

USER REPORT

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Variety of materials safely managed

Technologies from WITTMANN secure highly competitive level for Plasnova in Brazil

At the Louveira production plant located in the federal state of São Paulo in Brazil, Plasnova combines extrusion with injection molding under one roof. In WITTMANN, the plastics processor found a partner early on that offers the most suitable peripherals for both processes and also has injection molding machines in its product range. With all-in-one solutions, the high level of consulting expertise of the WITTMANN team on site and the innovative strength of the WITTMANN Group, Plasnova ensures a high level of competitiveness.

Visitors meet the products made by Plasnova immediately on arrival. The way from the parking lot to the entrance of the building leads through a park-like garden with lush plant growth. “This is our testing ground, our open-air development lab”, explains Eder, owner and CEO of Plasnova, while greeting us. And indeed, a closer look reveals the water pipes and sprinklers laid between the trees and bushes.

Plasnova specializes in horticultural and agricultural irrigation systems. Whether it be pipes or hoses, distribution systems, connection elements, couplings or valves, sprayers or sprinklers – all of these parts are manufactured in-house. Ever since its foundation almost 25 years ago, the company has seen continuous growth. Other sectors of industry, too, have already benefited for quite some time from the Plasnova team’s extensive extrusion and injection molding experience. Additional product lines include monofilaments for 3D printing, microtubes for the fishing industry, canulas for the chemical and pharmaceutical industries, and dosing caps for lubricant cans.

Simultaneous dosing and blending of six materials

The range of different plastic materials processed on site grows with the increasing portfolio of components being produced. In addition to standard materials such as PE and ABS, some plastic materials harder to process, partly with a high fiberglass content, are also being used.

“Safe handling of all these different materials is our daily challenge”, Eder reports while proudly presenting to us his most recent investment, which succeeds in coping with this challenge: a large gravimetric blender from WITTMANN’s Gravimax series. It feeds the extrusion lines, simultaneously metering and blending up to six different materials. “The Gravimax provides a consistently high quality standard, together with maximum material efficiency and a reduction in personnel costs. This leads to a higher margin”, says Eder, emphasizing that this is exactly what matters. For, as he says, the irrigation industry is a highly competitive market. Moreover, especially extrusion with extremely small die diameters down to the micro level requires extremely high-precision metering, in order to achieve the necessary product attributes.

As a further trend, Eder also mentions that more and more often a proportion of recycled material is mixed in with the basic material, masterbatch and other additives. “For some pipes, we can already blend in up to 70 percent of regrind.” For example, PE waste – from sprue and scrap parts – is granulated on site and then re-processed.

Before the decision was made to add a large Gravimax to the range of auxiliaries in the extrusion hall, the formulations were mixed manually and the individual ingredients weighed manually as well. “This clearly involves the risk of occasional mistakes happening”, says Eder. “Consequently, we wasted a lot of material in the past.” This is why Eder is so enthusiastic about the particularly precise dosing technology offered by the Gravimax system.

Extremely high material efficiency in dosing

Many conventional blending systems operate with time-based dosing algorithms, which set certain limits on the efficient use of materials. For either the system blends in too large quantities right from the start, or the machine operator calculates a material buffer to prevent system-related underdosing, which ultimately leads to excessive consumption, too. “Even if this involves only smallest quantities in each case, it is still a noticeable cost factor when expensive materials are being processed”, explains Marcos Cardenal from WITTMANN BATTENFELD do Brasil. “With the Gravimax, by contrast, it is possible to achieve extremely high levels of constancy in quality standards while keeping the set weight down to the required minimum. In this way, the Gravimax already amortizes itself after just a few months.”

To achieve a highly accurate and consistent blend for every batch and simultaneously be able to feed in the material very quickly, the Gravimax operates with the RTLS (Real Time Live Scale) technology developed by WITTMANN. Here, the first step is to approach the target weight by an extremely fast release of material within a minimum of time. Then, as a second step, the dosing system switches over to controlled high-precision dosing until the exact target weight is reached.

Since all valves inside the Gravimax are made of stainless steel, the appliance reaches a long service life even where materials reinforced with a high proportion of fiberglass are blended in.

Central material supply for injection molding and extrusion

Following the excellent results obtained in the extrusion process, the injection molding department is now also getting a new, large Gravimax blender. “What has proven itself in extrusion, we adopt for injection molding”, is how Eder explains his strategy, which has already been put into practice for the materials handling system. Whereas for a long time each injection molding machine had its own Drymax dryer, the injection molding hall has now been equipped with a central materials handling system following the example of the extrusion department. “Now we have a separate dryer for each material, so we can change over from one material to another much faster and much more easily”, says Eder.

The injection molding machine fleet includes 16 machines, among them several older models from Battenfeld, which became part of the WITTMANN Group in 2008. These machines are still functioning reliably to this day. The more recent machine models are servo-hydraulic SmartPower and all-electric EcoPower machines supplied by the WITTMANN Group. The largest injection molding machine comes with 200 tons clamping force. It is used to produce fittings and filters.

Everything from a single source enhances efficiency

For Plasnova, having both auxiliary equipment and processing machines from a single source means greater efficiency in planning new equipment and in after-sales service. “The responsibility lies in one hand, with the WITTMANN team”, Eder points out. “The WITTMANN technicians know all the systems here as well as we do, and they are on site very quickly when service is required. This is very important for us. We cannot simply stop an extrusion line whenever there is a problem with auxiliaries. Those systems must always function reliably.”

Plasnova and WITTMANN BATTENFELD do Brasil have now been cooperating for more than 20 years. This close partnership has developed into friendship. “We meet regularly for lunch”, Eder discloses. “Of course, we discuss the current projects there, and often the future, too. We have to stay on top of things and are always on the lookout for innovative technologies for further optimization of our production.”

DC pioneers: uninterruptible power supply for injection molding

The topic of DC, the installation of a local DC grid in order to use energy obtained from photovoltaics directly for the operation of injection molding machines without conversion losses, was also discussed over lunch. When it comes to DC, WITTMANN is the pioneer in the injection molding world. WITTMANN is actually the first machine and equipment supplier to offer DC-compatible injection molding machines, robots and temperature controllers, and has already presented these new possibilities and opportunities at several trade fairs, jointly with its partner Inesco.

“We were immediately convinced by this idea”, says Eder. Here, the company owner not only considers the energy that can be saved by eliminating the current conversion loss. “The decisive factor for us is that we are gaining a bit of independence from the public power supply network here in São Paulo. With the DC machine and the salt storage battery from Inesco, we can continue our production without interruption in spite of power failures.” In October 2024, Eder ordered a first DC-compatible injection molding machine for his plant at the WITTMANN booth during his visit to the Fakuma show in Germany, thus writing industrial history in Brazil.



Fig. 1: The garden in front of the factory building is a part of the development lab. Here, new irrigation systems are thoroughly tested.



Fig. 2: Cooperating in close partnership for 20 years: Eder, Owner-Manager of Plasnova, Cássio Luis Saltori and Marcos Cardenal from WITTMANN BATTENFELD do Brasil (from right to left).



Fig. 3: Sprayers and sprinklers come from the company's own injection molding shop.



Fig. 4: Plasnova operates several extrusion lines for making pipes and hoses.



Fig. 5: Diversification of the product range: the production of monofilaments for 3D printing now takes up a separate hall.



Fig. 6a+b: The new large Gravimax meters and mixes together up to six materials with extreme precision.



Fig. 7: All extrusion lines, too, are equipped exclusively with material loaders, dryers and dosing systems from WITTMANN.



Fig. 8a+b: The central materials handling system makes it easier for staff members to manufacture products with highest possible material efficiency and process consistency.



Fig. 9: What has proved effective in extrusion is also installed in the injection molding shop. Eder is investing continuously in further strengthening of his good competitive position.



Fig. 10: The equipment in the injection molding hall consists of 16 machines. The company's first DC machine will be started up shortly.

Photos: WITTMANN

The WITTMANN Group

The WITTMANN Group is a globally leading manufacturer of injection molding machines, robots and auxiliary equipment for processing a great variety of plasticizable materials – both plastic and non-plastic. The group of companies has its headquarters in Vienna, Austria and consists of two main divisions: WITTMANN BATTENFELD and WITTMANN. Following the principles of environmental protection, conservation of resources and circular economy, the WITTMANN Group engages in state-of-the-art process technology for maximum energy efficiency in injection molding, and in processing standard materials and materials with a high content of recycled and renewable raw materials. The products of the WITTMANN Group are designed for horizontal and vertical integration into a Smart Factory and can be interlinked to form an intelligent production cell.

The companies of the group jointly operate ten production plants in seven countries, and the additional sales companies at their 35 different locations are present in all major industrial markets around the world.

WITTMANN BATTENFELD pursues the continued strengthening of its market position as a manufacturer of injection molding machines and supplier of comprehensive modern machine technology in modular design. The product range of WITTMANN

includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. The combination of the individual areas under the umbrella of the WITTMANN Group enables perfect integration – to the advantage of injection molding processors with an increasing demand for seamless interlocking of processing machines, automation and auxiliaries.

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