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innovations

Technics – Markets – Trends

Volume 8 – 2/2014

WITTMANN Peripherals: Hot & Cool

Battenfeld

WITTMANN innovations (Volume 8 – 2/2014)

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Editorial

Michael Wittmann

Dear Reader,

In the long run, only sustainability can ensure success. As a family-run business with long-term relationships with customers, suppliers, universities, and schools, sustainability is an integral part of our philosophy. Energy efficiency is a very important issue for the WITTMANN Group that attracts much of our attention. It was the nineties when BATTENFELD developed the first fully electric injection molding machine. With the launch of the *PowerSeries* in 2010, WITTMANN BATTENFELD came out with machines that set new industry standards in regard to their energy consumption values. In addition, up-to-date process technologies and our operator trainings are helping towards a reduction of energy consumption and improved resource management in general. We are always keeping an eye on the entire process to be able to realize the best energy efficiency and production efficiency criteria with every step. Not least, construction and reconstruction of our own production plants is done with the optimum energy balance in mind.

Our committed and highly qualified employees are the cornerstone of our success. Therefore, sustainable human resources planning and development is of high significance within our group of companies. Today, qualified personnel from technical professions have become a narrow resource. For many years now, we have been offering comprehensive apprenticeship training to qualify young staff for future needs. The apprenticeship takes place in different professional fields, technical and commercial. Thus, we are securing our ability to meet the high quality requirements for the future that we are demanding of ourselves. In order to be attractive for our personnel in the long run, we offer interesting responsibilities, and a wide range of further education possibilities.

Beyond the in-house training, we are actively supporting schools and universities through lending machines, because upcoming plastics technicians and mechanical engineers should have the ability to study using the latest equipment. In granting internships and research grants for diploma theses, we are opening possibilities to add essential practical experience to the respective academic education. Thus, we can also benefit from the outcome of scientific research for our own developments.

Sustainability: a concept we have lived on for decades now, and one of our main focuses for the future. Sustainability is close to our heart for reasons of environmental protection, and ultimately, for the good of all of us.

Sincerely, Michael Wittmann

Content

Wahl Clipper Corporation: In-Mold Decoration for most racy products

"On the cutting edge" is the slogan of the Wahl company. Since 1919 – with the invention of the first practical electric hair clipper – the Wahl Clipper Corporation has been the leader in the business of electrical professional and home hair clipping and grooming devices. Today, with more than 2,200 employees worldwide, Wahl is proud to carry forward the tradition of innovation and superior customer service that was set up by Leo J. Wahl nearly 100 years ago.

Martin Stammhammer

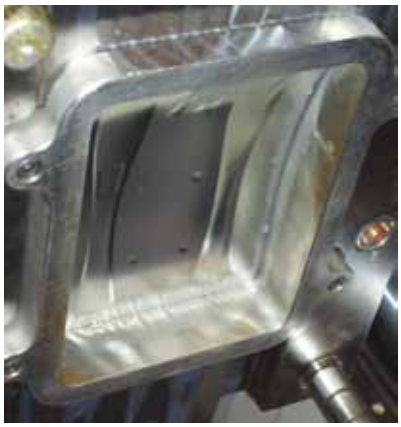
IMD (In-Mold Decoration) leaves many possibilities for surface design. Above the Wahl product model 1541 Lithium, assembled in the Hungarian plant of the Wahl Clipper Corporation.

Wahl Hungaria Kft. is the Hungarian branch of the American Wahl Clipper Corporation with a production plant in Mosonmagyaróvár. Formerly, the premises of this subsidiary held the production plant of Kuno Moser Kft., having been part of the Moser Elektrogeräte GmbH that was incorporated in 1996. Production in Mosonmagyaróvár is mainly dedicated to different kinds of hair clippers and cutters. 80% of the parts that are produced for these units are used for in-house assembly to ship ready-made products to the markets. More than 90% of the products leave Hungary for other countries worldwide. The latest models in Wahl's product range are the 1541 trimmer and the 1481 clipper. For these two new hair cutters, Wahl introduced IMD technologies (= In-Mold Decoration) to their products.

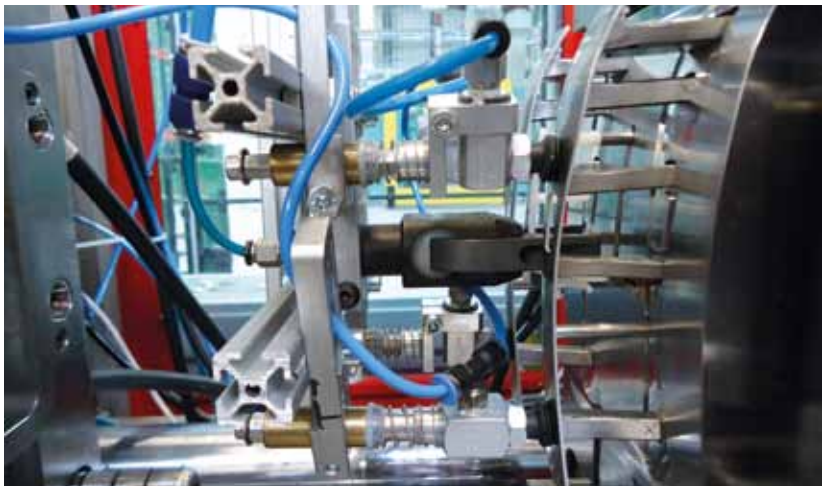
In general, the housing of a Wahl hair cutter consists of two half-shell plastic parts and a decorated inlay. This inlay is produced on a hybrid injection molding machine with 80 tons of clamping force that is equipped with a WITTMANN W818 robot. The machine is molding two decorated housing inlays simultaneously that are attached to one sprue. The sprue

From left to right: Attila Bánfai, Wahl Mold Plant Engineer, and Jozsef Nemes from WITTMANN Robottechnikai, Hungary, with WITTMANN auxiliaries.

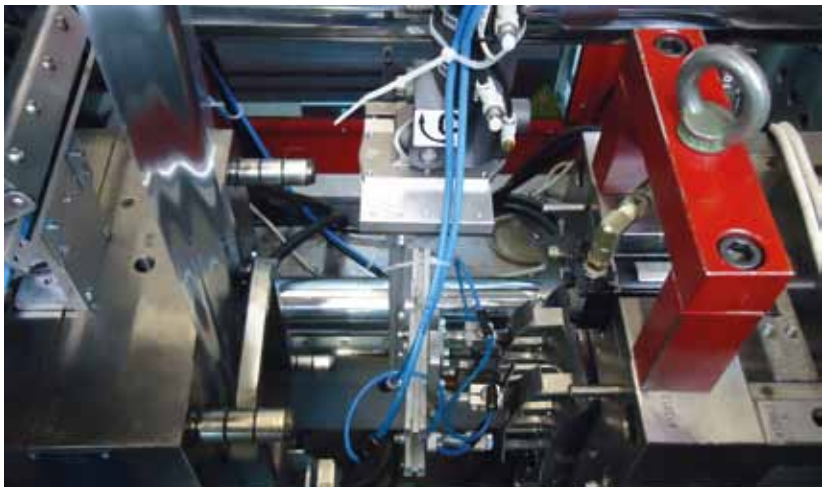
Robot mounted over the fixed platen. In the foreground, the foil dispenser can be seen.



Mold cavity of the moving platen. In the inside of the cavity, the foil can be seen. Here, the vacuum at the back wall has not yet been activated. Picture right: Cavity with activated vacuum behind the decoration foil, also before the injection of the plastic material.



View of the fixed platen with ejectors, ejecting the two parts from the mold. The blue tubes are leading to vacuum suction units that are needed for the removal of parts. Between tubes and parts the black gripper can be seen that is removing the sprue.



View of the active gripper from above. On the left side of the picture, the decoration foil can be seen, running through the mold cavity.

with the two parts is removed from the fixed mold half by a 180° rotational pneumatic C-axis mounted on the WITTMANN robot.

Automated decoration process

The decoration process of the inlays is executed as an integrated part of the molding process. The decoration is transferred from a special foil to the inlays. During the molding process, the foil is pulled through the mold bit by bit, unwinding from a coil dispenser that is mounted above the moving platen. A second coil below the mold makes sure to keep the necessary tension of the foil, whilst the foil is fixed within the cavity using a vacuum system to prevent any movement during the closing of the mold and the molding process itself. This solution also reduces the possibility of dust remaining between foil and cavity that would have a negative impact on the surface quality of the decorated inlay.

Within a cycle of 12 seconds, the robot removes the sprue with the two parts, separates the parts from the sprue, and positions the finished separated parts on the robot controlled conveyor belt. In this application at the Wahl plant, the handling of the decoration foil is controlled independently (by the machine); but this routine could also be easily integrated in the robot control.

Wahl relies on WITTMANN

Wahl Mold Plant Engineer Attila Bánfai points out: "The user-friendly interface of the WITTMANN R8.2 robot control paired with its reliability – these were some of the main reasons for us to rely on WITTMANN when realizing this application. Another big advantage is the superb availability of the local WITTMANN service team. Because of this, we are not only using WITTMANN robots, but also material conveying equipment and drying units, and even process temperature is controlled by WITTMANN devices."

The business relationship between Wahl and WITTMANN started ten years ago. Today, Wahl is operating ten WITTMANN robots, including additional automation equipment together with all types of other auxiliaries from WITTMANN. ◆

***Martin Stammhammer** is Sales Manager for Robots and Automation Systems at WITTMANN Kunststoffgeräte GmbH in Vienna, Austria.*

Philips in Klagenfurt is perfecting what is tried and tested

In manufacturing tweezer discs made of metal and plastics for epilators, Philips relies on machine and automation technology from WITTMANN BATTENFELD. Most recently, the existing production capacity of four machines has been further extended by the acquisition of a new all-electric EcoPower 55/130 injection molding machine. It is able to produce the parts considerably faster and consumes only half as much energy. Good reasons for a status report!

Gabriele Hopf

The tweezer discs are hybrid parts consisting of steel and plastics, or two different plastic materials. When producing these parts, Philips traditionally is relying on injection molding machines and automation technology from BATTENFELD and WITTMANN BATTENFELD, respectively.

The Philips plant in Klagenfurt, southern Austria is part of Philips' consumer lifestyle sector and one of eight international product development centers. Klagenfurt is not only the leading innovation center for kitchen appliances, but also produces highly complex key components for shavers and epilators, as well as drive systems for the well-known Philips Sonicare toothbrush.

Epilators are electrical appliances for mechanical hair removal, which look very similar to shavers on the outside, but are completely different in terms of design and function. While shavers cut off the hairs on the surface of the skin, leaving the hair roots untouched, epilators pull the hairs out of the skin with the roots.

What is done manually by gripping, holding and tweaking individual hairs with tweezers, the electrical appliance achieves by means of a rotating roll consisting of tweezer discs which rotate with eccentric movements. This causes the distance between the discs to vary, with the result of hairs being gripped automatically, pulled out and subsequently released again – similar to working with a pair of tweezers.

Epilators constitute a relatively new product line. Originating from the USA, they gradually became more popular in Europe after World War II, and have now been part of the production program of electric appliance manufacturers such as Philips for some 25 years.

The tweezer discs, originally made exclusively of metal, have now been produced as hybrid parts consisting of steel and plastics, or two different plastic materials, for the last 20 years. Each of the steel/plastic parts consists of a chromium steel disk which is overmolded with PA segments in an injection molding machine.

Alternatively, all-plastic tweezer disks are now being manufactured for the premium appliance market segment, with a hub consisting of a polyamide 6.6 blend and a concentric segmented ring made of a wear-resistant PA 6.6 compound with a high content of fiberglass and zirconium oxide.

BATTENFELD technology in continuous operation

At the Philips plant in Klagenfurt, tweezer discs have been made for more than 20 years. To produce the metal/plastic version, Philips has relied exclusively on BATTENFELD technology from the beginning. The start was made in 1990 with two hydraulic 250 CDC machines (25 tons clamping force) with the UNILOG 4000 control system, plus BATTENFELD Unirob robots and a separation and pick-and-place station for the metal inserts.

A few years later, two more machines were added, which are still operating today and are also used to produce high-precision mechanical plastic components for women's shavers and men's beard trimmers. These machines now have more than 100,000 operating hours "under their belt", but are still going strong, especially thanks to the peripheral automation equipment designed with innovative simplicity for sorting and separating the metal parts and feeding the end-of-arm device. The special highlight of this machine concept is a facility for monitoring and switching off individual (defective) cavities.

Generation leap through EcoPower machines

Ultimately as a consequence of the global financial and economic crisis, the market segment of medium-class epilators with metal/plastic tweezer discs has seen a powerful

comeback at the expense of premium appliances. Instead of ceasing their production, it had to be stepped up by adding another production cell.

Martin Varch, application technology engineer at Philips, comments: "To save us having to re-invent the wheel, continuity was the deciding factor which finally led to the choice of our technology supplier, and was largely also due to WITTMANN BATTENFELD's complete line competence being strengthened by the WITTMANN portfolio. In short, we invested in an all-electric injection molding machine with 55 tons clamping force and a 28 cm^3 plasticizing unit with an 18 mm screw, designated as an *EcoPower* 55/130." The said *EcoPower* is an all-electric machine with servo motor drives for all main movements (clamping unit including ejector, and metering/injection carried out by the injection unit), which is also equipped with an integrated, encapsulated servo-hydraulic component as the drive unit for a fast mold clamping system, core pulls and contact pressure for the injection unit.

Martin Varch continues: "A special challenge in planning the line concept was the fact that, compared to the original investment, the machine dimensions have grown, while the height of the hall of only 3.5 m below the crane runway has remained unchanged. The solution was to supply the handling device as a "stand-alone appliance" beside the machine and to fit it out with a shortened Y-axis. Its Z-axis is still connected with the machine, but with most of its weight resting on separate supports." The parts are produced with 16-cavity molds, as with the so far existing machines. The tweezer discs, which are pre-positioned in the peripheral equipment with cavity spacing, are inserted into the mold by a handling appliance.

A separate parts removal device, which enters the mold space from the ejection chute, i.e. vertically from below, removes the composite parts and transfers them to a separating system, which stores the parts separately according to the number of cavities.

Martin Varch, Process and Application Engineer at Philips, and Bernd Aigner, Regional Sales Manager of WITTMANN BATTENFELD, in front of the latest production cell model to manufacture the composite metal/plastic "tweezer discs" for epilators. The WITTMANN BATTENFELD production cell consists of an EcoPower 55/130 combined with a WITTMANN W832 handling device and a peripheral sorting and separating station for the metal inserts.

The tweezer discs, which have been pre-positioned in the peripheral station with cavity spacing, are inserted into the mold by the handling device. A separate parts removal device, which enters the mold from the ejection chute, removes the composite parts and transfers them to a stacking system which separates the parts strictly according to cavities.

Consistent and energy efficient

Asked to describe his experience with the new equipment, Martin Varch sums it up as follows: "When comparing the *EcoPower* line with the machines from our original investment, we found primarily one vital improvement: although the new line is only slightly faster than the so far existing machines, because their production cycle is limited by the speed of the metal parts handling equipment, its consistency in production and consequently the quality standard of the parts are significantly higher. Manual reworking is no longer necessary. Last but not least, operating the equipment has also become easier, especially during mold change. For example, we have a sequential set of operating instructions linked to the machine functions programmed into the operating software, which guides the operator step by step through the process and checks his actions. This has led to a considerable reduction in downtimes. The energy consumption values we have measured were also significantly lower."

However, a recently acquired additional *EcoPower* 110 has demonstrated that the new *EcoPower* machines are able to play out their superiority in terms of manufacturing speed too. It produces high-precision components for the vibration heads of electric shavers and is not dependant on the speed of peripheral equipment. In this instance, the cycle time was halved. At the same time, the reject rate dropped to almost zero. In this way, one new machine was able to replace two old ones, as WITTMANN BATTENFELD's Regional Sales Manager Bernd Aigner finally puts it with mixed feelings. ◆

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

CELLMOULD® foaming technology pro

The German company Schaumform GmbH, headquartered in Hutthurm in the south of Bavaria, supplies molds for prototypes and series production of foamed injection-molded parts and offers all engineering services necessary for successful design and also production of foamed components. At the K 2013 trade fair in Düsseldorf, the Schaumform company and WITTMANN BATTENFELD presented for the first time a combination of technologies with variothermic mold tempering, special mold inserts, high-precision opening and CELLMOULD® technology. The foamed parts that were produced at the K show met the highest expectations.

Norbert Müller

Premium-quality foam injection molding with CELLMOULD® gas injection into the melt and high-precision opening on an all-electric 240 t machine.

Plastic components turn out much lighter when produced by a foam injection molding process. This is extremely important for the automotive industry, since any part weight savings lead directly to lower fuel consumption and consequently a reduction in CO_2 emissions.

Accordingly, many components are now being tested to see whether foam injection-molded parts can be used in the future to replace conventional compact parts. Components not visible on the finished vehicle can already be produced directly as foam injection-molded parts without much difficulty.

However, another barrier must be overcome besides successful foam injection molding where injection-molded parts are visible, as is the case in vehicle interiors with cockpit components. Such parts must look exactly like compact components on the outside, in particular the visible surface must be completely free of striations.

Realization at the K 2013

From the left: Günter Brunner and CEO Norbert Müller from Schaumform, with Willibald Warta, General Manager Georg Tinschert and Gottfried Hausladen from WITTMANN BATTENFELD. It was decided at the K 2013 to establish a foam injection molding technology cooperation partnership.

On a technology showpiece that was presented to the public for the first time at the WITTMANN BATTENFELD booth during K 2013, Schaumform demonstrated that it is possible to master this challenge. Apart from using the right material (that thankfully was supplied free of charge by BASELL), though, this requires a combination of several technical solutions which must be well coordinated with each other.

The core component of the exhibit was an all-electric *EcoPower* injection molding machine with 240 t clamping force and a special equipment package for this product.

The moving platen was fitted with a high-precision opening function realized with a toggle. A CELLMOULD® foam injection unit with a 55 mm screw

duces light-weight, striation-free parts

diameter was mounted on the fixed platen. During the plasticizing process, the nitrogen required as a foaming agent is injected directly into the injection cylinder. Consequently, CELLMOULD® is a physical foaming process with gas injection straight into the melt. Schaumform developed and supplied a mold for the technology showpiece, designed for foam injection molding with high-precision opening and in particular for variothermic tempering of the mold insert on the visible side of the part.

Immediately before injection, the mold insert is heated by pressurized water at temperatures of up to 180 °C. In this way, if the process is applied correctly, components are produced without any striations on the visible surface.

The mold insert is subsequently cooled and simultaneously opened slightly with high precision, which has the effect of almost doubling the wall thickness of the molded part. This results in a fine, light foam structure inside the part. Mobile elements inside the mold also guarantee that the geometry of all surfaces that are important for the design and function of the part is precisely and correctly formed.

Variothermic mold tempering combined with high-precision opening and CELLMOULD® foaming technology produces extremely light-weight parts made of injection-molded foam, which are free of striations.

Outcome and further research

The cycle time is hardly any longer, despite the rather complex tempering technology, due to a mold insert made of a special material, valve stations placed close to the mold and temperature controllers tailored to fit this technology showpiece.

The foam injection molding machine from WITTMANN BATTENFELD with CELLMOULD® technology was re-installed at the technical lab of Schaumform immediately after K 2013.

There, some other thermoplastic materials are now being tested for automotive interiors, and alternative grades of steel for variothermic mold tempering as well.

The versatile test mold from Schaumform, combined with CELLMOULD® machine technology, is also being used to carry out various tests commissioned by customers. ◆

Norbert Müller *is CEO of Schaumform GmbH in Hutthurm, Germany.*

Pollmann about WITTMANN central systems

For more than 125 years now, the Pollmann company, a globally active plastics processor, has had its headquarters and main production plant in Karlstein, Lower Austria. The prominent automotive supplier has recently decided to purchase a new WITTMANN central drying and conveying system. The following is an interview with Pollmann's Technical General Manager Erwin Negeli.

Markus Wolfram

Views of the central WITTMANN material drying and conveying system at Pollmann in Karlstein, Lower Austria.

Markus Wolfram:

2013 was another very successful year for the WITTMANN Group. How was the last year for the Pollmann company? And what prospects do you see for your different locations in 2014?

Erwin Negeli:

In terms of the international market, our sales have developed as we thought they would. In the United States and in China, we partook in the ongoing economic growth that still is taking place in these countries. In Europe, it was a bit tougher, because we are supplying the European automotive industry with 95% of our products, and as is generally known, the European automotive industry struggled with massive sales difficulties during the past two years.

Markus Wolfram:

What special developments do you expect for the automotive industry?

Erwin Negeli:

There are some interesting developments in connection with the reductions in CO_2 emissions that are regulated by law. Today, vehicles are using many more components that are composed from plastics parts and metal parts, which is our primary field of activity.

Markus Wolfram:

Pollmann International is a company that is active worldwide. What kinds of parts are produced in the Czech Republic, in the United States, and in China? And are these parts components that are made from plastics in either case?

Erwin Negeli:

Every plant, at any given location, is producing nearly identical products. We are supplying the same customers from everywhere, because worldwide, they need what we manufacture. The local productions in China and the U.S. are supplying the local markets. The overall development work for new technologies and products is done in our European headquarters in Karlstein in Lower Austria. All of our plants everywhere in the world are producing our plastic and metal components. Some examples would be parts that are used for sensor technology in the field of automotive engineering, parts that are used for door latch housings, sunroof mechanisms, and for the purposes of hybrid drive technology.

Markus Wolfram:

How many machines in operation does Pollmann have altogether?

Photo: Pollmann

Pollmann International

Locations:
Austria (headquarters in Karlstein, Lower Austria), Czech Republic, China, U.S.A.

Staff:
1,245

Business areas:
Automotive, household goods, medical

Turnover:
108 million euros (2013)

Pollmann Austria GmbH

Management:
Ing. Erwin Negeli,
Mag. Christian Gaugusch

Buildings:
16,050 m²

Certifications:
ISO 9001, ISO/TS 16949, ISO 14001

Business activities:
Development and engineering, prototyping, tool making, automation technology, turning, punching, plastics injection molding, soldering, welding, assembly of components

Erwin Negeli:

In Europe (Austria and the Czech Republic) we are working with about 50 machines of different sizes. In China we are operating 20, and in the U.S. there are about 15 injection molding systems. In addition, Pollmann has punching machines, automatic lathes, and diverse special systems for the production of parts with a high production volume.

Markus Wolfram:

The plant in China was opened 2006/2007 with a new WITTMANN central system. And in Austria, you also invested in a material supply system last year – again a system from WITTMANN. What were the crucial reasons for choosing WITTMANN as the systems' supplier?

Erwin Negeli:

To come to the decision to purchase the new drying and conveying system for the Karlstein location (all in all, our third system of this kind) was not at all easy. This was a decision with a long-term impact, and a large investment, so it had to be considered very thoroughly. Eventually, the positive experience that we had with WITTMANN in China tipped the scales in their favor. Again, WITTMANN was highly flexible, and they were willing to listen and respond to our individual needs. In this case, we had to cope with different challenges at the same time. On the one hand, the entire system had to be adapted to very specific space conditions, and furthermore, the integration of the system had to be done without any interruption of operation. The WITTMANN team met any and all requirements brilliantly, and the system was launched without any noteworthy teething troubles. Incidentally, our location's closeness to WITTMANN (and thus to the service) also played a role when choosing the system's supplier.

Markus Wolfram:

Was the usability of the network control also one of the criteria?

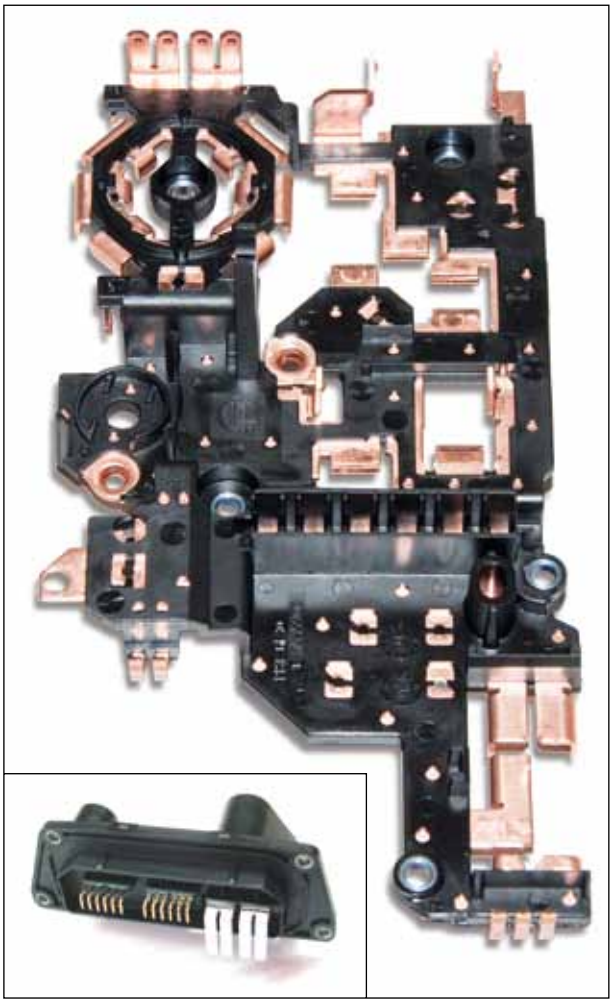
Erwin Negeli:

Yes, of course. The interface between operator and machine is one of the essential factors when working every day with the equipment. The machine has to support the staff and not the other way round.

Markus Wolfram:

What aspects are in the forefront when it comes to decide about a central system? Clearly arranged handling of the raw material, better definition of the workplaces, higher productivity, reduced waste…

From left to right: Christoph Schweinberger (WITTMANN Sales Manager Austria for Peripheral Equipment), Manfred Jäger (Purchasing of Producer Goods at Pollmann), Erwin Negeli (Pollmann Technical General Manager), and Markus Wolfram (see below).



Examples from the Pollmann product range: components made of plastics and metal parts for the automotive industry – "power frame" and plug for electric guidance (small picture below left).

Erwin Negeli:

Our entire production has always been geared towards working with central systems. The capacity of our old system was already exhausted, and as a result we would not have been able to continue to meet the requirements modern plastics are demanding with regard to the process security. Our products are also used with security-relevant applications (electric guidance, gearing sensors, automatic start/stop-function, etc.), thus precise processing is indispensable. Additionally, a central system reduces the dust loading within the production, and generally speaking, unnecessary material transport can be avoided, which minimizes not only the costs, but also the danger of confusion.

Markus Wolfram:

The Austrian Ministry of the Environment has honored Pollmann for "Enhancement of Energy Efficiency in Industry and Trade".

Erwin Negeli:

When we look at Austria as one of our locations, the issue of energy efficiency is of highest importance because it directly influences our costs. Executing the appropriate measures in this area over the past few years, we were capable of reducing our energy consumption significantly. For the certification of our other locations according to the ISO 14001 standard, we are working on the expansion of our strategy.

Markus Wolfram:

The drying hoppers of the SILMAX series are equipped with *SmartFlow* air regulating dampers as a standard. For the DRYMAX dry air dryers, you have also chosen a performance-related adaptation of the dry air volume. Thus, it is obvious that you are also going after better energy efficiency when it comes to purchasing equipment that is used for material drying.

Erwin Negeli:

Also for this, it means wasting money when the wrong decisions would be made. And because the WITTMANN solutions that you have mentioned are working so well – in fact, they are saving energy "autonomously" – it would be a mistake not to use these systems.

Markus Wolfram:

Again and again over the course of our audits, we are faced with very special requirements. Your system now has a function for the backtracking of batches, making it possible to oversee the entire material flow through a process that is carried out from a coded coupling station. The operator registers via chip at the system's control, which makes it possible to build up a regular structure for the administration of different operators.

Erwin Negeli:

Traceability that covers the entire process of value creation is a customer requirement for many of our products. This clearly starts with the drying of the material – even at this point, the possibility of batch-backtracking is a necessity and it was important for our purchase decision to get this option implemented. In this case, it meant not only to reach the audit's target, but also this really was a specific customer requirement. ◆

***Markus Wolfram** is Sales Manager of the Bulk Materials Department at WITTMANN Kunststoffgeräte GmbH in Vienna.*

My EcoPower

Tru Group and the *EcoPower* machine

Austria and UK:
Tru Group, a successful UK molder of plastics security seals, and a loyal customer of the WITTMANN Group, benefits greatly from the EcoPower injection molding machine from WITTMANN BATTENFELD.

Series
My EcoPower
Part 7

Respondent:
Kevin Mell

Position:
Managing Director

Company:
Tru Group

Location:
Gilberdyke Brough, United Kingdom

Kevin Mell (right) shakes hands in front of his EcoPower 110 with Daniel Williams, WITTMANN BATTENFELD UK Area Sales Manager.

- *What size and specification is your EcoPower machine?*
  It's a WITTMANN BATTENFELD *EcoPower* 110/350 B6 injection molding machine – complete with WITTMANN W818 robot.

- *How did you come to purchase this machine?*
  Back in 1995 our first machine was a BATTENFELD, and we've been buying with BATTENFELD ever since.

- *How long have you been running your WITTMANN BATTENFELD EcoPower?*
  About one or one and a half years.

- *What products does your business make?*
  Tru Group is a plastics trade molder and we also have our own proprietary products. In recent years we have developed considerable expertise in making plastics security seals. As part of that sector we offer JIT standards and service all over the world.

- *What products is your EcoPower typically making?*
  The EcoPower machine is used solely for the automated production and packaging of our security seals.

- *How many molds/tools are you typically using on your EcoPower?*
  The molding machine's capacity is spread between two molds on long runs; replenishing our own stocks for subsequent printing.

- *What are your favorite design features on the machine?*
  As ever, we like the absolute reliability and also the high consistency with the machine – that and the low energy consumption.

- *What operational advantages have you noticed on the EcoPower injection molding machine?*
  Firstly, we are an automated production shop. We therefore appreciate the WITTMANN BATTENFELD expertise and one-stop-shop that includes our need for robotics and automated production. We also appreciate only needing to see an engineer just once – at installation!

- *What changes in energy consumption have you noticed on the EcoPower?*
  Very positive.

- *What sort of payback period are you expecting?*
  Early days yet – but all the numbers are good in this regard.

- *Where next for your business?*
  We are currently extremely busy and hopefully at some point that will result in further investment. ◆

FORTUNA LTD in Greece: Surviving the crisis, and ready for take-off

FORTUNA has been serving the Greek and Cypriot markets for 50 years in the field of injection molding. After experiencing the fluctuations of these markets and having survived the current economic crisis the company is ready to move on most dynamically in the future.

The FORTUNA LTD team – from left to right: Maria Avgousti (Secretary), George Fortunas (Owner), Antigoni Dimitrou (Marketing), Vangelis Laios (Service).

The history of the FORTUNA company is a long one. It was founded in 1965 by two brothers: Argiris Fortunas, former major shareholder and Technical Director of the Greek company "Thermoplastic SA", and Andreas Fortunas, mechanical engineer, who graduated from T.U. Berlin University. Originally, the company consisted of two sectors: manufacturing of high standard extrusion machines, and representation of foreign companies such as Arburg and Margarit, specializing in injection molding machines.

In 1985, George Fortunas, plastics engineer and graduate of LKT in Vienna, undertook the management of the company. As there was a great demand for European machines at that time, FORTUNA exclusively became an agent for machinery and equipment for the plastics industry.

In 2005, the company invested in a new office located in the northern district of Athens, very close to the national highway and with easy access to the airport.

In 2007, FORTUNA started to offer free nationwide technical educational seminars to their customers. Since they were the first company in the plastics field to take such an initiative, the two main seminars in Athens and Thessaloniki were accepted with great enthusiasm and had the maximum attendance of plastics processors – comprising the industry's management and personnel. In 2008, the company extended their activities in the field of plastics and started collaborations with SMF (Germany), Joke (Germany), Star Automation (Japan), and Frigo (Italy), just to name a few.

Being one of the oldest companies in the field of plastics, FORTUNA has always worked as a team of professionals. Integrity and a high degree of responsibility go without saying when supporting their clients in achieving their goals. Moreover, their wide experience in service by providing both technical advice and project support, has allowed them to build up an excellent reputation in Greece and abroad as a reliable, trustworthy and competent company. This fact has enabled the company to survive the difficult years of the economic crisis.

Future prospects of the Greek market

Today, after having overcome six years of absolute severe economic depression, FORTUNA has learned how to fight and survive in a small market that is completely devoid of cash flow, investment potential and bank support.

Furthermore, having to deal with the nearly ruined national economy in Greece, the company in some way has pooled their own strength with the strength of their customers in an attempt to help them surpass all major obstacles and to move ahead.

For this reason, FORTUNA LTD has started a close collaboration with the WITTMANN Group for providing the Greek plastics processing industry with injection molding machines, peripherals and robotics, all from one source, this being now one of the most increasing needs in the Greek industrial market.

After a long period of stagnation, FORTUNA LTD and their clients share the need to move forward.

"Taking strength from the sun and the bright blue sky, the Greek spirit cannot be held back for long", George Fortunas declares.

"The burning desire for new horizons for the Greek entrepreneurs today is like an aircraft in front of the runway with the power of all engines on, ready to rush ahead the moment the brakes are released. When this happens it will run along, and finally reach the speed that is needed for a real take-off." ◆

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In-Mold Labeling

- WITTMANN IML stack mold systems *3/2007*
- The WITTMANN 2 + 2 stack mold *1/2008*
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- Quadrangular IML design at PLASTIPAK in Canada *4/2010*
- Tea Plast in Albania wants to become the Number One in IML *3/2012*
- EcoPower: fourfold IML *1/2013*
- IML as a multifaceted process *4/2013*

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- COOLMAX cooling units *2/2008*
- Temperature controller "guarding" injection molding machines *3/2008*
- Temperature controllers with DUO cooling *4/2008*
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- The new TEMPRO direct C120 [C250] *3/2009*
- WFC: Water Flow Control *4/2009*
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- TEMPRO uses heat waste *1/2014*

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- Cost efficient material drying *2/2007*
- FEEDMAX for the clean room *3/2007*
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WITTMANN KUNSTSTOFFGERÄTE GMBH
Lichtblaustrasse 10
1220 Vienna, AUSTRIA
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.: +86 512 5748 3388
fax: +86 512 5749 3199
info@wittmann-group.cn
www.wittmann-group.com

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

BP00000034 – 1402