes has enabled him to make a ready transition to the sales of the range of machines and auxiliaries from the WITTMANN Group.

Michael says that "the world pandemic has highlighted a need for Australia to have secure manufacture of essential supplies, including medical, defence, irrigation and food packaging. These challenges have the



The premises of WITTMANN BATTENFELD Australia Pty Ltd in Braeside, a suburb of Melbourne.



financial support of the Australian Government, and this in turn will continue to create opportunities for local manufacturers.

The increased cost of electricity in Australia is now – more than ever – highlighting the cost benefits of our EcoPower range of injection molding machines. WITTMANN BATTENFELD Australia will continue its efforts to service existing and long-term customers, whilst developing new opportunities in the Australian and New Zealand markets." Robert Wilson (left), Managing Director and Owner of Palm Outdoor Australia based in Melbourne, and Michael Gibbs in front of a WITT-MANN BATTENFELD injection molding machine with a WITTMANN robot. Palm Outdoor Australia is a designer and manufacturer of unbreakable drink and tableware products and of precision plastic automotive and building parts. Palm's consumer products are sold in Australia and in over 30 countries worldwide. In Australia. the company is the largest supplier of unbreakable drinkware. Palm is a valued and long-standing customer for WITTMANN equipment. The manufacturing facility contains only injection molding machines and auxiliaries from the WITTMANN Group.

