



By the combination Lab View and Bosch Rexroth complex system structures can be developed. This example shows a test bench with remarkable performance.

CUSTOMER PROFILE



**Zahnradfabrik-Neaviges
Wolfgang Schmahl GmbH & Co KG**

In the past 40 years the Zahnradfabrik Nevilles develops from a one-man-company to highly specialised manufacturers of gear wheels and gears that are used worldwide. Today the company Schmahl employs nearly 120 employees on a production area of 7.000 qm. From the very beginning the company specialised on the production of gear wheels and parts of gears with highest demands to accuracy as well as the mounting of complete gears.

TRANSMISSION TEST BENCH WITH LABVIEW AND BOSCH-REXROTH SERVOS

Test bench up to 15000 Nm

The company Schmahl produces gears for construction equipment that has to be produced exactly due to special demands. In order to avoid production- and material defects a test bench was developed in cooperation between the companies Schmahl, Bosch Rexroth and Quality Automation on which you let up to 15000 Nm sink in. The test bench is constructed in that way, that the drive and the outputs of electrical motors are simulated.

Drive and adjustment control with the MLD of Bosch Rexroth

The MLD of Bosch Rexroth drives and controls the motors, in doing so it serves also as SPS and controls e.g. the hydraulic system and gathers measuring values via analogue inputs. The power element of the IndraDrive series consists of a supply unit, two intermediate circle resistors and control equipment for each motor. The capacity of the supply unit comes to 120 KW, the motors have a nominal load of in total 141 KW. The MLD as central drive and control equipment is connected with the control units, the I/Os und the analogue units via Sercos Bus.

TCP connects the systems

The test bench is visualized by a LabView application that communicates with the MLD via TCP/IP. The motors and all control components can be controlled separately during the service operation. A test cycle is prepared with this application and saved in a data bank. This is provided in that way that the control programs are put in by the quality assurance and that the single gears can be tested by the operator via an order administration. The data of the test cycle contain driving speed, full load as well as temperature, distance measurement and an impact sound measurement. These data can be saved in the data bank in a cycle of 10ms.

All from one source

The project was realised exclusively by Quality Automation except the mechanical works. It includes the electrical construction, the construction of switchboard cabinets, the software for the MLD and the LabView application.

ABOUT THE AUTOR



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Employed as software developer at QA since 2001. Key aspects of activity: SPS-, LabView-programming, camera systems.