

Drive & Control profile

When Safety Is on the Line: Bosch Rexroth Delivers Quick, Critical Upgrade Without Compromising Supply to Customers



By installing the TS2plus Flexible Transfer System and IndraControl VSP 40 HMI controller, Schrader increased tire sensor production from 3 million to 5 million units per year.

Supplying to the automotive industry is a difficult task with exacting deadlines, individual quality accreditations and huge competition. Supplying a safety-critical component to the automotive industry is even more demanding. When upgraded safety regulations recently dictated that tire-monitoring systems become standard in automobiles, tire pressure sensor manufacturer

Schrader Electronics utilized Bosch Rexroth's Linear Motion & Assembly Technologies to upgrade its production facility in Antrim, Northern Ireland without compromising supply to its customers.

Schrader Electronics, supplier of electronics solutions to the automotive industry, is the market and technology leader in

Challenge

Increase capacity and quality of automated tire sensor production line without impacting supply to customers

Bosch Rexroth Solution

- TS2plus Flexible Transfer System
- Rexroth IndraControl VSP 40 HMI controller

Benefits

- Production line increased from 3 million to 5 million units per year
- Flexibility of TS2plus enables product changes in 30 minutes
- IndraControl VSP provides flexible, cost-effective control of sorting robot
- Line upgrade completed in one month
- 48% of original line capital equipment re-used after upgrade



Bosch Rexroth TS2plus Flexible Transfer System

Remote Tire Pressure Monitoring Systems (RTPMS). RTPMS allows drivers to monitor their vehicle's tire pressures by using electronic sensors that transmit pressure, temperature and acceleration data at regular intervals from each wheel to the central control unit in the vehicle. In recent years, tire-pressure monitoring systems have increasingly become a standard safety technology in automobiles both in the U.S. and European Union, with even greater demand anticipated with the probable standardization of RTPMS.

In order to meet the increased demand for RTPMS, Paul Gardner, manufacturing director at Schrader's Antrim site in Northern Ireland, determined to upgrade the existing Bosch Rexroth automated production line, installed several years prior, and to expand the product testing facility. The goal was to increase both the capacity of

the production line from 3 million to 5 million units per year and the quality of the product by installing new automation and controls along with a new workpiece pallet transfer system.

**The Upgrade:
Flexibility and Control**

Working with Rexroth's sales manager for Northern Ireland, Derek Wood, and their local sales partner, Schrader specified a system that included the Rexroth TS2plus Flexible Transfer System and a Rexroth IndraControl VSP 40 HMI controller.

As an international supplier to major car manufacturers, it was vital that Schrader be able to switch between makes and models rapidly with minimal loss of production time. The flexibility of Rexroth TS2plus system enabled this switch between products to take as little as thirty minutes. The TS2plus

comes from a family of Rexroth flexible transfer systems that differ in size and permissible load, with a variety of specific units including curves, transverse conveyors, positioning and drive units that can be combined as desired to construct a system. A range of pre-defined macro modules significantly reduce time spent on planning and designing, and permits the construction of numerous variants and provides made-to-measure systems tailored to the particular assembly task. Rexroth transfer systems are made with durable, high quality materials that are ESD (Electro Static Discharge) compatible or available in ESD-compatible design for safe use in electro-statically sensitive areas.

Schrader Electronics also implemented the use of Rexroth's IndraControl VSP 40, a compact 15-inch panel PC with touch screen operation. In the upgraded production line, the VSP PC controls a robot whose task involves the separation of good and bad parts. The reject information per batch is fed from the IndraControl and interfaces with the intelligent control on the production line. The IndraControl VSP provides Schrader with an economical solution for PC-based control, operation and monitoring, as well as a high level of investment protection due to its standardised hardware and software. The IndraControl VSP's EMV certified design offers a high production safety level, and complies with electromagnetic compatibility requirements.

Installation & Expansion

Because everything that Schrader Electronics makes is subject to 100% functional test, an increase in the capacity of the production line also resulted in the need to expand the capacity of the testing facility. However, Schrader's production of its safety-critical RTPMS automotive components could not be compromised during the transition. Tony Davenport, senior sales engineer explains, "We used the original Rexroth line to develop the testing facility and were able to use 48% of the original capital equipment, a fact which gave us a significant saving. There was no point in getting rid of the original equipment when it could be perfectly well re-used."

The actual upgrade took place over one month (meaning one month of down time) and according to Paul Gardner, "This one month took five months to prepare for in terms of making sure we had the new equipment prepared



Schrader Electronics was able to install new TS2plus conveyors in just under 30 days.

and enough stock to supply our customers. In total the whole process has taken less than a year from concept to delivery." The fact that the new production line is running smoothly is just as Paul Gardner expected. He says, "The

new Rexroth product has proved to be robust and reliable. Our original line of Rexroth product has been running since 1999, so it was proven in use. With Bosch Rexroth, the reliability and robustness of the equipment is key."

Rexroth
Bosch Group