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Grob linear drives at Amsterdam's Schipol Airport

Those who happen to be at Amsterdam's Schipol Airport early in the morning or late at night can witness a fascinating spectacle. The "house of tulips" – possibly Holland's most famous flower shop – is concealed under a hood, which reminds one of the typical facade of an Amsterdam town house – and of a greenhouse.

house of tulips http://www.tjep.com

Every morning the greenhouse rises up as if by magic and clears the way for flower fans who want to buy flowers quickly on their way home. And in the evening it goes in the opposite direction – the hood now moves very slowly downwards.

What secret lies behind this unusual Flower shop?

The drive with its innovative technology is located in the upper section of the greenhouse. In fact, there are four powerful linear drives from the BJ series with a cubic housing shape (in a travelling nut version) that move the greenhouse so noiselessly and elegantly. But that's not all. This lifting system is supplemented by further accessories from Grob GmbH Antriebstechnik:

- **Two transfer gearboxes** that distribute the force from the electric motor to the four linear drives.
- **Six Cardan shafts** that distribute the torques via the electric motor and the transfer gearboxes to the linear drive
- **One electric drive motor** that provides fort he necessary lifting movement via the Cardan shafts and the transfer gearboxes.

The linear drives are synchronised so that the greenhouse moves evenly. In addition, each linear drive is equipped with a safety retaining nut for safety reasons. This prevents the load from falling if the travelling nut should break as a result of excess wear.

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That is the big advantage of this drive solution

As opposed to other drive solutions, for example using hydraulics, only an electrical power source is required for this linear drive solution – no more than that. The use of hydraulics is ruled out because of the high risk of leaks and the associated environmental pollution. That in particular is a KO criterion for hydraulics in an airport.

With the lifting system from Grob, conversely, maintenance work is reduced to a minimum – it's only necessary to relubricate the linear drives with grease at relatively long intervals.

By the way, that also means that if too many risks are attached to a hydraulic system due to environmental regulations, it can easily be replaced by a lifting system. The maintenance work for the user is thus reduced.

You can see how the greenhouse works in practice in this video.

The construction of complete lifting systems is as easy as this

With transfer gearboxes, Cardan shafts and an electric motor, virtually "any" number of linear drives can be linked to form a lifting system. Typical examples of this are lifting systems in stage construction. Details of our lifting systems can also be found in our reference book "**Principles of linear drive technology**" on pages 29 ff.

Hubanlage mit Hubgetriebe

How we can help you

Would you like to know more about further application cases? Do you already have a specific application? Our pleasure – just send us an email describing your application to: info@grob-antriebstechnik.de or call us directly on Tel. +49-(0)7261/92630

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