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Improved workflow – Proficy optimizes production processes at Brüggen GmbH

As different as a heavy-weight truck and a small van may look – there's one thing they're sure to have in common: the swap systems, box semitrailers and fixed bodies they use are very likely to be quality products from Brüggen GmbH of Herzlake, in the Emsland region of Germany. Since starting up in 1990, the product quality and service competence that have turned the company into a leader in commercial vehicle construction, have been its trademark.

Brüggen is also a competence partner of Fahrzeugwerk Bernard Krone GmbH and operates one of the most advanced coating installations in Europe. With many years of experience, and state-of-the-art systems, the company is one of Europe's leading specialists in surface coating. The quality of its products and services is the maxim on which Brüggen bases its operations. Production is carried out solely to order.

In its detailed production planning, Brüggen uses the benefits of General Electric's industrial software solution Proficy to optimize its production control.

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The time factor

The lead time of a Krone order for components and spare parts must not exceed a few days; for complete swap units it's slightly longer. The time frame for actual production is therefore short and requires processes to be optimized on a continuous basis.

Throughout the company, Brüggen uses SAP as its enterprise resource planning system (ERP). In the individual production areas of Body Construction, Component Production, Coating and Final Assembly, additional IT systems are deployed for the detailed production planning.

Before the GE Intelligent Platforms solution was implemented, the existing IT system in Coating was unable to communicate directly with the umbrella SAP system. This meant that the SAP information had to be transferred to the IT system by hand, involving a great deal of increased effort before real production could actually get started. This change of medium between the detailed production planning IT system and SAP was not only time-consuming, but also a potential source of errors.

In addition, employees had to perform the quality controls within the individual production steps manually, and assess the effects of any necessary changes in quality assurance themselves. This increased production time, especially with larger orders.

↑ *The GE Solution.*

"Before the GE Intelligent Platforms solution Proficy was introduced, the change of medium between the detailed production planning IT system and SAP was always a potential source of errors."

Dieter Burs, Head of Production Engineering,
Brüggen GmbH

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For quality and growth

Aligning Brüggen's growth path with its quality demands meant modernizing the IT in Coating, so a manufacturing execution system (MES) was sought by the company. In addition to the SAP integration, the prerequisites desired for the MES were visualization and simulation of the detailed production planning.

With its open, flexible and scalable architecture and numerous visualization functions, the Proficy solution from General Electric fulfils Brüggen's requirements exactly. What is more, data analysis and real-time data control, together with real-time data management, offer new process-control and quality-assurance options.

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Delivery reliability as a matter of course

After a planning and testing phase, Dimensys, a service and solution partner of GE Intelligent Platforms, took charge of implementing the Proficy solution at Brüggen's site. "In detailed production planning especially, every detail in a process or production stage really does count. When a new solution is put into place, it's not only the expert knowledge, but also the team skills, of all those involved in the project that's required," says Dieter Burs, describing the challenges of changing an IT system within production.

For Brüggen, delivery reliability is a matter of course. Since truck swap systems, box semitrailers and fixed bodies are made solely to order, flexibility and a hitch-free production process are of particular importance. The new industrial software from General Electric gives substantial support to Brüggen in achieving this goal. Thanks to the SAP integration in Coating, the orders coming from the areas of Body Construction and Component Production need no longer be transferred and organized manually.

With Proficy, progress and quality in the production process can be followed on monitors, and individual process changes occurring at short notice can be carried out in real time.

↑ *The GE Solution.*

"Our relationship with GE Intelligent Platforms and its service partner Dimensys was, and is, productive and trustworthy."

Dieter Burs, Head of Production Engineering, Brüggen GmbH

With precision and innovation

In Coating, it’s not only paint that’s applied, but also primer and lettering. Individual settings are required for these steps, and must be transferred to the implementing machinery. General Electric’s software solution uses open interfaces to upload the incoming orders straight from the SAP system.

This saves time and enables production to start right away, regardless of the number of special factors in the order. As soon as production has begun, the processes under way are visualized, which also enables better management of work supplies. Material ordering can be automated in this way, too. The visualization also allows the work process to be monitored perfectly, and individual adjustments are passed straight from the system to the control units of the machinery.

In this production area, curing processes can take varying amounts of time, owing to the fluctuating temperature in the oven. The new solution from General Electric manages this automatically. It stops the timer for the curing process when the temperature drops below the threshold value, and restarts it as soon as the correct temperature is reached again. This means that curing is automatically terminated once the specified time has elapsed. The Proficy solution therefore contributes to process reliability, which employees can also monitor with the visualization.

Every color changeover in Coating uses up resources and takes time – which, particularly with large batch sizes, is precious.

To reduce color changeovers, the new industrial software allows advance grouping of the parts to be painted on their way to coating, in accordance with the color required. This saves capacities all across production.

The synergies of the future

Brüggen is also planning to deploy the GE Intelligent Platforms industrial software solution in other production areas. In the same way as Coating has its own challenges, Component Production and Final Assembly have their own emphases, too. As well as improvements specific to the individual production areas, extending application of the solution could also spawn cross-process synergies, lastingly optimizing Brüggen's entire production process.

"If it can already be established in Welding that two side panels to be painted green are coming into Coating within a three-hour interval, it's best to schedule them as a block right away," says Dieter Burs, explaining one possible way of proceeding. "This could reduce color changeovers and bundle capacities in advance – our way into the future."

"With an open, flexible and scalable architecture, Proficy fulfils our requirements of a manufacturing execution system (MES) exactly."

Bernard Kok, Head of Organization and IT, Brüggen GmbH

"The Proficy solution contributes substantially to process reliability, which is automatically guaranteed and can be monitored by employees through visualization."

Dieter Burs, Production Engineering, Brüggen GmbH

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GE Intelligent Platforms provides industrial software, control systems and embedded computing platforms to optimize our customers' assets and equipment. Our goal is to help our customers grow the profitability of their businesses through high performance solutions for today's connected world. We work across industries including power, manufacturing, water, mining, oil & gas, defense and aerospace. A division of GE, we are headquartered in Charlottesville, VA.

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