

Managers Navigator

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Founded: 1999

Staff: 30 (Automation)

Staff total: 140

Certificated: ISO 9001

ZELTWANGER – automate the future

"If you want to manufacture increasingly complex parts at competitive prices, you need the right automation solutions." This expert assessment is linked to the trend towards small units, each of which perform the simplest possible process, so they can be recombined to create special solutions almost like standard modules.

Under the motto "creative thinking for the future", ZELTWANGER Automation GmbH is committed to this very concept. The company's flexible, practical automation solutions combine simplicity and modularity to offer maximum flexibility and production reliability. They also reduce development costs. The company draws on its years of experience in building special machines and systems to create tailor-made, lean and intelligent automation solutions. For evidence of the company's focus on the future, take ZELTWANGER Automation's latest project. For the new and as yet unique urea injection technology for car diesel engines, the firm developed and built a semi-automated manual production line with 18 stations for the world's biggest automotive parts supplier, Bosch.

Creative thinking for the future

The future potential of this "AdBlue" technology becomes clear when we consider the ambitious aims behind this innovation. Engines with an exhaust gas treatment system will comply with the particularly strict emissions limits in California. In Europe, the technology aims to achieve emissions levels significantly below the Euro 5 standard, due to come into force in 2011. Additional measures are even being introduced with the aim of comfortably satisfying the Euro 6 standard, not due to come into force until 2015. The injection of urea into the exhaust gases produces ammonia in a special catalytic converter. The ammonia in turn breaks down the nitrogen oxides into nitrogen and water. Unlike pure ammonia, the AdBlue solution is non-toxic, odourless and biodegradable. US regulations specify that the complete system must remain fully functional over a distance of at least 150,000 miles.



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With requirements this tough, production needs to be error-free and satisfy stringent quality standards. It was in this respect that the assembly and testing solution developed by ZELTWANGER won over the automotive supplier. The system uses semi-automatic manual workstations. This is where the urea dosing pump is completely assembled and tested. The project was implemented in close collaboration with the customer, demonstrating the ability of everyone involved to cooperate in the interests of achieving the best solution. The 18 stations are designed as semi-automatic "desktop factories" because this is required by Bosch's internal Best Practice System for these piece numbers. If piece numbers go up the system can be equipped to run fully automatically. For the dimensioning the company worked to Bosch Rexroth dimensions and adapted all stations

to the appropriate grid pattern with widths of 220 mm, 440 mm etc. This flexibility is typical of the way ZELTWANGER works.

In a separate project for a premium automotive manufacturer, the company automated the leak testing system for the fuel system. This called for the expertise of ZELTWANGER Dichtheits- und Funktionsprüfungssysteme GmbH, which developed the best solution in close coordination with the automation team during the planning phase. The leak test is particularly important in this instance, as not only must it be automated and fast, it also has to produce reliable, safe and traceable results. ZELTWANGER has developed a new leak testing system that detects minute leaks of as little as 10^{-4} mbarl/s using forming gas. Crucially, however, the test procedure provides quantifiable results without the test points having to be sealed, and can be automated. Under normal production conditions this allows 100% quality checks to be carried out with absolute process reliability.

Technology and quality leader

The ZELTWANGER Group consists of separate companies for machine construction, automation and leak and functional testing systems. The 140 employees in Tübingen (Germany), the USA and the Czech Republic are called upon whenever a customer has complex tasks with high quality requirements. For many companies on its exclusive list of customers, ZELTWANGER has become one of their largest and more important development partners. In most cases it is also a technology and quality leader.



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