

The linear chain—a space saving marvel—ideal for the lifting table



Our daily business is the lifting and transporting of heavy loads. However, installation space is all too often limited. In precisely such cases the versatile linear chain is first choice for our customers.

Let's take the scissor lift as an example. So that the lifting table can retract as low as possible (for minimum installation height) it requires free space under the platform. Three types of drive come into question here:

- **A spindle drive:** this is ruled out if a minimum installation height is demanded, because the drive sits directly under the platform.
- **A hydraulic drive:** this variant is often ruled out because of the risk of a leakage; it is even necessary to employ a special oil for use in the food sector.
- **Linear chain drive:** The linear chain is the ideal variant, because it requires little installation space and because the chain can be rolled up.

The technology behind the scissor lift

The drive for the linear chain – usually an electric motor – sits on the base frame of the lifting table. The other end of the linear chain is attached to the fixed bearing side of the lifting table in a vertical position. The linear chain raises and lowers the work platform. In so doing, the linear chain ensures a constant speed over the entire stroke.

The big advantage of the linear chain is: it can be deflected by 90° at one end (on the floor in the case of the lifting table) and rolled up. This way the installation height in the retracted condition can be minimised.

What also speaks in favour of using the linear chain in such applications: very precise and repeatable positioning is possible with it.

We can realise forces up to a maximum of 35,000 N (with one linear chain) with a maximum stroke length of 20 metres (the chain must be guided). Naturally we can also move larger forces by working with 2, 4, 6 or more linear chains.

Background knowledge: How the linear chain works

The linear chain is a special product in linear drive technology, which shows its real strength when space is tight. The linear chain consists of specially formed, high-precision mechanical chain links. They can work in both directions: **pulling and "pushing"**.

When the linear chain works in one direction it pulls like a normal chain. When the linear chain pushes, i.e. when it works in the opposite direction, the chain links interlock with one another to make the chain rigid – **it acts like a bar**.

"Not only that, the chain can be rolled up, which saves an enormous amount of space. That is the main advantage of the linear chain", says managing director Eugen Reimche. "In addition, customers value the possibility of being able to implement practically "endless" strokes with the linear chain. This allows us to realise solutions where conventional linear drives are impossible due to the cramped spatial conditions, or where hydraulic or pneumatic systems are not desired."

The LinearChain: simple solution for cramped spatial conditions

Scissor lifts are reliable aids in many industrial processes. They can easily be integrated into assembly lines or used for the loading and unloading of goods. They considerably simplify the handling of loads and heavy loads and they facilitate the feeding of machines as well as the palletising, stacking and transport of finished goods.



Further typical applications of the linear chain are:

transport systems for opening and closing hall roofs | raising and lowering of floors and podiums in stage construction | extension and retraction of galleries | vehicle lifts | load platforms | container transfer | moving materials into tempering furnaces | lifting platforms in workshops

**Do you have a similar application? Then please call us.
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