



CASE STUDY Automation for dishwashers

Dishwashers are not only replacing people in the kitchen, they are also replacing them on the production line.

Bosch Siemens is a business that manufactures high-quality dishwashers, aiming its products at customers who value quality, reliability and durability above price competitiveness. One of its unique selling points is that it offers guarantees for 10 or more years on some of its dishwashers.

The company relies increasingly on automation for the manufacture of its dishwashers. It faced a particular problem of trying to install pads to deaden the sound of the dishwasher. The solution involved four robots working together as two pairs. One of the robots picks up the dishwasher unit while the second robot applies the pad to the rear panel. Unlike previous systems, each robot can work with 100% precision, if necessary adjusting the position of its gripper before attaching the pad to the dishwasher.

The production process requires the robots to bend at an angle of 90°, a movement that caused great discomfort to production line workers before the robots were introduced. Further discomfort had been caused by the high temperatures involved in the process.

The robots are also programmed to pick up any defects in materials or in the dishwasher, ensuring a high-quality finished product.

Bosch Siemens has reaped a number of benefits from the introduction of the robots:

- gentler handling of the components, which eliminates waste
- greater reliability in the accuracy of the process
- improved quality in the final product
- greater productivity, achieved most significantly by the 100% availability of the robots – this contrasts sharply with the limited hours of availability of the workforce
- improved working conditions for employees – in addition to coping with the high temperatures, an individual employee previously had to lift, without any mechanical aids, materials with a cumulative weight of 7 tonnes per shift

It was necessary for employees working with the robots to undergo suitable training. However, Bosch Siemens believes that the high cost of introducing the new technology will be recovered as a result of greater profitability within 2 years.

Source: www.bara.org.uk.

Questions

Total: 25 marks (30 minutes)

- 1 Outline one reason why employees may oppose the introduction of robots on Bosch Siemens' dishwasher production line. (3 marks)
- 2 Explain two reasons why employees may support the introduction of the robots. (6 marks)
- 3 Bosch Siemens identified a number of benefits to the business arising from the introduction of the robots. Evaluate the major advantages to Bosch Siemens of introducing these robots. (16 marks)