One Robot for All Molding Machines

Pulse Cooling:
The effective up-to-date method especially for difficult jobs (p. 6)

Complete Systems:
Robert BOSCH’s central drying and conveying in the Czech Republic (p. 8)

Inline Recycling:
Powerful applications are contributing to cutting the costs (p. 10)
Dear Reader,

We are very proud to present to you the first issue of WITTMANN innovations, a quarterly publication about activities in and around our company. With this newsletter we intend to present to you not only our worldwide operating organization, but also documented automation applications. We can be called world champions in the development and realization of peripheral equipment and the successful implementation at customer’s plants, but as soon as the units and the systems are working and the customer is satisfied, we feel equally satisfied. This newsletter should allow our product specialists to take the next step, which is to document interesting applications and to share this information “among the people”. We will create an archive of applications which will grow over the years and be used on an international basis.

A fate of our profession as an automation company is that our systems offer tremendous advantages in the brutal race to increase efficiency of production. This also entails that any request for release of information about actual systems is quickly met with reluctance. However, we do not want to release sensitive information but instead present our own products which can only excel because of successful project management on all sides. In that sense, we are asking you for your active participation and permission to report about your particular installation and company.

A further topic of this newsletter will be the introduction of various subsidiaries in our far reaching organization. We have grown significantly during the last few years, have founded country organizations and occupied new markets with representatives. Many of you might know quite well specific persons, sales managers or representatives, but the organization which is behind them often remains obscure. Here we want to offer you a better insight about our company and our country organizations, a platform to present themselves.

The first ones covered in here were WITTMANN Germany – as our biggest country organisation from a revenue standpoint – and Nucon Wittmann with a very strong orientation towards the sales of central material handling systems.

The entire team of innovations wishes you a great reading experience.

Sincerely,

Michael Wittmann
Robots Help Save Lives

Greiner Bio One with its location in Kremsmünster (Lower Austria) is the worldwide market leader for special medical preanalytic systems and security solutions. This innovative specialist trusts in the robots by WITTMANN.

Wilfried Hagn

Worldwide thousands of employees in medical labs support doctors and scientists daily by performing detailed blood tests in the endless fight against the most resistant illnesses of humanity and to win new knowledge.

To reduce the potentially always given danger of infection to lab employees during blood transfer to an absolute minimum, and to always guarantee the same quality of the tests, a majority of these labs are using the VACUETTE® system from Greiner Bio One.

The VACUETTE® system

This preanalytic system consists substantially of a plastic tube molded of break-proof PET which is assembled together with two more plastic parts and an elastic stopper to the VACUETTE® system.

In the course of assembly, the tube is half filled with a carrier liquid and is closed afterwards under vacuum. Using this system guarantees that only a certain amount of blood is transferred from a person to the test tube and that it occurs without contacting the surroundings.

Greiner Bio One was the first supplier worldwide to produce this progressive system from plastic and gained worldwide market leadership in this field.

Greiner Bio One selected the thoroughly proven WITTMANN robot systems for the automated production of the testing tubes.

Günther Pakanecz, production manager at Greiner Bio One headquarters in Kremsmünster, Lower Austria, highlights the easy programming of WITTMANN robots as well as other technical advantages like high reliability, high speed and accuracy.

Strict hygiene regulations are required, thus production occurs under conditions, that nearly meet those of a cleanroom.

Pipette needles:
Removal and Control

A WITTMANN robot system is also used to automate the production of another highly successful Greiner Bio One product, the pipette needles.

A W721C robot removes the parts as fast as possible from a 16 cavity mold by using a specially designed and customized EOAT.

Then the products are placed in a peripheral station for cavity separation before being deposited in boxes. Greiner Bio One also requested a special operation to allow easy take out of cavity separated samples for the quality control department. In addition, separation of the first shots is required after start up is implemented.

Günther Pakanecz is sure that Greiner Bio One will be able to achieve its high targets for the production improvement and quality assurance with this new robot system from WITTMANN.
Greiner Bio One is 100 % owned by the Greiner group and is active in bioscience and preanalytics in 100 countries worldwide. About 1,200 employees work in 19 representations and 5 production locations (A, D, HU, USA, Brazil), with an estimated turnover in 2006 of approx. 220 Mil. EUR. The entire Greiner group with approx. 6,500 employees achieved in 2005 a turnover of approx. 820 Mil. EUR.

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Wilfried Hagn is Sales Manager for Robots/Automation at WITTMANN Kunststoffgeräte GmbH in Vienna.
The pulsed cooled molding process, common to the standard injection molding applications, has been successfully adapted in recent years to each new format within optical disc manufacturing. The principle relies on the dynamic control of the amount of mold cooling during the molding cycle. And the mold cooling of course is directly linked with the process conditions and its cycle time.

Pulsed cooling usually results in substrates of higher quality and are molded within shorter cycle times. The process improvements are especially evident when manufacturing advanced media such as Blu-ray discs.

Advantages of pulsed cooling

Injection molding of optical media discs is a typical cyclic process. During the manufacturing process the mold is heated by the hot resin injection, and then cooled (although using a water temperature of approximately 80–120 °C) in order to release a substrate.

While most manufacturers use constant or continuous cooling (also called DC for Direct Cooling) systems for the molding process, it has been discovered that pulsed cooling offers several advantages. The main difference of a constant cooling system is the use of a process valve, which allows stopping the flow of cooling water during the molding cycle. Additionally, a cooling valve is included to reduce the water temperature if needed.

Research on various optical disc formats indicate that there could be a reduction in cooling time of up to 30 %, and further investigation showed other technical and cost advantages. Because of the dynamic temperature during each molding cycle, the mechanical properties of the substrate are also improved.

MF DisCo in use

The general principles of pulsed cooling systems and their function are explained in the above charts. In all experiments, the MF DisCo cooling system developed by DaTARIUS was used. BD substrates were molded on a line adapted for manufacturing commercial BD media.

Both ROM and rewritable (RE) formats were molded. In order to compare the results from continuous cooling and pulsed cooling no other variables (e.g. stamper, etc.) were changed.
The molding process using pulsed cooling was then modified to optimize and investigate the influence of various process parameters. Disc flatness properties, such as radial and tangential deviations were measured, as well as their birefringence. The substrates were inspected for "clouds" and "flow lines" using diffraction, visual inspection, and AFM. Some of the BD ROM discs were completely finished and electrical signals of the discs were evaluated.

**Effects of quality characteristics**

An installation of the MF DisCo shows positive effects on several quality parameters of the disc. These positive effects could be used to further reduce the cycle time while maintaining the quality at the same level as achieved without using the MF DisCo or by improving the quality and keeping the cycle time at the same level as before. Because of this wider process window it is easy to find the right balance of quality and cycle time within each production.

**Other positive effects**

The technical construction of the MF DisCo also gives other advantages which are very important for the production of optical discs as well.

- Concerning the floor space is to say, that he very compact construction of the MF DisCo helps reduce the required floor space within the production environment. It is often possible to integrate the devices right into injection molding machines. When compared to the size of some Japanese or U.S. American standard mold heaters the difference is very significant.

- Energy consumption: The very effective use of the heat induced into the cooling water during injection of the PC and the use of fresh water instead of a cooling device helps reduce energy consumption with the MF DisCo when compared to a standard mold heater.

The new pulsed cooling unit, MF DisCo, clearly offers time savings concerning the cycle time. And it reduces production costs significantly.

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*MF DisCo is available through DaTARILIS who have exclusive distribution rights. (Mag. Schiffer; tel.: +49-245 215 748 020, mobile: +43-676 559 87 50) FLOWCON is available from WITTMANN.*

**Tempering**

Scheme of process: Pulsed cooling system maintains temperature during the injection stroke by closing the process valves and stopping water flow. When injection of the PC stops, the valves reopen in order to cool the mold to the temperature for ejecting.  

Comparison: When mold open signal is received, the cooling water flow stops, resulting in higher mold surface temperature during injection. After the time t2 the cooling flow starts again with lower water temperature than standard, reducing the heat energy and cooling time.

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Peter Weber is Sales Manager for Water Flow Regulators/Temperature Controllers at WITTMANN Kunststoffgeräte GmbH in Vienna.
BOSCH selects WITTMANN System

Robert BOSCH selected the WITTMANN company as the complete system supplier for drying and material handling at their facility in České Budějovice. The location is well established as a supplier of automotive components.

Erhard Fux

POM (Polyoxymethylene) is conveyed from the 50 m³ outdoor silo through a small manifold station to the drying system. Placing the manifold station before the drying system adds flexibility for the customer. The supply of POM from the silo can be completely disconnected at this station to make the two drying hoppers for POM, each with 400 l silo capacity, accessible for other materials from gaylord stations.

There are a total of nine material stations under the approximate 40 m² large modular drying mezzanine where mainly the glass fiber filled polyamide is introduced into the WITTMANN central conveying and drying system. The mezzanine is located in the production hall and is part of the total installation by WITTMANN.

The drying unit supplies 900 m³/h dry air for a drying throughput of up to 500 kg/h of material. Connected to the dryer are 11 modular SILMAX drying hoppers, including two that were integrated as an extension, for a totally capacity of 1,700 l.

Energy saving dry air supplier

The two-cartridge dry air producer is characterized by a constant low dew point to -60°C and air flow volume, even with varying pressure ratios. The fluctuating pressure ratios can result from different material loads in the drying silos. The DRYMAX dry air producer offers several energy savings features.

One of which is the SmartReg function which adapts the regeneration duration and hence energy consumption, based on the humidity of the drying cartridge.

The dryers also use counter airflow for regeneration which shortens the regeneration duration substantially and saves energy costs.

The BOSCH drying has an integrated dew point sensor which monitors and provides automatic changeover of the desiccant towers. This simple option leads to a further energy savings of up to 50%. After regeneration and cooling the desiccant cartridge is moved into a waiting position where four independently controlled motorized valves lock the cartridge and prevent humidification by ambient air. It only enters the process if the dew point rises to a desired value. Due to process safety however, the regenerated cartridge is placed in process after a certain time period.

Process optimized drying hopper technology

Each SILMAX drying hopper has its own microprocessor and process heating to allow flexibility for materials with different drying temperatures. The drying hopper offers several standard process optimizing functions.

The MSF (Material Saver Function) prevents thermal degradation of the material. For example, if the material consumption is stopped or reduced, this fully automatic function intervenes and lowers the process temperature of the drying hopper. If the throughput is again increased, the function increases automatically to the default value for the process temperature.

A more important point with the drying process is not only the temperature management, but rather the complete drying process control system, which also controls the air flow volume through the drying hopper. BOSCH recognized the importance of this process optimization feature and established it as standard for the system.

WITTMANN supplied their SmartFlow technology which adapts the air flow volume to the material consumption at the drying hopper. A motor operated valve for the dry air supply on each SILMAX hopper can be precisely...
controlled, even with non-usage of the drying hopper, as the valve is automatically fully closed. This constant regulation can not be achieved manually and, for many system suppliers, this technology is either not a standard or available.

**Intelligent central feeding**

The WITTMANN M7 network control used at BOSCH is characterised by good functionality and high system security. User friendliness as well as simple management and good system representation of the peripheral equipment is ensured with the 8.5” high resolution TFT touchscreen. Important system data like the bill of materials and different log functions can be imported and exported using a Smartcard.

The “LineServer” network concept can administer up to 31 “BusModule” participants over a fast CAN bus and has a decentralized construction and redundant design. The M7 network control allows a maximum of 240 hopper loader stations with 8 vacuum pumps.

The material throughput visualization function was a determining factor for BOSCH. The patented hopper throughput measurement function on the M7 network control compares the maximum material drying throughputs with the material data base.

If the material throughput at the drying hopper exceeds the drying silo capacity or if the material residence time cannot be achieved, an error is indicated by the control system and logged. An operator with appropriate administration rights can select the parameters to stop conveying so that insufficiently dried material does never enter the process.

**Flexible whispering vacuum pumps**

The drying and conveying system in České Budějovice is divided into three vacuum lines: one vacuum line with 11 high temperature hopper loaders for the drying hopper supply and two additional vacuum lines for 28 injection molding machines.

Three vacuum pumps plus a spare are located on the mezzanine over a manual tubing manifold equipped with ball valves. A two-stage side channel compressor is used for filling the drying hopper and allows a maximum distance from the silos to the drying hopper of approximately 60 meters. Two rotary piston blowers were used for the supply of the injection molding side because of their flexible and simple power adaptation.

The maximum feeding distance to the injection molding machine is about 90 meters. Because these pumps were located directly in the production hall a complete sound absorption and exhaust air muffler were installed to lower the noise levels substantially.

**Progressive FEEDMAX hopper loaders**

The drying hopper loaders, with a maximum capacity of 24 l, were each equipped with a capacitive sensor to prevent overfilling. The control receives the sensor signal and stops conveying when the maximum level is reached. This simple function optimizes the conveying system and guarantees that the utilization time is kept as low as possible and the hopper loaders are not overfilled. A further technological advance for BOSCH is the technology of the controlled discharge valve. The positive shut-off could never be ensured by a flapper design which can lead to material leakage on the processing machine.

Unfortunately, this progressive technology is rarely seen elsewhere in the marketplace. WITTMANN continues to carry out pioneer work here in order to offer customers absolutely reliable systems.

Additionally, the FEEDMAX A-series vacuum hopper loader is designed for clean room applications as there are no venting holes like those needed for a flapper system. Therefore, no fine dust from the material will be released into the environment or deposited on the processing machines and/or hoppers.

**Wear-free coupling station coding**

The coded coupling station at BOSCH uses special coding eliminating mechanical wear common to electrical plugs. The electrical coding is made directly on the standard mechanical pipe couplings.

From a technical standpoint, the electrical coding is read by the M7 network control and prevents conveying if one wrong coupling connection is made.

The pump management offers a further giant advantage over coding as the control system is able to coordinate the pump sequence to allow material conveying from the same source over two vacuum lines. This leads to a further savings as the coupling station can be much smaller and substantially easier to operate.

**Facts about the system**

The system installation required over 1,200 meters of high grade stainless steel pipe for all the material lines, as well as 160 glass elbows for the proper conveying of abrasive materials.

There were 130 meters of aluminium vacuum piping. The piping system required 16 man days for installation and another 7 days for start-up and training.

All in all, from ordering the system to delivery and final acceptance it took 12 weeks. The WITTMANN system has operated now for over 2 years, 24 hours a day without failures. •

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Erhard Fux is Sales Manager for Material Handling at WITTMANN Kunststoffgeräte GmbH in Vienna.

Dipl.-Ing. Michael Wittmann, Ing. Daniel Přidal, Leader Manufacturing Section – BPS Office of Robert BOSCH spol. s r.o., and Dipl.-Ing. Michal Slaba, Managing Director of WITTMANN CZ spol. s r.o. (l.t.r.)
Sharply increasing resin prices make it interesting to consider the method of inline recycling of runners and scrap. Inline or closed loop recycling is both, cost-efficient and effective.

Gottfried Hausladen

WITTMANN offers all components ranging from different types of granulators, sprue pickers, robots, vacuum loaders and blenders to realize an effective reclaim process. The resulting optimized resin usage reduces the necessary raw material costs for the processor.

All alternatives to inline recycling bear the inherent disadvantage of additional efforts in collecting, handling and intermediate storage for any subsequent utilization and processing. Furthermore, if the material is not used immediately at the point of creation, it has a risk to be contaminated or misplaced. Production runs with medium to high batch sizes offer an especially quick return on investment for a really optimally sized inline recycling system. The reduced raw material requirement results in high savings based on the volume.

In many cases the consideration of the implementation of recycled material fails right during the projection phase if the customer specifies to the processor not to permit the blending with regrind material, even if this is technically permissible. When the price per part is an essential factor in gaining orders, the processor can potentially increase the chances of receiving the project by submitting two prices – with and without inline recycling – in the hope of convincing his customer of the feasibility and subsequent cost savings.

Transfer of the runner to the granulator

At the conceptional stage of the molding tool, it is important to find the best option for the separation of molded parts and runners. If the molded parts can be dropped during the demolding, the runner can be picked with a sprue picker. If the molded parts need to be picked and safely placed on a conveyor for optical reasons or to be processed further, a robot equipped with a gripper valve for the control of gripper fingers is required.

For applications with a 3-plate mold, robots need to be equipped with a second vertical arm, which is separately operated for the pick-up of the runner. The runner has to be designed in such a way that the robot can safely grip and remove it. If the parts need to be removed by a robot, but the runner can drop, then an auger or conveyor feed can be used. The weight of the reclaimed material should be, in the best case, below the permissible weight of the regrind addition to the virgin material. This is a safeguard that all runners and the occasional scrap parts, can be fed back to the process. If this is not possible, the excess flow of regrind has to be planned to be removed from the feedback in order to avoid production problems.

Screened granulators

The selection of the right granulator is of instrumental importance for any application. The tendency of the market is to go in the direction of processing not only the runners, but also the scrap parts.

Currently two different types of granulators can be commonly found in molding applications. Screened granulators, like the WITTMANN granulator model MB, find their field of operation particularly with soft to medium-hard and non-reinforced materials, e.g. TPE, PE and PP. The decision for the proper size of the granulator depends first on the width of the part and/or runner. The width of the cutting chamber must be bigger than the width of the part and/or runner. Then the proper diameter of the rotor has to be selected. In the side view of the molded part to be reclaimed, a square is...
mentally formed around the outer dimensions. The height of this square must not be bigger than one third to one half the size of the rotor diameter, otherwise it is possible that the part will float, or bounce on the rotor. The longest distance between edges of the part determine whether the part will easily pass the baffles in the hopper, intended for the prevention of fly-back, to reach the rotor. Also, the weight of the runner has to be taken into account for a trouble-free operation. Light-weight but bulky runners do not pass easily through the curtain(s) of the granulator feed hopper. A simple solution to this would be a granulator with an auger feed or a hopper without curtain(s). Another important characteristic is the material throughput of the granulator which should surpass the amount of expected scrap.

The proper size of the motor is ideally determined for critical applications by regrind tests. In applications with glass-fiber reinforced materials, consideration should be taken for wear-resistant options, e.g. a nickel plated cutting chamber or hardened replaceable wear plates. These criteria ensure that runners and parts are properly reclaimed. Furthermore these details make for a good granulator:

- Stable construction, durable and dust protected execution of the bearings
- If necessary, sound insulated execution; i.e. required sound level of less than < 85 dB(A) for example
- For minimal dust regrind, a low rpm rotor and inclined knives for less force and therefore low introduction of energy
- Simple cleaning and maintenance (easy access to the cutting chamber and classifying screen, fast accurate and easy change of knives with a pre-adjustment jig)

Screenless granulators

Screenless granulators like the WITTMANN SUMO models, find their main application particularly for hard and reinforced resins. They work with low rotational speeds of approximately 27 rpm. With breaker knives which are mounted on the cutting rotor, the parts are pre-cut to a size which can then be grabbed by the teeth on the roller cutters. As the resulting regrind can only have the size of the maximum distance between two teeth and no longs can be generated. Due to the low energy introduction, the regrind can not thermally degrade. The dust or fines content is smaller than with screened granulators. Also, thick-walled parts can be processed, even with small motor sizes, because of the high torque of screenless granulators and with low sound generation. The low rpm and the resulting low load on the cutting teeth enable twice the maintenance interval of standard granulators.

Another advantage over screen granulators is the shorter cleaning time in case of a product change as well as the simpler selection criteria for sizing. Similar to screened granulators, it has to be verified that the part can pass through the baffles in the hopper to reach the cutting rotor. The length of the part can not extend past the length of the cutting chamber and the part height has to be less than the height of the breaker knives. As screenless granulators achieve fairly small throughputs due to the low rotor speed, this has to be compared with the generation of the regrind volume.

Addition of regrind to the virgin material

After the removal of the runner from the mold and the selection of the right granulator, the proper addition of the regrind to the virgin material has to be determined. First of all applications are split between colored and uncolored virgin material. If the virgin material is already pre-colored the regrind can be added normally with a 2-component proportioning valve or with a blender. If the material is colored on the machine, the problem exists that the proportioning valve can not precisely add the regrind. The variation of the content of regrind/virgin material results in differently colored parts. Saturating colors offer the possibility to increase the color percentage (higher costs) and achieving therefore a relative uniform appearance. If the parts should be colored transparently, this unavoidably leads to lighter and darker spots. Using a gravimetric blending system, the amount of available regrind is determined and consistently added.

Currently two types of gravimetric blenders are available: batch blenders, like the WITTMANN blender model GRAVIMAX, which dispense one material after the other into a weight chamber with a subsequent mixing of all components, and “loss and weight” systems, which are principle on the market, where components are added similarly to a dosing unit with auger feeder. The material bins are weighed by means of weight cells. The reduction of weight in the bins after every dosing cycle is controlled by adjustment of the rotational speed of the auger. The addition of regrind can be limited in both systems. If the percentage of regrind is higher than the permissible amount to be used, the excessive regrind has to be discharged to surge material bins. It is also possible to equip a granulator with second vacuum take-off-adapter, whose two outlets are positioned at different height levels. The lower material outlet supplies the gravimetric blender and the upper outlet initiates via a paddle style sensor an impulse to a loader for the evacuation of the excessive material into a regrind buffer. The WITTMANN central loaders, FEEDMAX A, and the single loader FEEDMAX S3, offer optimized connections for these applications.
Germany: WITTMANN Robot Systeme GmbH

It is no coincidence that the entry of WITTMANN into the robot market occurred with the founding of WITTMANN Germany. This was clearly the plan with the acquisition of Küffner Robot Systeme in 1983.

It was also the first step for the company WITTMANN into the growing automation market. Due to space constraints, the newly founded company, WITTMANN Robot Systeme GmbH, moved shortly thereafter from the original location in Nuremberg to its current location in Schwaig.

Today, WITTMANN Germany consists of 3 main locations: the automation systems plant in Schwaig, the central sales office in Gross-Umstadt and a regional sales office in Vlotho covering the northern part of Germany. The company is jointly managed by Mr. Hans Hunsicker, Sales Director responsible for the offices in Gross-Umstadt and Vlotho, as well as Mr. Walter Klaus, Technical Director responsible for the plant in Schwaig.

WITTMANN Schwaig

Even today, 20 years after the acquisition of Küffner Robot Systeme and, despite a widely increased product offering, the robot tradition remains firmly rooted in the structure of the branch in Schwaig.

Mr. Walter Klaus manages a team of over 80 people at the plant. The focus of activity for WITTMANN Schwaig is the mechanical design, assembly and start-up of automation systems, as well as the service support for the entire product range.

The demanding German automation market requires both superbly trained engineers for the design and also an equally strong service team for the implementation and start-up of the systems. A group of 26 service technicians located across Germany guarantees individual support and the shortest distances to our customer’s plants. A 24 hour service hot-line is available free-of-charge and is accessible even during weekends. Of increasing importance from a service aspect is the location of the repair department for dryers, loaders, granulators and electronic components. Repairs and service calls for temperature controllers are performed directly from Schwaig and Vlotho. In close proximity to the plant in Schwaig is the training center which offers training classes in both a classroom location or at customers’ plants. It is also available for use as a well equipped demonstration room, for example, with a M7/7.2 central material handling system.

WITTMANN Gross-Umstadt

Mr. Hans Hunsicker is located with his team of 19 people in the central sales office in Gross-Umstadt near Frankfurt. From here project estimates for automation and central material handling systems are prepared as well as the general development of proposals for the entire product range.

For increased support of sales for our “newer” products WITTMANN Germany has established more direct regional sales people during the past few years with a separate focus on either robot automation or material handling systems.

The success of this action supports the idea that Germany, like the U.S. which has a similar structure due to
the size of the market, could establish itself as the leading market for central material handling systems.

Also, granulator sales have continuously grown during the last years making Germany the biggest export market.

**WITTMANN Vlotho**

In January 2006 the regional sales center of WITTMANN in Vlotho, with a staff of 4 people, was established for the direct coverage of the north German market. Up until then only robots and temperature controllers were available in this area. With the founding of this regional sales office, the entire product range is now promoted and sold in the north German market.

The sales center located in Vlotho also serves as a service location with repair facilities and extensive spare parts inventory. Customer training is also performed directly in the sales office in Vlotho.

**K 2007 Show**

The biggest organizational challenge for WITTMANN Germany will be the K 2007 Show which will be held October 23–28, 2007 in Dusseldorf. We are expecting a group of 100 staff for customer consultation and support, all of who need to be supplied with information, hotel rooms, food and transportation. With 460 m² of exhibit area, we will demonstrate the latest innovations (hall 10, booth A04).

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**Canada:**

**Nucon Wittmann Canada**

*Material handling systems have been the mainstay of business for Nucon Wittmann since they were founded in 1985 as an alternative choice to catalogue type material handling equipment suppliers.*

It was no surprise by offering individual components and fully engineered material handling solutions that Nucon Wittmann would grow to become the largest supplier of material handling equipment to the plastics industry in Canada. Over the years Nucon Wittmann has installed thousands of material handling systems around the world. These systems include everything from simple resin handling to custom systems for batching, weighing, drying and conveying with pressure or vacuum.

It is important to note and mention that these systems are for all processes. Extrusion processes such as pipe and profile, film and sheet have a much higher requirement for material handling due to their extreme throughput capabilities. Blow molding and rotational molding are also major markets for the material handling products, where regrind and colors must be much more critical and large batches of material must be blended with extreme accuracy.

It is a fact that the greatest percentage of resin is consumed for non-injection molding applications and of course, this results in a significant opportunity for material handling. With systems capable of more than 30,000 kg/h, Nucon Wittmann has developed equipment and multiple systems over the last 22 years, giving us the expertise to supply complete custom and standard material handling systems in all configurations. Custom engineered systems are fully designed looking at each piece of equipment as a part of the total system.

Today, Nucon Wittmann not only offers their customers complete material handling system solutions but also the entire line of WITTMANN automation and auxiliary products.

The expanded product line has benefited their customers through the obvious productivity improvements and also as a single source for all their automation and auxiliary equipment needs.

**Products**

One strategy Nucon Wittmann has developed to help processors take full advantage of the technology available in order to maximize the performance of their systems instead of sacrificing productivity is to analyze each piece of equipment as an element of the entire plant. They are then able to identify immediate improvements and calculate potential R.O.I. The reconfiguration of equipment and systems...
Portrait

and changes in personal often result in automation and auxiliary equipment systems not operating as originally designed or even at all. You may actually find it quite surprising, how quickly a simple or complex material handling system can pay for itself, with the savings of manpower and resin costs making up the bulk of the R.O.I., not to mention, warehouse space, machine downtime, equipment maintenance, material contamination and product quality all playing significant roles. The extensive product line consists of:

- Railcar Unloaders
- Silos and Hoppers
- Tilt Tables
- Integral Loaders
- Just-In-Time Loaders
- Vacuum Loaders
- Powder Vacuum Loaders
- Pumps
- Central Filters
- Controls
- Installation Materials
- Surge Bins
- Dryers

Engineering, support and sales

In house engineering and assembly provide customer’s with maximum product quality and system performance as everything is fully engineered and manufactured as a system not just a single component. Each product offers many standard features – that are often options on other equipment brands – providing maximum efficiency and minimum downtime. Nucon Wittmann provides sales, service and spare parts support for the complete material handling system.

Nucon Wittmann has a service team of 5, all of which are trained to provide complete product coverage. In addition, several of the technicians specialize in robots and automation to ensure maximum support for our customers. As the exclusive distributor of Maguire blenders in Canada we also provide local parts, service and warranty support.

In Canada, Nucon Wittmann sells through a combination of its own technical sales staff and a dedicated French speaking representative to ensure coast-to-coast coverage of the entire product line. The sales team has over 100 years experience in the plastics industry! There is also a newly formed Robot and Automation group with a technical specialist and engineering support to provide customers with complete system solutions from concept to production including all pre- and post-mold operations, EOAT, systems integration, installation and training support.

Plast-Ex 2007

The Plast-Ex 2007 Show being held at the International Centre, Toronto, Canada will be the largest display of equipment in the history of Nucon Wittmann. The booth will feature an exhibit area of 2,700 sq. ft. (30’ x 90’) and reflect the entire Wittmann product line. Maximum visibility and customer recognition will be achieved using the same signage used at NPE 2006. We required special approval of show management in order for us to use this very large sign on the display. The exhibit will also feature a Wittmann robot model acting as a goalie for customers to take their best shot at us and the Canadian hockey legend Johnny Bower signing autographs at the booth to reinforce our theme of establishing a game plan to be the market leader.

In Canada, Nucon Wittmann sells many standard features – that are often options on other equipment brands – providing maximum efficiency and minimum downtime. Nucon Wittmann provides sales, service and spare parts support for the complete material handling system.

The Nucon Wittmann team.

The completely new WITTMANN website went live on-line in February. It allows a clearly structured and goal oriented search for product information as well as background about our company including application stories, specials, news. In addition to detailed information about our existing innovative automation and auxiliary equipment product range, the website features the completely new product line for In-Mold Labeling (IML) systems and molds. The product line was recently acquired with the purchase of PAUL REGAD company and has since been integrated into WITTMANN France. Brochures are available on-line as pdf files for download. And, of course any requests can be directed to us via the contact form.

Visitors Welcome: www.wittmann-robot.com

New Website Is On-Line

WITTMANN’s new international website offers significantly expanded information content to the reader and reflects our design standards.

The completely new WITTMANN website went live on-line in February. It allows a clearly structured and goal oriented search for product information as well as background about our company including application stories, specials, news. In addition to detailed information about our existing innovative automation and auxiliary equipment product range, the website features the completely new product line for In-Mold Labeling (IML) systems and molds. The product line was recently acquired with the purchase of PAUL REGAD company and has since been integrated into WITTMANN France. Brochures are available on-line as pdf files for download. And, of course any requests can be directed to us via the contact form.
Special

Uncompromising:
New Quality Check for WITTMANN Dryers

With the introduction of a new testing tool for the start-up of every single DRYMAX compact dryer, WITTMANN sets new standards in quality control. This meets the demands of the highest production security.

The goal of the dryer testing tool is the computer controlled test run and 100 percent check of all functions of a WITTMANN DRYMAX dryer. After the completion of the tests, a detailed quality report is generated which is the basis for release before the final quality check is performed. Every single dryer function is precisely and repeatedly tested in order to detect and correct possible faulty functions.

**The computer controlled test run**

In order to initiate the test run, the dryers are connected via the integrated CAN-Bus interface to a computer which is able to control up to 8 individual dryers independently of each other. The testing tool benefits from the network ability of the entire dryer product line which can be connected by means of a line server LS30A to a central computer. For example to a WITTMANN M7.2 network control system or, in this case, an off-the-shelf PC. The transfer of the data to be visualised on the PC occurs via the OPC protocol, a standard interface, which is also employed for the connection of the M7.2 IPC control to an ERP (Enterprise Resource Planning) system.

**Precise functional tests**

The precise function and time sequence of the tests for each dryer model is retrieved from a data library and is separated into two logical phases. During the first phase, multiple functions of the dryer to be tested are performed separately from each other and they are monitored for correct behaviour. As soon as all the single functions are successfully completed, the proper automatic operation of the dryer starts.

In the second phase the dryer runs through its internal processes and produces the appropriate dry air volume for the specific dryer model. Now the testing tool switches the process temperature periodically lower and higher to test the response of the dryer to temperature changes. Besides the dew point, the dry air volume and the timely response of the material saver function are tested, as well as the symmetrical drying behaviour of the two desiccant beds.

After approximately 12 hours the dryers have finished all respective tests and the quality reports are generated. A successful completion of the testing tool guarantees WITTMANN customers a 100 percent functioning dryer.