

Integrated System Solutions for the Automotive Industries by Dürr Ecoclean – a Flexible Production Approach in Changing Times

Markets and requirements change continuously

Today, markets are changing faster than ever. Product life cycles for engine productions are getting shorter every year. As a result, manufacturers are challenged to bring innovations and developments to the market at an accelerated pace. This requirement - flexible product adaptation and faster speed to market, runs through the entire industrial supply chain, from the smallest pre-suppliers to final assembly.

A global provider and integrator of cleaning, automation, filtration, assembly and test systems

Dürr Ecoclean is a worldwide leader in industrial cleaning, automation, filtration, assembly and testing systems. From its roots in Germany, Dürr Ecoclean has grown into an international presence operating and maintaining sites all over the world. The group supplies standard cleaning and deburring technology and tailor-made systems to the automotive industry and its suppliers, as well as to the diversified industrial market. Its portfolio includes liquid filtration systems for reliable, eco-friendly and efficient processing and reconditioning of cooling lubricants and industrial liquids. The company's Automation Division develops and produces flexible work piece handling systems to provide reliable material flow between individual process steps in manufacturing.

A reliable partner worldwide, Dürr Ecoclean's reference list in the aforementioned areas is a genuine "who's who" of the automotive industry and its supplier base.

A new approach to the planning of production facilities—supported by the “SnapPlanner” planning tool

Beyond delivering single machines or custom solutions, Dürr Ecoclean integrates complex production installations across manufacturing disciplines. The company is known for its ability to integrate all project-related units - even components supplied by other manufacturers, such as CNC machines - into one overall project. The customer thus receives the entire production line from a single source while

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benefiting from full cost transparency, budget and planning reliability at all times. This allows the customer to focus attention on its core competence of building the best, most powerful and economical engines and transmissions.

As a system integrator, Dürr shares a unique advantage with its customers by collaborating within the newly developed "SnapPlanner" software tool. The software allows complex production lines to be developed and improved together with the customer. Years of planning experience went into the creation of this tool which accurately reproduces the proposed system in a 3D virtual world. Possible interferences and snags lurking in the "real-life" line structure can be detected in advance and eliminated during the planning phase. Changes to the line can be visualized immediately, and the impact on budget, process duration, resources and other factors, can be compared dynamically. The virtual process summarizes different cost impacts and permits comparison of key metrics by decision makers who have historically communicated only through complex spreadsheets and data tables. The SnapPlanner visualizations result in a better understanding of the issues amongst participants from diverse areas of expertise as they consider their investment decision and risks.

Worldwide Partnership—Success Story

One of the first customers to collaborate with Dürr Ecoclean on the development of integrated systems through SnapPlanner was Cummins, Inc. Based in Indiana (USA), Cummins is the world's largest independent manufacturer of diesel engines and maintains an extensive global network of engine-making plants and service facilities. Cooperation between the two companies in the planning and integration of complex production lines grew out of a relationship that began in 1999 with successful installations of Dürr's cleaning, filtration, and automation equipment. In 2007 for its plant in Columbus, Indiana, Cummins awarded its first contract to Dürr calling for a complete integration of CNC machines with Dürr's products—*EcoCTrans* washers, coolant filtration systems, gantries, robotic buffer systems, and PZR conveyors with related floor automation.

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Ecoclean equipment on site: an EcoCTrans washer and an HRB filter

Later in the same year, Cummins' joint venture, ZAO Cummins Kama (ZCK), chose Dürr for its plant in Russia. The company needed a supplier capable of handling the entire planning side in terms of cost and process optimization as well as a competent on-site partner in this region of the world. A semi-automated line was selected to permit manual operations where possible. The line included not only Dürr's cleaning, filtration and materials handling technology but also, as a genuine first, Dürr's cylinder block subassembly and testing operations. For ZCK this was an integrated purchase, covering everything from planning through to the implementation stage. The U.S. team was supported by Dürr colleagues in Russia whose access to the Dürr Group's worldwide sales and service network ensured the smooth completion of the project.

The most recent and most extensive collaboration between the companies to date has just been installed in Jamestown, New York. Cummins chose Dürr Ecoclean as the integrator, this time for a highly automated and flexible installation. Complete engine block and cylinder head lines were purchased from Dürr Ecoclean which included the supplier's cleaning, filtration, automation, and flexible subassembly & test equipment. Dürr Ecoclean supplied all non-machining technologies for the lines, and the company integrated the entire line including the machine tools.

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The Ecoclean "RIO": Robotic Input-Output System

A flexible production approach in changing times

The history of successful cooperation between Cummins and Dürr Ecoclean reflects mutual benefits and a focus on the customer's goals within each specific market. Collaboration within "SnapPlanner" and the project team's expertise fostered optimum solutions within the target regions—i.e., flexible production lines meeting today's demands for efficiency, national particulars, and per-unit cost targets. By taking these criteria into account during the planning phase, Dürr Ecoclean strives to identify needs-based investments that can be scaled to fit an ever changing demand for production volumes and product diversification.

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