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Dear Reader,

In recent days and weeks a major event overshadowed all other activities around our company – it was the acquisition of the injection molding machine manufacturer Battenfeld by the WITTMANN group. With the takeover of Battenfeld, which occurred on April 1st, a new era began for our company. The current business philosophy to offer all products and services around the injection molding machine was without this important piece which has now been resolved. We are now the first machine manufacturer for the plastics industry worldwide who can entirely meet the rising requests from customers for complete molding solutions from one supplier. Besides peripheral equipment, for which WITTMANN is renowned, we will offer in the future through the separate sales channel of WITTMANN-Battenfeld, the entire range of injection molding technology as well as additional technologies like: Airmold gas injection technology, Aquamold water injection technology foil and textile back molding, In-Mold Decoration, Variomold, Wood Injection molding, multi-component technology and powder injection molding. The merging of the different products and peripheral equipment to optimize the overall system will be suggested and achieved by our own experts from WITTMANN-Battenfeld. The slogan “Competency from one hand” has probably never before established its validity in the plastics industry to this extent.

In order for you to see this for yourself, we have planned the “Battenfeld Competency Days” from June 4th−6th, 2008, at our Kottingbrunn plant, Austria. We will present the innovative WITTMANN-Battenfeld equipment, our wide range of application technology and our latest service packages covering customer support and training. We are very pleased to invite you at this time to Kottingbrunn.

The internal company structure of the WITTMANN group, which has increased to 1,580 employees, will remain almost unchanged as the expert knowledge developed through many decades of research and numerous practical applications in each individual product area, is a substantial part of our success. Each and every one of the products in our portfolio must exist and compete for itself alone in the market and be able to belong, in its respective area, to the technology leaders.

Exciting times are waiting for us and we will remain loyal to our mission, to increase our market leadership through our innovative spirit. I hereby want very much to welcome on behalf of the entire WITTMANN team, our newly gained colleagues at Battenfeld.

Sincerely,
Michael Wittmann
WITTMANN Acquires Battenfeld

With the acquisition of Battenfeld Kunststoffmaschinen Ges.m.b.H., WITTMANN, a global manufacturer of auxiliary equipment, is taking over a successful worldwide manufacturer of injection molding machines. As a result, the entire know-how required by plastics processors is concentrated in one source yet the autonomy of the two divisions will remain.

Battenfeld Kunststoffmaschinen Ges.m.b.H. has its roots in the area of forging and metalworking dating back to 1876. In 1948, Battenfeld Injection Molding was established and the following decades brought continuous internationalization.

Today, Battenfeld – with its 600 employees worldwide – manufactures approximately 1,000 injection molding machines annually, with a full range of clamping forces.

Battenfeld has 14 distribution and service companies and agencies in over 80 countries. The global structure of Battenfeld ensures a solid basis on which both the group and customer success is able to grow.

Synergy effects through syndication

The acquisition of Battenfeld by WITTMANN creates a synergy that will ensure future success and contribute to further growth.

On April 1, 2008 WITTMANN will take over the Battenfeld headquarters and production plant at Kottingbrunn (Lower Austria) and the worldwide sales and distribution subsidiary companies and the German service company, the last remaining independent service unit. The market for auxiliary equipment on one hand and that for injection molding machines on the other, will continue to grow independently. However, the syndication will of course lead to the completion of both product lines, providing the advantage plastics processors have been looking for in terms of a seamless combination of processing machines, automation and auxiliary equipment – all occurring at a progressive rate. The WITTMANN group will now have about 1,500 employees worldwide and going hand in hand with this growth, a more integrated sales and service network with greater expertise in every field of injection molding including automation.

In any case, the long term relationship with new and existing customers remains the overall leading thought of the entire business activity.
Robots Assisting Livestock Farming

*WITTMANN robots are automating the production of transponder pins with integrated RFID chips. These parts are becoming more and more accepted as reliable electronic “cattle drovers” in livestock farming – for the benefit of stock farmers, consumers, and animals.*

**Jordi Farres**

In many European countries agriculture, and especially livestock farming, is still handled quite traditionally by many small to mid-size rural enterprises existing alongside only a few large firms. All are struggling against low market prices for their products and the need to meet the expectations of the customer in regards to high quality and food safety. Although the conservation of rural structures is highly subsidized, especially within the European Union, it has become important for most of the small and mid-size firms to improve their workflow (e.g. due to high labor cost) – as the only option to stay competitive in the market for meat and dairy products.

**RFID systems for livestock farming**

One example of improving the workflow is the automatic identification and individual monitoring of the cattle in the barn via a mainframe computer. In traditional small firms the farmer identifies his animals by the varying figure and patterns of the fur.

The animals are called by their individual names and very often still, the life stories and milking results are written down in books. As the livestock count increases it gets more and more difficult to distinguish the animals from one another and to even overlook their individual needs and characteristics. Hence, it is becoming more and more difficult to assure optimal feeding and adequate veterinary care and monitoring.

Therefore, in modern livestock farming enterprises nowadays, the whole life of the individual cattle is normally observed – even controlled, in a sense, via a suitable electronic system. A central element of such a monitoring system is the application of a transponder pin, basically an RFID chip that is embedded into a plastic enclosure along with a steel point for piercing, which is placed within the ear of each calf immediately after its birth. The enclosure is designed in a way that the chip can be inserted after the event and sealed with a wafer-tight cap.

**Data management**

All relevant data is saved on the chip: name, date of birth, weight, milk production, forage, as well as a potential course of disease including medication, and the data can be edited if necessary. When the earmarked cattle enter a stall in the barn or the feeding ground on the grazing land, the appropriate forage and the right amount of water are calculated by the system and provided automatically to the stall – according to the time of day and the specific animal. Automatic milking is performed and the yield compared to the foregoing results. When the amount of milk is too high or too low the system generates a message that describes the occurrence (suspected illness or other irregularity). When crossing specially designed stalls with integrated weighing units, the weight of each single animal is collected daily. This information can also be saved on the chip and

*They are essential for the modern “administration” of livestock: transponder pins – RFID chips that are embedded in a plastic housing.*

*WITTMANN innovations – 2/2008*
observed as required. Due to the flexibility of the system it is not necessary to guide the animals into the stalls and tie them up. They are relatively free to move within the barn complex and corresponding grazing land, to the point of literally choosing their own stalls. Thus, factory farming ensures optimal feeding and milking while facilitating compliance with regulations and quality standards.

The market for monitoring systems is still increasing in the industrialized countries and has resulted in several manufacturers specializing in the production of these systems.

In 2007, WITTMMANN Spain accepted a bid to automate a production line of transponder pins with robots. The system is described below in detail.

**Automating the production**

Using a vertical injection molding machine equipped with a rotary table, the transponder pins are produced in a 20 cavity mold operating at a total cycle time of 20 seconds. A fast moving WITTMANN W721 robot (10 kg payload) performs the insertion of the steel points for piercing, removes the finished parts and places them on a conveyor belt. Two vibratory feeder bowls are connected upstream from the injection molding machine to provide separation of the steel points. The steel points are then exactly positioned and fixed to two linear vibratory transportation lines. By means of two short pick & place servo axes the steel points are picked up and placed on an intermediate plate where their position corresponds exactly to the pattern of the mold cavities. This not only requires very high speed but also extremely accurate positioning of the parts to within a maximum tolerance of +/- 0.05 mm.

Using an insertion gripper, the WITTMANN robot removes all 20 points from the intermediate plate simultaneously before moving into position over the rotary disk of the machine. The finished transponder pins are then removed by a second gripper before the steel points on the first grip are inserted into the mold cavities. The finished parts are then dropped onto a conveyor belt positioned beside the machine.

The extremely short cycle time requires several of the robot movements to be performed at the same time: the insertion and removal movements along with the single placement of the 20 steel points on the intermediate plate by the servo axes. The communication between the robot and the vertical injection molding machine is accomplished via a standard R7.2 robot control and, in this case, communication is achieved via an (optional) input/output module.

Heavy Weight Parts for MC 70-80

The injection molder Centrex Plastics LLC (Findlay, Ohio), has contacted WITTMANN at the NPE show 2007. They were looking for a recycling solution that could process the huge amounts of plastics accumulating continuously.

**Todd Rains**

Centrex Plastics LLC is a custom injection molding facility located in Findlay, Ohio. Last year at NPE, Centrex contacted WITTMANN to look at how they could decrease the volume of the various plastics that had accumulated in Centrex’s facility. Centrex’s main concern was to create a single work cell where one operator could process over 2,000 pounds of material an hour and quickly change materials throughout the work day.

WITTMANN’s solution was an MC 70-80 granulator (USA: MC 2832) integrated with a conveyor, blower and cyclone system. The large cutting chamber of the MC 70-80 was more than capable of handling the bicycle ramps, measuring 22” wide x 32” long (560 x 815 mm).

A tour of Centrex shows there is little room for error as the factory molds numerous large automotive parts for very large trucks, cars and SUVs. The MC 70-80 allows Centrex to immediately grind any bad parts that are produced and introduce the regrind back into the molding process. This eliminates scrap piles of bad parts that take up valuable floor space. The MC 70-80 is used to process multiple combinations and colors of ABS, polyolefins, and polypropylenes. The small profile of the MC 70-80 allowed Centrex to decrease the amount of valuable floor space required in its already full production facility.

**Adjusting the knives**

Standard with all units is the pre-adjustment knife gap fixture which allows the knives to be gapped outside the machine for a quick and easy knife change, saving Centrex hours common for the maintenance of their pre-existing granulators. Each rotating knife can be adjusted independently to minimize the gap between the rotating and stationary knives. The ability to sharpen and adjust each knife helps maintain a constant cutting circle. While the gap between the knife tip and screen always remains the same.
this helps push material through the screen increasing throughputs and minimizing energy consumption. Also, the gap between the rotating and stationary knives is minimized by the Herringbone rotors.

The knives are mounted at a small slant creating a “scissor” like cut which moves material away from the side walls and towards the center of the cutting chamber. The ability to reduce the gap independently on each knife after sharpening will greatly reduce dust. Dust is caused when material is not consistently cut.

**The technical features**

Required to run seven days a week for up to 3 full shifts, the granulator must be able to stand up to a rigorous environment. WITTMANN uses 75 hp motors as a standard in the MC 70-80 with options for 90 and 120 hp motors while a MC 70-100 (USA: 2840) can go as high as 140 hp. The rotor, bearings and cutting chamber side walls are designed larger than standard conventional granulators of the same size. Due to the size range of the various parts, Centrex chose a three spoke rotor. WITTMANN offers a 5 spoke rotor for increased throughputs. The open rotor design allows unrestricted airflow through the cutting chamber for cooling and is quieter than solid rotors.

The MC 70-80 has been in service at Centrex for over a year and has had 100% uptime. Eric McMillan, Maintenance Manager, says “This unit is built like a tank.” A second fly wheel was added to the granulator increase inertia resulting in higher torque.

**Clamshell design**

A key feature of the MC 70-80 is the clamshell design which allows for quick and easy access to the top and bottom of the cutting chamber for material cleaning, color changes and maintenance. Opening the granulator requires a simple push of the button. Lorenzo Villanueba, Grinder Technician, says “I can clean the entire unit and switch between materials without contamination, all in under 15 minutes.” The granulator is equipped with hydraulic cylinders to allow one person to open the hopper from a control panel. Finally, a blower pushes the material to a large cyclone, where it is filtered and collected below the cyclone. Small bags hang from the top of the cyclone to collect any extra dust particles not collected by the filter and can easily be opened and cleaned. The regrind that is collected from the cyclone is brought directly back to the molding machines.

Each part at Centrex has a predetermined amount of regrind that can be blended with virgin material during the molding process. 25% regrind with 75% resin is the most common, some parts can use up to 50% regrind. Centrex uses blenders beside the press to mix the material before reintroducing it into the molding machine.

WITTMANN provides a wide range of options that allow you to customize each model to match your requirements. WITTMANN will perform material testing to determine which granulator is best suited for your production requirements.

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Todd Rains
is Regional Sales Manager of WITTMANN Inc., USA.
New: COOLMAX Cooling Units

The FRIGO SYSTEM company was founded in 1970, and since then has been addicted to the production and the sale of industrial cooling systems. Since 2006 WITTMANN and FRIGO SYSTEM are cooperating with each other. The outcome: The COOLMAX series of compact cooling units.

Alessandro Grassi

FRIGO SYSTEM was founded in 1970 and has since been dedicated to the development, engineering and marketing of industrial cooling systems. Their diverse range of products are demanded by a variety of different sectors – from the very strong plastics processing industry and high-tech aeronautics sector to flexographic printing and packaging and the pulp and paper industries.

Innovation, uninterrupted research in quest for new methods, the development of new markets and the distinct adherence to professional ethics, have driven the evolution of FRIGO SYSTEM. This has also led to numerous collaborations with internationally well respected companies. Today, FRIGO SYSTEM has a close network of points of sale and service partners.

Two companies, one project

In 2006, FRIGO SYSTEM and WITTMANN began to develop a new line of cooling units. This ambitious collaboration has resulted in the COOLMAX line of compact cooling units, presented for the first time at the K 2007 show in Düsseldorf, Germany.

At WITTMANN’s suggestion, COOLMAX units have been designed and developed primarily for the requirements of the injection molding process and that of In-Mold Labeling (IML). The idea was to fill a gap within the range of auxiliary equipment offered by WITTMANN.

Thus, the products within the COOLMAX line combine the distinguished image and spirit of innovation well-known to WITTMANN and the technically perfect realization by FRIGO SYSTEM. The COOLMAX line of air-cooled, water chilling units are primarily designed for industrial use such as print processes and injection molding packaging. The nominal cooling capacity of the product line covers a range from 10 to 89 kW. Standard versions of COOLMAX chillers can be used at ambient temperatures of up to 38 °C while others have been adapted to even tropical conditions of up to 42 °C. Therefore, there is a COOLMAX unit basically suited to any climate. The cabinet of the unit with its rounded edges and, of course its innovative design as a whole, give it an elegant look. In addition to the aesthetics, there has been much importance attached to the highest functionality. For example, COOLMAX units are equipped with casters for portability. The FRIGO SYSTEM technology ensures the most compact dimensions allowing the COOLMAX units to be used anywhere in the production plant. Despite the unit’s compactness the few mechanical components that may need to be accessed are easy to reach as the outer panels
are readily removable. The installation and start-up can be performed by the operators themselves without the need of external personnel.

As a standard, the cooling units are equipped with a tank, pump and threaded connectors. It’s the simple principle of “plug & play” as the units can be easily connected to any industrial system.

The know-how required to develop the COOLMAX was obtained by FRIGO SYSTEM through intensive research and development during the last 40 years and wide-ranging experience in the most diverse fields of industry. The perfect choice of components without doubt also contributes to the FRIGO SYSTEM formula of success.

**The COOLMAX key features**

Speaking from a basic point of view of performance and efficiency the COOLMAX units are different from other products. The technology is based upon the application of a vaporizer with dry expansion for which FRIGO SYSTEM holds a patent. The unit operates without using glycol. The vaporizer is located in a stainless steel collection tank filled with cooling water and insulated to prevent condensation and temperature loss. In addition, the tank is equipped with a vision panel allowing the fill level to be monitored. The COOLMAX offers automatic filling of the water tank so there is no need for the operator to check the minimum fill level.

The hermetically constructed cooling compressor is manufactured by highly respected international companies to guarantee high performance, operational reliability under difficult conditions and greater than average durability. Also, the highest quality pumps ensure consistent water circulation. Operators can choose from a wide range of models depending on the field of application and the performance requirements.

The units are equipped with centrifugal pumps that feature calibrated bypass circuits, eliminating the need for recurring check-up and readjustment of the valve notch, to ensure maximum safety.

The feed line and return line each contain a temperature sensor. The sensors check the temperature of the water entering the respective injection molding machine and the vaporizer outlet. Thus, it is possible to react in time should a malfunction occur that could cause freezing of the condenser. The condensation happens via the ambient air and needs no water.

The large condenser has copper tubes and aluminum fins with clearances of 2.1 mm to simplify cleaning and prevent contamination. Each COOLMAX has either single or multiple low noise fans depending on the model and are equipped with air vents.

**Comfortably controlled**

To further improve the design and user-friendliness both the Austrian as well as the Italian design engineers developed an elaborate control system that efficiently combines the WITTMANN hardware with the electronics and FRIGO SYSTEM control elements. The control functions are adjusted via the digital microprocessor modulators and signal lamps display the alerts. An LCD display provides the operator with any relevant information in the form of text and graphics. If required, it is possible to adapt the system via the control unit easily, without causing any problems.

The COOLMAX series fits perfectly into the wide range of FRIGO SYSTEM products, ranging from customized compact cooling units of 3 to 900 kW capacity and to cooling systems with even higher performances. The most recent FRIGO SYSTEM innovation is the application of R410a refrigerant which offers a high level of environmental sustainability, a solution which is particularly in the spirit of environmentally sound systems.

The Research and Development Department, as well as the engineering team of FRIGO SYSTEM, are always available for the analysis and design of customized systems. Such innovative solutions for special applications have made FRIGO SYSTEM one of the leading companies in the field of cooling units and a reliable partner that adheres to technical innovation and excels in flexibility when dealing with market conditions.

**Alessandro Grassi**  
**is General Manager of the Italian cooling systems manufacturer FRIGO SYSTEM.**
When designing the system some special requirements had to be considered. Five of the processing machines needed to be equipped not only with material drying and conveying, but also with volumetric material blending. Six different materials (ABS, ABS/PC, PC, PA6, POM and PP), all stored in octabins, had to be conveyed into the drying system according to the specific processing requirements, resulting in varying rates ranging from 10 to 40 kg/h. The system required the ability to handle a total material throughput of 150 kg/h and cover a distance of 50 m horizontally and 6 m vertically, between the drying bins and the injection molding machines.

Arge2000

The Arge2000 company, based in Gyál in the south of Budapest, has been manufacturing products from technical plastics since 1991. The injection molding floor covers 1,500 m² and has three shifts operating 30 machines with clamping forces ranging from 25 to 1,100 tons. Attached is 2,500 m² of storage space, a 1,200 m² assembly hall and a 600 m² office building. A total of 120 different materials can be processed in this plant and at least 15 materials are processed during a single shift. Material changes occur at intervals ranging anywhere from as little as two shifts up to two weeks. Arge2000 is a distinguished component supplier to multiple well-known global manufacturers in the automotive and domestic appliance industries, e.g. Capro, Sanko, Geala, and Nilfisk, just to mention a few.

The system structure

The system was installed in several steps over a period of five months. During that time the three shifts operated without interruption. With the first step the conveying system for the nine most modern and fully automated machines was installed. These machines were molding parts requiring the highest degree of attention. The second step involved nine additional machines and with the third step the system was completed. A 35 m² platform was installed before beginning any of the work. A DRYMAX 450 battery dryer was installed on this platform along with six SILMAX drying hoppers. The generous dimensions of the platform allow for up to doubling of the drying capacity if necessary. Dryers with two desiccant beds were used to produce 450 m³ of dry air per hour with a dew point of up to -60 °C.

In terms of their operation, one of the dryer’s desiccant beds is dehumidifying the air that is coming from the drying hopper while the other desiccant bed is in regeneration. Dew point sensors provide exact monitoring of the drying process. In the event the dew point exceeds the desired preset value, the other desiccant bed is activated.

Each SILMAX hopper is microprocessor controlled and equipped with a process heater allowing the drying temperature to be set according to the material being dried. The hoppers were built with 100, 150 and 200 l of volumetric capacity. A controlled vacuum take-off adapter ensures complete emptying of the material pipes.

Feeding of the machines is achieved with FEEDMAX A300 series loaders. These units range in size from 12 to 24 l capacity and are equipped with capacitive level sensors connected to the system control. Once the pre-set fill level is reached, the flow of material is interrupted to avoid overfilling. The FEEDMAX loaders provide the fastest possible filling and re-filling of the drying hoppers and thus, strikingly demonstrate their conveying capacity. Undried resin is stored in octabins installed under the platform which is sized to allow convenient access for changing the octabins.
The conveying system consists of two vacuum systems separated from each another, 28 FEEDMAX loaders, a 3 kW pump station, a 1.6 kW blower station and a coupling station. The pump, blower and coupling station are also installed under the drying platform, again saving space.

The installation of the material and vacuum pipes was performed by the Arge2000 personnel under the supervision of a WITTMANN service engineer. In total, 800 m of stainless steel pipe, 110 m of aluminum pipe and about 80 glass elbows were used.

On the machines themselves, FEEDMAX A200 loaders with 6 l machine hoppers were used. The emptying of the loaders is executed via pneumatic shut-off discharge valves with a bell shape to avoid malfunctions. There is no accumulation of electrostatically charged dust outside the equipment because the resin is kept completely isolated from the surroundings.

No dust enters the plant environment and no ambient humidity gets into the resin. Four of the 22 loaders are equipped with built-in dual proportional valves (DPV) to enable the conveying of two components: virgin material and regrind. The material flow is visible via the glass elbows and through the respective machine hopper vision panels.

In addition, five of the processing machines are loaded with masterbatch in different colors using a DOSIMAX volumetric dosing unit.

**Network control M7**

The network control is organized locally through a Line server that provides control of up to 31 BUS modules (“participants”) connected to one CAN-BUS line. Currently, the maximum extension of the network control allows four drying batteries with 240 feeding stations and eight vacuum pumps.

The WITTMANN network control offers numerous possibilities to visualize each parameter, e.g. the material throughput, drying function, residence time in the drying hopper and so on. The M7 network control used at Arge2000 guarantees the highest reliability and provides acutely developed functionality.

The high-resolution TFT touch screen allows for simple unit management and detailed representation of the entire system. The import and export of data is achieved by means of a SmartMedia memory card. The set parameters can only be changed after entering a password. The WITTMANN TeachBox is directly connected to the BUS system and displays the standardized user interface on a 8.5" VGA touch screen. The operator can monitor the material flow through visual representation and can access status information about every single system component. When a parameter or the status of any unit changes, the diagrams are immediately updated without any delay. After choosing any single component, the respective information is shown as well as any information regarding the maintenance and diagnostic parameters. The parameters of the drying process can be called up and, in addition, a material database with the material requirements.

This eliminates possible mistakes during setup of the production process. “Reflection” of the controls is made possible when using an IPC – which offers the online connection to multiple workplaces at the same time. And, using an in-house mail server, provides the system with the ability to send error messages to any PC.

**New projects**

The system specified above has since been expanded to include machines with 250 t clamping force. However, this required the machines to be fed with material via portable drying units which is not as cost efficient as a central drying and conveying system, especially when used with large machines. One of the main advantages of a WITTMANN central system is the energy savings opportunities:

- the SmartFlow function regulates the air quantity for each drying hopper based on the material throughput
- the material protection function prevents over-drying, thus any thermal degradation of the resin
- counter flow regeneration results in more rapid regeneration of the desiccant beds
- dew point controlled change of desiccant beds (with counter flow regeneration) results in consistently charging the molecular sieve and leads to much higher durability

Thus, it has been decided to extend the drying and conveying system for the large machines accordingly. This will result in the addition of drying hoppers and a complete system capable of handling all the requirements for operating the larger machines.

Péter László
is Head of the Budapest Sales Department at WITTMANN Robottechnikai Kft. (WITTMANN Hungary).
Conveying

Changing Parameters When Conveying Different Materials

The conveying procedure of plastic resin from source to the material consumer seems straightforward and simple, but as is the case so often in life, the problems lie in the details.

Michael Wittmann

First of all processors want to maximize the utilization of their investments. Therefore many types of resins with different bulk densities and no uniform conveying behavior are used with the same material handling system. Secondly a central material system in itself, is a variable system with constantly changing parameters during operation.

As with most systems, material loaders can be added or removed to a specific vacuum line, material sources can have varying distances to the loaders or, in the case of automatic or manual pump switchover, blowers with different characteristics can be employed. Furthermore, wear also plays an important role in terms of changes to the operating parameters.

Central systems as variable systems

Typically, the central material handling system is set up during start-up with a certain set of parameters for the conveying and purging times, which are usually not changed or modified during operation except for maybe a few cases. If an adjustment is made as a reaction to an error then the well-known “trial and error” method is often used. In a tightly linked networked system any local adjustment to a material loader have in many cases far reaching effects on the other loaders in the system. If as a consequence of the adjustment error symptoms show up then the “optimization” process begins again and the problems can further reinforce themselves.

The WITTMANN conveying algorithm

In order to prevent this from happening and to relieve the operator of all parameter adjustments, WITTMANN has developed a self-optimizing conveying algorithm for the FEEDMAX series material loaders and the M7.2 network control system. This algorithm determines independently and precisely, the optimal conveying and purging times respectively for all material loaders in the central material handling system and adapts these parameters constantly during operation.

A substantial benefit of the conveying algorithm is that the initial adjustments are also determined automatically. The initial values for the conveying and purging times are determined during the first two loading cycles. The loading cycles that follow are then used to optimize the conveying times. In order to determine these values, the algorithm uses the level sensors in the FEEDMAX series material loaders. During operation, activation of the level sensor is used to reduce the conveying time by a fixed time value or, in the case where the sensor is not activated, to increase the conveying time by a time value. Thus, the advantage is automatic settling down of the conveying time to guarantee optimized operation. Only after a certain number of loading cycles and therefore, the already optimized adjustment of the conveying times, the setting of the purging times is performed. After the initialization phase these times are set too high and therefore consume an unnecessary amount of time for purging of the material lines. Based on the activation of the level sensor, the algorithm shortens the purging time accordingly. Afterwards, the optimization of the conveying times is continued. If the material to be conveyed is changed on one loader or, the loader is re-activated, the entire process starts again with the initialization phase.

The conveying algorithm developed by WITTMANN completely eliminates the need for the operator to perform any adjustments to the conveying and purging times. Furthermore, the parameters are permanently set to the optimized values for the most efficient and convenient operation of the material handling system. WITTMANN has applied for a patent on this innovative process and newly developed algorithm for determining the conveying parameters.
The first IML system ever on the Indian sub-continent was ceremonially handed over

The first In-Mold Labeling (IML) system in India was handed over to the two Presidents, Mr. Rajnikant Patel and Mr. Vipul Patel, of Jyoti Plastics Industries, Ahmedabad on December 7, 2007 during the Plastvision show in Mumbai, India.

The high-speed In-Mold Labeling system consists of a WITTMANN W727H side-entry robot and 2-cavity single face molds. It is used for the production of two 200 gram containers and their corresponding lids.

The system is attached to a Milacron injection molding machine. WITTMANN developed the complete IML system for this project including the molds and automation systems.

The customer, Jyoti Plastics Industries, has excelled in the past as a visionary who adapts new developments quicker than other local plastic processors and could therefore gain faster technological advances.

The unmatched growth of Jyoti Plastics Industries proves the vision of Rajnikant and Vipul Patel and also, the In-Mold Labeling technology, will open new markets to Jyoti Plastics Industries.

WITTMANN Canada: prominent guests at the official opening ceremony

WITTMANN Canada officially opened its new 40,000 sq. ft. Canadian headquarters in Richmond Hill, Ontario on Friday, February 22, 2008 with an Open House and ribbon cutting ceremony attended by various dignitaries, government officials, trade press, customers, suppliers and employees, both locally and from WITTMANN global.

Guests and staff gathered in the equipment showroom to examine a range of equipment representing the complete WITTMANN line of automation and auxiliary equipment before being taken on guided tours of the building and production areas. Everyone then enjoyed a catered lunch and cake followed by speeches by various individuals and the official ribbon cutting to launch the new facility.

There were many special guests in attendance including those from all levels of government including David Barrow, Mayor of Richmond Hill; Reza Moridi, M.P.E., Parliamentary Assistant, Ministry of Training, Colleges and Universities; Karl Schmidt, Consul and Trade Commissioner and Drazen Miletic, Vice Consul and Deputy trade Commissioner, Consulate General of Austria, Commercial Section.

The response from attendees clearly identified the new facility as being unmatched in the Canadian plastics industry and that WITTMANN Canada is positioned for global growth.

Never before has the Canadian operation had a dedicated showroom for equipment demonstrations and an on-site training room available to attract customers and provide hands-on training. Rob Miller, President of WITTMANN Canada stated, “With this new facility WITTMANN Canada has the space to further develop their products and services to remain competitive and grow the business.” The move to the larger facility resulted from the acquisition of the M-Tek blending and materials handling product line last year from Mould-Tek Industries.

Michael Wittmann stated, “Along with our purchase of the M-Tek product line, this move reaffirms our commitment to stay in the Canadian market.”

Rob Miller, President of WITTMANN Canada added, “The products manufactured at this location include our complete line of resin conveying systems, the full range of weigh scale blenders acquired last year, as well as many of our custom engineered products such as desiccant dryer systems, and custom conveying and weighing systems. We are also distributing and servicing all of the other WITTMANN products manufactured by our other global divisions.”

Consul Karl Schmidt, Parliamentary Assistant Reza Moridi, Rob Miller, Michael Wittmann, Mayor David Barrow (from left to right).
In 1994, WITTMANN began robot production in the US and has steadily grown with the sales. WITTMANN USA ships close to 500 robots per year. In 2000, the new Torrington, CT, US headquarters plant has been built, and in 2006, the first plant expansion to over 70,000 sq ft of space for manufacturing, machining, engineering, sales and service has been completed.

WITTMANN USA staff has grown to over 100 dedicated and energized employees, plus an additional strength of manufacturing sales and service agents.

United States regional support

To cover the US geography responsibly, WITTMANN US has regional Technical Centers in Elgin, IL, Lake Forest, CA, Big Rapids, MI, and soon a new location in the South East.

Each of these centers offers local training for customers, spare parts, and quick shipment options for net 30 products.

Additionally, WITTMANN US has a network of trained sales and service professionals located throughout the US. One focus of the product specialists for customers is to maintain individual experts in each field such as:

- robot applications engineers,
- central material handling and drying systems,
- temperature controllers,
- and granulators.

Often in excess of 10–15 years experience, provides more value to customers to deal with the WITTMANN staff as consultants and project managers for efficient project analysis and execution.

Inventory

For the temperature controllers, granulators, dryers, loaders, blenders, and robots, WITTMANN USA maintains over $7m of inventory to provide quick shipments of stocked, standard products, and is offering granulator testing, with video and regrind quality samples for optimized solutions.

Various dryer configurations of hoppers are integrated, portable cart styles or press mounted, with vacuum loaders to meet every customer specifications.

The Material Handling and Dryer Systems Division provides all aspects from customer conception of a central system to design and controls, project management, plant layout, piping and installation materials, plant installation and supervision, silo erection, start-up and training.

While all WITTMANN products globally, use the same bill of material, and global volumes offer us good component purchasing costs, for competitive market pricing, the local US manufacturing gives an added flexibility to produce orders to customer’s specifications in competitive lead times.

WITTMANN robots have gained notoriety for high end, yet user friendly controls, with an open architecture and multi-tasking programming capability to run much more than just pick & place molding functions. The WITTMANN USA operation can illustrate countless proven and reli-
able custom automation applications, fully integrated and flexible work cell designs, and experience of:

- insert loading,
- collection, box filing, packaging systems,
- degating,
- inspection, automation.

These solutions cover the range of automotive, medical, electrical, house wares, packaging, toys, appliances and other molded parts sectors.

**Technology and training center**

With the 2006 plant addition, WITTMANN USA put in a state-of-the-art technology center to display and offer testing with the products range. In this center, visitors can witness new products as the ultra fast W7x5 side entry robot, the six axis articulating robot and servo gator, the M7 central MH system and control panel, dryers, blenders, temperature controllers and granulators. One highlight for customers is the new training room.

The multi-media, movie theatre, training classroom allows extremely low cost training, with highly effective, hands on programming training value for students.

**Global network compliment**

The neighboring WITTMANN divisions, with their entire staff and in their brand new plants, WITTMANN Canada and WITTMANN Mexico only further compliment WITTMANN’s commitment and local support to the North American and most often, continuous global customer base.

The WITTMANN global structure and network makes the complete enterprise the most viable auxiliary supplier choice for progressive molders of any size, wherever in the world they are situated.

One final word is that WITTMANN USA and the most widely recognized customer base, share in brand loyalty and partnering for mutual rewards and success.

Check the new US Website for much more information about WITTMANN at [www.wittmann-ct.com](http://www.wittmann-ct.com).

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**Australia: WITTMANN Pty Ltd**

In 2007 WITTMANN Pty Ltd was formed to begin a new era for WITTMANN in the Australia and New Zealand region in an effort to further expand the growth of WITTMANN products globally. Of course, WITTMANN Australia will focus on the full range of WITTMANN products but in particular be strongly focused on material handling equipment.

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It is important to note that the Australian and New Zealand markets may not be aware WITTMANN offers a full range of automation and auxiliary equipment and not just the CNC Robots for which they are so well known. With the backing and support of WITTMANN worldwide, material handling and the gravimetric blender product lines are proving very popular in all Australian plastics segments.

WITTMANN Pty Ltd is a wholly owned Australian company formed by Anthony Prior and Andrew Wong. The experienced team has introduced the full range of WITTMANN products to the Australian and New Zealand marketplace over the past 12 months. The most well known products in the region have been CNC Robots of course and water flow regulators. Although the WITTMANN agency for Australia and New Zealand is relatively new in its current form, in fact just 12 months old, WITTMANN has had a long standing presence in both countries for more than 25 years and are well known for their quality. The company is located in the south of Sydney and serves the entire region of Australia and New Zealand fully. Australia is a unique country in that it is so big but with so few people.

For the service team it is nothing to travel 1,000 km for a service call and then 1,000 km home. WITTMANN Australia has chosen the very best contract service technicians from around the two countries to represent them for fast and efficient service.

Many interested customers from all over Australia and New Zealand. In particular, Jérôme returned home with an order for three IML Systems from one of the most respected plastics processors. The most attractive prospect for IML customers in Australia is the fact that WITTMANN can supply the full product range from low cost, entry level units all the way up to multi-axis stack mold systems. WITTMANN Australia is now well positioned for local service and spare parts.

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**The IML expert “down under”**

In September 2007, Jérôme Empereur, of WITTMANN France made a visit to Australia and New Zealand to help promote WITTMANN IML systems.

There were many interested customers from all over Australia and New Zealand. In particular, Jérôme returned home with an order for three IML Systems from one of the most respected plastics processors. The most attractive prospect for IML customers in Australia is the fact that WITTMANN can supply the full product range from low cost, entry level units all the way up to multi-axis stack mold systems. WITTMANN Australia is now well positioned for local service and spare parts.

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**Anthony Prior (left) and the Australian “core team”**