



Modular control system ensures greater flexibility in disc brake production

## PC-based control is the standard for testing and assembly

Chassis Brakes International is a globally-operating manufacturer of disc and drum brakes for cars. The company's high-profile customers include leading automotive companies such as PSA Peugeot Citroën, Toyota, Mercedes, Ford, and Honda. Every day up to 25,000 disc brakes leave the bustling plant located in the French town of Angers. With the introduction of PC-based control from Beckhoff, machine cycle times were improved by an impressive 10 to 15 percent. As a result, Chassis Brakes International decided to implement PC- and EtherCAT-based control as their global PLC standard for their disc brake testing and assembly.

Four fully-automatic production lines and three robot stations handle disc brake production at the Chassis Brakes International plant in Angers, France. The lines consist of 20 to 30 modules, each responsible for a specific assembly step. The plant is configured according to customer requirements for the individual brake types, which means that machine modules are replaced, moved, or added as needed. To ensure streamlined and efficient changeover to new product lines or brake types, a highly flexible and modular control system was required.

### Openness simplifies control system retrofit

In order to make brake production even more efficient, the plant managers at Angers decided to retrofit the entire control system of the plant. Arnaud Pillet and Guillaume Neveu, the managers of Chassis Brakes International's PLC project in Angers, explained their goals: "The key requirement was to ensure that the new PLC platform supports the existing application software that had been developed by Chassis Brakes International. We already had an extensive library of PLC and HMI objects and functions, which we were determined to retain for future use," said Guillaume Neveu. He added that compatibility of the HMI with the InduSoft development platform was also desirable. Chassis Brakes International also wanted to connect to existing equipment networked over the Interbus fieldbus system and ensure connectivity to PROFIBUS, because some of the machines at the Angers plant are PROFIBUS-based.





At the Angers plant, disc brakes are produced on four fully automatic production lines and three robot stations, according to customer-specific requirements.

With these connectivity specifications in mind, Chassis Brakes International decided on a C6920 Industrial PC with TwinCAT automation software as their control platform moving forward. "Initially we retrofitted an individual Flex-line station, which turned out to be very straightforward and simple to configure and connect," said Arnaud Pillet. "The clear highlight of the new control system is the 10 to 15 % improvement of the machine cycle time, thanks to the impressive computing power of the C6920," Guillaume Neveu added.

#### PC-based control selected as new PLC standard

Chassis Brakes International also decided to move forward with the Beckhoff control platform as the PLC standard at Angers. "With this standardization, we pursue several objectives," explained the control experts at Angers. "We sought to employ a single programming software, as well as limit the number of components we use, thus reducing the number of specialized personnel required for operation and maintenance of the individual machine lines." Depending on the degree of complexity of the respective assembly and testing system, the company now also uses DIN rail-mounted CX5020 and CX8090 series Embedded PCs from Beckhoff, in addition to the C6920 IPCs. Following these control system upgrades, Chassis Brakes International now uses EtherCAT as their primary industrial communication system. "Using EtherCAT opens up a much wider variety of industrial devices for us, since the automation market already offers an immense range of EtherCAT-based hardware," noted Arnaud Pillet. The integration of PROFIBUS is realized alternatively with the PROFIBUS master terminal EL6731 or the Fieldbus Cards FC3101 resp. FC3151 via TwinCAT, depending on the hardware platform, which is used. "The next step for Chassis Brakes International", so Arnaud Pillet, "is to define a global PLC standard for our numerous production facilities in Poland, China, Spain, Portugal, Turkey, and India."



Arnaud Pillet and Guillaume Neveu, managers of the PLC project at the Chassis Brakes International plant in Angers, France, introduced the Beckhoff control platform as the standard for disc brake testing and assembly systems.



Disc brakes from Chassis Brakes International. Every day up to 25,000 disc brakes leave the plant at the French town of Angers.

Further information:

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

[www.beckhoff.fr](http://www.beckhoff.fr)