Press release

Dürr hands over new mega paint shop to SAIC Volkswagen

Paint shop of superlatives for capacity and digitalization

Bietigheim-Bissingen, 7 April 2021 – Despite all the restrictions caused by the coronavirus pandemic, it was a precision landing; Dürr handed over one of the biggest paint shops in China to SAIC Volkswagen right on schedule. The new plant in Anting is a factory of superlatives. The production capacity is twice that of a standard paint shop at 120 bodies per hour, and behind the intelligent production is software and artificial intelligence on a hitherto unknown scale.

A smart painting line records around 3,500 digital data points for every individual body alone. On top of this, sensors supply many gigabytes of data in the form of process values for temperature, pressure, and humidity as one example. This information is the raw material for increasing the overall equipment effectiveness (OEE) of a paint shop. The new SAIC Volkswagen joint venture (SVW) plant near Shanghai, where various electric models and conventionally powered vehicles are produced, is a prime example from real life. Dürr supplied all of the plant engineering as well as the most comprehensive portfolio yet of its proprietary DXQ software products for the highly digitized factory.

Parallel development of digital solutions and plant engineering

Right from the beginning, mechanical engineering and IT expertise went hand in hand in the SVW project. The digital solutions were developed in parallel with planning and implementing the comprehensive plant engineering – from the RoDip® dip coating system through paint booths with EcoDryScrubber dry separation to the oven and the air pollution control. SVW’s digital requirements catalog largely lined up with the development agenda of Dürr’s Digital Factory with the result that many new DXQ products found their way into the plant. Over the 18-month project duration, six international product development teams from Dürr worked with up to ten developers in each case on the new technologies. They coordinated closely with SVW in short sprints as is customary in agile development. To ensure as smooth an IT installation as possible in China, all the software functions were first tested in the Dürr headquarters in Bietigheim-Bissingen in a test environment that faithfully replicated the conditions in Anting.

DXQcontrol for controlling the mega paint shop

SVW uses nearly all modules from the feature-rich DXQcontrol software solution for higher-level plant control. It enables the life cycle of each body to be tracked from beginning to end. This starts with receipt of a production order, whereby the order information is translated into concrete production steps. In addition to order data management, the DXQbusiness.intelligence module from the DXQcontrol product family is also used in a new form. For the first time, consumption data such as energy, water, or air usage can be evaluated historically over long periods. This lays the foundation for sustainable plant operation. A further innovation is the use of mobile apps provided by various **DXQ** products. For example, employees can manage and filter alarm functions directly at the point of origin in the plant using tablets if the line comes to a stop.

One piece of maintenance software for all components in a paint shop

For SVW, mobile versions also have the advantage that the employees can access maintenance data using tablets by scanning QR codes on plant components. In this way, information can be called up directly at the point of origin. This enables the employees to work more flexibly than is possible with stationary PCs. At SVW in Anting, the DXQequipment.maintenance maintenance software is being used for the first time for a complete paint shop, and as a mobile version as well. The software has interfaces to the plant equipment’s almost 130 controllers, and uses them to determine each piece of equipment’s need for maintenance based on up-to-date information like operating hours or counter readings. SVW can also incorporate plant components from other suppliers here.

Optimizing the painting process with big data

Several terabytes of digital data per year are collected, saved, and evaluated by the intelligent algorithms of the DXQplant.analytics application in the new paint shop. If, for example, an employee detects an irregularity on the paint surface during the quality inspection, he enters it into the tablet. DXQplant.analytics correlates recorded quality results with order data (production number, derivative, color, etc.) and process data on the basis of artificial intelligence to identify patterns. A broad base of data makes it possible to track the fault causes in a targeted way and define measures. In this way, the system can be permanently optimized. For the first time, process data from other suppliers’ components and systems is also evaluated at SVW in Anting using DXQplant.analytics, for example in Application Technology.

Digital just in time

The coronavirus pandemic did not affect the date for the start of production despite the several weeks of shutdown in China and the ongoing travel restrictions. The internal cooperation between the Dürr plant and software experts in Germany and China went without a hitch – and also with a greater reliance on digital communication than in any other project before.

Pictures

****

Picture 1: Quality results are recorded digitally via tablets. The analysis software DXQplant.analytics correlates these results with a broad base of data to identify patterns.



Picture 2: Thanks to Dürr’s mobile apps, employees always have an eye on the plant status.

The Dürr Group is one of the world's leading mechanical and plant engineering firms with extensive expertise in automation and digitalization/Industry 4.0. Its products, systems and services enable highly efficient and resource-saving manufacturing processes in different industries. The Dürr Group supplies sectors like the automotive industry, mechanical engineering, chemical, pharmaceutical, medical technology and woodworking industries. It generated sales of € 3.32 billion in 2020. The company has more than 17,000 employees and 120 business locations in 33 countries. Since February 2021, the majority-owned automation specialist Teamtechnik has also been part of the Group. The Dürr Group operates in the market with the brands Dürr, Schenck and HOMAG and with five divisions:

* **Paint and Final Assembly Systems:** paint shops as well as final assembly, testing and filling technology for the automotive industry, assembly and test systems for medical devices
* **Application Technology:** robot technologies for the automated application of paint, sealants and adhesives
* **Clean Technology Systems:** air pollution control, noise abatement systems and coating systems for battery electrodes
* **Measuring and Process Systems:** balancing equipment and diagnostic technology
* **Woodworking Machinery and Systems:** machinery and equipment for the woodworking industry

Contact

Dürr Systems AG

Kristin Roth

Marketing

Phone: +49 7142 78-4854

E-Mail: kristin.roth@durr.com

[www.durr.com](http://www.durr.com)