

Beamex Case Story

Nokian Tyres
Finland



Calibrating for ensuring high and consistent product quality.

beamex

NOKIAN TYRES HAS THE WORLD'S LARGEST WINTER TYRE SELECTION

Nokian Tyres is the only tyre manufacturer in the world that specializes in the needs and products of customers in Nordic conditions. Products are marketed in regions with Nordic conditions, where demanding driving conditions and wear and tear on tyres are the result of snow, forest roads and seasonal changes. The company's main products include winter tyres for passenger cars and commercial vehicles and tyres for forestry machinery. Indeed, the company has the world's largest selection of winter tyres. Nokian Tyres has its own factory in Nokia, Finland and in Vsevolozhsk, Russia. Nokian Tyres' turnover for the year 2007 was 1.025 billion euros and the company employed ca. 3,500 persons. The factory in Nokia manufactures c. 18,000 passenger car tyres in a 24-hour period. Heikki Karhe and Ville-Matti Niemi work as measurement technicians in the calibration department of Nokian Tyres' Nokia factory.

The situation

The calibration department falls under personnel management, which is not very common.

"There were three choices from the beginning: maintenance, production quality organization, and personnel management. I suggested personnel management – this ensured that calibration would not be in a secondary position in the company and processes. Thanks to this organizational structure, we can focus one hundred percent on tasks related to calibration and the arrangement has worked out well," Heikki recalls.

Today, the factory has approximately 2,500 devices to calibrate. "In addition to our own equipment, we also calibrate instruments from the Vianor tyre store chain, which is also owned by Nokian Tyres. Once a year, Vianor sends us torque wrenches and tyre pressure gauges for

calibration, a total of about 300 devices," Heikki summarizes. About 1,400 units are calibrated at the factory each year and the majority of the calibration is done in the field, where the instruments are installed. The primary calibrations are of temperature, pressure, mass and length. Field calibrations are made throughout the year on average 2–3 days per week; however during summer shut-downs, equipment which is used in production year-round is calibrated. The calibration interval for instruments vary between 6 weeks and 4 years, depending on how critical the calibration is for a particular device. An example of equipment with a six-week interval would be a scale that measures powdered substances. All instruments that come to the factory are also calibrated before installation – it would be wrong to think that every new instrument is automatically accurate.

Clarifying the role of calibration at Nokian Tyres, Heikki explains, "Calibration is of great importance, especially from the viewpoint of production safety and quality of the final product." He continues and says, "Preparation of the right rubber mixture is precision work and a sample is taken from each rubber mixture to ensure quality. Measuring instruments which yield wrong values could easily ruin the final product." The factory is also full of pressure instruments and it is also important for the safety of the workers that those instruments show the right values.

Calibration itself may also be done in demanding conditions – often it is necessary to creep, crawl or stretch to reach the equipment that needs to be calibrated. Moreover, the equipment that is being calibrated may be located near hot steam pipes and there may be another maintenance group working nearby. These conditions require that the calibration devices are durable, easy to use, and compact.

“It would not be an exaggeration to say that Beamex® CMX Calibration Software has made documentation 50% faster and more efficient and has made the entire work process about 25% faster and more efficient than our previous system,” Ville-Matti says.

The solution and main benefits

“We require that calibration devices are easy to use, precise and durable,” Heikki says. Most calibrations are carried out with Beamex® MC5 Multifunction Calibrators, and Beamex® CMX Calibration Software is used for calibration planning, scheduling and documentation.

“The MC5 calibrator we use is equipped with three pressure modules and it is convenient to use in the field, because we can use the same device for calibrating both pressure and temperature signals,” Heikki comments. Calibrating with the MC5 is quick. “When calibrating pressure instruments, a proper calibration phase, which contains 5-6 calibration points, lasts from three to four minutes if the line is opened up first and connected to the MC5. The Beamex® PGXH high pressure pump is also suitable for our needs and we use it with the MC5 for producing pressure,” Heikki continues. The MC5 is calibrated once a year in the Beamex calibration laboratory and during this period older Beamex devices are used at the factory for calibrations.

A work list is printed out from the Beamex® CMX Calibration Software which shows what needs to be calibrated. When calibrations have been completed, the information is stored in the CMX. All calibration information and history is stored in CMX – there are no printed copies kept of calibration reports. “The use of CMX has made the documentation phase of calibration quicker and more efficient. It would not be an exaggeration to say that Beamex® CMX Calibration Software has made documentation 50% faster and more efficient and has made the entire work process about 25% faster and more efficient than our previous system,” Ville-



Clarifying the role of calibration at Nokian Tyres, Heikki explains, “Calibration is of great importance, especially from the viewpoint of production safety and quality of the final product.”

Matti says. According to his experience, the increase in efficiency and speed comes in the form of faster and easier search and processing functions, via device/position groups, the significantly better clarity and intuitiveness of the Explorer-type interface, and the considerably better versatility in general. CMX also has numerous small facilitating features, which, all combined, affect efficiency and speed. An example of this is the Check In / Check Out functions.

Case Story in Brief

Customer profile

Nokian Tyres

Finland

The situation

Calibration is of great importance, especially from the viewpoint of production safety and quality of the final product. The Nokian Tyres factory has approximately 2,500 devices to calibrate, 1,400 of which are calibrated every year. Calibration itself may also be done in demanding conditions – often it is necessary to creep, crawl or stretch to reach the equipment that needs to be calibrated. This requires that the calibration devices be durable, easy to use, and precise.

Solution

- Beamex® MC5 Multifunction Calibrator
- Beamex® CMX Calibration Software
- Beamex® PGXH, PGM and PGV calibration pumps

Main benefits

- Accurate and easy-to-use calibrator
- Operation in demanding environments
- Documentation and planning significantly more efficient with calibration software

Beamex Oy Ab

Ristisuonraitti 10
FI-68600 Pietarsaari
Finland

Phone: +358 10 550 5000
Fax: +358 10 550 5404
E-mail: info@beamex.com
Internet: www.beamex.com

For more information

Please visit
www.beamex.com

or contact
info@beamex.com