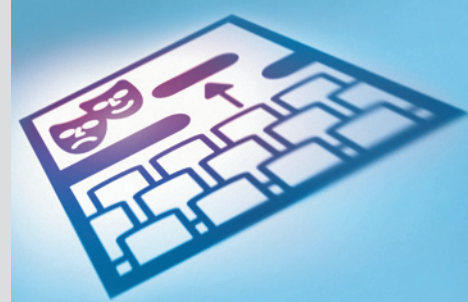


# Stage Technology From Stage Lift to Table Trap Lift



The Drive & Control Company



# Realizing the Vision

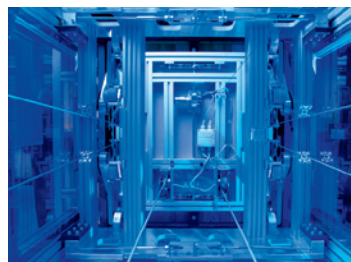
Modern electrohydraulic drive and control technology from Rexroth offers the technical requirements for artistic creativity at the State Theater, Mainz.



# From Stage Lift to Trap Lift

Bosch Rexroth has developed a wide range of drive concepts for stage technology. The third generation trap lift from Bosch Rexroth shown here can be used not only on stage level or under stage, but also in the orchestra pit. Its low dead weight and height makes the System Trap Lift flexible when transporting, permitting use in the orchestra pit, on the stage floor, in the stage wagon and the turntable. It is also possible for two lifts to be driven independently to all the trap door openings under the stage.

Simultaneous travel to neighboring trap doors is also possible, as the external dimensions of the drivable frame is a mere 1.000 mm wide x 1.500 mm deep. These lightweight and mobile systems are suitable for individual, tandem, or even triplet operation.





The option of tandem operation via electric coupling of the control system increases the flexibility even more. In tandem operation one lift acts as the master control of the drives, while the other lift is designed as a slave and carries out these commands. When it comes to accuracy the system trap lift is also setting new standards. Reference systems are to be found in the stages of the following theaters: Gera in eastern Germany, the Opera House in Copenhagen, the Frankfurt Drama Theater, Gärtnerplatz Theater in Munich, the ETA Bamberg, the Hangzhou Opera House in China and the Drama Theater Luxembourg. Further installations are planned for the Festival Theater, Bayreuth and the Bolshoi Opera House in Moscow.

At SHOWTECH 2005 the specialist jury announced the System Trap Lift winner of the Stage Technology Category, awarding it the SHOWTECH Product Award.

#### Technical Data (standard version)

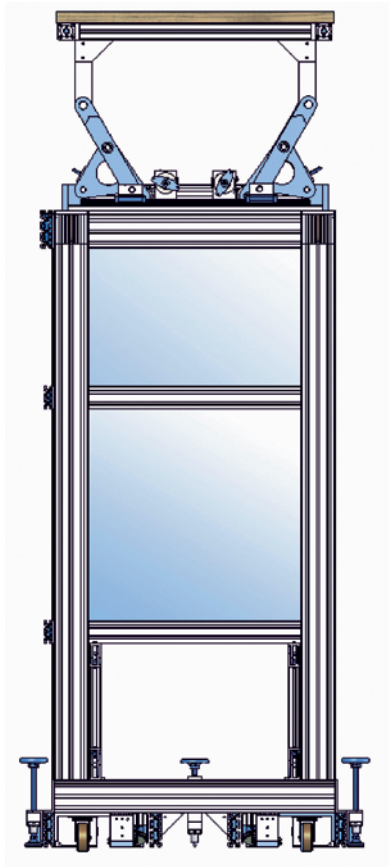
Platform	1000 mm x 1000 mm
Pay load dyn.	250 daN
Pay load stat.	500 daN
Dimensions	W = 1000 mm D = 1500 mm H = 1960 mm
Lift	2600 mm
Speed	0.7 m/s, adjustable
Acceleration	0.8 m/s <sup>2</sup>
Dead weight approx.	600kg
Entrance levels at	500 mm and 700 mm
Dependent on single or tandem operation	
Control system	to IEC61508 SIL3

A special version is available for a lifting height of up to 6000mm.

#### Mechanical Construction and Installation

As opposed to the conventional telescopic construction type, a cable pull scissor system is used here with fixed supports. The scissor-shaped mechanics are installed completely under the 1 x 1m platform to save space. The lifting frame is pulled up by means of a servo motor, with the passive cable pull connecting with the scissor-shaped mechanics.

The lifting frame locks into the upper edge of the support and guides the platform up to the upper edge of the stage without swaying, which was the tendency of telescopic designs. A maintenance-free servo motor with absolute value transducer is used as the drive, measuring the position directly to the platform and thus attaining accuracies of one tenth of a millimeter. Much emphasis is placed on ease of operation. As an option the operator can select all essential commands, such as speed and target specification via a numerical panel or touch panel. Operation and setting up requires just a single operator.



### Advantages of the new Design

The third generation of lifts clearly offers more flexibility than conventional systems. The lift is lightweight and very easy to operate. The reduction in weight is due to the use of extremely light materials such as aluhol profiles for the frame and macro-lon plates for the side panels. The lifts can be switched to triplet mode up to a lifting area of 1 x 7 m as required, thus offering the functionality of a large table trap lift.

### Scope of Supply

The lift is normally supplied as an autonomous and ready-to-use functional unit. Furthermore, the following options are also available:

- Locking facility at stage level
- Bridge/Traverse for increasing the performance area of two podia to e.g. 3 x 1m
- Additional doors
- Additional trap doors
- Erecting and setting up in the theater
- Maintenance



### The Drive & Control Company

Rexroth is unique. No other brand on the world market can offer all drive and control technologies, both on a specialized and integrated basis. With approximately 28,000 employees in more than 80 countries around the world, Rexroth has an infrastructure designed with partnership and customer proximity in mind. Over 500,000 customers worldwide utilize the know-how of the technology leader.

- Electric Drives and Controls
- Hydraulics
- Linear Motion and Assembly Technologies
- Pneumatics
- Service



### Intelligent Hydraulics in New Dimensions

Whether it's a case of raising or lowering loads smoothly, undertaking linear or rotational movements, achieving even acceleration or accurate positioning, maintaining preset speeds, transmitting power or linking motion sequences – in fact, wherever economical power is required, this is where hydraulics comes into its own.

Using hydraulic drive and control technology from Rexroth will help you become more competitive than ever.

Bosch Rexroth AG  
Hydraulics  
BRH-SE/CCB  
97814 Lohr, Germany  
Phone: +49(0)9352/18-1234  
Fax: +49(0)9352/18-1000  
[stage-technology@boschrexroth.de](mailto:stage-technology@boschrexroth.de)  
[www.boschrexroth.com/  
stage-technology](http://www.boschrexroth.com/stage-technology)