

Summary

Company: Feige Filling
Country: Germany
Sector: Manufacturer of filling systems
Product: In-Sight 5401 with PatMax
Description: Fully-automatic location and filling of drums on pallets

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Automate dangerous and toxic filling with Cognex vision

How do you guarantee people's safety when dealing with dangerous or toxic materials? Not only that, how do you automate a dangerous filling process while guaranteeing the right materials go to the right place at the right quantity?

For years, Feige Filling has been supplying industrial machines used to fill different containers. In 2006, this German company developed a new robotic filling technology equipped with Cognex vision that opens up completely new opportunities for filling with regard to safety, speed and cost effectiveness. Equipped with the In-Sight™ 5401 camera plus PatMax™, the "RobotFiller", a robot with a four or six-jointed arm, can locate the different container stoppers for filling even when they arrive in various positions on the pallet.

Vision tools that find and fill

One of the RobotFiller's most important functions is to locate the stoppers with screw closures on the drums. As the stoppers are arranged off-centre at the edge of the drum lid, they tend to be in a different position on every pallet. Without a precision vision system, safe and rapid opening, filling and closing would not be possible. Cognex PatMax technology makes In-Sight especially fast and reliable. This revolutionary tool for high-precision location of objects using pattern-matching technology reads and recognises an enormous variety of patterns. Once the stopper is located, the filling process starts. The first step is for the RobotFiller to pick up a tool which it uses to remove the screw closures of the drums and put them down on a tray. It then changes tool and grips the filling valve to suit the filling job. This is the innovational step for the future of automatic filling of large containers on pallets. Without human intervention, RobotFiller can switch different filling valves and tools for further processing fully automatically, considerably accelerating the filling process. In addition, the RobotFiller protects staff when critical substances are being handled, as the complete filling area can be enclosed and subjected to extraction. Following precisely calibrated filling, the jointed-arm robot switches tools again to pick up the stoppers and close the containers. With the drums filled, the pallet is ready to be transported by the conveyor belt.

Safety in traceability - the right material for the right container

Code-reading properties mean that the In-Sight 5401 can detect every container. The information passed on to a safety system further up the chain ensures that the right containers for filling are located on the pallet. This plausibility check means that the In-Sight 5401 increases process safety and helps save costs, as the incorrect assignment of filling material to container is ruled out. Plus the rugged, robust characteristics of the In-Sight

5401 are of real value in this kind of operating environment susceptible as it is to toxic material and flammable substances.

For engineer Axel Frank, Automation Technology Manager at Feige Filling, the benefits of the In-Sight 5401 with the jointed-arm robot are obvious. Attached directly to the end of the robot arm and supported by eight LEDs arranged in a circle, the intelligent camera system ensures optimum processes. The automation expert particularly appreciates the fact that he does not require any additional evaluation electronics with an industry PC. He also values the clear assignment of interfaces which makes it much easier for users to familiarize themselves with the system.

Just add vision - to get the most flexible filling system in the world

Cognex real-time image detection means that the RobotFiller is currently the most flexible filling system in the world. Speed, cost saving, process reliability and above all increased protection for the operator make Feige Filling high technology plus innovative Cognex vision systems the compatible combination of the future.

About Cognex

COGNEX designs, develops, produces and sells machine-based vision systems and computers which allow machines to see "intelligently". Cognex is the world's leading supplier of machine-based vision systems, with over 400,000 systems already supplied, corresponding to a cumulative turnover of over 2 billion USD since the company was founded in 1981. The Modular Vision Systems Division of Cognex is based in Natick, Massachusetts, and specializes in machine-based vision systems used in the automated production and quality assurance of individual parts. The Surface Inspection Systems Division headquartered in Alamenda, California, concentrates on the high-speed surface inspection of sheet product made of metal, paper and plastic. In addition to the headquarters in Natick, Massachusetts, there are other subsidiaries in North America, Japan, Europe and South-East Asia. The head office of Cognex Europe is in Rueil-Malmaison, near Paris. For more information, see our website at <http://www.cognex.com>.

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