

Press Release

Partnering to advance cold glue application and sensor technology

How the WestRock plant in Düren, Germany, and Baumer hhs collaborated to take adhesive application and quality assurance to a totally new level in folding carton production.

Krefeld, 8 February 2022 - As a producer of high-end folding cartons, WestRock in Düren is the ideal partner for Baumer hhs when it comes to field testing new equipment. The new PX 1000 cold glue application head and new GDX 1000 cold glue monitoring sensor recently were put through the last stages of development at WestRock prior to market introduction. This powerful combination of the PX 1000 and GDX 1000 for gluing and monitoring sets new standards, reduces quality costs in folding carton production and makes it easier for the plant to produce packaging of the highest quality.

“We always have the latest, market-leading equipment from Baumer hhs for adhesive application and quality control on our machines, so we can explore its advantages for our customers at an early stage. In turn, we also influence its development with the high demands we place on the performance, user-friendliness and reliability of our production systems,” says Giuliano Terracciano, head of Finishing and the Gluing Department, explaining why WestRock-owned Multi Packaging Solutions Düren GmbH is happy to act as sparring partner for Baumer hhs.

The three-shift plant in Düren specialises in the production of premium paper and board packaging for confectionery products. “Top quality is just barely good enough for our customers. Baumer hhs can put its innovations to the acid test on our machines under very demanding conditions, using both relatively simple cartons run at high speed, as well as more complex packaging. Our two companies have been working together very closely for many years on advanced projects,” explains plant manager Dirk Matzke.

The first prototypes of the new cold glue PX 1000 application head and GDX 1000 monitoring sensor were installed at the plant in late 2020. “Baumer hhs asked us in autumn if we would be interested in testing a new cold glue head, developed specifically to also process complex packaging at high speeds, in one of our folder-glueers. In the lab, the new head had achieved outstanding results in a number of categories, including start-up behaviour, precision application and flexible response to fluctuating adhesive viscosities. Baumer hhs now wanted to see if it could verify these advantages under demanding production conditions over an extended period of time,” says Terracciano in retrospect.

Uniquely precise adhesive application

After just a few trial runs in the folder-gluer, machine operators were thrilled with the new equipment because it significantly facilitated their work. “The PX 1000 doesn’t need to be cleaned as often. Production interruptions due to cleaning are down considerably as a result, and that benefits productivity in packaging production. What’s more, the new head applies adhesive more precisely and in smaller dimensions than we have ever experienced before. It really exploits this advantage on packaging products with small flaps and at very high machine speeds. The new head makes it easier than ever for us to avoid inside gluing and ensure the functionality of our packaging products,” says Terracciano, emphasising important changes associated with the PX 1000.

For example, in the production of telescope-type boxes with side seam gluing for chocolates, the PX 1000 applies the glue lines exactly from the defined start to end points. “Generally speaking, the new head once again significantly increases the reliability of adhesive application and therefore of the overall production process. Our machine operators can be sure the glue is applied right where it belongs - and only there,” Terracciano adds.

Another advantage of the new head is how it facilitates the work of machine operators: The PX 1000 works smoothly and reliably even when it cycles relatively infrequently, as is the case in the production of lock bottom boxes.

“During the trial runs, we suggested that Baumer hhs make several optimisations, which they implemented perfectly,” says Terracciano, illustrating again how working in close partnership to improve gluing equipment in folding carton production results in various synergies for both companies.

A perfect combination

The prototype of the new GDX 1000 cold glue monitoring sensor was installed in the folder-gluer alongside the PX 1000. With its high resolution and innovative measuring principle based on the latest electronics, it guarantees even more reliable control of the gluing process right up to the highest machine speeds – which is a plus for demanding folding cartons applications in particular.

“The GDX 1000 greatly simplifies the monitoring of glue-free areas,” says Terracciano. Machine operators no longer have to define blind-out areas along the edges when setting up the quality control parameters. In teach-in mode, the high-performance sensor detects them independently – even on printed glue flaps during production. Setup times have been reduced to a minimum and input errors ruled out.

Thanks also to more reliable measurement results, production stops and reject rates have been further minimised to increase both productivity and quality. Gone are the days in the production of crash-lock bottom or 4/6-corner boxes when glue-free areas on colour transitions and angled edges were identified

as defects and the blanks ejected, when the boxes were in fact flawlessly glued. The GDX 1000 detects only real defects in the gluing process – and with unmatched reliability.

The high precision of the PX 1000 in applying adhesive goes hand-in-hand with the high reliability of the GDX 1000 in monitoring glue-free areas. “This new equipment makes it easier for us to meet specified reliability and quality targets with our packaging products. It helps us to further reduce our quality costs, meaning the costs of both control and defects. That is a tremendous help in day-to-day operations,” summarises Matzke. “And higher reliability in production naturally improves the sustainability of both the production process and the packaging.”

Focus on user-friendliness

The user interface on Baumer hhs’s Xtend³ controller also was optimised for greater convenience in close collaboration with the WestRock plant in Düren. Machine operators now have direct access on the Xtend³ to all important machine functions, which saves them time searching through sub-menus. They can select individual application heads right from the menu. To simplify required entries in the sub-menus, operators can toggle between them using simple swipe gestures. Furthermore, the various visualisations, for instance of adhesive monitoring, are now much more practical.

General system operation via the user interface on the Xtend³ controller was also enhanced at the plant. For example, the Xtend³ supports different levels of access authorisation for different users. Specific functions are only accessible if users have been assigned the corresponding access authorisations. This prevents machine operators from switching off certain functions. In addition, jobs can be assigned specific functions, which subsequently must be actively used. Today, many packaging producers all over the world are using these options to increase the reliability of their production processes. “We are very fortunate in that all our machine operators are so well-trained that we no longer need this option,” adds Terracciano.

Industry 4.0 of growing importance

The new Xtend³ controllers provide comprehensive machine and process data on adhesive application that can be used to further optimise this production step. In other words, the controllers can be perfectly integrated in Industry 4.0 environments. “Xtend³ gives us numerous options in this regard. We will be putting them to use in future to conduct root cause analysis and to document our product quality,” says Terracciano.

For example, with its Xtend³ systems, the plant can easily generate production reports to document which quality assurance methods were used for which jobs, whether systems signalled any errors during production and what countermeasures were taken. The reports can be made available to customers in PDF format.

Machine operators prefer the new equipment

Currently, the new PX 1000 cold glue head and new GDH 1000 cold glue monitoring sensor are in operation on two of five folder-glueers at the WestRock plant. Three of the machines were upgraded from Xtend² to Xtend³. “If it were up to our machine operators, we would install the new equipment on all our folder-glueers right away,” says Terracciano. “As soon as that happens, it will boost process efficiency throughout the Gluing Department,” he adds.

“Adhesive application is a key quality parameter in packaging production. We need to be able to rely on our equipment one-hundred percent. That’s why Baumer hhs is a very important partner for us. Their high-performance equipment and services enable us to produce reliable quality for our customers, which includes avoiding product mix-ups. Our customers know that we equip all our machines with technologies that essentially eliminate errors, especially in adhesive application,” says Matzke, underlining the importance of the partnership. “The name Baumer hhs has always stood for premium quality. The new equipment gives us new options in folding carton production that we never thought possible before.

((Text box))

WestRock Düren

Founded in 1964, Multi Packaging Solutions Düren GmbH in Düren, Germany, has 150 employees and specialises in the production of food-grade packaging for the confectionery industry, mainly chocolates. Its primary market is the German-speaking region, although packaging products are also shipped worldwide on customer request. The facility originated in 1893 with the establishment of a carton production company. WestRock acquired the Multi Packaging Solutions Group in May 2017, including the plant in Düren. Equipped with the latest technologies, the plant even has an in-house laboratory offering all the options necessary to analyse printing inks, paperboard grades and more. Backed by these facilities, the plant can guarantee customers that the packaging products it manufactures are safe for food applications. The WestRock company has a workforce of 50,000 at some 300 locations.



As a producer of complex high-end folding cartons, the WestRock plant in Düren has been an ideal partner for Baumer hhs for years when it comes to field testing new equipment (l. to r.): Giuliano Terracciano (WestRock Düren) and Andreas Brandt (Marketing Manager, Baumer hhs).



Testing the new PX 1000 cold glue head and new GDX 1000 cold glue monitoring sensor from Baumer hhs at the WestRock plant in Düren delivered proof positive: The new equipment once again significantly increases the reliability of adhesive application and therefore of the overall production process.

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Baumer hhs GmbH

Baumer hhs GmbH, Krefeld/Germany, is a leading, internationally operating manufacturer of industrial gluing systems in conjunction with quality assurance and camera verification systems. Baumer hhs offers its customers a carefully coordinated portfolio of solutions for a host of different demands on cold glue and hot melt application in automated production environments, including application heads, pumps, pressure vessels, control and monitoring systems. The portfolio is rounded off by a comprehensive range of services, from consulting and the testing of innovative applications at the hhs solution centre in Krefeld, all the way to every form of after-sales service.

Solutions from Baumer hhs are used in the folding carton and corrugated board industry, in print finishing, special-purpose machines and many other applications.

For more information on the Baumer hhs company, its products and its services, go to: www.baumerhhs.com