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Battenfeld



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Editorial



Michael Wittmann

Dear reader,

“Off to a new one!” – We have successfully completed 2010 and it will go into the company records as one of the most successful years of the WITTMANN Group. The year developed so rapidly, as the change in business climate was universal, and even in many sectors beyond previous normalcy. Our trend curves now continue this uptick in business development of this last year, whereas the extreme downturn of the 2009 recession almost appears like erroneous data in the course of its collection. The sharp global upswing of business in the plastics industry was very welcomed, but it surprised most supply chains entirely and caught us on the wrong foot. Although we forecasted an increase of 20% compared to 2009, the real extent of growth could not have been anticipated. What started and initially was considered as a decent training run, developed quickly into a full-fledged marathon with over 100% of increase over the previous period. Despite all efforts to increase capacities and efficiencies, the consequences were a short-term increase of delivery times. In foreseeable time, this should return to its normal capacity – and we can then return to general normality in our business lives.

A certain distrust remains after the economic melt-down of 2009, and even if the business sun shines undisturbed and bright, we are awaiting the second dip of the recession, which is widely anticipated to happen. However the further we move away from 2009, and not experience economic thunder storms, the more our confidence will grow to keep the upward momentum steady.

I want to extend a special “thank you” to all employees of the once again steady growing WITTMANN Group. The up and down of the last years has not passed by unnoticed at anybody in the plastics industry. Some participants in the market have however used the time, to strengthen themselves internally and wait for the right time for anewed expansion. Thanks to our resilient and dedicated employees, we were able to position ourselves through this ride. Through flexibility, resiliency and innovative thinking, our team succeeded to bring to market our strongest new products offering. At the K 2010, in October, we presented a true fireworks display of innovations, which caused waves in our industry and once again demonstrated our drive for innovation. For the hard work, which has enabled this, I thank all our employees worldwide. Not least, I want to thank you, our customers, for the trust and confidence you have given to us over the last years. Very dearly I wish all of you, co-workers and business partners, a happy, healthy and successful new year 2011.

Sincerely, Michael Wittmann

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Swiss precision in the clean room

Fully automatic production of medical micro-components: For the manufacturing of indicator wheels, housing parts and exiguous cog wheels Forteq Healthcare in Nidau/Switzerland is using WITTMANN linear servo-robots in the clean room. The target is: Shortest cycle times at highest availability.

Werner Bürlü – Walter Klaus

The Forteq Healthcare Company in Nidau/Switzerland is producing their parts in the clean room. Companies working in medical technology and diagnostics are to find amongst the Forteq customers, as well as the pharmaceutical industry.

The production of an inhalator for the controlled dosing of pharmaceuticals treating respiratory diseases is a very typical example from the product portfolio of the Forteq Healthcare Company. This product's single components are manufactured highly automated in the clean room. Afterwards the parts are completed to ready-for-sale units on fully automated

assembly lines. The systems are producing precision parts, amongst other things cog wheels of 0.02 grams that are used in the inhalator's counting mechanism. This mechanism allows for overseeing the fill level of the inhalator. The counting mechanism being absolutely correct at indicating the fill-level is of prime importance, when the patient's health is depending on the exactly regulated and continuous inhalation of the active ingredient. The inhalator is made of ten parts, of which nine are molded by using hot runner systems. Five of these are produced in six production cells. The automation machinery is coming from WITTMANN Kunststofftechnik in Kaltbrunn/Switzerland.

Because of the small weight of the single parts, it is not possible to switch off the non-conform cavities of the multi-cavity molds – therefore the removal of the whole shot is imperative. The robot is processing the good/bad-signal and afterwards orderly placing the parts (16 to 32 pieces per shot, depending on the mold) for the subsequent separation or drops them into the scrap channel. When removing these highly sensitive parts, the gripper has to be positioned at the mold at a maximum tolerance of 0.2 mm by means of index pins. Only this is making sure that the sliders and ejector pins are not damaging the parts that still have a temperature of about 90°C. The rugged grippers are optimized in terms of weight to shorten the removal time as much as possible. Thus literally Swiss precision work is necessary that is done by the gripper construction department of WITTMANN



Kunststofftechnik in Kaltbrunn. Dr. Joachim Franke, Forteq Healthcare CEO states: "The quality and performance of the WITTMANN automation is one reason for our years lasting supplier loyalty."

Reliability and low maintenance

Forteq is a young company with a long tradition, having emerged from the former Mikron Plastic Technology. Besides the injection molding technology, clean room production is playing a key role in the medical field. The manufacturing of the products is happening consistently in the ISO 8 class clean room. Not only companies working in medical technology and diagnostics are to find amongst their customers. Predominantly technical plastics and polypropylene are processed in systems that are reaching cycle times of 4.4 seconds without the use of a robot, and 7.9 seconds with robot part removal.

To meet the highest quality standards, Forteq is starting a file for every new development as a part of the design and development process. They are monitoring the adherence of all regulations and standards, whereby the documentation of all modifications and considered alternatives – that have emerged during the development phase – is absolutely assured. Then they start production following cGMP guidelines. Forteq is conducting ISO 9001:2000 and ISO 13485:2003 quality management systems. This access was

at the bottom of the decision to buy the actually existing production cells. To Dr. Franke and his team the reliability and low maintenance of temperature controllers, robots, and other peripheral units are of special importance.

Six WITTMANN robot systems of different technical states (and different years of construction) are forming the center point of the automation. However, they are featuring one thing in equal measure: Undisturbed operation seven days a week, 24 hours a day, week by week – only interrupted by necessary production cell and clean room maintenance.

The realized cycle times meanwhile are partly going below the eight-seconds-boundary. Here the highly dynamic so-called W-Drives, which are a WITTMANN development, are top-performing. Nevertheless the part removal can last up to two seconds, due to the most precisely executed mold docking and the mandatory monitoring whether each single part has been removed from the mold or not. Walter Reinmann, Head of the Forteq Component Production, explains: “When molding such small parts, the mold protection of the injection molding machine is not really reacting reliably, and damage caused by a part that has not been removed from the mold can lead to immense costs. We rather accept the removal times being some tenths of a second longer, due to the bigger mass of the solid gripper system. But the bottom line is that we are sure to save a lot of money by getting an undisturbed continuous run and products that are meeting the specifications.”

The robot is inserting the removed parts into separating devices from which they are carried via a piping system to the packing pouches. From there they are brought to the assembling machines without any further repacking or other handling. Sample parts for the quality control are requested either constantly and periodically via the robot's software, or they can be sorted out sporadically via a hand lever outside the safety guarding. Depositing of the parts is happening in special drawers which can be emptied at any time without disturbing the run of the production cell.

Short cycle times: Quick return on investment

The new robot types W721 CSS3 and W732 CSS3 are 3-axes servo-robots. Compared to their predecessors a significant cycle time reduction from 12.5 to 8 seconds was

achieved – maintaining absolute identical reliability and precision of the units. Considering 48 weeks of operation a year, the return on investment is occurring in very short time.

Intelligent WITTMANN control

The WITTMANN R7.2 control is fit for teach-in programming. To meet special requirements, the list of commands can be completed. The display of errors or malfunctions as plain text is one of these special TeachBox functions. All sensors or control inputs that are reading certain positions of the mechanical elements can be real-time controlled via the software, and they can activate an alarm in case one signal is missing within a defined time frame. Displaying plain text is making sure that the operator can localize the defect without any delay. “If necessary, the displayed text can be entered by our operators themselves even in different languages. This is enormously facilitating the identification of problem areas. This as well is making a further contribution to increasing the equipment's availability”, says Walter Reinmann.

And if it is possible – at a cycle time of e.g. 6 seconds and a production period of 48 weeks a year – to increase the number of working cycles per year up to nearly five million, an optimal programming is absolutely mandatory. Highest acceleration and speed are only applied, where they are necessary to keep the entire cycle as short as possible. This minimizes the abrasion of pneumatic tubes and energy chains, thus helping to reduce the contamination of the clean room. The following course is

executed in an economic manner, which means that every movement is as short as possible and as slow as maintainable. The intelligent program architecture of the software is allowing to build such a program structure by just taking a few simple steps – and hence is one more argument for the use of linear robots in the clean room.

The optimal production of parts that are, in some respects, extremely delicate, requires a perfect “teamwork of men and machine”. “In the long run, it is only possible to meet the very high requirements of the pharmaceutical and medical industry by reverting to a highly qualified team of experienced experts and selected efficient and reliable machinery”, states Forteq Healthcare CEO Dr. Joachim Franke in conclusion. ♦



A 32-fold vacuum gripper is removing the cog wheels weighing only 0.02 grams. The linear robot is maneuvering the vacuum gripper within an 8-seconds-cycle.

The counting mechanisms for inhalators are consisting of ten single components, including cog wheels and an inspection window.

The precision parts are assembled fully automatically.

Werner Bürli is General Manager of WITTMANN Kunststofftechnik AG in Kaltbrunn, Switzerland.
Walter Klaus was (until his retirement in 2008) Technical Director of WITTMANN Robot Systeme GmbH in Schwaig, Germany.

Flow measurement and control combined with online-thermography

Multi-circuit flow control is more often used by processors looking for better process security and part quality. The WITTMANN WFC unit (Water Flow Control) is combining a water flow regulator and flow measurement control meeting all requirements of single mold channel control. System changes are identified through collection of the process data, ensuring the reproducibility. Problems like blocked channels or buckled tubes that might occur after having changed the mold, are identified immediately.

Gerald Schodl

Since the BATTENFELD takeover, WITTMANN and WITTMANN BATTENFELD are constantly generating synergy through the sharing of expert knowledge that can be used for the respective development and production work. Thereby the superior target remains to meet the growing demands of the market. WITTMANN and WITTMANN BATTENFELD are working hand in hand developing integrated solutions that are including material handling, tempering, automation, and the injection molding process itself.

Optimal part quality through controlled flow

It is the main target of all development efforts to always make possible the best part quality. Therefore different up-to-date techniques are used.

For example the so-called online thermography method is applied, developed by the Süd-deutsches Kunststoffzentrum (South German Plastics Center, SKZ) in Würzburg; or the WFC unit (Water Flow Control).

At the K Show 2010, WFC has been presented in interaction with a WITTMANN BATTENFELD injection molding machine to the public.

The accurate mold tempering is playing a crucial role in good injection molding, and thus the tempering process is attracting more and more attention. The deformation of the part – hence the quality of the parts – is influenced by the temperature distribution within the mold. When producing complex parts, a constant tempering of the different mold segments is indispensable to get a constantly high quality.



Pointing out variations in quality

Online thermography is identifying variations in quality – for every single shot. The technology is visualizing both overstepping and under-running of temperature control tolerances. Online thermography is a quality management procedure of parts in hot condition, in which an infrared camera makes an optical recording of the molded part, thus

WITTMANN Water Flow Control for exact mold tempering with numerous cooling circuits, installed on a WITTMANN BATTENFELD injection molding machine.

documenting the surface temperature (respectively the temperature distribution). Directly after the demolding the part is rotated by the robot in front of the activated camera. Afterwards the dataset is analyzed with the aid of special software. The outcome and possible deviations from the standard are displayed on a monitor.

The calculation of the deviations is done on the basis of predefined mold segments. Via an interface these deviations are communicated to the WFC. The WFC unit is executing the necessary temperature changes without any delay in real-time. The significant advantage of this technique is the external temperature measuring that is done at the molded part. Thus complex adjustments or extensions at the mold itself are not necessary.



Advantages of thermography

In comparison to the common temperature measuring method that is using temperature sensors within the mold, thermographic measuring of the molded part is offering some special advantages:

- The here applied camera systems are working significantly more precise, and they are also much more robust than temperature sensors.
- The high resolution of an IR camera is allowing for exact registration of extensive areas and critical points (hot spots).
- If the rare case of any sort of disturbance should occur, the camera can be replaced very quickly and without having to dismount the mold.

The constant temperature control is allowing for optimized cycle times. The technology is advancing the start-up phase, and is leading to less scrap during the start-up phase. The constant temperature distribution is leading to a lasting quality improvement. Variations in temperature that are not within the tolerance range are detected immediately. The

costs that are linked to producing scrap are dropping to a minimum. The realization of the statistical process control gives for example the advantage that mold maintenance can be done early, so unscheduled repairs can be prevented as far as possible. Not least to mention that the thermal "fingerprint" is a comprehensively relevant process parameter.

The K 2010 "one stop shopping" configuration

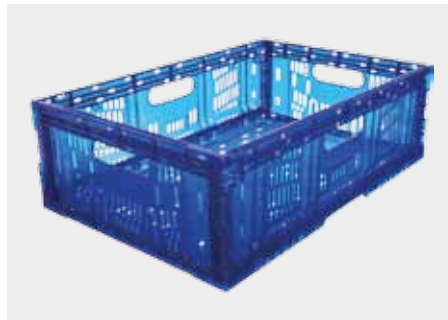
At K Show 2010 the potential of online thermography has been demonstrated in conjunction with an *EcoPower* 240/750 injection molding machine. A WITTMANN W821 robot was in charge of positioning the finished part – an

ABS building block – in front of the camera. The robot was equipped with a rotational axis, permitting to take thermal "fingerprints" of five sides of the part.

The analyzed thermographic records are needed for quality management documentation purposes. Beyond that, these values are consulted to control the mold tempering. After having made the thermal pictures the robot is handling over the parts to a laser inscribing station.

The handling system is playing a key role in this process. The heat images can only be done precisely when the positioning of the part is happening with repeated absolute precision. After that they are compared to the target state by software especially developed by the SKZ. The servo technology of the WITTMANN robot that is controlled by the R8 software is ensuring that the robot's movements are absolutely accurately repeated.

Through exact positioning of the molded part in front of the IR camera, the temperature conditions on the surface are detected.



Foldable box, produced at the K Show 2010 using a WITTMANN BATTENFELD MacroPower 1000/8800 injection molding machine and WITTMANN Water Flow Control (WFC).

A large-scale machine producing a foldable box

Again at this year's K Show, a WITTMANN BATTENFELD large-scale *MacroPower* 1000/8800 UNILOG B6 machine showed impressively the efficient interaction of WITTMANN auxiliaries and WITTMANN BATTENFELD machine.

The many visitors were in particular taken with the impressive large-scale Water Flow Control system with its 80 cooling circuits directly mounted on the machine. The installation presented to the public a special packaging application: The production of a stackable foldable box was executed – and this box also found great favor with the show visitors. ♦

Gerald Schodl is Sales Director of the Temperature Control Technology Department at WITTMANN Kunststoffgeräte GmbH in Vienna.

WITTMANN BATTENFELD injection molding machines with *ServoDrive*

ServoDrive is an energy-efficient drive concept that was used with WITTMANN BATTENFELD hydraulic machines for the first time in 2009; and in the meantime it has emerged as a successful alternative to all-electric machines. This drive concept was presented at the K Show 2010 in Düsseldorf, attracting the special interest of the professional visitors.

Gabriele Hopf



WITTMANN
BATTENFELD HM
65/300 injection
molding machine
with *ServoDrive*
technology.

Conventional hydraulic injection molding machines are driven by a three-phase synchronous motor. A conventional hydraulic system is operating the hydraulic axes like moving cylinder, hydro motor and injection cylinder.

A three-phase synchronous motor is operated at a constant number of revolutions and on its part is driving an electrically adjustable hydraulic pump.

But the drawback with this concept is that the motor is driven permanently at the maximum number of revolutions, and therefore there is a certain basic consumption of energy at any time. First of all, this has an impact on the energy consumption at the partial-load operational range of the motor, because the efficiency factor of a three-phase synchronous motor is falling heavily when the performance is decreasing.

The best efficiency factor of a three-phase synchronous motor is achieved when working at full-load operational range, but working with an injection molding machine, this would happen only very rarely.

During the cooling time that can make up a considerable part of the machine's overall cycle time, it would not be necessary to consume energy after the dosing procedure has happened – but nevertheless the machine is run at partial-load operational range with the maximum number of revolutions.

Energy savings through electric machines

For the purpose of reducing energy consumption the first all-electric machines were developed twenty years ago. Compared to using fully hydraulic machines it is possible today – by using only all-electric machines with peripheral servo drives – to lower the energy consumption to an extent of 50%, and even more. However, when using all-electric machines, a limitation in regard to the clamping principle has to be accepted.

This is because almost exclusively toggle clamping units are in use here for high clamping forces, and the flexibility and compactness of toggle units is limited when it comes to higher clamping forces. When comparing electric machines to hydraulic machines, it is furthermore necessary to consider that all-electric machines are indeed leading to energy savings, but the acquisition cost are about 25% higher.

*Energy efficiency through hydraulic *ServoDrive**

It seemed necessary to have the advantages energy-efficient electric machines are providing also when purchasing hydraulic machines at a lower price. So special systems have been developed that should come close to all electric machines – regarding their cost-reducing potential. Instead

of the three-phase motor with constant number of revolutions and an adjustable axial piston pump, another choice has to be made: here a highly dynamic servo motor with a considerably higher efficiency factor is used. An internal gear pump with constant swallowing capacity is applied. The regulation of the flow rate is done exclusively via the motor's number of revolutions.

In this way the necessary number of revolutions can be optimized for every working point. In other words: If only half of the hydraulic flow rate is needed, then only half of the maximum motor speed is realized.



For large-scale machines

This new drive technology is a good and economic supplement to all-electric machines – especially for large machines. The use of this technology is not limited by any size parameters. Large machines with more than 800 t of clamping force are nearly exclusively designed as very compact hydro-mechanical

WITTMANN
BATTENFELD
ServoDrive system.

This is leading to considerable energy savings. In addition the system is shut down during interval times e.g. cooling phases when no axis is actuated. And it can be completely turned off during longer interval times.

The conjunction of the higher efficiency factor of the servo drives on the one hand and the rotation speed dependent flow rate control on the other hand is leading to energy savings of up to 35% – in comparison to conventional drives with three-phase asynchronous motors.

Further advantages of ServoDrive

A positive implication of the low application of energy is the much lower warming of the hydraulic oil. Thus much less cooling water is needed and in consequence less energy. At the same time the hydraulic oil is less charged that is to say its durability is much higher.

As a consequence the oil change intervals are getting longer which means positively contributing to less environmental stress. The noise level is significantly lower with *ServoDrive*.

This effect is achieved by using an internal gear pump instead of a piston pump. A further reduction of the noise level is due to the low medial rotational speed. In conjunction with the soundproofed motor pump room that is optimized in regard to the respective frequency, the noise level can be reduced to an extent of three decibels. The insigni-

ficantly higher purchase costs of a hydraulic machine with *ServoDrive* compared to a hydraulic machine with three-phase motor are amortized within a short time, normally two to three years.

Besides of the significantly lowered energy consumption and the hydraulic oil savings potential, the WITTMANN BATTENFELD *ServoDrive* systems are resulting in a further reduction of the electricity costs by considerably reducing the reactive power. This reduction is due to the servo motor's higher efficiency factor and the approximately 20% better value of the total system.

2-plate machines. They are offering the advantage of shorter overall lengths and low moving masses, thus they are especially suitable for the servo-hydraulic drive technology.

The prospects of ServoDrive

The consideration of rising energy costs on the one hand and future EU guidelines (that are allowing only highly efficient three-phase asynchronous motors from June 2011) on the other hand, are showing the innovation of WITTMANN BATTENFELD. With their *ServoDrive* the company is not only following today's trends, but is anticipating the specifications to come, thus meeting the challenges of the future.

At this year's K Show in Düsseldorf, an inherently stable box was produced on a hydraulic *ServoDrive* machine at the WITTMANN BATTENFELD booth. The material used was FASAL Bio 322, a mixture of wood granules and bio plastics, thus a material made of renewable resources. The interest of the visitors was enormous, and also led to concrete orders.

Already 50 *ServoDrive* machines have been sold, and the feedback from the WITTMANN BATTENFELD customers has been consistently positive. First of all the excellent cost-performance ratio of the machines has made a deep impression. This means a great stimulus for WITTMANN BATTENFELD, because the first priority of the company has always been the creation of customer benefit. ♦

Leading South American manufacturer again relies on WITTMANN BATTENFELD

Krona Indústria is a top player in the South American plastics market. With the purchase of its 75th injection molding machine since 2001, the Brazilian Joinville based producer of pipes and fittings is once more relying on the Austrian injection molding machine manufacturer WITTMANN BATTENFELD.

Gabriele Hopf

The company which started with the production of PVC pipes on two extruders in 1994 has today become a leading supplier of pipes and fittings in the South American market. Only three years after its founding, the company started the production of PVC fittings on three injection molding machines. In the following years, Krona was able to realize impressive growth rates of 25 to 30%.

To accommodate this enormous growth, Krona's production facilities have been extended several times over the years. Two more plants at new locations are planned for the future. For example, the construction of a new plant in Alagoas (in the North-East) is now under way, where production start-up is already scheduled for mid-2011. Targeted investment, comprehensive quality management and a clear commitment to social responsibility towards its associates and the general public are the cornerstones of the company's success.

On an area of 38,000 m², Krona manufactures some 500 different PVC products today for a wide range of different applications. These include drinking water and waste water pipe lines and products for sanitary installations. With 550 employees, the company processes more than 30,000 tons of PVC annually. Pipes and fittings are produced around the clock 7 days a week, which also goes for raw material deliveries and the dispatch of finished parts.

Krona relies on WITTMANN BATTENFELD

In its production halls in Joinville, Krona is currently operating about 90 injection molding machines. The majority of these come from WITTMANN BATTENFELD. What



At K Show 2010 the purchase of the 75th injection molding machine from WITTMANN BATTENFELD is commemorated with the presentation of a certificate.

Krona primarily appreciates about WITTMANN BATTENFELD is the excellent cooperation and counseling prior to equipment deliveries, as well as continuous improvements of its products and in-production customer support. For example, a special Krona equipment package has been developed to meet the customer's needs, which is optimally geared to Krona's applications and structures and thus highly efficient and ideal for optimizing Krona's production flow.

The 12 most recently ordered machines have been further optimized to provide an extremely energy-efficient solution while maintaining the machines' high performance. The energy-saving potential of these machines amounts to about 12% compared to previous deliveries.

The machines include hydraulic models from the HM series with clamping forces ranging from 240 to 500 t, machines from the TM series with 400 and 500 t clamping force and vertical rotary table machines. All of these machines ensure a high degree of parts reproducibility, an important aspect for Krona in the choice of injection molding equipment. The machines are laid out for PVC processing and feature many components with special protection against corrosion. Thus a long service life is achieved for the equipment in spite of high corrosive loads. ♦

Gabriele Hopf is Head of the Marketing Department at WITTMANN BATTENFELD in Kottlingbrunn, Lower Austria.

The TMP CONVERT grinding solutions: Central and beside the machine

The French company, located in Simandre-sur-Suran, is producing injection molding and blow molding parts since 1959. The company is developing its own range of containers used in different industries working in the fields of agriculture, chemistry, and motorcycle manufacturing. – And it has been working for a long time with WITTMANN BATTENFELD.

Denis Metral – Valérie Vannier

Thierry Convert:

“With WITTMANN we have developed a long-term cooperation using WITTMANN robots, hopper loaders and water flow regulators. When we have decided to invest in a new beside-the-machine granulator for blow molding scrap, we consequently turned to Valérie Vannier, the Area Sales Responsible of WITTMANN BATTENFELD France – and she recommended their MC 34 granulator, being perfectly in line with the existing installation. We paid special attention to the technical parameters of the motor and the energy costs. This granulator had to be located beside the blow molding machine, so the noise level and the footprint were crucial for our decision. Neck (tops) and bottoms (tails) are cut off manually from the molded parts. Hence our operators were involved in the purchase decision to achieve a well-accepted and efficient solution.”

Valérie Vannier: “To be successful with this manual blow molding recycling application we met the CONVERT operators to understand their requirements. We had a lively discussion especially about compact design, low noise level, and ergonomic working conditions. From a technical point of view, the solutions suggested by WITTMANN were instantly accepted. We have noticed a strong claim for a definition of how a granulator should be used the safest way. Thus a special mode of operation was defined. After having cut off the neck of the molded part, the operator places it on the table until it has reached ambient temperature. Hot



TMP CONVERT – www.tmpconvert.com

- Customized agricultural backpack sprayers in varying shape designs.
- Tanks, technical pipes, bottles, and cans (with various capacities from 0.5 liters to 20 liters suitable for detergents, oil, fuel, food ...).
- Materials processed are mainly PE, PEHD, and PA6.
- Injection molding machines ranging from 40 to 1,500 tons of clamping force.
- Blow molding capacity for containers ranging from 0.1 liters to 200 liters.

Thierry Convert: “Lumps of plastic material and complete tank sprayers (bad parts that occur during the starting phase of the production) cannot be ground in the beside-the-machine granulator. For this, we had to choose another solution optimizing the respective granulator’s size and cost. Therefore we are grinding large parts using a central granulator. It is a more economic alternative, and we didn’t have to oversize the unit beside the machine. The regrind is evacuated by means of a blower system with cyclone and filter, and it is conveyed to a special container standing 5 meters away from the grinder. This is the plant-engineering basis for our 100% inline recycling. We are very satisfied with this installation and soon, namely this year, we will install a second equipment – in collaboration with WITTMANN BATTENFELD.” ♦

scrap cannot be inserted into the granulator, because the risk of plastic melt would be too high. The operators have decided to keep the necks on the table for a somewhat longer span of time. Compared to necks, the bottoms of the molded parts are colder. When the bottom of the part has been cut off and then has been dropped into the granulator, the neck can follow. This procedure is making sure that

only cold scrap is processed by the granulator. A simple idea, but one that is very efficient and leading to good results. Last but not least, we got the benefit of not having to use a cooling circuit for the granulator’s cutting chamber.”

Operator inserting a cut-off lap part into the WITTMANN MC 34 beside-the-press granulator at TMP CONVERT.

Denis Metral is International Product Manager for granulators at WITTMANN BATTENFELD France SAS in Seyssinet-Pariset. **Valérie Vannier** is the Area Sales Responsible for auxiliary equipment at WITTMANN BATTENFELD France SAS.

A resounding success: U.S. Open House & Technology Symposium

"Connecting Technologies" was the theme of the recent Open House & Technology Symposium at WITTMANN BATTENFELD USA. Held October 14–15 2010 at WITTMANN BATTENFELD's USA headquarters in Torrington, Connecticut, the "Connecting Technologies" event drew over 150 people including many customers, as well as suppliers and members of the press.

The theme was appropriate for this event, as visitors were able to see the latest WITTMANN BATTENFELD injection molding technology integrated with intelligent peripheral equipment. Complete turnkey molding systems were on display and in operation, showing how maximum molding productivity and efficiency can be achieved.

In addition, visitors had the opportunity to attend numerous break-out technical sessions to learn more detail about WITTMANN BATTENFELD products and technology, and see how the company's products can support about virtually every stage of the plastic product manufacturing process, from the handling of pellets when they arrive in a rail car, to post molding material recycling, and everything in-between.

Specific products and technologies on display at the Open House & Technology Symposium included:

- EcoPower electric molding machine molding cell.
- HM ServoDrive 45/130 machine molding cell.
- W8 control series robot.
- In-mold labeling and packaging side-entry turnkey automation solutions.
- Temperature controller technologies.
- Granulator optimization.
- Drying energy efficiency.
- Blender accuracy and repeatability.
- M7.2 centralized material handling control system.



Extremely positive response

Customer response to the event was extremely positive, as was press coverage.

One customer who attended the event was Greg Herlin, President of Cashmere Molding, Inc., Woodinville, WA. He stated, "I was extremely impressed by the range of technologies presented and exhibited at the Open House & Technology Symposium. I learned several things that can be applied to improving efficiencies in my molding operation, and was able to engage in one-on-one discussions and hands-on demonstrations. All the individual WITTMANN BATTENFELD products were exhibited, as well as two fully integrated turnkey work cells –



very impressive." Members of the press interviewed David Preusse, President of WITTMANN BATTENFELD USA, and Georg Tinschert, President of WITTMANN BATTENFELD GmbH.

Some feature articles appeared shortly after the Open House & Technology Symposium in leading publications such as *Plastics News*, *Modern Plastics Worldwide*, and *Injection Molding Magazine*, in both print and electronic editions. ♦

The Open House & Technology Symposium 2010 at WITTMANN BATTENFELD Inc. in Torrington, Connecticut, formed the ideal stage for expert discussions dealing with every aspect of injection molding technologies and auxiliaries.

WITTMANN strengthens EUROGULF partnership for the Emirates and the Gulf

The WITTMANN Group has successfully demonstrated its abilities at the Arabplast 2011, which was held from January 8th to 11th in the World Trade Center in Dubai. Numerous visitors to the booth of WITTMANN and WITTMANN BATTENFELD were able to receive detailed and valuable information about the extensive molding machine and auxiliary equipment offering of the company.

The event of the Arabplast show marked furthermore an extended and strengthened relationship between the EUROGULF Industrial Supplies LLC Company and the WITTMANN Group.

Company EUROGULF has acted as the BATTENFELD agent in the territory of Bahrain, Oman, Kuwait, Qatar and the United Arab Emirates since 1989 and has succeeded to place over 100 injection molding presses in this dynamic and evolving market.

Following the concept "Everything from a single source", EUROGULF recently selected the WITTMANN auxiliary equipment to complement their offerings for the plastic injection processing plants. With immediate effect EUROGULF will represent the entire product line of WITTMANN and WITTMANN BATTENFELD in their market.

Good prospects for Near Eastern molding

The signing of the extended agency contract took place on January 9th in the presence of Mrs. Maria M. Koursaris – Owner of EUROGULF, as well as her father and founder Mr. Michael C. Koursaris and the Managing Director, Mr. Walter Cornelisse. The representa-



From left to right: Mr. Edmund Kirsch, Mr. Walter Cornelisse, Mr. Michael C. Koursaris, Mr. Michael Wittmann and Mrs. Maria M. Koursaris.

tives of WITTMANN were Mr. Edmund Kirsch – Regional Sales Manager WITTMANN BATTENFELD and Mr. Michael Wittmann – General Manager of WITTMANN Group. EUROGULF Managing Director, Walter Cornelisse says:

"We are now delighted to be supplying the entire range of WITTMANN products and services, including the newly launched BATTENFELD molding machines, including

the *EcoPower* models, as well as turnkey IML systems. Many projects and customers in the Emirates favor, indeed require, a turnkey approach to supply, particularly in areas of complex plastics processing and for injection molding. WITTMANN's dedicated 'one stop shop' approach to plastics processing equipment will now help these customers and will help EUROGULF provide speedy and effective solutions to Near Eastern molding." ♦

Mexico: WITTMANN BATTENFELD Mexico S.A. de C.V.

While the K Show 1998 was taking place in October, a business plan for the Mexican WITTMANN subsidiary was drawn up on a napkin. In the course of a show party, Michael Wittmann and Carlos Chávez prepared the 1999 budget in order to start the operations of today's WITTMANN BATTENFELD Mexico. After having discussed the last details in November, the Mexican branch was founded in January 1999 in the city of Querétaro.

Mexican subsidiary of WITTMANN BATTENFELD, having moved in Querétaro from the initial office (small picture below) to the current facilities (left).

Carlos Chávez (left), U.S. Western Territory Manager, and Rodrigo Muñoz, his successor as the Mexican General Manager.

WITTMANN was one of the first auxiliary equipment suppliers to establish a subsidiary in Mexico, and it was the first company to supply water flow regulators, water temperature controllers and robots directly from the manufacturer. Initially the product portfolio was limited. However, the enthusiasm for the project was enormous. Company founder Dr. Werner Wittmann visited the new branch to learn more about the Mexican market. A parcel of land was bought, and in 2007 the company moved to the new premises, also located in Querétaro which is one of the most industrialized and booming areas in Mexico. Located a short ten minutes away from the previous offices and only fifteen minutes from the international airport, the new facility is ideally situated for the plastics industry.

A story of growth and success

The Mexican operations started with only two employees: the general director and a service engineer. By the year 2000, sales were double than in 1999, and 10 employees were working with WITTMANN Mexico. The Mexican market embraced the WITTMANN automation solutions, and robot sales looked promising.

By that time, WITTMANN Mexico already supplied material handling systems and granulators. Little by little the product portfolio was getting wider, and further growth could be foreseen. In 2005 the regional office in Mexico City was opened, and due to its immediate success a larger facility was necessary in 2006.



In April 2008 the WITTMANN Group took over BATTENFELD, adding injection molding machines to the group's product portfolio. The new project was welcomed with enthusiasm, and reorganization took place, appointing Rodrigo Muñoz to the Head of the Mexico City office. WITTMANN Mexico S. de R.L. de C.V. now became the company WITTMANN BATTENFELD Mexico S.A. de C.V.

Meeting new challenges

2009 will be remembered as the year of the worldwide economic crisis – a difficult year, but however not cata-

strophic, and the usual rhythm of operations could be kept at WITTMANN BATTENFELD Mexico. The economic recovery has become eminent in the course of 2010, and orders are continuing to increase.

After having worked twelve years for the Mexican branch, Carlos Chávez became the United States Western Territory Manager of WITTMANN BATTENFELD Inc.

His successor as the General Manager of the Mexican subsidiary is Rodrigo Muñoz, formerly in charge of the Mexico City office. This combination is extremely promising for both the Mexican and the U.S. subsidiaries. ♦

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- Drive engineering for robots 1/2008
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- Automated production of oil level sensors 2/2010
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Injection Molding

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- Quality control of the WITTMANN dryers 1/2007
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WITTMANN
KUNSTSTOFFGERÄTE GMBH
1220 Vienna, AUSTRIA
Lichtblaustrasse 10
tel.: +43-1 250 39-0
fax: +43-1 259 71-70
info.at@wittmann-group.com
www.wittmann-group.com

WITTMANN
BATTENFELD INC.
1 Technology Park Drive
Torrington, CT 06790, USA
tel.: +1-860 496 9603
fax: +1-860 482 2069
info.us@wittmann-group.com
www.wittmann-group.com

WITTMANN ROBOT
(KUNSHAN) CO. LTD.
No. 1 Wittmann Rd.
DianShanHu Town
Kunshan City, Jiangsu Province
215245 CHINA
tel.: +86(0) 512 5748 3388
fax: +86(0) 512 5749 3199
info@wittmann-group.cn
www.wittmann-group.com

WITTMANN
BATTENFELD GMBH
Wiener Neustädter Strasse 81
2542 Kottlingbrunn, AUSTRIA
Tel : +43 (0)2252 404-0
Fax: +43 (0)2252 404-1062
info@wittmann-group.com
www.wittmann-group.com

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