



SLACK ADJUSTERS

Test bench for slack adjusters

The test bench consists of two main parts: the mechanical bench itself, and the control desk. The two are connected electrically and pneumatically. The test bench's major advantage is its ability to test various types of slack adjusters from different manufacturers.

The mechanical bench is a mechanical assembly that simulates a railcar's brake rigging, adapted so that the slack adjusters can be tested. It comprises a welded steel frame and two movable tables. The main mechanical assemblies are the two levers on which the slack adjuster is mounted. To ensure that the operator is safe at all times, the bench is surrounded by a safety barrier featuring two horizontal doors and four vertical doors for ease of access.

The main test bench frame is constructed from structural welded steel profiles; the safety barrier is made of aluminum profiles with cover panels fabricated from bonded aluminum (AL+PVC+AL sandwich) material.



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The control desk is used to control and monitor the test process. It is equipped with a touchscreen monitor for fast, user-friendly access to operator commands. The lower part of the panel also features a retractable keyboard with mouse. Tests are managed using the EKA software application, which is preinstalled in the control desk's computer. The computer communicates with the bench's data acquisition sensors through a RS485/422 serial port. Data acquisition involves capturing measurements from pressure and distance sensors and controlling the brake application process via electropneumatic valves; the entire testing process is automated. The desk is mounted on four multidirectional casters so that it is easy to maneuver, depending on the operator's position. The top of the panel also features a safety light that clearly signals the different testing phases. The body of the control desk houses the electronic control box, electropneumatic valves, two electropneumatic pressure sensors and other electronic components.

The test bench itself is a mechanical structure featuring a combined position-measuring device (using laser and wire distance sensors mounted on linear guides and bearings). When the bench is being prepared for testing, the device is mounted on dedicated axles on each of the two test bench levers. The pressure sensors are housed in the control desk.

- Operating air pressure: 6-10 bar
- Power supply: 230V AC 50-60 Hz



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