Automation:
Thinking in terms of the specific functions instead of technical standards (p. 6)

Robot Engineering:
Modern robot drives are ensuring quick, quiet, and totally reliable units (p. 8)

In-Mold Labeling:
WITTMANN France is setting new standards with its 2 + 2 stack mold (p. 10)
Dear Reader,

The widely heard phrase currently that the year 2007 just flew by only applies in a limited way to travellers who have spent a significant part of the year flying or – necessarily connected with this – waiting at airports. This might be twisting of words a little, but it brings me to the main point. Flying also has its good sides: Through the request of the flight attendants to switch off all electrical devices for the duration of the flight, someone is cut off from any connection to the outside world. At the end of the year, this “pause in connectivity” gives one the opportunity to deliberate about the year ending, as well as to think about the New Year.

What happened in the life of WITTMANN in 2007? We can be pleased about a significant increase of our consolidated group revenue, as well as the number of employees. This growth is based on a generally friendly economic situation and therefore, a high degree of investment in most countries. Another share in this development is the further increased product offering of our company now with IML automation systems and molds, as well as the recent addition of gravimetric blenders. The size of the increase was slowed down by the obvious weakness of the US$. Divisions in our worldwide operating group, whose currencies are linked to the US$, are relatively weaker in EURO terms.

A further highlight of 2007 was the participation at the K Show in Düsseldorf, Germany. Also, WITTMANN India started its operation and now supplies plastic processing companies on a local basis with our products.

In 2008 we are expecting continuation of the friendly business development. Our order books are already filled well into 2008 and the increases, which we expect from the sales activities of our new TEMPRO plus C temperature controller line and the MAS beside-the-press granulators, are just starting and will show their effects in 2008. Also, our small W701 series robots are just about to hit the market. They are opening a new market segment for our automation activities down to machines of 25 tons clamping force, which we were not able to completely cover until now. The DRYMAX ER60 rotational dryer and the new FEEDMAX R102 central vacuum loaders will be available by the middle of the year and further increase our market exposure.

Several construction activities are under way. This includes a new plant in France, in the Czech Republic and Germany. Therefore, another eventful New Year is awaiting us that too will also “fly by”. – A Happy New Year 2008!

With best regards,
Michael Wittmann
Bearing Challenging Recycling

Today, only few U.S. game manufacturers still operate domestic molding operations. However, one company has found the winning solution in an increasingly competitive market.

Bob Harrison

One U.S. leader in the design, manufacture and marketing of games and toys worldwide knows how to remain in the game. As a plastics processor, they too face the same pressures as other molders of rising costs and have turned to WITTMANN for automation work cells and other innovative cost saving solutions to reduce manufacturing costs.

Having worked with WITTMANN for many years on their automation needs with sprue pickers, robots, EOAT and complete work cells, they were fully aware of the product quality and local support available to them. They commonly involve WITTMANN early on in their projects to ensure everything is specifically tailored to their needs in order to maximize the benefits. They recently remarked: “WITTMANN always brings the necessary players to the table up front to provide input and ideas. They work closely with us on each project from start to finish ensuring its success.”

A challenging project

One of their biggest challenges was recovering the runners and scrap from K-Resin® used in several of their games. K-Resin®, known for its crystal clarity, durability and high performance, is a very soft, energy absorbing material which has the potential to be reprocessed multiple times but not only degrades if exposed to excessive temperatures, but quickly melts if not properly reground. Add to this that the runners are generally warm when they are being processed and the material is slow to cool, which only compounds the potential for problems.

Although the customer had tried other granulators to regrind the runners and scrap they typically created large amounts of fluff that was difficult to convey. This would then lead the evacuation bin to fill up and material to back-up into the screen and melt due to additional heat caused by excessive cutting and insufficient cooling. Not only did it quickly jam the grinder but it would take an entire shift to clean out the resulting material which would often solidify into a solid block of plastic which then needed to be chiseled out. They estimated that they were cleaning a granulator out at least once a week which resulted in increased labor and eliminated any material cost savings that the regrind otherwise offered. The problem was inadequate cooling of the granulator because of the closed rotor design and the build up of fluff caused by poor cutting quality from the fixed knives and the ever increasing gap between cutting surfaces.

WITTMANN’s granulator product sales manager, Bob Harrison, performed some initial research on the K-Resin® manufacturer’s website to determine what specifically was required to successfully regrind the material. The Chevron Phillips website www.cpchem.com offered the following application:

When reprocessing K-Resin® SBC, a chopper with sharp blades, close blade tolerance and adequate ventilation should be used to avoid heat buildup. Excessive temperatures in the chopper or storage container can degrade the resin yielding increased haze, erratic flow behavior and undesirable property changes. If extreme processing and regrinding conditions are avoided, K-Resin® SBC should easily withstand multiple passes.”

A solution fitting to the material

WITTMANN’s solution was a 3-blade open rotor design for maximum cooling and adjustable rotating knives. The adjustable knives provide a constant cutting circle in relation to the screen for maximum cutting efficiency. In addition, the adjustable rotating knives can be adjusted or ‘gapped’ individually to allow the smallest gap possible for each knife. No longer does the gap need to be set for the widest knife but instead all can be set to the smallest gap possible. Having minimal clearance between the rotating and fixed knives provides a cleaner, more efficient cut as opposed to the shearing type cut that occurs as the gap increases with fixed knives.

The customer had even considered using a water cooled cutting chamber to solve the excessive heat issue. Instead, WITTMANN provided a better solution for their application using an open rotor granulator and saved them the added expense of a water cooled chamber and all the hook-ups and capacity issues.

Another problem the customer had experienced was the handling of regrind from the granulator to the machine. Because of the very fluffy nature of the material it was hard to feed and the existing hopper loaders did not offer proportional mixing. WITTMANN proposed a granulator with a vacuum take-out bin connected to a WITTMANN FEEDMAX loader to convey the regrind to a two material hopper. This then allowed the processor to mix the two materials in the correct proportions without any material flow issues. Typically, for this processor, the runner averages 15% of the shot and could be as much as 50% for some jobs. The WITTMANN equipment allowed them to recover virtually 100% of the K-Resin® scrap. This is a substantial improvement over the waste incurred before the equipment was purchased. If one looks at the true material savings, the return on investment for the granulator took less than nine months.

Continuous operation without troubles

The granulators now operate 24 hours a day, five days a week and they require very little maintenance. Because the granulators have adjustable knives and come with a pre-adjustment knife gap fixture, a spare set of sharpened knives can be kept on the shelf and changed out very quickly and easily if required. Long blade knife has resulted from the minimally abrasive material and the improved processing. The low maintenance design and elimination of fluff has resulted in an uninterrupted operation of the granulator for over 5 years!

WITTMANN also offers a new safety feature that results in faster, much easier access to the granulator cutting chamber for cleaning and inspection. As the rotor generates a voltage while still turning – even after the power is shut-off – it is monitored and when the rotor stops turning and reads “zero” voltage, a safety interlock will allow the granulator unit to be immediately opened for access without the time consuming process of turning finely threaded time delay safety interlock switches.

WITTMANN offers processors one stop shopping for automation and auxiliary equipment along with complete product support to meet all their processing needs. From the local sales representative through top level management, they are there to support you. And, for service and spare parts, local support is available if you need it. With a full range of conventional and screenless granulators, WITTMANN is able to specify the best unit for your individual application.

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WITTMANN innovations – 1/2008

Bob Harrison

is Sales Manager

of the Granulators

Department at

WITTMANN USA
Production of Seat Adjustment Rods: Robots Working Hand in Hand

The combination of linear and articulating industrial robots in a single work cell is becoming more and more common. By thinking in terms of the specific functions instead of technical standards can make the development of this type of production cell more flexible than ever before.

Walter Klaus

The production of what might appear at first sight to be the simplest part can turn out to be a more complex application consisting of various functions and steps needed to assure 100% quality output.

In the following case, different kinds of robots – two WITTMANN linear industrial robots and two WITTMANN articulating robots – as well as two vision systems, flexible transport chains, ball feeders and a high level PLC supervising the equipment, are combined to create a highly efficient production cell.

Objectives

The decision to produce parts in fully automated cells is certainly made on the basis of various factors. First of all is the volume of parts to be produced in a given time frame and the return on investment (ROI) calculation. In this case, for the production of seat adjustment rods, the decision was additionally influenced by the following criteria:

- minimization of personnel involved in production and handling
- increased machine output
- reduced scrap
- reduction of total floor space
- traceability of the various production steps for error diagnostics

The robot and control concept

When establishing the production concept one of the customer’s main objectives was to find automation that was as flexible as possible so they could reuse it without major changes when the planned production had been phased out or changed. It was soon determined that most of the operations could be accomplished with standard off-the-shelf robots delivered by WITTMANN in Schwaig. Analysis of the various movements required by the production process was performed for each phase of production in order to determine which type of robot was best suited. The fast, long distance movements needed to transport and stack the trays into the lattice boxes were the perfect task for linear robots. The unbeatable straightforward programming ability of the WITTMANN robots – which is a result of thousands of different applications – makes teaching in general and, even in the online mode, a safe and simple process. Palpating programs refer back to the experience of two decades of continuous program development and require only a few basic inputs to perfectly fill a box with trays. Supplying and removing molded parts from the injection molding machine is, as well, a WITTMANN strong point with its slim but rigid W6 and W7 series robots. If we recall, one of the objectives for this production cell was the reduction of floor space. Then, as a result, is a very narrow placed working area inside the cell. Here, the extreme manoeuvrability of the WK86 articulating robots is definitely required.

Regardless of the high programming capabilities of both the linear and articulating robot controls, there is still room for improvement when it comes to easy central operation, monitoring and trouble shooting of the complete production cell. It would be very hard to find a PLC better suited than the Siemens S7 controls in order to integrate different control types and enable the operator to run the whole cell, including each and every machine therein, through a single S7 human machine interface (HMI) touch panel.

From one single place, the HMI allows running all units in home position prior to production start, starting of the cell depending on the product code selected and monitoring the production sequence. Guiding the operator through the process, calling up the I/O’s, checking the error messages and finding the cause, as easy as it can be with the high level S7 PLC.

Operating cycles

At the beginning of the operation the threaded rods are moved 40 at a time in vacuum formed plastic trays which are piled in stacks of 15 each. The transport of the trays and rods is performed by heavy duty chain conveyors offering a buffer of 30,000 parts for one complete shift for 750 cycles with 4 cavities based on 48 seconds per cycle.

De-nesting of one tray is the first step prior to inspection of each rod by a vision system to check the dimensions and ensure correct orientation in the tray. The handling is performed by a WK86 articulating robot which places the rods in front of the camera system and then transmits the acceptable parts to a temperature controlled heating plate. The rods to be inserted in the injection molding machine (IMM) are picked up four at a time from this plate by a WK83i S53 linear robot and inserted in the open mold half of the vertical press. The same robot, through a multi-functional gripper attached to the WK83i S53, removes the finished parts before inserting the rods.

For a short period the linear robot places the four rods in a cooling jig where the second WK86 takes over and inserts the adjustment rods for the following operation in which the parts are completed. In this task, a 6 mm steel ball is pressed into the plastic gear at the upper end of the adjustment rod. This steel ball performs the function of actuating the limit switch to stop the seating movement by shutting off the electrical motor. As a result of this force fitting operation there is – under specific conditions – the risk of bursting the plastic gear. It is therefore essential to perform a quality check on 100% of the parts.

Checking vision system

This is accomplished by a vision system which checks the risk area online with the transport movement of the single parts from the force fitting station to a collecting area. A specially designed dual operation gripper allows the robot to pick up a set of four parts which are then transported by the articulating motion of the second WK86 to the tray alignment position of the chain system and placed part by part in the trays for traceability, with each tray containing only those parts from one specific mold cavity. Finally, a W621i S53 linear robot picks up each tray filled with 100% tested and approved parts and stacks it in ready-for-shipment lattice boxes, organized in a sequence that one container carries only the parts of one specific mold cavity.

From above:
- Blanks and finished parts
- Camera check of length and orientation
- Heating plate insertion
- Insertion in the IMM
- Impressing of steel balls
- Quality check via vision system

Walter Klaus is Director of Engineering at WITTMANN Robot Systeme GmbH in Schwaig, Germany.
Drive Engineering for Robots

An optimal robot for the plastics processing industry has to be quick, quiet, reliable and last but not least, economical. The drive technology used for the robot takes on a key role when it comes to optimizing these parameters.

Thomas Kalender

The demands made on a robot drive are directly comparable to those of a top class sports car: The distance from A to B has to be covered within the shortest possible time. Needed are high acceleration, high speed, and the best performance when decelerating. A sports car, as well as a robot, must also move their own motor and therefore, the drive weight should be as low as possible in both cases. Unlike a typical sports car, a robot has to perform with a low noise level even at maximum speed. In terms of reliability, a robot requires that of a truck rather than a sports car. The performance must also include the economic thoughts of the potential customer.

The drive technology used in the new WITTMANN W8 generation robots combines the demands on dynamics, reliability, low noise level and economics to an extent never before reached.

Higher power density

When evaluating a robot drive the power density plays a prominent role. When the drive’s maximum power is divided by its volume, one gets a characteristic number of Watts per liter – the so called power density. The power density of the drives used by WITTMANN has been partially increased to a spectacular level (see graph). The level reached today is made possible by using the most modern magnetic material, optimization of the magnetic circle and using a space saving single pole coil.

More precise and faster positioning

Fast, precise positioning and quiet, vibration free operation are important requirements for a powerful robot drive. What does the dynamics of the drive truly depend on as it is not the raw force itself? The force has to be controlled by a quick, precise adjustment and in this regard, the WITTMANN drive technology – in terms of innovation – has absolutely nothing to fear from any comparison. The position control speed of the new W821 has increased by a factor of 32 in comparison to the W621 robot. And, the position control of the model W821 UHS has increased in speed once more by a factor of 2 and is therefore 64x faster than the standard W621. The importance of quick control of course grows even bigger when the measurement of position is also of ample quality. Only then it is possible to achieve quick and exact positioning at an acceptable low noise level. For this reason, all drive systems of the W8 generation robots use 17-bit position resolution. This means exactly 131,072 increments per motor revolution. Converted to the linear movement of a Z-axis, this means an arithmetical resolution of position of less than 0.3 µm!

Continuous digital control

With the introduction of the W8 generation robots, WITTMANN has established a whole standardized architecture of communication within the entire robot. And the drives are also fully embedded into this architecture and the robot control ac-

ceases the drives via a fast system of communication. This not only leads to higher performance and accuracy but, the operator also benefits from improved diagnostics and reduced maintenance time.

Very low noise level

Modern robots not only have to be fast and economical but they should also operate with relatively low noise. Not only the mechanical parts such as racks and gears contribute to the acoustic pattern of a robot but, there are staggering differences between servo drives in regards to the acoustic pattern and the creation of vibrations, especially at a high number of revolutions.

Last but not least, the noise level is affected by the quality of the sensors used (e.g. for current and position) and by the algorithms of the motor control. WITTMANN has given a lot of consideration to optimizing the entire drive unit with regards to both power and economy, and also to reduce the acoustic emissions to their lowest level. We would be missing the target without components that are subsequently harmonized with one another.

A New Home for WITTMANN Canada

After several weeks of planning and much anticipation, the WITTMANN Canada branch has completed the move to the new 40,000 sq. ft. industry showplace in Richmond Hill, Ontario, Canada.

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The result is the more than doubling of their manufacturing capacity to support WITTMANN’s global operations. “The recent acquisition of the M-Tek line of blowers and material handling equipment, combined with WITTMANN’s already extensive product line and a significant increase in staff, resulted in the immediate need to move to a larger facility”, says Rob Miller, President of WITTMANN Canada, Inc.

“Expansions in every department combined with our strong core business of manufacture blowers and loaders will allow us to substantially increase our manufacturing capacity and the ability to support WITTMANN customers around the world. The modular design for many of our products makes them ideally suited for just-in-time manufacturing using standard sub-assemblies from inventory that can be selected based on the specific customer requirements and then quickly assembled, tested and shipped.”

“Our customers have come to rely on us for the highest level of quality and support – which remains unmatched in our industry – for all their material handling, auxiliary equipment and automation needs”, states Miller.

“The new facility is the only one of its kind in Canada serving the plastics industry with our complete inhouse design, engineering, manufacturing, installation, training and with spare parts”, notes Miller.

“A fully equipped 3,000 sq. ft. training and hands-on demonstration area with the latest product innovations, combined with the largest spare parts inventory of any sort of auxiliary equipment and our well-known 24/7 service, allows us to provide our customers with unparalleled support”, Miller adds.
IML: WITTMANN France Reinvents
The Ice Cream Container

WITTMANN France has been given the responsibility for the construction of a turnkey IML system for the production of a 2 liter rectangular ice cream cup by a Brazilian customer, Pavao Industria.

Michel Zaegel

The outcome of a sophisticated process: 2 liter ice cream container with its lid, both produced by means of one mold.

To meet the required production volumes the conventional solution would have used one mold for the cup and another for the lid, requiring investment in two injection molding machines and two robot supported IML automation cells.

A good idea

Based on the fact that every ice cream container has a lid, the mold making division of WITTMANN France proposed a solution for molding the two parts in one mold and thus, provided Pavao Industria with the opportunity to limit the investment to only one injection molding machine and automation cell – without even changing the tonnage of the injection molding machine.

Even though the idea at first appears obvious and seems rather simple, it does require the application of a technically complex solution and in particular, the perfect handling of the solution.

An innovative solution

The solution consisted of a 2 + 2 cavity stack mold molding the cups on one face and the lids on the other. The entire production cell was comprised of the injection molding machine, a family stack mold and a WITTMANN W727 TWIN IML system, for insertion of the 4 labels of different shapes. In this specially designed mold is absolutely comparable to the purchase price of two conventional molds however, the savings comes from eliminating the need for a second automation cell and injection molding machine of the same tonnage.

The process

This WITTMANN sequential valve gated hot runner family stack mold, in combination with an adapted WITTMANN 5-axis automation cell, has the ability to produce two cups with a wall thickness of 0.6 mm and two fitting matching lids with a thickness of 0.55 mm at the same time – in an overall cycle time of about 6 seconds, including the insertion of the 360° wrap around labels for the two cups and the flat labels for the two lids. In the end the purchase price of this specially designed mold is absolutely comparable to the purchase price of two conventional molds however, the savings comes from eliminating the need for a second automation cell and injection molding machine of the same tonnage.

A very special mold

In terms of its dimensions, the mold has been designed to fit a standard injection molding machine for packaging. In terms of this application, a Demag EL Exis 5350/810 injection molding machine is used. The considerable difference concerning the dimension of the two parts has been a great challenge for the design engineers. The ice cream cup has a height of 116 mm but the lid only 7.5 mm. In order not to exceed the 700 mm maximum opening of the injection molding machine, it has been necessary to use a two level mold with a different mold open height for each of the two faces, resulting in the total mold open height of 700 mm being divided into two unequal amounts. This problem has been solved by inventing specially designed mechanics – by the use of different gear wheels and rods. This has made it possible to assign an opening of 500 mm to the container mold half and an opening of only 200 mm to the lid mold half.

The standard characteristics of the Demag injection molding machine requires the mold half for the larger cavities of the ice cream containers be arranged on the moving platen of the press. This has only been made possible by executing an absolutely perfect brace support for the moving platen.

Not only do the height dimensions of the different parts vary but also so do the masses. The cup has a much higher weight than the lid – 3.5 times higher. To deal with the difference the mold has been equipped with a Husky hot runner system with nozzles of different length and sequential activation for the different mold halves. This is strictly a result of the different injection times that are required by the different parts.
Central Conveying: Focusing On Material Feeding

In early 2006 Hebra Maschinen- u. Formenbau GmbH based in Sulzbach-Rosenberg was in need of an entire central conveying system for 22 injection molding machines – and turned to WITTMANN.

Gottfried Hausladen

The WITTMANN customer established his main objectives based on the following points:

- constant, adjustable ratio of mixture without layering at the IMM
- predrying of the regrind to maintain constant processing parameters
- possibility of external feeding of undried material

Over a period of about six months several concepts were developed and reviewed in close collaboration with the customer. The best solution for processing the regrind was then supplied.

Stream of regrind

Every injection molding machine in the plant is equipped with a beside-the-press granulator. In order to ensure as much free space as possible around the injection molding machine, regrind is conveyed back to the material feeding area. Via a small coupling station, regrind (of the same material) can be conveyed from the granulators into a special collection tank. This collection tank offers several advantages. On one hand it allows balancing of the various amounts of regrind from each injection molding machine and provides an overflow buffer for material as it can be removed from the tank and stored elsewhere. On the other hand, external humid regrind can be added by using this tank. Two loaders feed a gravimetric blending system by means of two pipelines connected to what source.

The mixture of virgin material and regrind are conveyed based on the material throughput for the drying hopper. Therefore, only the air quantity that is actually needed for drying the process in the specific drying hopper has to be heated. As a result, it is possible to save up to 80% of the energy costs associated with the drying process.

The material savings function automatically reduces the drying temperature by 20°C when it experiences marginal material throughput and thus avoids overdrying of the resin. At the same time the SmartFlow function reduces the air quantity to a minimum, so that only high pressure can exist within the drying hopper. This avoids humid ambient air from entering the drying hopper and thus, aids to the energy savings.

Also, the supply of dry air is handled efficiently. The dew point controlled regeneration, in combination with the temperature controlled countercflow regeneration, ensures the most energy efficient operation.

Conveying

The dried material is conveyed from the controlled vacuum takeoff adapter of the drying hopper – via the coupling station – to the injection molding machine. The controlled vacuum takeoff adapter ensures complete emptying of the material pipe and, in the event of a wrong connection at the coupling station, prevents material from being conveyed to the processing machine.

All standard FEEDMAX loaders can be used in the clean room. Because the loaders use a pneumatic material discharge shutoff valve there is no need for openings in the loaders and thus, the material is entirely isolated from the environment. As a result, there is no emission of dust into the environment and no humidity can contact the plastic materials being conveyed.

Using a pneumatic material discharge shutoff valve eliminates the malfunctions caused by the effects of electrosat

dically charged dust. Such problems occur again and again when using flapper valves. A metal separator is mounted between the loading unit and the feed throat of the injection molding machine to prevent any blockage of the hot runner system.

Network control IPC/M7.2

The system is visualized on a 15” touch screen with a schematic presentation of the material flow. When the material flow changes because of a change of material or the couplings at the coupling station, the graphic presentation on the screen is instantly updated. When changing material at the injection molding machines the operator is informed by instructions in plain text as to what coupling is to be connected to what source.

A material database ensures that the right parameters, according to the manufacturer’s specifications, are selected and reproducible at anytime. The throughput control at the drying hopper automatically monitors the residence time to ensure compliance. The dew point is shown over a period of twelve hours. The M7.2 control ensures the constant monitoring of all necessary drying parameters and guarantees that the respective material is conveyed to the correct processing machine.

After one year of operation the advantages of this system – in comparison to the formerly used peripheral conveying system – became much more evident to the customer:

- constant quality of the processing material
- more free space around the machines
- less documentation work
- labor savings

From above:
- FEEDMAX loaders mounted on collection tanks
- DRYMAX battery dryer with SILMAX drying hoppers
- FEEDMAX loader mounted on the injection molding machine

Gottfried Hausladen is Head of the Sales Department South for Material Handling at WITTMANN Robot Systeme GmbH.
Hungary: WITTMANN Robottechnikai Kft.

In 1998, the Hungarian branch was founded and after the acquisition of a 145,000 sq. ft. parcel of land, began production the following year. The location is advantageously situated in terms of access directly at the frontier with Austria and about 100 km away from the company headquarters in Vienna.

Production started in 1999 with 10 employees in an area of about 20,500 sq. ft. At first, the W601 series robot was produced and in succession the follow-up W602 model, the successful pneumatic W620 series robots and the model W720. Between 2003 and 2005, until the opening of the new Material Handling Department at the new Vienna production plant (Plant II, Pererstraße), the DRYMAX drying units and the FEEDMAX single loaders were also produced in Hungary.

The Hungarian Production

Beginning in 2005, production concentrated on the W7XX robot series. Currently, the W702 sprue picker, as well as multiple-axis robots from small to medium size, are built there. The models range from the W711 linear pneumatic robot to the W713, W721, and W731 3-axis servo robots, the W713 and W723 robot series with telescopic arms and the W710 and W711 microscopic arms as well as the W710 and W711 3-axis servo robots. In autumn this year the 2,000th robot was produced in Hungary.

From the beginning, Thomas Wittmann as President, and Lajos Imre as Plant Manager are heading the factory in Hungary. Besides the manufacturing of this extensive range of robots, the fabrication department has been continuously expanded under the administration of József Divósi. Since 2002 the plant has had a laser cutting unit and an edge bending unit. In 2003 the first CNC machining center was acquired followed by a second one a few years later. In 2004 the plant was once again upgraded with the purchase of a powder coating unit for the treatment of sheet metal parts. For ensuring high quality as well as cost-efficient production in the future, a modern welding robot was acquired in 2006.

Today in Mosonmagyaróvár all fabrication parts for the ongoing production in Hungary are manufactured in-house. Sheet metal parts as well as complete robots are shipped to the many worldwide manufacturing locations of the WITTMANN group.

WITTMANN Hungary has grown year by year in terms of size, production capacity and manpower to its current size of 54,000 sq. ft. and 90 employees. In 2007 about 1,800 robots were assembled in the Hungarian plant.

These figures show the importance of the Hungarian plant for the entire WITTMANN group, because in Hungary nearly half of all WITTMANN robots are produced. An important step in developing the Hungarian market has been the creation of a local sales team.

Headed by Péter László, the three-person team has been based in Budapest since 2005. Supported by their own service team, implementation, maintenance and repair of the local installations are carried out directly. Acting quickly and close to the customer has made it possible to communicate the range of WITTMANN products to large international companies as well as small and medium size Hungarian companies. Over the years this has resulted in a multitude of successfully executed ventures. The close cooperation with the customer shows again and again the necessity of communicating the knowledge of the sales and service staff by means of individual care. With the intention to extensively prepare the projects and transfer the necessary information to WITTMANN’s customers, a modern training room for demonstrations has been established in Mosonmagyaróvár with the latest expansion in 2006.

Switzerland: WITTMANN Kunststofftechnik AG

In 2003 WITTMANN established its Swiss branch. Although the former trading partner had successfully introduced the product range, the increasing demand for entire solutions lead to the change in the commercial structure.

The approximately 1,000 square meter showplace of WITTMANN Switzerland is based in Kaltbrunn. Twelve employees, communicating in three languages, are responsible for customers located all over Switzerland. WITTMANN Switzerland performs final assembly of automation equipment on its shop floor and has a service department for temperature controllers and dryers. It also has a small exhibition space with a training classroom where nearly every week training classes for machine operators are held.

Well established in the clean room

Being a country with high salaries, technically demanding industries with a high creation of value are tradition ally located in Switzerland. Very early on WITTMANN Switzerland established special solutions for use in clean rooms and the respective directions for maintenance and other necessary documentation. Today WITTMANN Switzerland can be designated as the leading supplier of automation solutions for medical manufacturing. One such area is the construction of grippers where much know-how has been accumulated to meet the high demands for clean room suitability. Many customers are even using temperature controllers, sprue pickers and granulators in their clean rooms.

WITTMANN Switzerland is especially proud of its large market share for temperature controllers because no less than three strong competitors have their home base in Switzerland. To be further competitive in this field, special service for temperature control units is offered making it possible to meet the increasing number of requests for maintenance contracts.

The market for material handling products is showing an enjoyable increase in the number of sales, additionally challenging the service department, making special training for the service technicians more and more important. The increasing number of customers completely satisfying their demand for auxiliary equipment by turning to WITTMANN is proving to be a result of the very positive reaction the WITTMANN efforts are producing.

Some additional potential exists for future operations especially in regard to smaller equipment with a clamping force of up to 80 tons, as the demand for cost-efficient standardized automation systems is rapidly increasing.

In addition, much emphasis is being placed on further development of the French speaking part of the Swiss market to gain a leading market position there – for the entire WITTMANN product range.