



# VarioFlow: Productivity in motion

All manufacturing has a start point and an end point. Moving the materials you use, and the products you make, between those two points—efficiently, within a framework flexible enough to change as your needs and markets change—plays a vital role in your profitability and competitive performance.



VarioFlow flexible chain conveyors deliver the value successful manufacturers demand across a wide range of industries and applications. Offering proven performance with lower entry costs and a unique array of design features that adapt flexibly to changing requirements, VarioFlow flexible chain conveyors from Bosch Rexroth are engineered with attention to details critical for improved productivity.



Optical Lens



Food and Packaging



Industrial Products



Personal and Home Products



Precision Assembly



Multi-level, curved, straight, alpine—VarioFlow lets you construct the best layout for your application.

### Engineered to create value

VarioFlow conveyors were designed from the ground up to satisfy the unique requirements of each participant in the factory automation value chain: end users, OEMs and system integrators.

**For end-users** such as factory operators and production line managers, VarioFlow offers strength and flexibility—long-lasting, reliable system components that use less energy and can be easily adapted—changed, moved, or expanded—to meet changing needs.

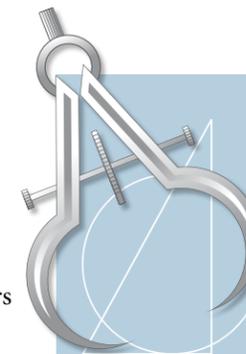
**For OEMs** building specific production machines requiring conveyor motion, VarioFlow offers

choices—such as a large selection of different chain types to fit any machine type or function.

**For System Integrators** building complete production lines, VarioFlow provides the performance and lower total cost of ownership—TCO—to satisfy demanding end-user requirements, backed by top-priority technical support.



Patented UltraCurve™ technology delivers smooth radial transitions and virtually friction-free motion.



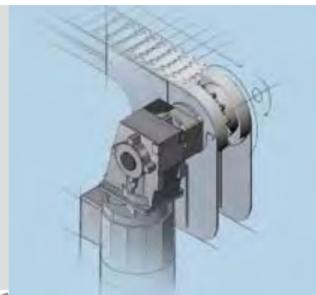
### Design details that matter

**Bosch Rexroth became a global leader in factory automation by getting the engineering details right—constantly applying innovative thinking to every challenge we face.**

Look for this key icon to learn more about the unique design details that enable VarioFlow conveyors to deliver more value, more performance, at a lower cost, for your long term production needs.

# VarioFlow: Proven design features

VarioFlow is more than just a conveyor system—it's a complete, modular suite of components from the world's leading conveyor producer. It integrates advanced materials, innovative design elements and time-tested technologies—flexible chains, profile designs, motors, gearboxes and other features—into a system that satisfies the most complex conveying needs. And it's highly adaptable—to let you quickly change the system as your needs change.



### Drives and gearmotors

*VarioFlow drives and gearboxes help control*

*your costs and improve productivity every minute they run:*

- Drives and gearboxes deliver 90% of motor rotation to the actual conveyor motion
- Less energy to move the same load compared to competitive conveyors
- Right- or left-hand gearmotor mounting offers greater installation flexibility
- Integrated slip clutch in drives protects the chain and reduces footprint
- Sealed gearbox protects products and is virtually maintenance free
- Variable frequency drives let end-users tune movement to match unique production needs

**Lower total cost of ownership—start to finish**  
VarioFlow flexible chain conveyors deliver value fast, and keep delivering it over time. Our technology facilitates quick conveyor design, installation, and start-up, saving you money at

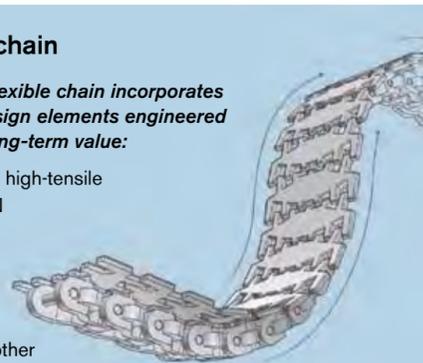
each step. With exceptionally high chain tensile strength and low chain friction, VarioFlow operates with fewer motors, uses less energy, requires less maintenance, and delivers a longer service life—minimizing TCO and maximizing value.



### Flexible chain

*VarioFlow flexible chain incorporates multiple design elements engineered to deliver long-term value:*

- Advanced resins offer high-tensile strength up to 1250 N
- Enables longer chain life with less need to replace or repair
- Low coefficient of friction provides smoother motion, requiring fewer drives and less energy for similar loads
- Linkage system enables fast, easy replacement
- FDA-approved material suitable for hygienic uses



## VarioFlow 65/90

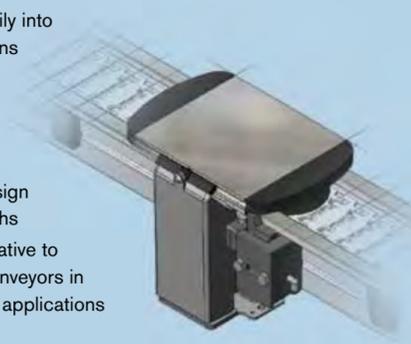
VarioFlow 65/90 conveyors set the standard for high-performance, lower-cost conveying systems. They feature stronger conveyor profiles, stronger chain, and more efficient gear motors for the movement and material handling you need in both 65 and 90 mm widths. The modular system, with pre-assembled components immediately ready for installation, includes drives, return units, conveyor profiles, curve wheels, left- and right-hand drive modules, and sturdy leg set supports based on Bosch Rexroth's industry-best aluminum framing system.



### VarioFlow workpiece pallets

*Not all products requiring conveyors have standard dimensions or handling requirements. That's why VarioFlow gives you Workpiece Pallet options:*

- Pallets incorporate easily into VarioFlow 65/90 designs
- Complete system of pre-designed pallets, stops, positioning units and transfers
- Configurable pallet design supports variable lengths
- A good low-cost alternative to traditional assembly conveyors in light payload assembly applications



**VarioFlow 65/90 product offering**

= Closed Profile   
 = Open Profile  
 = Curve Wheel   
 = Bent Profile Curves

Widths	Max Item Weight	Aluminum	Stainless	Pallet	Curves
65 mm	15 kg (33 lbs)*	Yes	No	Yes—12 kg (26 Lbs) load max†	R150
90 mm	20 kg (44 lbs)*	Yes	No	Yes—18 kg (39 Lbs) load max†	R700

\*Approximate. Maximum weights and other limits depend on application details and layout.  
†Max load for Pallet systems without stop, positioning, or actuated diverter points. With these items max load is 8 kg.

## VarioFlow S

Ideally suited to packaging applications, VarioFlow S offers unmatched design flexibility with various drive and chain options. For hygienic applications, it is available in stainless steel and features a unique, open-profile option that prevents the accumulation of dirt particles and aids cleaning. VarioFlow S lets you create systems from 80 to 320 mm wide in either aluminum or stainless steel. And only VarioFlow S has our patented UltraCurve™ horizontal curve technology, for incomparably smooth radial transitions and minimal friction.



**VarioFlow S product offering**

= Closed Profile   
 = Open Profile  
 = Patented Assisted Curves with Internal Bearings

Widths	Max Item Weight	Aluminum	Stainless	Pallet	Curves
80 mm	18 kg (39 lbs)*	Yes	Yes	No	R250 or R500
100 mm	18 kg (39 lbs)*	Yes	No	No	R250 or R500
160 mm	20 kg (44 lbs)*	Yes	Yes	No	R500
240 mm	22 kg (48 lbs)*	Yes	Yes	No	R500
320 mm	22 kg (48 lbs)*	Yes	Yes	No	R500

\*Approximate. Maximum weights and other limits depend on application details and layout.

and wear parts are replaceable with minimum time, effort and tools.

VarioFlow S takes Adaptive Modularity even further by using common side profiles and key components to construct systems in widths from 80 to 320mm. More common parts means more flexibility in the initial layout and build, and easier replacement and maintenance later on, with fewer spare parts required. Gearmotors, chain base links, sprockets, fasteners, slide rail, and guiding components are all common throughout the system.



### Low-friction curve elements

*Smoother operation and additional energy savings are achieved through Bosch Rexroth's patented UltraCurve horizontal curve in VarioFlow S:*

- Curves equipped with ball bearings to ensure minimal friction
- Keeps overall system efficiency high
- Designed for trouble-free, smooth operation in accumulated conditions
- Available in both aluminum and stainless steel
- Eliminates tug-and-jerk motion through curves

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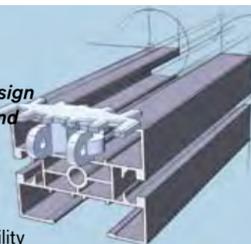
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**Structural profile**

*Stability and strength are core design elements of the aluminum base and profile elements of VarioFlow:*



- Specially designed stiffening elements add stability and structural integrity
- Open or closed-beam options provide flexibility to match system design to application conditions (frequent maintenance, hygienic concerns, load requirements)
- Thirty years experience with aluminum structural framing is the foundation of our expertise in designing robust conveyor systems
- T-slot design enables easy integration with machine guarding, work stations and other Bosch Rexroth aluminum framing accessories
- Cross bracing reduces vibration, conveyor component wear, and minimizes potential to damage delicate items being transported

**Breadth of product line**

VarioFlow is a chain conveyor system designed for demanding applications of all types, offering today's manufacturers, system integrators and OEMs both the breadth and depth of product line they need: drives, gearmotors, return units, conveyor profiles, horizontal and vertical curves, lateral guides, base units, and much more, as well as a large selection of different chain types to enable custom solutions for each application.

**VarioFlow and VarioFlow S chain types**

Chain Style	Materials FDA Approved	VarioFlow	VarioFlow S	Applications
Plain	●			Smooth surface general purpose chain with excellent strength characteristics (1250N) and low coefficient of friction
Steel Top			N/A	Non-corrosive stainless steel surface protects chain from damage by sharp parts, hot parts or metal shavings, resulting in longer chain life
Friction Top				Large, soft friction-producing surface, excellent for transport at low angle inclines. Available as complete rolls or links to alternate with standard chain sections
Flocked			N/A	Soft flocked surface to protect sensitive products from marring or damage, especially in accumulation
Cleated	●			Rigid plastic cleat for conveying parts in inclines. Optimized for round parts such as bearings (VF65/90) or for packaged product (VFS)
ESD			N/A	Carbon loaded plastic material to encourage electrostatic dissipation in sensitive environments. ESD slide rail and grounding straps should also be used in these applications
Roller Cleat	●		N/A	Encourages incoming product to roll into pockets between cleats, ensuring continuous material flow without the need for cycle time adjustments
Accumulation Roller	●		N/A	Reduces back pressure in accumulation situations, which protects the product from excessive abrasion, reduces the load on the conveyor, and eases product release to the next process
Wedge	●	N/A		Allows vertical lift and descent of products by securing the product between opposing soft cleated chains. Wedge conveyance can vastly reduce floor space required for incline and decline of product
Universal	●		N/A	Allows assembly to the chain of application specific product fixtures or cleats. Easy attachment via provided inset for M4 nuts, through hole, and alignment pins
Specialty				Specialty chains can be designed for specific products and applications—contact Bosch Rexroth for more information

# VarioFlow PRO

## System Designer & Builder Network

To realize the full value VarioFlow conveyors can deliver to your operation, count on the VarioFlow PRO builder network, created and supported by Bosch Rexroth. The VarioFlow PRO network equips top-quality professional builders with all the resources needed to create superbly designed VarioFlow solutions. Members of the VarioFlow PRO network possess unique advantages: access to an array of design tools, Bosch Rexroth-supplied expert application insight, and training in best practices—all to support the design and installation of one of the most flexible, modular, and cost-effective chain conveyors available today.



## Innovative Bosch Rexroth assembly and motion technologies

**Structural framing and Manual Production Systems**

With everything to build anything, our Aluminum Structural Framing has over 82 different high-strength, anodized aluminum profile types and dozens of bolt-together connectors for quick, easy



assembly of a wide range of complete, multi-functional structures. Our Manual Production Systems (MPS) provide a lean, flexible platform for efficient information flow, people flow and material flow in processes where manual production works best.

**Powered conveyors for precision assembly**



The Bosch Rexroth TS family of modular pallet-based conveyors is perfect for today's constantly changing assembly environment. Pre-engineered, modular, and flexible, TS conveyors set global standards for performance and reliability, letting you tailor a system to meet your needs now, then expand or modify it as your needs change. They provide the perfect complement to VarioFlow solutions, and are engineered to meet the same high-quality production requirements.

**Linear modules and Cartesian motion systems**

Ready-to-mount Linear Modules and Cartesian Systems let you complete your motion and automated assembly systems. They are available in ball screw and belt drive versions with lengths up to 12 m, and high capacity systems up to 68,000N moving load. For small, high-speed, precise systems or large



heavy loads, Rexroth offers dozens of choices in actuators to build the right linear motion system to complete your application.

## Global resources, local support, 24 hours a day—only from Bosch Rexroth

**Service and support**

Many of today's manufacturers, system integrators and OEMs operate in a global marketplace—that's why Bosch Rexroth leverages its worldwide resources to ensure that your VarioFlow conveyor solution is fully supported, no matter where you build or manufacture.



Whether you're planning and installing a simple VarioFlow conveyor system or a brand new factory requiring a comprehensive material flow management solution, count on our support to be there when and where you need it. Plus, because VarioFlow modules are assembled in our full-service, ISO 9001 and 14001-certified facility in Buchanan, Michigan, you have quick access to a complete inventory of VarioFlow components for last-minute design changes and spare parts.

**Productivity tools**

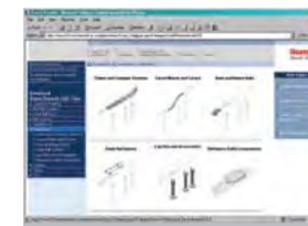
Engineering is our business, too, and we've created numerous tools to streamline the VarioFlow design process. They include comprehensive product catalogs, time-saving MTPro software and 2D/3D CAD models, and easy-to-use layout and estimating tools.



Time-saving Software



Easy-to-use Documentation



Online Support