

VarioFlow *plus* – the innovative chain conveyor system, easily installed, with low-noise operation

Today, customer requirements for transport solutions are more demanding than ever. With the VarioFlow *plus* Rexroth offers a powerful, standardized, and versatile conveyor system for use in the food & packaging industries, health care, assembly lines in automotive & electronics, and machine linking.





The modular Rexroth VarioFlow *plus* chain conveyor system consists of components that can be used universally for all system widths. This reduces the parts that must be stocked by the user.

The stable chain permits tensile forces of up to 1,250 N. The chain surface is nearly closed, allowing even the smallest of parts to be transported safely and reliably.

The concept for individual section routing comprises the sizes 65, 90, 120, 160, 240, and 320 in two materials: the basic aluminum version and the stainless steel version for applications with higher hygiene requirements, such as in the food industry. For this, Rexroth uses components made of FDA-compliant materials.

Alternatively, Rexroth offers a workpiece pallet system suitable for transporting workpiece pallets in the automotive and electronic industries.

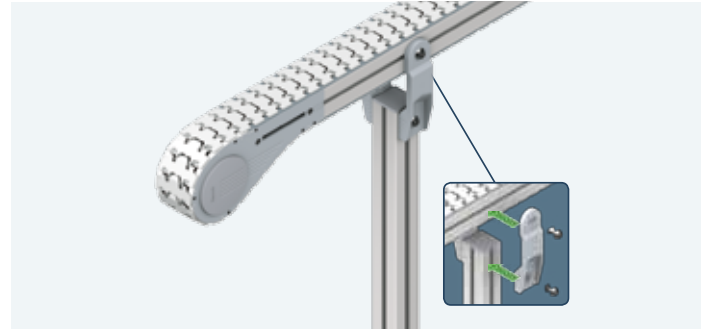
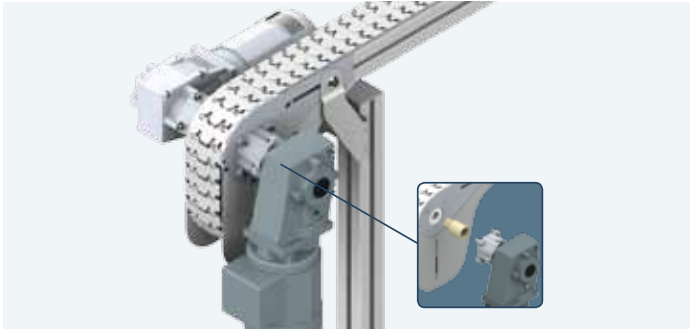


The advantages of VarioFlow *plus*

Flexible planning and rapid commissioning thanks to intelligent solutions

The clever drive solution enables a great degree of planning freedom: the motor mounting position can be selected

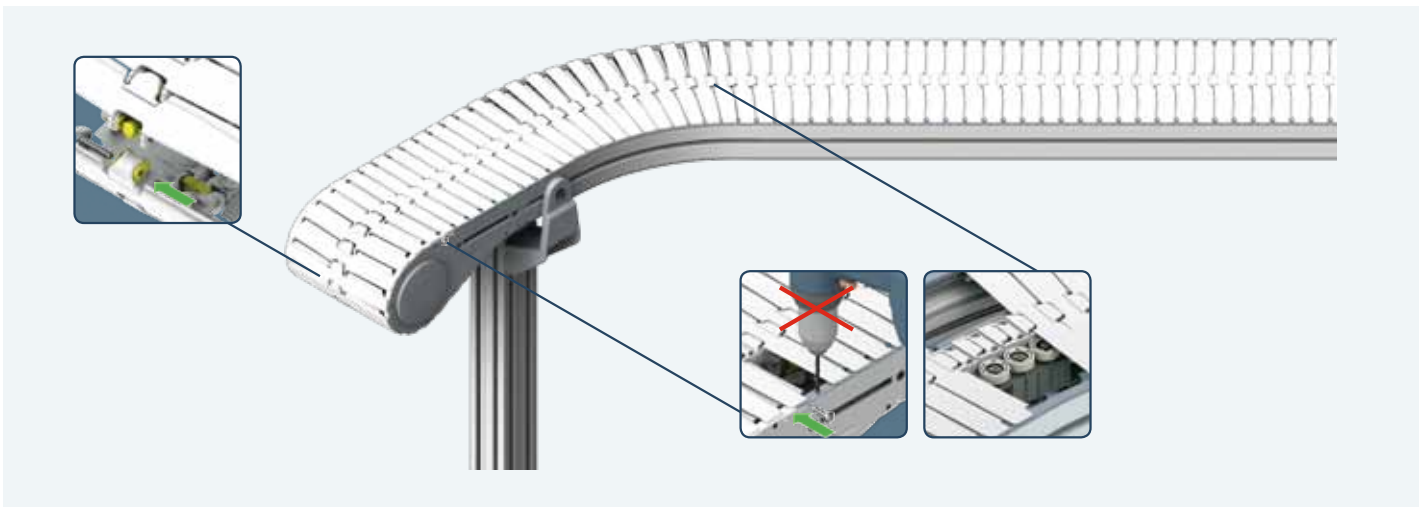
on-site. Smart connection technology saves time during assembly and allows for easy conversions and system extensions.



Optimal work conditions thanks to quiet operation and easy maintenance

The maintenance-friendly conveyor system VarioFlow *plus* creates ideal conditions at the workstation. Thanks to improved sliding properties and low friction materials, the working environment is relatively quiet (see page 294).

Fewer joints and the rolling friction in the horizontal curves ensure low wear and thus reduce downtimes.

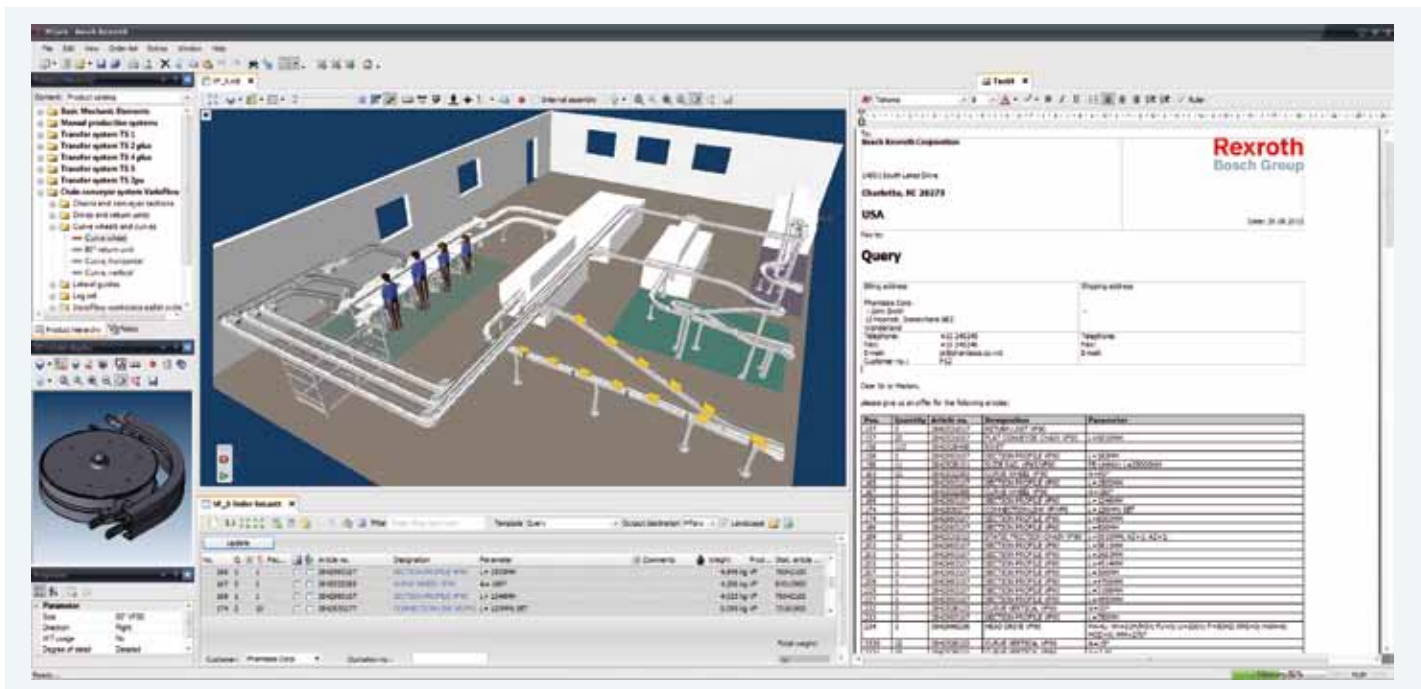


Simple and fast project planning with MTpro

MTpro is an intuitive software program used for planning assembly systems. It assists you from selection to configuration and ordering of the Rexroth products. Components can be selected from the range via drag & drop and assembled quickly and easily using the snap function. Thanks to the automatic bill of material calculation and electronic order integration, you can keep costs under control and minimize your ordering effort.

Numerous interfaces enable the planning data to be subsequently used in the areas of Construction, Purchasing, and Service.

With MTpro you can plan, calculate, and document your assembly systems in just a few steps. The Layout Designer lets you create even complex constructions and system layouts in no time at all.





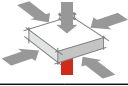
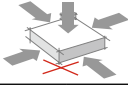


VarioFlow plus – for the economical, individual transport of parts





Useful information for selecting and designing a chain conveyor system

Chain conveyor or transfer system

	TS1	TS2 plus	VarioFlow	
Typical applications	Linking assembly stations and assembly workstations 		Horizontal and vertical product transport 	
Speed	4.5–18 m/min	4.5–18 m/min	4–60 m/min	4–18 m/min
Workpiece pallet size (from ... to)	80x80 mm ... 160x160 mm	160x160 mm ... 1200x1200 mm	Direct transport without workpiece pallet	65x76 mm ... 90x500 mm
Product weight	3 kg	240 kg	3 kg/34.5 mm	8 kg with function modules (diverter, positioning unit, etc.) 15 kg without function modules (diverter, positioning unit, etc.)
Accessibility				
Section path				
Positional accuracy	0.015 mm	0.1 mm	0.15 mm	0.15 mm

Aluminum or stainless steel version

Requirements

Harsh, normal (emulsions)	← Ambient conditions →	Clean
Yes	← Food and Drug Administration →	Yes
Yes	← Electrostatic discharge →	No
Alcohol, water ↓ Aluminum	← Cleaning agents →	Wet cleaning/ use of acid-containing or alkaline cleaning agents (pH value: 5 to 8) ↓ Stainless steel

Direct transport or workpiece pallet transport

The center of gravity location, inherent stability, and the contour of a product determine whether direct transport on a chain conveyor system is suitable or a workpiece pallet is required.

Workpiece pallets can be used when:

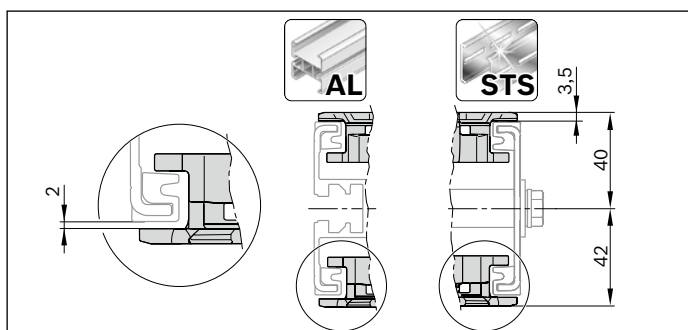
- The product has no static stability due to its geometry
- Transport can cause a change in position of the product
- The process requires it
- The product surface is very sensitive
- Accumulation is required and the product geometry does not allow for accumulation
- An exact positioning of the part is required
- The process is controlled via an ID system

Track width

The selection of the chain conveyor system width is determined by the nature of the product and its dimensions. The maximum width of the conveyed goods is dependent on the form and location of its center of mass. If products are transported directly, the system width can differ greatly from the product width. It is important for direct transport that the center of the product is as close as possible to the center of the chain and that it has high inherent stability.

System height

The stainless steel (STS) and aluminum (AL) versions have the same system height.



Load and chain tensile force

With the *BKBsoft* chain calculation program, which is integrated into the *MTpro* planning software, the maximum chain tensile force and required drive torque can be calculated quickly and efficiently.

If the approved chain tensile force or drive torque of the gear motor is exceeded, the layout of the conveyor section should be checked to see whether it can be adjusted. This can be done by dividing the conveyor section, reducing the speed, shortening accumulation sections, or using curve wheels or roller curves instead of sliding curves. See also the section Stick-slip effect on page 274.

Ambient conditions

Abrasive ambient conditions:

When fitting the chain conveyor, pay special attention to the cleanliness of the slide rails and the section profile. Metal shavings and builder's dust are very abrasive and can cause extreme wear!

During operation, general cleanliness of the system and its environment should be emphasized. This will prolong the service life of slide rails and chains. Dust and dirt particles, as well as chippings, salt, sugar, etc., are also very abrasive.

Using a chain conveyor system in critical environments is to be checked in each individual case. Please contact your Rexroth representative.

Temperature:

The area of application for *VarioFlow plus* is 0 °C to < 60 °C. Temperatures < 0 °C require special gear motors with special lubrication, seals, and ball bearings (available on request).

Temperatures > 40 °C reduce the performance of drive motors and increase the stretching of plastics. This results in a lower chain tensile force. See also section "Technical data" on page 274.

Media resistance:

The materials used are resistant to most chemicals used in industrial applications. See also "Resistance of the chain against chemicals" on page 296.

If in doubt, it is recommended that you ask the manufacturer of the cleaning agent whether the VF material (see material use) is resistant to the cleaning agent.

A resin in the lubricant oil can bond the chain to the slide rail after longer downtimes. You can remedy this by continual (empty) runs or by cleaning with a normal emulsion on completion.

Humidity:

Operating the *VarioFlow plus* in dry rooms is not permitted; the relative air humidity must be at least 5%.

High-pressure cleaning:

High-pressure cleaning of the chain conveyor ball-bearing areas (e.g. in the drive, roller curves, etc.) is prohibited.

System overview

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The modular system with a few basic building blocks in six track widths and two materials enables a transport system to be adapted to the most diverse requirements.

The system components are available in aluminum (AL) as a basic version or in stainless steel (STS) for increased hygiene requirements (e.g. in the food industry). The ESD system comprises AL, STS and special ESD components.

