

CLIENTE	Rollon	TESTATA	Aircraft Interiors International	DATA	Marzo 2013
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Aircraft
interiors

PRODUCTSSERVICES



Advances in linear guides and telescopic rails can reduce weight and maintenance, while improving the passenger experience

linearequation

In the technology-driven aeronautical market, the ability to innovate is essential, and Rollon, which specialises in the production of linear guides, has focused its R&D efforts on meeting these demands. The company is committed to finding solutions to these challenges, such as the need for lighter mechanical components to reduce operational and installed costs. Numerous linear guides are present in first- and business-class seating, and they are used for recline, armrests, footrests and adjustable tables.

There are five different challenges faced by seat designers. The first is to design a seat that is comfortable; the passenger wants to experience smooth movement and quiet running, and not to feel the seat deflect beneath them as it extends to a new position. Therefore the linear guide needs to be able to support the weight of the passenger successfully in the aircraft.

The second challenge for seat designers is to choose components that are suitable for the requirements (load, speed, smoothness and life), while remaining capable of resisting contaminants (drink spills, corrosion, shock loads and passengers falling against extended parts). If the seat fails in operation it could become unusable to the point where the failure causes the aircraft to remain on the ground until the seat is repaired.

Thirdly, designers must consider the ease of maintenance for airline operations; aircraft ground time is a major expense and must be minimised. Linear guide selection needs to be made with a view to minimising the amount of time required to maintain, lubricate or replace the components.

The fourth factor is the need for the seat manufacturer to reduce and minimise the cost of assembly for the seat structure. Quality parts that can be applied easily to the frame are needed for successful and fast seat assembly.

The final factor is the weight of components; any excess weight is trimmed to reduce the fuel consumption. But lightweight parts are often light-duty components, so balancing weight versus performance is critical.

Rollon has achieved considerable innovations in the form and shape of its telescopic rails, which are often used in aircraft interiors. The result is a rail that is 30% lighter than standard products, with hardened tracks that are capable of running in excess of 10,000 cycles, even with a maximum load of 130kg applied to the end and with the guide in fully extracted position. Less weight offers a competitive advantage to designers of aircraft interiors, who can still benefit from a product with the same reliability, resistance, load capacity and compactness. Analysts estimate that the economic savings could be as much as €98 per kilogram.

The new telescopic rail in the DE series was made possible by the efforts of Rollon's R&D department to redesign the extruded profile in order to reduce thickness and eliminate excess material. Another benefit of Rollon linear guides is their ability to self-align with the mounting surface. This product is also available with anti-corrosion treatment.

Rollon has a well-organised network of distributors and branches in Germany, France and the USA, and will be showing its full range of linear motion products at Aircraft Interiors Expo.

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