



Industry 4.0: a new level of quality

Bosch presents connected solutions for higher process and product safety at interpack 2017

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- ▶ Focus on highest product quality for end consumers and patients
- ▶ Transparent and safe processes thanks to machine data in real-time
- ▶ Future-proof serialization – for pharmaceuticals and food products

Stuttgart/Düsseldorf, Germany – At interpack 2017, Bosch Packaging Technology shows how Industry 4.0 solutions help to achieve higher process safety and product quality. “Especially in the pharmaceutical and food industries, both manufacturers and end consumers expect absolutely safe products,” says Dr Stefan König, president of Bosch Packaging Technology. “The key to this safety are transparent and controllable manufacturing processes, which comply with international guidelines. Our Industry 4.0 solutions are designed to support customers in optimizing their processes – and in making their products even safer for end consumers and patients.”

Consistent process safety

Detailed information about each machine, line or process status is provided by the **Condition Monitoring** platform. It records data in real-time, enabling maintenance staff to react before cost-intensive process deviations or downtimes occur. An example shown at interpack is the monitoring of filters, which ensure the consistent sterility of production processes. Special sensors within the machine control the sterilization status of these filters. In case pre-defined parameters are infringed, operators receive a notification. This enables them to initiate maintenance activities quickly, and to prevent product loss due to non-sterile processes.

To ensure constant product quality, all process steps are subject to strict regulations. This is particularly true in the pharmaceutical industry, for instance regarding electronic records and signatures. The **Bosch Pharma Manufacturing Execution System (MES)** enables pharmaceutical companies to take the step towards a transparent, paperless production. To this end, Bosch works with the software provider Parsec Automation Corp. and configures the MES software TrakSYS according to the requirements of the

pharmaceutical industry. Together with a complete audit trail, it includes all necessary functionalities to manage machines and processes, and to generate electronic batch records (EBR), thus facilitating the approval for batch releases by qualified persons. The Bosch Pharma MES can be integrated into any Bosch or third-party machines and lines, as well as into complete manufacturing facilities.

Counterfeit-proof packaging

When it comes to packaging, pharmaceutical manufacturers must also comply with strict regulations. The unambiguous serialization of secondary packaging aims at protecting patients from counterfeit medicine, and ensures the traceability along the production chain. The **Track & Trace solution** from Bosch fulfills both requirements. It consists of the CPI software and machine modules, which are connected within the serialization process. At the machine level, CPS modules print data matrix codes onto folding cartons, verify the codes and, if required, equip the packaging with a tamper-evident seal. The CPI software integrates the CPS modules into the company IT. This ensures a reliable serialization – from the allocation of the serial numbers through to the last aggregation step.

“In the food industry, the requirements regarding product safety are also rising continuously,” says König. “While we already drew on the comprehensive know-how of the Bosch Group during the development of our Track & Trace solution, for instance from the automotive division, we can now transfer this expertise to the food industry.” At interpack, Bosch showcases such an application for yoghurt packaging for the first time. The packaging machine is connected with the CPI software. The software transfers the information directly into the Bosch IoT Cloud. Thanks to the QR code printed onto the lid of the yoghurt cup, end consumers can verify whether they have bought an original product. “The cloud further enables producers to actively communicate with their customers,” König explains. “In case of a faulty product, consumers can immediately inform the manufacturer – and support them in securing the quality of their products.” Apart from product verification, manufacturers also make use of well-known online marketing possibilities via the code by adding further, product-specific information such as ingredients, allergens or recipes.

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Based in Waiblingen near Stuttgart, Germany, and employing 6,200 associates, the Bosch Packaging Technology division is one of the leading suppliers of process and packaging technology. At over 30 locations in more than 15 countries worldwide, a highly-qualified workforce develops and produces complete solutions for the pharmaceuticals, food, and confectionery industries. These solutions are complemented by a comprehensive after-sales service portfolio. A global service and sales network provides customers with local points of contact. Additional information is available online at www.boschpackaging.com

The Bosch Group is a leading global supplier of technology and services. It employs roughly 390,000 associates worldwide (as of December 31, 2016). According to preliminary figures, the company generated sales of 73.1 billion euros in 2016. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected industry. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to create solutions for a connected life, and to improve quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 450 subsidiaries and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 120 locations across the globe, Bosch employs 59,000 associates in research and development.

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