

innovations

Volume 15 - 4/2021



Wittmann



The cover picture shows measuring tubes that are used with the WITTMANN water flow regulator series.

WITTMANN innovations (Volume 15 - 4/2021)

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Wittmann

Wittmann Battenfeld

Editorial

Dear Reader,

The themes of sustainability, circular economy and digitization not only occupied the minds of visitors who attended the Fakuma just ended, but also continue to govern the daily work of our R&D departments. The reports in this issue of *innovations* illustrate this very clearly. Energy efficiency is a central aspect of all our products. An attribute which not only produces financial benefits, but at a time of CO₂ footprint measurement and evaluation in production it is also increasingly becoming a political and social issue, and consequently one also raised by our users' customers. The report on page 8 presents relevant feedback about the *SmartPower* from our customers, White Horse Plastics and Rugby Plastics in the UK. The savings potentials achieved by these



companies in energy consumption have exceeded all expectations. We are receiving similar responses from virtually all new installations, as soon as energy consumption measurements and

comparisons are carried out. The high degree of efficiency is due to KERS, the special energy recovery technology developed by us, which is installed in all machines from the *PowerSeries*.

Recycling will also become more and more significant. Especially wherever a minimum content of regrind is prescribed by law for various products. Here, inline recycling constitutes the first logical step, since the reclaimed materials are single-variety and can be further processed without any problems. There is virtually no risk of impairment to the mechanical attributes of the

finished parts either. The report about the application at our customer SAS DODARD in France on page 4 describes a typical example of effective inline recycling.

Concerning Fakuma: this year's event constituted a new beginning for the personal presence on trade fairs in our industry. The greatest success of Fakuma 2021 was the fact that this so important meeting point of market participants and visitors could be held once again almost in its original form. At any rate, this year's trade fair has exceeded our own expectations. After a break of almost two years, we had the great opportunity to meet many of you personally once more, to give you a live presentation of our company's numerous innovations and new developments for the trend themes of our industry. Many thanks for your visit!

And now I wish you great pleasure in reading this issue of *innovations*.

Yours, Michael Wittmann

Content



Page 4: Recycling with G-Max granulators at DODARD

Monitoring WFC					
WFC 1					
IN: 60,2 C					
Circuit	Name	On	Monitor		Comparat
1	AS1	<input checked="" type="checkbox"/>	7,2	7,4 l/min	60,0
2	zwei	<input checked="" type="checkbox"/>	5,0	4,5 l/min	60,0
3	drei	<input checked="" type="checkbox"/>	5,0	4,5 l/min	60,0
4	vier	<input checked="" type="checkbox"/>	5,0	5,9 l/min	60,0

Page 6: Highest process reliability through flow measuring and flow control



Page 8: Energy savings with the *SmartPower* in the UK



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Seite 12: Trademark's medical division grows by 40 %



Page 14: Robots handling ALCAR alloy wheels

In-line recycling of plastics made easy with WITTMANN G-Max granulators

Injection molder SAS DODARD in France produces parts using 15 automated injection molding cells from the WITTMANN Group. WITTMANN BATTENFELD France supplied not only the molding machines, but also the automation solutions and the granulators used for the company's in-line recycling process.

Denis Metral

SAS DODARD is a French manufacturer and distributor of industrial protection caps made from plastic. The company has been in business for over 30 years and the manufacturing site is located in Viriat, 70 kilometers north from Lyon. The company employs ten people.

The DODARD production plant is ISO 9001 certified, and houses 19 injection molding machines with clamping forces ranging from 25 to 110 tons. The company reverts to an especially flexible fleet of machines to guarantee optimal delivery times to its customers. DODARD's products are widely distributed, and the company enjoys an excellent reputation.

Electric versus hydraulic

The company's strong growth has necessitated the replacement of 15 injection molding machines with clamping forces of 55 to 110 tons during the year 2020. The investment should reduce energy consumption as much as possible, cut maintenance costs, improve precision, and optimize mold cycle times. Choosing electric injection molding machines was an absolute requirement to achieve these objectives.

There are some advantages using electric injection molding machines instead of hydraulic ones that were decisive factors. Electric machines don't need additional start-up time compared to hydraulic machines that require oil preheating. More than that, fluctuating oil temperature can influence the process. Last but not least, electric machines ensure a much cleaner machine surrounding area.

At DODARD, the process cooling water derives from a well, and in case of hot weather the temperature of the water had caused many issues with the previously existing hydraulic presses. The intermediate target is to use a water cooling unit in the future. In any case, the water consumption of the WITTMANN BATTENFELD *EcoPower* presses is some three to five times lower than that of hydraulic machines. This factor will allow for an optimal sizing of the future cooling unit.

15 working cells

WITTMANN BATTENFELD supplied in all 15 *EcoPower* machines, four machines with 110 tons of clamping force, 11 with 55 tons – provided a complete service, and guaranteed the functionality of all the equipment. The entire design work for the 15 production cells was done by the Technical Department of WITTMANN BATTENFELD France in La Buisse situated in the Grenoble area.

The *EcoPower* molding machines are all equipped with WITTMANN PRIMUS 10 robots. The B8 control system of the injection molding machine allows the full integration of the robot control into the machine control.

The Technical Department of WITTMANN BATTENFELD France planned the material handling process, the removal of sprues and parts from the machines, the in-line recycling of the production scrap, and the evacuation of the finished parts.

One other significant improvement was also delivered – namely the absence of parts on the factory floor. In order to achieve this

objective, particular attention was paid to the enclosure and the discharge of the parts. In the end, DODARD wanted to minimize operator numbers on each cell, while optimizing a very fast production start-up. All the production cells are thus highly automated – leaving essential control tasks to highly-skilled staff personnel.

Successful in-line recycling

The previously existing production setting at DODARD was already able to recycle sprues in-line. As several materials had shown a rather difficult behavior in the recycling process, WITTMANN BATTENFELD was asked to carry out some granulation tests in its manufacturing plant near Grenoble. The results of these tests made it clear that when scrap was grinded using G-Max blade granulators, the quality of the regrind was much higher than before. The results that were achieved using this high-quality regrind were beyond expectations. Thus, the recycled production scrap became a source of additional profit, and the overall waste that finally accrued was considerably reduced.

Each injection molding machine was equipped with a FEEDMAX S3-net single material loader with a proportional valve ensuring the correct portions of virgin material and regrind respectively. In practice, the WITTMANN G-Max granulators met the requirements of the installation perfectly.

Advantages of G-Max granulators

G-Max granulators have a very small footprint, thus saving space around the production cell. They offer quick and easy access

Working cell with G-Max granulator at SAS DODARD in Viriat, France.

for maintenance. Tool-less screen changing and cleaning is made simple thanks to the tilting hopper. This also allows much better access to the top of the cutting chamber and the swing-down screen cradle.

G-Max granulators achieve better cutting performance and maximum efficiency. The speed of 200 rpm @ 50 Hz reduces unnecessary repeated cuts. Particles go through an optimized rotor and screen, producing cleaner regrind and the best combination for throughput.

The staggered blades on the granulator's rotor provide a powerful cut; the blades take smaller bites, and they also ensure a progressive cut, reducing the risk of rotor stalling, as well as reducing noise and energy consumption.

A maintenance-free system of belt drive is supplied. The automatic self-tensioning system eliminates the constant need for re-tensioning the belt to prevent slipping and, again, rotor-stalling. This was a significant improvement for DODARD - before using G-Max granulators, they had to execute preventive maintenance on the old granulators every six months.

As concerns the blades of G-Max granulators: blade wear control is easily workable, replacing the blades (and sharpening) is easy and hardly takes time.

Everybody knows it: blade sharpness is an essential criterion for producing quality regrind containing only little dust.

Denis Metral is International Product Manager for granulators at WITTMANN BATTENFELD France SAS in La Buisse, France.



Flow measurement and flow monitoring for ultimate process reliability

The history of WITTMANN began more than 40 years ago with the production of flow controllers. Today, every injection molding machine is equipped with a flow controller, and the appliances from WITTMANN, continuously improved with time, have long since established themselves as the industrial standard.

Zoran Bijelac

Optimized, cutting-edge flow controller solutions are an essential factor enhancing process reliability in injection molding production. By way of parallel connection to the mold, they offer users numerous advantages, such as higher flow rates and reduced wear on pumps, and they contribute substantially to saving energy.

Successive steps of development

Flow controllers are a particularly suitable example to illustrate the general technical development over recent decades.

Following the outstanding long-term success story of analog WITTMANN flow controllers over many decades, the digital WFC (Water Flow Control) model was launched in 2010.

From this point, its serial interface built in as standard made it possible to have temperatures and flow parameters visualized directly on the display of the injection molding machine's control system. Setting of tolerances, together with the use of fine adjustment valves, ensured optimal monitoring of every single circuit. As soon as any irregularities occurred in a cooling circuit, a tolerance alarm was triggered, so that the appropriate adjustment could be carried out immediately. This method provides the best possible conditions for preventing the production of scrap.

Driven by the positive feedback from users of WFC – and certainly also by WITTMANN's determination to defend its leading edge in this field – the "intelligent" flow controller model FLOWCON plus was introduced in 2015.

The step motor valves installed in the return section of FLOWCON plus dispense with the need for manual readjustment.

As soon as any value in the cooling circuit exceeds its set tolerance margin, FLOWCON plus carries out the necessary adjustment automatically by opening or closing the corresponding valve. Only if the valve is already fully open and the set value still cannot be reached, is the tolerance alarm triggered. The process can then be interrupted before any rejects are produced. Injection molders using FLOWCON plus can regulate flow rates, return temperature or valve positioning with this appliance, and perform Δt regulation as well. In addition, all values can be retrieved for comparison with reference values.

But this is not all: numerous options are also available for FLOWCON plus. These include an optional compressed air blow-out system as well as single-circuit blow-out, with complete drying out of every single cooling circuit in the course of a mold change.

The new WFC 120

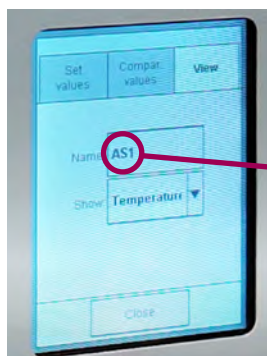
The experience WITTMANN has gathered from several decades of development work on its flow controllers has now given birth

to the youngest member of this family of appliances: the WFC 120. The design of this appliance is based on the findings gained by the practical use of its predecessor models. Positioning of the WFC 120 close to the mold now offers injection molders some additional advantages. The combination of much shorter hoses, lower pressure loss and higher flow rates ultimately leads to a noticeable reduction in costs.

Four to twelve circuits are available for the WFC 120, which can be operated via a 3.5" touch-screen. If the appliance is installed inside the machine close to the mold, it can be operated via a 5.7" remote control panel as an option.

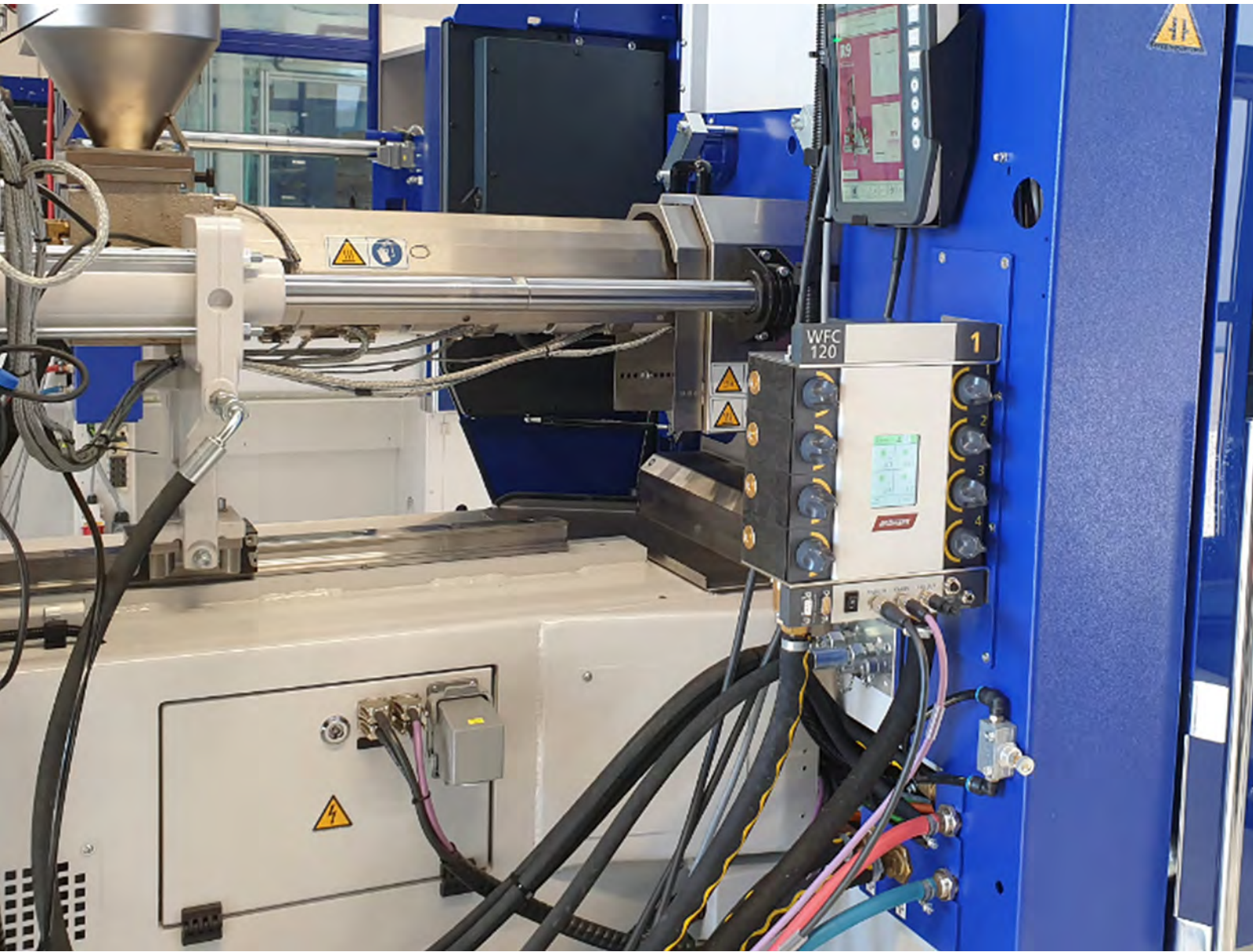
On WITTMANN BATTENFELD injection molding machines, the WFC 120 is visualized on the machine's control system via CAN communication; the serial interface is available for injection molding machines of all other brands.

Zoran Bijelac works in the Department of Technical Sales Support for Temperature and Flow Controllers at WITTMANN Technology GmbH in Vienna.



Circuit	Name	On	Monitor	Comparative value	Info
1	AS1	<input checked="" type="checkbox"/>	7.2 7.4 l/min	60.0 60.3 C	ΔT 0.1 C
2	zwei	<input checked="" type="checkbox"/>	5.0 4.5 l/min	60.0 60.0 C	ΔT 0.2 C
3	drei	<input checked="" type="checkbox"/>	5.0 4.5 l/min	60.0 60.1 C	ΔT 0.1 C
4	vier	<input checked="" type="checkbox"/>	5.0 5.9 l/min	60.0 60.1 C	ΔT 0.1 C

On the left: view of a display on the WFC 120's screen. On the right: the corresponding visualization on the control system of a WITTMANN BATTENFELD injection molding machine.



Installation of the WFC 120 close to the mold on a WITTMANN BATTENFELD injection molding machine.



The continuous further improvement of cooling water flow controllers from WITTMANN has produced more and more sophisticated solutions. From left to right: Series 110 (revised version of Series 100), WFC 100, FLOWCON plus, WFC 120.

Significant energy savings from the *SmartPower* injection molding machines

Over the last few months WITTMANN BATTENFELD has succeeded in winning new injection molders as customers in many markets with its *SmartPower* injection molding machines. – An exemplary overview of reactions from the UK.

Adrian Lunney

The appealing design of the WITTMANN BATTENFELD *SmartPower*, its near-silent operation, the highly repeatable process capabilities, wide platens and class-leading compactness are perhaps some of the main factors influencing a purchase. However, once in operation, the bonus of the *SmartPower*'s extreme energy efficiency performance also becomes an inescapable fact.

In numerous meetings with customers held by Dan Williams, Managing Director of WITTMANN BATTENFELD UK following the installation of *SmartPower* machines, energy efficiency has come up as a topic of particular significance. The magnitude of actual savings realized on the production floor by comparison to similar machine models has exceeded expectations and surprised many users.

White Horse Plastics

A typical example is White Horse Plastics (WHP) based in Oxfordshire, which recently ordered a *SmartPower* 60. WHP Managing Director Paul Bobby says that "after labor and raw material costs, energy and utilities present us with the next most significant overhead. I always expect to see some significant improvement when comparing old to new, but these outcomes were far more impressive than could ever have been hoped for. In fact, the greatly reduced running costs from the *SmartPower* machine

were so incredible that it led to us repeating the exercise in order to check our methodology. But when repeated these results were exactly the same. These machines are called *SmartPower* for a very good reason", says Bobby. And He adds: "The energy savings achieved are truly world class."

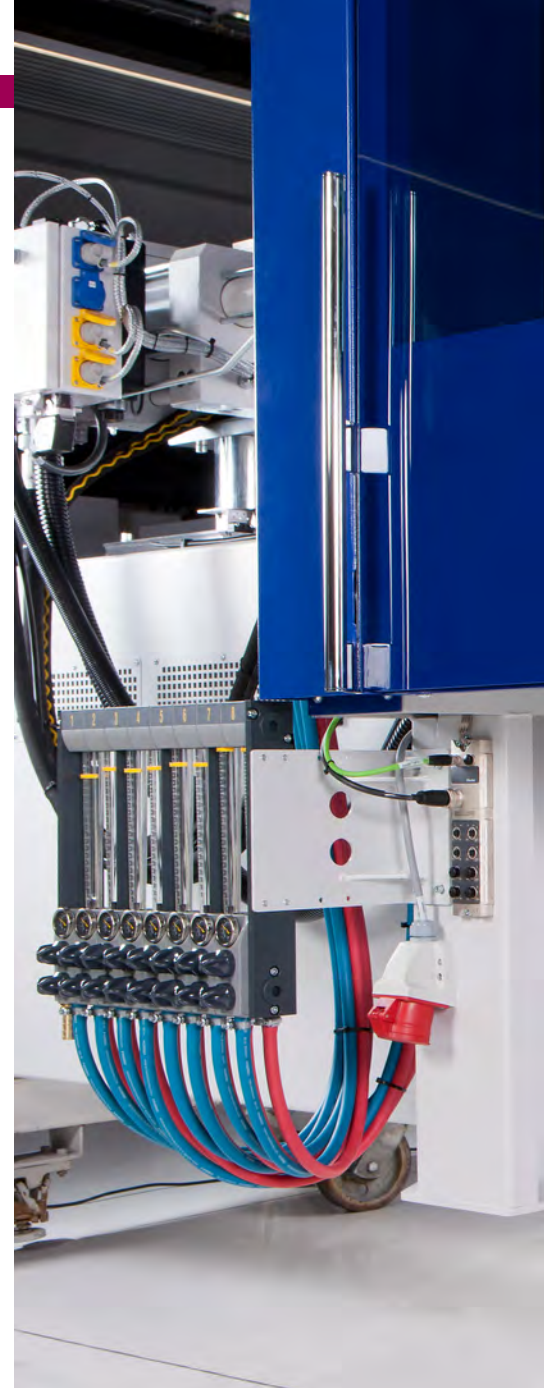
Rugby Plastics

At Thomas Dudley-owned Rugby Plastics similar experiences have emerged: Dr Steven Pepper has been leading the company drive towards factory efficiencies. In this case a *SmartPower* 50 injection molding machine was the basis for the energy measurement work. The machine was supplied with servo power and a HiQ quality control package and it also deployed the regenerative KERS braking system so effectively used by the WITTMANN Group.

The *SmartPower* was compared to a machine that had been supplied in the early 1990s. Unsurprisingly perhaps the test results were astounding, revealing that the *SmartPower* injection molding machine was six times more energy efficient and six times less costly to run than the older machine.

Predictable cost reduction

Joint WITTMANN BATTENFELD UK Managing Director Tracy Cadman says that "my accounting background and expertise tells me that the low running costs of WITTMANN BATTENFELD designed equipment has to be



a primary consideration for our customers in any purchasing decision. Customers are increasingly factoring these numbers into a lifetime of machinery performance – over ten, fifteen, twenty years."

Tracy Cadman also notes that WITTMANN BATTENFELD UK is able to confidently model and forecast the reduced energy cost they will save prospective customers with *SmartPower* based technology.

"Our leading customers in the UK and Ireland are increasingly realizing that low energy production is helping to future proof businesses, not only for cost but also in terms of transparent Industry 4.0 production and securing a low environmental footprint."

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



View of the servo drive (right half of the picture) of a WITTMANN BATTENFELD *SmartPower* injection molding machine.



Tracy Cadman and Dan Williams, the two Managing Directors of WITTMANN BATTENFELD UK Ltd, the subsidiary of the WITTMANN Group being in charge of the United Kingdom and Ireland markets. The UK branch is headquartered in Northants, UK.

Successful in the pandemic with medical technology

The Polish injection molder NOEX presents itself today as a prime example of a company with ultra-modern machinery, innovative technologies and a very promising future. – Equipment from the WITTMANN Group is contributing to this success story.

Bogdan Zabrzewski

Jan Nowak re-established NOEX in its present form in 1986, after it had already existed during the 1930s. This new start-up laid the foundation for the company as it is known today. Due to the general economic conditions in Poland during the second half of the 1980s, NOEX originally relied on manufacturing relatively simple products, such as rear mirrors for bicycles or candle holders.

Today, NOEX is a leading-edge business employing 200 people. In its production halls in Komorniki, 40 injection molding machines from WITTMANN BATTENFELD are operating with clamping forces ranging from 35 to 350 tons. A large number of these machines are equipped with robots and auxiliary appliances from WITTMANN.

NOEX gathered experience in making injection molded parts over a period of three decades. The company makes more than

200 different proprietary products and has implemented dozens of special projects for customers as well. It delivers molded parts to a wide range of industries. NOEX makes high-grade articles for laboratories, as well as advertising, building construction, electrical goods and office supplies.

Medical technology

With the outbreak of the COVID pandemic in 2020, NOEX ventured on a momentous new alignment, which was to open up new markets for the company. NOEX had already taken part several times in manufacturing medical products. But now, a new stage of corporate history began with the production of petri dishes and tubes. With the fast-growing demand for COVID diagnostics equipment, NOEX also started the production of test kits in December 2020, each consisting of a swab spatula and a test tube with sealing cap., NOEX was able to develop very rapidly into one of the largest European manufacturers of this special product. The test kits that were made by NOEX in Poland reached the markets of most West European countries.

To minimize as far as possible the discomfort felt by people during testing when samples were taken with the swab spatula, NOEX developed a special 2-component technology for spatula production. The result is a swab spatula made of PP with a tip consisting of soft TPE elastomers.

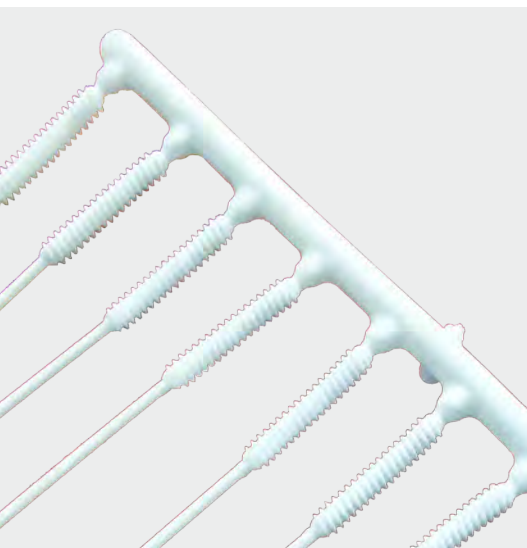
WITTMANN Group equipment

These high-grade parts are being produced on 16 *EcoPower* 55/350 injection molding machines from WITTMANN BATTENFELD. All of these molding machines are designed as Insider solutions (following the concept

of an ex-works solution for the construction of a production cell), and they come equipped with either W808 or PRIMUS 16T robots. The machines and robots operate under clean room conditions, as the maintenance of the most scrupulous cleanliness is a basic prerequisite for the production of these test kits. Due to the strong demand, production is running in three shifts.

For NOEX it was essential in this project to ensure absolute top quality, down to the most minute details. Production costs and energy consumption were to be minimized as well. Since *EcoPower* injection molding machines are extremely energy efficient, all of these expectations could be fulfilled to complete satisfaction.

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



Sprue with spatula, manufactured with a specially developed 2-component technology.



Test tubes with the respective matching sealing caps.



Views of the new NOEX production hall in Komorniki, Poland for COVID test kits, with 16 *EcoPower 55/350* Insider injection molding machines from WITTMANN BATTENFELD.



40% growth in medical: Trademark Plastics succeeds with WITTMANN automation

Southern California based medical molder meets workforce challenges, grows business with increased use of WITTMANN robotics, automation and central material handling systems.

Edgar Sanchez

In business since 1989, Trademark Plastics, Inc. (TPI) is a leading custom molder based in Riverside, California. With 140 employees, 52 molding machines, and 3.6 million lbs of material processed per year, the company is a major supplier of parts to some of the top medical companies in the world.

Since COVID-19 hit the USA in early 2020, TPI has seen a big increase in demand for its products, which include non-proprietary products for medical devices such as syringes, breathing apparatus, etc. Between workforce challenges that included difficulty finding skilled labor, and having to operate during COVID with a reduced number of workers, the company increased its use of robotics and automation and turned to WITTMANN BATTENFELD, Inc., the USA subsidiary of the WITTMANN Group, to meet the demand.

Custom programming ability is key

"85 to 90 percent of our business is medical parts", says David Carty, CEO of TPI. "We work with six of the top 100 medical companies in the world, and four of those have been customers for more than 15 years."

Back in 2011, when TPI was growing its and looking to increase its use of automation, the company embarked on a search to find easier to use robots. "We were having issues with programming our existing robots to meet our requirements", says Carty. "As a custom molder, we need the ability to custom program our robots to adapt to any application that presents itself."

After contacting WITTMANN BATTENFELD, they discovered that one of the many advantages that WITTMANN robots provide is the ability to custom program.

With their first purchase of WITTMANN robots, TPI asked WITTMANN for help with writing specific programs for their applica-

tions. WITTMANN not only wrote the programs, they also sent a technical service person from the company's Southern California Tech Center to TPI to install the program, and worked hand in hand with TPI's team for long-term integration and success.

"WITTMANN robots are easy to program, easy to use, and very low maintenance – our operators love them", says Carty. "Their training is excellent, plus the proximity of WITTMANN's Tech Center in Southern California, and the local support WITTMANN provides is huge for us."

Goal to increase automation

TPI was growing prior to COVID, but the company has seen a 40% increase in business due to the demand for its medical products. While growth is good, the company has had hiring challenges and difficulty finding workers. Because of this, TPI needed to better automate its plant.

"Robots were key to us getting through the labor shortage for the many months that COVID was most active", says Carty. "Our growth was maintained through the help of increased automation and robotics. Labor is still a major issue, but thanks to WITTMANN robots we can keep jobs running with no downtime."

David sees it this way: one robot does the work of more than three people. For every new injection molding machine that TPI buys, they also buy a robot. "If you're not lights out in the future, you might not survive", says Carty. TPI currently has 13 WITTMANN robots in use at its facility, two of which it purchased last year.

Central material handling solution

In addition to their use of WITTMANN robots, TPI invested in a WITTMANN central material handling system in 2020 to better control the distribution of materials to the

company's large fleet of molding machines. The WITTMANN system with an M7.3 controller installed at TPI in 2020 has helped the company reduce material handling costs; the one central system loads material to 36 molding machines.

"The WITTMANN Group central material handling system has been a great addition for ensuring a constant material supply to our machines, without risk of contamination", says Carty. TPI has also purchased additional WITTMANN auxiliary equipment including a gravimetric feeder, a G-Max granulator, ATON dryers, and loaders. "We love the MC Balance gravimetric feeder, it allows for proper color dispersion and quick color changes for parts", says Carty.

Continued growth

The future looks bright for TPI, and the continued efforts to fully automate its plant have helped the company stay competitive. "WITTMANN is our partner, and increasing automation at TPI is our goal", says Carty. "We have to turn around projects very quickly. We work hard to try to implement continual innovation here, and WITTMANN robots have been a big part of that."

For WITTMANN BATTENFELD, TPI's goal of increased automation is a great example for other molders looking to increase their profits and better compete in the industry. It's essential for companies to continue to look to robots and automation to improve their operations. WITTMANN's job is to help them with the transition and to make sure they get the most out of the equipment. TPI has been a great customer of WITTMANN BATTENFELD USA, and they are happy to be a part of TPI's continued success.

Edgar Sanchez is Western Regional Sales Manager working with WITTMANN BATTENFELD, Inc. in Torrington, Connecticut, USA.



View of the TPI production hall in Riverside, California, with WITTMANN robots.

TPI Vice President Brayn Barrera (left) and David Carty, CEO.



FEEDMAX loaders conveying resin that is dried outside of the clean room.



Robots handling aluminum wheels

At ALCAR (Germany) WITTMANN robots are being used in a field totally different from plastics processing: in handling alloy wheels.

Maximilian Töpfl

The alloy wheel division of ALCAR Wheels GmbH based in Hirtenberg, Lower Austria, headquarters of the ALCAR Group, comprises the operative areas of Design, Product Development, Production and Logistics, as well as Technical Support and Global Sales of alloy wheels of the Group's well-known brands AEZ, DOTZ, DEZENT and DOTZ SURVIVAL.

The main production plant for ALCAR alloy wheels is located at ALCAR Leichtmetallräder Produktion GmbH in Neuenrade, North Rhine-Westphalia, Germany. Its current annual production amounts to about 1.2 million aluminum wheels. This company engages in continuous investments, which definitely must be seen as an expression of loyalty to the location and to the "Made in Germany" quality standard of products.

Automation needs

Against the backdrop of a constantly rising degree of automation in production with the objective of further improvements in quality, process stability and the cost situation, ALCAR has decided to use automation solutions from the WITTMANN Group.

At present, six automatic production lines using W863 pro robots from WITTMANN are in operation in Neuenrade. The decisive factors in winning the order were ultimately the space-saving design of the robots as well as their top-quality workmanship and high level of performance.

The task

The task at hand was to pass unprocessed aluminum wheel rims to a machining center, then remove the finished turned and



Roland Neuss, Managing Director/COO at ALCAR Leichtmetallräder Produktion GmbH (left) and Maximilian Toepfl, Project Leader at WITTMANN BATTENFELD Germany.

machined alloy wheels and stack them on pallets, where intermediate layers of PE had to be placed as well.

Special challenges were the inaccurate positioning of the unprocessed wheel rims on the pallets delivered from the foundry, as well as the extensive range of alloy wheel models, which often widely differ from each other.

With the raw wheel rims arriving on those pallets, positioning inaccuracies of up to 80 mm may occur, which is certainly a sizeable challenge. Here, a camera-aided system is now in place, which is able to compare the target position with the actual position and transmit the difference to the robot's control system, so that the robot can compensate the inaccuracy while picking up the item. This system also ensures that every wheel rim can be oriented towards the correct position of the valve opening.

The WITTMANN W863 pro robot moves with its specially developed gripper carrying an integrated camera towards the pre-set target position of a wheel rim and re-adjusts its movement along several axes where necessary. The gripping system, which subsequently takes the wheel rims to the machining center, is designed for extreme flexibility.

After all, it must be able to handle a large number of different wheel rim models, whose diameters range from 16 to 22 inches with widths varying between 5 and 11.5 inches. A total of 250 different types of wheel rims need to be processed, for each of which a different process has been programmed, and all of these programs are stored in the WITTMANN robot's control system.

Successful cooperation

Following installation and commissioning of the first production line, Roland Neuss, Managing Director and COO of ALCAR in Neuenrade, expressed great satisfaction about the cooperation with WITTMANN BATTENFELD Deutschland GmbH, which was in charge of the project.

He specially emphasized the availability of the molding machines and adherence to schedules, also underscored the company's professionalism in project management and last, but not least, adherence to the agreed cost estimate.

Maximilian Töpfl is Project Leader for Customized Automation at WITTMANN BATTENFELD Deutschland GmbH in Nuremberg.

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