

Increased safety for stage engineering equipment

3 June 2015 by Bosch Rexroth AG

The use of increasingly powerful drives has resulted in intensive safetyrelated discussions in the field of stage technology. Comprehensive tests and simulations provide important results during the measurement of load peaks for various emergency stop scenarios. Rexroth offers solutions for hydraulic and electromechanical drives that provide reliable protection for actors, scenery and equipment.

The trend towards increasingly powerful drives for stage engineering applications has resulted in upper stage machinery with load capacities of up to one ton at speeds up to 1.8 m/s. "Series of tests at these capacities indicated that we could not simply continue using the construction design we had been using until now," explains Volker Kirsch, Director Sales Stage Technology at Bosch Rexroth.

Rexroth engineers performed extensive series of tests in a test field specially constructed for typical stage engineering drive systems. The result: Tests were performed in a test set up that was designed to closely recreate the conditions found in a theater. The results showed that the load to be moved and the drive were subjected to loads far greater than twice the nominal load. This means that all components in the force flow have to be designed to be far stronger.

Manufacturers and users now must face the new challenges. Bosch Rexroth has already turned the test results into solutions. For instance, safety equipment based on hydraulic components from Rexroth exhibits significantly softer emergency stop behavior. Rexroth has designed a damping device especially for electromechanical winches, which ensures soft emergency stop behavior on stage engineering systems. These devices can be easily implemented in new systems and in existing set-ups.

Rexroth will be comparing relevant variants under real conditions at their Stage|Set|Scenery trade fair stand. Moreover, a special smart measuring instrument on a real fly winch will enable visitors to understand how softactuation brakes and an emergency stop absorber work.

Source: Bosch Rexroth