Product Specification Sheet

LDSO/KGK300/100XXXS/RF/RI90-SK426

Housing:
Very robust all steel welded construction with deep groove ball thrust bearing DIN 711 and taper roller bearing DIN 720, with grease nipple, dust and splash water protected.

Wheels:
Made from high-compressed, hard and tough Polyamide PA6 G, very heavy construction, turned out of bulk material, with deep groove ball bearing.
The wheels have an extremely high load capacity,l are very abrasion- and impact-proof and have a very small rolling resistance.

Technical Data:

Wheel-ø	300 mm
Wheels Width	2 x 110 mm
Load Capacity	20.000 kg
Overall Height	500 mm
Type of Wheel bearing	Deep Groove Ball Bearing
Plate Size	400 x 500 mm
Screw Hole Distance	300 x 400 mm
Screw Hole ø	32 mm
Jib Length	110 mm
Weight per Piece	195 kg

Special Design:

Wheel Lock, 2 pieces, for manual handling

Directional Lock 4 x 90 °

Vanished in RAL9010 white

Gerhard Schwalb GmbH
Wheels – Castors – Conveyor Technique

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Non-standard Castors by SCHWALB included in production of space satellites

Our customer is a leading manufacturer of space equipment and is located in Luxembourg. There the development and production of a multi purpose trolley (MPT), as main component of the Mechanical Groud Support Equipment (MGSE), was completed for OHB System, Germany.

For this reason we developped and produced **special double-wheel swivel castors with wheel locking device and 4x90° direction locking device. These castors have a very high load capacity of 20 tons each and specially designed for the desires and needs of the customer.**

The MPT is used for the handling of SGEO satellites and other satellite systems, that need to be moved on the ground between production area, test area and various dust-free rooms that are located in different operating zones. Weighing 10 tons itself, the MPT is able to carry a satellite of up to 4 tons. The machine is moved in between the different operating zones in a modified standard container.

MPT-Container


MPT- Entering the Container

Additional equipment, also produced by our customer, can be carried together with the MPT. Main function of the MPT is tilting and turning satellites as well as the transport of these within the different operating zones. The tilting and turning of the satellite can be managed by one user, whereas the transport within the operating zone is done by a fork lift truck. For this reason self-fixing high-performance gear systems are installed.


VERTICAL


HORIZONTAL

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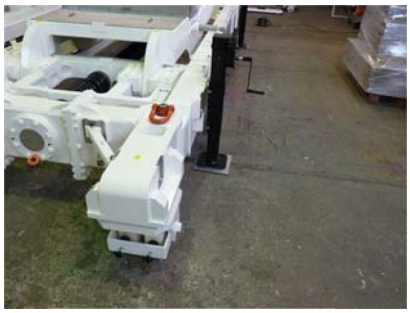
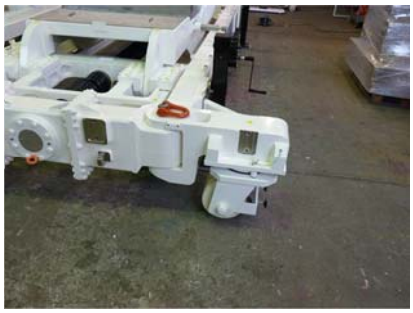
The MPT has a extendable wheel system, in order to grant the necessary stability during handling.



VERTICAL



HORIZONTAL

The complete development, production and tests was accomplished by our customer, in co-operation with other Luxembourgian suppliers.

MPT with mass-dummy of the future satellite in horizontal position.

MPT with mass-dummy in vertical position.

Remark: the mass-dummy was delivered by OHB System. In the near future the MGSE will be expanded by different innovative lifting devices according to customer requests, in order to enable vertical and horizontal lifting of satellites within dust-free rooms.

The MPT shows the ability, to develop solutions with high demands concerning reliability and safety, promptly and according to customer's requests.

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After delivery of the Mechanical Ground Support Equipment (MGSE), developped and produced by our customer, the different elements like

- a Multi Purpose Trolley (MPT)
- a Satellite Horizontal Lifting Devise (SHLD) and
- a Satellite Vertical Lifting Device (SVLD)

started to assembling SGEO satellites by OHB System in Bremen.

Transportation was to a first dust-free room was arranged in a modified standard container. For this reason a fork lift truck was connected to the unit by a drawbar. The different castors from **SCHWALB** that were used for this matter have a load capacity of 6.000 kg up to 20.000 kg per castor.

MPT and

SHLD & SVLD during entering the dust-free room

MPT

The MPT is used for the handling of SGEO satellites and other satellite systems, that need to be moved on the ground during production and tests to various dust-free rooms that are located in different operating zones.

The MTP is able to handle a satellite weighing up to 4 tons, whereas ist own weight totals 10 tons. The machine and the two appendent lifting devices are moved in between the different operating zones in a modified standard container.

Main function of the MPT is tilting and lifting of satellites and the transport within the operating zones. One user is able to tilt and lift the device by hand. For this reason self-saving high-performance drive systems were installed.

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MPT in operation

The wo lifting devices enable the vertical and horizontal lifting of such satellites, whereas an easy, remote controlled balance of the satellite or its components in two directions during the lifting process is possible.


SVLD on top of SHLD is lifted


SVLD in operation

During development the features of each machine appeared, while the load capacity was tested, whereat the nominal mass of the satellites as used twice.

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The picture below shows the SVLD during a function test: The SVLD lifts a mass-dummy that simulates the satellite's gravitation center and ist shell. The balance systeme inside the SVLD is set into operation from the ground, using a long bar.

SVLD during balancing

Remark: the mass-dummy was provided by OHB System

The described MGST shows our customer's competence, to develop customer-specific solutions with high requirements regarding reliability and safty within a fixed time frame.

The **SCHWALB** customer is embraced of both, the individual, competent consulting and development and the puncutal delivery of the high-quality special rollers. Meanwhile some additional orders were placed and delivered and others will follow.

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