Wittmann innovations

Volume 18 – 2/2024

The cover photo shows a detailed shot of a FEEDMAX S3 net material conveyor with green AmbiLED light signal.

WITTMANN innovations (Volume 18 – 2/2024)

"WITTMANN innovations" is the quarterly house organ of the WITTMANN Group. The magazine appears to meet the informational demands of staff and customers. Address: WITTMANN Technology GmbH, Lichtblaustrasse 10, 1220 Vienna – Editorial office, layout, graphic production: Bernhard Grabner – tel.: +43-1 250 39-204 – e-mail: bernhard.grabner@wittmann-group.com
Issue 3/2024 of "WITTMANN innovations" will appear at the beginning of the third quarter 2024. – www.wittmann-group.com

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Editorial

Dear Reader,

A quotation from Henry Ford goes as follows: "Almost anyone can think up an idea. What counts is the development of a practical product." At the Hannover Fair 2011, a concept for the comprehensive digitalization of industrial production was presented for the first time under the term Industry 4.0. We eagerly embraced the idea at WITTMANN. Since then we have brought many digital products and technologies onto the market. We summarize these innovations under the name Wittmann 4.0.

Wittmann 4.0 is about the intelligent networking and digitalization of machines, robots and peripheral devices and the many advantages that can be achieved from this. We consistently rely on communication standards defined by EUROMAP. This makes us the world's first and – thus far – the only company in our industry to offer solutions that collect, analyze and use data across the entire injection molding production – from material handling to injection molding and inline recycling to integration into higher-level IT systems – making process optimization evermore usable. Only this consistent approach enables future-oriented functions such as the self-optimization of individual system components or the Plug & Produce concepts within the Wittmann 4.0 production cell.

We will present our current innovations to you at the WITTMANN Competence Days 2024 on June 19th and 20th in Vienna. Our main topic will be digitalization, and Wittmann 4.0 will be the central theme throughout the event. Exciting specialist lectures and live exhibits await you at the MARX HALLE event center in Vienna. We also invite you to take tours of our production plants in Vienna, Kottingbrunn and Mosonmagyaróvár in Hungary.

How far down the line are you in digitalizing your injection molding processes? From many conversations with our customers, we know that many of you are now starting to assess the opportunities, possibilities and challenges of digitalization and networking. The topic can be confusing and there is often a lack of in-house resource. However, here we are; at your side with our know-how and our experience. We certainly have the solutions – for individual machines, robots and peripherals as well as for complete production cells and the entire machine park. Naturally our consulting services are included!

Nobody will be able to avoid digitalization over the next few years. In the future, digitalization and networking will determine competitiveness, sustainability, quality and location protection. Let's tackle these challenges together and leverage the potential that lies ahead of us. In digitalization as well as in injection molding, in automation and in peripherals.

I look forward to welcoming you to our Competence Days in Vienna in June!

Today I hope you really enjoy reading our *innovations* magazine.

Very cordially yours,
Michael Wittmann

Content

Keeney improves regrind quality using WITTMANN G-Max 23

With headquarters in Farmington, Connecticut, USA, Keeney Holdings LLC is a leading manufacturer and distributor of tubular drainage products. At their plastic injection molding operation in Winchester, New Hampshire, they run several WITTMANN EcoPower injection molding machines, sprue pickers, and temperature control units. To realize Keeney's GoGreen-Initiative, the company relies on WITTMANN granulators.

Greg Hannoosh – Denis Metral

Keeney was founded in 1923 and has been a part of the Oatey family companies since 2019. Oatey Co., based in Cleveland, Ohio, is a leader for the residential and commercial plumbing industries since 1916. They operate a comprehensive manufacturing and distribution network to supply thousands of products for professional builders, contractors, engineers, and do-it-yourself consumers around the world. Keeney has facilities in four US states as well as Canada and China.

Using reground material inline

When Keeney looked to upgrade some older press-side granulators, they contacted WITTMANN USA. With the increased use of regrind in their molding operations, they were concerned with the overall quality of regrind; they also wanted ease of maintenance. Materials used include PP, TPE, ABS and PVC.

After an initial meeting, WITTMANN USA ran a granulator trial run where they obtained Keeney's material, did a grinding test with screenless and conventional granulators, and also did a regrind quality analysis.

"We find that by running these types of trials, it gives our customers peace of mind", says Steve Mussmann, Division Manager Material Handling & Auxiliaries for WITTMANN USA. "When they can see real-world results before placing the order, they know what they are purchasing is going to work well on their specific application."

For granulator trials, WITTMANN's quantitative approach is to perform a multi-stages sieve test. Regrind is passed through a series of sieves with progressively smaller hole sizes. Results are interpreted as follows:

- Particles that do not pass through the top and largest screen (typically > 8 mm) are considered "longs" and may present material handling problems because of their large size.
- Particles that are captured by the 6 mm and 3 mm sieves are considered good regrind.
- Particles that pass through the 3 mm sieve are considered fines.

After completing the trial, the percentage of material that is dust and fines is calculated compared with good quality regrind.

Denis Metral, WITTMANN's International Sales Manager Granulators: "With the increased push towards recycling and sustainability in our industry, the question has always been and continues to be, can we use regrind to make good finished products? The answer is usually 'yes', but it's important to prove-out the concept to our customers in advance." As a benchmark, says Metral, good quality ground material should be:

- Similar in pellet size to the virgin material.
- Fewer fines that melt more uniformly, resulting in fewer rejected parts and reduced costs.
- Uniform and as free as possible from dust and fines, so that it flows more easily and mixes better with the virgin material and other additives in the molding machine.

G-Max 23 beside-the-press granulator from WITTMANN; cutting chamber.

Improved performance and cleanliness

After seeing the WITTMANN trials, the Keeney company purchased 7 new WITTMANN G-Max 23 granulators, bringing their total number of WITTMANN granulators to 15. They now are up and running alongside their molding machines, which include three WITTMANN EcoPower machines, in their Winchester plant. "We are very happy

G-Max 23 beside-the-press granulator at the Keeney plant in Winchester, New Hampshire.

TEMPRO primus C120 temperature controller and G-Max 23 granulator, next to an EcoPower 240 molding machine.

with the new WITTMANN granulators", says Steve Duval, Operations Manager at Keeney. "Not only do they perform well by helping us process better regrind, they also help us keep the facility clean and neat."

Benefits of using press-side granulators for inline recycling of sprues include:

- No labor is necessary for handling scrap.
- No moisture in regrind compared to central grinding.
- Internal reground materials are free of contaminants and cross-contamination with other materials.
- Keep the material "in the loop" rather than sending it to a landfill.
- Closed-loop recycling of sprues gives a second life cycle to internal production waste as a valuable secondary resource.
- Start-up waste and imperfect products can be reground, and are no longer thrown away.

Close collaboration to customize equipment

Advanced Plastics Machinery Incorporated (APM), the New England Representative of WITTMANN USA, has helped Keeney by engineering and producing customized upper feed chutes for the WITTMANN granulators. "The sprues and runners on Keeney's products are often quite large, and sometimes do not have a consistent drop out of the molding machine", says Bruce Beckmann of APM. "The customized upper feed chutes we designed provide a much larger landing area to the runners, so that they funnel into the granulator without difficulties and directly down into the cutting chamber." Beckmann also notes that this chute fits to each granulator and protects the loading area as a safety guard.

The Keeney GoGreen-Initiative

By implementing responsible cost saving practices including the conservation of energy, recycling material, and reducing its use of virgin pellets, Keeney strives to continually reduce any negative impact on the environment. These practices lead to less waste and scrap, and also have the benefit of reducing the company's costs of production.

Keeney also strives to produce "green" products that conserve natural resources and reduce packaging, allowing its customers to do their part in reducing their carbon footprint.

"Our new G-Max 23 granulators we purchased from the WITTMANN Group really have contributed nicely to our GoGreen-Initiative", says Keeney Operations Manager Steve Duval. "They help us achieve our overall goals of recycling and reusing what previously would have been waste or scrap materials."

Greg Hannoosh is Founder and President of Next Step Communications Inc. in Kittery Point, Maine, USA.
Denis Metral is International Sales Manager for granulators at WITTMANN BATTENFELD France in La Buisse.

Reproducibility and flexibility on a large scale

Not far from the IJsselmeer in the north of the Netherlands, AKROH Industries B.V. manufactures a wide range of plastics products for many different branches, including agriculture, the automotive industry and healthcare. The MacroPower from WITTMANN is one of the most popular machine models on its production floor and plays a key role in the company's growth strategy. With MacroPower injection molding machines AKROH achieves high competitiveness.

Susanne Zinckgraf

The MacroPower is one of the favorite machine models on the AKROH production floor.

AKROH is celebrating. On the day of our visit, three cream cakes were delivered to the production plant in the Dutch city of Zwolle, each decorated with a photo of a WITTMANN injection molding machine. The occasion is the commissioning of a new MacroPower 2000 from WITTMANN – with 2000 t clamping force by far the largest injection molding machine ever installed at AKROH. With this investment, the family-owned company is opening a new chapter in its history. Following the massive expansion of its machinery, further growth is now planned for the business segment of contract injection molding, which currently generates about 20 per cent of the company's sales. "We are continuously stepping up the product portfolio for our customers", states Arend-Jan Horst, owner and CEO of AKROH Industries B.V.

With 27 injection molding machines in a wide range of clamping forces, the company's machinery and equipment has almost doubled since it moved into its new building three years ago. "We are now a modern factory", says Horst not without pride, since his whole family is contributing to the company's success. His wife Olga and his son Jorn, for instance, are in charge of the accounts department. Jorn's brother Robbert is responsible as operator for the injection molding machines of the plant.

The new MacroPower 2000 is the largest injection molding machine so far in AKROH's equipment. It is intended primarily for generating further growth in the business segment of contract injection molding.

Ultimate reproducibility for extremely tough products

Since the company's foundation in 1956, its product range has been changed and diversified several times. Among AKROH's own product lines, one main focus lies on agricultural applications. Equipment for livestock and dairy farming as well as tractor components have made the AKROH brand famous especially in Europe. Via the agricultural trade, the company currently delivers more than 7,000 different products and product variants into 60 countries worldwide. More than 600 molds are in active use.

The blades of the feeding shovels are manufactured on a MacroPower 850.

During our visit in Zwolle, large black shovel blades are running off the production line from a MacroPower 850 injection molding machine. Mounted on a wooden rod with a handle also injection molded from plastic, they will be sold as feeding shovels later on.

These large parts with a 1,000 g shot weight are produced in a single-cavity mold within a cycle time of 30 seconds. They are made of high-impact polypropylene, for they must be able to withstand some tough treatment during rough daily use in the stables and on the fields. Between summer and winter, the environmental temperatures may vary from -10 to +40° Celsius, which must not have any adverse effect on the stability of the shovels.

"With the MacroPower we can rely on producing consistent high quality", Arend-Jan Horst emphasizes, leading us to another MacroPower machine, which molds large plant containers to a customer's order. "Here, the requirements are even more stringent", he explains. "The wall thickness is no more than 1.5 mm, yet we still achieve very high dimensional accuracy." This was not the case with an injection molding machine of a Chinese brand, which AKROH purchased some years ago on trial. Especially with thin-walled parts, which require high injection pressures, the Chinese machine's sensor system quickly reached its limits.

Another advantage of the MacroPower in direct comparison between the machines is its modest floor space requirement. Thanks to two-platen technology, the MacroPower's footprint is noticeably shorter.

Generally, the footprint of the production cells is a major issue. Even when it comes to automation, AKROH ensures a compact layout. A conscious decision was made to equip the new large 2000-ton machine with a linear robot. In contrast to a six-axis robot, which would take up additional floor space next to the machine, the WX173 linear robot from WITTMANN is mounted directly on the machine above the clamping unit. For maximum flexibility during parts removal, WITTMANN integrated two additional servo rotary axes for its customer. Thanks to the servo C-axis, it is possible to switch flexibly between removal on the moving and on the stationary mold mount-ing platen, depending on the mold.

MeltPro screw and HiQ Flow – a successful duo

Another contribution to the consistent high quality of the injection-molded parts is made by the plasticizing units in the WITTMANN machines.

"All of our most recently delivered machines are equipped with MeltPro barrier screws, and we have now al-so retrofitted the existing machines", reports Michel van der Motten, Managing Director of WITTMANN BATTENFELD Benelux NV. By this move, AKROH has prepared itself well for the future, since the proportion of regrind in the materials being processed is rising.

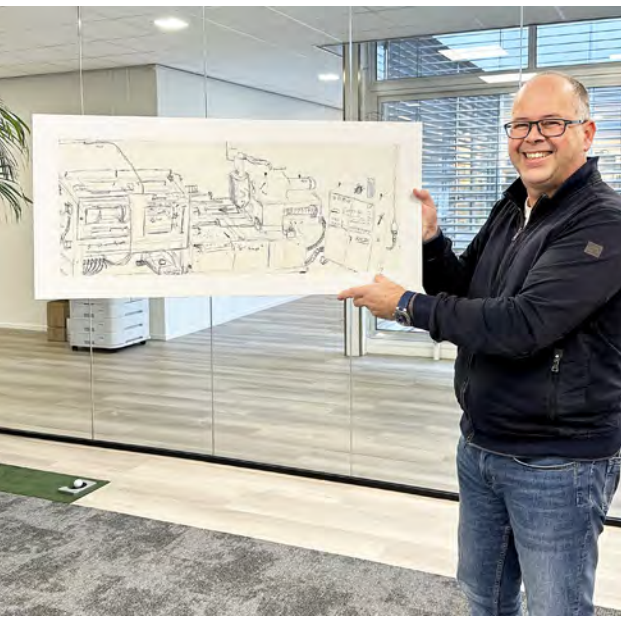
When using a machine with a standard 3-zone screw to process materials with a high proportion of regrind, AKROH had to lengthen the plasticizing time in order to achieve sufficiently high melt homogeneity. "This means that for a number of products we would no longer have been cost-efficient", Horst explains.

The intelligent assistance systems from the HiQ product series from WITTMANN provide additional support in processing recycled material. The HiQ Flow software measures the viscosity of the plastic melt during the injection phase of each cycle. In the case of deviation from the pre-defined set value, the machine automatically compensates the injection volume within the same shot. The result is 100 per cent good parts.

Especially in recycled plastic materials, the MFI sometimes fluctuates strongly from one batch to the next. "With our WITTMANN machines, we can still process high percentages of recycled material streak-free", says Horst.

"Since our introduction of MeltPro screws and HiQ Flow, we are not getting any more production-related scrap." Some plant containers are already being produced entirely from recycled materials. For making the feeding shovels, 10 per cent regrind are currently blended in. This regrind is entirely derived in-house from sprue and start-up scrap.

"Keeping production scrap in the cycle is now an essential strategy for us to remain competitive with our prices", Arend-Jan Horst emphasizes. "For the agricultural products, we have strong competitors in China, India and Pakistan. Here, the unit costs are invariably an important issue." >>



Picture left:
Arend-Jan Horst was eleven years old when his grandfather purchased his first BATTENFELD machine. Horst then made a drawing of this machine, which is now hanging in his office.
Picture right:
The arrival of the MacroPower 2000 injection molding machine is celebrated with cream cake. Michel van der Motten from WITTMANN BATTENFELD Benelux, Robbert Horst, Jorn Horst und Arend-Jan Horst (left to right), jointly representing two generations of owners.

Digitalization for maximum uptime

"Our customers buy from us, because we deliver excellent quality, respond flexibly to customers' wishes and are nevertheless not more expensive than the Asians", the manager explains. "The price we are paying for this is a continuous flow of process optimization." Consistently high reliability and stability of the machines are not enough. The availability and flexibility of the production systems are also closely examined by the AKROH management for every investment decision.

"When we receive an order today, we can deliver it tomorrow", this is how Arend-Jan Horst describes the extreme case, which actually happens quite often. Molds are changed twice or three times per day, and this must be done quickly to keep the machines' uptime on a top level. The long-stroke system for releasing the tie-bars supports easy installation of large molds from one side, and what is more, the progressing digitalization of the production processes is already showing a positive effect here as well. "The machine recognizes the mold by reading out the mold data set and then automatically sets the correct parameters", explains Horst. "Digitalization already offers many opportunities today for working even more efficiently. We intend to exploit these opportunities even more effectively in future".

In family-owned companies, long-term planning is normal

A basic prerequisite for continuous optimization of processes is transparency. The AKROH team is just starting a relevant project to examine energy efficiency. "We have set ourselves the task of measuring more. We look at all sources of energy consumption, not only those of the machines. Maybe it is possible after all to turn the temperature of the cooling water up by two degrees in one process or another. The energy prices have risen so sharply in the course of last year that even changes seemingly small at the first glance have a large effect. The important point for me is that we can continue production here in our homeland in spite of the high labor and energy costs – to this end we exploit all opportunities open to us."

As CEO of a family-owned company, Arend-Jan Horst thinks ahead on a long-term basis. "I was eleven years old when my grandpa bought his first injection molding machine", he remembers. "It was a BATTENFELD machine, and I learned injection molding on it." Strong ties between AKROH and the WITTMANN Group, of which BATTENFELD today is a part, have been in existence ever since. "The excellent contacts are important to me", Horst emphasizes. "WITTMANN is a family-owned company like us, and family-owned companies work in a different way. People there talk openly with each other, which also makes it possible to plan the future together."

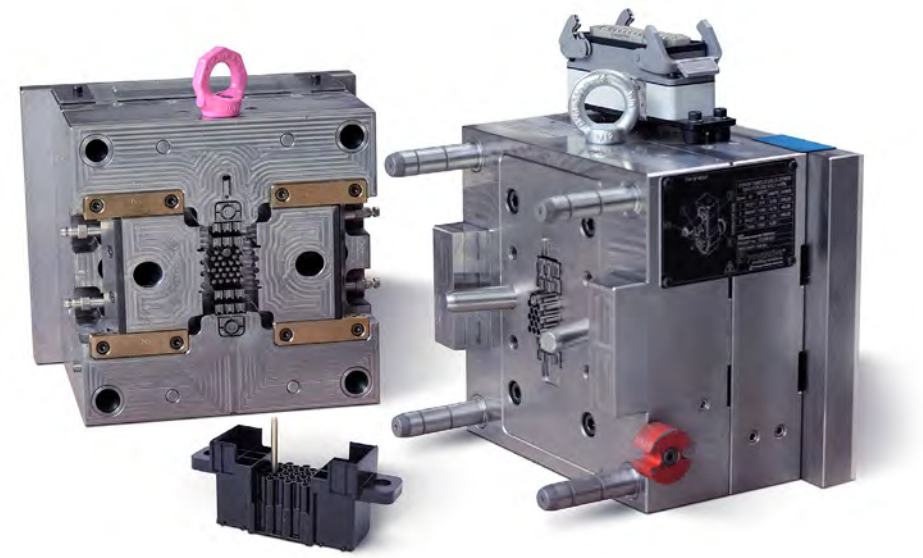
The feeding shovels with injection-molded parts made of high-impact PP are ready for rough handling in stables and on fields. The AKROH CEO Arend-Jan Horst (left) presents the shovels jointly with Michel van der Motten, Managing Director of WITTMANN BATTENFELD Benelux, in the show-room of the new, modern production plant in Zwolle, The Netherlands.

Susanne Zinckgraf is Head of Strategic Marketing of the WITTMANN Group.

Sustainable technology for high-quality plastic parts

The Austrian company Joh. Fuchs & Sohn GmbH based in Ybbsitz/ Lower Austria is a well-known injection molder of high-grade plastic parts for a great variety of applications. Ultra-modern injection molding machine technology enables this company to offer its customers injection-molded solutions which are both sustainable and cost-efficient.

Gabriele Hopf



Picture above: Mold to produce an AMP plug for communication units in critical infrastructure, manufactured in-house by reverse engineering at Joh. Fuchs & Sohn's own mold-making shop. Below left: Housing for aqua sensors to measure the water quality in BSH dishwashers. Below right: Housing for an electrical tool. (Photos: FUSO)

Joh. Fuchs & Sohn – FUSO – was established in 1947 in Waidhofen on the river Ybbs in Lower Austria. In 1964, it started off into plastic injection molding by producing the orange-colored lids for Ovomaltine cans.

Today, the family-owned company managed by its CEO Maximilian Högn and its CSO Klaus Großtesner makes highly sophisticated plastic parts from a great variety of materials, including high-temperature plastics, for many different sectors of industry in Ybbsitz in Lower Austria with about 80 workers on a production floor of just under 3,000 m².

The company makes a point of supplying technical plastic parts and assemblies to a solid, mixed industrial customer base. The various sectors served by FUSO include the automotive and railway industries, as well as consumer goods, electronics, medical technology, building construction, telecommunication, mechanical engineering and renewable energy generation.

State-of-the-art machinery for first-class products

To make all these parts, a number of injection molding machines ranging from 450 to 5,200 kN in clamping force are in operation, 17 of which have come from WITTMANN BATTENFELD. Moreover, FUSO is also a long-standing customer of the WITTMANN Group for automation equipment, using more than 40 handling devices with load capacities from 5 to 30 kg, including 7 series robots as well as latest 9 series models with R9 control systems.

The items produced range from micro parts weighing just 0.03 g right up to large parts weighing 2 kg. In addition to manufacturing complex plastic parts by 1- or 2-component injection molding, the company offers insert molding for functional parts, mounting of complete assemblies, as well as glueing and welding, plus decoration by 4-color pad printing and laser printing, and 3D scanning for reverse engineering. 3D prints for rapid prototyping are also possible. Injection molding tools and automation systems are planned, designed and manufactured in-house at the company's own mold-making shop. For ecological purposes, the company has made a special point of installing tool-friendly cooling water systems. Further evidence of FUSO's commitment to protecting the environment are waste heat utilization and a photovoltaic system.

Requirements from the customer base concerning quality standards and attributes of the parts in terms of tolerances, outward appearance and materials used are constantly becoming more and more stringent. FUSO scores with purchasers by its extensive technical know-how and many years of experience in making high-quality parts and assemblies.

This wealth of expertise enables the company to offer top-quality solutions which are both sustainable and cost-efficient. FUSO also stands out on the market by its high supply availability and reliability towards its customers. >>

View of the FUSO Production in Ybbsitz, Lower Austria: SmartPower machines from WITTMANN BATTENFELD designed as Insider cells with WITTMANN linear robots.

From the left: Martin Stammhammer, International Sales Manager Robots and Automation, WITTMANN Technology; Maximilian Högn, CEO of FUSO; Klaus Großtesner, CSO of FUSO; Andreas Högn, FUSO Majority Shareholder and Advisor; Roland Pechtl, WITTMANN BATTENFELD Area Sales Manager.

With the rising demands from customers on the parts and assemblies produced, FUSO's own demands on the injection molding equipment used are also increasing. The company's machinery is state-of-the-art, with a high level of automation on its production floor. All systems are fitted with matching robots to ensure careful parts handling. In addition to a good price-performance ratio, FUSO requires from injection molding machines above all stability, as well as easy access for servicing and cleaning, a smooth, easy-to-clean surface, user-friendliness in operation and a high standard of repeatability.

Other factors gaining increasingly in significance are the machines' energy efficiency, their networkability with robots and auxiliaries and availability of assistance systems. Last, but not least, the quality of the after-sales service including the possibility of using an online service also play an important part in the purchasing decision according to Klaus Großtesner.

In the acquisition of robots, easy programmability is a top priority in addition to all other criteria which are also applicable to the machines.

Four decades of partnership

The cooperation between FUSO and WITTMANN BATTENFELD has already been in existence for four decades. The machines most recently supplied by WITTMANN BATTENFELD are exclusively models from the SmartPower series. The machines from the SmartPower series are hydraulic machines equipped with fast-responding servo motors and powerful constant displacement pumps. This technology, combined with the KERS (Kinetic Energy Recovery System) to recover the deceleration energy within the machine, which is included as standard, provides the SmartPower's high level of energy efficiency. Further characteristics of the SmartPower are its small footprint and its pivotable injection unit, which ensures easy access to the barrel for quick and comfortable barrel change.

All SmartPower machines except one are designed as Insider cells, which means that they come with a WITTMANN robot and a conveyor belt integrated in the production cell. This variant offers a number of advantages, ranging from an enormous amount of space saved compared to systems with conventional automation solutions, all the way to cost advantages since the CE conformity of the entire system is ensured through appropriate certification upon delivery. Moreover, the robot cycle time can be minimized due to shorter travel distances and direct parts depositing on the conveyor belt.

The machines delivered in 2023 also come already equipped with the new B8X control system and the HiQ Flow assistance system. The B8X control system includes several control components allowing a higher internal clock frequency with shorter response times to sensor signals and consequently a higher standard of parts reproducibility, with user-friendliness and familiar visualization remaining unchanged. The HiQ Flow assistance system is an injection regulation function by which viscosity fluctuations in the material used can be compensated.

This function enables automatic process management and compensates even minimal fluctuations in the material quality. FUSO is so completely satisfied with this system that all of the company's other machines have been retrofitted with it, too, wherever technically feasible and economically advisable.

"The Insider cells based on the servo-hydraulic SmartPower and WITTMANN linear robots meet our requirements in every respect", Maximilian Högn, FUSO CEO, confirms. "The equipment is space-saving, highly energy-efficient, easily accessible and easy to operate."

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

RING: Best German quality with internationally competitive unit costs

Manufacturing at lower cost than in Eastern Europe and on a competitive level with Asia – this was the target when RING Kamm und Haarschmuck GmbH, based in Bavaria, decided to relocate parts of its injection molding production back to its own facility. WITTMANN accepted the challenge and supplied a highly integrated production cell grouped around a SmartPower injection molding machine with inline recycling, able to manufacture autonomously for up to 18 hours. RING thus saves material, energy and manpower and achieves internationally competitive unit costs.

Susanne Zinckgraf

The RING brand has a long tradition. "My great-grandfather established the company in 1931", Stephanie Renner told us during our visit in Regensburg, South Germany. Together with her mother Elfriede Renner-Weigert and her brother Walter Renner, she manages RING Kamm und Haarschmuck GmbH today, a company known primarily for its top-quality combs. "In the 1970s, there were 200 merchants selling combs in Germany", she reports from what she has been told. Today, the business is concentrated on major drugstore chains. The numbers of units per customer have increased, but so has the price pressure, too.

The grandparents already adjusted to the changing times and started to diversify the product range. Today, the portfolio includes more than 3,000 products in 3 different business segments, which are being sold in more than 30 countries worldwide.

For a long time, RING manufactured all its products at its own facility. Then part of its production had to be relocated abroad, due to rising labor and production costs.

The Corona pandemic brought about another change. "We had problems with having our products delivered on time from our supplier", Renner reports. "What is more, the supplier also wanted to increase the price by up to 30 per cent because of the higher energy costs. In that case, we would have ceased to be competitive."

So, the family council decided to relocate part of the production back to the company's own premises. At first this concerned the most important tooling for making bathroom accessories, such as tooth mugs, toothbrush boxes, soap dishes and combs, which are now being manufactured in Regensburg in large quantities for a German drugstore chain.

On the day of our visit, tooth brush boxes are running off the production line on a SmartPower injection molding machine from the WITTMANN Group. Made of polystyrene, in mother-of-pearl white, one of the current trend colors in the drugstore range.

For half a year now, the SmartPower has been producing around the clock, with breaks only for set-up and servicing. The production cell is designed so that it can operate autonomously for up to 18 hours.

Counselling and service made all the difference

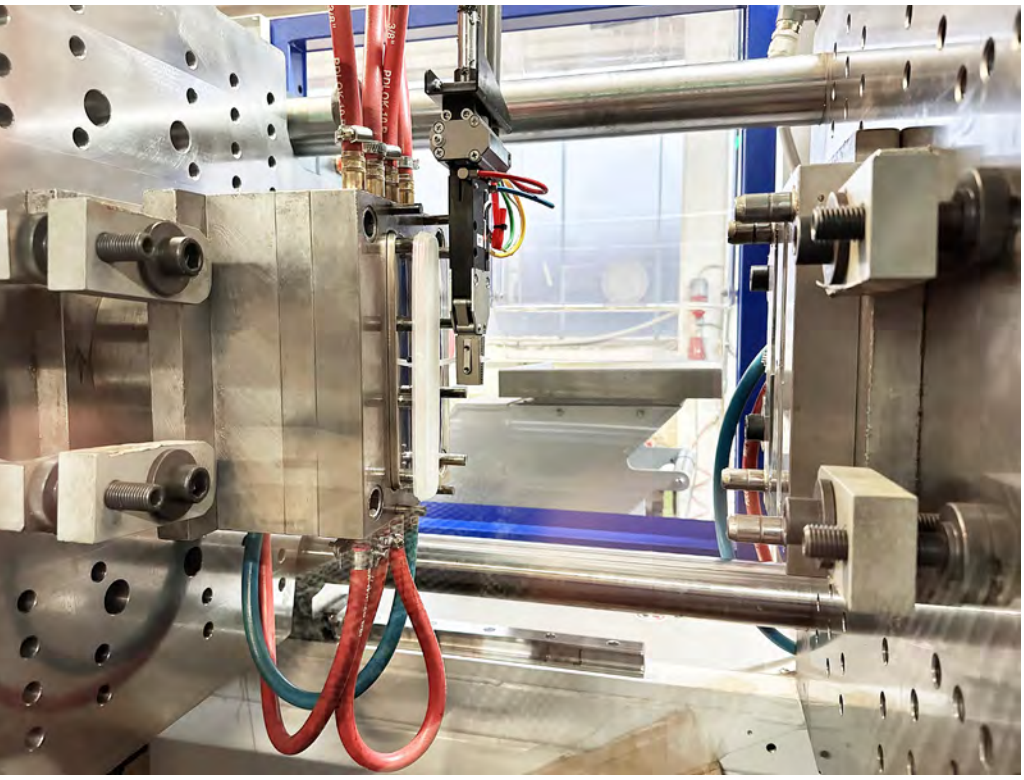
The path was not entirely smooth bet-ween deciding to resume in-house production and actually starting up the new production cell. "My grandfather and my father have long since passed away, and with them, we have lost much of our injection molding expertise", Elfriede Renner-Weigert remembers. "We had to start all over again to recover the know-how." Here, the family-owned company received extensive support from WITTMANN. "My father knew Werner Battenfeld personally", says Renner-Weigert. "Formerly, all our injection molding machines came from BATTENFELD. So, I know that these are good-quality machines." Nevertheless, enquiries were not only made to the WITTMANN Group, of which BATTENFELD is a part today. On the contrary, the entire market was thoroughly scrutinized and negotiations conducted with several injection molding machine manufacturers. But in the end, WITTMANN won the contract, and so this tradition is also being continued at RING.

"With WITTMANN, we felt from the beginning that we were very well advised", Stephanie Renner emphasizes. "WITTMANN had the best answers to meet our requirements. For our decision to purchase, their counseling and excellent service tipped the balance in their favor."

Autonomous production for up to 18 hours

Extreme efficiency and autonomous production to minimize unit costs – these were the requirements in a nutshell for the new production cell. "One crucial point for us was that we did not have to hire any additional staff", says Renner, "which would have pushed up our unit costs >>

The core of the production cell is a SmartPower injection molding machine with a sprue picker. Thanks to the high energy efficiency of the servo-hydraulic machine, RING Kamm und Haarschmuck was able to benefit from the German government's public funding program.



The comparatively large mold platens of the SmartPower injection molding machine offer ample flexibility for mounting a great variety of molds including relatively large specimens.

too far. Quite apart from the fact that our region already suffers severely from skilled labor shortage anyway."

"We looked very carefully into what really makes sense in this case", reports Gottfried Hausladen, Regional Sales Manager of WITTMANN BATTENFELD in Germany. "As little as possible, as much as necessary – this principle was the key factor to reach the optimal solution for our customer. "

In the end, a turnkey production cell was delivered, grouped around a servo-hydraulic SmartPower 120/350 injection molding machine equipped with a WP80 sprue picker, as well as a temperature controller, blenders and material handling devices, a material dryer and a G-Max grinder for in-house recycling of sprue and production scrap. In addition, the WITTMANN engineers had integrated into the line concept a conveyor belt and a parts carousel. The carousel consists of two levels, each with four large product collecting boxes, where there is enough room for injection-molded parts from up to 18 hours of production. "Product changeovers take place as rarely as possible, since every mold change costs time", Renner explains. Nevertheless, the machine's flexibility was another requirement with long-term production planning in view. "We are well known for our fast response to customers' wishes", says Renner. "For quick deliveries of sample parts, we have invested in a 3D printer as well." The particularly large mold platens of the injection molding machines from the SmartPower series contribute substantially to the new production cell's flexibility. We are able to set up relatively large molds efficiently on our 120-ton injection molding machine", says Renner. "This gives us a good basis for further expanding our own production at our facility in Regensburg."

Everything from a single source

"One big advantage for us is that WITTMANN delivers complete production cells from a single source", emphasizes Elfriede Renner-Weigert. "We have only one central contact partner for the entire system. That gives us a feeling of security."

So WITTMANN BATTENFELD Germany also took care of the public funding application, for example. Due to the high energy efficiency of the SmartPower series, RING was able to make extensive use of the German government's funding opportunities.

RING also received ample support from the WITTMANN BATTENFELD application technology department in setting up the tools, and the application engineers continue to support the customer for further process optimization. For this purpose, primarily the online support tools are being used. Via a secure Internet connection, the WITTMANN BATTENFELD process specialists can link up with the SmartPower machine's control system's interface, view the parameters and make suggestions for even more efficient settings. "We have already acquired a lot of process know-how", says Stephanie Renner. Her brother Walter is still taking part in WITTMANN seminars and workshops.

Saving material and energy

The family is particularly proud of not only reaching but even exceeding the efficiency goals originally set. Various different factors are contributing to these results, for example shorter cycle times, reduced storage costs through just-in-time production, lower transport costs and higher material and energy efficiency. "We need less masterbatch for dyeing the granulate", Renner explains.

Picture left: The two-level product carousel makes autonomous production for up to 18 hours possible. Picture right: Sprue is granulated directly. For making the drugstore items, up to 10% regrind can be blended in with the virgin material.

Picture left: Jointly exploiting all possible energy saving potentials – Gottfried Hausladen from WITTMANN BATTENFELD Germany, Walter and Stephanie Renner, and Stefan Hofner, Sales Manager of RING Kamm und Haarschmuck (from right to left). Picture right: "That WITTMANN supplies complete cells from a single source is a big advantage for us", says Elfriede Renner-Weigert, who manages the company together with her daughter Stephanie and her son Walter Renner.

One reason for this is the high-precision dosing technology integrated into the system design by the WITTMANN sales engineers. What is more, in the production of these drugstore items, granulate from direct sprue ecycling can be reused in production with a ten percent share.

The SmartPower machine reaches its extremely high energy efficiency level thanks to ultra-modern servo hydraulics and the patented KERS system. This kinetic energy recovery system (KERS) transforms the kinetic energy of deceleration processes into electrical energy, which can subsequently be used, for example, for barrel heating. WITTMANN offers this form of energy recovery also for servo-hydraulic injection molding machines as part of the standard equipment – a unique selling point to this day.

With a photovoltaic power generation system of its own, RING Kamm und Haarschmuck has also achieved partial independence from the electricity market.

Social commitment – a part of sustainability strategy

In-house production also very strongly supports the sustainability goals the family has set itself for their company and its products. "We purchase our raw materials from Europe. Together with our production in Germany, this makes for short transport distances and an extremely small CO_2 footprint for our products", says Renner-Weigert. "Consumers are increasingly coming to appreciate this type of added value. We can guarantee that the materials processed by us are free of PBA and melamine, and in some cases even approved for contact with foodstuffs."

RING keeps a close watch on the development of new materials from non-fossil sources. Post-consumer recyclates are already being used today to produce combs, which do not require an approval for food safety. Another product line strongly in demand are bathroom accessories from the Natural series, which are made from bio-based raw materials such as liquid wood. Social commitment is a part of the company's sustainability strategy. The tooth mugs, tooth brush boxes and soap dishes manufactured on the new production cell are transported to neighboring sheltered workshops in large cartons. In these establishments, the products are labeled and packaged ready to sell.

With its decision to return production to its own premises, RING Kamm und Haarschmuck has strengthened its competitive position on a long-term basis. "Our largest competitors are located in Asia. "With our new production strategy, we are able to offer competitive unit costs even compared with China", Stephanie Renner emphasizes. "That has only become possible because we have taken this course of action."

Susanne Zinckgraf is Head of Strategic Marketing of the WITTMANN Group.

Six new injection molding machine workcells for Comar

Each of the four new machines at Comar in West Bend is equipped with two W833 pro high-speed robots.

Comar purchased four new work cells for the highly automated production of lids for its plant in West Bend, Wisconsin. Two more new WITTMANN systems for stack mold applications for the production of medical parts were installed at other production sites of the American company.

Crystal Brocious

During the height of the COVID-19 pandemic, Comar – a contract manufacturer of medical and packaging solutions – saw an opportunity to expand its operations by purchasing a plant across town from a building it had outgrown. To outfit the plant, Comar once again relied heavily on WITTMANN all-electric injection molding machines and easy-to-program robots to add to its capabilities. Comar's primary focus at its original 26,000-square-foot plant in West Bend, Wisconsin, was molding three sizes of container lids for multiple disinfectant wet wipe customers. The production of 80 mm, 105 mm, and 120 mm wet-wipe lids rose over 50% and "could have doubled that during the pandemic because demand was so high", according to Plant Manager Jim Spalding. Comar also began producing the canisters by adding an extrusion blow molding cell, which is complemented by additional blow molding cells in Comar's Sheboygan, Wisconsin facility.

In addition to manufacturing wet wipe canisters and lids, Comar's ISO 9001 and SQF certified (= Safe Quality Food) West Bend facility can produce products for other industries, including nutraceutical packaging. Automation is vital to Comar's operations and customer value proposition – their West Bend facility alone houses 20 WITTMANN robots and seven complete workcells.

In the summer of 2020, Comar was nearing maximum capacity at its West Bend facility. Spotting an established molding plant across town, Spalding alerted his bosses about that building becoming available – and Comar's corporate leadership leased it. Built in 2005, that plant had been occupied by another molding group, so it was already designed to house molding machines and plant infrastructure.

The new West Bend plant

On Labor Day 2021, Comar "ripped the bandage off" and officially shut the smaller West Bend plant. By October, the new plant was online, with some brand new equipment thanks to having a much roomier 160,000 square feet to work with. Comar's new West Bend facility features 22 injection

Jim Spalding with EcoPower Xpress 500 injection molding machine.

molding machines ranging from 180–550 US tons, seven of which are WITTMANN all-electric EcoPower Xpress molding machines with B8 controls – including four new turn-key units that joined three others ordered and delivered during the pandemic. While keeping a fraction of the existing machinery and equipment, Comar added many improvements to the new facility, including central resin systems, chillers, cranes, reinforced concrete flooring, and other infrastructure. The new machines that Comar added in 2020 were the first WITTMANN EcoPower Xpress machines purchased in the USA. These all-electric high-speed molding machines manufacture thin-wall lids produced in stack molds. The lids are for round blow-molded containers. Each machine was equipped with dual high-speed WITTMANN W833 pro series robots.

Comar employs high cavitation precision molds on the new WITTMANN machines that perform ultra-fast cycle times. "These are sophisticated, high-precision tools, making lids as well as other challenging molded products", Spalding explained. Comar optimizes its molding processes by installing RJG eDart® systems on machines, which enables precise monitoring and control of key plastic variables.

Comar partnered with WITTMANN representative Norstech Plastics Equipment in Burlington, Wisconsin, to outfit and service the new facility. "I can't say enough about WITTMANN and Norstech, including Brian Heugh and Dan Luke, for their support in getting the new machinery up and running during the pandemic", Spalding said. He also said Chicago-based DevLinks, a WITTMANN integrator that developed the IML workcells, was instrumental in providing much-needed support.

As part of its diversification, Comar's West Bend facility will produce closures for vitamin bottles and jars and lids for the nutraceutical industry. Molds for those items will come from Comar's La Mirada plant in California. In-mold labeling (IML) is also a growing part of Comar's business, and the facility features two cells for producing labels embedded in wipes canisters.

Two new WITTMANN workcells purchased for stack mold medical application

"All Comar plants have the autonomy to buy the machines and equipment they need", said Spalding, who joined the company in April 2009 when it was West Bend Plastics, which Comar purchased in the year 2018.

"We had discussed trying to standardize company-wide but found that was suboptimal in some cases." Instead, Comar created guidelines that all new machinery and equipment must meet and focused on standardizing machine platforms within plants where technically feasible. >>

Thin-wall lids for round containers are produced on WITTMANN Group injection molding machines at Comar's West Bend, Wisconsin plant.

When researching what machinery to buy for the latest Comar medical molding application, management asked Spalding for his opinion. "We had some Comar representatives attend the recent K show in Germany, where they saw a stack molding demonstration at the WITTMANN booth", he said. "They reached out to me as someone with a lot of experience with WITTMANN. I was able to provide feedback on the great experience we had with all of our WITTMANN machine and robot additions."

Comar ultimately purchased and now operates two WITTMANN workcells, one in California, and one in New Jersey, running what Spalding calls a "highly visible medical project". While details of the application are proprietary, Comar says it is a stack mold application integrated with other equipment in a fully automated line in an ISO 8 cleanroom environment to manufacture devices for a plasma apheresis process.

Ease of programming

Before joining West Bend, Jim Spalding worked with Philips Medisize and MGS Manufacturing – he first encountered WITTMANN robots in that period. "Learning and training folks to use robots is easy with WITTMANN", Spalding asserted. "Our new technicians love them. It's hard enough teaching technicians how to use multiple injection molding machines – it's almost impossible with multiple brands of robots. And, the ease of working with WITTMANN robots helps to recruit and keep workers." Comar uses mainly WITTMANN's R8 robots and some older R7 models from 2005 that still work well. "We plan to upgrade these older models at some point", Spalding noted. "And WITTMANN programs are really easy to use, so that won't be a major issue."

Not only are WITTMANN robots exceeding expectations, he added, but "WITTMANN's one-stop shopping is incredibly important – and one phone call is all you need for service and support." This played a large part in Comar selecting WITTMANN integrated workcells, which include the company's molding machines, robots, and auxiliaries.

Crystal Brocious is the Marketing Communications Manager of WITTMANN USA, Inc. in Torrington, Connecticut.

WITTMANN robots deliver savings for Wavin UK

WITTMANN BATTENFELD UK has supplied Wavin UK's injection molding facility at Doncaster with a bulk order of eight Primus 14 linear robots.

Adrian Lunney

Wavin UK operates four UK manufacturing sites and is part of the Orbia Building and Infrastructure group – a world leader in plastic pipe systems for residential, non-residential and civil engineering projects.

The WITTMANN robots replaced an ageing fleet of robots from another supplier which had seen better days and which were beginning to disrupt production through breakdown and lack of parts and service.

Competitive tendering for the new order saw WITTMANN BATTENFELD UK win through, largely through customer service and support and an impressive price-performance ratio.

Luke Evans, Wavin UK Project Engineer and CI Leader says that "the robots needed to fit seamlessly onto our existing molding machines and take up a very similar footprint to that which was already fitted. The overall package price needed to be competitive, and ease of use was always high on our list, due to the nature of the production area and the amount of human interactivity."

WITTMANN was selected due to the quality of the robot while still offering a very competitive price. Luke notes that "after visiting another customer site to witness the robots in action and to see how easy the robots were to work with at high speed, it made our decision a lot easier. From quotation to point of order was then an easy task. WITTMANN provided fully detailed layout drawings and talked us through all the elements of the job. That combined with the support on installation and training resulted in WITTMANN being selected as the successful supplier."

The installation and commissioning of the WITTMANN robots was a smooth process despite only being able to have two injection molding machines down at any one time. "WITTMANN were very flexible and patient with us in this regard – able, for example, to get two robots installed and commissioned in 1–1,5 days and then have the machines back up and in production before moving to the next set of machines." Further benefits included:

Luke Evans (left) and Orrin Smith at the Interplas 2023 in Birmingham.

Views of the Wavin production in Doncaster, UK, with Primus 14 robots from WITTMANN.

- A seamless integration of the new robots into the existing conveyor guarding system.
- A flexible training schedule that worked around Wavin UK's shift patterns.
- Full engineering support for all technical questions.
- Significant energy savings over the previous automation system.

Wavin UK has certainly noticed the before and after benefits: "With the new robots installed," says Luke, "we have been able to reduce the cycle times on the machines by up to three seconds. This is primarily due to the increased robot speed and has had a massive impact on production. In addition, the ease of setup has significantly reduced out changeover times again having a big impact in molding."

Orrin Smith, Area Sales Manager for WITTMANN BATTENFELD UK says: "It was a real pleasure to work with Luke Evans of Wavin on this project. It makes all the hard work securing this business worthwhile, when you see that the customer is happy, has improved output, streamlined their process and reduced the stress in the day-to-day. I look forward to continuing to work closely with Wavin on future projects and growing our relationship."

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

WITTMANN establishes a new subsidiary in Vietnam

With the foundation of its own sales and service subsidiary in Vietnam, the WITTMANN Group, headquartered in Austria, strengthens its market presence in Southeast Asia.

With its new subsidiary in Ho Chi Minh City, WITTMANN is located right in the middle of Vietnam's vibrant plastics processing region.

Giang An Le has taken over the management of WITTMANN Vietnam Co., Ltd.

„Vietnam is growing rapidly more and more significant as a production location for the injection molding industry", emphasizes Michael Wittmann, owner and CEO of the WITTMANN Group. "We are now responding to this trend by establishing WITTMANN Vietnam Co., Ltd in Ho Chi Minh City. This will enable us to serve our local customers there even more effectively and to provide flexible support for the development of new production facilities. With this action, we are further strengthening our customer base in Southeast Asia."

The plastics industry in Vietnam has already shown continuous dynamic growth in recent years. WITTMANN is now further developing its already significant customer base in that area.

Since 2015, the company has been present in Vietnam with a local agency, and its cooperation with TAO BANGKOK (VIETNAM) Co. LTD will be continued. In this way, WITTMANN will provide optimal continuity and security for its customers in the region.

Giang An Le is the General Manager of the new subsidiary. He will now further expand the company's sales and service network in Vietnam. The graduate electrical engineer contributes 20 years of experience in international production and mechanical engineering companies, mainly in the plastics industry. As a German citizen with Vietnamese roots, Giang An Le is at home in both the European and Asian cultures.

Innovative technologies and application technology counselling in demand

Ho Chi Minh City is situated in southern Vietnam and thus in an important center of the plastics industry. The corporate headquarters of the new subsidiary are located in the Tan Binh District, in the immediate vicinity of the international airport. This makes WITTMANN in Vietnam also very easy to reach for international customers. Numerous global players are building up new production sites in Vietnam, including many companies already using injection molding machines, robots and auxiliary equipment from the WITTMANN Group in other countries.

"With our great complete solution expertise and the ability to supply entire production cells from a single source, we are in a position to provide excellent support to these companies as well as to local plastics processors", says Michael Wittmann. "The requirements for higher efficiency and quality standards are continually rising in Southeast Asia. Accordingly, innovative processing technologies in the field of injection molding, innovative automation solutions and application technology counselling are in high demand."

Presence strengthened across Southeast Asia

With a total of nine subsidiaries and additional agencies, WITTMANN shows a very strong presence throughout all of Asia and ensures short distances to its customers in all industrial centers. In China, WITTMANN operates its own production plant for robots and auxiliary equipment thus shortening delivery times for its Asian customers and simplifying logistics.

Simultaneously with the foundation of WITTMANN Vietnam, the Group has also strengthened its presence in the Philippines. There, AustroPlast based in Noveleta near Manila has been engaged as the new sales partner for the entire WITTMANN product portfolio. AustroPlast has more than 20 years of experience in the Philippine plastics processing industry.

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BP00000034 – 2/2024 – Printed in Austria.