

**Wittmann**

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# innovations

*Technics – Markets – Trends*

*Volume 6 – 2/2012*



*Robot W818:  
A work of art*

**Battenfeld**

# Articles that appeared in *WITTMANN innovations* so far

## Injection Molding

- WITTMANN BATTENFELD: One stop shopping for injection molding 4/2008
- Metal injection molding at Indo-US MIM 4/2008
- Cost optimization: EcoPower by BATTENFELD 1/2009
- IT assisted services 1/2009
- Water injection for all-plastic parts 2/2009
- Krona Indústria and WITTMANN BATTENFELD 2/2009
- Molding micro-parts with the Micro-system 50 3/2009
- Multi-component process at wolcraft 4/2009
- Process data acquisition: partnership with Wille System 4/2009
- The new all-electric EcoPower injection molding machine 4/2009
- Thomas Dudley and WITTMANN BATTENFELD 1/2010
- IML with TM Xpress 1/2010
- AIRMOULD® and AQUAMOULD® Mobile 1/2010
- Design Molded Plastics and their molding machines 2/2010
- Stadelmann relies on Wille and WITTMANN BATTENFELD 2/2010
- The new MicroPower molding machine 3/2010
- AQUAMOULD® and projectile injection technology 3/2010
- New benchmark in large machines: MacroPower 4/2010
- STELLA relies on WITTMANN BATTENFELD machines 4/2010
- The ServoDrive technology 1/2011
- The 75<sup>th</sup> machine for Krona 1/2011
- Packaging specialist TM Xpress 2/2011
- WAVIN (Czech Rep.) and WITTMANN BATTENFELD 3/2011
- SANIT molding a success 3/2011
- WEPLER Filter using BATTENFELD machines 4/2011
- MacroPower for the production of cable ties 1/2012

## News From The Subsidiaries

- Australia 2/2008
- Austria 2+3/2008, 1/2010, 3/2011
- Benelux 3/2008, 2/2009
- Brazil 3/2007, 1/2009
- Bulgaria 2/2009
- Canada 1/2007, 1+2/2008, 3/2009
- China 2/2010
- Czech Republic/Slovakia 4/2009
- Denmark 1/2009
- Finland 4/2008+1/2012
- France 2/2007, 3/2008
- Germany 1/2007
- Great Britain 2/2009, 2/2010
- Hungary 1/2008
- India 2/2008, 3/2010
- Israel 1/2012
- Italy 4/2008, 1/2010, 4/2011
- Mexico 3/2007, 3/2009, 1+2/2011
- Slovenia/Croatia 1/2010
- Southeast Asia 2/2007
- South Korea 3/2010
- Spain 3/2007
- Sweden 2/2009
- Switzerland 1/2008
- Taiwan 4/2009
- Turkey 3/2008, 2+4/2011
- USA 2/2008, 3/2009, 1/2011

## Conveying/Drying

- Central drying and conveying at Robert BOSCH 1/2007
- Quality control of the WITTMANN dryers 1/2007
- Drying and conveying system at Kromberg & Schubert 2/2007
- Cost efficient material drying 2/2007
- FEEDMAX conveying units fit for the clean room 3/2007
- The new DRYMAX ED80 material dryer 3/2007
- Focus on material feeding 1/2008
- The WITTMANN network control at Arge2000 2/2008
- Changing parameters when conveying different materials 2/2008
- Optimizing a material conveying system 3/2008
- DRYMAX dryers complete with energy rating 3/2008
- Metchem central material handling system 4/2008
- Auxiliaries at Delphi in China 1/2009
- The LISI COSMETICS central system 2/2009
- Perfect planning of central systems avoids downtime 3/2009
- Testing the WITTMANN energy claims at FKT 4/2009
- The new FEEDMAX B 100 1/2010
- Greiner is saving energy by using WITTMANN dryers 2/2010
- The A.C.S. conveying system 3/2010
- The new FEEDMAX Primus material conveyor 4/2010
- The new DRYMAX Aton 2/2011
- The BKF conveying system 2/2011
- WD Kunststofftechnik and its central system 4/2011
- PET processor uses a WITTMANN conveying system 1/2012

## Blending

- The new WITTMANN blenders of the GRAVIMAX series 2/2007
- The truth about blender economics 3/2007
- The new GRAVIMAX 14V blender 3/2009
- The art of blending regrind 3/2011

## Granulation

- Inline recycling of sprues 1/2007
- Giant granulator MCP 100 2/2007
- The new MAS granulator 3/2007
- The challenging recycling process 1/2008
- The MC 70-80 granulator at Centrex 2/2008
- Gibo Plast enforces recycling 2/2009
- The new AF auger feed for MC central granulators 4/2009
- Grinding of ferrite 1/2010
- Grinding critical material 3/2010
- TMP CONVERT: Customized solutions 1/2011
- Inline recycling with Minor 2 3/2011

## In-Mold Labeling

- WITTMANN IML stack mold systems 3/2007
- The WITTMANN 2 + 2 stack mold 1/2008
- ATM d.o.o. in Serbia grows with WITTMANN systems 3/2009
- Quadrangular IML design at PLASTIPAK in Canada 4/2010

## Temperature Control

- The advantages of pulsed cooling 1/2007
- Comparing water to oil 2/2007
- The new temperature controllers of the TEMPRO plus C series 3/2007
- The new COOLMAX compact cooling units 2/2008
- Temperature controller "guarding" injection molding machines 3/2008
- Temperature controllers with DUO cooling 4/2008
- Variothermal tempering 1/2009
- The new TEMPRO plus C180 2/2009
- The new TEMPRO direct C120 [C250] 3/2009
- WFC: WITTMANN Water Flow Control functionality 4/2009
- TEMPRO plus C180 water temperature controller 1/2010
- WITTMANN TEMPRO: The universal benchmark 2/2010
- BFMOLD™ mold cooling system 3/2010
- The new TEMPRO plus D temperature controllers 4/2010
- Online-thermography 1/2011
- Tempering and injection molding at Fuchs & Sohn 2/2011
- TEMPRO plus D in the automotive sector 1/2012

## Automation

- Production and quality control in medical engineering 1/2007
- The handling of large structural foam parts 2/2007
- The new R8 robot control 3/2007
- High-end: The production of seat adjustment rods 1/2008
- Drive engineering for robots 1/2008
- Automating the production of transponder pins 2/2008
- Automated production of remote control keys 3/2008
- Automation at Carclo Technical Plastics, UK 4/2008
- The flexible automation cell as ABA-PGT 1/2009
- The cultivation of growth with WITTMANN robots 2/2009
- Bruder toy wheel production 4/2009
- Production of pallets at Georg Utz in Poland 1/2010
- EcoMode helps getting energy efficient robots 2/2010
- Automated production of oil level sensors 2/2010
- Automating rotation welding 3/2010
- The new R8.2 robot control 4/2010
- Linear robots in the clean room 1/2011
- Super-fast part removal 2/2011
- Automation of cups and lids 3/2011
- Superior multi-component molding 4/2011
- The automation of insert molding 1/2012

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Issue 3/2012 of "WITTMANN innovations" will appear at the beginning of the third quarter 2012.

# Editorial



**Michael Wittmann**

Dear Reader,

Since the middle of last year, we have maintained a regular blog written by Adrian Lunney, a well-known journalist, on our website [www.wittmann-group.com](http://www.wittmann-group.com). "LUNNEY's blog" deals with a variety of topics in the plastics industry. In the issue dated 16<sup>th</sup> March, Adrian Lunney looked at developments in bionics and the corresponding developments in the plastics processing industry: The manufacture of prosthetic skin, plastic hearts and artificial limbs made of carbon fiber.

At first glance, the handling of such products may not appear to fit into our company's classic fields of activity. Nevertheless, there is a clear association with our established portfolio. For instance, our *MicroPower* injection molding system is frequently employed in the processing of very expensive, absorbable synthetic materials in the area of medical engineering. At prices ranging from 2,000 to 5,000 EUR per kilogram for these sophisticated plastics, which are used for clips, bone screws and plates, every single gram of material that can be saved matters. In such applications, the advantages of our *MicroPower* system's unique, high-precision injection molding technology are brought convincingly to bear.

In Europe, *MicroPower* technology was last presented to the public in mid-March at the MEDTEC in Stuttgart. The continued rise in longevity in developed countries and rapid general advances in medical engineering are opening up new possibilities for the use of *MicroPower* in medical technology almost on a weekly basis. In the meantime, this year's next important plastics trade fair, the NPE in Orlando, has already taken place. On more than 700 m<sup>2</sup> of exhibition space, our U.S. subsidiary WITTMANN BATTENFELD Inc. presented a comprehensive cross-section of our entire product range. Injection molding machines of the *PowerSeries* were represented in all sizes ranging from *MicroPower* to *MacroPower*, and our Series 8 robots demonstrated their versatility in a basketball practice session which included skillful dribbling and scoring with Michael Jordan-like precision. As core automation components in five complete work cells, the robots subsequently demonstrated that they can also meet the demands placed on them in the plastics industry. Many other spectacular and innovative products were introduced to visitors in an entertaining and informative way.

This issue of *innovations* will again whisk you off to all possible corners of the world. We report on customer applications in Germany, Austria and Romania, and we visit our branches in India, Colombia and Switzerland. I wish you enjoyable reading!

Sincerely yours, Michael Wittmann

# Content

## **Injection Molding**

### **The CELLMOULD® Process**



**Helmut Eckardt** on manufacturing lightweight parts at Schröder. **Page 4**

## **Entire Solutions**

### **Romanian complete system**



**Bogdan Nestor** reporting about the PLASTICOM investments. **Page 6**

## **Tempering**

### **Complete Documentation**



**Zdravko Gavran** introducing new TEMPRO developments. **Page 8**

## **Automation**

### **Looking for tenths of seconds**



**Walter Klaus** on the WEIDENHAMMER lid production. **Page 10**

## **Granulation**

### **Under the molding machine**



**Denis Metral** on the space under the machine for granulators. **Page 12**

## **Series**

### **„My EcoPower“ in Austria**



Part 4 of the series: **Martin Varch**, Philips, answering our questions. **Page 13**

**Portrait**  
WITTMANN and BATTENFELD in Switzerland. (p. 14)



**Portrait**  
India celebrating its birthday. (p. 15)



**Portrait**  
... of WIBA Colombia. (p. 15)





# SCHRÖDER goes with WITTMANN BATTENFELD CELLMOULD® for light weight parts

*CELLMOULD® is the WITTMANN BATTENFELD process for structural foam molding with direct gassing. The process development was based on more than 40 years of experience with structural foam molding using physical blowing agents. The nitrogen is injected into the cavity and thus forms foamed products with a fine and regular cell structure. All the equipment components are developed and manufactured by WITTMANN BATTENFELD.*

**Helmut Eckardt**



2-component CELLMOULD® injection molding machine with 400 metric tons of clamping force.

**S**CHRÖDER KUNSTSTOFFTECHNIK in Kierspe, Germany, is a custom molding company that is a part of the privately owned German EBG Group. The company in Kierspe has about 70 employees and runs 33 injection molding machines ranging between 15 and 420 metric tons. SCHRÖDER also has a molding company in the Czech Republic with about 90 employees and with 16 molding machines, bringing the total number of employees of all the group companies that concentrate on compression and injection molding of thermosets is about 250.

Dag Hagby, CEO of the SCHRÖDER companies, points out: “Our specialty at SCHRÖDER in Kierspe is the design of molds and the production of complex and extremely complex injection molded products.” SCHRÖDER has already been producing structural foam moldings with gas injection for quite some time. This process offers several significant advantages:

- Weight reduction.
- Elimination of sink marks.
- Low in-molded stresses.
- Low warping.
- Improved rigidity at same weight.
- Low internal cavity pressures.
- Improved polymer flow by means of the gas.
- Tight tolerances.

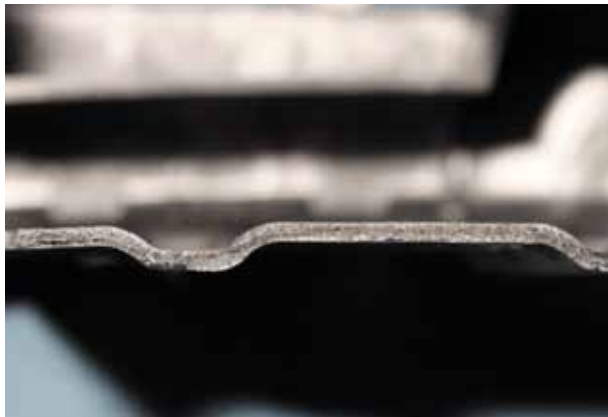
About 70% of SCHRÖDER’s business is in the automotive field, where the most important trend is weight reduction. This can be achieved in several different ways by either reducing the wall thickness, reducing the density of the parts, or by increasing the functionality. For SCHRÖDER, structural foam with direct gassing is the right solution to meet the highest demands.

**Reduction of wall thickness**

The injection of the gas reduces the viscosity of the polymer. Because of the improved polymer flow, even very tight cavities with a wall thickness of less than 2 mm and long flow paths can be filled at lower cavity pressures.

**Reduction of density**

When injecting gas, a polymer holding pressure normally is not required. The cavity is filled by the polymer completely or almost completely. Shrinkage of the volume is compensated by the physical blowing agent (gas, used instead of a chemical blowing agent).



Density reduction must be seen in relation to the mechanical characteristics of the products. SCHRÖDER products are showing density reductions of about 7–10%.

**Increasing functionality**

Components with rigid and soft sections are produced by means of the 2-component technology. Parts with integrated sealing sections are produced in a single-step operation.

When compared to separate injections and post-molding assembly, the 2-component part can be designed much lighter in weight.

Most of SCHRÖDER's CELLMOULD® parts are made from PBT with 20% glass or PP with 20% mineral filler. Many other Polymers such as PA, POM, PBT, OC, PC-ABS blends, TPE and others are used in production.

**CELLMOULD® equipment**

In 2011 SCHRÖDER purchased 5 new injection molding machines, all from WITTMANN BATTENFELD. Four of them are equipped with CELLMOULD®, the process for direct gassing developed and built by WITTMANN BATTENFELD.

The CELLMOULD® machines have clamping forces of 300 and 400 metric tons and are equipped with 25 L/D screw and barrel units. WITTMANN BATTENFELD supplies not only the equipment itself, but also any service for the machines and the process.

The strongest argument for SCHRÖDER's decision to work with WITTMANN BATTENFELD was the fact that they are the only supplier for CELLMOULD® machinery and the special foaming technology.

CELLMOULD® technology provided some additional advantages for SCHRÖDER:

- ◆ Part quality: The parts are of a very fine and regular cell structure. The process is absolutely reliable.
- ◆ Easy programming and control: As all the parameter settings for CELLMOULD® are done by using the UNILOG B6 control, programming and optimizing are very easy. All CELLMOULD® parameters are stored together with the mold parameters. Quality control parameters are visualized on the same screen.
- ◆ Gas control: The nitrogen is injected via a special gas injection nozzle. The gas injection process control is located directly at the injection unit, so there is no need for any separate unit standing beside the machine.
- ◆ Low cost: Gas for direct injection normally is supplied from conventional nitrogen bottles. Before the injection of the gas can be executed, it has to be compressed.

SCHRÖDER also decided to purchase a combined nitrogen and pressure generator unit from WITTMANN BATTENFELD. This generator is aspirating environmental air that afterwards is cleaned, then dried, then separated into nitrogen and oxygen by means of a membrane system, and finally compressed to 330 bar. All four CELLMOULD® machines are supplied with gas from this generator. The same system can be used as well for AIRMOULD®, the WITTMANN BATTENFELD gas-assisted injection molding technology. ◆

*Cell structure of a CELLMOULD® part.*

*2-component CELLMOULD® part with integrated TPE seal lip.*

*Dag Hagby, CEO of SCHRÖDER KUNSTSTOFF-TECHNIK, with a complex CELLMOULD® part in front of BATTENFELD CELLMOULD® machine with 300 metric tons of clamping force.*

*Helmut Eckardt is Head of New Technologies at WITTMANN BATTENFELD in Meinerzhagen.*

# PLASTICOM get head start with the help of WITTMANN BATTENFELD

*PLASTICOM IMPEX SRL, based in Titu, Romania, became the first customer of the Romanian WITTMANN BATTENFELD agency that was founded in 2009. PLASTICOM was brought into life in 1993 by Constantin Neacsu, one of the most dedicated businessmen in the Romanian plastics processing field. Having grown every year, PLASTICOM has become very successful and is increasingly relying on both auxiliaries from WITTMANN and WITTMANN BATTENFELD injection molding machines.*

**Bogdan Nestor**

In 2009, PLASTICOM started its collaboration with WITTMANN BATTENFELD SRL, the then newly established Romanian agency of the WITTMANN Group. PLASTICOM decided outright to acquire two injection molding machines from WITTMANN BATTENFELD, even within a difficult economic environment, as the financial crisis in Romania had just begun.



*View of the new PLASTICOM production floor: injection molding machines from WITTMANN BATTENFELD and WITTMANN robots and material conveyors.*

All injection molders' customers are demanding the best quality at the same prices, even though the material costs have risen. The PLASTICOM executives changed their way of thinking and managed to produce better quality with the same machinery resources, but at lower cost. PLASTICOM was still using 15 non-BATTENFELD machines that were 15 to 18 years old. Even though they were not their own, WITTMANN BATTENFELD technicians took care of the old machines to keep them continuously running. This service was a crucial part of PLASTICOM's progress.

*From left to right: Bogdan Nestor, Director of WITTMANN BATTENFELD Romania, PLASTICOM Production Manager Ovidiu Neacsu, PLASTICOM General Manager Constantin Neacsu.*

In general, PLASTICOM processes ABS, PEHD, PS, and transparent PS into aesthetically pleasing parts. If the transparent parts are not molded perfectly, they are simply scrap. As PLASTICOM is not using regrind material, the percentage of scrap had to be considerably reduced in order to meet the customer's requirements and to successfully compete with the other injection molders on the market.



## *Central material handling system*

In 2010, the decision was made to install a central drying and conveying system that would supply the then 17 injection molding machines with plastics material. Again, an overall professional solution was found in the WITTMANN products.



Now, the new central WITTMANN drying and conveying system provides the material for both PLASTICOM production floors, serving older machines as well as the newly acquired models. The system is made up of two GM 09 pumps and two XM B filters that are in charge of two vacuum circuits. The pumps are connected via a manual 3-way-valve, and if one of the pumps should shut down by reason of failure, the vacuum will be kept running at full capacity by the other pump. Furthermore, the system contains a DRYMAX E battery dryer, three SILMAX material hoppers (with volumetric capacities of 100, 150 and 300 liters) and an RFID-coded coupling station with 7 inlets (each of them with 6 outlets). The material loaders have been chosen with regard to the respective injection molding machine's throughput, resulting in different models from the WITTMANN FEEDMAX B series

### Automated production

Also in 2010, PLASTICOM began production with two molds that were dedicated solely to running on their two big WITTMANN BATTENFELD machines. These were producing parts 24 hours a day, running even on Saturdays and Sundays.

Even so, PLASTICOM could not really produce the number of parts needed by the customer. As a result, two WITTMANN W833 robots with the appropriate EOAT (end-of-arm-tooling) were purchased.

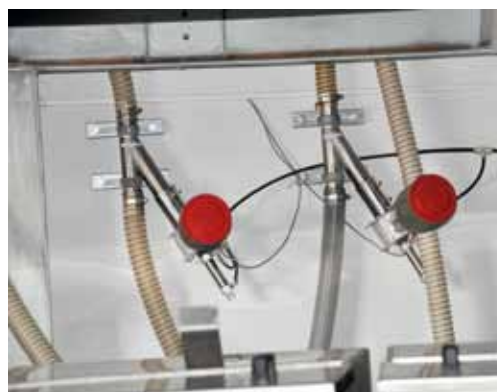
After having worked for two months without automation, the output immediately jumped up by 20% after the introduction of the WITTMANN robots into the process. This was an amazing improvement, and it was exactly what

PLASTICOM needed. The robots are equipped with telescopic Y-axes so they will not interfere with the crane installation in the production hall.

### Looking at the results

In addition to the aforementioned products, PLASTICOM also bought some WITTMANN temperature controllers of the TEMPRO series which were both reasonably priced and completely reliable. General Manager Constantin Neacsu states to be very satisfied with the equipment bought from WITTMANN BATTENFELD Romania. He underlines the excellent support and technical advice

*For space saving reasons, the different components of the central drying and conveying system are installed on a platform.*



*Some details of the central system: XM B filter stations and coupling station (left), filters.*

with varying sizes. As not all molding machines are processing masterbatch, only eight DOSIMAX volumetric dosing systems had to be purchased. The eMax/24 network control system from WITTMANN proved to be very stable, and was the most economic solution. Because of the recent acquisition of another four injection molding machines, the drying and conveying system was increased further last year, including the purchase of one more eMax/24 network controller.

given by the supplier. He says that this successful collaboration will definitely continue. Production Manager Ovidiu Neacsu adds: „We have doubled our production since 2010, this means we have produced double the amount of plastics material, and I have no idea how we could have managed this without our central conveying system from WITTMANN. This system does its job very well – beyond all our expectations.” ♦

**Bogdan Nestor**  
is Director of  
WITTMANN  
BATTENFELD  
SRL in Bucharest,  
Romania.

# Temperature control: Confidence is good, control is better

*Users in the plastics processing industry are continually on the lookout for methods to increase process reliability. Monitoring of process parameters is a critical prerequisite for improving and maintaining product quality given identical or shorter cycle times. WITTMANN now offers related innovations in the field of temperature regulation.*

**Zdravko Gavran**

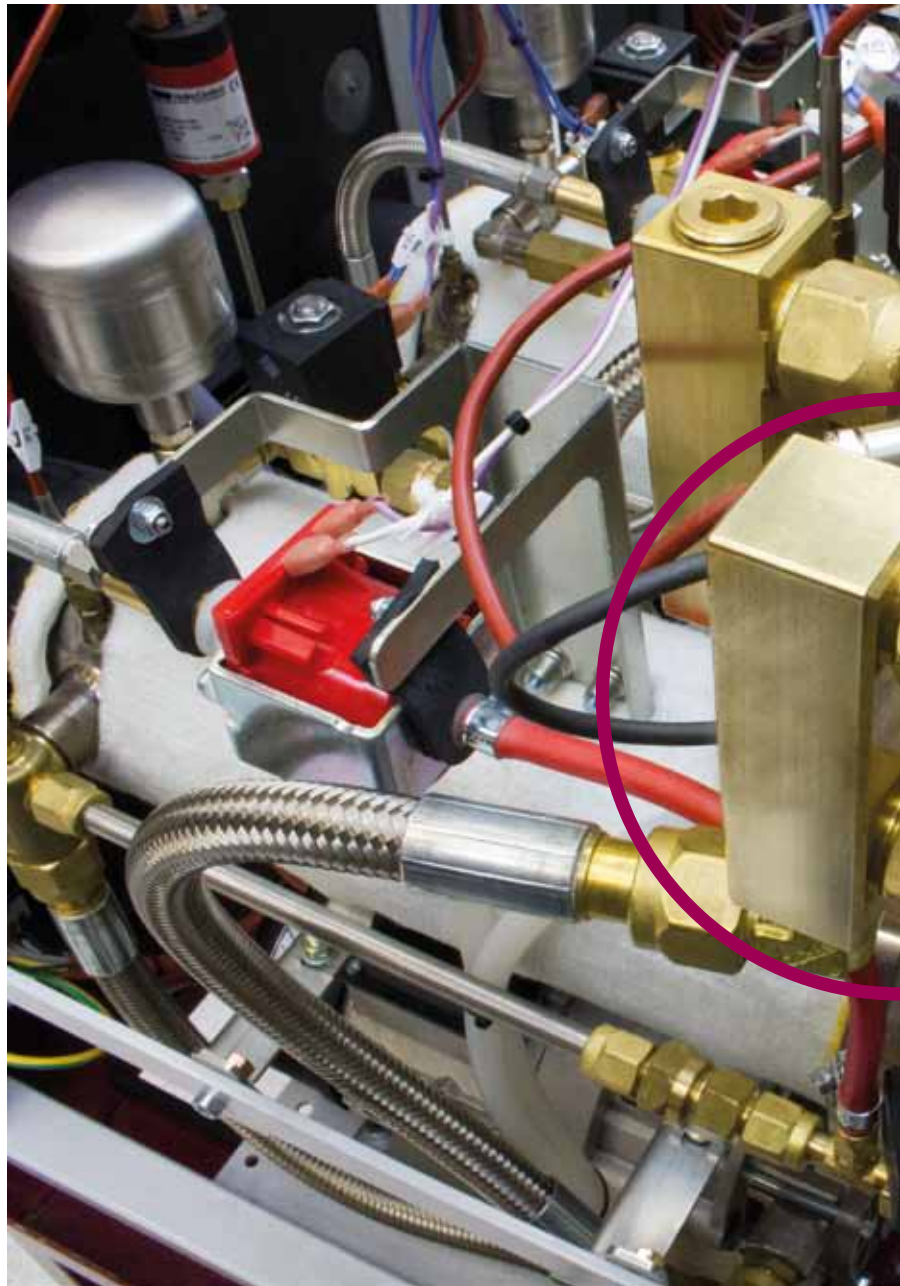
**L**ogging of process parameters is essential for tracing production errors. Temperature, pressure and flow rate are equally important here. Unintended rises or drops in temperature during production directly affect the quality of the parts. Such changes in temperature can, in turn, be caused by pressure and flow conditions.

## Oscilloscope function

If a lasting change in mold temperature occurs and goes unnoticed initially (for example, during a night shift), the exact time of the deviation can be determined by means of the temperature, pressure and flow curves provided by the TEMPRO's oscilloscope function. These recordings make it easier to ascertain the causes of deviations.

Constrictions due to deposits in temperature-control channels are indicated by increased pump pressure and reduced flow rate. Pump failures are indicated by reduced pump pressure and flow rate, and the causes of malfunctions not directly related to the temperature controller can also be localized.

If a hot-channel failure causes the cavity to overheat, for instance, this might be due to the insufficient availability of cold water for the temperature controller to use to cool the cavity. On the basis of such analyses, it is



*A look into the inner workings of a WITTMANN dual zone temperature controller with integrated distributors. Highlighted here is the distribution of one of the two temperature regulation circuits among two flow circuits.*

*Oscilloscope function of the TEMPRO plus D temperature controller permits recording of four flow rates (left), pressure and flow characteristics (right). The picture in the middle shows the indication of four flow rates on the display of a TEMPRO plus D dual zone temperature controller.*





ultimately possible to initiate appropriate quality assurance measures to help prevent errors in future. Last but not least, the oscilloscope function can be used to monitor manufactured parts. If part production values recorded over a certain period of time deviate from specifications, the related parts can be sorted out entirely.

### Complete documentation

For comprehensive documentation of process parameters, the temperature, pressure and flow rates recorded by the device can be transferred very easily via the standard integrated USB port of the TEMPRO plus D temperature controller to a storage device (USB stick). This data storage is for the previous 24 hours. Data gathered during current operations can also be recorded directly onto a USB stick until its memory capacity has been exhausted.

These raw data can then be easily transferred to a personal computer and processed there by means of the specially developed WITTMANN software.

This instrument can also be used as service support for more rapid elimination of control problems over long distances.

### Dual flow measurement

If a temperature controller with just one temperature regulation circuit is employed, the usual procedure is to connect the cooling channels serially to the mold.

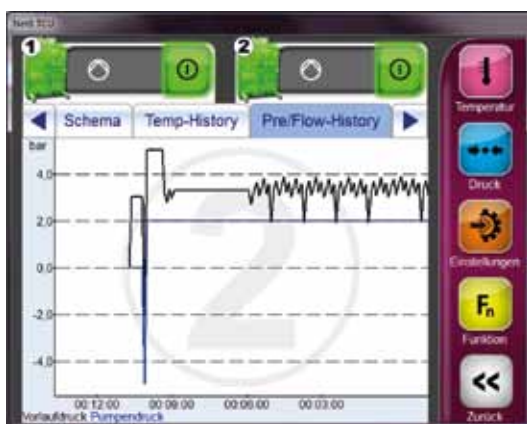
If a user wants to connect several flow circuits whilst retaining use of the single-circuit temperature controller, a distributor is needed.

This unit distributes the existing temperature regulation circuit among two flow circuits which then permit flow through the mold via a parallel connection.

Such a distributor has the option of being integrated into the temperature controller models D90, D140 and D160 of the WITTMANN TEMPRO series for the purpose of dual flow measurement, which allows mutually independent control of the flows through the two "sub-circuits" thus created.

This dual flow measurement is also possible for dual-circuit temperature controllers. In this case, after distribution of the individual temperature regulation circuits there are a total of four flow circuits, the flow rates of which can also be registered separately.

All flow rates from all temperature regulation circuits can be displayed continuously by the device so as to permit quick assessment of the flows in the mold. ♦



**Zdravko Gavran**  
is Technical Sales  
Support of the  
Temperature  
Controllers Department at WITTMANN Kunststoffgeräte GmbH in Vienna, Austria.

# Automated, lightning-speed production of packaging lids

*The packaging industry requires very short cycle times which creates the main challenge to process design and machine technology. At WEIDENHAMMER PLASTIC PACKAGING (WPP) in Zwenkau, Germany, an innovative cooling concept is used to manufacture completely distortion-free container lids from PP with the shortest possible cycle times. This requires automation capable of realizing sequences as short as just a few tenths of a second.*

**Walter Klaus**

**T**he production of lids for food containers with diameters from 80 to 110 millimeters seems trivial at first glance, but it is not by any means. The specifications for this particular project were especially demanding.

Upon commencement of the project, WITTMANN and WEIDENHAMMER had already agreed on a number of general conditions which would no longer be modifiable. These included the return on investment to be provided by the automation system, a guaranteed cycle time and a fixed total price. The process itself was full of difficult details. All parts were to remain fully undeformed, not only during removal and handling, but also

during dense stacking in cartons in the proper position. This was one of the pre-conditions for a process that needs to be fault-free on a lasting basis. Food containers with lids of this sort are sealed 230 times per minute, a speed that requires a flawless part. Furthermore, the entire system had to be constructed and pre-equipped to allow later use in IML (in-mold labeling) mode in terms of mechanics, as well as control and programming technology.

Also, changeover to this production mode had to be demand-based, and possible through simple retrofitting without major modifications. Moreover, this conversion option could not lengthen the cycle time originally defined for the lid-installing application.

For WEIDENHAMMER, there were obvious reasons to grant WITTMANN the contract for this system. According to Maurizio Conte, operations manager at WPP, these reasons included “modern technology, service-orientation and a good basis for communication, coupled with a balanced price-performance ratio. Equally important for us were the exclusively positive experiences gathered by our affiliated plant in Hockenheim with WITTMANN for over two years, and the very good results yielded there by a similarly designed system.”



*A laterally inserted high-speed robot (WITTMANN W737) removes eight plastic lids from the injection mold and passes them on to a transfer and alignment unit in each case.*

## *The production concept*

The system consists of an all-electric injection molding machine, an 8-cavity tool, and a WITTMANN automation cell with a W737 high-speed robot, a W732 four-axis servo robot, and a sorting and transfer unit for packing the lids in cartons. Thorsten Sturm, WPP operations manager in Zwenkau, explains the use of the all-electric injection molding machine with “fifty percent energy savings compared to fully hydraulic machines, and a much lower risk of contaminating parts manufactured for the food industry.” Compared with free fall of the lid from the mold and subsequent alignment in the sorting device, handling with appropriate automation provides an added advantage of minimized contamination risk. In addition, the electric machine helps reduce energy consumption, a quality that always receives special attention at WEIDENHAMMER.

The different lids to be produced at this facility have a wall thickness of 0.5 mm and a diameter of up to 104 mm. They tend to warp during both the production process (cooling in the tool) and the subsequent shrinkage process. Warping in the tool itself is prevented by a special cooling technology which allows extremely short injection and cooling times.



Warping during shrinkage is avoided by rapid handling and secure, stable storage in the carton. Fast and distortion-free solidification of PP, which has a high melt index, requires a cooling system which maintains the steel tool's cavities at a consistently low temperature by immediately dissipating the heat introduced by the melt. This is achieved by very thin walls between the cooling channels and the cavities' interior, and water cooled to 12°C for very efficient energy transfer.

### Acceleration to 7 g

The lids manufactured in the 8-cavity tool are removed by a laterally inserted W737 special robot with a high-speed drive based on the proven W-Drive technology. Optimized



for such situations, this technology achieves accelerations of up to 7 g. The insertion and withdrawal strokes each have a length of 800 mm. Despite a very steep acceleration ramp, the top speed is maintained for a very short time before the robot is brought to a standstill again by an equally steep deceleration ramp in order to remove the part, for which purpose a demolding stroke is not necessary. Vacuum suction units lead the way during insertion.

No sooner have these units reached their position than the lid is ejected and transferred to them. This achieves a removal time of 0.6 s, as measured from the "mold is open" signal to the "mold is closed" signal. Forming part of the standard, *SmartRemoval* functionality of WITTMANN's control system, this technique allows the operator to attain the shortest possible removal time at the "push of a button". Indispensable for the gripper is an extremely lightweight yet highly rigid

design, achieved by means of a precisely calculated aluminum construction. For the W737 high-speed robot, too, the moving masses needed to be minimized to achieve the high accelerations involved here. The removed parts are passed on to a gripping and transfer unit whose kinematics blend the simplest drive technology with fast motion. Within two seconds, the lids are transferred in two rows, each accommodating four parts, and then distributed among four parallel tracks, while, simultaneously, the transfer of a new round is prepared. Placed in guide rails on sorting belts, the parts are then collected and aligned so that they can be picked up by a W732 standard robot with four servo axes and stacked in a carton. If the extremely rapid transfer in the tool causes the lids to become offset with respect to the theoretical midpoint, this deviation is compensated via the contour of the guide rails on the sorting belts.

On its way out of the tool, and before transferring the part, both the removal gripper and the transfer gripper pass an ionizing bar. The ionized air here completely eliminates any electrostatic charge on the parts, thereby reducing their contamination by particles in the ambient air. The discharge process also permits accurate and lastingly stable storage patterns in the carton without causing parts to repel each other and shift out of position, which is crucial for avoiding distortion during cooling and consequent shrinkage. Fast-acting, color-independent sensors check for correct positioning and quantity of parts following deposition in the carton. A division of tasks between the three basic units has made it possible to achieve the specified and assured total cycle time of four seconds.

### Short commissioning times

The entire system, consisting of the fast removal mechanism, transfer unit and sorting belts, is integrated into a base frame. This modular technology enables not only fast and accurate transfer of parts, but also programming and teach-in of the individual gripper positions during production at WITTMANN. The entire unit was subsequently aligned and fixed with respect to the tool's zero-point at WEIDENHAMMER, thus becoming ready for operation. It was possible to commission the system very quickly at WEIDENHAMMER, thereby significantly reducing the installation costs, which form part of the purchase price. Another positive result was minimization of the production system's downtimes.

Proving highly beneficial during regular operation too, the robots' program structure and control linkage contributed in a special way to the rapid commissioning process. The devices operate on what is known as the "handshake" principle: In this case, the W737 robot is defined as the "master" responsible for controlling the basic functions of the W732 robot, as well as the transfer and sorting unit. Program functions such as Start/Stop, Moving to home position, Set stop and Emergency stop can thus be accessed from a single *TeachBox* for the entire facility.

The facility's technology and implementation have been received with great enthusiasm at WPP in Zwenkau. According to Maurizio Conte, "a further WITTMANN facility designed identically in principle is currently being set up at our premises." ♦

*The transfer and alignment unit with an ionizing bar receives and distributes the eight lids within two seconds on four parallel tracks.*

*A W732 servo robot removes the plastic lids from the sorting belt and stacks them according to a special deformation-free pattern in the packaging unit.*

**Walter Klaus**  
*was (until his retirement in 2008) Technical Director of WITTMANN Robot Systeme in Schwaig, Germany.*

# Granulating under the machine

*Placing the granulator under the processing machine is a method that is offering some relevant advantages to plastics processors. WITTMANN is developing an extensive range of under-the-press granulators.*

**Denis Metral**

**T**here are some benefits of recycling the material in-line, and an increasing number of customers are interested in granulator placement underneath the injection molding machine. A granulator can be fully integrated under the machine, thus giving free access around the IMM. This reduces the footprint of the production equipment, and it leads to quieter working conditions by minimizing the generation of noise, which is confined under the IMM frame. There are additional advantages of granulator placement directly under the mold:

- No labor cost for handling the material.
- Compact installation compared to a conveyor belt alongside the IMM.
- The sprues are 100% recycled in-line without the risk of pollution.
- A safety device can be installed connecting the granulator to the IMM. Then the granulator will work only if it is placed correctly under the machine – removing it from its operation position would stop it for safety reasons.

*Views of applications using the WITTMANN MAS2 Auger under-the-press granulator.*

Different auger models are available for the WITTMANN Minor and Junior series of screenless granulators as well as for the MAS2 granulator that is an ideal fit for the in-line recycling of soft to medium hard plastics.

## **MAS2 Auger granulator**

The MAS2 Auger granulator from WITTMANN is a conventional granulator with auger feed which allows it to be placed directly underneath the mold area of the molding machine. The 247 x 255 mm cutting chamber and the open rotor are identical to that for the model MAS2 (3 moving and 2 fixed knives). The low rotational speed of 200 rpm guarantees uniform regrind and minimal fines. The MAS2 Auger granulator is available with a large auger trough opening (600 x 280 mm) for wider runners. For the processing of soft materials, the granulator features a knife that is located above the screw to avoid large, soft sprues wrapping around the screw. Many options are available to meet the customer's specific requirements:

- METALSTOP, the patented metal detection.
- High level indicator.
- Connector for water cooling.
- Hopper directly on the auger feed throat

**Denis Metral**  
is International Product Manager for granulators at WITTMANN BATTENFELD France SAS in Seyssinet-Pariset.



for robot or conveyor feed.

- Auger feed throat height of 524 mm.
- Remote control box.

As a special option, WITTMANN granulators can also be furnished with the so-called ARS (Automatic Reversing System). The ARS provides optimal processing for continuous operation and can help avoid shutdowns due to blocking. If an overload is detected by changes in amperage or speed, the motor stops and reverses to remove the part that caused the blockage and then turns forward again. This feature is leading to the highest process security. ♦



# Austria: Philips benefiting from the *EcoPower*

*Royal Philips Electronics has many subsidiaries all over the world. The Group runs a Competence and Development Center for Consumer Lifestyle in Klagenfurt, Austria.*

## My *EcoPower*

### Part 4

Respondent:  
Martin Varch

Position:  
Process Engineer

Company:  
Philips

Location:  
Klagenfurt, Austria



*Philips Process Engineer Martin Varch and "his" EcoPower injection molding machine.*

- *What size and spec is your EcoPower machine?*  
We have a new WITTMANN BATTENFELD EcoPower 55/350 H, UNILOG B6<sup>S</sup>.
- *Who is Philips?*  
Royal Philips Electronics with headquarters in the Netherlands is a company offering a wide variety of products for health care and wellness.
- *Which IMM's brands do you currently have?*  
We currently use Engel and WITTMANN BATTENFELD injection molding machines.
- *Why did you decide to purchase an EcoPower?*  
We had conducted some research comparing hydraulic and electric machines. Finally, our findings pointed to the selection of an EcoPower machine from WITTMANN BATTENFELD.
- *Which were your expectations with your EcoPower 55?*  
We were aiming to achieve: first a reduction of cycle time, and also a reduction of power consumption and a reduction of water cooling.
- *Which are the actual results?*  
We were able to achieve much more process stability in production.
- *How many molds are you typically using on your EcoPower 55 at present?*  
We are using a total of seven molds.
- *What are your favorite design features on the EcoPower 55?*  
We like very much the user pages and the many options regarding the configuration of the machine interface. This makes for a much easier operation for our operators.
- *Maybe you had other benefits that you would like to mention?*  
We find that we have a much cleaner working environment compared to the fully hydraulic equipment.
- *Which changes would you suggest for the WITTMANN BATTENFELD EcoPower series of injection molding machines?*  
We think that a good idea might be a feature for automatic height adjustment. ♦

# Switzerland: WITTMANN and BATTENFELD work hand in hand

*The WITTMANN Group is represented in Switzerland by two companies: BATTENFELD Schweiz AG in Volketswil, responsible for sales and service of injection molding machines, and WITTMANN Kunststofftechnik AG, based in Kaltbrunn and specializing in automation and peripherals. Both companies nonetheless frequently find themselves working in close cooperation, thereby substantiating their motto of "one-stop shopping".*

*Four managers at the Swiss Plastics 2012 pursuing a common objective (from left to right): Werner Bürli, WITTMANN Kunststofftechnik AG (Switzerland); Michael Wittmann, WITTMANN Kunststoffgeräte GmbH (Austria); Georg Tinschert, WITTMANN BATTENFELD GmbH (Austria); Thomas Robers, BATTENFELD Schweiz AG (Switzerland).*

*(Photo: M. Flury)*

Designing efficient injection molding processes not only requires first-class equipment, but also the ability to cohesively match the various means of production, such as processing machines, automation and peripherals. The WITTMANN Group's global enterprises have made it their goal to always bear all aspects of a production plant in mind for the benefit of their customers. Only a capacity to appropriately combine know-how from the various areas of plastics processing can achieve customer-specific solutions which actually earn the name "solution".



## Successful unity

In this spirit, the WITTMANN Group's Switzerland-based companies for the first time presented themselves at a joint exhibition stand at this year's Swiss Plastics show. On exhibit were two all-electric injection molding systems, each fully equipped with robots and peripherals. There was an *EcoPower* system with a W823 robot for producing a technical part, and a *MicroPower* system with a W8VS2 SCARA robot for producing a medical clip weighing 2 mg. In terms of control technology, the robots, temperature regulators and other peripherals were fully integrated into the respective manufacturing cells. The presentation at Swiss Plastics 2012 gave each of the two companies an opportunity to demonstrate their entire system competence to the professional audience there. Both highly-integrated manufacturing cells served to sym-



bolize the constructive collaboration between WITTMANN and BATTENFELD.

Werner Bürli, Managing Director of WITTMANN Kunststofftechnik and Thomas Robers, Head of Sales and Managing Director of BATTENFELD Schweiz also comment similarly on the core competencies of their enterprises, leaving no doubt that they pursue the same goals.

"We provide injection molding machines which, together with WITTMANN's customized automation and peripheral equipment, comprise injection molding systems that offer

high economic value," declares Thomas Robers. Werner Bürli further emphasizes a need for considering processing machines and peripherals as two aspects of a single effort toward systems expertise: "We deal with temperature management in tools, material drying and conveyance, and, of course, application automation. In all areas, we have products which lead the market. Of decisive importance, however, is our systems expertise which allows us to account for entire processes as well as logistics. From this, we develop a solution which maximizes added value for the customer." ♦

*The WITTMANN Group's Swiss branches in Volketswil (left) and Kaltbrunn.*



# India celebrating the first 5 successful years

Since its incorporation in December 2006, WITTMANN India has renamed itself WITTMANN BATTENFELD India Pvt. Ltd. to better reflect the broadened sales and service support after WITTMANN's acquisition of BATTENFELD in April 2008. Since its founding, the Indian company has enjoyed uninterrupted growth. This is not only reflected in its market share, but also in the growth of its team, which has now surpassed 35 employees. This guarantees excellent coverage of all Indian plastics centers. Today, WITTMANN BATTENFELD India is independently developing customized automation solutions, and is the leader in development of linear robots. Another leadership role was earned in the field of powder injection molding with specially adapted injection molding machines of the BATTENFELD HM series.

## A challenging and dynamic market

The Indian Managing Director, Nanda Kumar, points out: "The Indian plastics processors are innovative, dynamic and demanding; they require technological leadership, together with outstanding service and short response

times. Starting the day WITTMANN BATTENFELD India came into existence, it was our goal to be an all around reliable partner. We are proud to have achieved this within a demanding environment, and of course we are trying to further develop our market position by promoting the other products in our extensive portfolio. The Indian plastics market has grown consistently over the last years by double digit figures, and we have been able to grow at an even greater rate."

Nanda Kumar sees a lot of potential for further growth in robots and automation, but also in the field of central drying and conveying systems with the corresponding WITTMANN M7.2 control. He is also confident that the EcoPower injection molding



The Indian team at the Plastindia with General Manager Nanda Kumar (first row, third from the left) and Domenik Nikollaj, Material Handling Sales Manager in Vienna, Austria (first row, second from the right).



machines, as well as the automation of blow molding machines, will make a strong impact on the Indian market.

Today, the Indian plastics industry is looking

for energy efficient equipment to be able to reduce manufacturing costs. Here, WITTMANN BATTENFELD is making a big impact due to their commitment to achieving the lowest possible energy consumption of their equipment. To meet the growing demand of the Indian plastics industry, WITTMANN BATTENFELD India will once again expand their manufacturing capacity in 2012. ♦

The new premises of WITTMANN BATTENFELD India in Chennai.

# WIBA Colombia establishing on the local market

The Colombiaplast trade fair held in Bogota in 2008 saw the inauguration of a local channel for distributing the products of WITTMANN BATTENFELD. This ambitious project has since burgeoned into the enterprise's Colombian sales organization.

WIBA Colombia was established at the suggestion of Carlos Chávez who, as managing director of the WITTMANN Group's Mexican branch at the time, wanted to expand the enterprise's activities to Latin America. For strategic reasons, expansion began in Colombia with the aim of achieving the same significant measure of success Carlos Chávez had already achieved in Mexico. In 2011, WIBA Colombia finally commenced its operations as an independent company. The newly founded establishment received crucial support



from WITTMANN Mexico in terms of logistics, spare parts and service. The Colombian plastics processing industry holds great potential. Demand for peripheral equipment (ranging to complete conveyor systems), IML systems and injection molding machines is rising. A number of prominent companies

in the plastics sector rely on robots and other peripheral equipment from the WITTMANN Group, whose competence as a technological partner is held in the highest regard.

Customer relations are maintained by the technical service department too, which contributes to the bond of genuine trust which has arisen between customers and the service teams. The staff of WIBA Colombia is made up of engineers with technical/chemical background. In 2012, Managing Director Sublema Rios formulated the goal to position WIBA Colombia permanently as the largest supplier of peripheral equipment and molding machines in Colombia. The company will present itself and its products to industry professionals from 1<sup>st</sup> to 5<sup>th</sup> October at the Colombiaplast 2012 (booth 1718). ♦

Rear row: Wellington Guzman, Carlos Mendoza, Jorge Lopez. Front row: Jairo Mantilla, Managing Director Sublema Rios, Estrid González (from left to right in each case).

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