

# Stagecraft in action

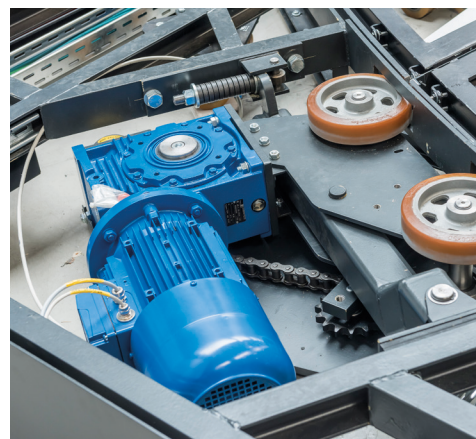


## BOSCH REXROTH SETS THE SCENE FOR STUTTGART THEATRE PERFORMANCES WITH NEW STAGE TECHNOLOGY

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Bosch Rexroth has modernized the stage technology at the Württembergische Staatstheater Stuttgart. The final system includes a 12m x 12m turntable for stage sets, a feat of engineering that moves the sets around with an accuracy of less than 10 mm. A Rexroth SYB 3.0 stage control system ensures drive unit movement is coordinated to move the wagons in the right direction, and elevators are monitored to make sure they and the wagons are correctly positioned. The new turntable means sets can be changed quickly and, with the turntable's integrated power and data capability, very complicated set designs can be built and controlled.

Among the main design challenges faced by the Bosch Rexroth team were the different capabilities of main stage and side stage elevators. While the former could handle a full-sized set of 12m x 12m, the elevators for the side stages could only manage smaller sets. To overcome this, they devised a two-part turntable system consisting of primary and secondary wagons, of 8m x 12m and 4m x 12m respectively. Moved independently or as a single unit, this flexible solution allows the wagons to move through either main stage or side stage elevators. The wagons' twelve independently controlled drive units are designed to allow movement of the wheels in any direction, or even to turn on their axis like a tank. If all drive units are aligned away





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from the front of the stage, the set can be moved backwards or forwards. Turning all the drives by ninety degrees means the turntable can then be moved off to the left or right.

## Dress rehearsal

The layout of the theatre's stage presented additional challenges. The stage sits flush with the theatre floor, with a clearance on either side of just 10 mm, so the turntable's guidance system had to be incredibly accurate. A fully electronic, contactless solution was developed that uses a series of inductive sensors to detect metal guiding strips fitted into the theatre's wooden floor. This allows the wagons to be guided accurately into position on the stage or into the stage elevators. Implementing the system at the theatre had to be achieved in only 14 weeks, therefore a 'dress rehearsal' was held at the Bosch Rexroth factory in Lohr am Main in which the turntable system was built and tested. Successfully installed in 2018, the new turntable has carried the spectacular sets in shows such as Puss in Boots and La Boheme.

