

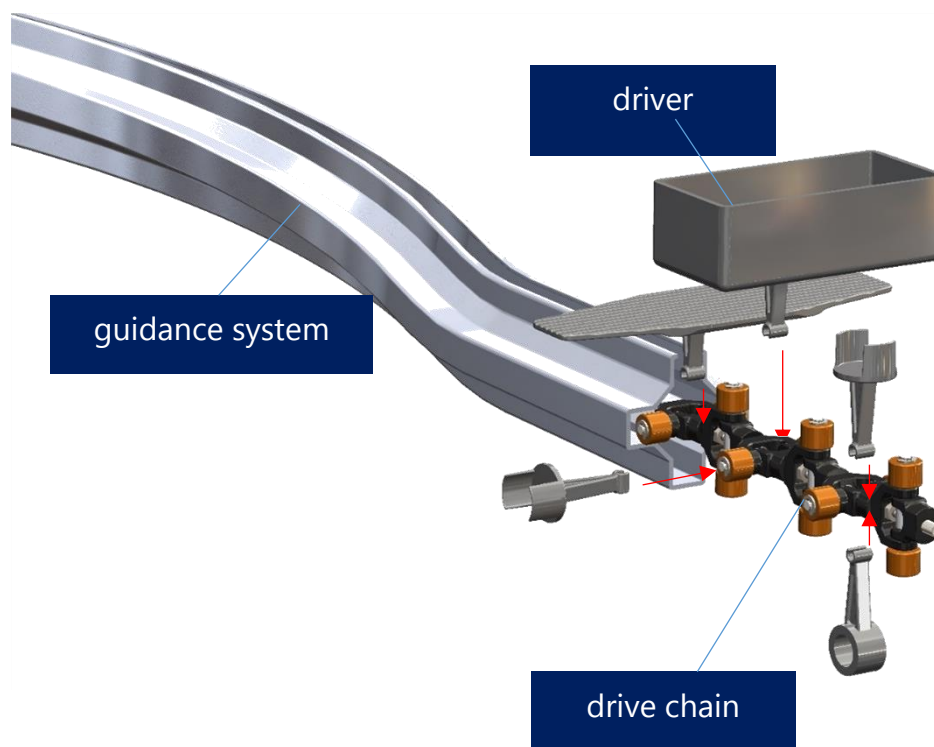
PATENTED 3D CHAIN DRIVE

BRIEF DESCRIPTION

ff Fördersysteme offers a flexible basic system for conveyor and transport systems of all kinds. On the basis of a three-dimensionally movable chain and a guide system consisting of straight and curved segments, conveyor sections that are precisely adapted to the respective requirements can be implemented without interfaces in the smallest of spaces. By adapting the system with various transport attachment, it is suitable for a wide variety of applications

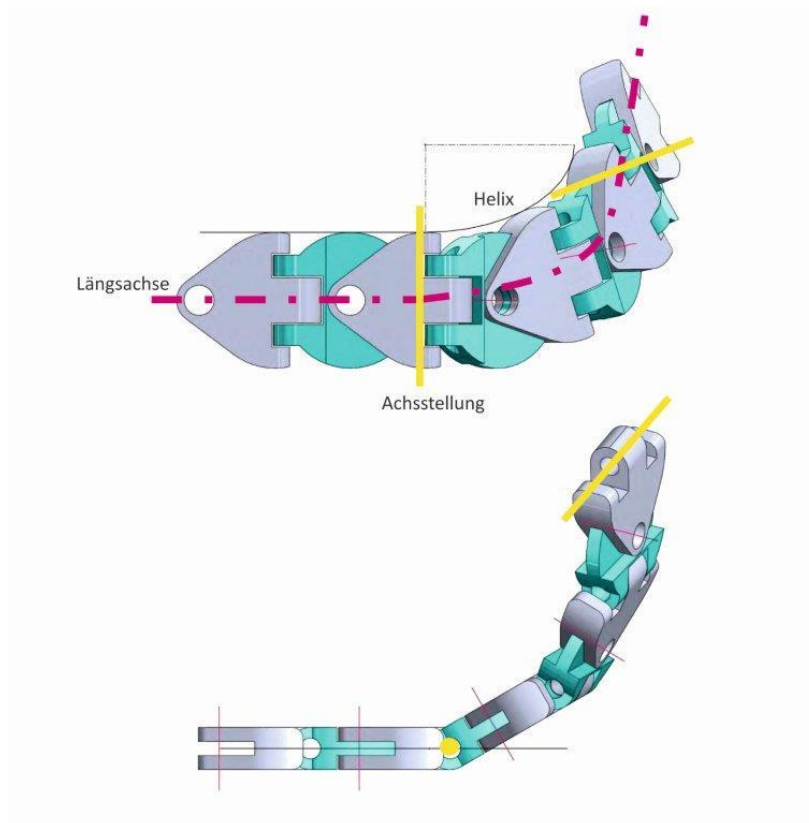
FUNCTION OF ff FÖREDERSYSTEME

The basis of the conveyor system is a patented, three-dimensionally movable drive chain. This is guided in an aluminum profile. The aluminum guide system consists of straight and curved components. Any three-dimensional transport route can be realized with it. Since the aluminum profiles are open on one side, any attachments for the goods to be transported can be placed directly on the conveyor chain.



EXCURSION - 3D MOBILITY CHAIN

So that a conveyor chain can follow a three-dimensional path, it must be designed to be flexible. A corresponding freedom of movement is necessary for this. Although conventional conveyor chains have corresponding joints and freedoms, the freedom of rotation required in the longitudinal direction is missing or is very limited. The picture below shows that the conveyor chain is therefore twisted on a spiral track and would enter this track crookedly on a continuing track. This chain can only be followed by tracks whose planes are perpendicular to each other.



In order to achieve full freedom of movement and at the same time to create the possibility that the conveyor chain can adapt to any track and its axes can always be aligned horizontally according to the specifications of the guide track, a chain link with the possibility of rotation is inserted along the longitudinal axis. Thus, the conveyor chain can twist on a helical path and run straight into this path on a continuing path. The chain can follow any track and curvature in space.

DETAILS OF THE 3D CHAIN

The chain consists of chain links and axle connections. The three-dimensional mobility is made possible by the axial axis of rotation (1). The loads are transferred to the guide rail via the guide rollers (4).

Depending on the size, area of application and load capacity, the chain can be designed as:

- Plastic chain
- Stainless Steel Chain - Deep Drawn Parts
- Steel chain - forged

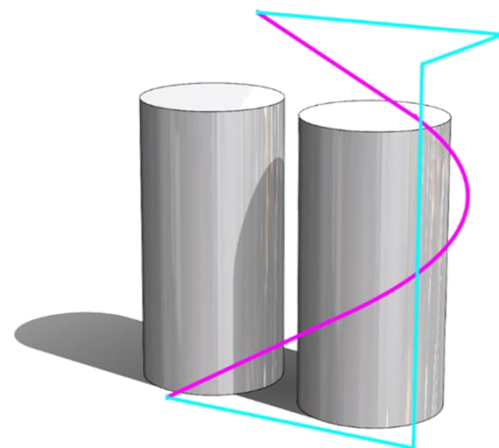


THE DIRECT WAY FROM A TO B

Most conveyor lines consist of curves, ramps, elevators, etc. from a large number of combined modules. Each module usually has its own drive and sensors. This results in many transfer points and all drives must be integrated into one controller. Gradients are often only possible to a limited extent.

The ff conveyor lines consist of a single drive train, which can be designed in any three-dimensional space. This means that the tightest radii and any inclines can be managed and the shortest possible conveying distance can be achieved. No interfaces, interruptions with additional drives, sensors, etc. are necessary.

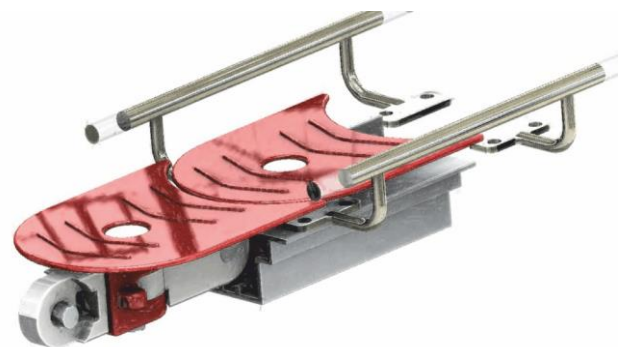
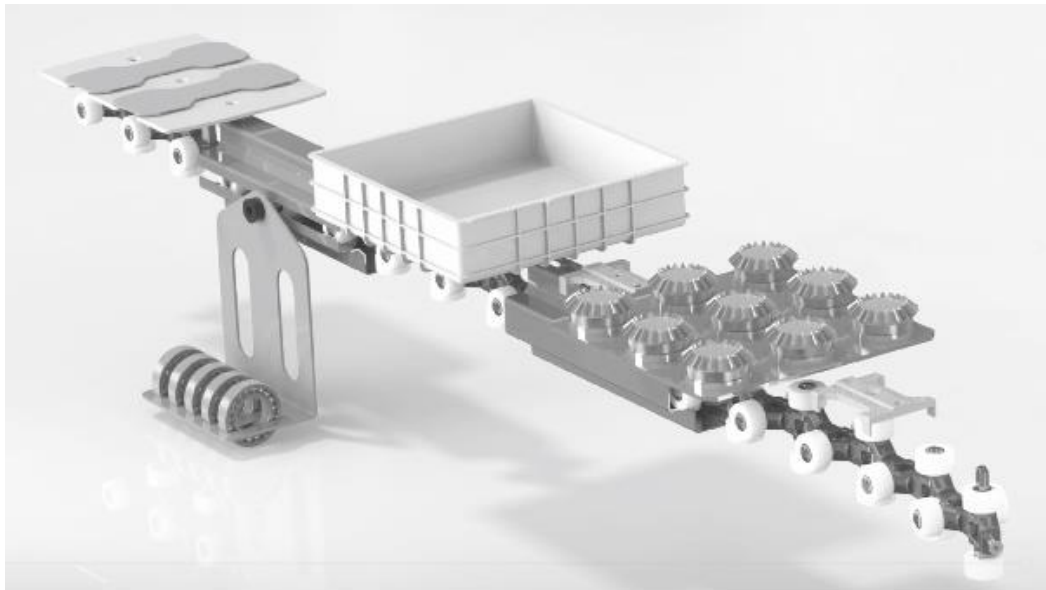
 ff Fördersysteme
 Conventional Systems



ONE SYSTEM WITH MANY POSSIBLE APPLICATIONS

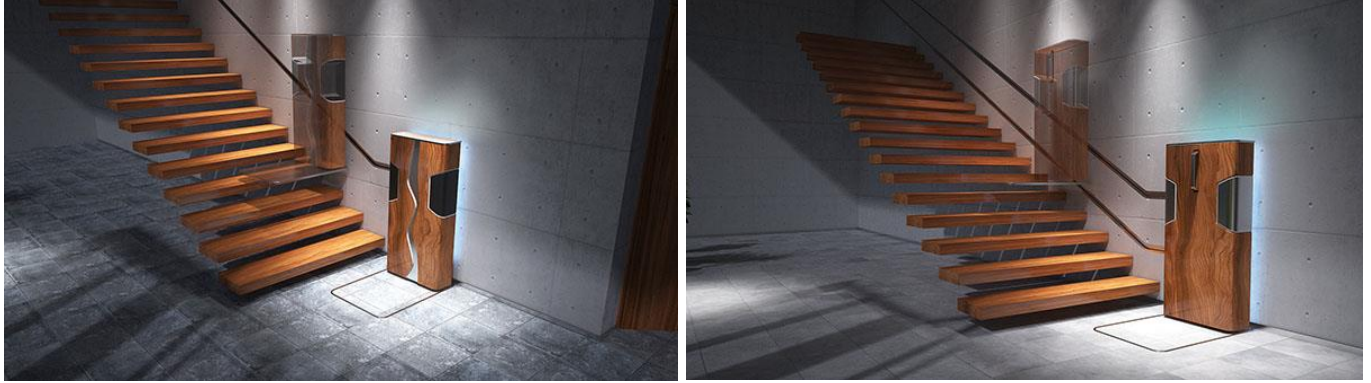
- VARIABLE TRANSPORT DEVICE CONVEYOR TECHNOLOGY

A drive train can be variably equipped or converted with various driver components. The modular 3D chain drive system consists of straight and curved components that can be flexibly lined up, allowing a system to be converted or retrofitted as required. By adding different transport carriers such as conveyor belts, KLT boxes, overhead conveyors, etc., the system can be used in a wide variety of ways. The technology also offers the possibility of converting an existing conveyor system or of managing an entire production process with a single basic system.



- DRIVE SOLUTION FOR A MODERN STAIRLIFT

This drive system was originally developed for a modern stair lift. In contrast to conventional stair lifts, the drive unit is not carried along on the seat, but installed externally. As a result, the stair lift can be designed to be very space-saving and the focus can be placed on the design. The rail guide can be installed in the wall.



- IDEA: APPLICATION FOR SPIRAL HELICAL ESCALATORS

In the field of passenger transport, this technology can be used as a new drive technology for a three-dimensional escalator. This allows a curved escalator to be built that can follow any three-dimensional path, which opens up new architectural possibilities.

