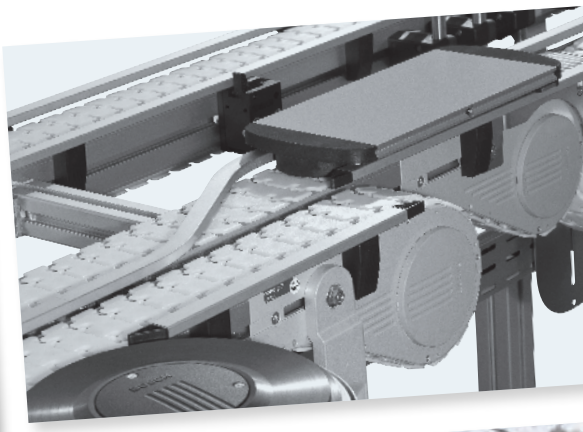
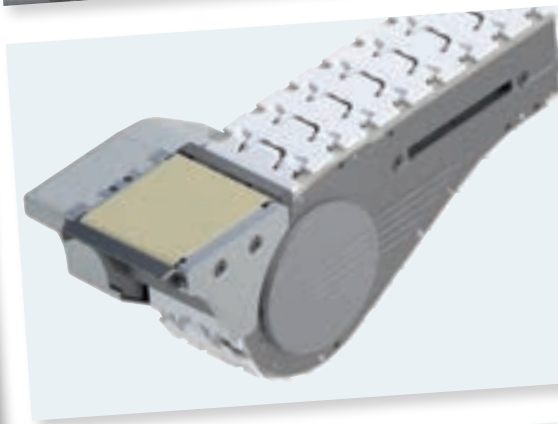
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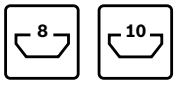
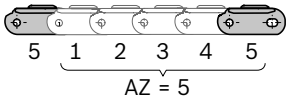


Chain conveyor system
VarioFlow *plus*

3.0

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Symbols

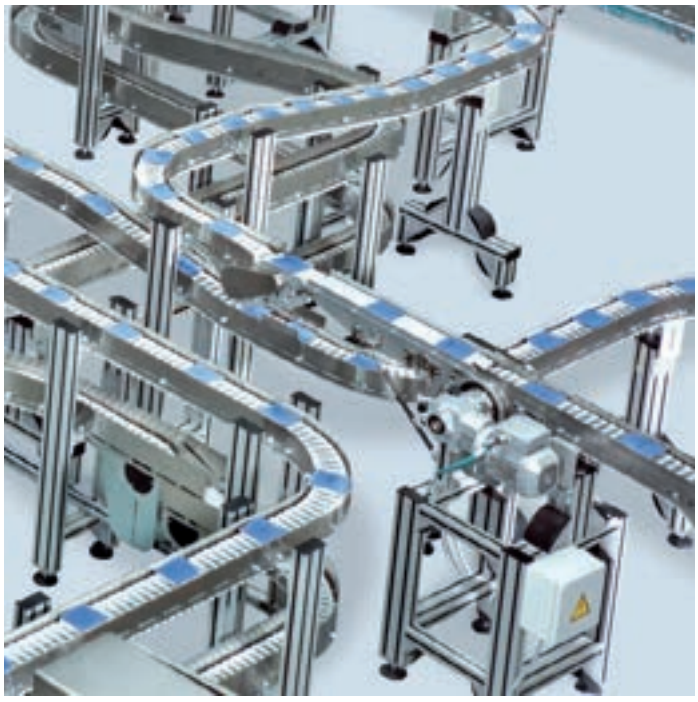
Presentation	Explanation
	Components for the aluminum system (AL)
	Components for the stainless steel system (STS)
	1. Profile with slot width 8 mm, 10 mm 2. Accessories suitable for mounting to profiles with the specified slot width
	Conductive material version in accordance with DIN EN 61340-5-1; suitable for use in ESD-sensitive areas
Section profile VF*plus* AL open — **L** (mm) — **No.** 12 pcs — 6070 — **3 842 546 647** 1 pc — 50 ... 6000 — **3 842 996 026/L**	Delivery unit = delivery quantity (here: 12) Order: 1 x 3 842 546 647: Delivery: 12 x section profile VF*plus* AL open, L = 6070 mm 11 x 3 842 546 647: Delivery: 132 x section profile VF*plus* AL open, L = 6070 mm
Cross connector AL — **b** (mm) — — **No.** VF*plus* 65 — 65 — 10 — **3 842 546 672**	Packing unit = minimum order quantity (here: 10) Order: 1 x 3 842 546 672: Delivery: 10 x 3 842 546 672 (rounded up) 15 x 3 842 546 672: Delivery: 20 x 3 842 546 672 (rounded up)
	Distance, in which the "special chain links" are inserted between the flat conveyor chain links. AZ = spacing distance Example: AZ = 5 = a special chain link follows four flat conveyor chain links

Introduction VarioFlow *plus*, System overview			**4**	1
Conveyor chains	AL	STS	**16**	2
Aluminum system (AL) VarioFlow *plus*	AL		**48**	3
Stainless steel system (STS) VarioFlow *plus*		STS	**126**	4
ESD system VarioFlow *plus*		ESD	**184**	5
Wedge conveyor	AL	STS	**204**	6
Product guide	AL	STS	**212**	7
Workpiece pallet system (WT)	AL		**236**	8
Tools	AL	STS	**286**	9
Technical data			**292**	10
Material number overview			**324**	11
Index			**328**	12

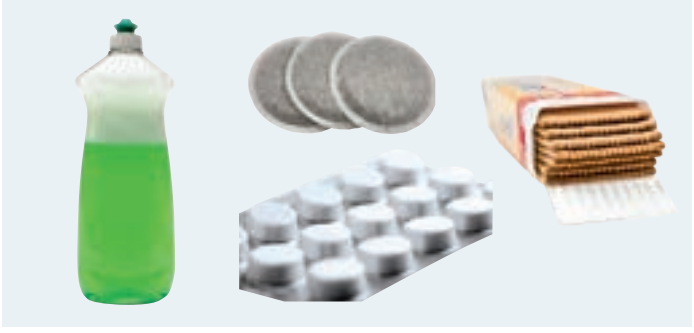
VarioFlow *plus* – the innovative chain conveyor system, easily installed, with low-noise operation

Today, user 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.

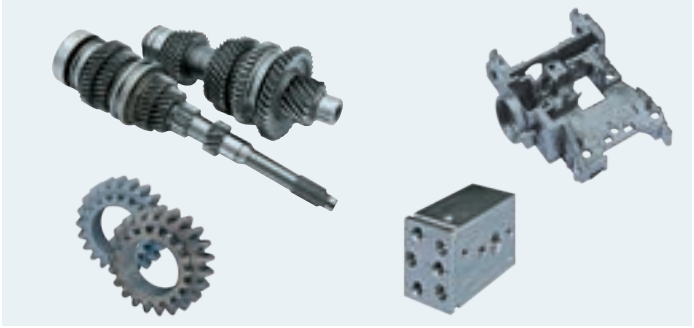




The construction kit of the Rexroth VarioFlow *plus* chain conveyor system consists of components that can be used universally for all system widths. This reduces the need for spare parts for the user.
The stable chain permits tensile forces of up to 1250 N. The chain surface is nearly closed, allowing even the smallest of components 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 workpieces in the automotive and electronic industries.



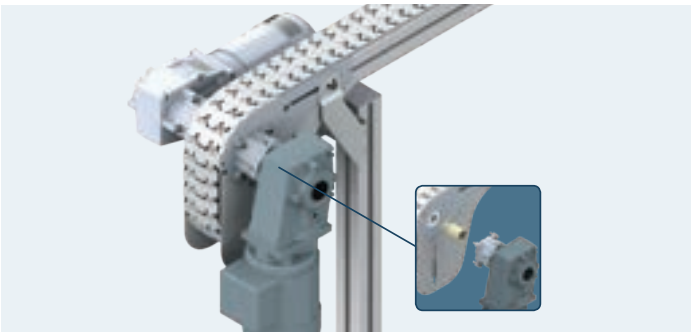




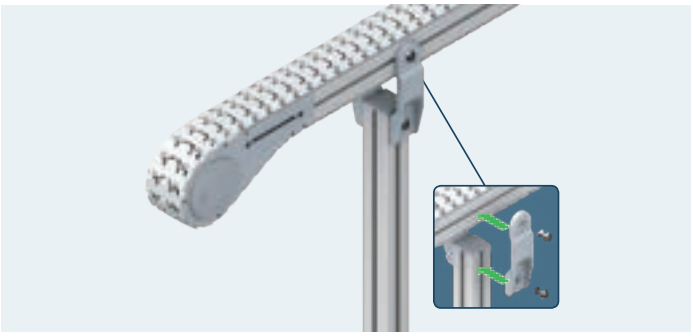
The advantages of VarioFlow *plus*

Flexible planning and fast 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.

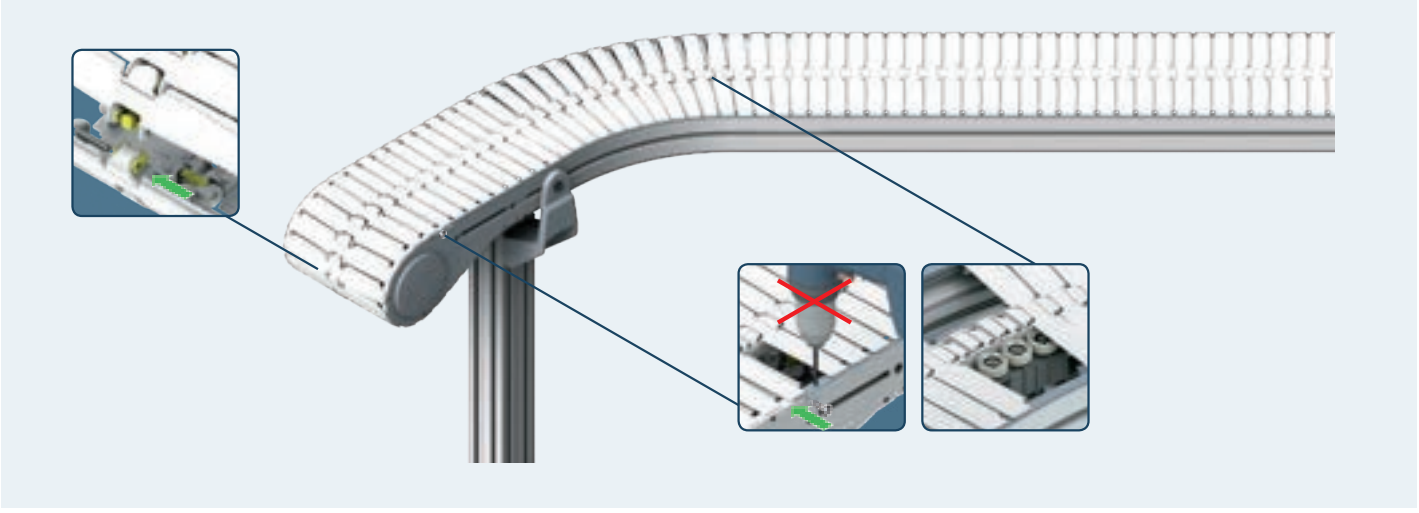


Smart connection technology saves time during assembly and allows for easy conversions and system extensions.



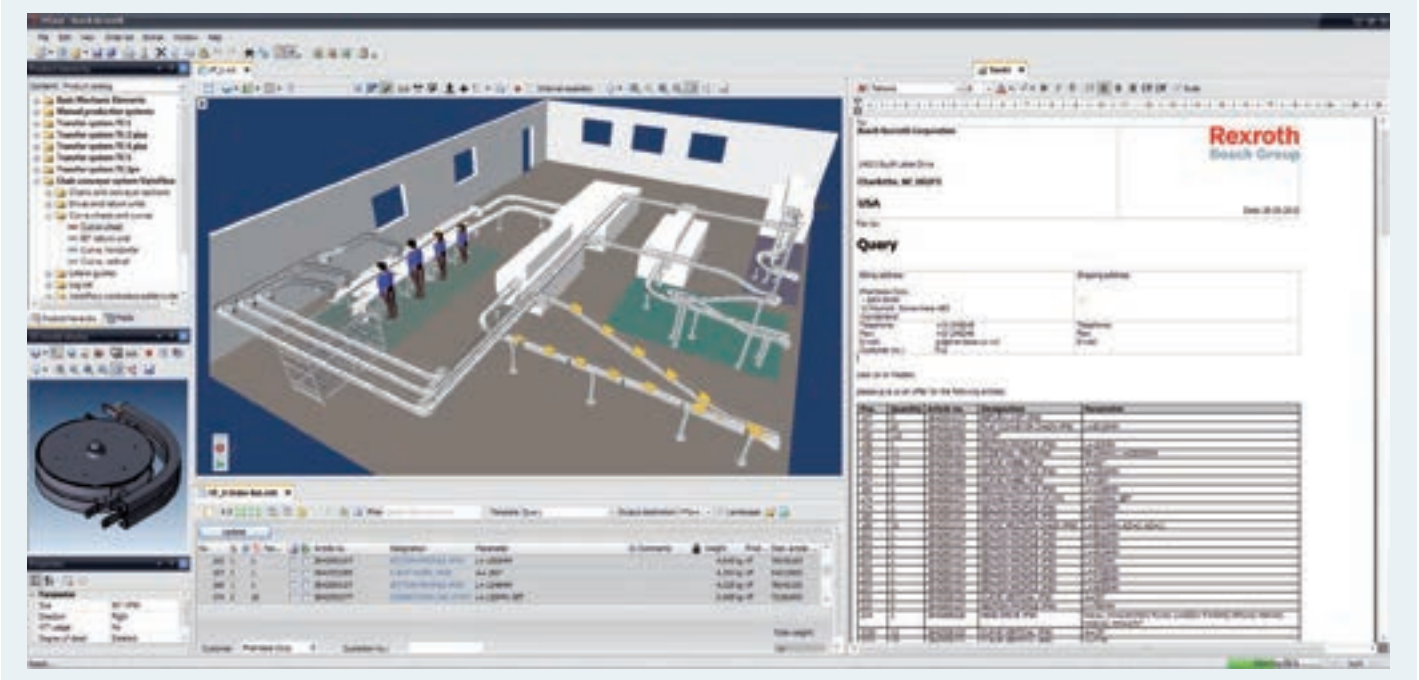
Optimum working conditions thanks to smooth running and easy maintenance

The maintenance-friendly VarioFlow *plus* transport system ensures optimum working conditions. Thanks to improved sliding properties and low friction materials, the working environment is relatively quiet (see p. 318). Fewer joints and the rolling friction in the horizontal curves ensure low wear and thus reduce downtimes.



Simple and fast project planning with MT*pro*

MT*pro* 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 and drop and assembled quickly and easily using the snap function. Thanks to automatic parts list costing and electronic order integration, you can keep costs under control and minimize time spent ordering. Numerous interfaces allow planning data to be used by other departments, such as Design, Purchasing and Service. With MT*pro* 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



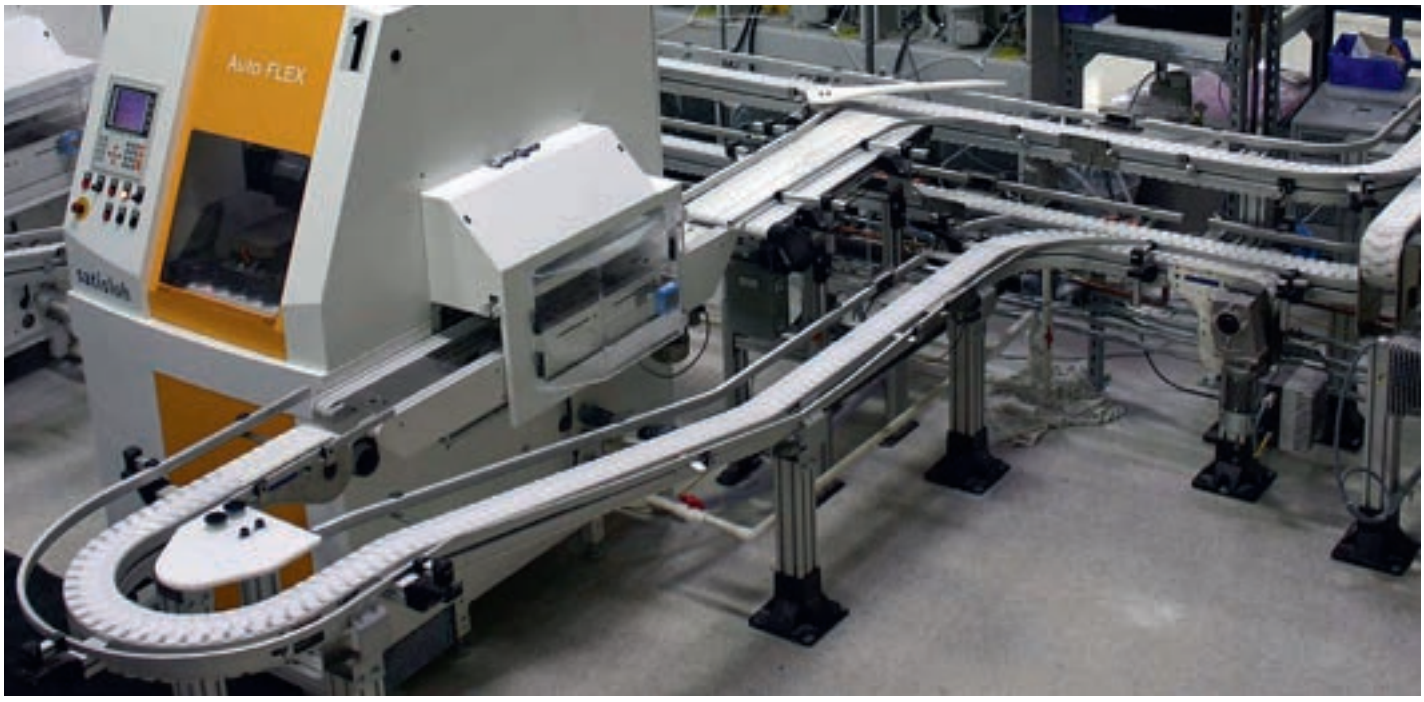






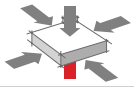
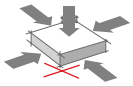





Auto FLEX
1

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
WT size (from ... to)	80 x 80 mm ... 160 x 160 mm	160 x 160 mm ... 1200 x 1200 mm	Direct transport without WT	65 x 76 mm ... 90 x 500 mm
Product weight	3 kg	240 kg	3 kg/34.5 mm	8 kg **with** function modules (diverter, positioning unit...) 15 kg **without** function modules (diverter, positioning unit...)
Accessibility				
Section path				
Positioning 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 WT 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.

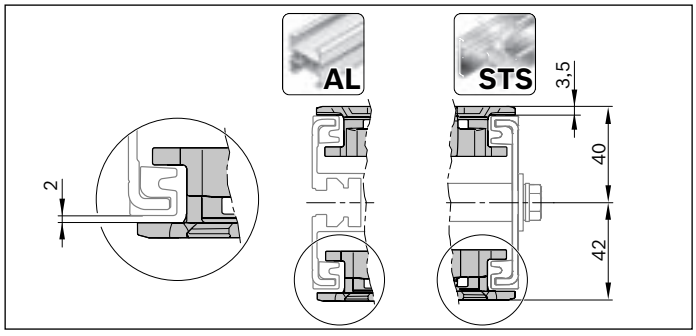
Workpiece pallets can be used when:
- The product has no static stability due to its geometry
- Transport can cause a change in position of the product
- The process requires it
- The product surface is very sensitive
- Accumulation is required and the product geometry does not allow for accumulation
- 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

The BKB*soft* chain calculation program that is integrated into the MT*pro* planning software allows quick and efficient calculation of the maximum chain tensile force and the corresponding required drive torque.
If the permissible chain tensile force or the drive torque. of the gear motor is exceeded then the conveyor section must be examined to determine if the layout can be adjusted accordingly. Among the possible adjustments are splitting of the conveyor section into smaller sections, reduction of the speed, shortening of accumulation sections, using curve wheels or roller curves instead of sliding curves.
See also the section Stick-slip effect on page 298.

Ambient conditions

Abrasive ambient conditions
When fitting the chain conveyor, pay special attention to the cleanliness of the sliding 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 sliding 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 (ESD: <40 °C). Temperatures < 0 °C require special gear motors with special lubrication, special seals and special 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 298.

Media resistance
The materials used are resistant to most chemicals used in industrial applications, even in case of longer contact.
See also "Resistance of the chain against chemicals" on page 320.

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 sliding 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 %.

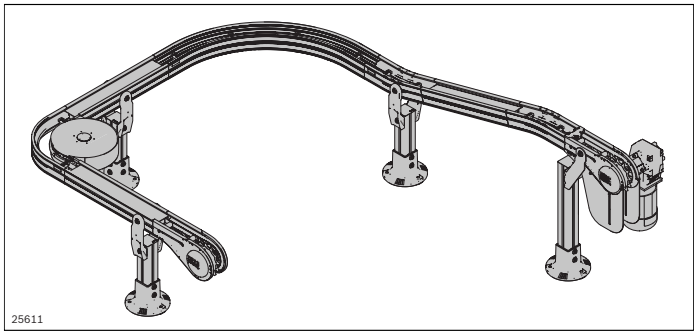
High-pressure cleaning
High-pressure cleaning of the chain conveyor ball bearing areas (e.g. in the drive, roller curves, etc.) is prohibited.

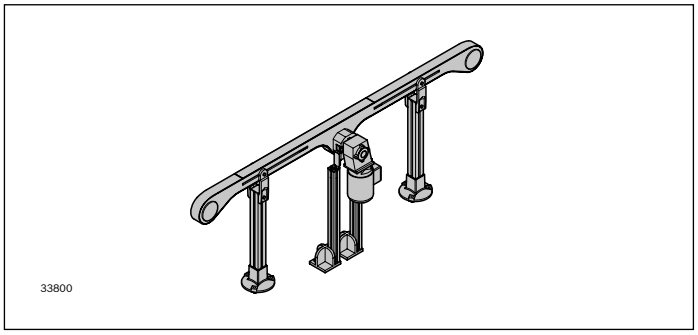
System overview

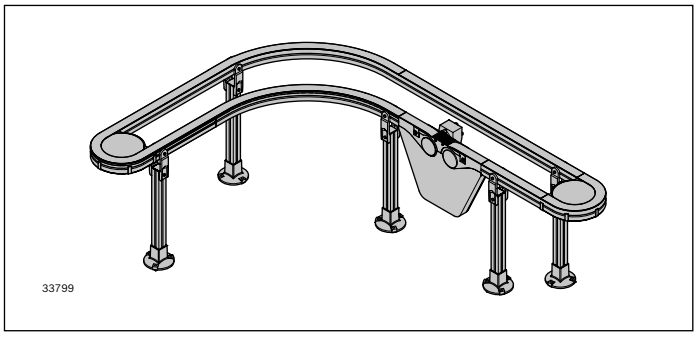
The construction kit with a few basic building blocks in six track widths and two material versions enables a transport system to be adapted to the most diverse requirements.

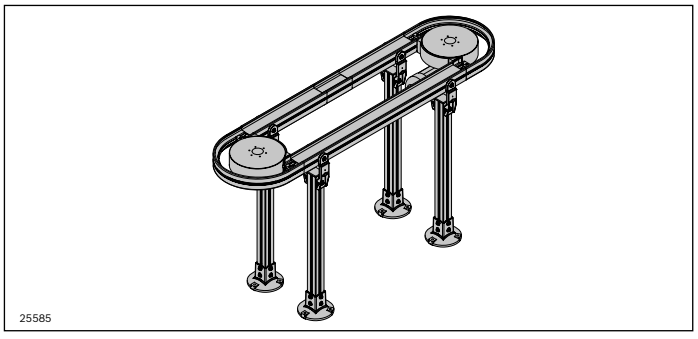
The system components are available in aluminum (AL) as a basic version or in stainless steel (STS) for increased hygiene requirements (e.g. in the food industry).
The ESD system comprises AL, STS and special ESD components.

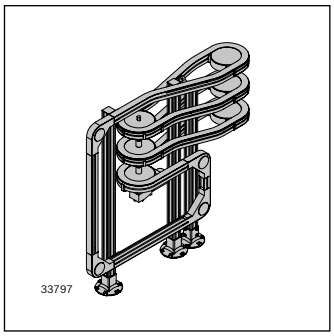


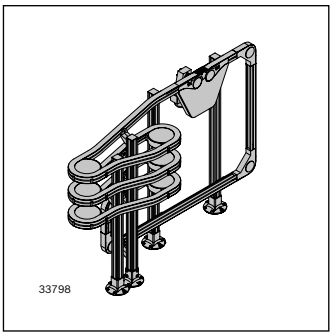


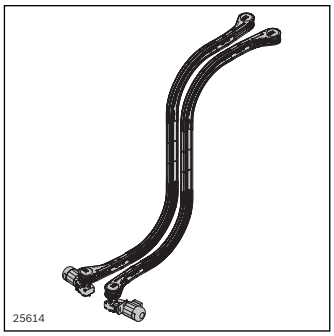


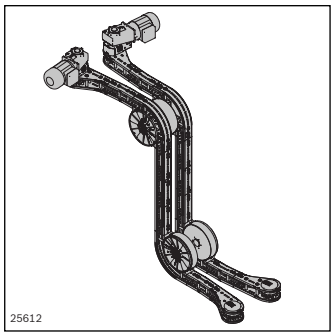




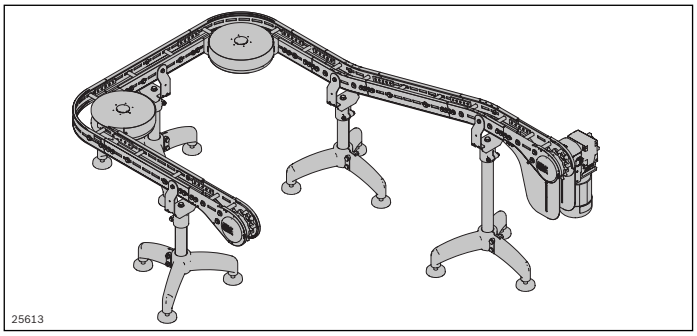


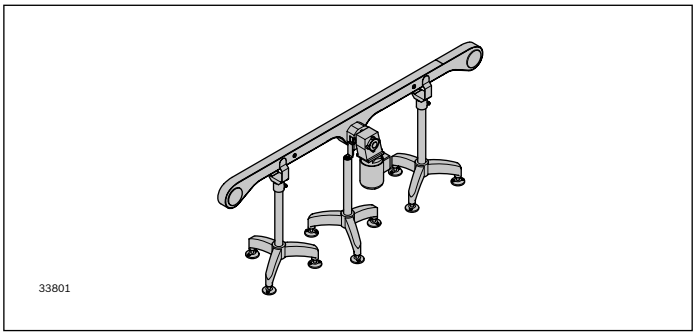


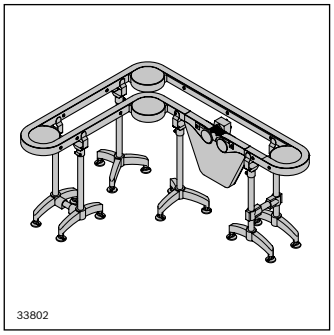


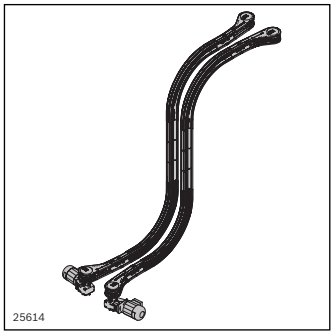


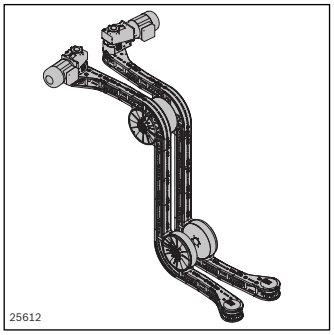

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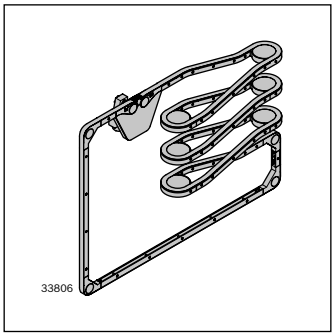

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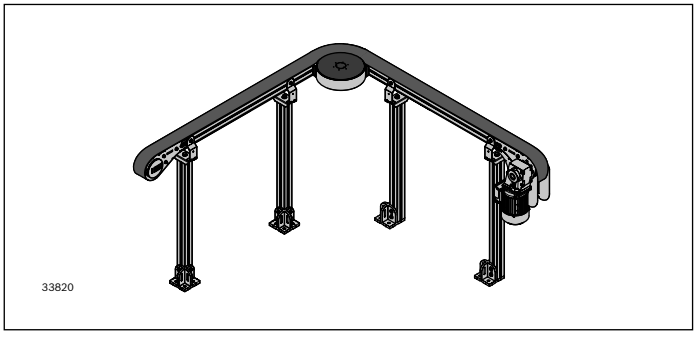

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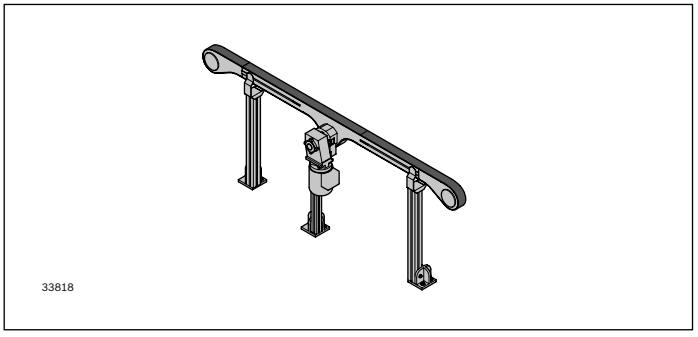

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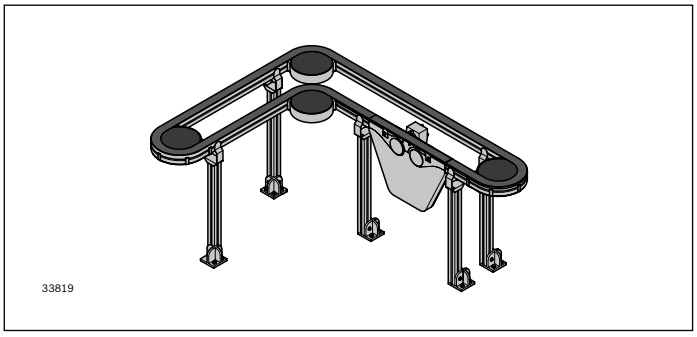

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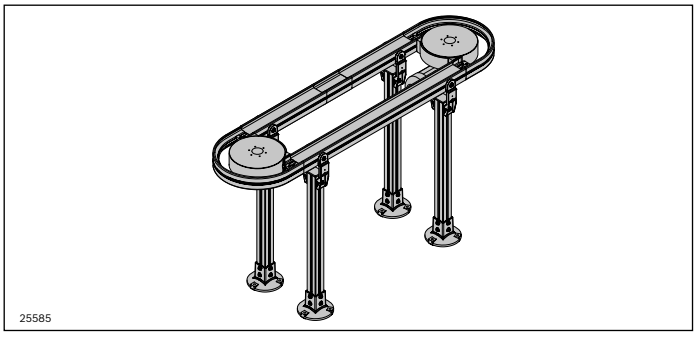

ESD


AL


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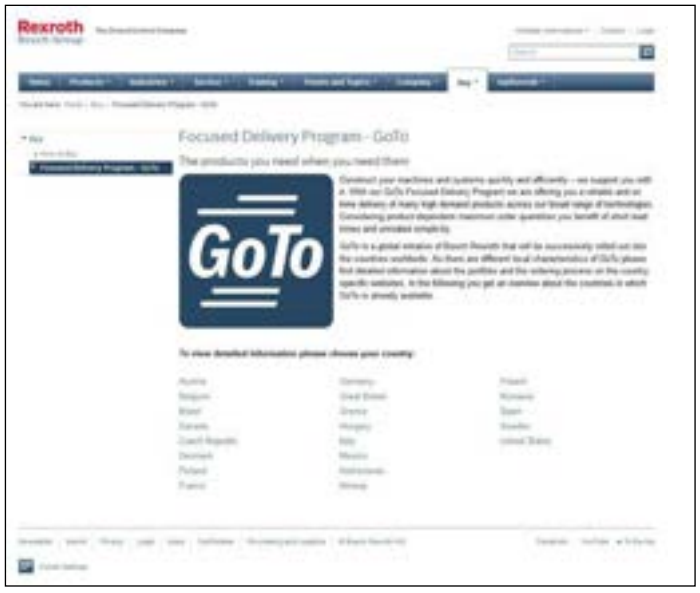

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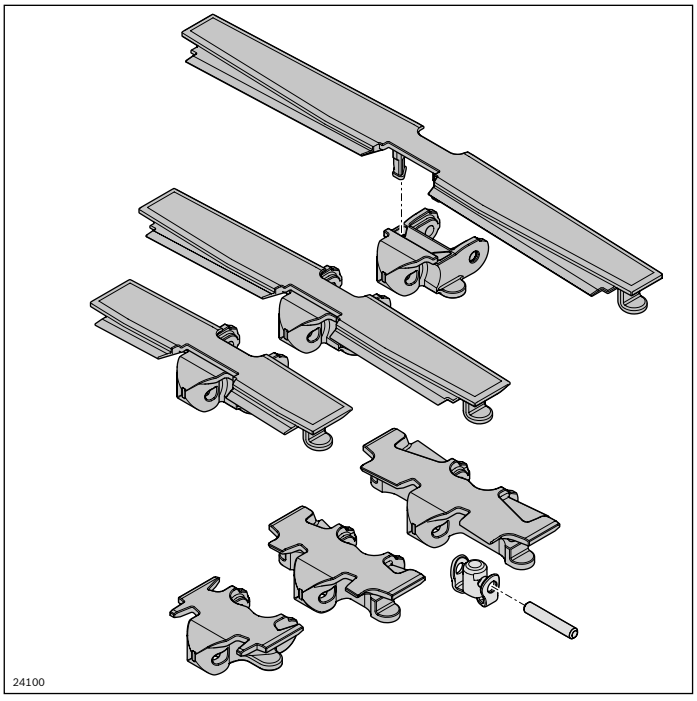
Online

Visit the website for the Focused Delivery Program.
It offers simple access to additional product information, including data sheets, part numbers, specifications, downloads and more.

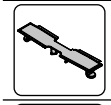
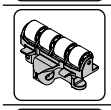
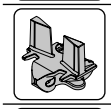
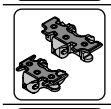
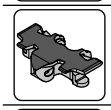
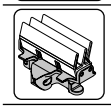
Conveyor chains







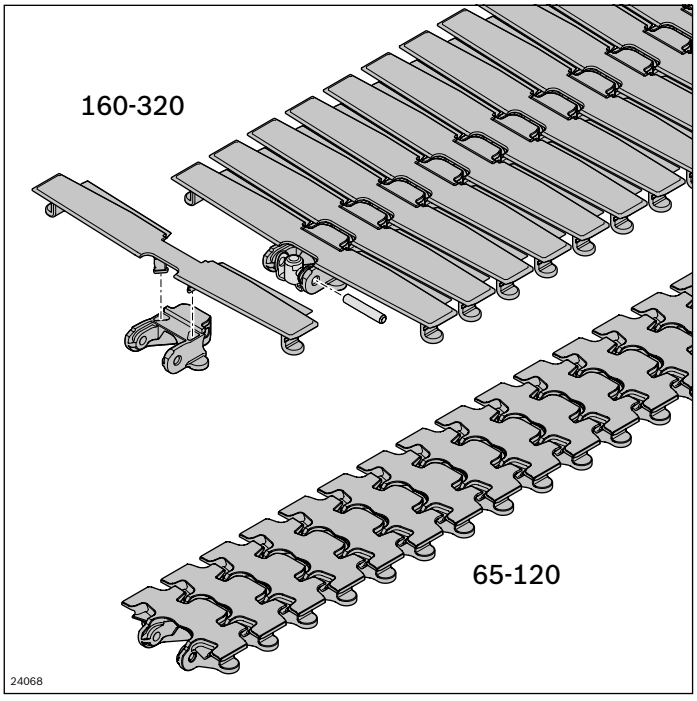
- Quiet and smooth-running parts transport thanks to patented conveyor chains
- Optimized antifriction properties of the chains
- Chain links uncoupled by means of different materials (patented)
- FDA-compliant materials
- Low-vibration transport of small parts and accumulation option by covering the chain links
- Easy-to-exchange chain plate from size 160
- Wide variety of chain types suitable for different applications

	**Flat conveyor chain**	**18**
	**Static friction chain**	**22**
	**Accumulation roller chain D11, Roller cleated chain D11**	**26**
	**Roller cleated chain D20**	**30**
	**Roller cleat D35**	**32**
	**Cleated chain**	**36**
	**Universal chain**	**38**
	**Steel-plated conveyor chain**	**42**
	**Flocked chain**	**44**
	**Clamping chain**	**46**

Flat conveyor chain







The flat conveyor chain is used to transport products directly or indirectly via workpiece pallets.
The gray conveyor chain is mainly used to transport products indirectly via workpiece pallets, in particular for steel wear pads. The dark coloring means that there is virtually no visual impairment of the chain surface.

- Transport on ascending or descending sections up to about 7° possible, depending on the product (test required)
- Accumulation operation permitted, depending on the product
- Maximum chain tensile force: 1250 N
- From size 160: Chain plate easy to replace
- Size gray chain: 65, 90
- Chain links can be combined with other types of chains of the same size
- Chain also available in ESD version, see conveyor chain ESD on page 190

- ▶ Drilling the flat conveyor chain links allows for the simple attachment of superstructures. Sizes 65-120 have a mold cavity for accommodating a flat M5 hexagon nut. Sizes 160-320 have a centering aid mounted on the underside of the chain plate. Max. drilling up to ø5 mm, since at this point there are no interfering contours in the chain conveyor, see p. 21

- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21 (does not apply for conveyor chain gray)

Required accessories for individual chain links:
- Chain pin and pivot pin, see p. 19

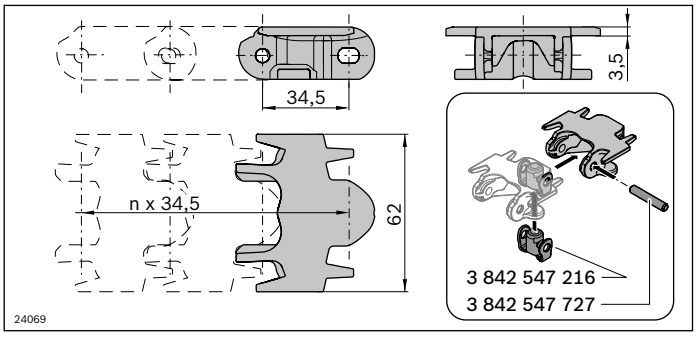
For base chain links 160-320, a chain plate is also required, see p. 20, 21

Optional accessories:
- Static friction chain link, see p. 22
- Accumulation roller chain link D11, see p. 26
- Roller cleated chain link D20, see p. 30
- Cleated chain link, see p. 36
- Universal chain link, see p. 38

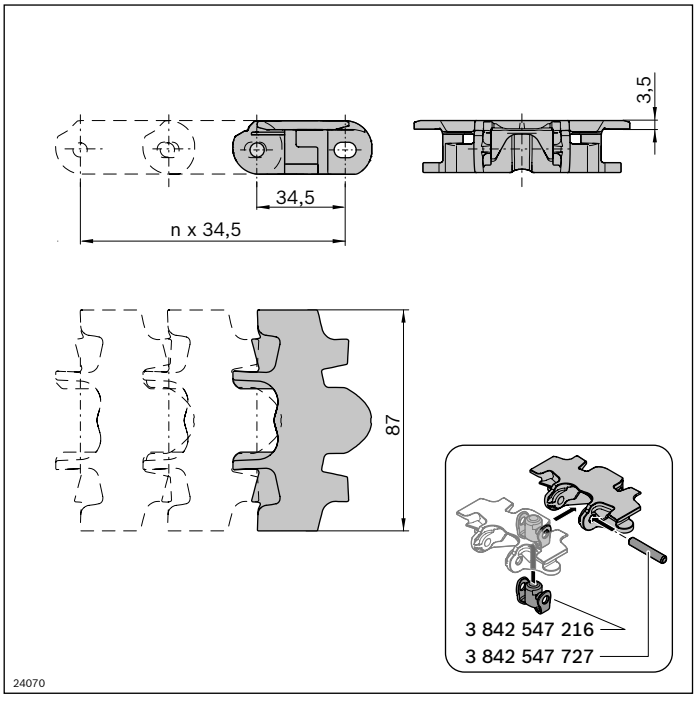
Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- Chain: Fully assembled

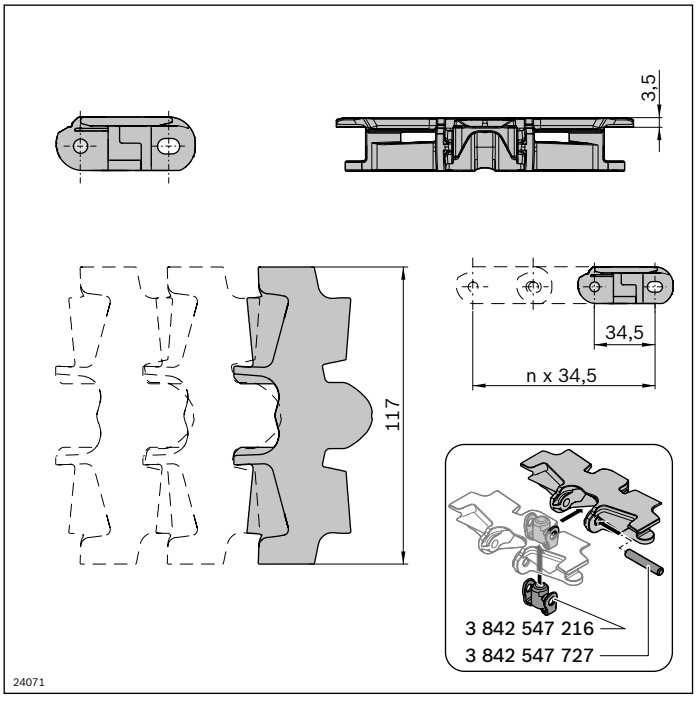
Material:
- Chain link: POM
- Chain plate: POM
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



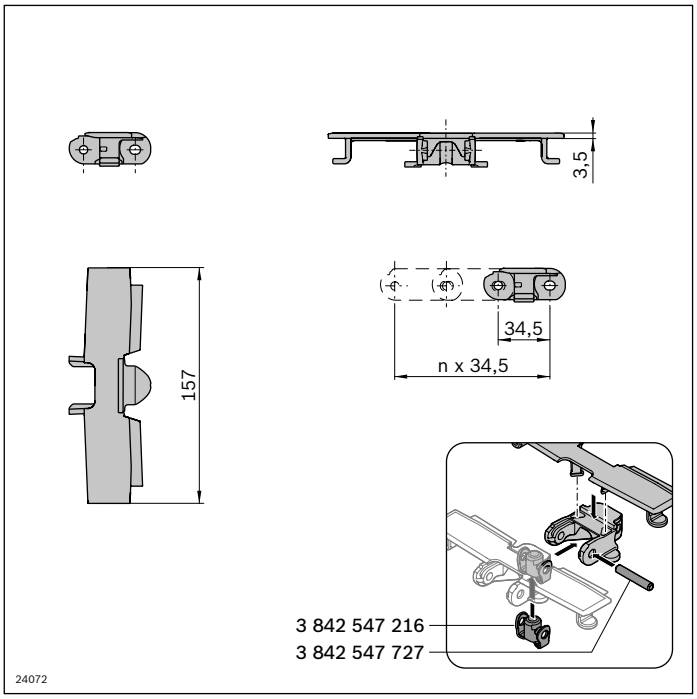
Flat conveyor chain VF*plus* 65	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 069**
Chain link		10	**3 842 546 000**
Conveyor chain, gray	4968	1	**3 842 546 075**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



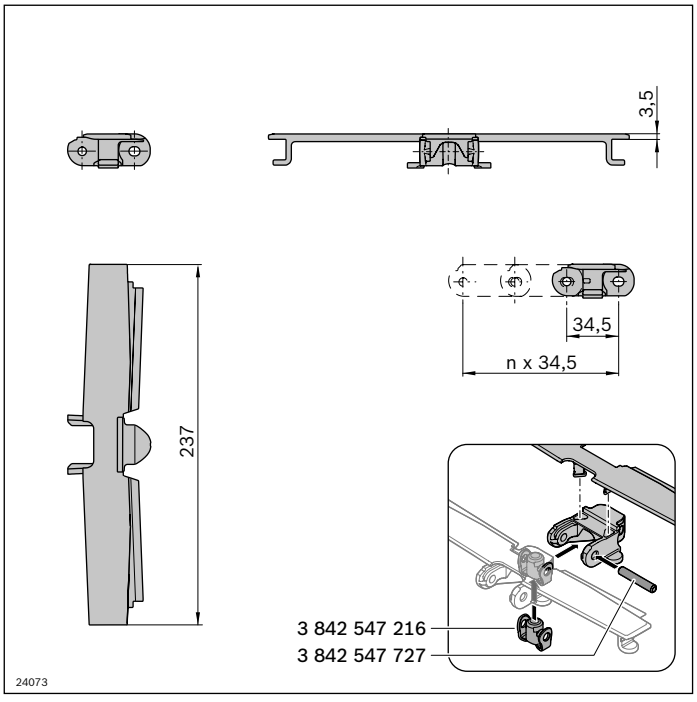
Flat conveyor chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 070**
Chain link		10	**3 842 546 001**
Conveyor chain, gray	4968	1	**3 842 546 076**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



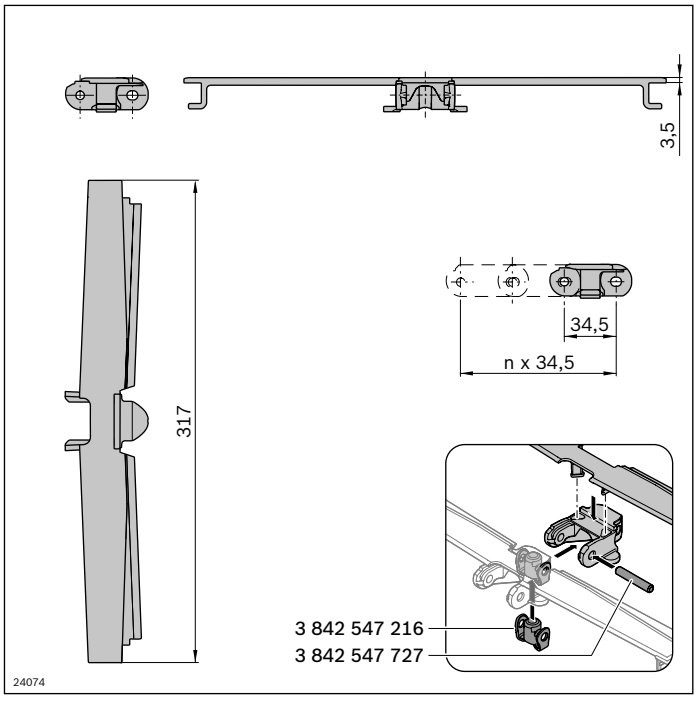
Flat conveyor chain VF*plus* 120	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 071**
Chain link		10	**3 842 546 002**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Flat conveyor chain VF*plus* 160	**L** (mm)		**No.**
Conveyor chain	2898	1	**3 842 546 072**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 160		10	**3 842 546 093**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



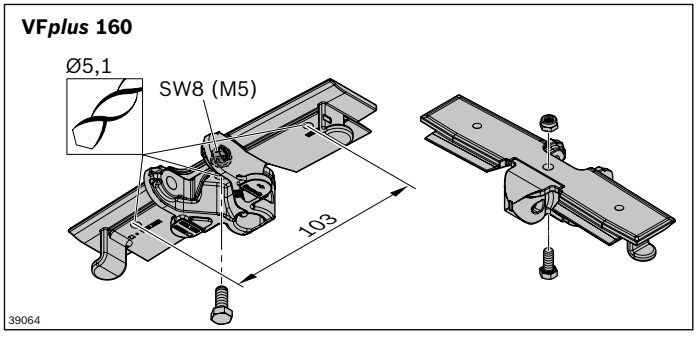
Flat conveyor chain VF*plus* 240	**L** (mm)		**No.**
Conveyor chain	2898	1	**3 842 546 073**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 240		10	**3 842 546 094**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Flat conveyor chain VF*plus* 320	**L** (mm)		**No.**
Conveyor chain	2898	1	**3 842 546 074**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 320		10	**3 842 546 095**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

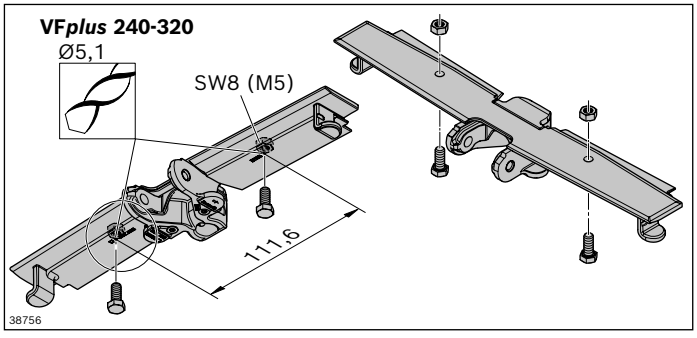
Notice for the attachment of structures

VF*plus* 160



VF*plus* 240-320

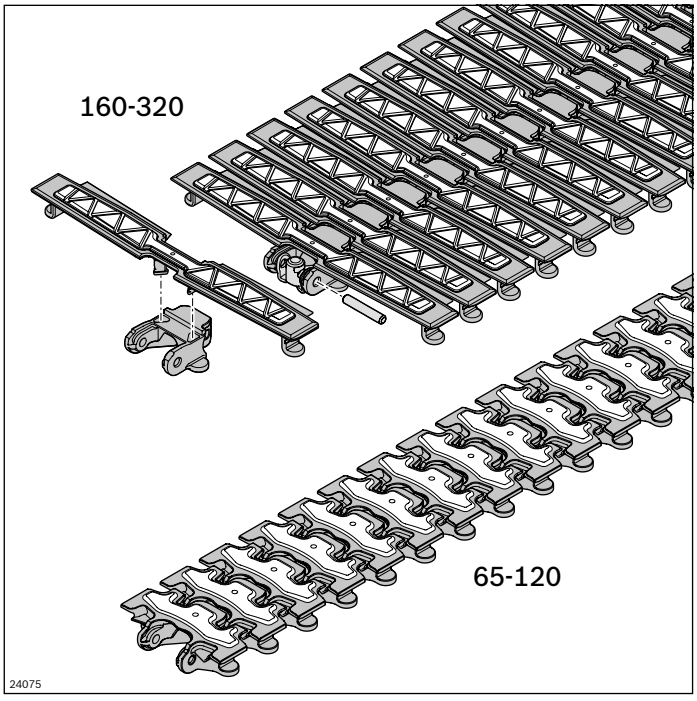
Notice: Risk of collision! Only use the mounting points provided.



Static friction chain







The static friction chain enables the transport of products on ascending or descending sections.
The number of chain links with static friction lining can be specified by the user depending on the product size, weight and the inclination.

- Transport on ascending or descending sections up to about 30° possible. The maximum gradient depends on the product surface, section length, and speed (test required)
- Accumulation operation not permitted
- Maximum chain tensile force: 1250 N
- From size 160: Chain plate easy to replace
- Only suitable for dry operation
- AZ ≥ 2: Static friction chain supplemented with flat conveyor chain links (AZ = spacing distance)
  AZ = 1: All links with static friction coating
- The grip is maintained through regular cleaning
- The chain coating is not suitable for transporting sharp-edged objects

- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21

- ▶ Extensive static friction lining for transporting product securely

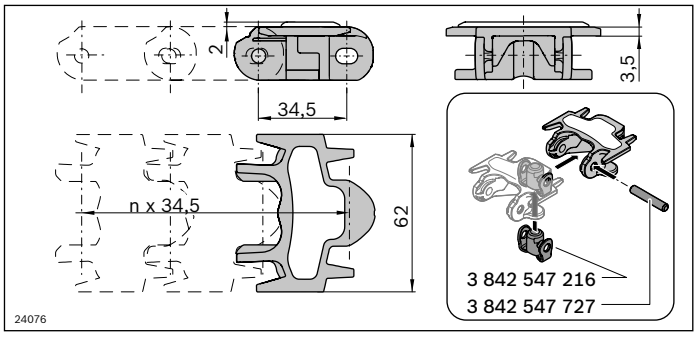
Required accessories for individual chain links:
- Chain pin and pivot pin, see p. 23

For basic chain links 160-320, a chain plate is also required, see p. 24

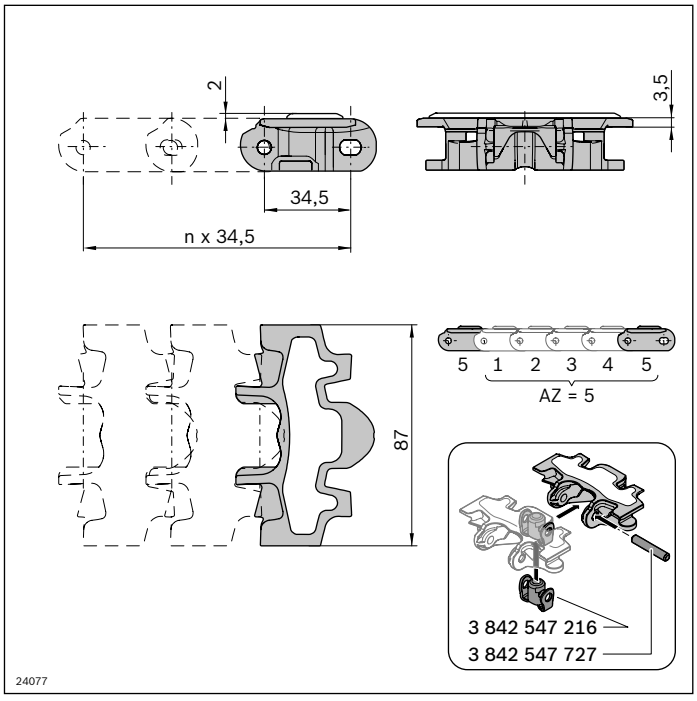
Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- Chain: Fully assembled

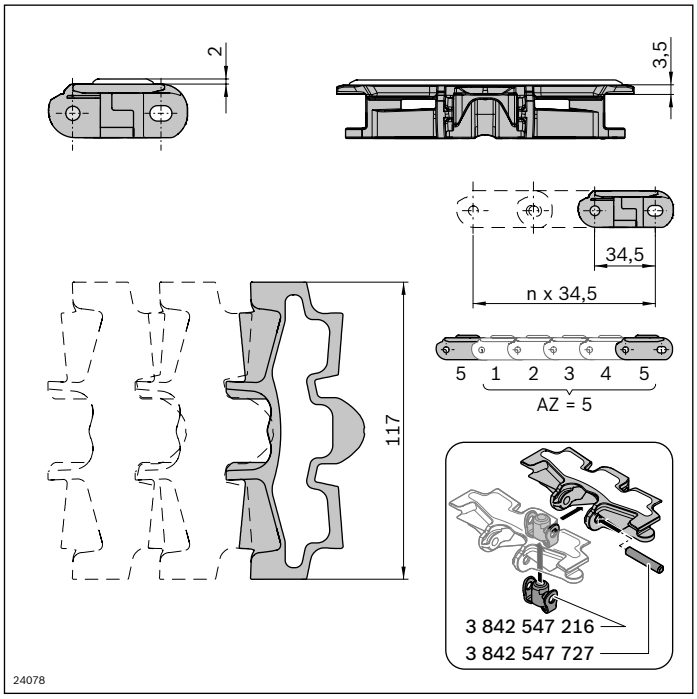
Material:
- Chain link: POM
- Static friction coating: TPE Shore 70A
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



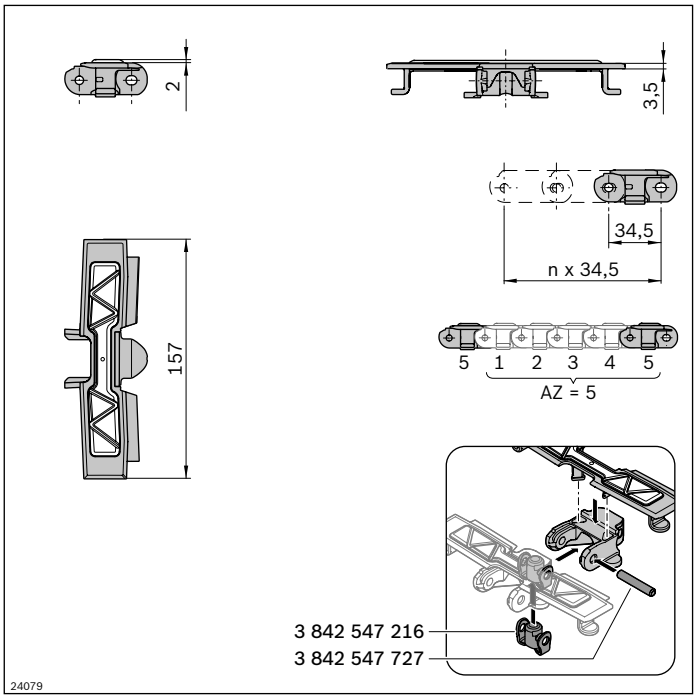
Static friction chain VF*plus* 65	**L** (mm)		**No.**
Conveyor chain; AZ = 1	4968	1	**3 842 546 077**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 706/AZ**
Chain link		10	**3 842 546 006**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



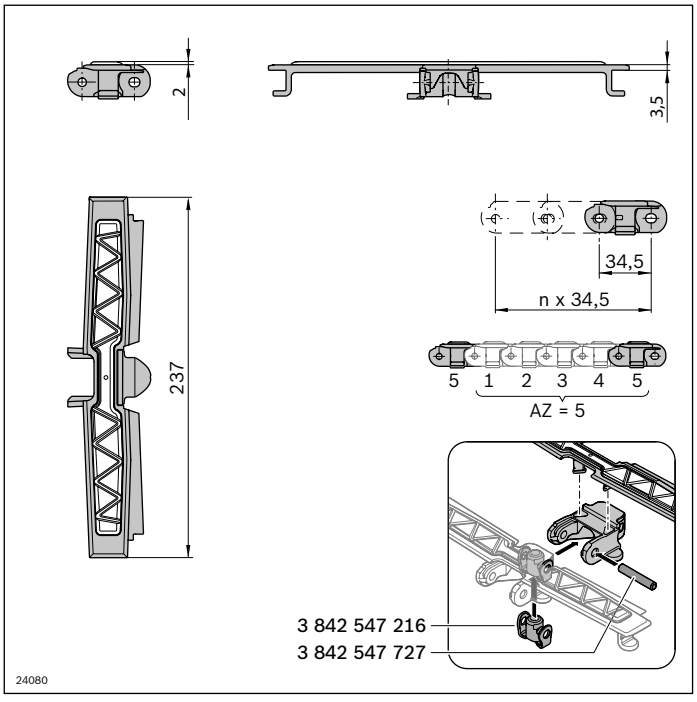
Static friction chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain; AZ = 1	4968	1	**3 842 546 078**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 707/AZ**
Chain link		10	**3 842 546 007**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



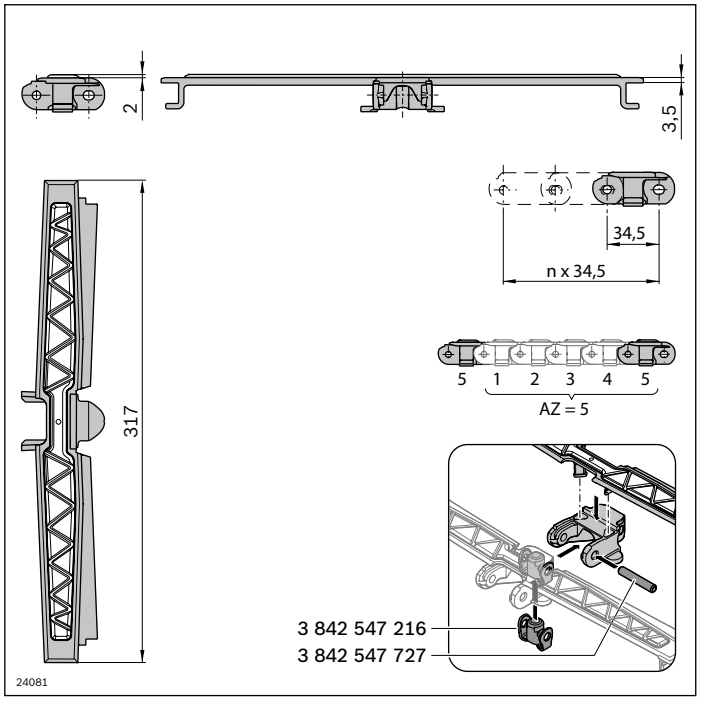
Static friction chain VF*plus* 120	**L** (mm)		**No.**
Conveyor chain; AZ = 1	4968	1	**3 842 546 079**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 708/AZ**
Chain link		10	**3 842 546 008**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Static friction chain VF*plus* 160	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 080**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 709/AZ**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 160		10	**3 842 546 096**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Static friction chain VF*plus* 240	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 081**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 710/AZ**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 240		10	**3 842 546 097**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

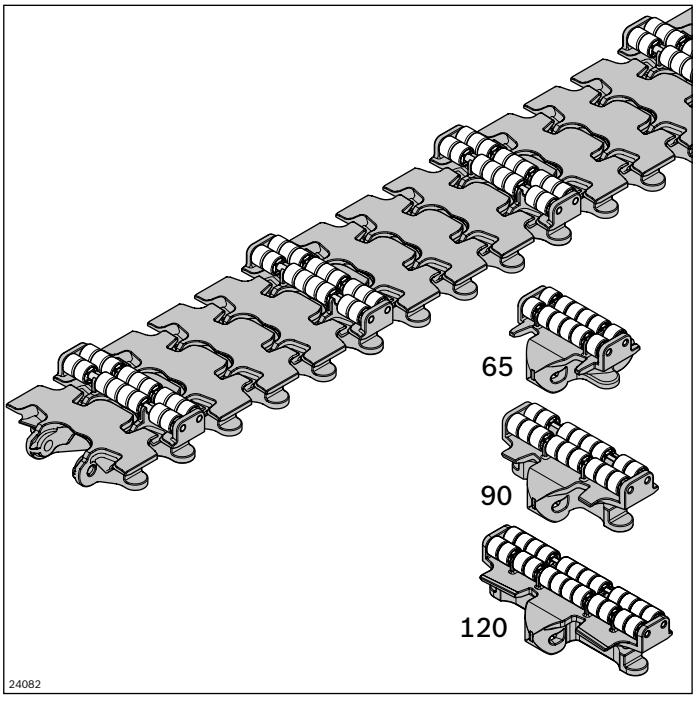


Static friction chain VF*plus* 320	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 082**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 711/AZ**
Basic chain link 160-320		10	**3 842 546 028**
Chain plate 320		10	**3 842 546 098**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Accumulation roller chain D11, Roller cleated chain D11







The accumulation roller chain D11 (AZ = 1) enables the surface-protecting and exclusively horizontal transport of sensitive products, even in accumulation operation.
Use as a roller cleated chain (AZ ≥ 2) enables the vertical transport of small products. See also "Layout instructions for roller cleated chains", on page 34

- The maximum gradient when using cleats depends on the product geometry (test required)
- Accumulation operation permitted when used as an accumulation roller chain (AZ = 1)
  Accumulation operation not permitted when used as a roller cleated chain (AZ ≥ 2)
- Maximum chain tensile force: 1250 N
- AZ ≥ 2: Roller cleated chain supplemented with flat chain links (AZ = spacing distance)
  AZ = 1: Continuous accumulation roller chain
- Product length for use with the accumulation roller chain: ≧ 70 mm

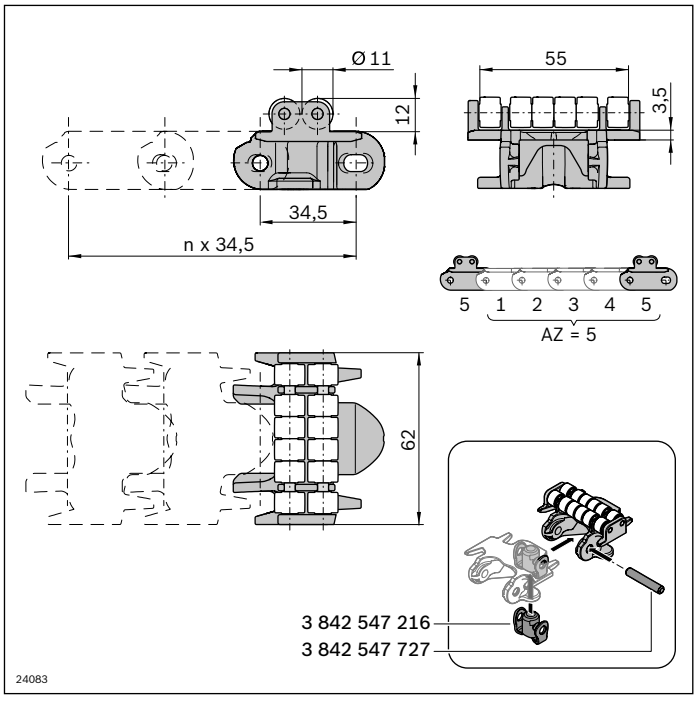
- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21

Required accessories for individual chain links:
- Chain pin and pivot pin, see p. 27

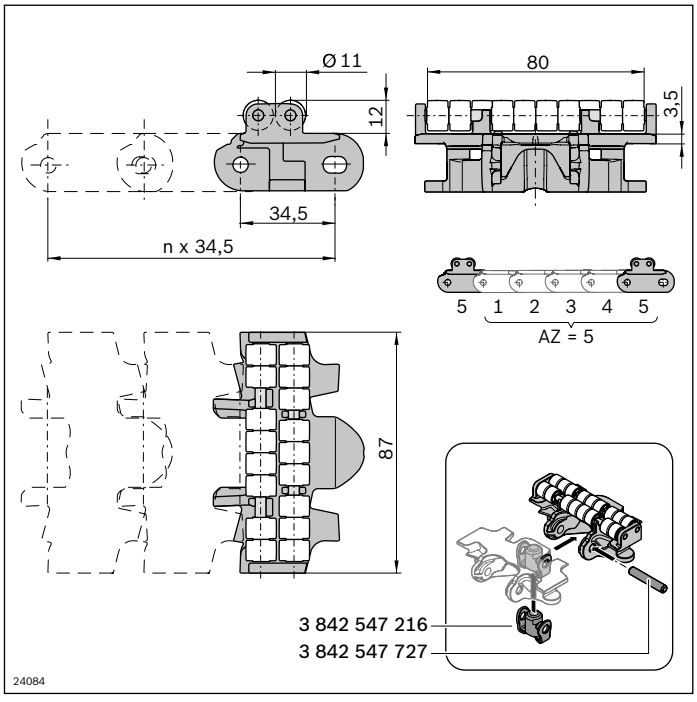
Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- Chain: Fully assembled

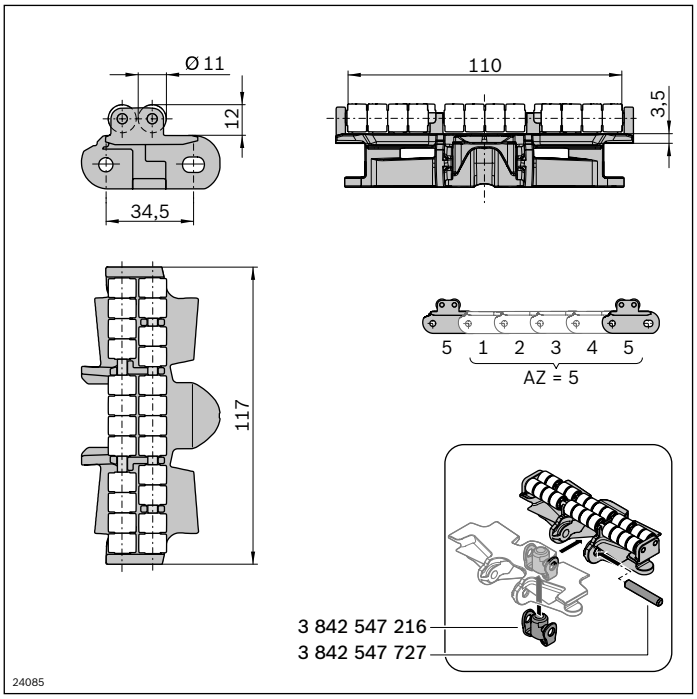
Material:
- Chain link: POM
- Roller: POM
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



Accumulation roller chain D11 VF*plus* 65	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 083**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 717/AZ**
Chain link		10	**3 842 546 017**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Accumulation roller chain D11 VF*plus* 90	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 084**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 718/AZ**
Chain link		10	**3 842 546 018**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

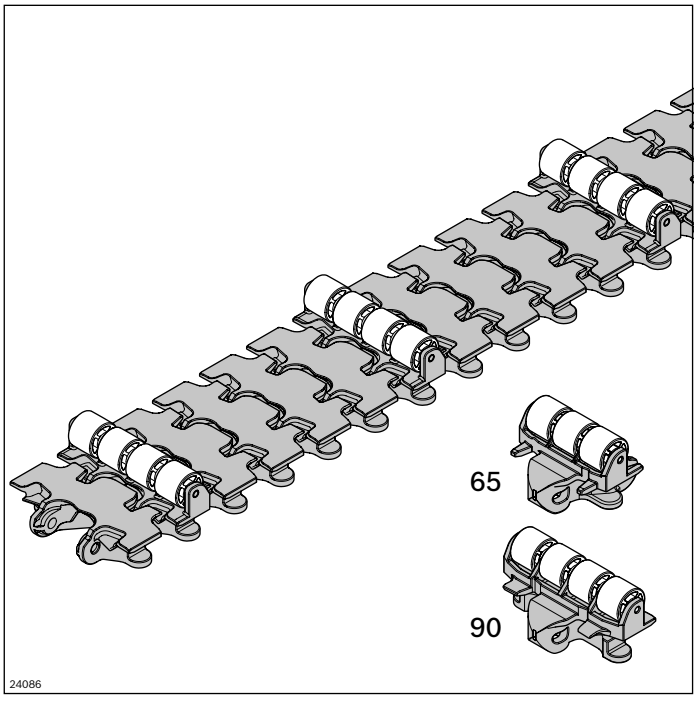


Accumulation roller chain D11 VF*plus* 120	**L** (mm)		**No.**
Conveyor chain; AZ = 1	2898	1	**3 842 546 085**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 719/AZ**
Chain link		10	**3 842 546 019**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Roller cleated chain D20







The roller cleated chain D20 enables the transport of products on ascending or descending sections.
See also "Layout instructions for roller cleated chains", on page 34
- The maximum gradient depends on the product geometry (test required)
- Accumulation operation not permitted
- Maximum chain tensile force: 1250 N
- AZ ≥ 2: Roller cleated chain supplemented with flat conveyor chain links (AZ = spacing distance)

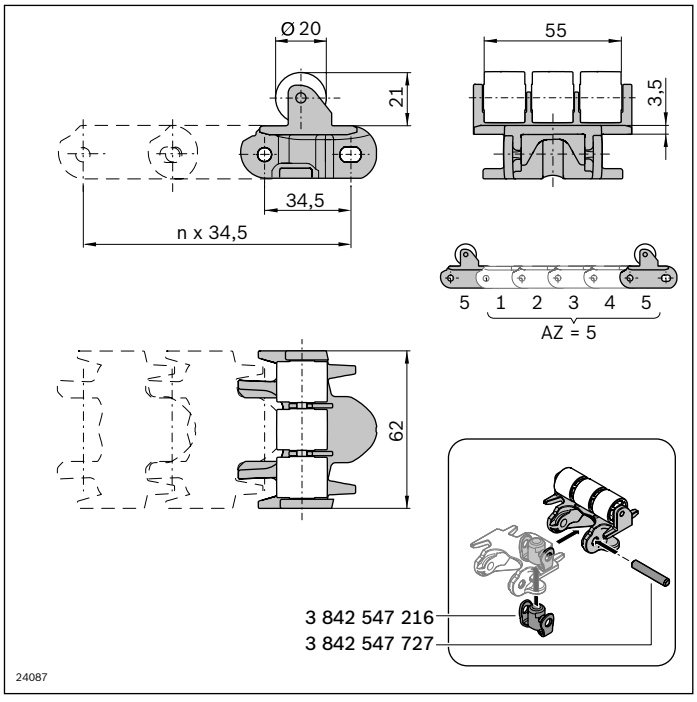
- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21
- ▶ For feeding without any effort for cycle time adjustment

Required accessories for individual chain links:
- Chain pin and pivot pin, see p. 31

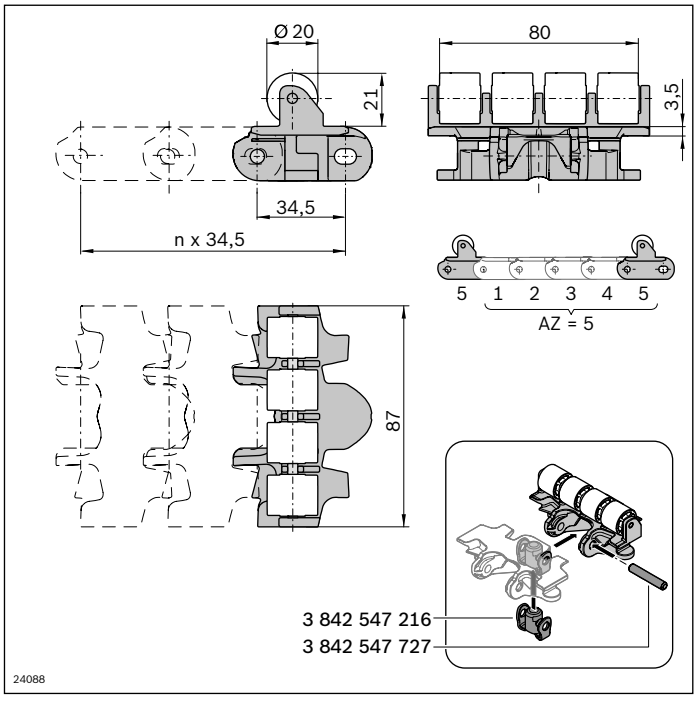
Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- Chain: Fully assembled

Material:
- Chain link: POM
- Roller: POM
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



Roller cleated chain D20 VF*plus* 65	**L** (mm)		**No.**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 720/AZ**
Chain link		10	**3 842 546 020**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

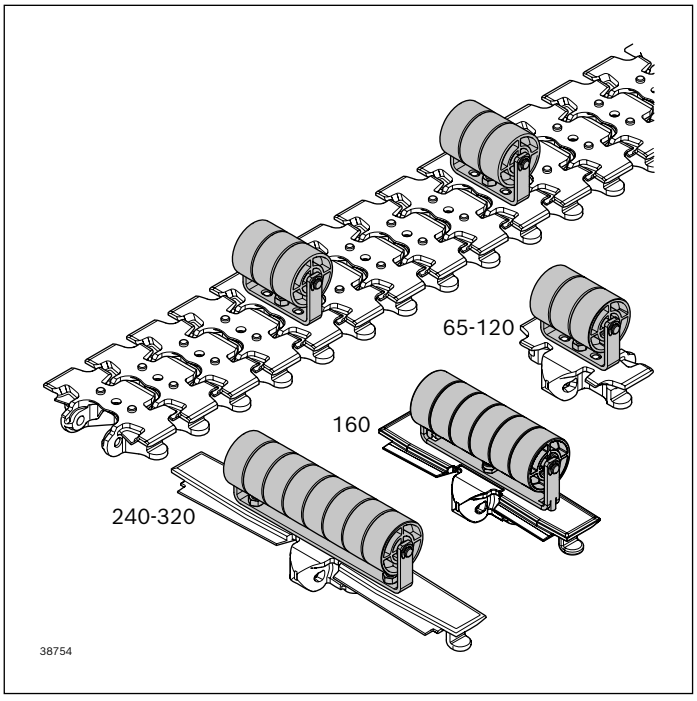


Roller cleated chain D20 VF*plus* 90	**L** (mm)		**No.**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 721/AZ**
Chain link		10	**3 842 546 021**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Roller cleat D35







The roller cleat D35 enables the transport of large-volume products on ascending or descending sections. See also "Layout instructions for roller cleated chains", page 34.

- The maximum gradient depends on the product geometry (test required)
- Accumulation operation not permitted
- Maximum chain tensile force: 1250 N
- Static force: 100 N
- Dynamic force: 10 N
- 3 types:
  - For size 65-120
  - For size 160
  - For size 240-320

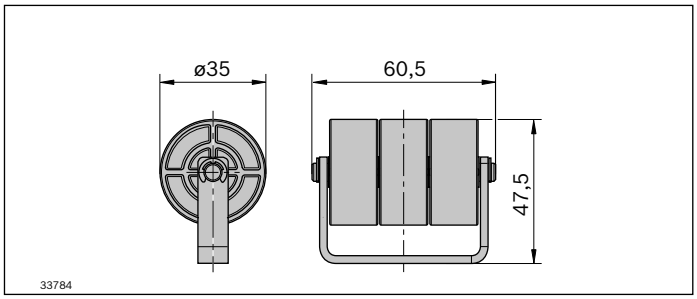
Notice:
The chain plate with roller cleat must be screwed to the basic chain link.

- ▶ A roller cleated chain D35 is created easily by mounting the roller cleat on the universal chain link (65-120). Drilling the basic chain links (160-320) allows for the simple attachment of the roller cleat. A mold cavity for accommodating a flat hexagon nut/screw M5 is present, see p. 21, 40
- ▶ For feeding without any effort for cycle time adjustment
- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21

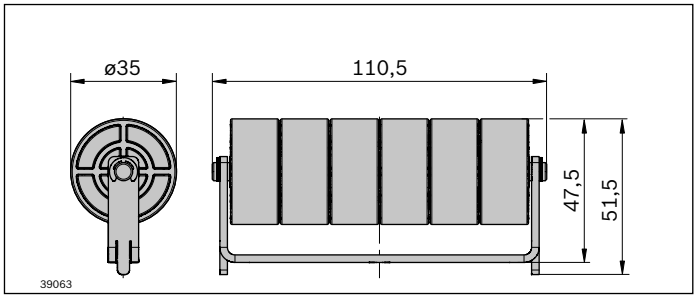
Required accessories:
- Universal chain links 65-120, see p. 18 and p. 38, basic chain links 160-320, see p. 20

Scope of delivery:
- Roll bar mounted, incl. fastening material

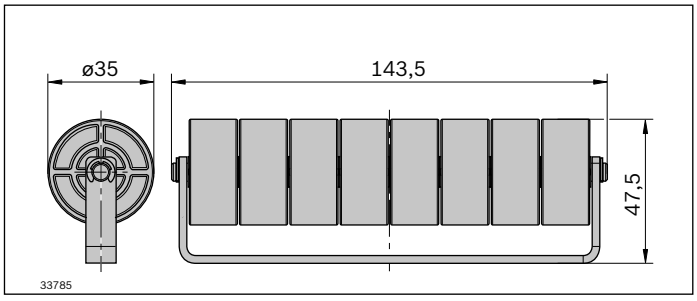
Material:
- Roller: POM, white
- Roller bracket, axle: Non-rusting steel 1.4301



Roller cleat D35		No.
65-120	1	**3 842 546 107**



Roller cleat D35		No.
160	1	**3 842 564 331**

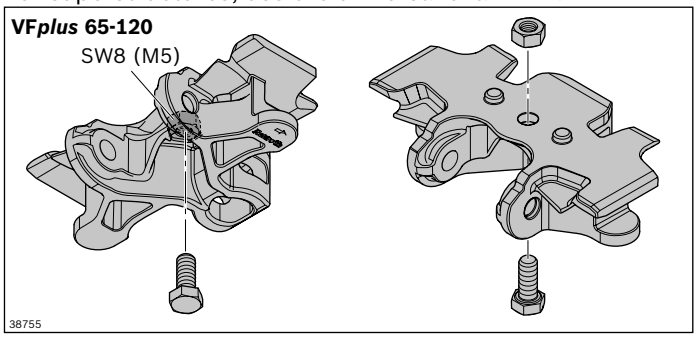


Roller cleat D35		No.
240-320	1	**3 842 553 028**

Notice for the attachment of structures

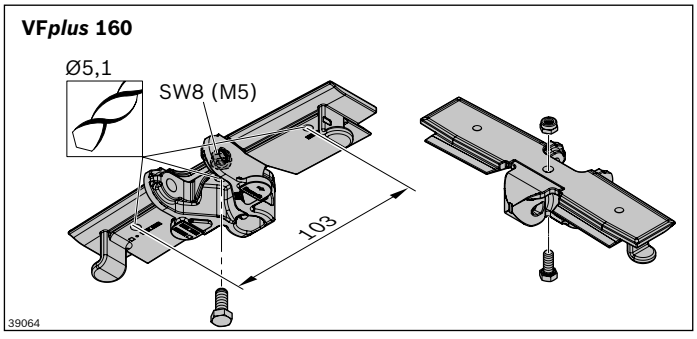
Notice VF*plus* 65-120:

For superstructures, use the universal chain link.



Notice VF*plus* 160:

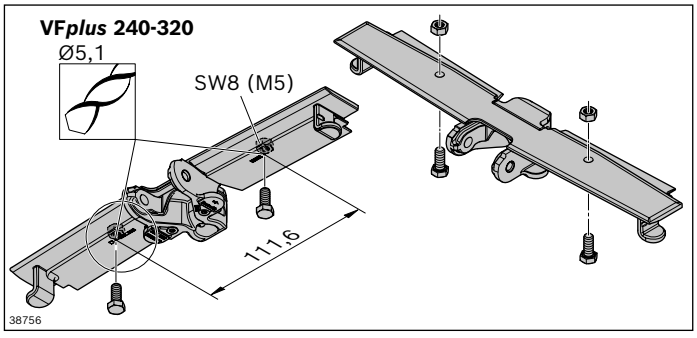
Roller cleat fixed with three bores



Note VF*plus* 240-320:

Risk of collision!

Only use the mounting points provided.



Layout instructions for roller cleated chains

Fig. A

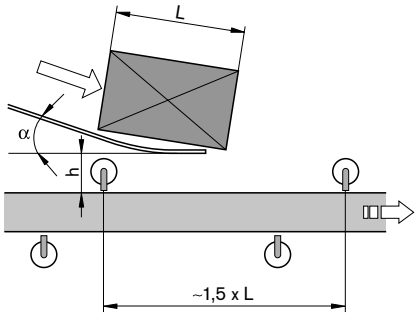
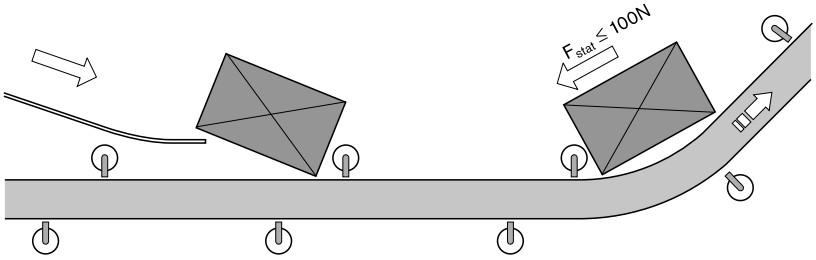
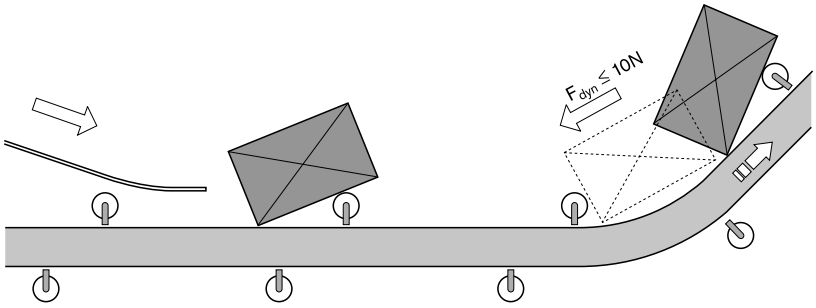


Fig. B



00123918

Fig. C



00123919

Roller cleated chain

During uphill transport of packaged, bulky products (e.g. boxes), the products can slide between the roller cleats via a chute to be diagonally "inserted" into the conveying direction from above. The product rolls into the next free pocket, which ensures continuous material flow without any expensive cycle time adjustment. The roller diameter is dependent on the size of the transported goods.

When planning, observe the following (see fig. **A**):

- Keep height of fall "h" and angle "α" as small as possible.
- The speed of the inserted product should be about the same as that of the conveyor system. Reduce higher speeds by braking (e.g. brushes) before inserting into the roller cleated chain.
  Always prevent the product from transmitting its kinetic energy to the roller cleats
- Feeding in the conveying direction of the roller cleated chain
- The distance of the roller cleat is approx. 1.5x product length (ensures curve mobility in vertical curves)
- Removal speed:
  2x product length x 1.5x product quantity/min

This ensures that each product has two pockets available to slide into, either forwards or backwards (see fig. **B**, **C**).

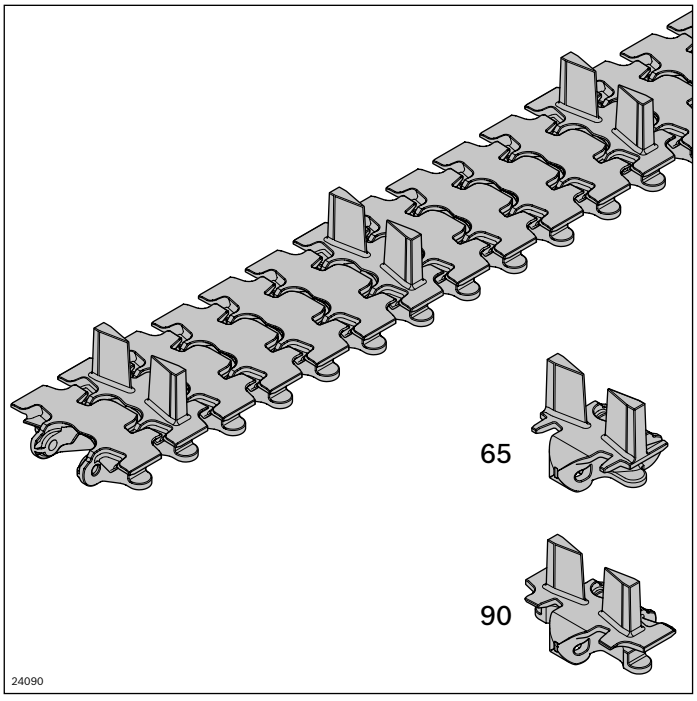
- Max. dynamic force of product when sliding backwards against the roller cleat: 10 N
- Max. static force due to adjacent product: 100 N

At higher forces, decrease the angle of inclination or reduce the speed of impact by installing individual static friction chain links between the roller cleats.

Cleated chain







The cleated chain facilitates the transport of products on uphill and downhill sections.

- The maximum gradient depends on the product geometry (test required)
- Accumulation operation not permitted
- Maximum chain tensile force: 1250 N
- AZ ≥ 2: Cleated chain supplemented with flat conveyor chain links (AZ = spacing distance)

- Extremely quiet chain running thanks to the patented chain design
- Materials meet the requirements of EU 10/2011 and FDA CFR 21
- The centrally divided cleat allows for the simple transfer of conveyed material at the section ends: A transfer area only needs to be recessed in the area of the cleat and can otherwise be used near to the submerging chain

Required accessories for individual chain links:

- Chain pin and pivot pin, see p. 37

Scope of delivery:

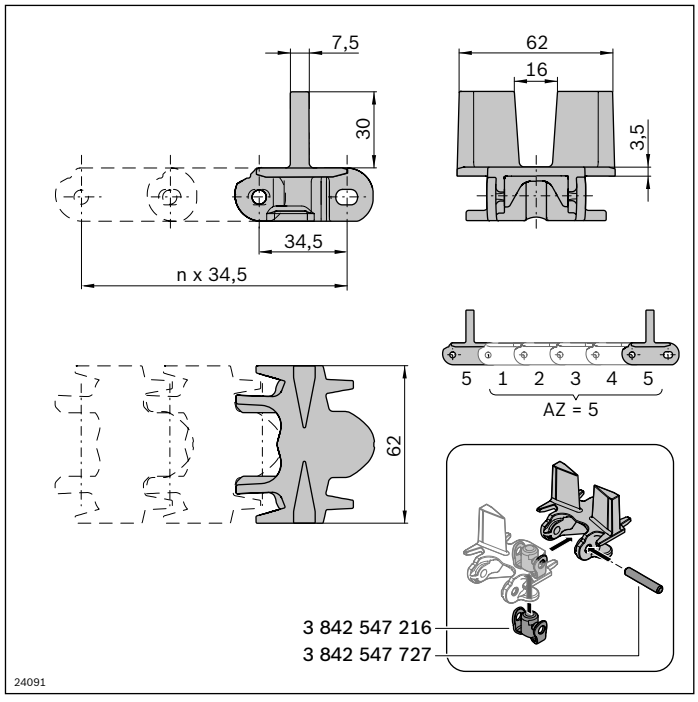
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:

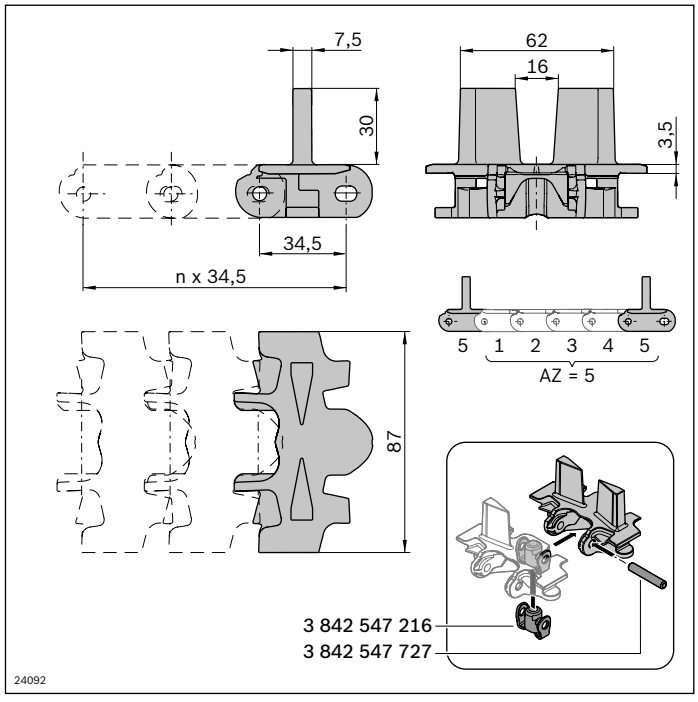
- Chain: Fully assembled

Material:

- Chain link: POM
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



Cleated chain VF*plus* 65	**L** (mm)		**No.**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 715/AZ**
Chain link		10	**3 842 546 015**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

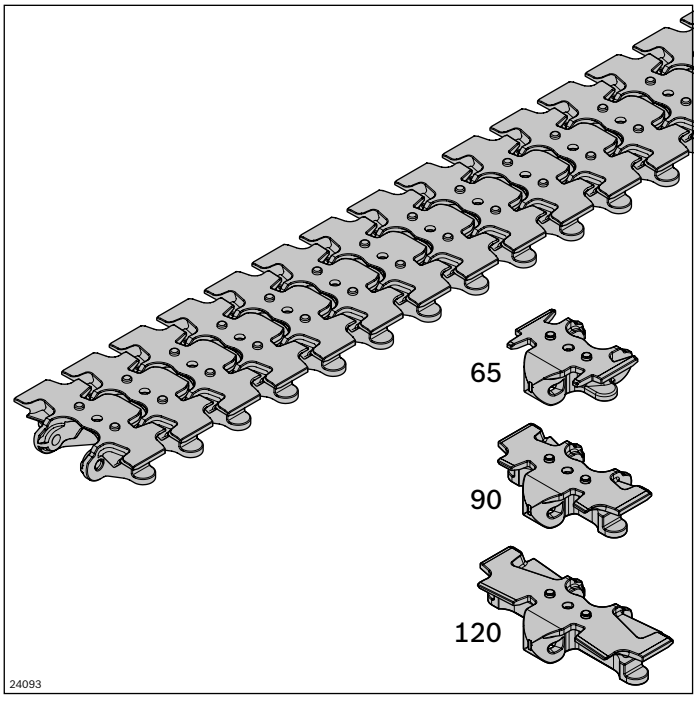


Cleated chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain; AZ = 2 ... 84	2898	1	**3 842 998 716/AZ**
Chain link		10	**3 842 546 016**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Universal chain







The universal chain serves as mounting base for the assembly of customer-specific cleats or superstructures.

- The maximum gradient depends on the customer-specific cleats (test required)
- Accumulation operation not permitted
- Maximum chain tensile force: 1250 N
- AZ ≥ 2: Universal chain supplemented with flat conveyor chain links
  AZ = 1: Complete conveyor chain with universal chain links
  (AZ = spacing distance)

- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials meet the requirements of EU 10/2011 and FDA CFR 21
- ▶ A mold cavity for mounting a flat M5 hexagon nut on the underside of the chain plate as well as the integrated anti-torsion element (pin) facilitate the simple, centered attachment of superstructures, see p. 40

Required accessories for individual chain links:

- Chain pin and pivot pin, see p. 39

Optional accessories:

- Static friction chain link, see p. 22
- Accumulation roller chain link D11, see p. 26
- Roller cleated chain link D20, see p. 30
- Cleated chain link, see p. 36

Scope of delivery:

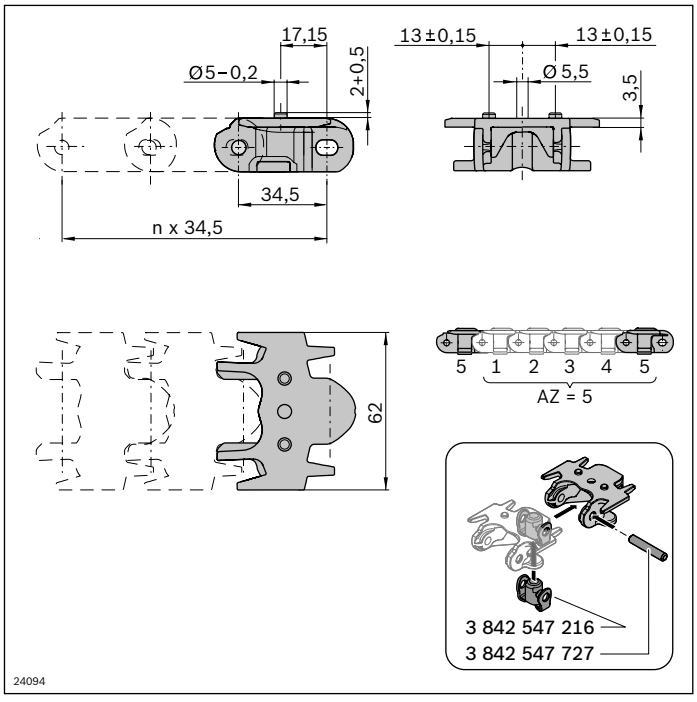
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:

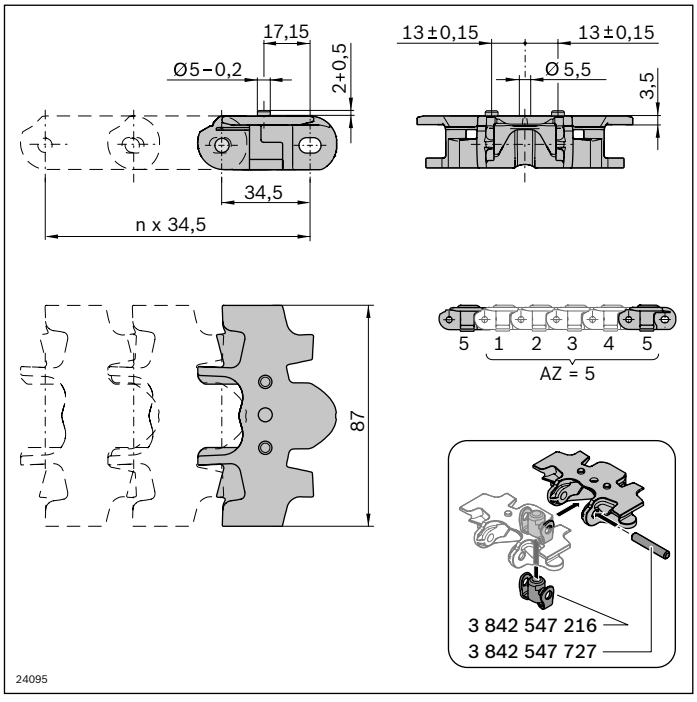
- Chain: Fully assembled

Material:

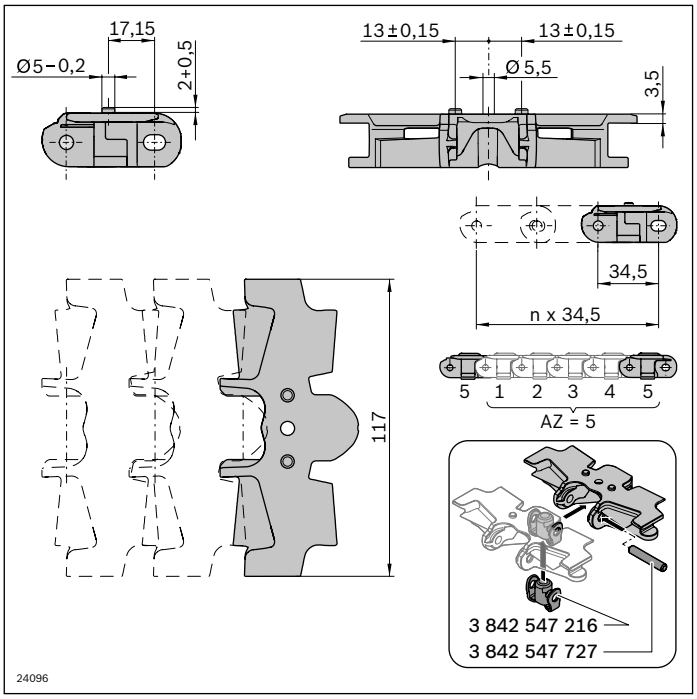
- Chain link: POM
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



Universal chain VF*plus* 65	**L** (mm)		**No.**
Conveyor chain; AZ = 1 ... 84	2898	1	**3 842 998 712/AZ**
Chain link		10	**3 842 546 012**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Universal chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain; AZ = 1 ... 84	2898	1	**3 842 998 713/AZ**
Chain link		10	**3 842 546 013**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

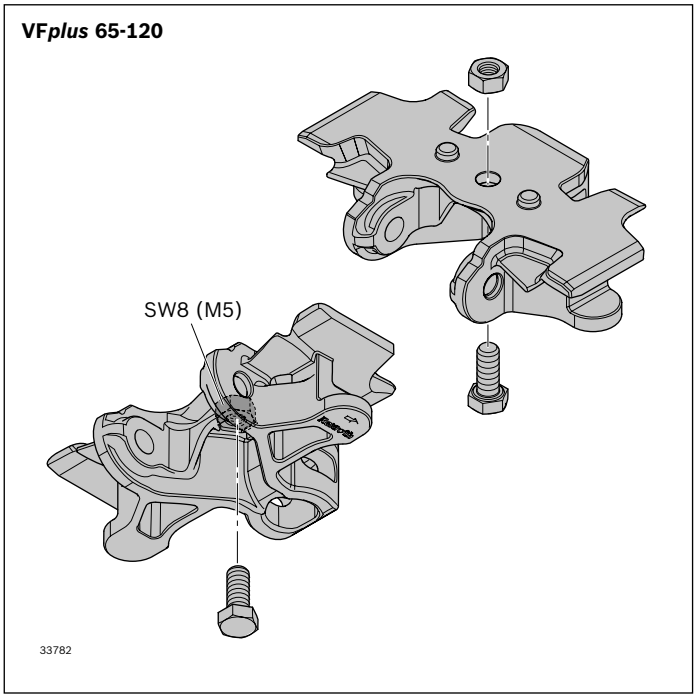


Universal chain VF*plus* 120	**L** (mm)		**No.**
Conveyor chain; AZ = 1 ... 84	2898	1	**3 842 998 714/AZ**
Chain link		10	**3 842 546 014**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Notice for the attachment of structures

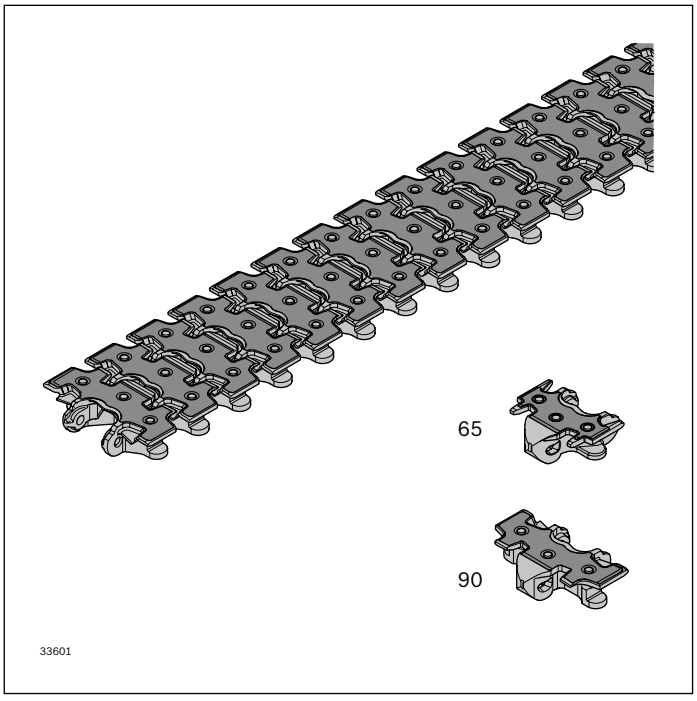
VF*plus* 65-120

Notice: For superstructures, use the universal chain link.



Steel-plated conveyor chain





The steel-plated conveyor chain is used for sharp-edged parts and products with a rough surface.

- Transport on ascending or descending sections up to about 7° possible, depending on the product (test required)
- Accumulation operation permitted, depending on the product
- Maximum chain tensile force: 1250 N
- Size: 65, 90
- Combination with chain links of different chain types is not permitted

Notice: We recommend using steel sliding rails (see p. 58), as abrasive particles cause increased wear.

Notice:
Not suitable for standard WT system VarioFlow *plus*.

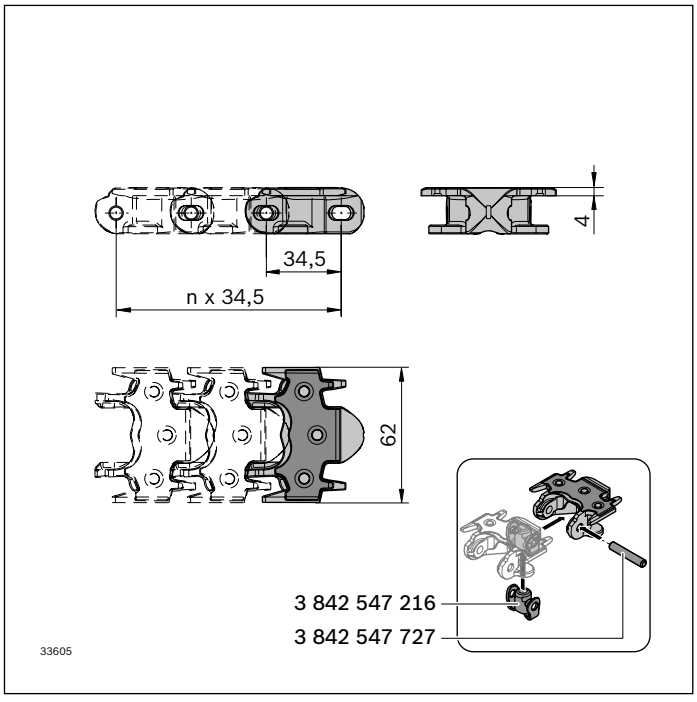
- The stainless version is also suitable for use in wet ambient conditions
- This chain version offers smooth running and less maintenance (no lubrication) compared with completely steel chains

- Extremely quiet chain running thanks to the patented chain design
- Materials meet the requirements of EU 10/2011 and FDA CFR 21

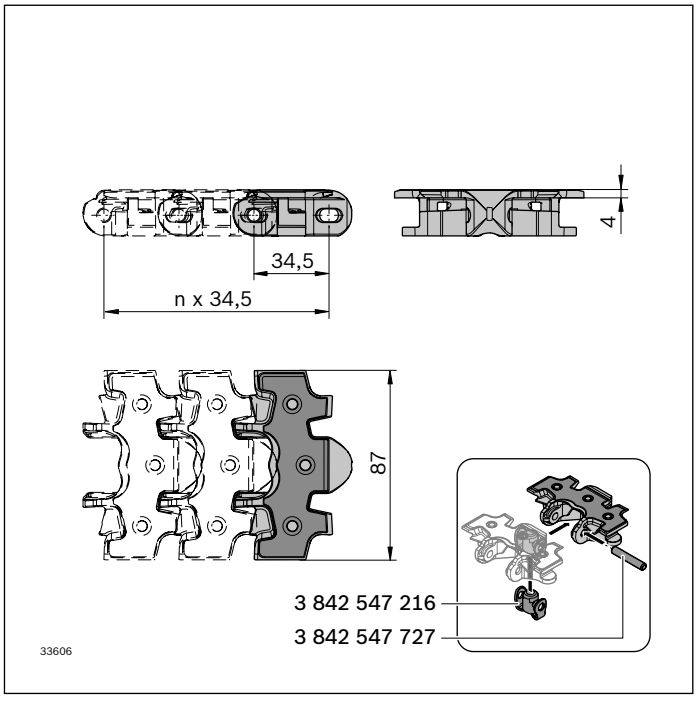
Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- Chain: Fully assembled

Material:
- Chain link: POM, white
- Steel coating: Non-rusting steel 1.4301, HV ≥ 480
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66



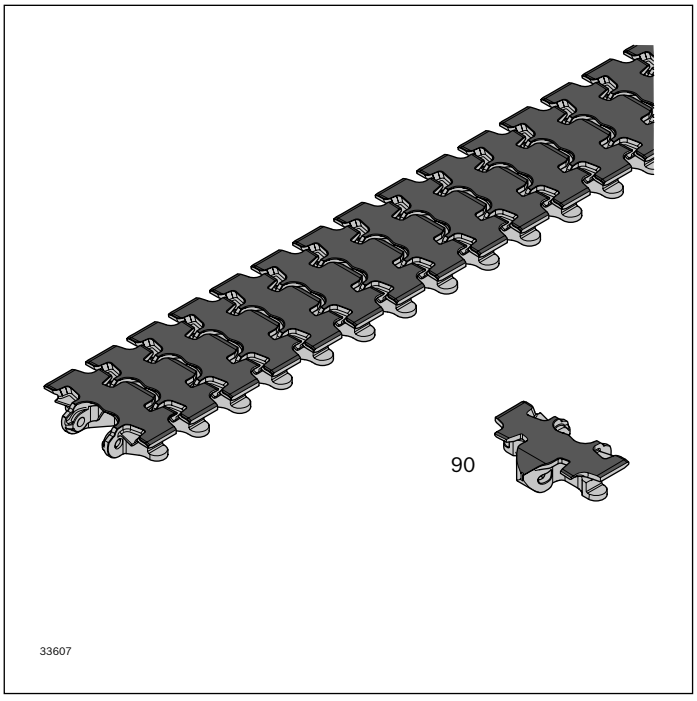
Steel-plated conveyor chain VF*plus* 65	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 090**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Steel-plated conveyor chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 091**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Flocked chain





- Soft PA-flocking 3.3 dtex for sensitive product surfaces
- Extremely quiet chain running thanks to the patented chain design

The flocked chain is used on sensitive transport surfaces (e.g. gloss, clear, barcode, raised printing).

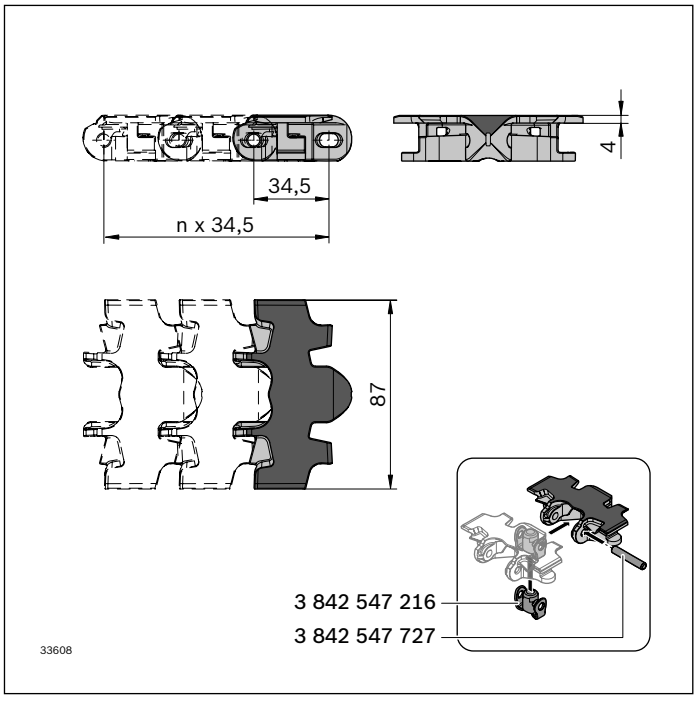
- Transport on ascending or descending sections up to about 7° possible, depending on the product (test required)
- For products susceptible to jams
- Only dry use
- Maximum permissible tracking force: 5 N/chain link
- Maximum chain tensile force: 1250 N
- Size: 90
- Not suitable for sharp-edged products
- Combination with chain links of different chain types is not permitted

Notice:
Not suitable for standard VarioFlow *plus* WT system.

Scope of delivery:
- Chain: Complete, incl. chain pin and pivot pin

Material:
- Chain link: POM, white
- Flocking: PA 3.3 dtex, anthracite
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66

Condition on delivery:
- Chain: Fully assembled

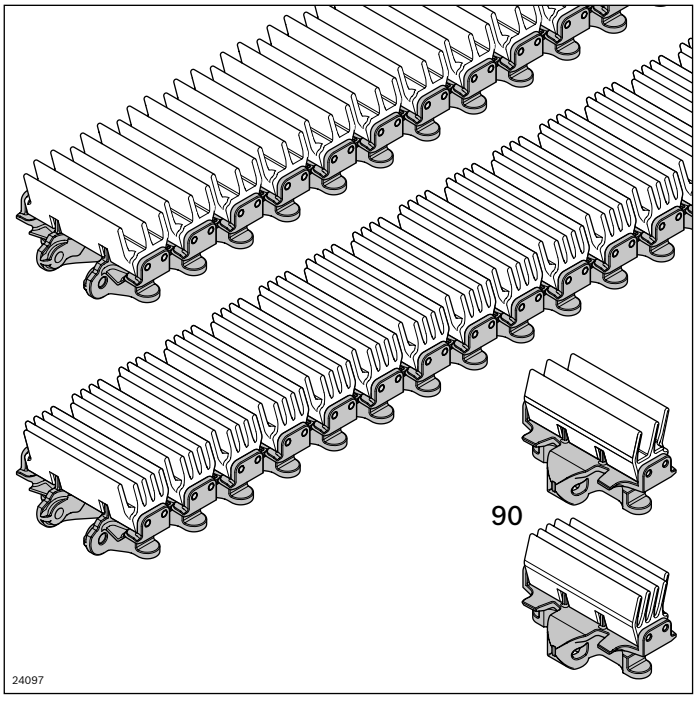


Flocked chain VF*plus* 90	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 553 023**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Clamping chain







- ▶ Extremely quiet chain running thanks to the patented chain design
- ▶ Materials comply with the requirements of FDA CFR 21

The clamping chain clamps products to enable transport across different heights or distances.
Particularly when the product to be transported
- – Cannot be transported vertically on a standard conveyor due to its design
- – Cannot be transported up steep gradients with other chains due to its center of gravity
- – Has sensitive surfaces that would be damaged by lateral or upper guides
- – Must not slip during vertical transport
- – Should be transported without synchronization

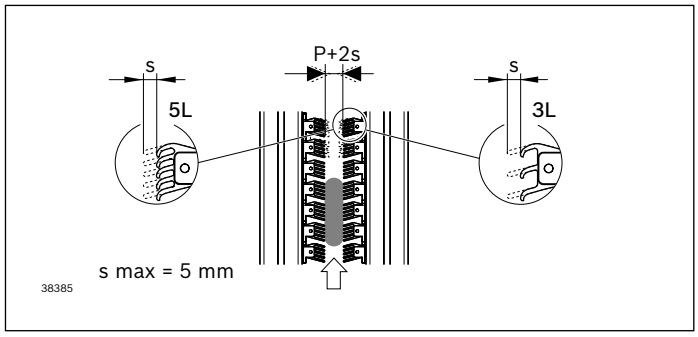
- – Transport options with clamping chain depend on the product geometry (test required)
- – Accumulation operation not permitted
- – Maximum chain tensile force: 1250 N
- – Only suitable for dry operation
- – Chain available in two versions:
  5 plates (5L) for products insensitive to pressure
  3 plates (3L) for products sensitive to pressure
  For information on contact pressure in the wedge conveyor, see p. 47
- – An assembly module is required for assembling and disassembling the chain
- – The plates are not suitable for transporting sharp-edged objects

See also "Setting up a wedge conveyor" on page 206.

Scope of delivery:
- – Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:
- – Chain: Fully assembled

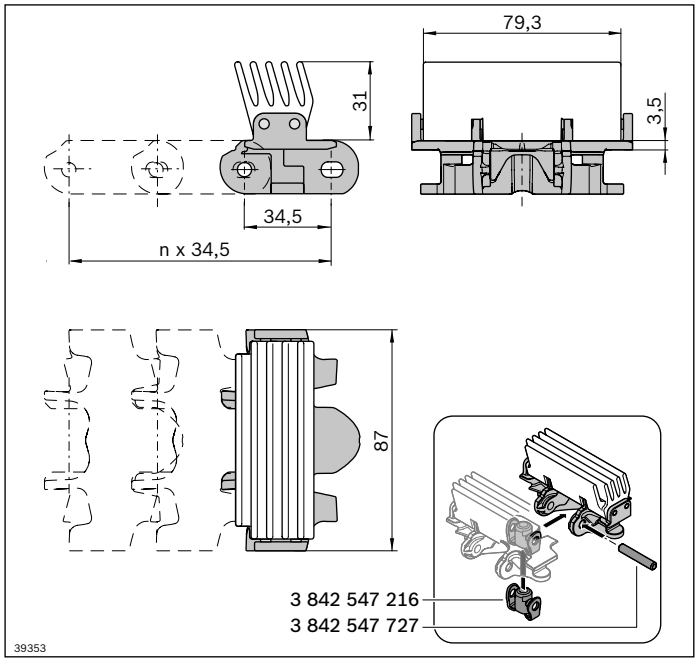
Material:
- – Chain link: POM
- – Plates: TPE, Shore A 55
- – Chain pin: Non-rusting steel 1.4301
- – Pivot pin: PA66



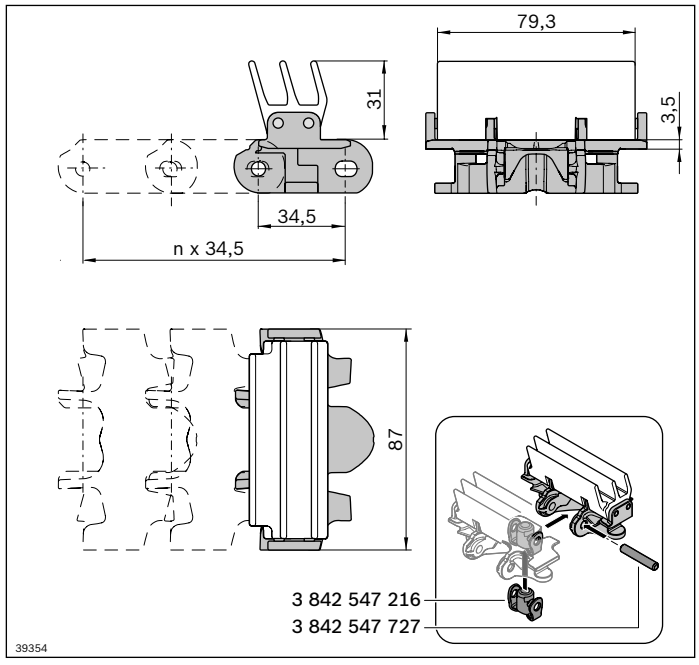
Permissible product weight per chain pair:
5L: 15 N; 3L: 9 N

Max. product length (depending on the product height):
in curve wheel: 100 mm
in curve R500: 250 mm
in curve R700: 400 mm

"s" (= pressing pressure) depends on size, weight, and surface finish of the product. Tests may be necessary.
P = product width



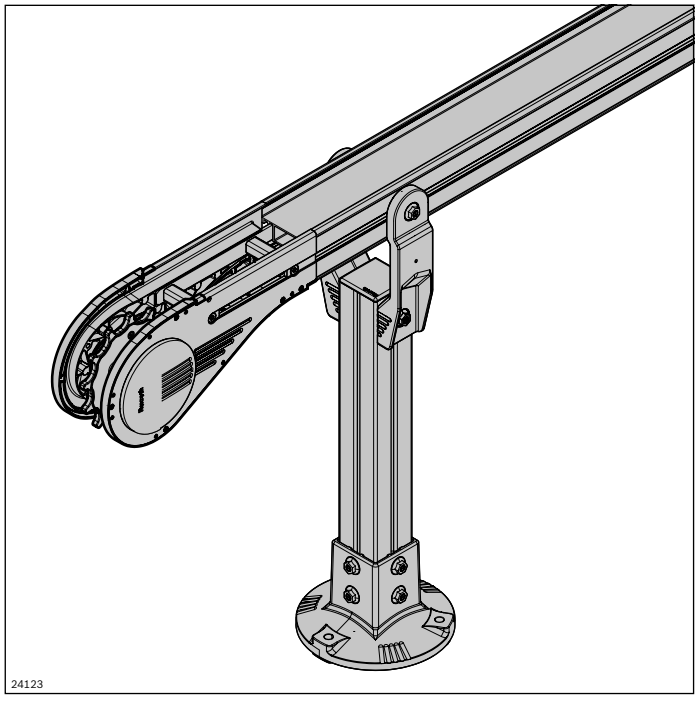
Clamping chain VF*plus* 90 5L	**L** (mm)		**No.**
Conveyor chain	2898	1	**3 842 546 086**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



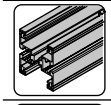
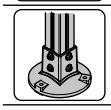
Clamping chain VF*plus* 90 3L	**L** (mm)		**No.**
Conveyor chain	2898	1	**3 842 546 087**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Aluminum system (AL) VarioFlow *plus*



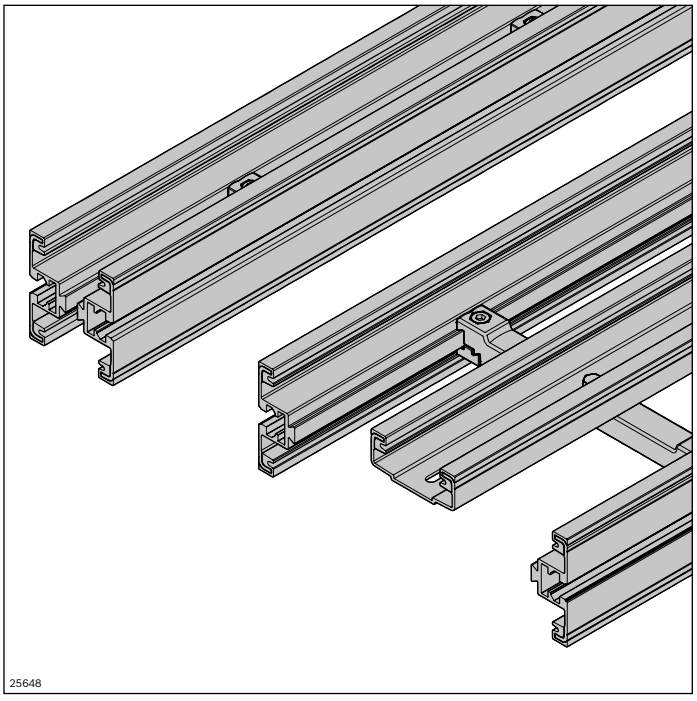


- Economical conveyor layout for a wide range of applications in the automotive and electronics industries, machine linking, or in the areas of food & packaging and health & care
- Mounting of sliding rails without rivets or the need to machine the track bearing surfaces
- Minimal sliding rail interruptions
- FDA-compliant, low-friction materials for components subject to constant friction
- Standardized components that can be used universally
- Continuous product range in the sizes 65, 90, 120, 160, 240, 320

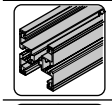
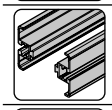
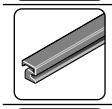
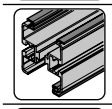
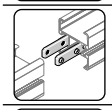
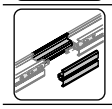
	**Sections AL**	**50**
	**Curves AL**	**66**
	**Drive and return unit AL**	**76**
	**Leg sets AL**	**114**

Sections AL



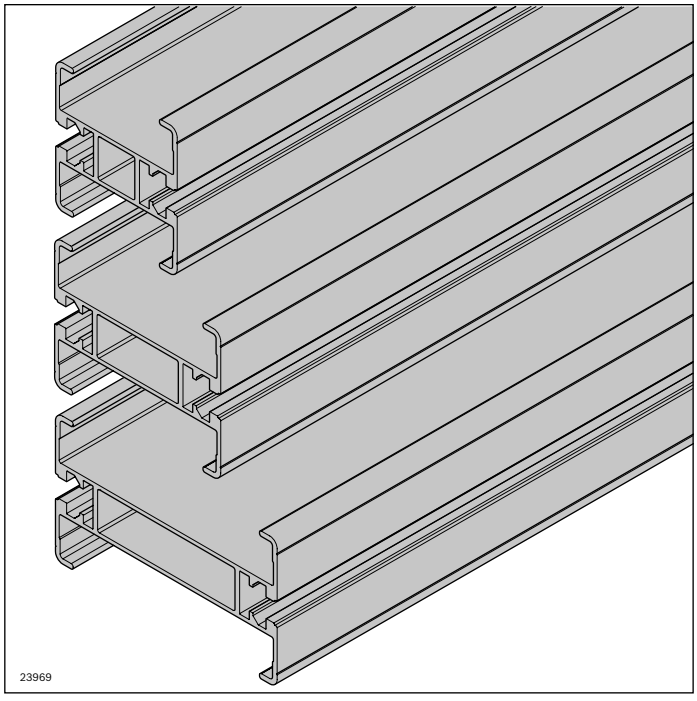


- Simple assembly of sections thanks to smart connection technology
- Mounting of sliding rails without rivets or the need to machine the track bearing surfaces
- Sliding rails with optimized anti-friction properties and FDA-compliant materials
- One sliding rail cross-section for all sizes
- Connection technology with plug-through screws
- Few screwed connections
- Easy to clean thanks to ample draining surfaces
- One profile cross-section for open construction in all sizes
- Closed profile in the sizes 65, 90, 120
- Use of a support profile from size 160

	**Section profile AL closed**	**52**
	**Section profile AL open**	**54**
	**Sliding rail**	**56**
	**Steel sliding rail**	**58**
	**Profile connector AL**	**60**
	**Assembly module AL**	**62**

Section profile AL closed





The section profile is the supporting element for the construction of straight conveyor sections and allows for the attachment of all required components.

– Size: 65, 90, 120

- Slot on the inside for attaching main components such as drive/return unit, curves, etc.
- Slot on the outside for fastening lateral guides, supports, or other accessories
- If necessary, the sliding rail can be mounted laterally using the centering groove as a drilling aid
- Special constructions can be attached quickly and simply with components from the modular aluminum framing system through the 10 mm outside slot.

Required accessories:

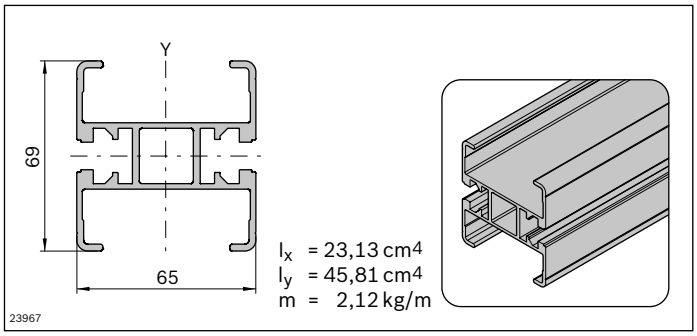
– Sliding rail, see p. 56
– Profile connector, see p. 60

Optional accessories:

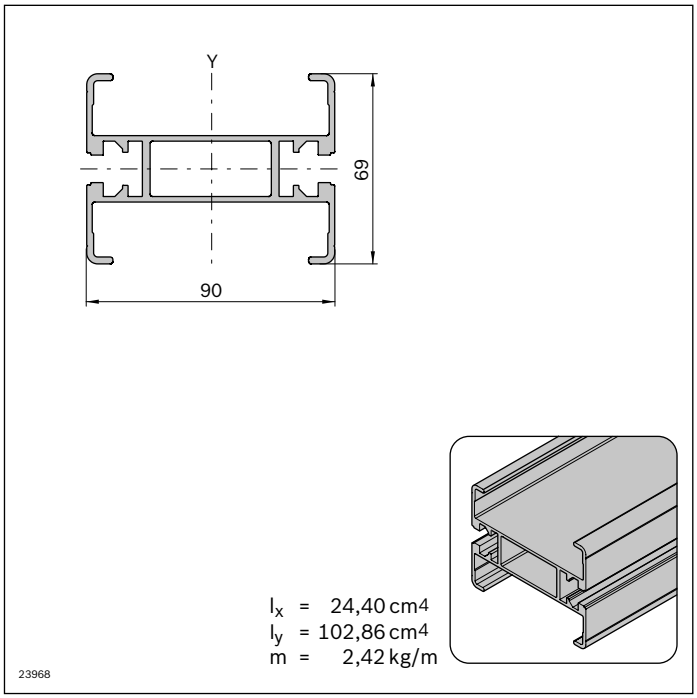
– Cover profile, see p. 63

Material:

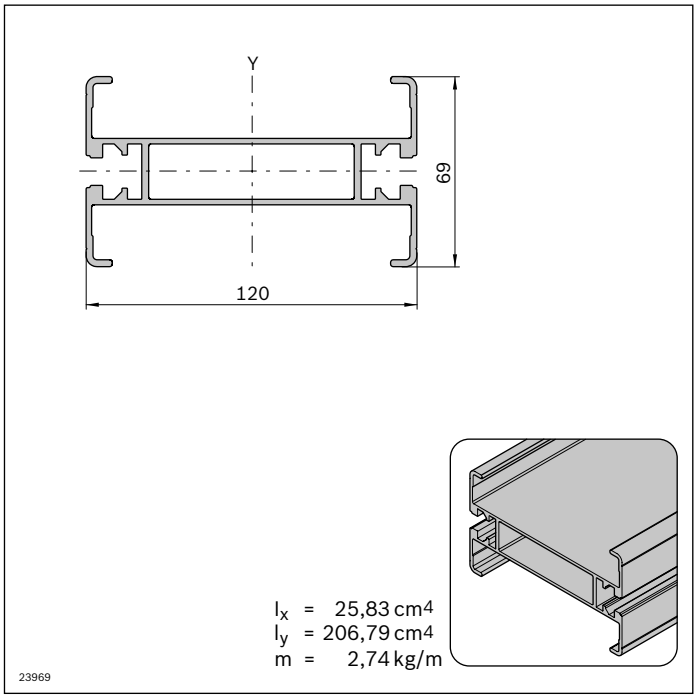
– Aluminum; natural, anodized



Section profile VF*plus* 65 AL	L (mm)	No.
12 pcs	6070	**3 842 546 643**
1 pc	50 ... 6000	**3 842 996 022/L**



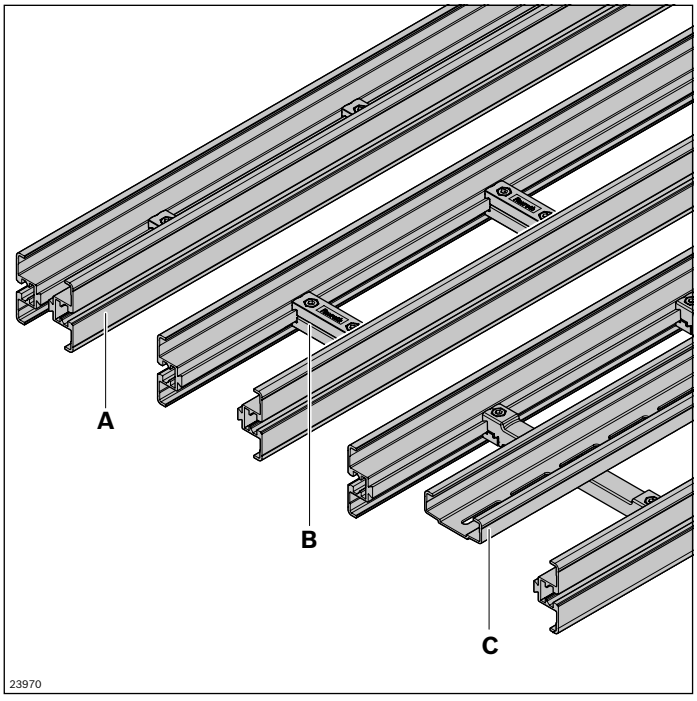
Section profile VF*plus* 90 AL	L (mm)	No.
12 pcs	6070	**3 842 546 644**
1 pc	50 ... 6000	**3 842 996 023/L**



Section profile VF*plus* 120 AL	L (mm)	No.
6 pcs	6070	**3 842 546 645**
1 pc	50 ... 6000	**3 842 996 024/L**

Section profile AL open
Cross connector AL
Support profile AL





The open construction of the section profile (**A**) allows dirt or foreign particles to be removed directly.
To build a conveyor section, 2 open section profiles are required, which are connected by cross connectors.
A support profile is necessary for sizes 160 and up.
– Same profile cross-section across all sizes (65-320)

The cross connector (**B**) is the connection of two profile halves to make an open section profile. The size is determined by using cross connectors of different lengths.

From size 160, a support profile (**C**) is required.
The support profile is attached to the existing cross connectors.

Section profile AL open (A)
- Slot on the inside for attaching main components such as drive/return unit, curves, etc.
- A 10 mm outside slot for simple fastening of lateral guides, leg sets, or components from the modular aluminum framing system
- If necessary, the sliding rail can be mounted laterally using the centering groove as a drilling aid

Required accessories:
– **A:** Cross connector, see p. 54; sliding rail, see p. 56; profile connector, see p. 60; support profile from size 160, see p. 55

Optional accessories:
– **A:** Cover profile, see p. 63

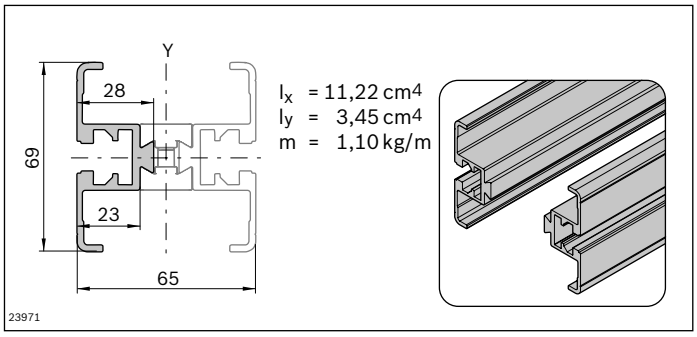
Cross connector AL (B)
- Cross connector with mounting option for support profile

Support profile AL (C)
- Elongated holes at regular intervals for fastening

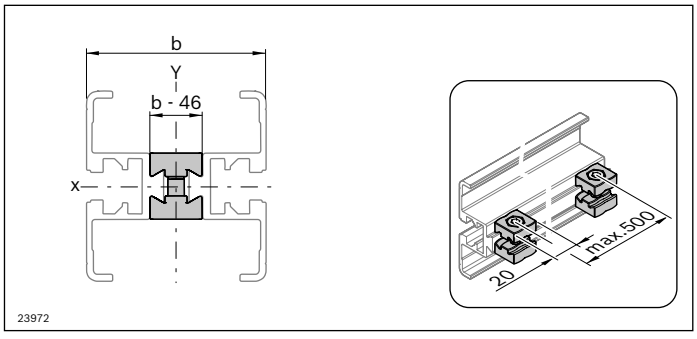
Scope of delivery:
– **B:** Complete, incl. screw for attaching the support profile

Condition on delivery:
– **A, B:** Assembly required

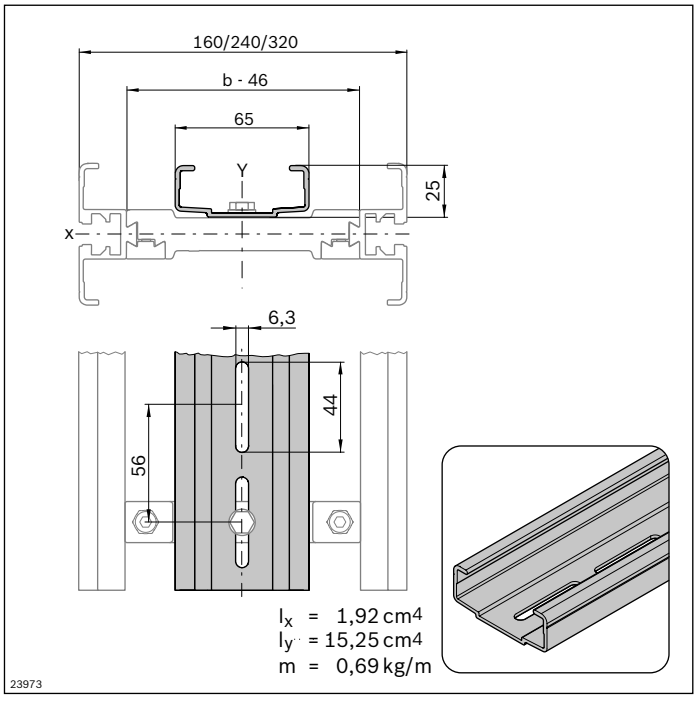
Material:
– **A**, **C:** Aluminum; natural, anodized
– **B:** Diecast aluminum



Section profile VF*plus* AL open	L (mm)	No.
12 pcs	6070	**3 842 546 647**
2 pcs	3000	**3 842 546 670**
1 pc	50 ... 6000	**3 842 996 026/L**



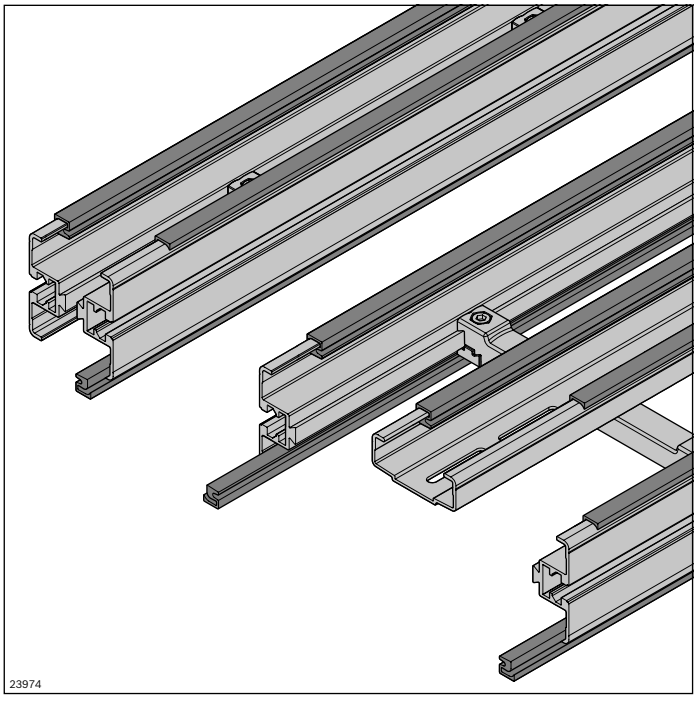
Cross connector AL	b (mm)		No.
VF*plus* 65	65	10	**3 842 546 672**
VF*plus* 90	90	10	**3 842 546 673**
VF*plus* 120	120	10	**3 842 546 674**
VF*plus* 160	160	10	**3 842 546 675**
VF*plus* 240	240	10	**3 842 546 676**
VF*plus* 320	320	10	**3 842 546 677**



Support profile VF*plus* AL	L (mm)	No.
12 pcs	6070	**3 842 546 705**
1 pc	3000	**3 842 547 904**
1 pc	75 ... 6000	**3 842 996 028/L**

Sliding rail





- Easy assembly – simply clip onto the section profile
- Secured against axial shifting with lateral screw fittings
- Gliding surface machining: Not required
- Material
  - with sliding rail Premium, Advanced: FDA CFR 21
  - with sliding rail Basic: EU 10/2011, FDA CFR 21
- One cross-section for all section profiles AL and STS

Required accessories:
- Sliding rail assembly tool, see p. 288
- Sheet metal screw 2.9x9.5 DIN 7982; DIN EN ISO 7050 see p. 57
  1 screw for each sliding rail section

Material:
- PE-UHMW

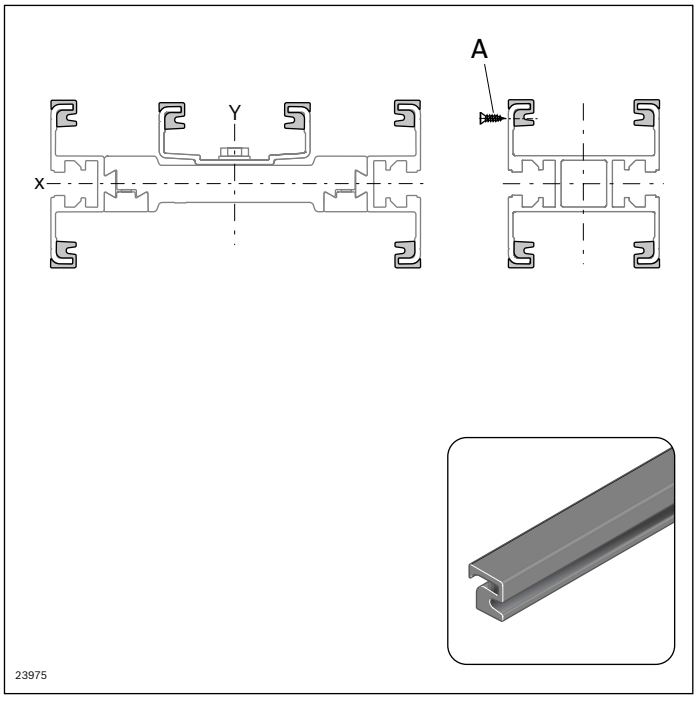
The sliding rail is clipped into the section profile and guides the conveyor chain.
Lateral securing means the sliding surface does not need to be machined. Wear and noise level are thus reduced to a minimum.

Three sliding rails with different main areas of application are available:
- Basic: Straight sections and curve wheels, v_{max} 60 m/min
- Advanced: Sections with sliding curves, v_{max} 60 m/min, clean room
- Premium: Sections with sliding curves, v_{max} 100 m/min, clean room

For the selection of sliding rails, see the "Technical data" chapter on page 300. See also sliding rails ESD on page 192 and steel sliding rails on page 58.

Extend the sliding rail over the component interfaces to ensure minimum wear and noise emissions. Interruptions to the profile or component connection must be avoided. If an interruption is necessary after 10 m, the sliding rail must be attached laterally with a sheet metal screw (**A**).

Notice: After the sliding curves, an interruption is provided as an expansion joint in the inner curve area.



Sliding rail VF*plus*	**Color**	**L** (mm)		**No.**
Premium	gray	30000	1	**3 842 546 116**
Advanced	white	30000	1	**3 842 549 727**
Basic	blue	30000	1	**3 842 549 730**

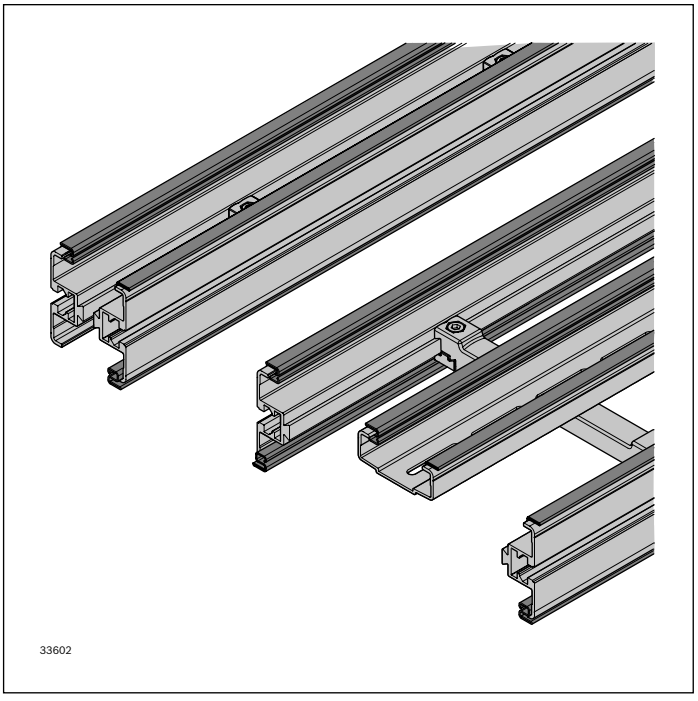
See also sliding rail ESD, see p. 192
and steel sliding rail, see p. 58.

Sheet metal screw		**No.**
A	100	**3 842 547 908**

Steel sliding rail







- ▶ Easy assembly - simply clip onto the section profile
- ▶ Secured against axial shifting via lateral fixing
- ▶ Gliding surface machining: Not required
- ▶ One cross-section for all AL and STS section profiles

Required accessories:
- – Pop rivet D3x8 mm, see p. 59
- – Number of rivets:
  - • Straight sliding rail section: 1 rivet
  - • 30°/45° curves: 2 rivets
  - • 90° curve: 3 rivets
  - • 180° curve: 6 rivets

Material:
- – Non-rusting steel 1.4301

The steel sliding rail is suitable for use in abrasive ambient conditions (reduced service life of the conveyor chain). It is clipped in to the section profile and fixed in place at the side via a pop rivet.
The side fixing reduces the friction and the noise level to a minimum. The steel sliding rail butt joints are merely chamfered. The Advanced sliding rail is used in the lower run of the curve wheels.
- – Steel sliding rail straight section (**A**), not bendable
- – Steel sliding rail curve wheels (**B**) 30°, 45°, 90°, 180°
- – Dry, wet and abrasive environment
- – Size:
  - • Straight section: All track widths
  - • Curve wheel 65, 90, 120
- – Not suitable for use in horizontal sliding curves
- – Only Advanced or Premium sliding rails can be used in vertical curves

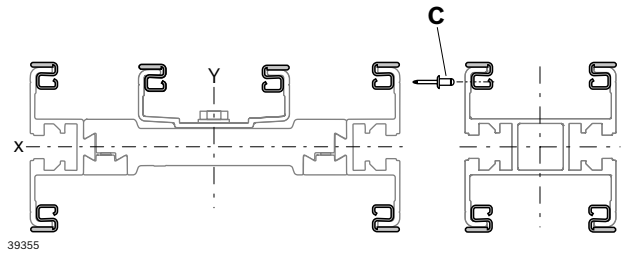
For the selection of sliding rails, see the "Technical data" chapter on page 300.

Notice: Ensure gap-free assembly (without expansion joint), as foreign bodies could otherwise get trapped in the gap and damage the chain.

Notice: Non-destructive dismantling of the steel sliding rail is not possible. A target separation point of the system must therefore be defined before assembly. Overlap the steel sliding rail by 10 ... 15 mm on the section profile separation point. This ensures that it is still possible to pull apart the two parts.

Extend the steel sliding rail over the component interfaces to ensure minimum wear and reduced noise emissions. Interruptions directly on the profile or component connection must be avoided.

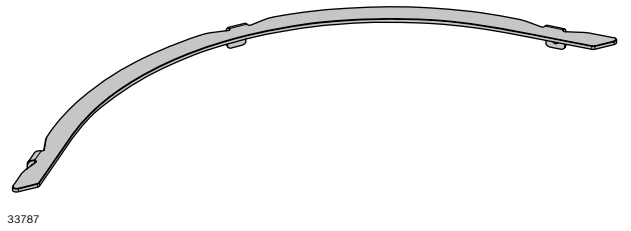
A



Sliding rail VF*plus* Steel	**L** (mm)		**No.**
A Straight section	3000	1	**3 842 552 970**

Pop rivet D3x8mm		**No.**
C	100	**3 842 557 004**

B



Steel sliding rail; curve wheel VF*plus* 65		**No.**
B Steel 30°	1	**3 842 557 030**
B Steel 45°	1	**3 842 557 031**
B Steel 90°	1	**3 842 552 972**
B Steel 180°	1	**3 842 552 973**

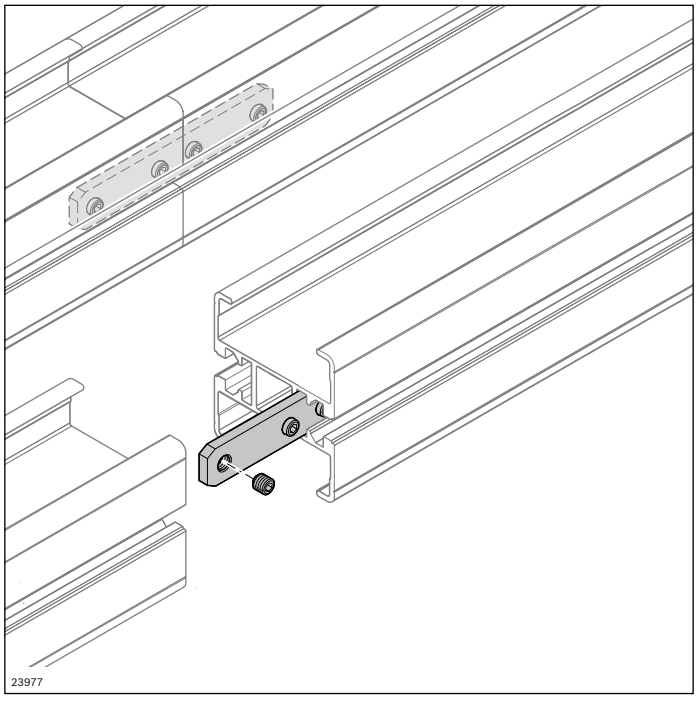
Steel sliding rail; curve wheel VF*plus* 90		**No.**
B Steel 30°	1	**3 842 557 032**
B Steel 45°	1	**3 842 557 033**
B Steel 90°	1	**3 842 552 974**
B Steel 180°	1	**3 842 552 975**

Steel sliding rail; curve wheel VF*plus* 120		**No.**
B Steel 30°	1	**3 842 557 034**
B Steel 45°	1	**3 842 557 035**
B Steel 90°	1	**3 842 557 036**
B Steel 180°	1	**3 842 557 037**

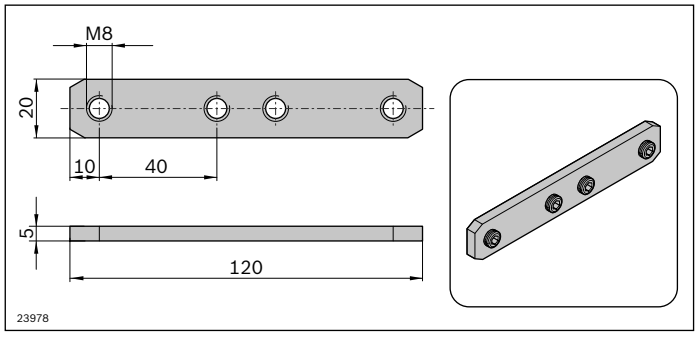
Pop rivet D3x8mm		**No.**
C	100	**3 842 557 004**

Profile connector AL





Two profile connectors are used to connect the end faces of the section profiles. The profile connector is fixed in the interior slot, so that the slot on the outside is available for all kinds of superstructures.



Profile connector VF*plus* AL		**No.**
	10	**3 842 530 277**

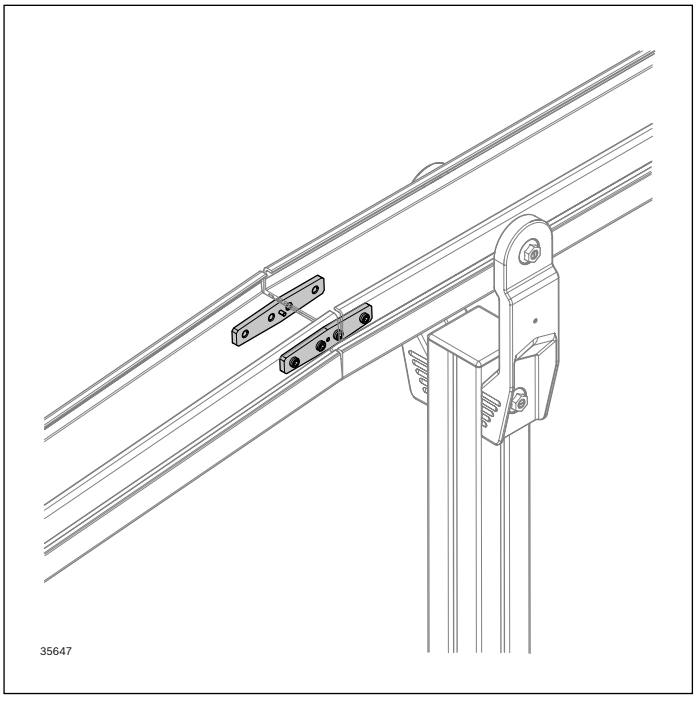
Scope of delivery:
– Complete

Material:
– Steel; zinc-plated

Condition on delivery:
– Screws pre-assembled and secured

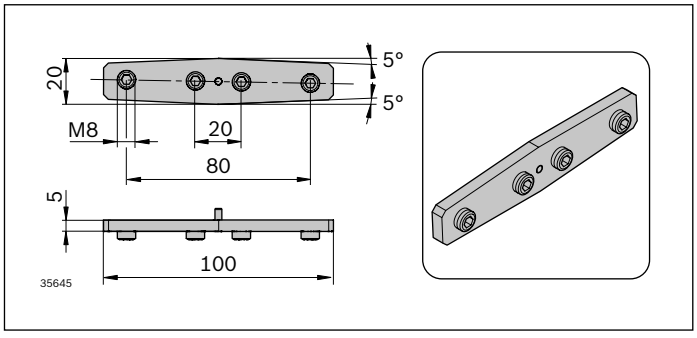
Profile connector AL adjustable 0-5°





The adjustable profile connector is suitable for cost-effectively adjusting the vertical inclination of section profiles to an angle of 0-5°.
The section profiles do not require a miter cut.
For a smooth transition of the chain, only the sliding rail is pulled over the interfaces of the section profiles.
Thanks to the integrated stop, the profile connector can be fastened precisely in the central position.
The profile connector is fixed in the interior slot, so that the slot on the outside is available for all kinds of superstructures.

- Size: 65, 90, 120
- Leg distance max. 300 mm from the cut edge
- Requires the use of the sliding rails "Advanced" or "Premium"
- Only a rigid connection is permitted (not as a pivot point for height adjustment)
- Can only be connected to section profiles and horizontal sliding curves



Profile connector ADJ 0-5° SET		No.
	Set	**3 842 559 130**

Scope of delivery:

- Complete (set contains two profile connectors)

Material:

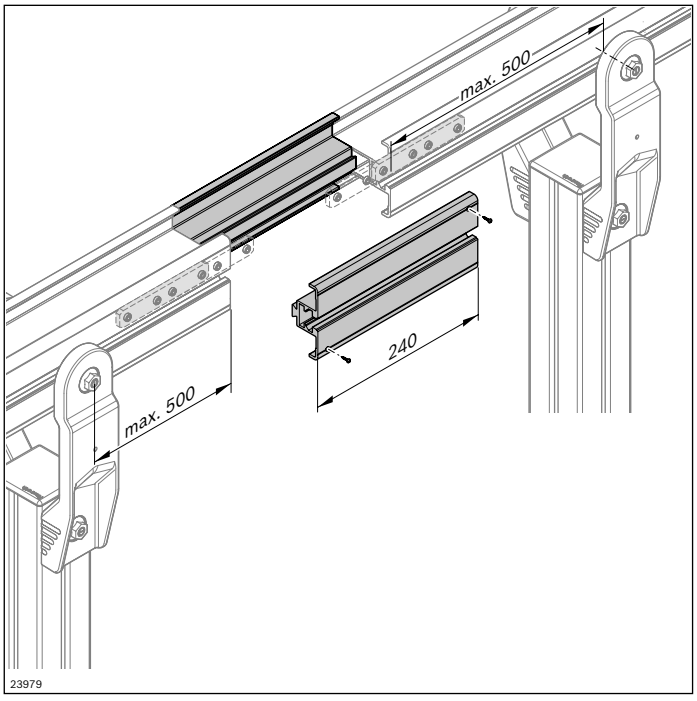
- Steel; zinc-plated

Condition on delivery:

- Screws pre-assembled and secured

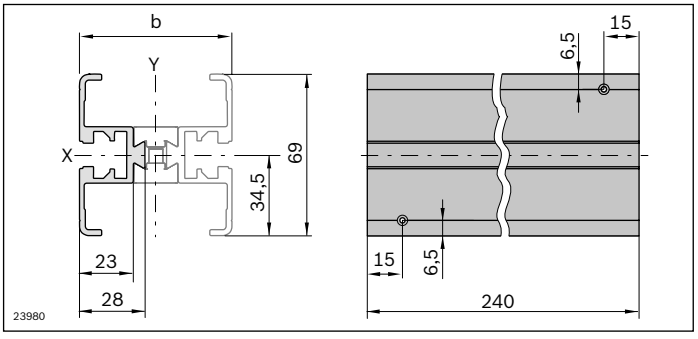
Assembly module AL





The assembly module is used for inserting and closing or opening the chain. It can be installed at any point on the conveyor section that is easy to access in operation.
The assembly module is intended for sections with drives without a chain bag (e.g. wedge conveyor, curve wheel drive).
For attachment options, see matrix on page 313

- Max. distance from the nearest leg sets on both sides is 500 mm
- The support profile with sliding rail is not interrupted in the assembly module to increase the smooth running
- Sliding rail interruption is only required on the side to be opened



	L (mm)		**No.**
Assembly module VF*plus* AL		1	**3 842 547 899**
Sliding rail VF*plus* Premium	30000	1	**3 842 546 116**
Sliding rail VF*plus* Advanced	30000	1	**3 842 549 727**
Sliding rail VF*plus* Basic	30000	1	**3 842 549 730**
Sliding rail VF*plus* Steel	3000	1	**3 842 552 970**
Sliding rail VF*plus* ESD	30000	1	**3 842 557 000**

Required accessories:
- Sliding rail, see p. 56, 58, 192

Optional accessories:
- Cover profile, see p. 63

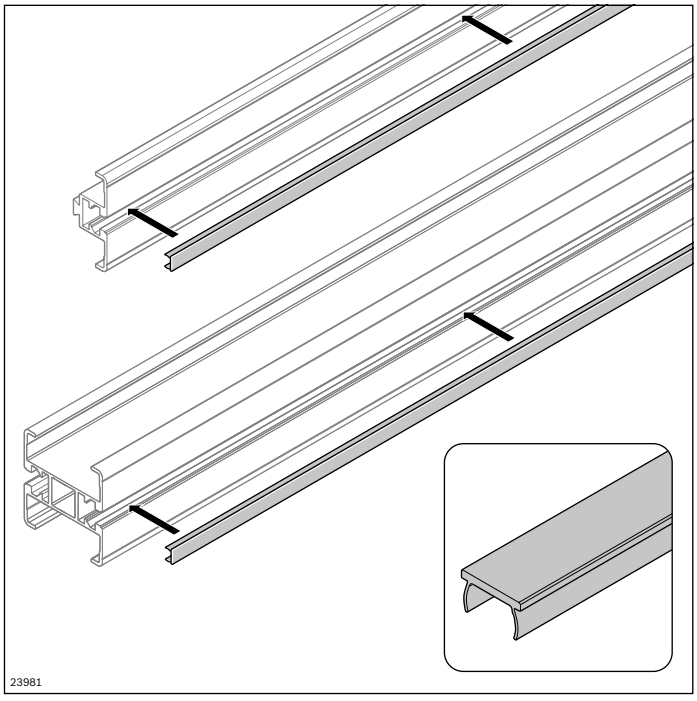
Scope of delivery:
- Including 4 profile connectors and sheet-metal screws for fastening the sliding rail

Condition on delivery:
- In single parts

Material:
- Aluminum; natural, anodized
- Profile connector: Steel; zinc-plated

Cover profile





Cover profile to improve system design, to fix cables routed in the profile slot, and to protect the profile slot against contamination

Material:
- AL: Aluminum; natural, anodized
- PVC: Hard PVC; colored

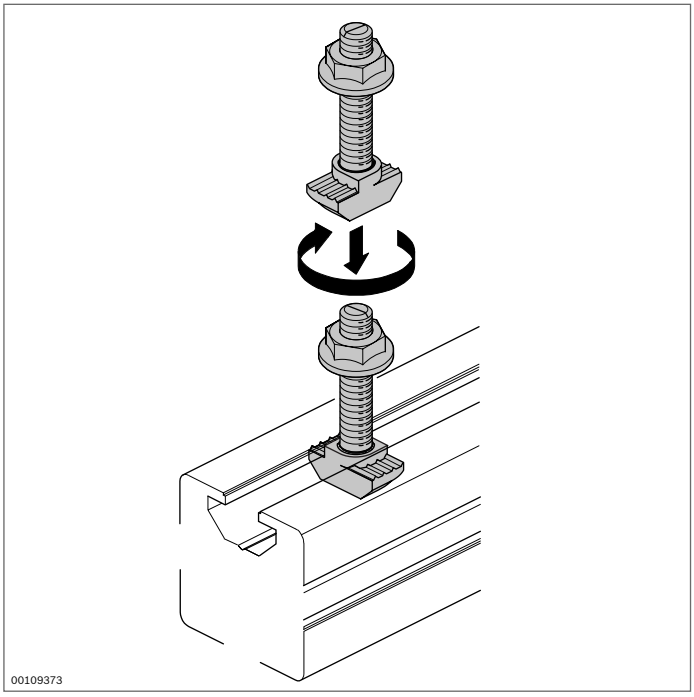
Cover profile		L (mm)		No.
 00109368	AL	2000	10	**3 842 523 258**
 19502	PVC			
	Signal gray (RAL 7004)	2000	10	**3 842 548 876**
	Black (RAL 9005)	2000	10	**3 842 548 877**
	Light gray (RAL 7035)	2000	10	**3 842 518 367**
	Red (RAL 3020)	2000	10	**3 842 518 368**
	Yellow (RAL 1023)	2000	10	**3 842 518 369**
	Green (RAL 6032)	2000	10	**3 842 549 888**
	Blue (RAL 5010)	2000	10	**3 842 538 955**
	Orange (RAL 2004)	2000	10	**3 842 538 957**
	Colorless, transparent	2000	10	**3 842 191 182**

Flange nut
T-bolt



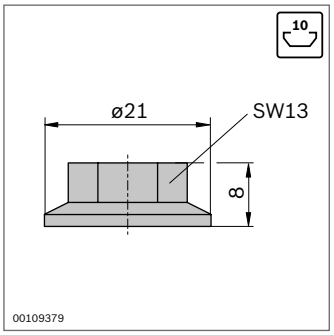




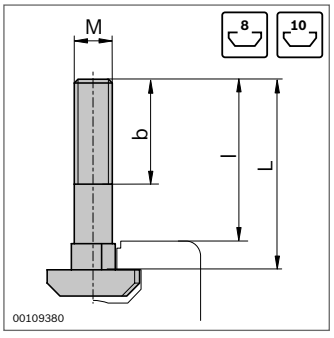


Fastening elements for mounting accessories on the profile slot
- Secure and conductive connection
- Notch at bolt end as marker for correct position recognition
- Profile finishing: Not required

There is a selection of different mounting options in the MGE catalog.



Flange nut	Slot	M	ESD		No.
	10	M8	⏚	100	**3 842 345 081**
Material:	Steel; zinc-plated				

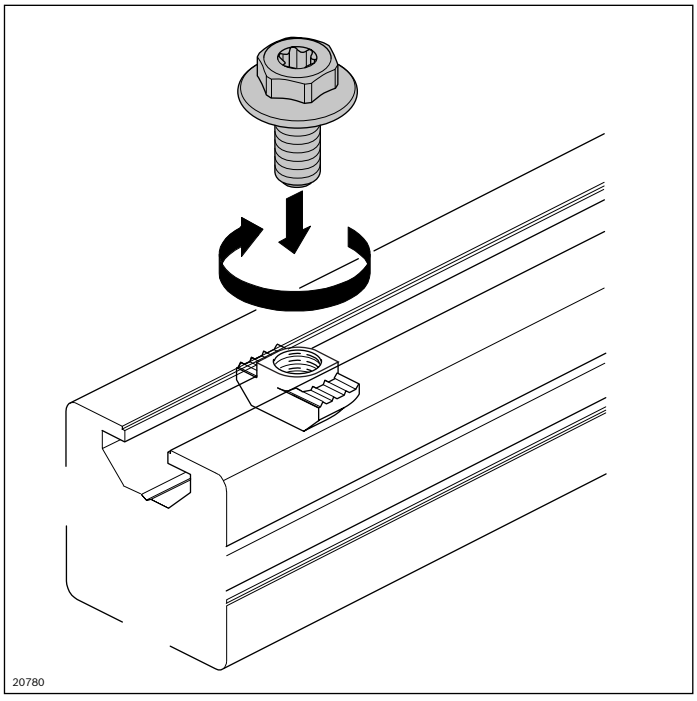


Slot	
10	6000 ... 18000 N[1)]

[1)] Dependent on the profile (see also "Technical data" in the MGE catalog)

T-bolt	Slot	MxL	b (mm)	l (mm)	ESD		No.
	10	M8x20	14	14	⏚	100	**3 842 528 715**
		M8x25	19	19	⏚	100	**3 842 528 718**
		M8x30	24	24	⏚	100	**3 842 528 721**
		M8x40	22	34	⏚	100	**3 842 528 724**
		M8x50	22	44	⏚	100	**3 842 528 727**
Material:	Steel; zinc-plated						

Collar screw
T-nut



- Collar screw with multi-function head for tightening with ring/open-end wrench (WS 13) or Torx screwdriver (T40)
- Machine tightening possible
- Preferably to be used for fastening brackets
- Quick and simple assembly
- Excellent force transmission via the wide flange
- With Polyfleck to secure the T-nut

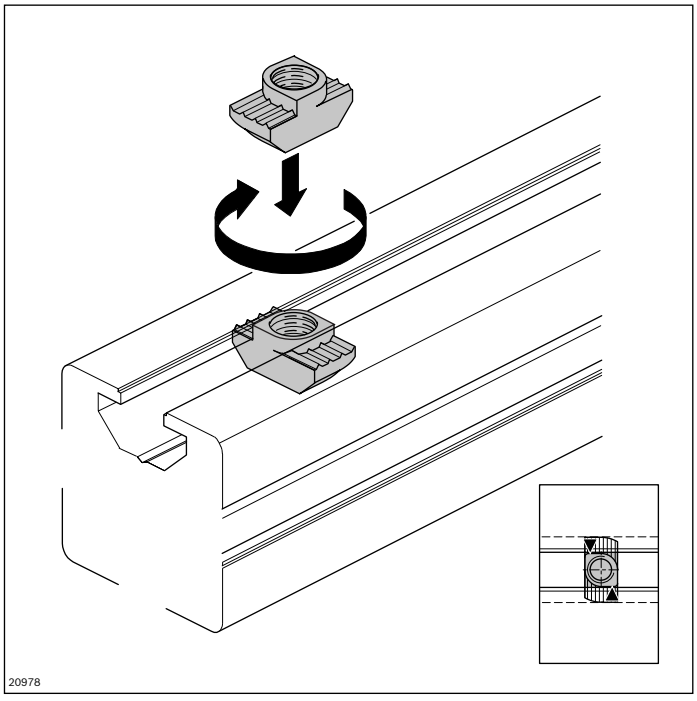
Tools: Offset screwdriver

Collar screw	M	L (mm)	ESD		No.
M8x18-SW13-T40[1)]	M8	18	ESD	100	**3 842 541 246**
M8x20-SW13-T40[2)]	M8	20	ESD	100	**3 842 541 409**

[1)] For 40/40 and 60/60 brackets

[2)] For all other brackets for 10 mm slot

Material: Steel; zinc-plated



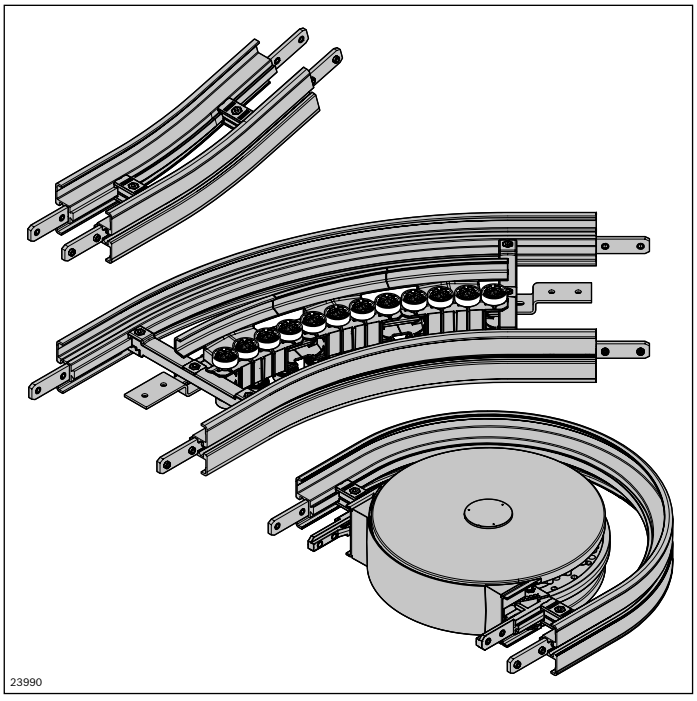
Fastening elements for mounting accessories on the profile slot

- Standard element for a secure and conductive connection
- End stop for correct positioning in the profile slot
- Profile finishing: Not required

T-nut, 10 mm slot	Slot	M	ESD		No.
Steel; zinc-plated	10	M4	ESD	100	**3 842 530 281**
		M5	ESD	100	**3 842 530 283**
		M6	ESD	100	**3 842 530 285**
		M8	ESD	100	**3 842 530 287**

Curves AL



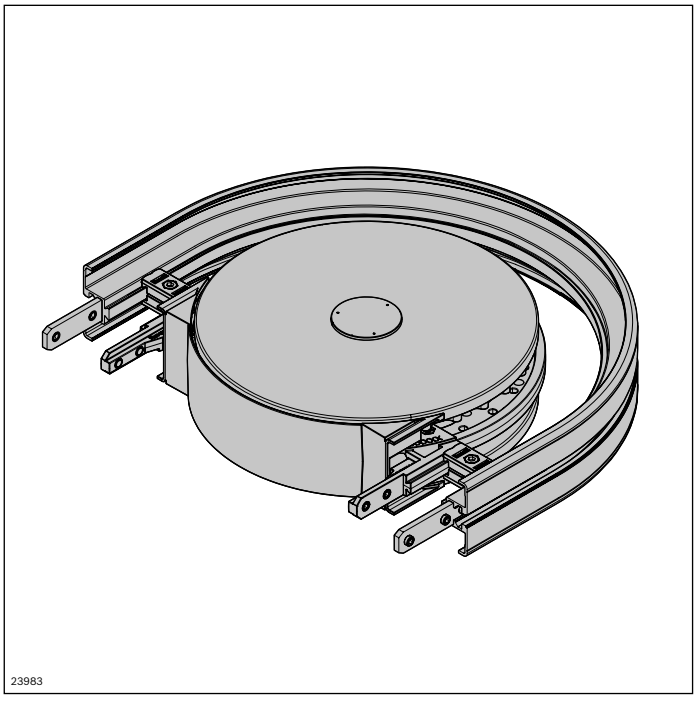


- Longer service life and reduced downtimes thanks to low-friction curve technology
- Reduced friction on curve wheels and patented roller curves to minimize wear, meaning longer sections
- Components subject to constant friction feature FDA-compliant materials
- Easy to clean thanks to ample draining surfaces
- Capable of accumulation
- Ball bearings sealed on both sides of non-rusting steel (1.4301) with FDA-compliant special grease in curve wheels and patented roller curves
- Curve wheel can be upgraded to a curve wheel drive or alpine conveyor

	**Curve wheel AL** **Protective cover for the curve wheel AL**	**68**
	**Roller curve horizontal AL**	**70**
	**Sliding curve horizontal AL**	**72**
	**Vertical curve AL**	**74**

Curve wheel AL





The curve wheel provides a horizontal direction change for the chain. It enables low-friction direction changes with very small radii.
For attachment options, see the matrix on page 313
- Size: 65, 90, 120
- Deflection angles see table on page 69, other deflection angles on request
- Suitable chain types: All
- For circuit systems without chain return in bottom run (using a curve wheel or connection drive), the appropriate cover must be used for personal safety reasons

For the selection of sliding rails, see the "Technical data" chapter on page 300.

Notice: High-pressure cleaning of the ball bearings is not permitted.

See also Curve wheel AL ESD, page 194.

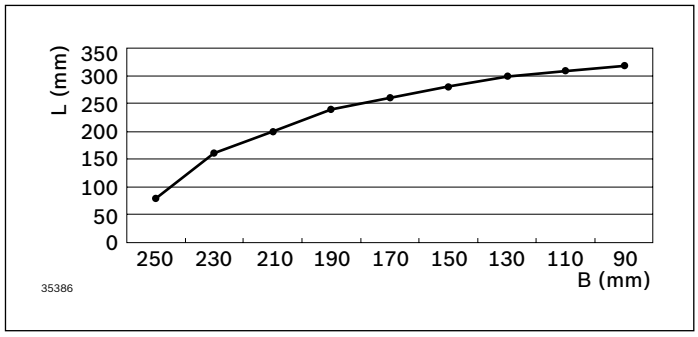
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Surfaces in contact with chain made of FDA-compliant material

Scope of delivery:
- Including fastening material for mounting to the section profile AL

Material:
- Housing: Diecast aluminum
- Chain wheel: PA; white
- Ball bearing: Non-rusting steel 1.4301/FDA

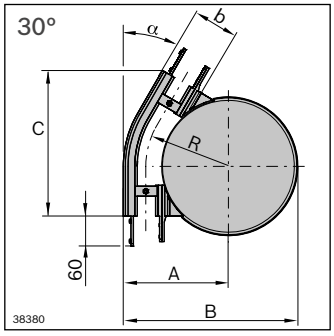
- No interfering contours above chain plate height
- Can be used horizontally and vertically (for wedge conveyors)

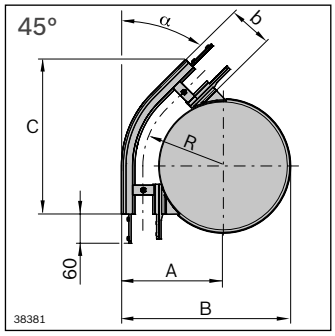
Condition on delivery:
- Assembled

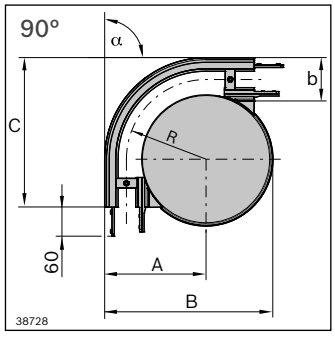


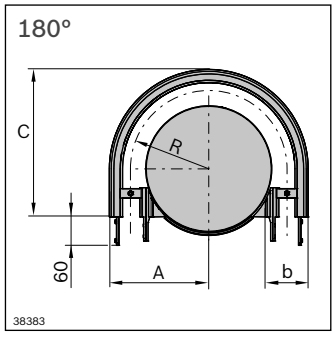
L = product length in conveying direction
B = product width

Curve wheel AL	α (°)	No.
VF*plus* 65	30	**3 842 547 048**
	45	**3 842 547 049**
	90	**3 842 547 050**
	180	**3 842 547 051**
VF*plus* 90	30	**3 842 547 052**
	45	**3 842 547 053**
	90	**3 842 547 054**
	180	**3 842 547 055**
VF*plus* 120	30	**3 842 547 056**
	45	**3 842 547 057**
	90	**3 842 547 058**
	180	**3 842 547 059**

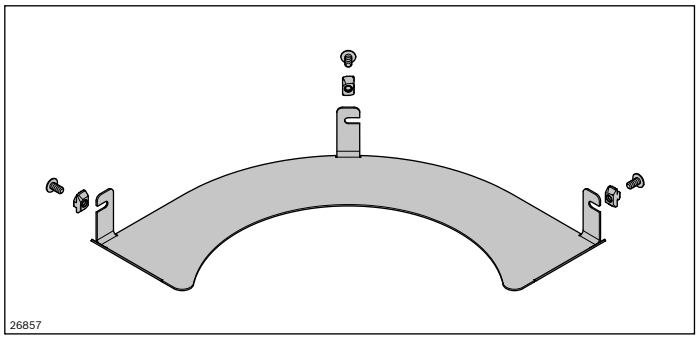








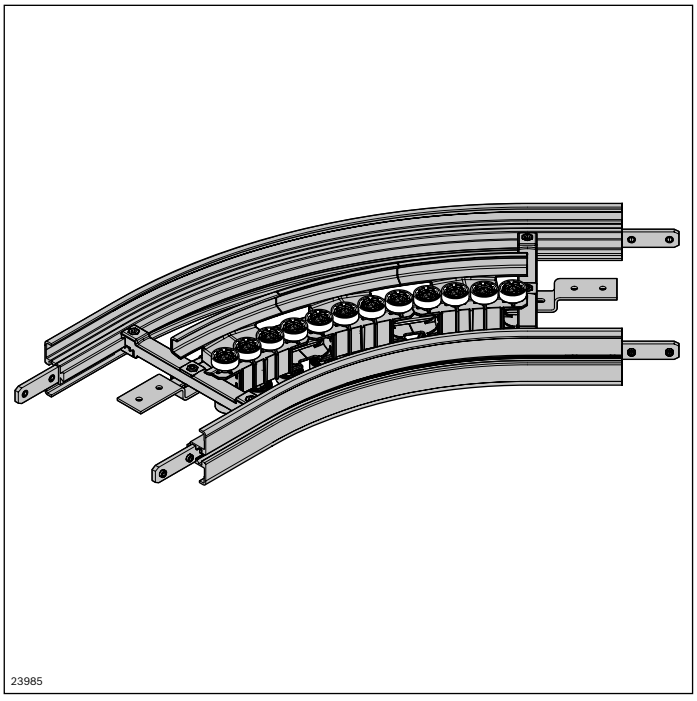
b (mm)	α (°)	**R** (mm)	**A** (mm)	**B** (mm)	**C** (mm)
65	30	153.0	185.5	324.5	279.4
	45	153.0	185.5	324.5	301.9
	90	153.0	185.5	324.5	285.5
	180	153.0	185.5	–	287.5
90	30	165.5	210.5	349.5	291.9
	45	165.5	210.5	349.5	319.6
	90	165.5	210.5	349.5	310.5
	180	165.5	210.5	–	312.5
120	30	180.5	240.5	379.5	306.9
	45	180.5	240.5	379.5	340.8
	90	180.5	240.5	379.5	340.5
	180	180.5	240.5	–	342.5



Protective cover AL	α (°)	No.
VF*plus* 65	30	**3 842 551 545**
	45	**3 842 551 546**
	90	**3 842 551 547**
	180	**3 842 551 548**
VF*plus* 90	30	**3 842 551 549**
	45	**3 842 551 550**
	90	**3 842 551 551**
	180	**3 842 551 552**

Roller curve horizontal AL





The low-friction roller curve provides a horizontal change in direction for the chain. Roller elements with ball bearings enable longer conveyor sections.
The service life of the chain is increased and system costs reduced.
For attachment options and length determination of the support profile, see matrix on page 313
- Size: 160, 240, 320
- Deflection angles, see table on p. 71
- Other deflection angles on request
- Suitable chain types: All
- Version with open section profiles

For the selection of sliding rails, see the "Technical data" chapter on page 300.

Notice: High-pressure cleaning of the ball bearings is not permitted.

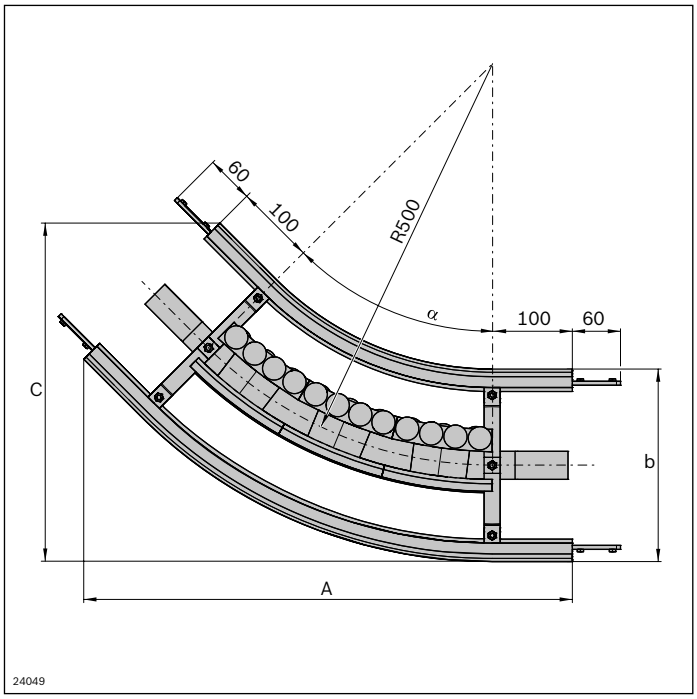
- Patented roller elements for low-friction, quieter changes in chain direction
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Surfaces in contact with chain made of FDA-compliant materials

Required accessories:
- Sliding rail: Length calculation, see p. 302

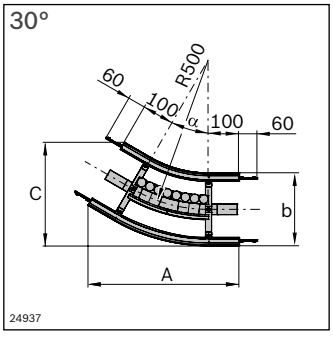
Scope of delivery:
- Including fastening material for mounting to the section profile AL

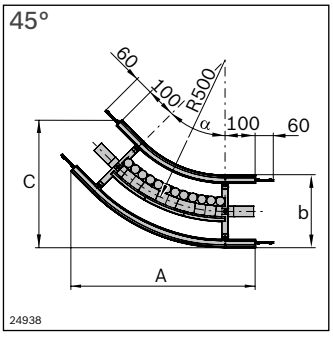
Condition on delivery:
- Assembled

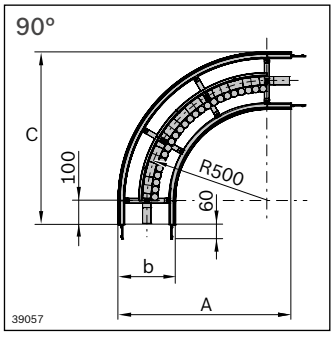
Material:
- Profile: Aluminum; anodized
- Roller carrier: PA66
- Ball bearing: Non-rusting steel 1.4301/FDA
- Connector: Steel; zinc-plated
- Rollers: PA

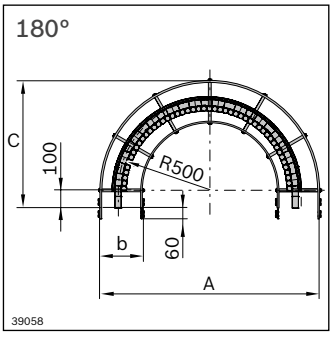


Roller curve AL	α (°)	No.
VF*plus* 160	30	**3 842 547 060**
	45	**3 842 547 061**
	90	**3 842 547 062**
	180	**3 842 547 063**
VF*plus* 240	30	**3 842 547 064**
	45	**3 842 547 065**
	90	**3 842 547 066**
	180	**3 842 547 067**
VF*plus* 320	30	**3 842 547 068**
	45	**3 842 547 069**
	90	**3 842 547 070**
	180	**3 842 547 071**









b (mm)	α (°)	**A** (mm)	**C** (mm)
160	30	476.6	266.3
	45	580.8	353.7
	90	680.0	680.0
	180	1160.0	680.0
240	30	496.6	340.9
	45	609.1	422.0
	90	720.0	720.0
	180	1240.0	720.0
320	30	516.6	415.6
	45	637.4	490.3
	90	760.0	760.0
	180	1320.0	760.0

Sliding curve horizontal AL





The sliding curve provides a horizontal change in direction for the chain, for when there is not enough space for a curve wheel or the speeds or product dimensions do not permit conveying over a curve wheel. The sliding curve is used to reduce noise at high speeds or when transporting long products in wedge conveyors. The chain tensile force is increased through the ensuing friction.
For attachment options, see the matrix on page 313
- Size: 65, 90, 120
- Deflection angles and radii see table on p. 73, other deflection angles and radii on request
- Suitable chain types: All
- Version with open section profiles
- Requires the use of the sliding rails "Advanced" or "Premium"
- Use in abrasive environments is not permissible

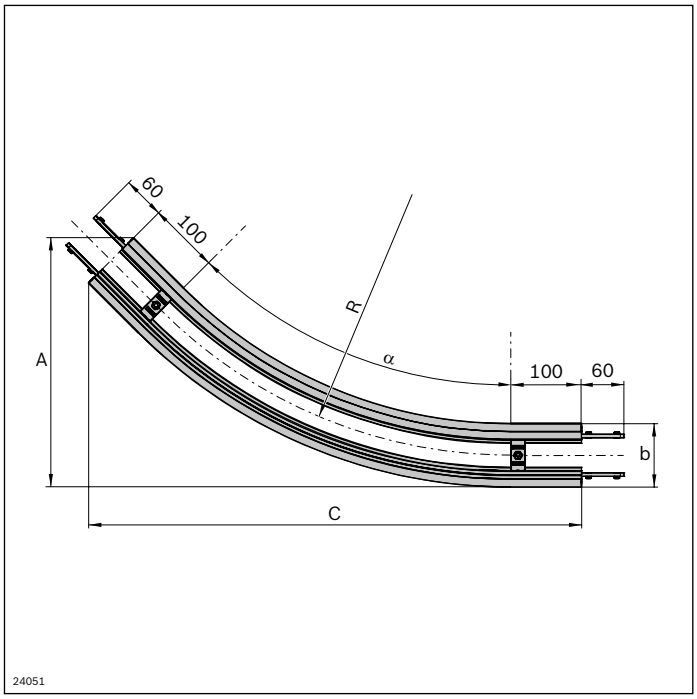
For the selection of sliding rails, see the "Technical data" chapter on page 300.

Required accessories:
- Sliding rail: Length calculation, see p. 302

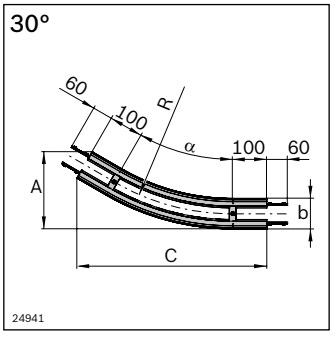
Scope of delivery:
- Including fastening material for mounting to the section profile AL

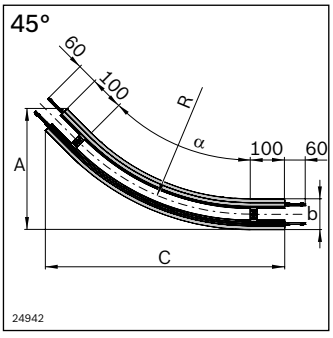
Material:
- Profile: Aluminum; anodized
- Profile connector: Steel; zinc-plated
- Cross connector: Diecast aluminum

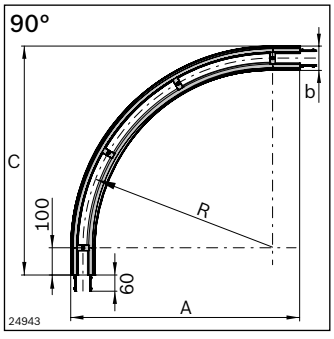
Condition on delivery:
- Assembled



Sliding curve horizontal AL	α (°)	R (mm)	No.
VF*plus* 65	30	700	**3 842 547 072**
	45	700	**3 842 547 073**
	90	700	**3 842 547 074**
VF*plus* 90	45	500	**3 842 547 075**
	90	500	**3 842 547 076**
	30	700	**3 842 547 077**
	45	700	**3 842 547 078**
	90	700	**3 842 547 079**
VF*plus* 120	30	700	**3 842 547 080**
	45	700	**3 842 547 081**
	90	700	**3 842 547 082**







b (mm)	α (°)	R (mm)	A (mm)	C (mm)
65	30	700	204.4	552.9
	45	700	331.2	688.7
	90	700	832.5	832.5
90	45	500	294.0	556.1
	90	500	645.0	645.0
	30	700	227.8	559.1
	45	700	352.6	697.5
	90	700	845.0	845.0
120	30	700	255.7	566.6
	45	700	378.2	708.1
	90	700	860.0	860.0

Vertical curve AL





The vertical curve is used for the transition from a horizontal conveyor section to an ascending section and vice versa. The chain tensile force is increased through the ensuing friction.
A vertical curve of 5° is recommended for the infeed and outfeed on the wedge conveyor, especially with small products.
For attachment options, see the matrix on page 313
- Size: All track widths
- Deflection angles and radii see table on page 75, other deflection angles and radii on request
- Suitable chain types: All
- Version with open section profiles
- Requires the use of the sliding rails "Advanced" or "Premium"
- For vertical sections ≤ 5°, the adjustable profile connectors AL can be used for sizes 65-120

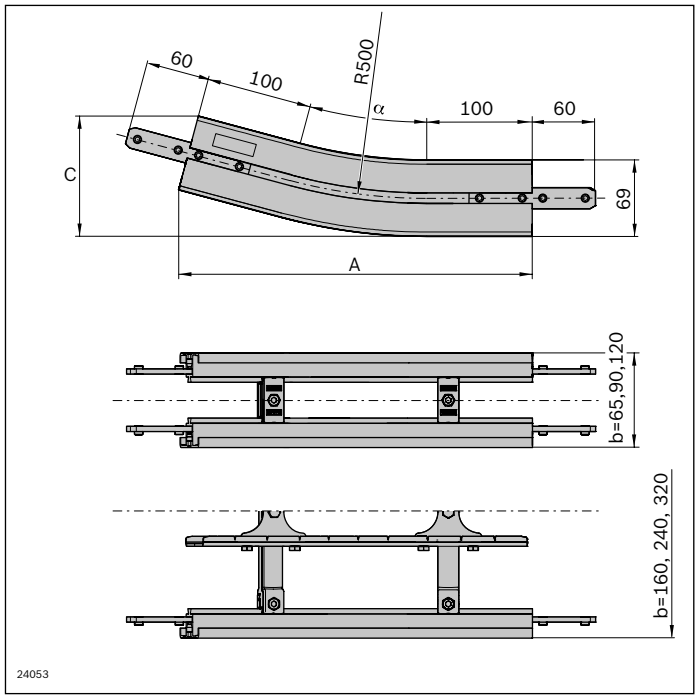
For the selection of sliding rails, see the "Technical data" chapter on page 300.

Required accessories:
- Sliding rail: Length calculation, see p. 302

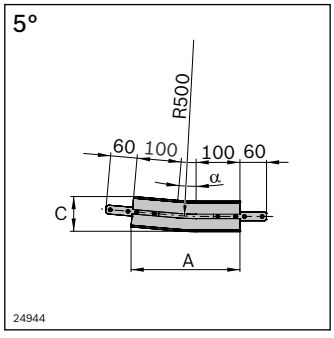
Scope of delivery:
- Including fastening material for mounting to the section profile AL

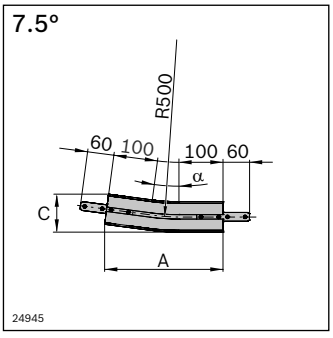
Material:
- Profile: Aluminum; anodized
- Profile connector: Steel; zinc-plated
- Cross connector: Diecast aluminum
- Support profile from size 160: Non-rusting steel 1.4301

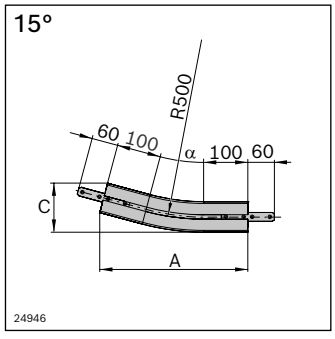
Condition on delivery:
- Assembled

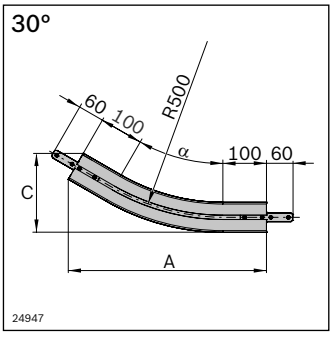


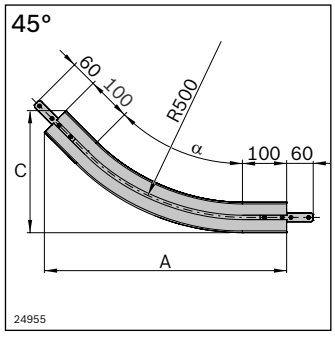
Vertical curve AL	**α** (°)	**No.**
VF*plus* 65	5	**3 842 547 083**
	7.5	**3 842 547 084**
	15	**3 842 547 085**
	30	**3 842 547 086**
	45	**3 842 547 087**
	90	**3 842 559 126**
VF*plus* 90	5	**3 842 547 088**
	7.5	**3 842 547 089**
	15	**3 842 547 090**
	30	**3 842 547 091**
	45	**3 842 547 092**
	90	**3 842 559 127**
VF*plus* 120	5	**3 842 547 093**
	7.5	**3 842 547 094**
	15	**3 842 547 095**
	30	**3 842 547 096**
	45	**3 842 547 097**
	90	**3 842 559 128**
VF*plus* 160	5	**3 842 547 098**
	7.5	**3 842 547 099**
	15	**3 842 547 100**
	30	**3 842 547 101**
	45	**3 842 547 102**
VF*plus* 240	5	**3 842 547 103**
	7.5	**3 842 547 104**
	15	**3 842 547 105**
	30	**3 842 547 106**
VF*plus* 320	5	**3 842 547 107**
	7.5	**3 842 547 108**
	15	**3 842 547 109**
	30	**3 842 547 110**

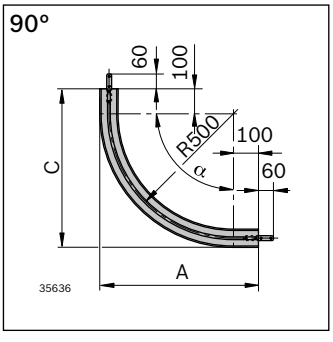








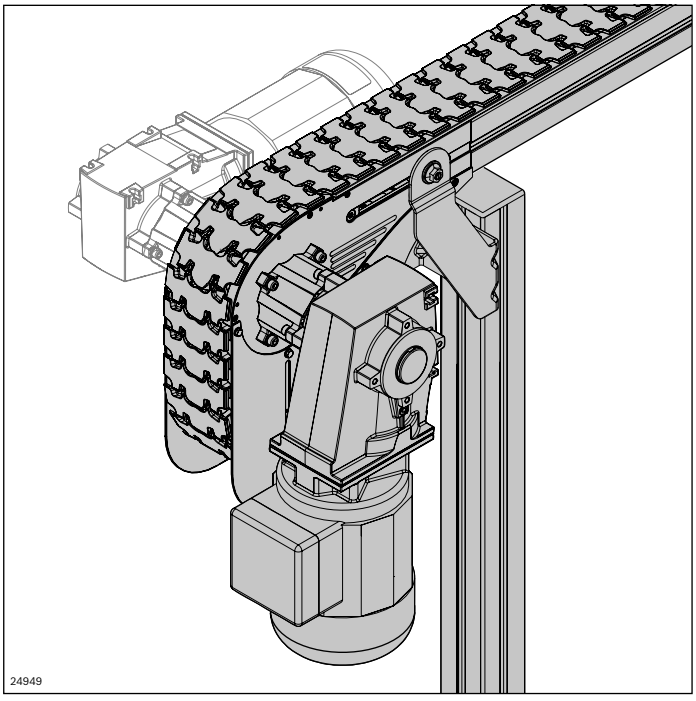




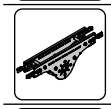
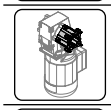
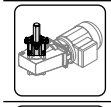
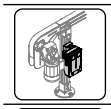
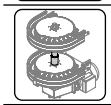
b (mm)	**α** (°)	**R** (mm)	**A** (mm)	**C** (mm)
65-320	5	500	246.2	79.5
	7.5	500	268.9	86
	15	500	334.9	110.7
	30	500	453.9	181.4
65-160	45	500	548.7	276.1
65-120	90	500	636.3	636.3

Drive and return unit AL

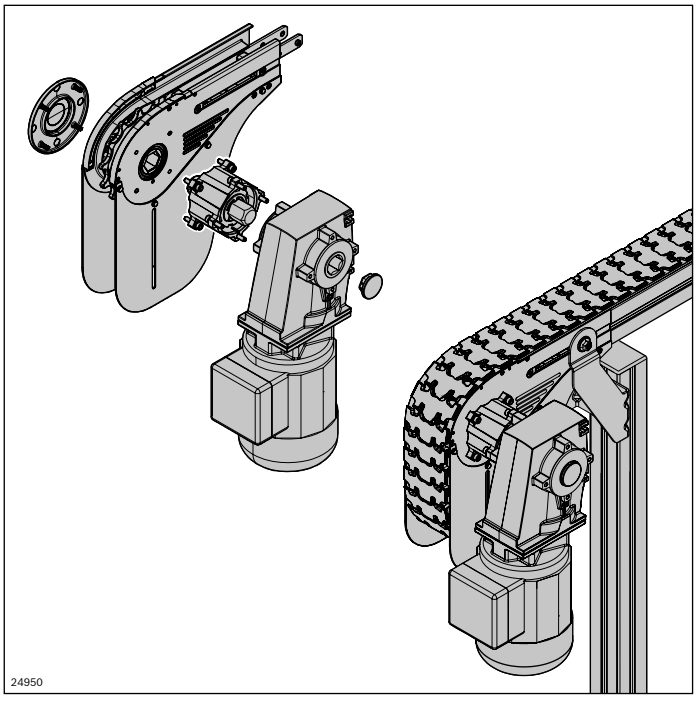




- High flexibility and short delivery times thanks to a novel drive concept
- Basic units with interfaces on both sides for drive kit and transmission (active bridges)
- Free choice of the motor mounting position on site
- Configurable drive kit (standard gear motor or round shaft)
- Multi-track systems with standard components possible
- Reduced noise emission due to sliding rails guided in the drive/return unit
- In-stock, standardized components
- Side elements with slots for accommodating holders
- Pulling section; pushing or reversible operation on request

	**Basic unit AL** **Head drive direct**	**80**
	**Basic unit AL** **Connection drive**	**82**
	**Basic unit** **Center drive**	**84**
	**Return unit AL** **Closed head drive AL**	**86**
	**90° return unit**	**88**
	**Basic unit** **Curve wheel drive AL**	**90**
	**Drive kit**	**92**
	**Drive kit curve wheel AL**	**94**
	**Frequency converter motec 8400**	**96**
	**Manual control unit** **Switching/potentiometer unit**	**99**
	**Transmission kit**	**100**
	**Passive/active bridges connection kit**	**102**
	**Synchronous drive** **Connection kit, external motor/internal motor**	**110**
	**Alpine conveyor connection kit**	**112**

Innovative drive concept



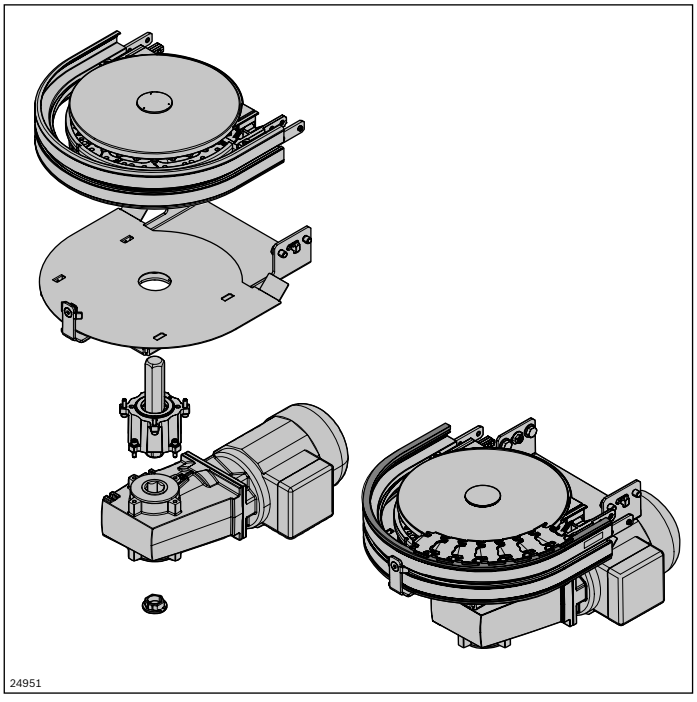
Basic unit AL
(head drive direct, center
or connection drive)
or return unit

+

Configurable drive kit
(standard gear motor or round shaft
+ transmission kit where applicable)

=

Complete drive
(transmission drive)



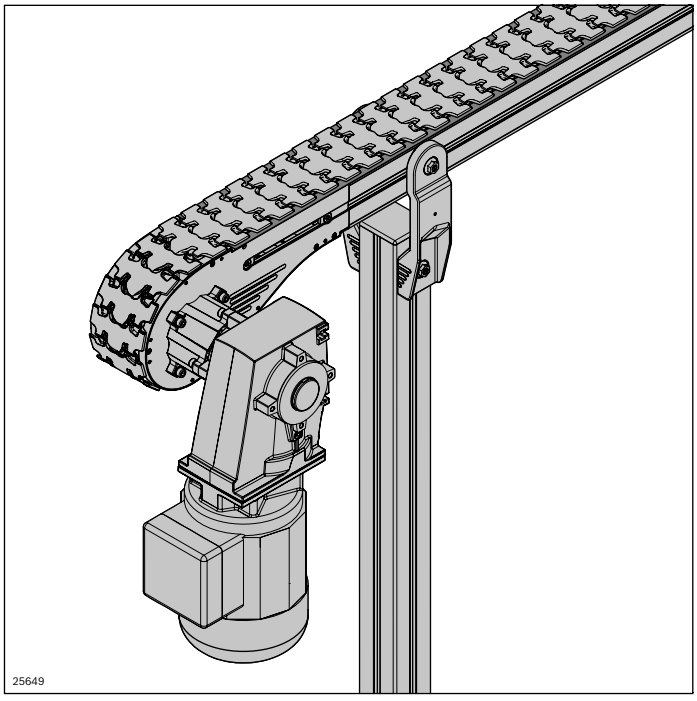
Basic unit curve wheel drive AL

+

Configurable drive kit
(standard gear motor or round shaft)

=

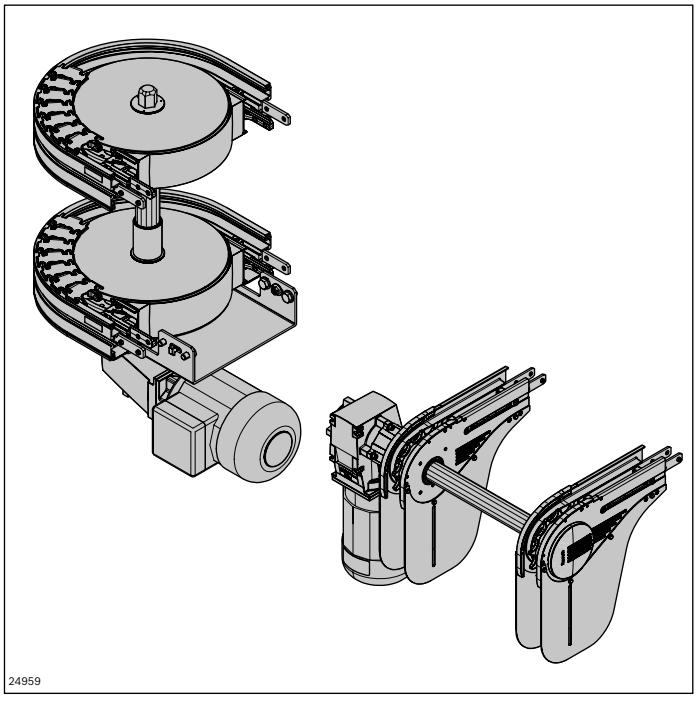
Complete drive



The well thought-out drive solution enables high flexibility and planning freedom

The in-stock, standardized basic units
- Are quickly and easily combined with the configurable drive kit (standard gear motor or customer-specific interface) into a complete drive
- Guarantee fast availability of the few construction kit elements/spare parts

The interface on both sides in the basic unit and return unit
- Enables a free selection of the motor mounting position on-site
- Offers additional transmission interfaces (active bridges)



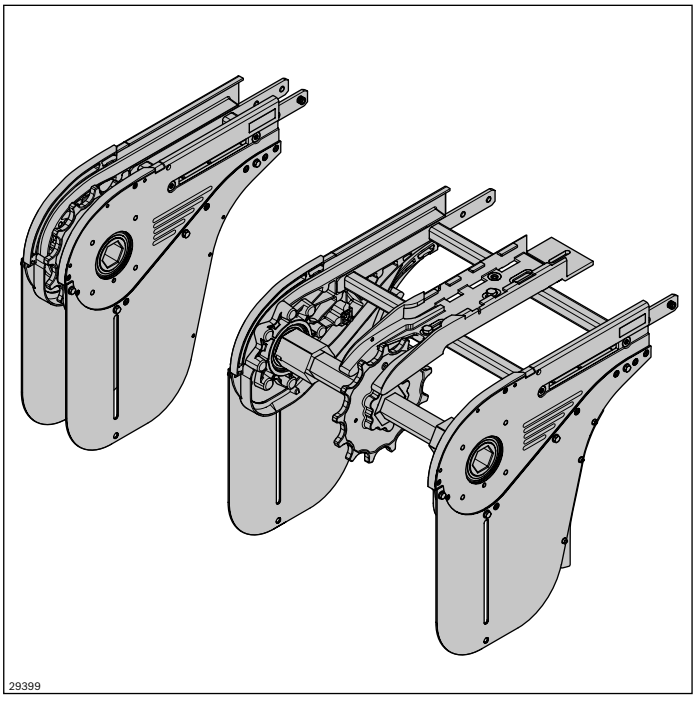
The simple, connectible curve wheel for standard drives and base units facilitates the easy implementation of multi-track systems and alpine conveyors

For attachment options, see the matrix on page 313

Notice: High-pressure cleaning of the ball bearing areas is not permitted.

Basic unit AL
Head drive direct





The basic unit is quickly turned into a head drive with variable mounting position by adding a drive kit.
With the double-sided hexagonal hollow shaft, other components can be easily driven using a transmission (active bridges).

- Size: All track widths
- Suitable chain types: All
- Permissible chain tensile force: F_{max} = 1250 N
- Section length: L ≤ 30 m
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Not suitable for reversible operation

Notice:

- A chain sprocket must be used to limit the chain slipping back ascending or descending sections.
- Chain sprocket prevents the chain bag from swiveling out

- ▶ Reduced noise emission due to sliding rails guided in the head drive
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard

Required accessories:
- Drive kit, see p. 92
- Sliding rail: Length calculation, see p. 302
- Motor leg set, see p. 117/121

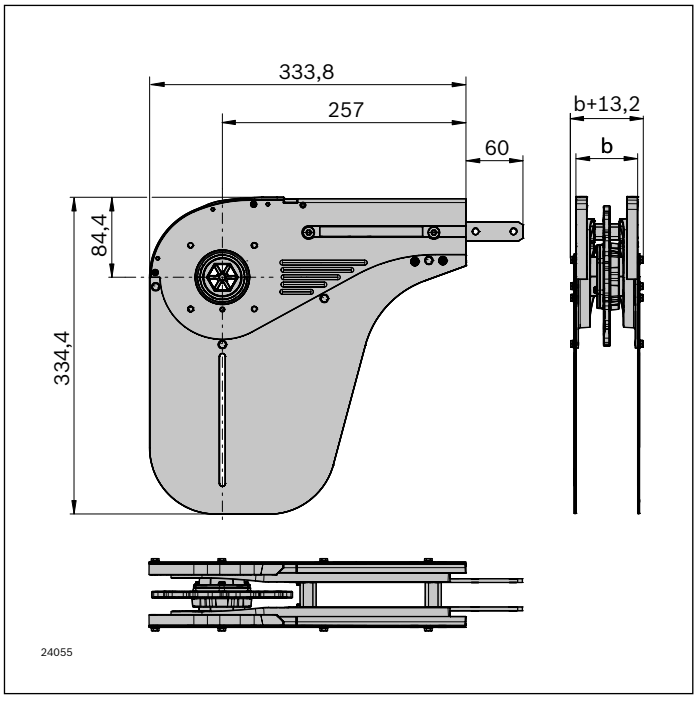
Optional accessories:
- Passive bridges connection kit, see p. 102ff.
- Active bridges connection kit, see p. 106ff.
- Synchronous drive connection kit, see p. 110
- Chain sprocket for inclined sections, see p. 81
- Transmission kit, see p. 100

- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Implementation of parallel sections with gap dimension down to zero
- ▶ Side elements with slot to attach holders for lateral guides, or similar

Scope of delivery: Including fastening material

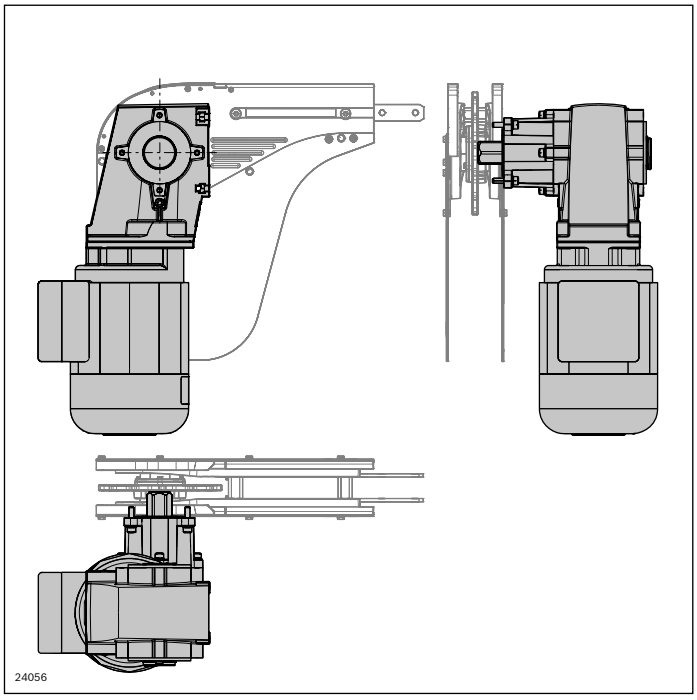
Condition on delivery: Assembled: Chain guards enclosed

Material:
- Housing: Diecast aluminum, powder-coated, silver
- Chain wheel: PA
- Chain guide: PA
- Connector: Steel; zinc-plated
- Hexagonal shaft up to size 160: PA from size 160: Non-rusting steel 1.4301, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



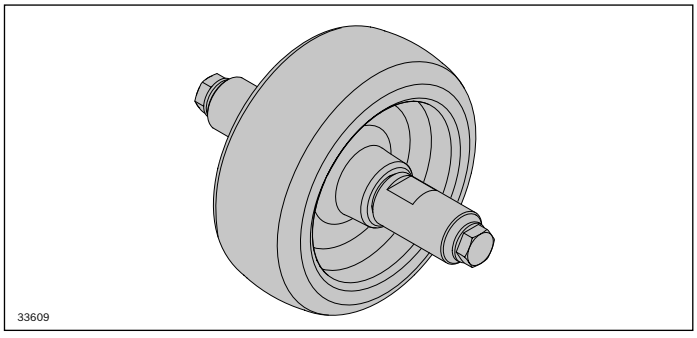
Basic unit AL	No.
VF*plus* 65 direct	**3 842 546 120**
VF*plus* 90 direct	**3 842 546 121**
VF*plus* 120 direct	**3 842 546 122**
VF*plus* 160 direct	**3 842 546 123**
VF*plus* 240 direct	**3 842 546 124**
VF*plus* 320 direct	**3 842 546 125**

Order the drive kit in addition to the basic unit AL (see p. 92) to complete your drive.



Drive kit VF*plus*	No.
	3 842 998 291

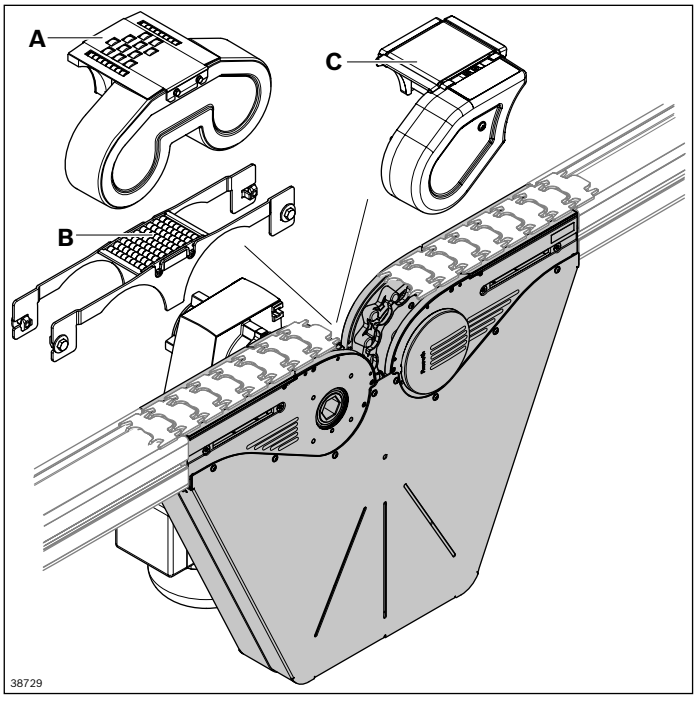
See p. 92



Chain sprocket	No.
VF*plus* 65	**3 842 553 047**
VF*plus* 90	**3 842 553 048**
VF*plus* 120	**3 842 553 049**
VF*plus* 160	**3 842 553 057**
VF*plus* 240	**3 842 553 058**
VF*plus* 320	**3 842 553 059**

Basic unit AL
Connection drive





- Reduced noise emission due to sliding rails guided in the connection drive
- Installation of the drive kit possible on the right/left (motor, coupling, flange)
- Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Side elements with slot to attach holders for lateral guides, or similar

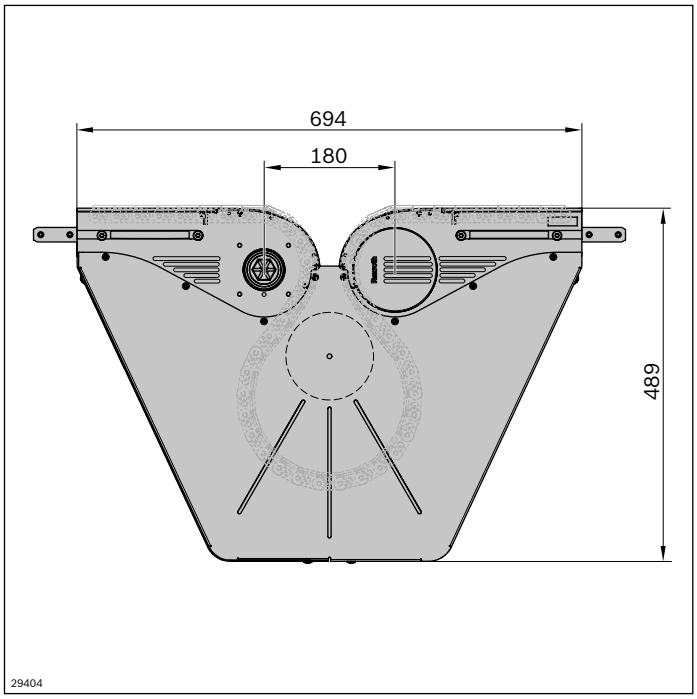
Required accessories:
- Drive kit, see p. 92
- Connection kit passive bridges, see p. 102ff.
- Connection kit active bridges, see p. 106ff.
- Sliding rail: Length calculation, see p. 302

Scope of delivery:
- Including fastening material

The connection drive is used for driving the conveyor chain in circuit systems with a top-running chain. Supplementing the basic unit connection drive with the drive kit quickly turns it into a complete connection drive with a variable mounting position. For transferring the conveyed material, an active (**A, C**) or passive bridge (**B**) must be added. The active bridge (**A, C**) is driven by a transmission from the connection drive
- Size: 65, 90
- Suitable chain types: Flat conveyor chain, static friction chain
- Permissible chain tensile force: F_{max} = 1250 N
- Section length: L ≤ 30 m
- Conveying speed: v_N = 2 ... 27 m/min, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Recommendation: No accumulation operation up to 1500 mm after the connection drive
- For safety reasons, only use with a closed profile
- Reversible operation not permitted
- Not permitted for wet operation or rough ambient conditions

Material:
- Housing: Diecast aluminum, powder-coated
- Chain wheel: PA
- Chain guide: PA
- Connector: Steel; zinc-plated
- Hexagonal shaft
  up to size 160: PA
  from size 160: Non-rusting steel 1.4301, PA
- Ball bearing: Non-rusting steel 1.4301/FDA
- Chain fender: Steel; zinc-plated

Condition on delivery:
- Assembled



Basic unit connection drive AL	No.
VF*plus* 65	**3 842 547 712**
VF*plus* 90	**3 842 547 713**

Drive kit VF*plus*	No.
	3 842 998 291
See p. 92	

Active roller bridge connection kit (A)	No.
VF*plus* 65	**3 842 555 820**
VF*plus* 90	**3 842 555 821**
See p. 108	

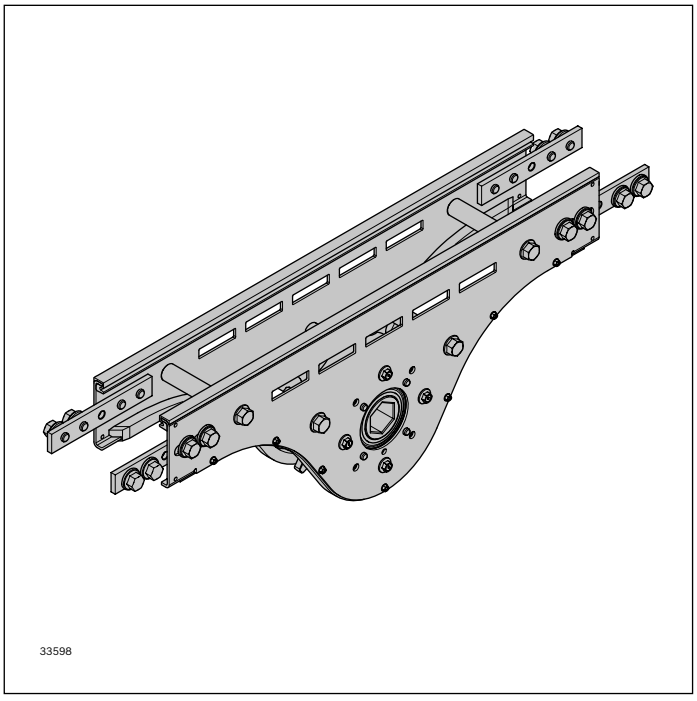
Active belt bridge connection kit (C)		No.
VF*plus* 65	L	**3 842 558 000**
VF*plus* 65	R	**3 842 558 001**
VF*plus* 90	L	**3 842 558 002**
VF*plus* 90	R	**3 842 558 003**
See p. 106		

Passive bridge connection kit (B)	No.
VF*plus* 65	**3 842 549 015**
VF*plus* 90	**3 842 549 016**
See p. 102	

Basic unit
Center drive







The center drive basic unit is used if the available space is limited at the ends of the sections.
It is quickly turned into a center drive with variable motor mounting position by adding the drive kit
- Size: 65-120
- Chain return on the underside of the profile
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Permissible chain tensile force: F_{max} = 600 N
- Max. conveying length: 7 m
- Because no length compensation (chain bag) is present, the chain length must be checked regularly and shortened if necessary
- Recommendation: No accumulation operation until 1000 mm after the return unit
- An assembly module is required for assembling the chain

- ▶ Reduced noise emission due to sliding rails guided in the center drive
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section using a hexagonal hollow shaft integrated as standard
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Side elements with slot for attaching holders for lateral guides, or similar

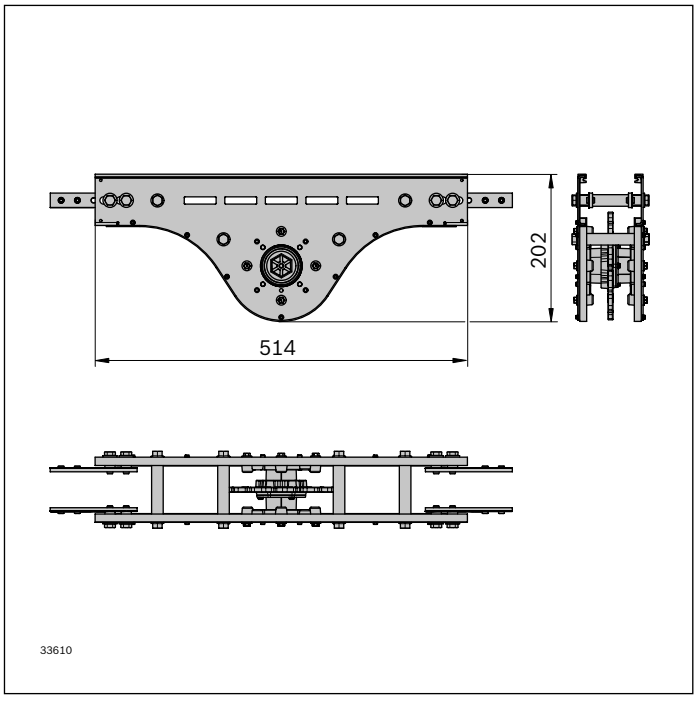
Required accessories:
- Drive kit, see p. 85
- Sliding rail, see p. 56
- Motor leg set/motor leg set ESD, see p. 121/202
- Assembly module, see p. 62

Scope of delivery:
- Including fastening material
- For systems AL: Adapter VF*plus* AL-STS

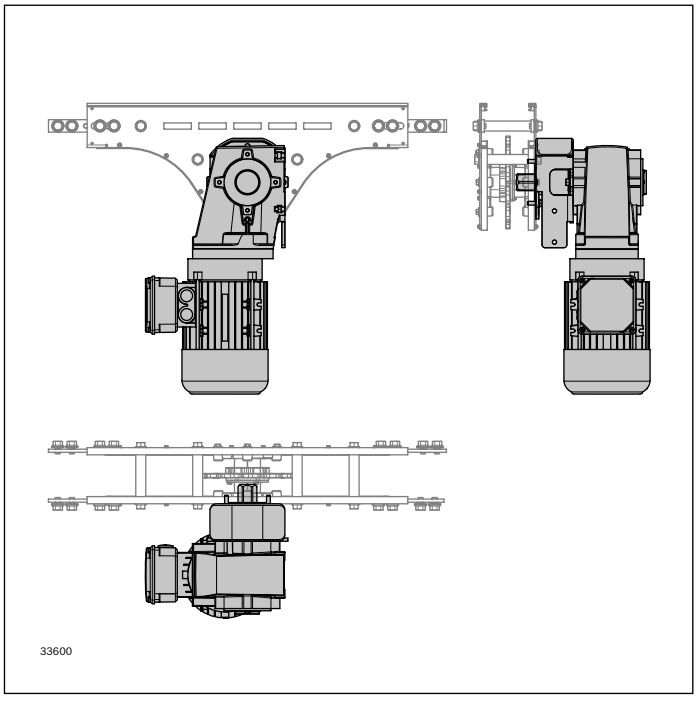
Condition on delivery:
- Assembled, (profile connector enclosed)

Optional accessories:
- Synchronous drive connection kit, see p. 110
- Frequency converter, see p. 96
- Transmission kit, see p. 100

Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



Basic unit with center drive	No.
VF*plus* 65	**3 842 552 940**
VF*plus* 90	**3 842 552 941**
VF*plus* 120	**3 842 552 942**



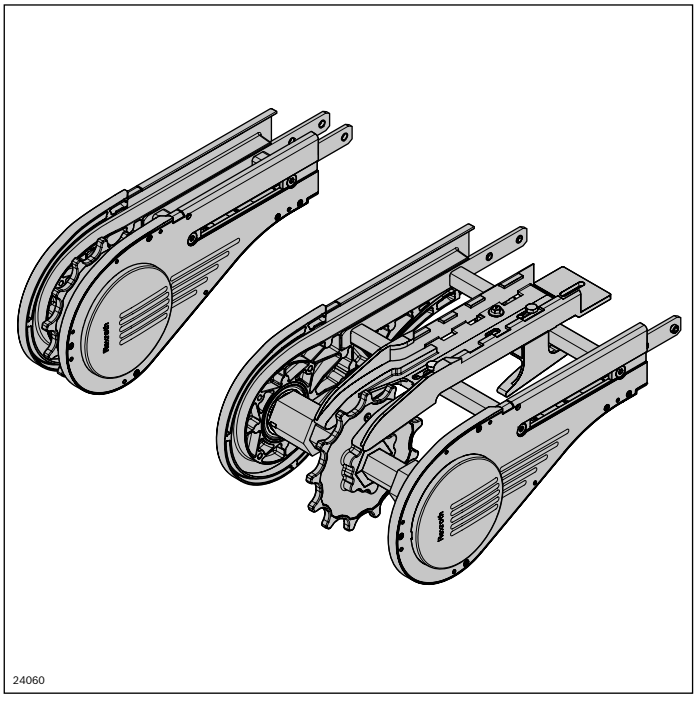
Drive kit VF*plus*	No.
VF*plus* 65	**3 842 998 291**

See p. 92

Notice: The selection of the parameter SP = STS is imperative. Even if an aluminum track is used because centering is not possible on an AL flange.

Return unit AL
Closed head drive AL





Thanks to the innovative drive concept, the return unit can be operated simply by itself or supplemented with a drive kit to be operated as a head drive without chain bag.
The section length is limited to a maximum of 7 m.

- Size: All track widths
- Suitable chain types: All
- Permissible chain tensile force
  Return unit function: F_{max} = 1250 N
  Head drive without chain bag function: F_{max} = 600 N
  With shortened maintenance interval, due to chain elongation
- Section length for return unit function: L ≤ 30 m
  Section length for function as drive: L ≤ 7 m
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Use as a drive for wedge conveyors, when combined with a drive kit
- Reversible operation on request

- ▶ Reduced noise emission due to sliding rails guided in the return unit
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Side elements with slot to attach holders for lateral guides, or similar

Required accessories:
- Sliding rail: Length calculation, see p. 302

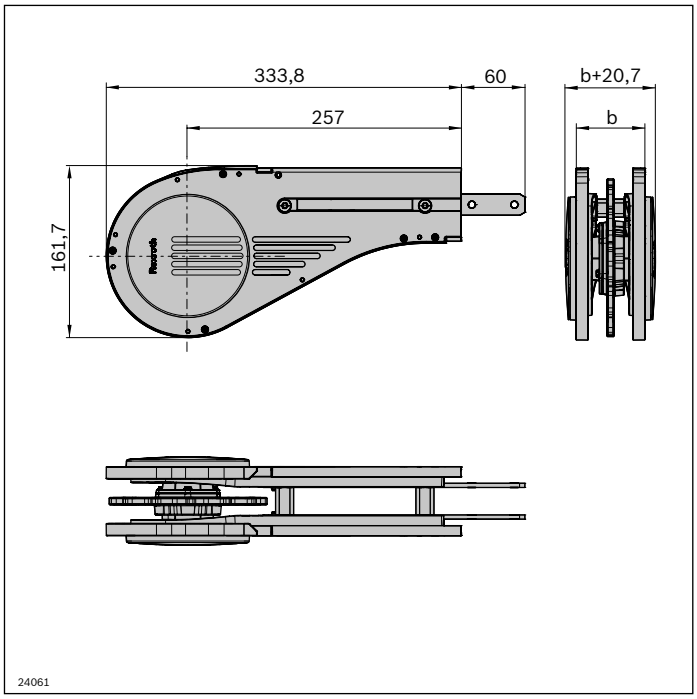
For use as a drive:
- Assembly module, see p. 62
- Drive kit, see p. 92
- Motor leg set, see p. 117/121

Scope of delivery:
- Including fastening material

Condition on delivery:
- Assembled

Optional accessories:
- Transmission kit, see p. 100

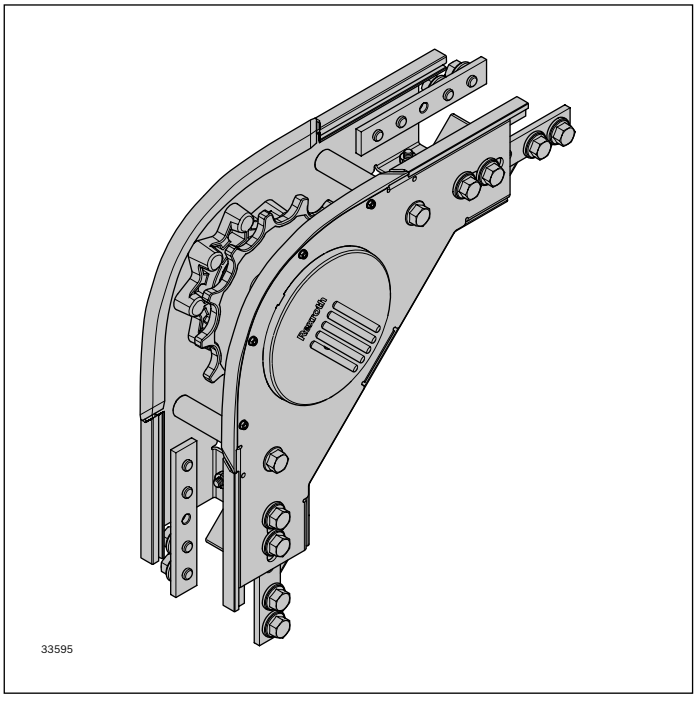
Material:
- Housing: Diecast aluminum, powder-coated
- Chain wheel: PA
- Chain guide: PA
- Connector: Steel; zinc-plated
- Hexagonal shaft
  up to size 160: PA
  from size 160: Non-rusting steel 1.4301, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



Return unit AL	No.
VF*plus* 65	**3 842 547 516**
VF*plus* 90	**3 842 547 517**
VF*plus* 120	**3 842 547 518**
VF*plus* 160	**3 842 547 519**
VF*plus* 240	**3 842 547 520**
VF*plus* 320	**3 842 547 521**

90° return unit





For building alpine conveyors with chain running only on the upper side.

- Only for use with:
  - Connection drive (AL and STS)
  - Curve wheel drive AL (drive kit parameter AC = 1)
- Size: 65, 90
- Section length: L_{max} = 30 m
- Alpine conveyor for curve wheel drive or connection drive

Notice: When using conveyor systems without a returning chain, a cover must be mounted by the customer to ensure personal safety.

Advantage over alpine conveyor with head drive:

- ▶ Shorter chain return, so the required tensile force of the conveyor chain is lower and therefore the possible volume of the alpine conveyor is larger.
- ▶ No longer necessary to mount the sliding rails required for the chain return on the bottom side of the profile
- ▶ The required conveyor chain is shorter

Scope of delivery:

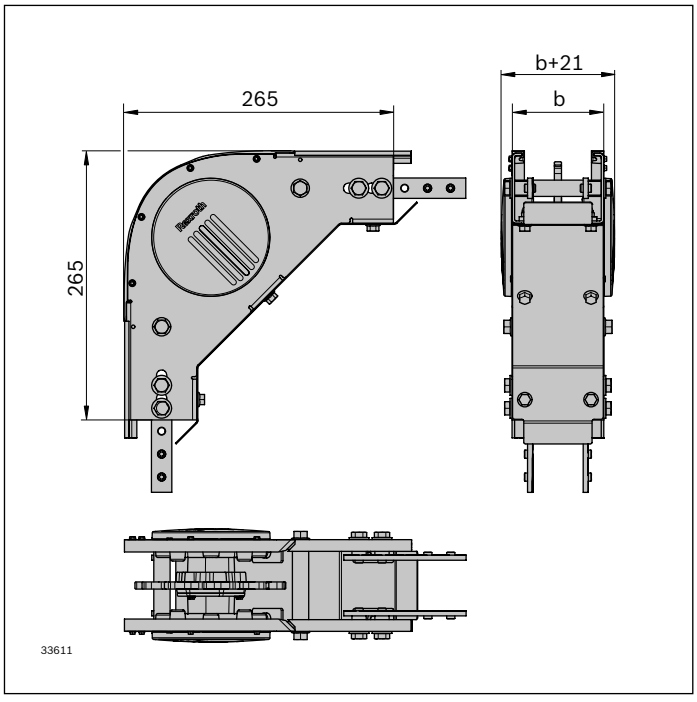
- Including fastening material
- For AL systems: Adapter AL-STS

Condition on delivery:

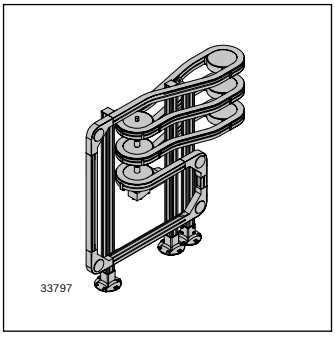
- Assembled

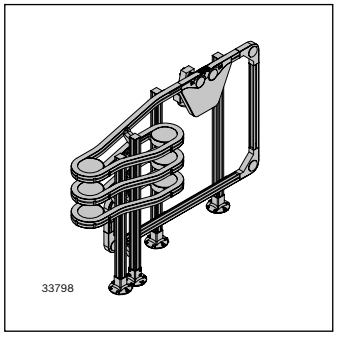
Material:

- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



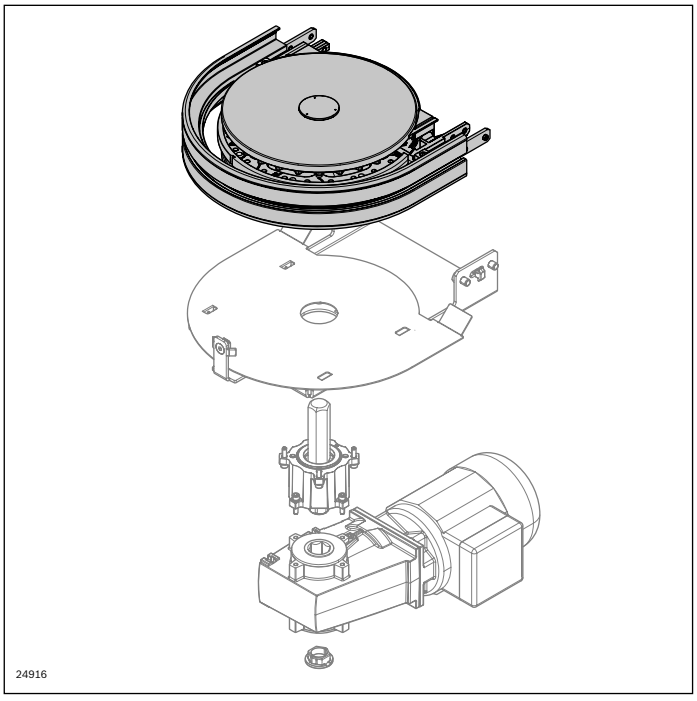
90° return unit		**No.**
VF*plus* 65	1	**3 842 552 984**
VF*plus* 90	1	**3 842 552 985**





Basic unit
Curve wheel drive AL





- ▶ Driving several superimposed basic curve wheel units (alpine conveyor) is easily implemented via the integrated hexagonal hollow shafts
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Side elements with slot to attach holders for lateral guides, or similar

The curve wheel drive is used for driving the conveyor chain in circuit systems with a top-running chain.
Combining the base unit curve wheel 180° AL with the appropriate drive kit quickly turns it into a curve wheel drive.

- Size: 65, 90
- Suitable chain types: All
- Permissible chain tensile force: F_{max} = 400 N per level
  Section length for closed circuits: L ≤ 10 m
- Permissible torque: M_{max} = 60 Nm
  When combining several curve wheel base units, the motor torque must be distributed across the individual levels
- Conveying speed: v_N = 4 ... 21 m/min
  For drives with frequency converters (FU), the speed must be limited to a maximum of 21 m/min using control technology
- Recommendation: No accumulation operation until 1000 mm after the curve wheel drive
- Can only be used with a closed profile

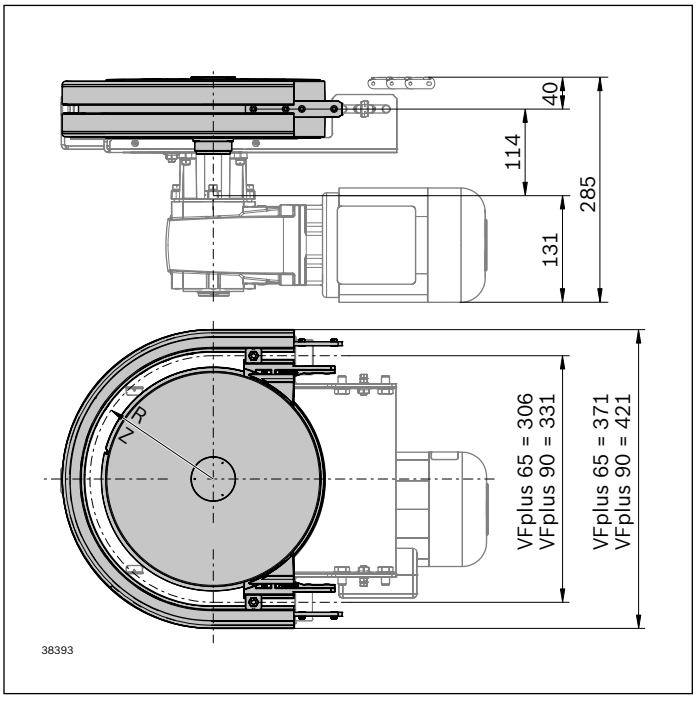
Required accessories:
- Curve wheel drive kit, see p. 94
- Assembly module, see p. 62
- Sliding rail: Length calculation, see p. 302
- Leg set, see p. 119

Optional accessories:
- Alpine conveyor connection kit, see p. 112

Scope of delivery:
- Including fastening material

Condition on delivery:
- Assembly required

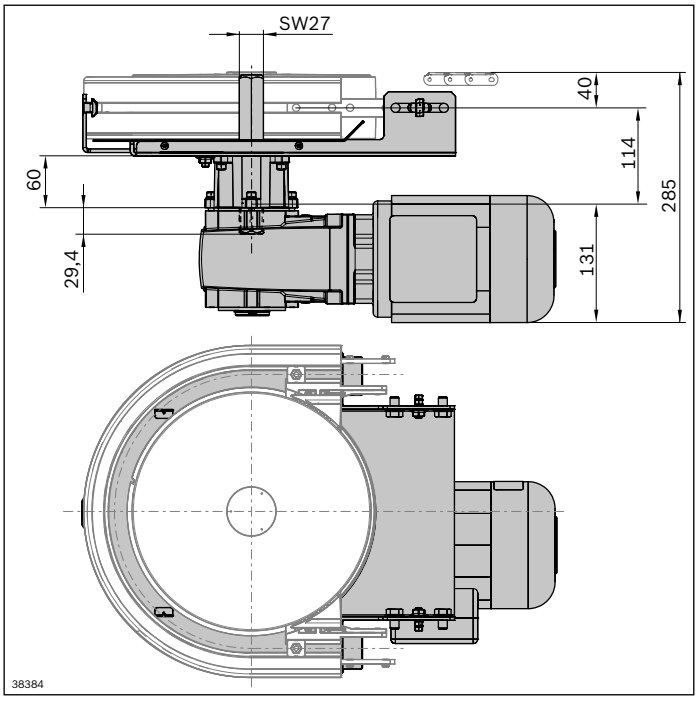
Material:
- Housing: Diecast aluminum
- Chain wheel: PA; white
- Ball bearing: Non-rusting steel 1.4301/FDA



Basic unit curve wheel AL	α (°)	No.
VF*plus* 65	180	**3 842 547 380**
VF*plus* 90	180	**3 842 547 381**

	R (mm)	**Z**[1)]
VF*plus* 65	153.0	28
VF*plus* 90	165.5	30

[1)] Number of teeth



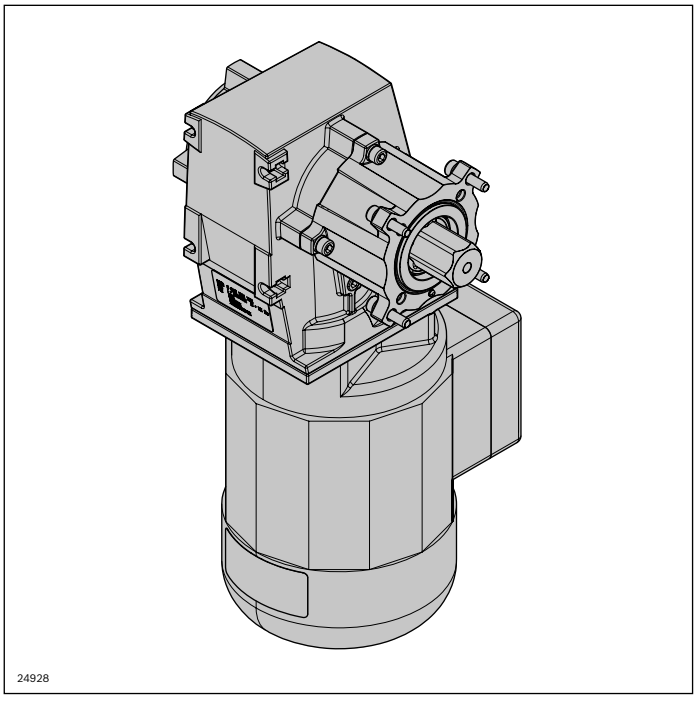
Drive kit curve wheel VF*plus* AL	No.
	3 842 998 742

See also page 94

Drive kit







▶ The adjustable ball catch coupling is protected and integrated in the flange to save space.

The drive kit is designed to operate the basic head drive/connection drive units and the return unit (closed drive). It contains a flange for attaching the motor to the basic unit, a hexagonal shaft for transmission of force, as well as other optional equipment features.

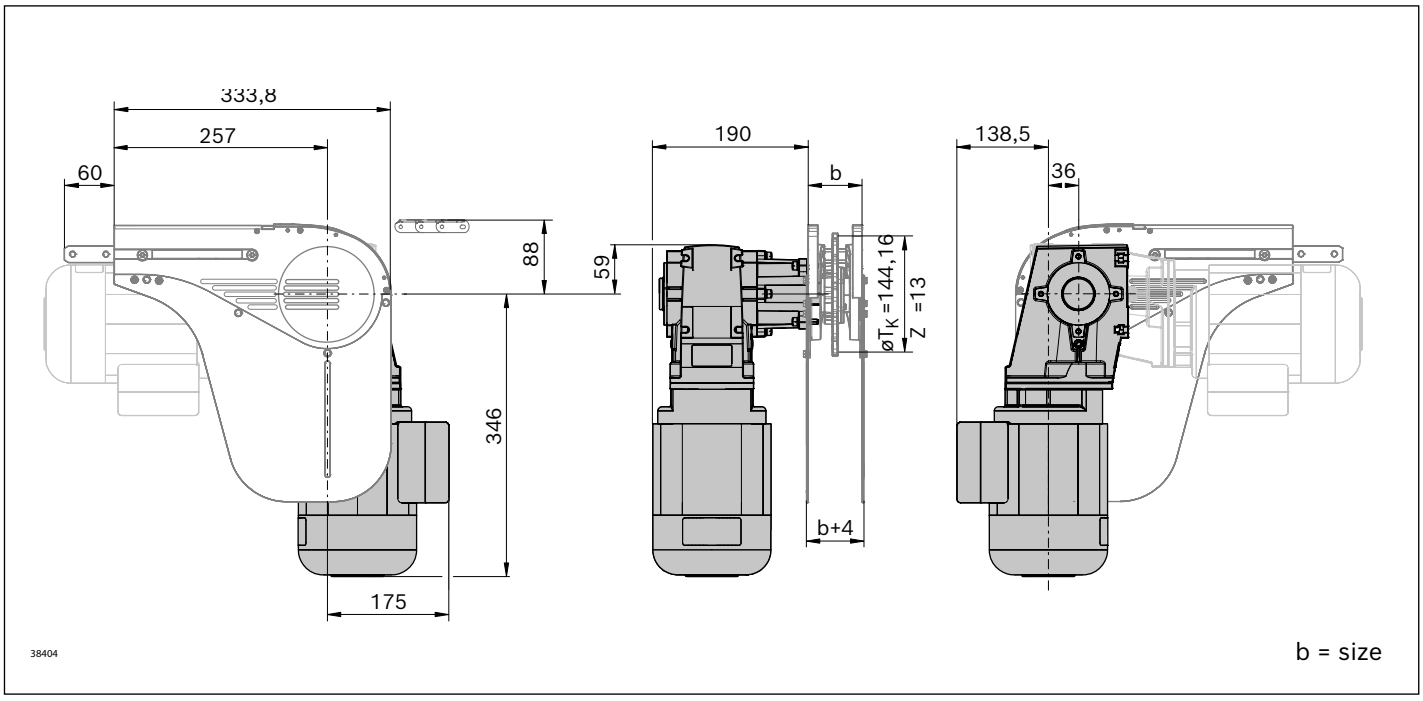
– Versions in aluminum (SP = AL) or stainless steel (SP = STS)
– For SP = AL, with adjustable ball catch coupling (Kpg = 1) or without (Kpg = 0). The coupling does not provide personal safety. Preset to maximum chain tensile force at the factory
– With Lenze gear motor (GM = 1) or with an interface for attaching a gear motor SEW SA47 (GM = 2)
  An adaptation is required by the customer for attaching other gear motors (GM = 0), see p. 93
– Fixed or adjustable speed (v_N). For an adjustable speed, gear motors must be retrofitted with an FU (frequency converter), see p. 96
– Different voltages and supply frequencies (U/f)
– Connections are made using terminal boxes (AT = K) or plugs (AT = S)
– GM = 1 without surface and corrosion protection

Optional accessories:
– Frequency converter, see p. 96

Scope of delivery:
– Including fastening material
– Including flange, shaft and gear motor (GM = 1)

Material:
– Flange, motor: Diecast aluminum
– Shaft: Non-rusting steel 1.4301/PA
– Ball catch coupling: Steel

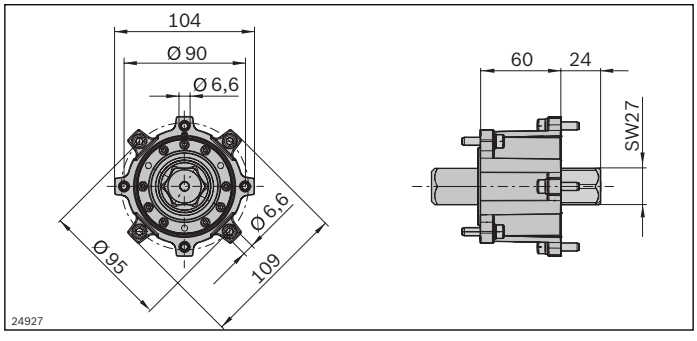
Condition on delivery:
– Kit



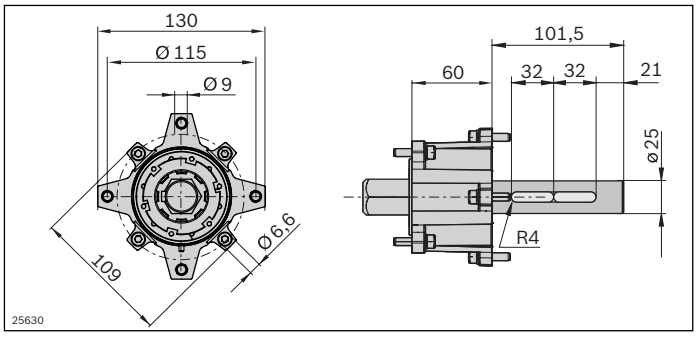
Drive kit VF*plus*	**SP**	**GM**	**Kpg**	**v_N** (m/min)	**U/f** (V/Hz) **See p. 305**	**AT**	**No.**
	AL; STS*	0: 1; 2	0; 1	5, 10, 13, 16, 21, 27, 33, 40, 50		K; S	**3 842 998 291** SP = ... GM = ... Kpg = ... v_N = ... U/f = ... AT = ...

* Version STS see p. 164

AL GM = 0

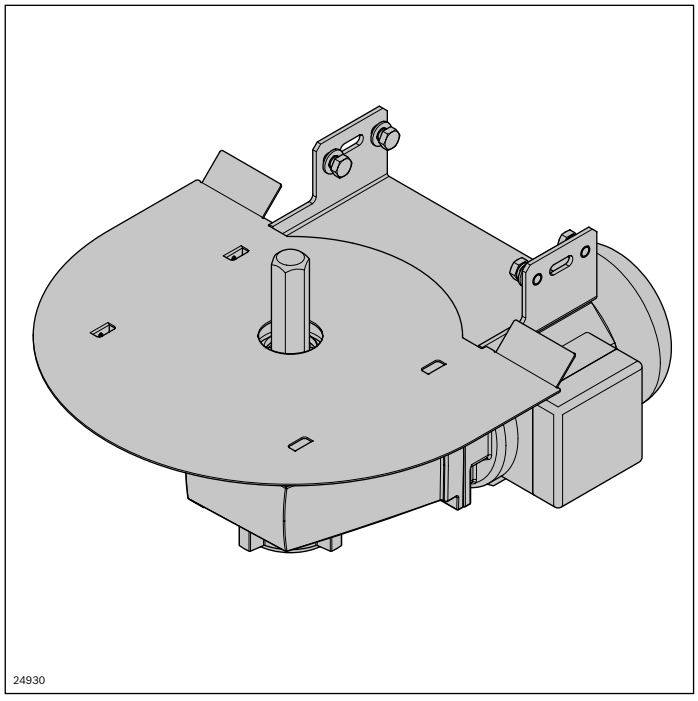


AL GM = 2



Drive kit curve wheel AL





- The transmission of force of several superimposed curve wheels is possible. The motor torque then has to be distributed across all curve wheel levels.
- The adjustable ball catch coupling is protected and integrated in the flange to save space.

The 180° curve wheel (aluminum version) is quickly transformed into a curve wheel drive by using a drive kit. It contains a flange for attaching the motor to the curve wheel, a hexagonal shaft for transmission of force, as well as other optional equipment features.

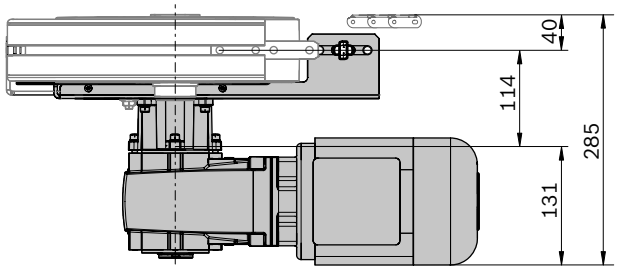
- For building a circulation system with curve wheel (AC = 0) or a alpine conveyor (AC = 1)
- With preset ball catch coupling (KPG = 1) for limiting the torque or for the drive kit of the alpine conveyor (AC = 1) or without (KPG = 0). The coupling does not provide personal safety.
- With Lenze gear motor (GM = 1) or with an interface for attaching a gear motor SEW SA47 (GM = 2)
  An adaptation is required by the customer for attaching other gear motors (GM = 0), see p. 95
- Fixed or adjustable speed (v_N). For an adjustable speed, gear motors must be retrofitted with an FU (frequency converter), see p. 96
- Different voltages and supply frequencies (U/f)
- Connections are made using terminal boxes (AT = K) or plugs (AT = S)
- GM = 1 without surface and corrosion protection
- Conveying speed: v_N = 4 ... 21 m/min. For drives with frequency converters (FU), the speed must be limited to a maximum of 21 m/min using control technology

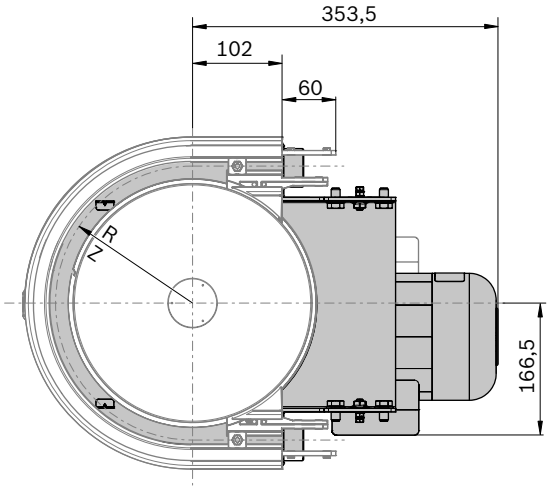
Required accessories:
- Motor leg sets, see p. 121

Scope of delivery:
- Including fastening material
- Including guard plates (contact protection from below)
- Including flange, shaft and gear motor (GM = 1)

Condition on delivery:
- Kit

Material:
- Flange: Diecast aluminum
- Shaft: STS
- Connecting sheet, cover sheet: Steel; zinc-plated
- Ball catch coupling: Steel





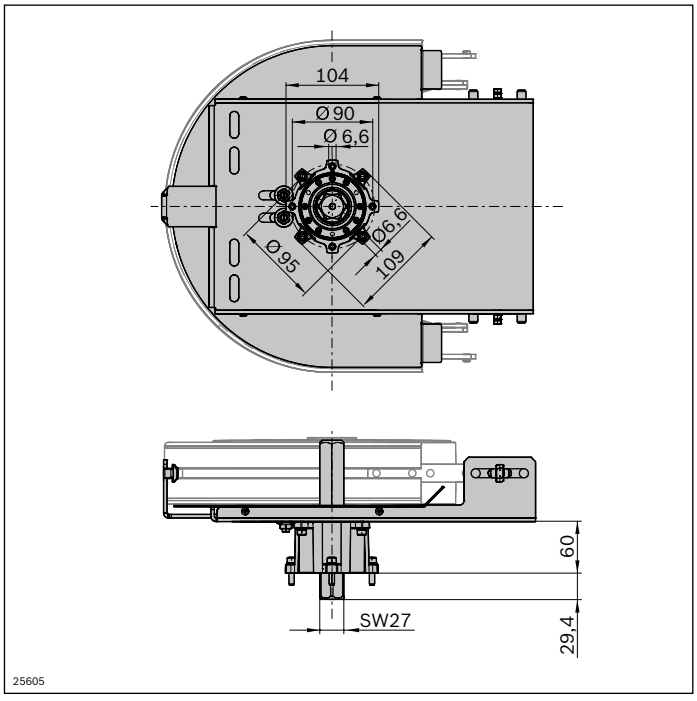
	R (mm)	**Z**[1)]
VF*plus* 65	153.0	28
VF*plus* 90	165.5	30

38395

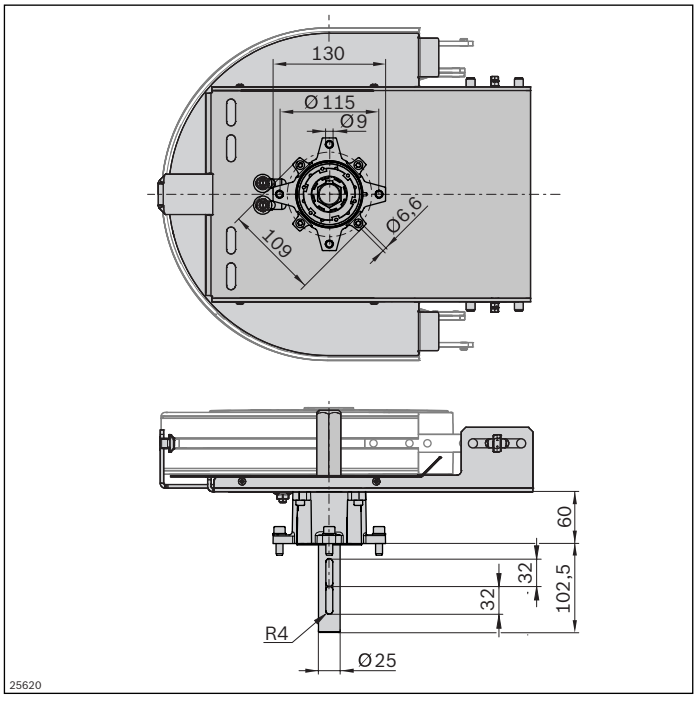
[1)] Number of teeth

Drive kit curve wheel AL	**GM**	**AC**	**b** (mm)	**Kpg**	**v_N** (m/min)	**U/f** (V/Hz) **See p. 305**	**AT**	**No.**
	0; 1; 2	0; 1	65; 90	0; 1	5, 10, 13, 21		K; S	**3 842 998 742** GM = ... AC = ... b = ... Kpg = ... v_N = ... U/f = ... AT = ...

AL GM = 0



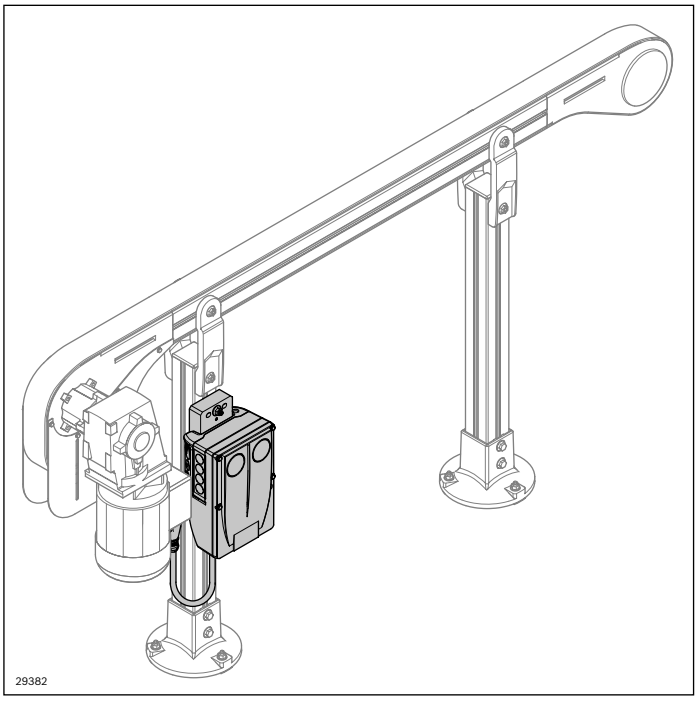
AL GM = 2



Frequency converter motec 8400

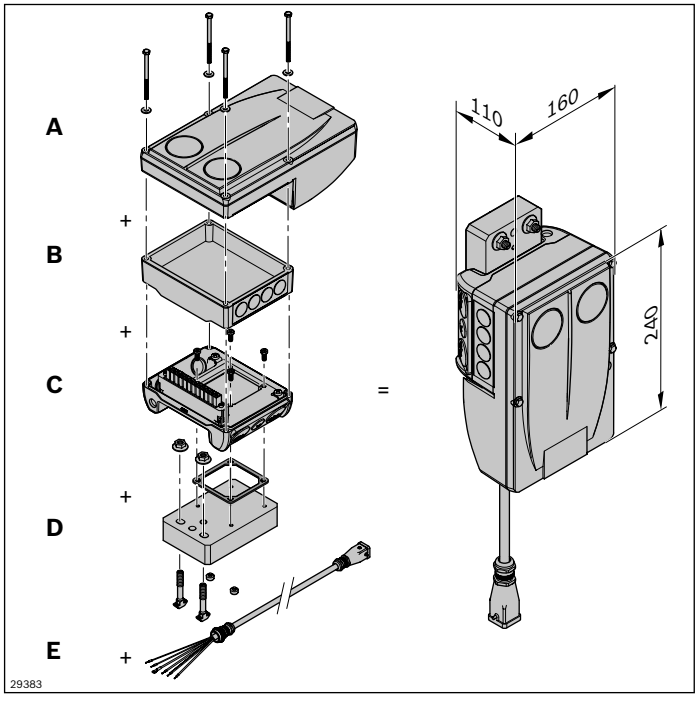






In order to operate a gear motor with adjustable speed, the motor needs to be retrofitted with a frequency converter (FU). The frequency converter has a modular design so that it can be easily mounted on a leg set and connected to the motor by cable.

- Connected load: 0.55 kW
- Speed (v_N) depending on the base speed of the gear motor used

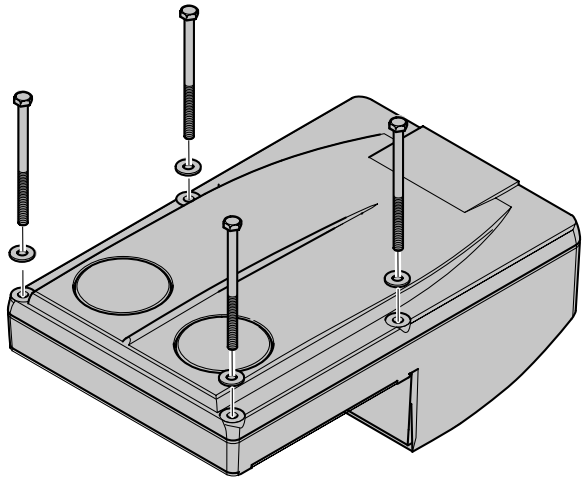


Complete frequency converter consisting of the modules

- Frequency converter power unit (**A**)
- Communication module (**B**)
- Connection unit (**C**)
- Attachment kit (**D**)
- Optional: Connection cable (**E**) for the plug-in connection to the gear motor (AT = S)

The individual modules can be ordered separately and are easy to connect with the screws supplied with the scope of delivery. For the internal and external voltage supply, the modules must be wired by the user (see terminal box assignment, page 309).

A



29384

Frequency converter (A)

Power unit: 0.55 kW

3/PE AC 320 V -0 % ... 528 V +0 %,

45 Hz -0 % .... 65 Hz +0 %

- Easy start-up via manual control unit
- Easy-to-replace memory module
- Large LED status indicator

Frequency converter	No.
0.55 kW power unit	**3 842 553 447**

The speed range of the frequency converter *) is based on the base speed of the motor:

Base speed of motor (m/min) **at 50 Hz**	**Min**[1)] (m/min)	**Max**[2)] (m/min)
5[3)]	2	6
10[3)]	4	12
13	5	15
16	6	19
21	7	25
27	9	32
33	11	39
40	13	48
50	16	60

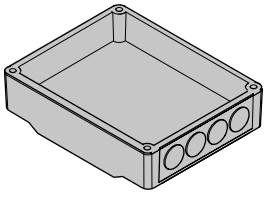
*) By accepting a resulting loss of power, a higher bandwidth can be covered (see p. 309)

[1)] Min corresponds to approx. 16 Hz supply frequency

[2)] Max corresponds to approx. 60 Hz supply frequency

[3)] At 460 V/60 Hz max (m/min) 20 % higher

B



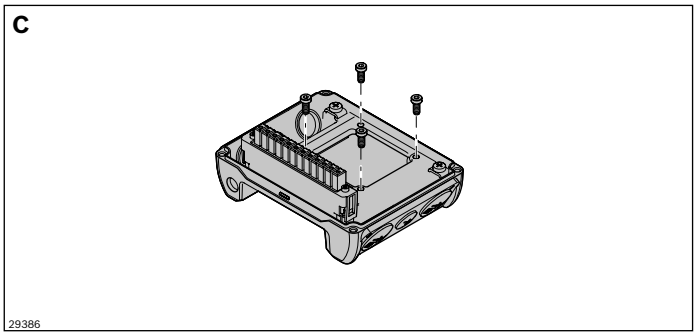
29385

Communication module (B)

- Used to control the frequency converter
- Cable connection options
- Standard version without "integrated safety system STO (safety torque off)" (available on request)

Depending on their function, the individual communication modules are provided with the corresponding connections.

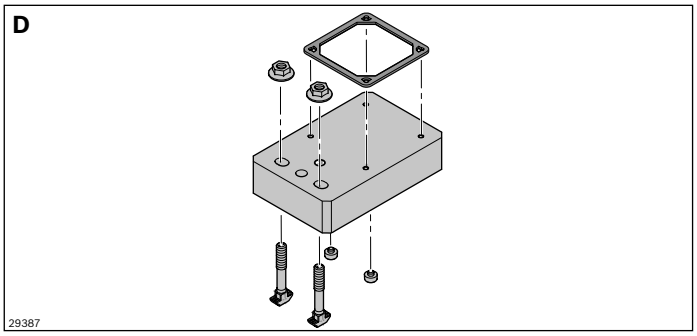
Communication module	No.
Standard I/O	**3 842 553 449**
AS-i	**3 842 553 453**
CANopen	**3 842 553 454**
EtherNet/IP	**3 842 553 451**
EtherCAT	**3 842 553 459**
PROFIBUS	**3 842 553 452**
PROFINET	**3 842 553 450**



Connection unit (C)

– Power grid connection options

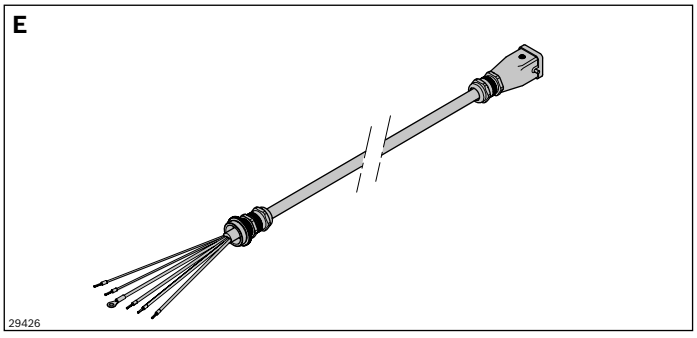
Connection unit	No.
	3 842 553 445



Attachment kit (D)

– For the simple attachment of the frequency converter to the leg set AL (slot/s with a 60 or 80 strut profile)

Attachment kit	No.
	3 842 553 457



Connection cable (E)

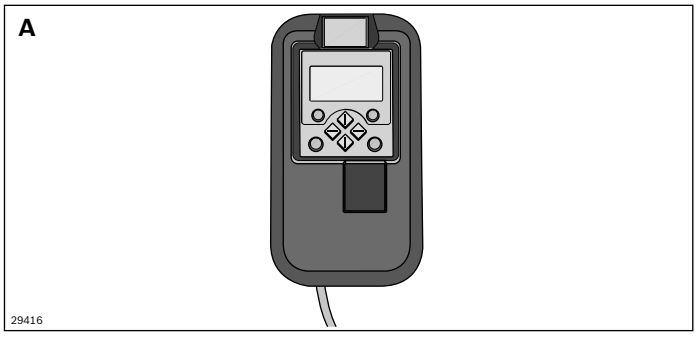
– For connecting the gear motor to the frequency converter (length: 1 m)
– For the drive kit AT = S (direct wiring with AT = K)

Connection cable	No.
	3 842 553 512

Manual control unit
Switching/potentiometer unit

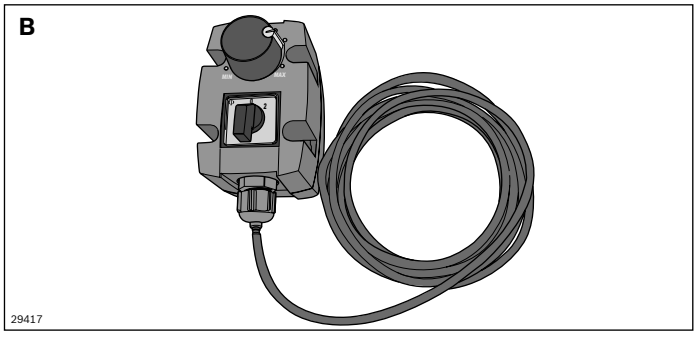






Manual control unit
The manual control unit is required for the parameterization of drives with frequency converters.
In addition, you can:
- Control (e.g. block and release)
- Display operating data
- Steplessly regulate the transport speed
- Transfer parameter sets to other basic devices

Manual control unit	No.
	3 842 552 821



Switching/potentiometer unit
The switching/potentiometer unit is used to fine tune the transport speed within a range that has been preset with the manual control unit. The switching/potentiometer unit is connected to the frequency converter by a cable.
The drive can be started or stopped with the rotary switch.

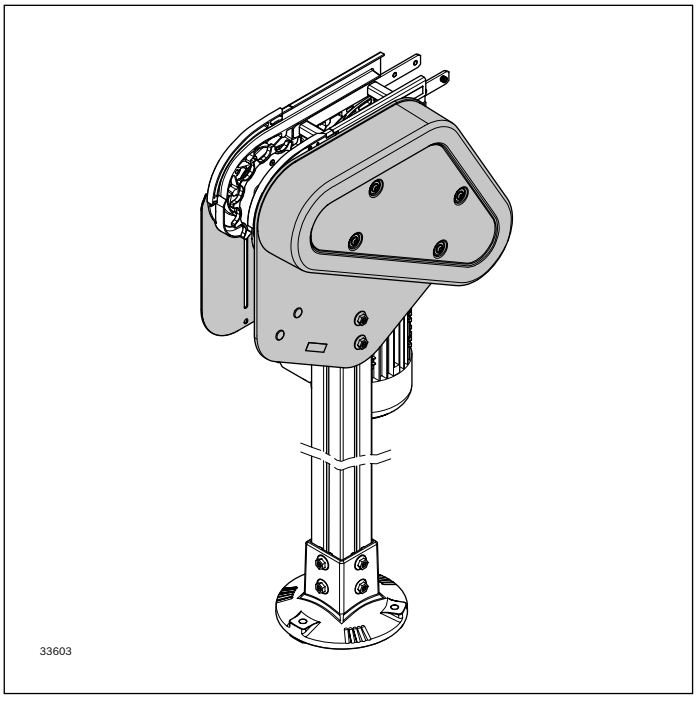
Notice: It is imperative that the running direction of the chain conveyor is checked prior to start-up.

Switching/potentiometer unit	No.
	3 842 553 184

Scope of delivery:
- **A, B:** Including 2.5 m connection cable

Transmission kit





If the available space is not sufficient for mounting the drive kit directly on the basic unit, the transmission kit also enables conversion to a transmission drive at a later date. The basic units head drive direct and closed head drive are quickly turned into a transmission drive with variable mounting position with the transmission kit and drive kit.

- Only for AL systems
- Size: 65, 90, 120
- Can also be used in sizes 160, 240, 320 with the additional adapter 3 842 559 108
- Permissible chain tensile force: F_{max} = 1250 N
- Support required
- Not suitable for wet operation/cleaning
- Mounting on STS version on request

- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Very quiet, as transmission takes place through toothed belt

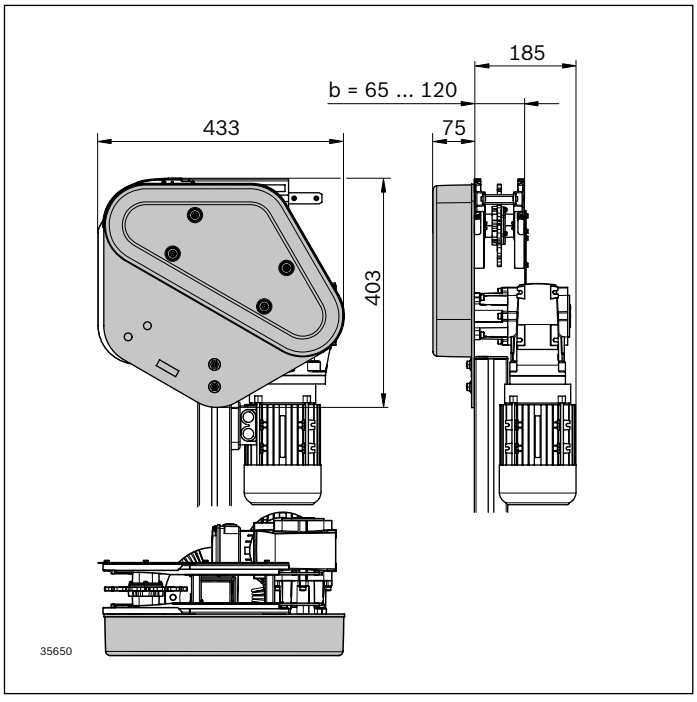
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling

Required accessories:
- Leg set, see p. 117

Scope of delivery:
- Including fastening material

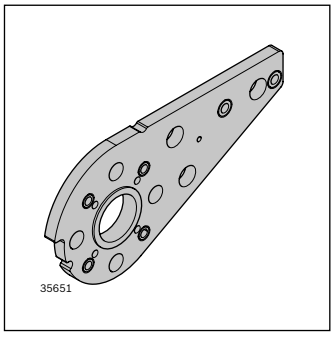
Condition on delivery:
- Assembled

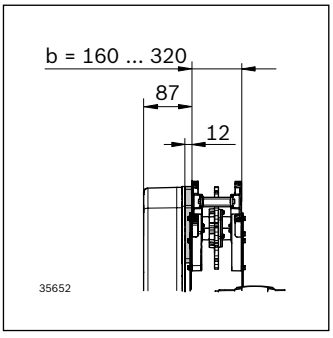
Material:
- Side plates: Non-rusting steel 1.4301
- Belt: Rubber compound
- Cover: ABS
- Connecting parts: Aluminum
- Adapter: POM, non-rusting steel 1.4301



Transmission kit VF*plus*	No.
	3 842 552 900

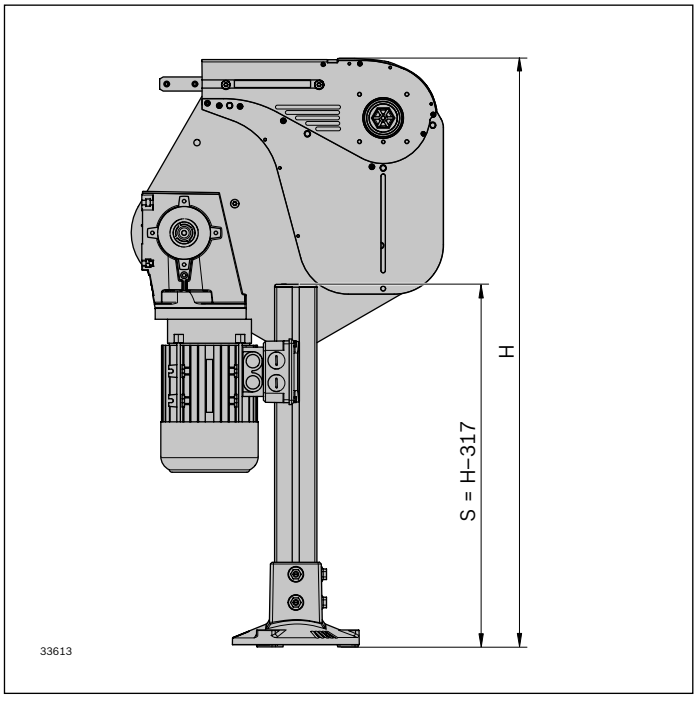
b = 65, 90, 120





Adapter VF*plus* Transmission AL 160-320	No.
	3 842 559 108

b = 160, 240, 320



Motor support

The support is mounted on the inside (below the chain).

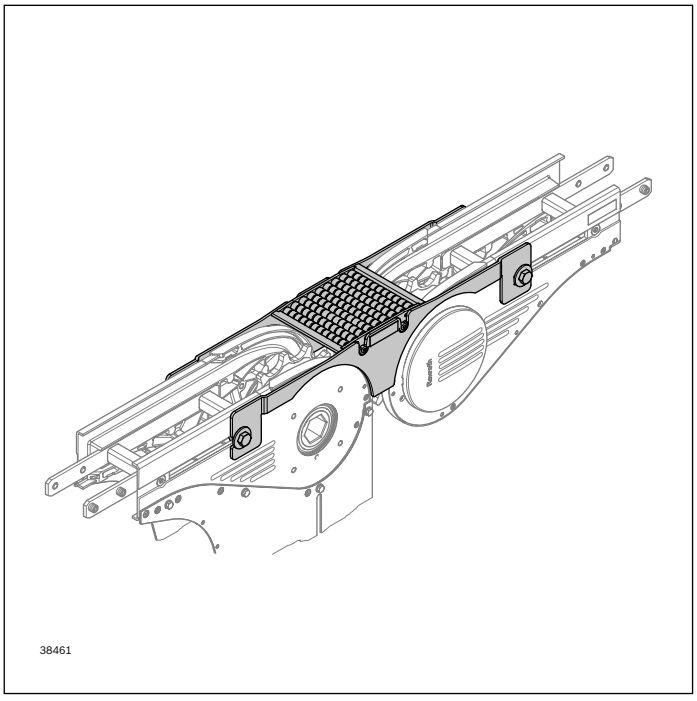
Notice: The motor must be mounted so that there are no collisions with the support.

H: Transport height (top edge of chain)
S: Leg set height
L: Profile length (L = S – 15)

Passive bridge connection kit







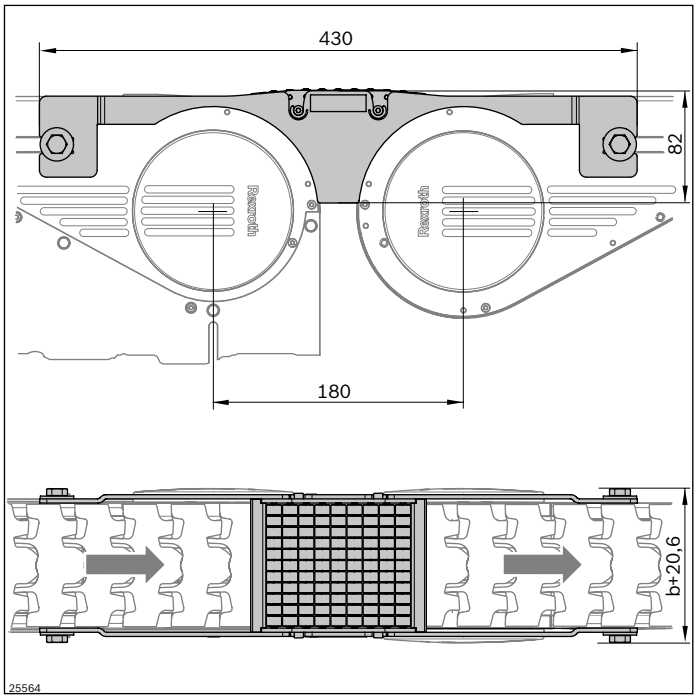
The passive bridge is used as a transfer unit between the basic unit and return unit or with the connection drive to bridge the conveyor trench.
- Size: 65-160
- Only for flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- Height adjustment: Approx. 2 mm
- The conveyed goods are transferred via passive rollers
- Suitable for goods from approx. 300 mm length

▶ Can be retrofitted into a standard configuration at any time

Scope of delivery:
- Including fastening material

Condition on delivery:
- Some assembly required

Material:
- Non-rusting steel 1.4301, POM

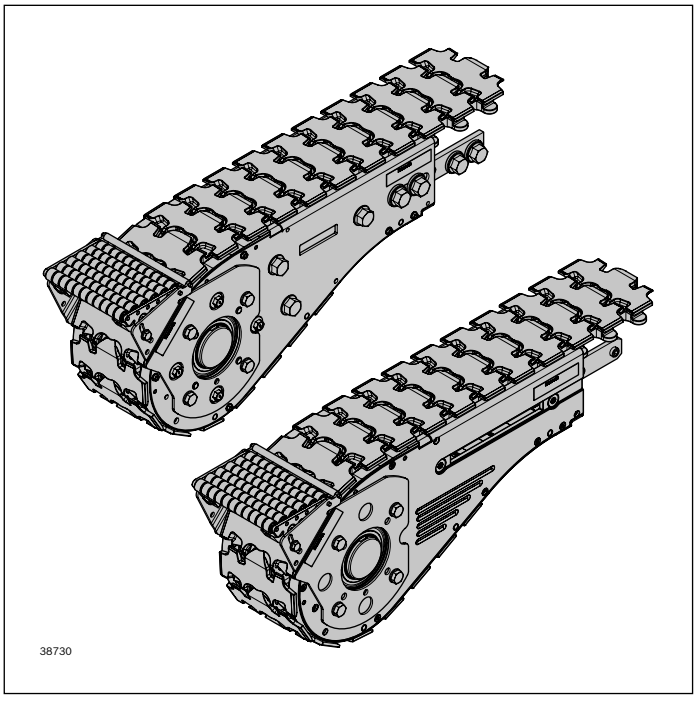


Passive bridge connection kit	No.
VF*plus* 65	**3 842 549 015**
VF*plus* 90	**3 842 549 016**
VF*plus* 120	**3 842 549 017**
VF*plus* 160	**3 842 549 018**

Short passive bridge connection kit







The short passive bridge is used as a transfer unit between the basic unit or return unit and a third-party conveyor to bridge the conveyor trench.

- Size: 65-160
- Each in a separate version for a flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- The conveyed goods are transferred via passive rollers
- Suitable for goods from approx. 150 mm length
- Inclination adjustment ±15° (only the gradient)

- ▶ Can be retrofitted into the basic unit and return unit at any time (cannot be combined with the transmission kit)
- ▶ Suitable for mounting on AL and STS

Scope of delivery:

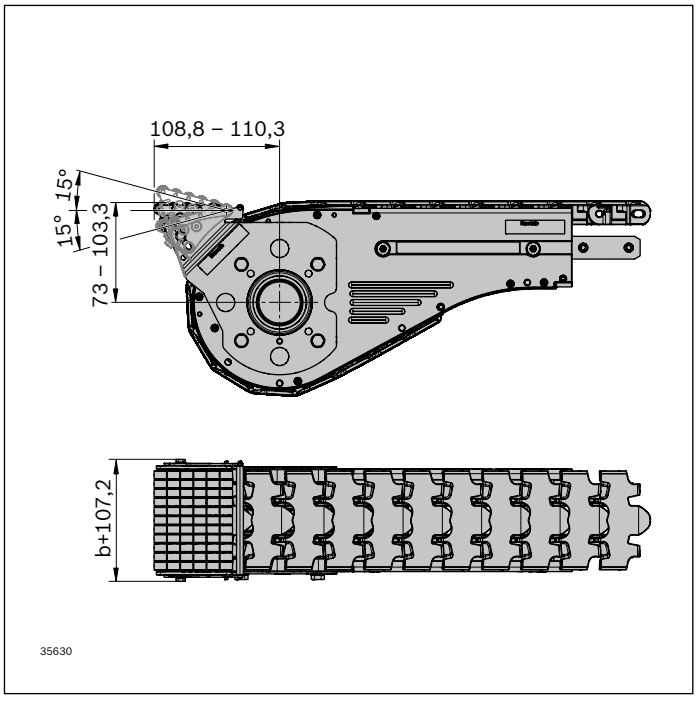
- Including fastening material

Material:

- Non-rusting steel 1.4301, POM

Condition on delivery:

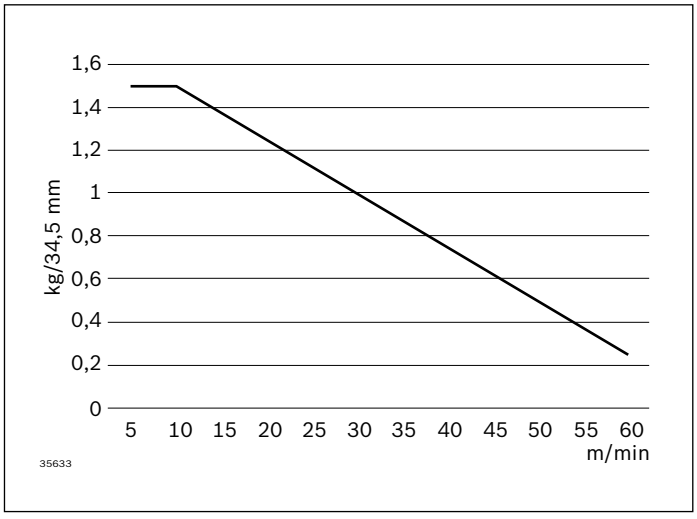
- Some assembly required



Short passive bridge connection kit for flat conveyor chain	**No.**
VF*plus* 65	**3 842 558 050**
VF*plus* 90	**3 842 558 051**
VF*plus* 120	**3 842 558 052**
VF*plus* 160	**3 842 558 053**

Short passive bridge connection kit for static friction chain	**No.**
VF*plus* 65	**3 842 558 078**
VF*plus* 90	**3 842 558 079**
VF*plus* 120	**3 842 558 080**
VF*plus* 160	**3 842 558 081**

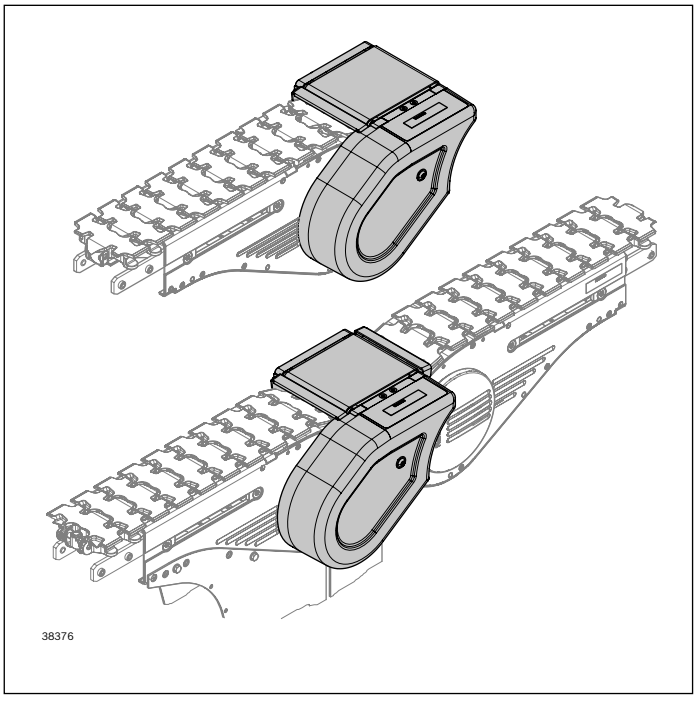
Permissible load depending on the speed



Connection kit active belt bridge







- ▶ Simple transmission of the drive force using hexagonal hollow shafts integrated into the base unit or return unit as standard
- ▶ Can be retrofitted into a standard configuration at any time
- ▶ Easy replacement of the belt from the top

Scope of delivery:
- – Including fastening material
- – Transmission and protective cover

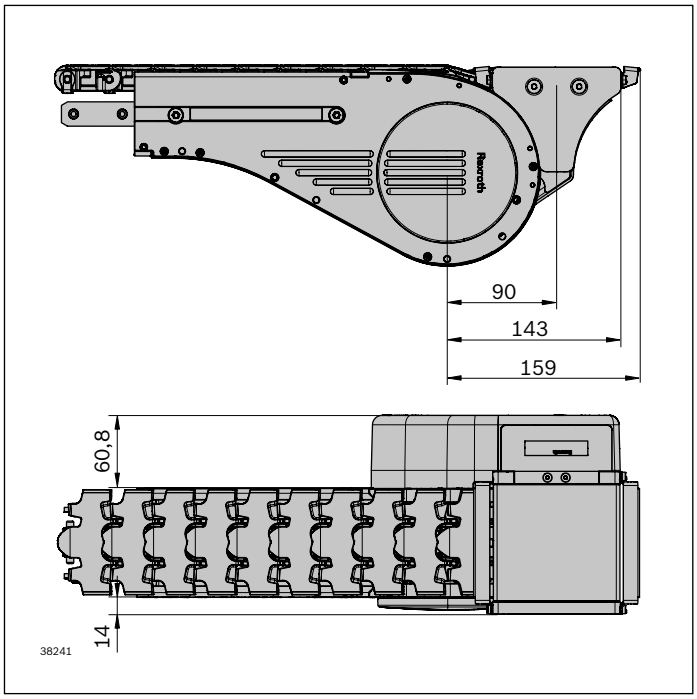
Material:
- – Aluminum, non-rusting steel 1.4301, PA, PE, ABS, PUR

The active belt bridge is used as a transfer unit for bridging the conveyor trench
- • between the basic unit and return unit
- • between the start or end of a conveyor section and a third-party conveyor
- • in the connection drive
- • Size: 65, 90

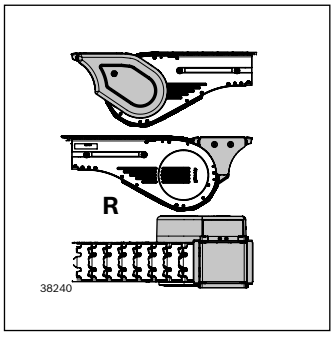
– Only for flat conveyor chain and static friction chain

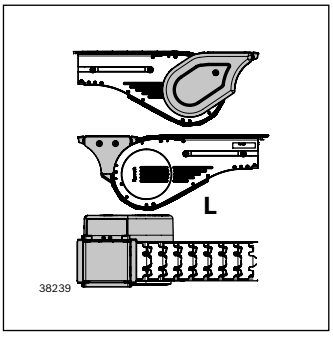
The active belt bridge is driven by a transmission (on the drive or return unit side).
- – Suitable for conveyed materials from approx. 80 mm in length (depending on the speed, position of the center of gravity, product friction, etc.)
- – Installation possible on both the drive and return side (make sure to use the correct L/R version)
- – Not permitted for wet operation, rough ambient conditions or sharp-edged products
- – Load depending on the speed (see diagram)
- – The speed of the adjacent conveyor should be approximately the same to prevent premature wear

Condition on delivery:
- – Some assembly required

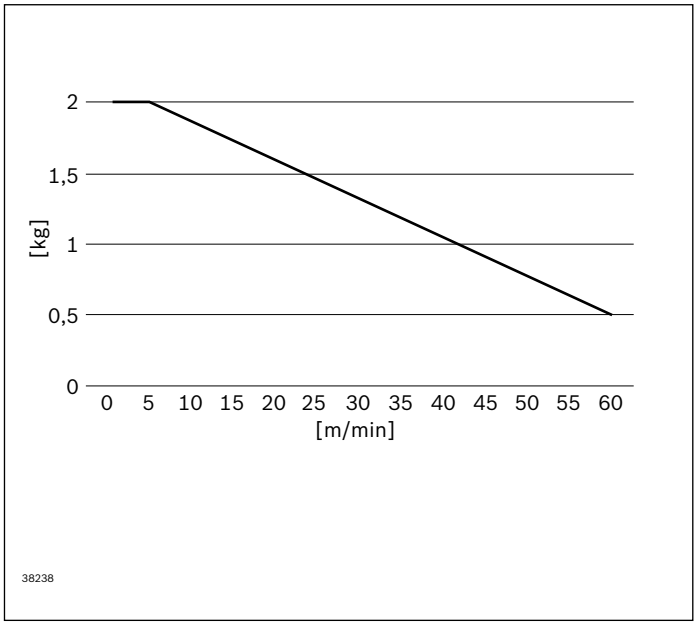


Connection kit active belt bridge		**No.**
VF*plus* 65	L	**3 842 558 000**
VF*plus* 65	R	**3 842 558 001**
VF*plus* 90	L	**3 842 558 002**
VF*plus* 90	R	**3 842 558 003**





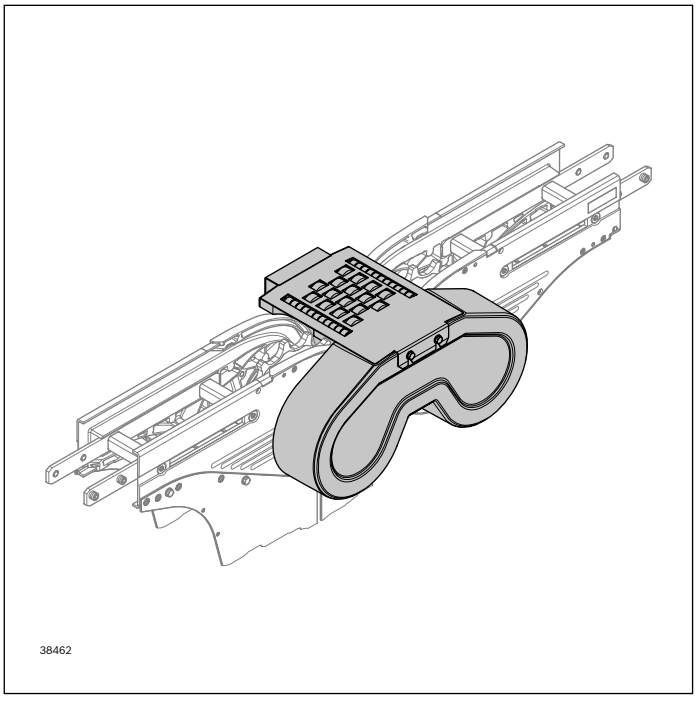
Permissible load depending on the speed



Active roller bridge connection kit







The active roller bridge is used as a transfer unit between the basic unit and return unit or with the connection drive to bridge the conveyor trench. The active roller bridge is driven by a transmission (on the drive or return unit side).

- Size: 65-160
- Only for flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- Height adjustment: Approx. 2 mm
- Additional versions (e.g. machine variants at the section end) available on request
- Suitable for conveyed materials from approx. 100 mm in length (depending on the speed, position of the center of gravity, product friction, etc.)
- Freely selectable mounting position (L/R)
- Not permitted for wet operation or rough ambient conditions

- ▶ Simple transmission of the drive force using hexagonal hollow shafts integrated into the base unit or return unit as standard

- ▶ Can be retrofitted into a standard configuration at any time

Scope of delivery:

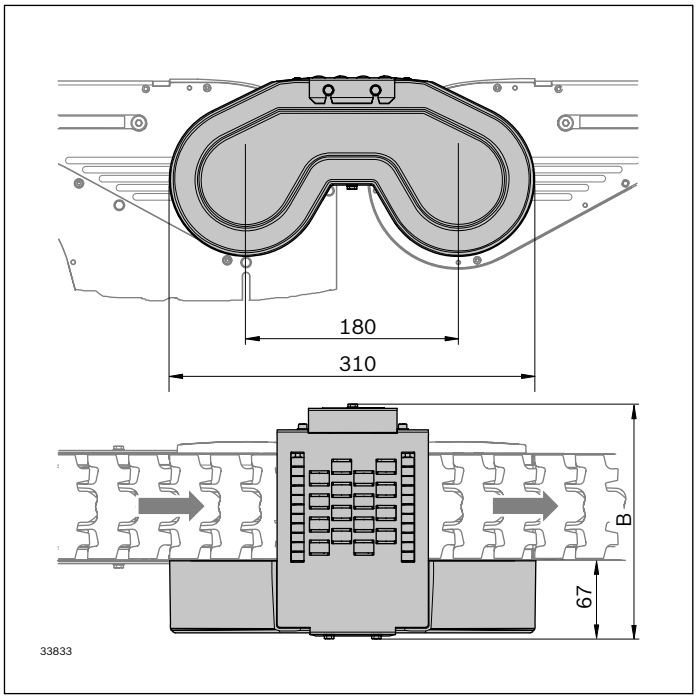
- Including fastening material
- Transmission and protective cover

Condition on delivery:

- Some assembly required

Material:

- Non-rusting steel 1.4301, PA, POM, ABS, PUR

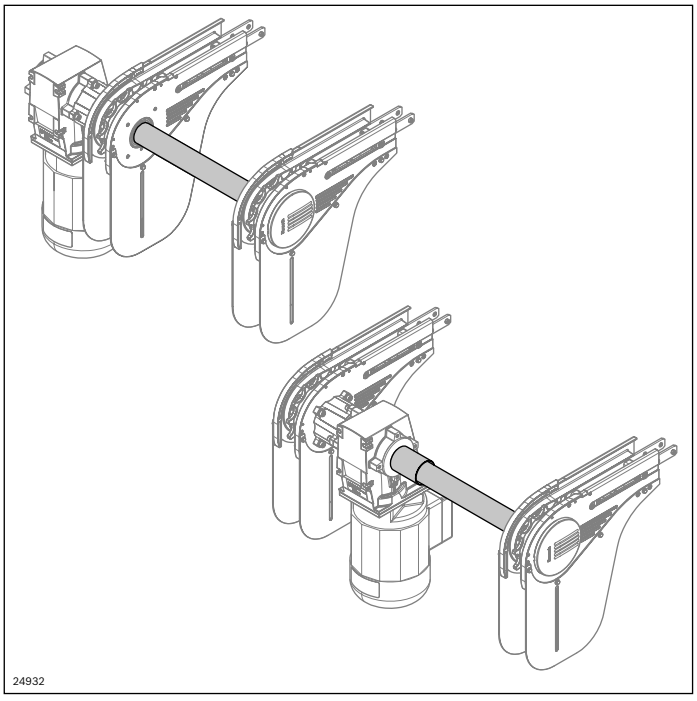


Active roller bridge connection kit	**B**	**No.**
VF*plus* 65	174	**3 842 555 820**
VF*plus* 90	199	**3 842 555 821**
VF*plus* 120	229	**3 842 555 822**
VF*plus* 160	269	**3 842 555 823**

Synchronous drive
Connection kit, external motor/internal motor





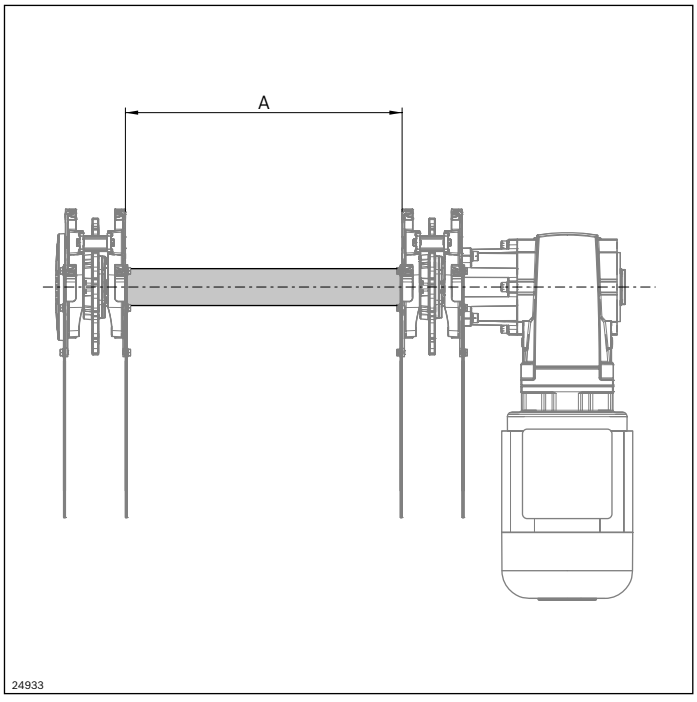


The connection kit for a synchronous drive is used to synchronously drive two conveyor sections with only one motor.

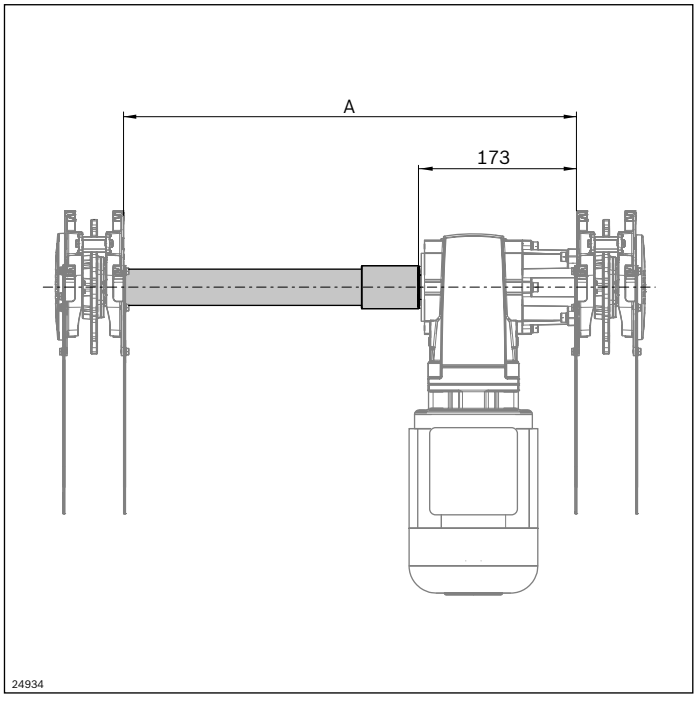
– Exterior synchronous drive:
  • Motor mounting position outside the parallel sections
  • Use of holders AL (see p. 117, 121), minimum distance between the sections: $A_{min\ AL} \geq 20$ mm
– Internal synchronous drive:
  • Motor mounting position between the parallel sections for drive kit GM = 1 (see p. 92), customer check required for other motor types

Condition on delivery:
– Assembly required

Material:
– Shaft: Non-rusting steel 1.4301
– Coupling: PA



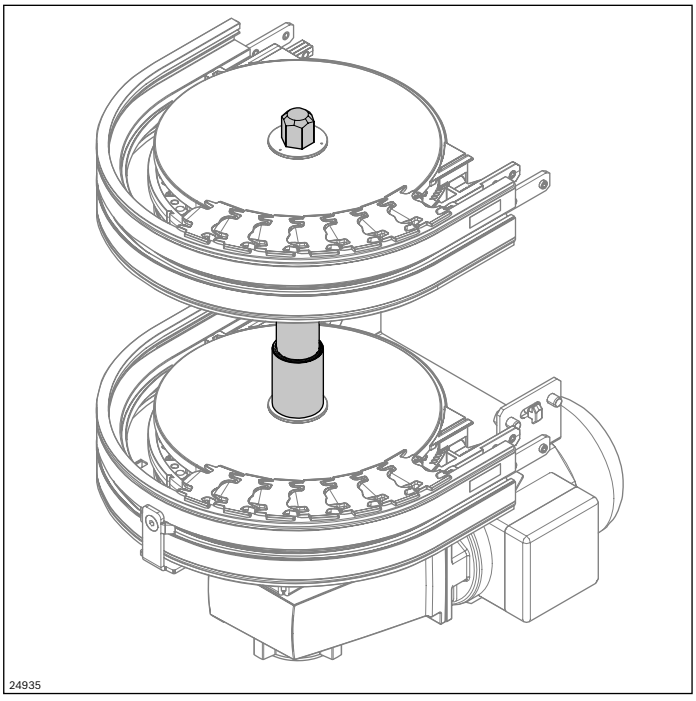
Synchronous drive connection kit	**A** (mm)	**No.**
VF*plus* external motor	15 ... 2940	**3 842 998 774**



Synchronous drive connection kit	**A** (mm)	**No.**
VF*plus* internal motor	240 ... 3160	**3 842 998 775**

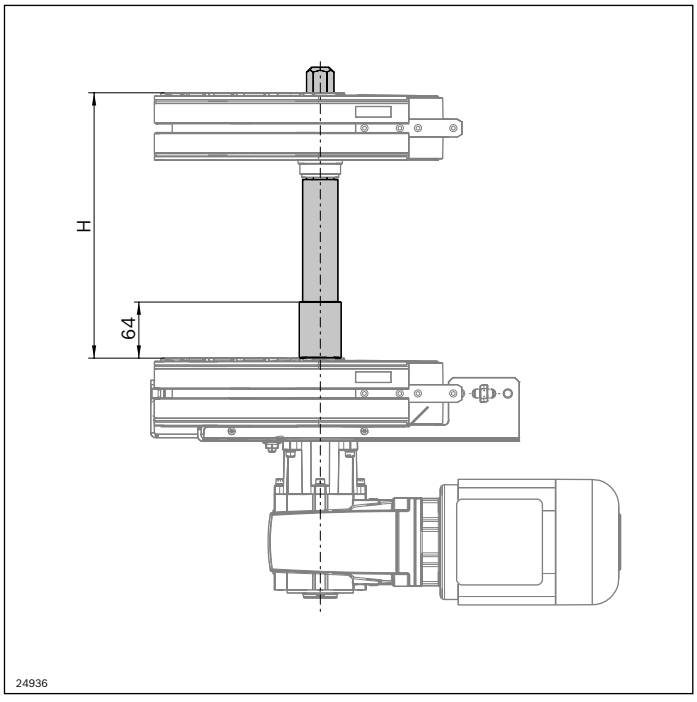
Alpine conveyor connection kit



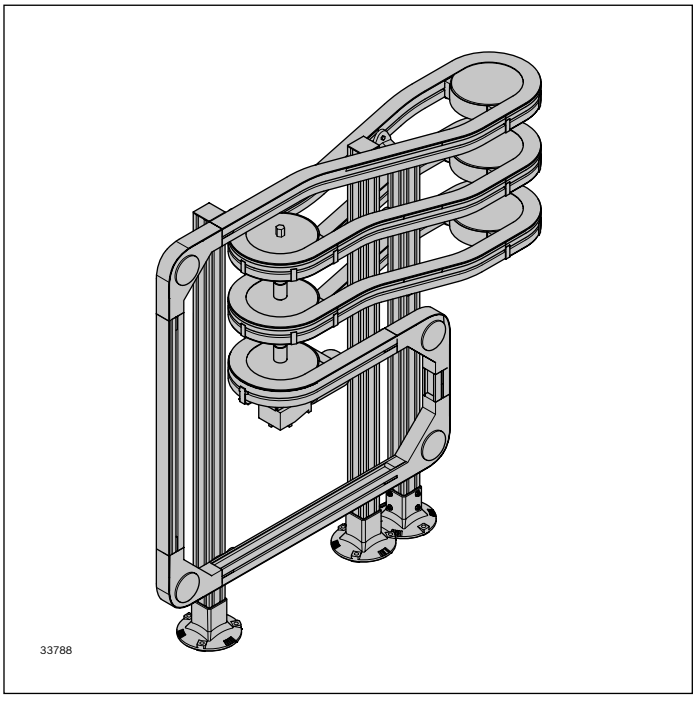


With the alpine conveyor connection kit, an alpine conveyor in the sizes 65 mm or 90 mm can be easily mounted by combining several basic units of curve wheel drive AL.

Material:
- Shaft: Non-rusting steel 1.4301
- Coupling: Polyamide

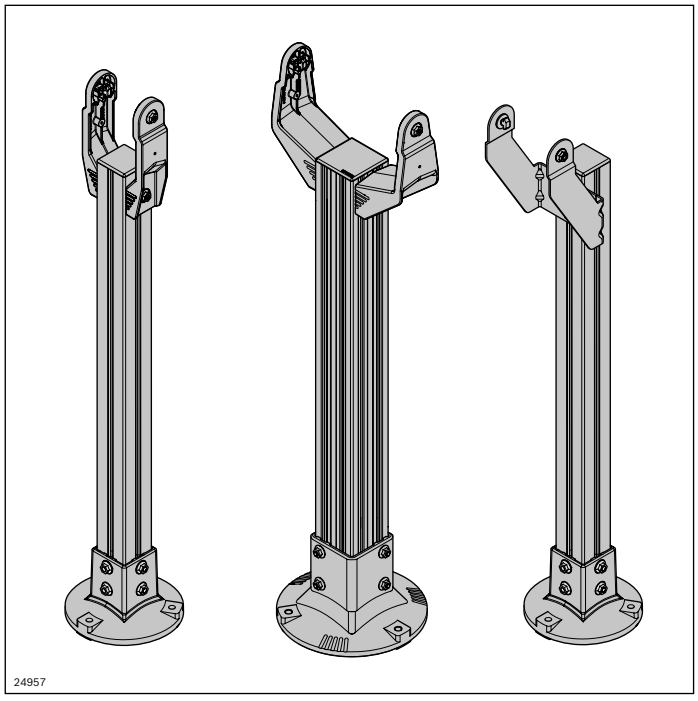


Alpine conveyor AC connection kit	**H** (mm)	**No.**
	172 ... 1000	**3 842 998 776**

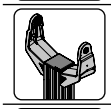
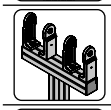


Leg sets AL



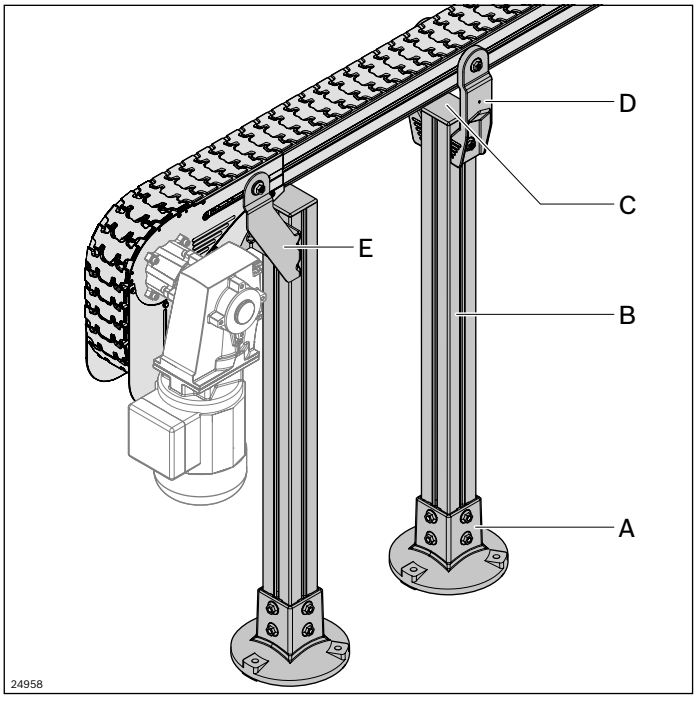


- Fast, simple leg set adjustment thanks to clever product details
- Plug-through screws, few screwed connections
- Easy to clean thanks to ample draining surfaces
- Simple realization of ascending and descending conveyor sections thanks to a holder with centering lugs that can be broken off
- Drill guide for simple fastening of drip trays, safety devices, etc.
- Supports can also be used in conjunction with sections STS

	**Leg set 65-120 AL**	**116**
	**Curve wheel drive leg set**	**119**
	**Leg set 160-320 AL**	**120**
	**Supporting bracket AL**	**122**
	**Supporting bracket, lateral AL**	**124**

Leg set 65-120 AL





- Holder is easily centered in the slot thanks to centering lugs (**D**)
- Very simple assembly with plug-in screwed connection (**D**)
- Easy-to-clean design with draining surfaces

The chain conveyor is placed on the ground by means of supports (and fastened) or even suspended from the ceiling. The suspension is determined by the application.
The floor supports for sizes 65, 90 and 120 are constructed from the following single parts:
Foot 60x60 (**A**), strut profile 60x60 (**B**), cover cap (**C**), holder for attaching the section profiles (**D**) 65, 90 or 120.
A separate holder (**E**) is used to support the motors / drives.

- Depending on the speed, accumulation behavior and weight, the supports are to be fixed at a distance of approx. 2 ... 3 m
- The leg sets for the stainless steel system (see p. 182) may also be used for the aluminum system
- The holder (**E**) may only be used for AL systems
- The height adjustment range is up to 79 mm (**D**), depending on the return chain, see "Holder adjustment range" p. 118
- The holder (**D**) can also be used for ascending and descending conveyor sections (up to approx. 45°, depending on the return chain) by removing the centering lugs
- Holder (**D**) with drill guide for additional holes to fasten drip trays, trap guards for return chains, etc.

See also setting up the supports for systems ESD, page 202.

Optional accessories:
- Dowel, washer, see p. 118

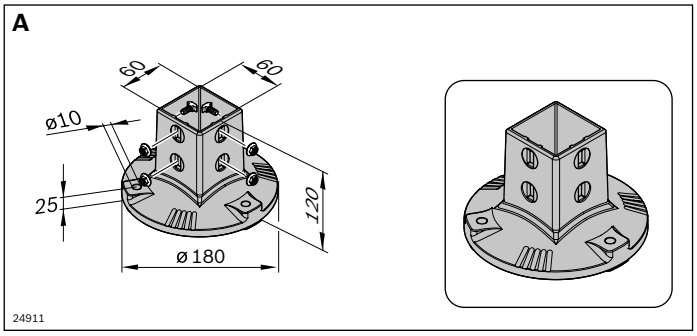
Alternative feet (see MGE catalog, "Feet and wheels" section)

Scope of delivery:
- **A**, **E:** Including fastening material
- **D:** Set (2 pcs) incl. fastening material

Condition on delivery:
- Assembly required

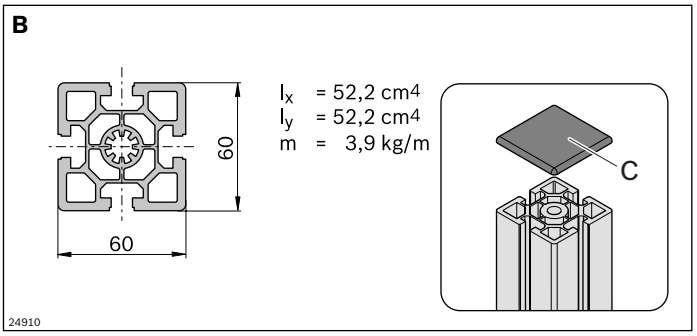
Material:
- **A**, **D:** Diecast aluminum; silver
- **B:** Aluminum; natural, anodized
- **C:** PA; black
- **E:** Steel; zinc-plated

A



Foot AL		No.
VF*plus* 60x60	1	**3 842 544 875**

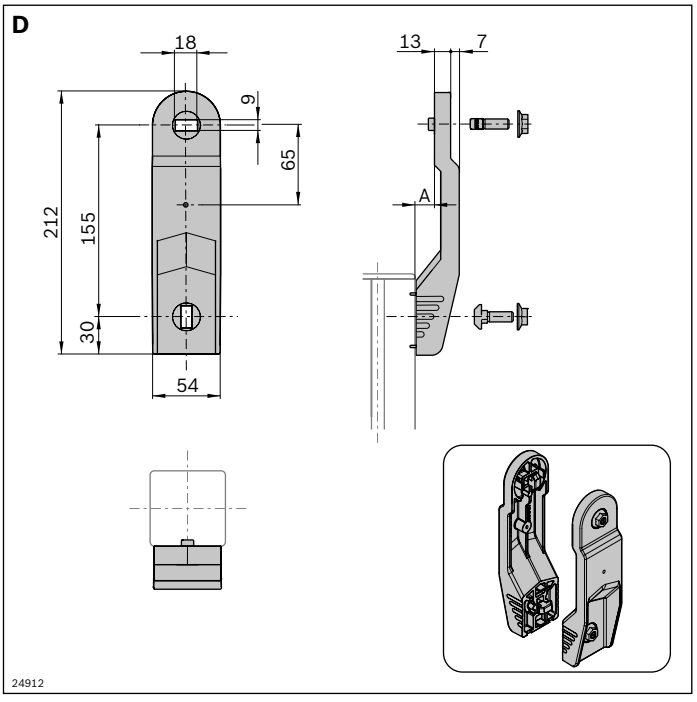
B



Strut profile AL 60x60	**L** (mm)	No.
20 pcs	6070	**3 842 557 202**
1 pc	50 ... 6070	**3 842 990 350/L**

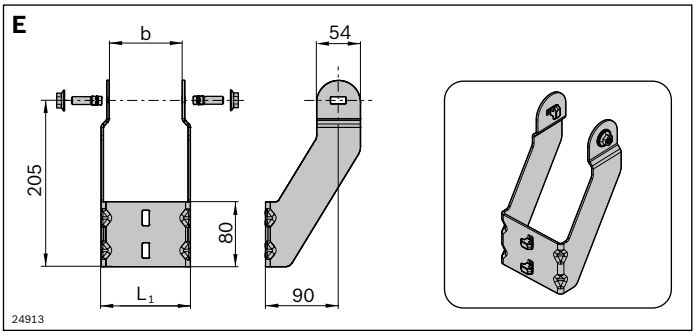
Cover cap		No.
VF*plus* 60x60, signal gray	100	**3 842 548 810**

D

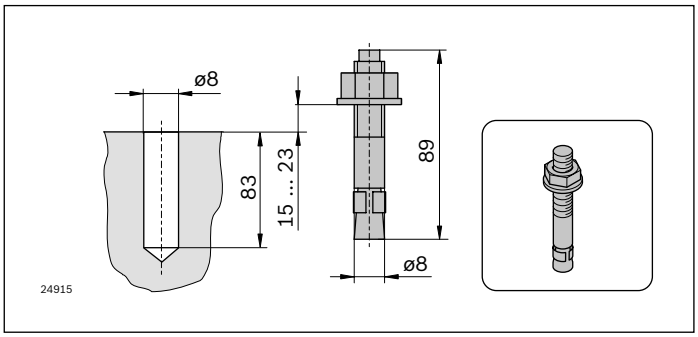


Holder AL	**b** (mm)	**A** (mm)		No.
VF*plus* 65	65	2.5	Set	**3 842 546 625**
VF*plus* 90	90	15	Set	**3 842 546 626**
VF*plus* 120	120	30	Set	**3 842 546 627**

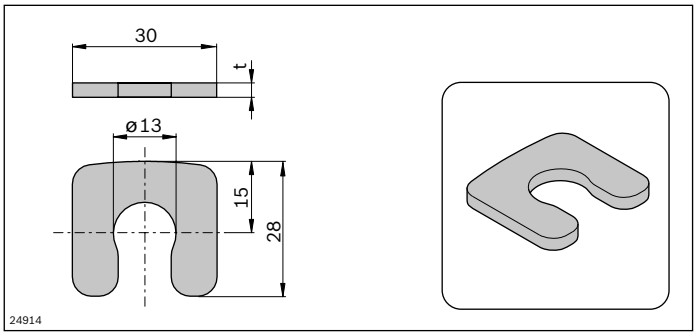
E



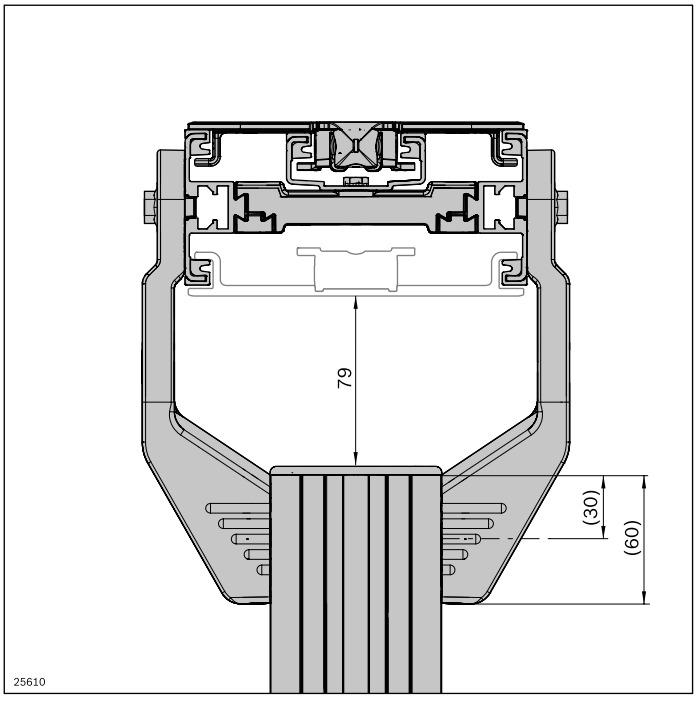
Holder engine support AL	**b** (mm)	L_1 (mm)		No.
VF*plus* 65	65	85	Set	**3 842 547 442**
VF*plus* 90	90	110	Set	**3 842 547 443**
VF*plus* 120	120	140	Set	**3 842 547 444**



Dowel		No.
	100	**3 842 540 668**



Washer	**t** (mm)		No.
	1	100	**3 842 546 717**
	3	20	**3 842 546 718**

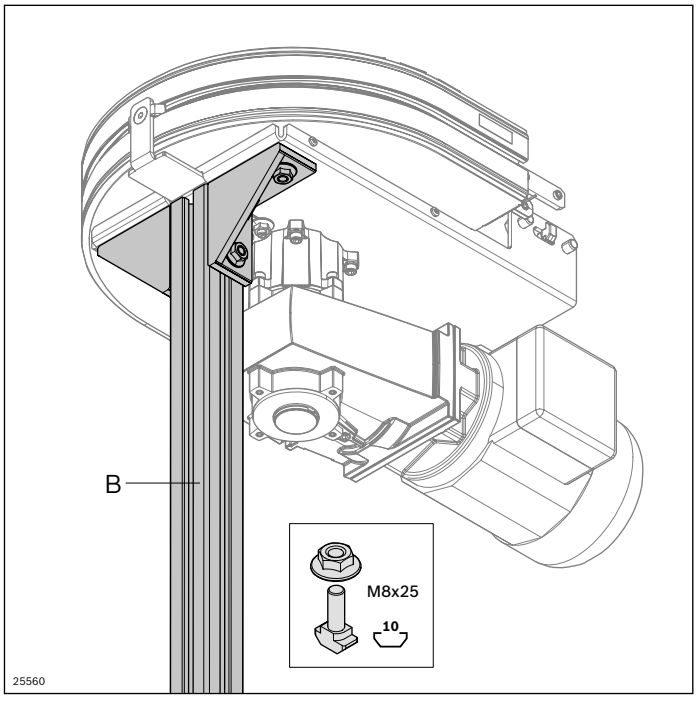


Holder adjustment range

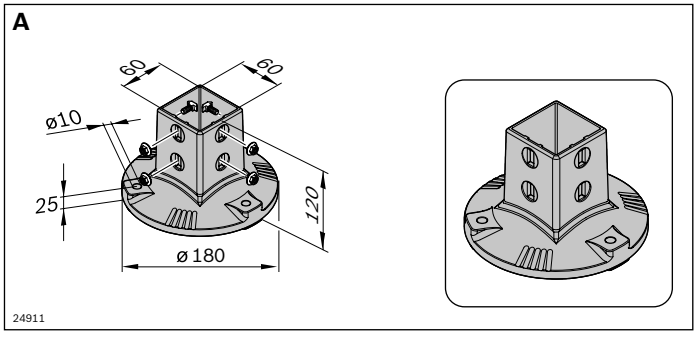
The aluminum holder adjustment range shown relates to the standard installation position (holder flush with the profile end) and the use of a flat chain for horizontal running of the chain. For vertical use, the adjustment range is reduced depending on the angle.

Curve wheel drive leg set

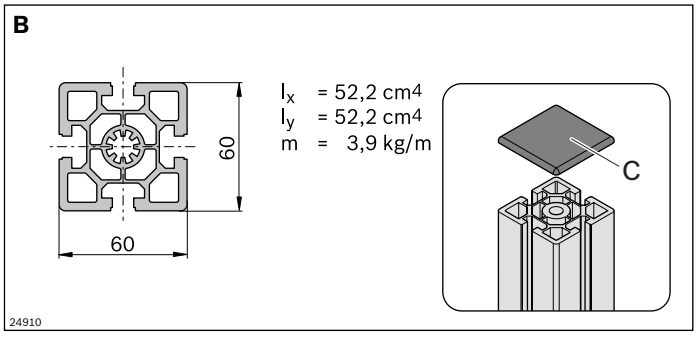




Bracket 40/80	Slot	ESD		No.
Set (standard)	10 / 10		1	**3 842 529 386**
designLINE set	10 / 10		1	**3 842 551 604**



Foot AL		No.
VF*plus* 60x60	1	**3 842 544 875**

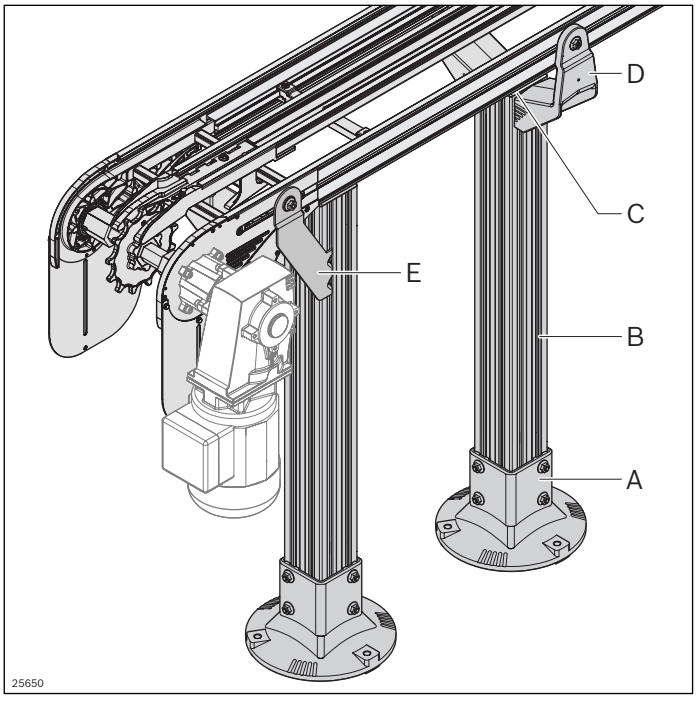


Strut profile AL 60x60	L (mm)	No.
20 pcs	6070	**3 842 557 202**
1 pc	50 ... 6070	**3 842 990 350/L**

Cover cap		No.
VF*plus* 60x60, signal gray	100	**3 842 548 810**

Leg set 160-320 AL





- Holder is easily centered in the slot thanks to centering lugs (**D**)
- Very simple assembly with plug-in screwed connection (**D**)
- Easy-to-clean design with draining surfaces

The chain conveyor is placed on the ground by means of supports (and fastened) or even suspended from the ceiling. The suspension is determined by the application. The floor supports for sizes 160, 240 and 320 are constructed from the following individual parts:
Foot 80x80 (**A**), strut profile 80x80L (**B**), cover cap (**C**), holder for attaching the section profiles (**D**) 160, 240 or 320.
A separate holder (**E**) is used to support the motors/drives

- Depending on the speed, accumulation behavior and weight, the supports are to be fixed at a distance of approx. 2 ... 3 m
- The leg sets for the stainless steel system (see p. 182) may also be used for the aluminum system
- The holder (**E**) may only be used for AL systems
- The height adjustment range is up to 79 mm (**D**), depending on the return chain, see p. 118
- The holder (**D**) can also be used for ascending and descending conveyor sections (up to approx. 45°, depending on the return chain) by removing the centering lugs
- Holder (**D**) with drill guide for additional holes to fasten drip trays, trap guards for return chains, etc.

Optional accessories:
- Dowel, washer, see p. 118

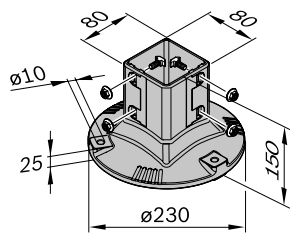
Alternative feet (see MGE catalog, "Feet and wheels" section)

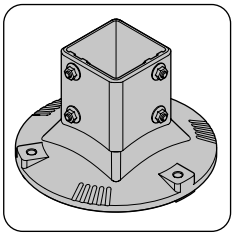
Scope of delivery:
- **A**, **E:** Including fastening material
- **D:** Set (2 pcs) incl. fastening material

Condition on delivery:
- Assembly required

Material:
- **A**, **D:** Diecast aluminum; silver
- **B:** Aluminum; natural, anodized
- **C:** PA; black
- **E:** Steel; zinc-plated

A

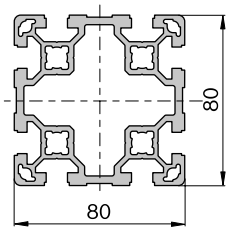




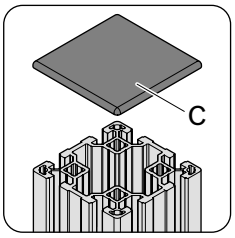
24918

Foot AL		**No.**
VF*plus* 80x80	1	**3 842 540 173**

B



I_x = 132,1 cm4
I_y = 132,1 cm4
m = 4,9 kg/m

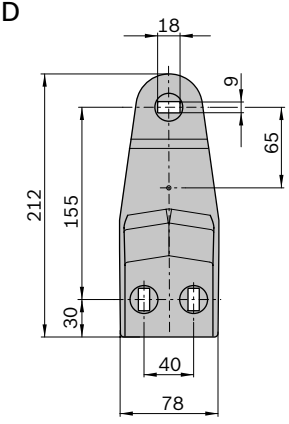


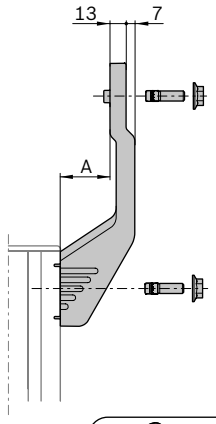
24917

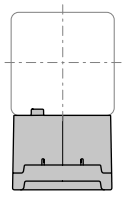
Strut profile AL 80x80 L	**L** (mm)	**No.**
6 pcs	6070	**3 842 529 347**
1 pc	50 ... 6000	**3 842 993 133/L**

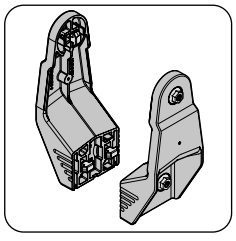
Cover cap		**No.**
VF*plus* 80x80, signal gray	20	**3 842 548 750**

D





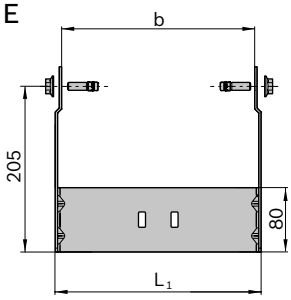


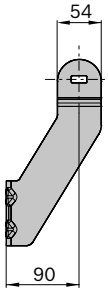


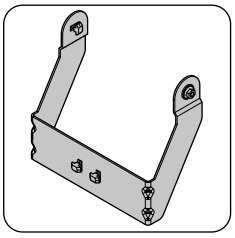
24919

Holder AL	**b** (mm)	**A** (mm)		**No.**
VF*plus* 160	160	40	Set	**3 842 546 628**
VF*plus* 240	240	80	Set	**3 842 546 629**
VF*plus* 320	320	120	Set	**3 842 546 630**

E





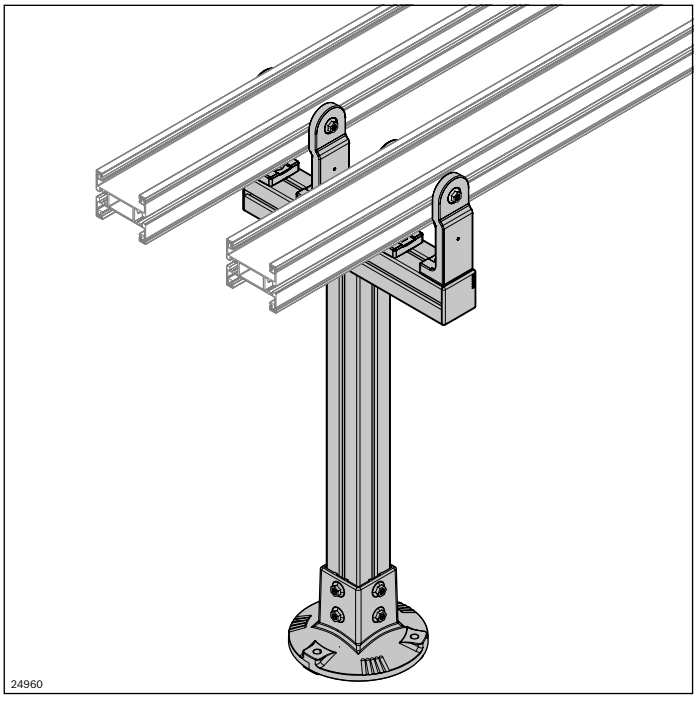


24920

Holder engine support AL	**b** (mm)	**L_1** (mm)		**No.**
VF*plus* 160	160	180	Set	**3 842 547 445**
VF*plus* 240	240	260	Set	**3 842 547 446**
VF*plus* 320	320	340	Set	**3 842 547 447**

Supporting bracket AL





- Supporting bracket is easily centered in the slot thanks to centering lugs
- Very simple assembly thanks to pluggable screwed connection
- Easy-to-clean design with draining surfaces

Several parallel sections can be assembled on a horizontal profile with the supporting bracket.

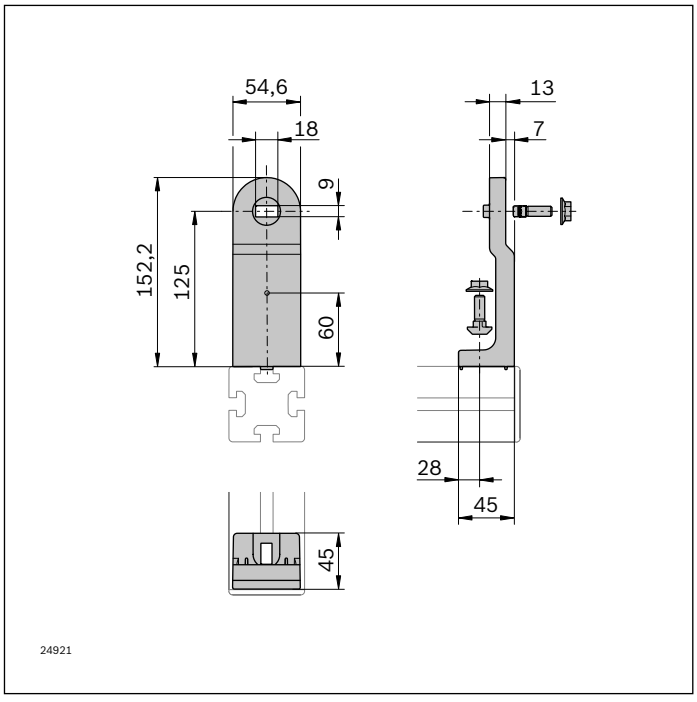
– The distance of the supporting bracket in the conveying direction is approx. 2-3 m, depending on the speed, accumulation behavior and weight
– The supporting brackets can also be used for ascending and descending conveyor sections (up to about 45°, depending on the returning chain) by removing the centering lugs

Scope of delivery:

– Including fastening material

Material:

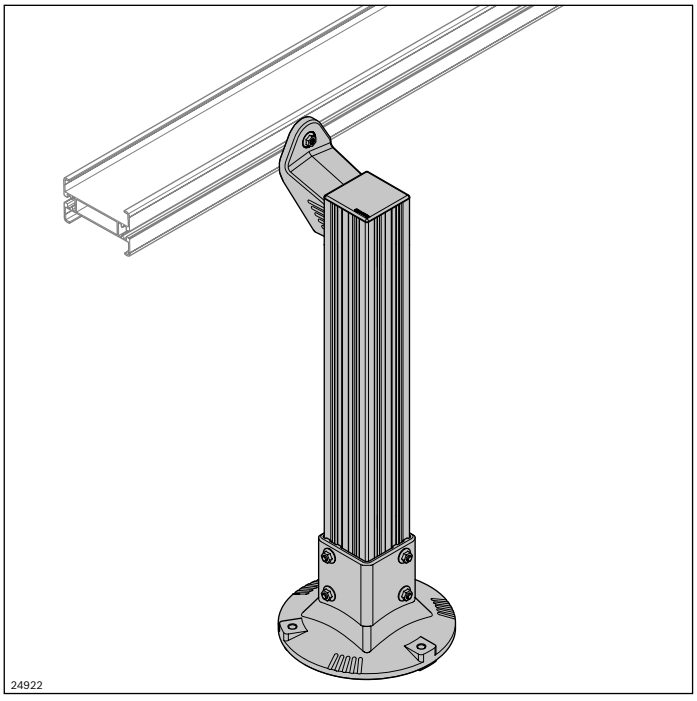
– Diecast aluminum; silver



Supporting bracket VF*plus* AL		**No.**
	Set	**3 842 546 632**

Supporting bracket, lateral AL





The lateral supporting bracket is for mounting on a vertical strut profile 80x80. It is suitable for the construction of an alpine conveyor, for example.

– In the case of one-sided attachment, the lateral supporting bracket is only permitted for sizes up to 120
– The lateral supporting bracket can also be used for ascending and descending conveyor sections (up to approx. 45°) by removing the centering lugs

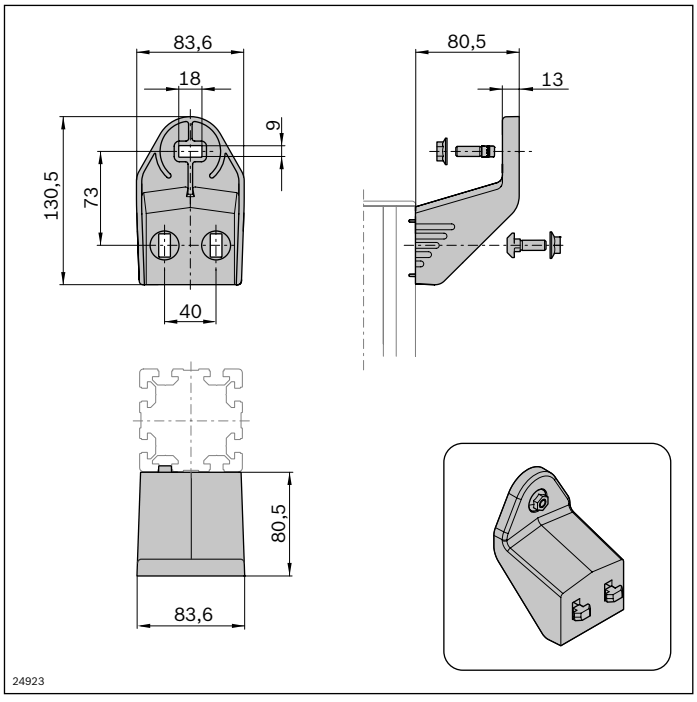
- ▶ Supporting bracket is easily centered in the slot thanks to centering lugs
- ▶ Very simple assembly thanks to pluggable screwed connection
- ▶ Easy-to-clean design with draining surfaces

Scope of delivery:

– Including fastening material

Material:

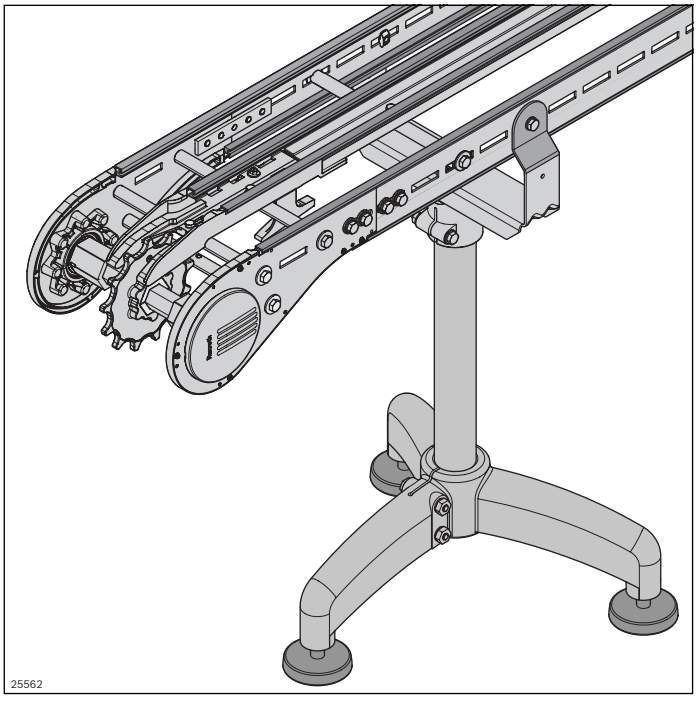
– Diecast aluminum; silver



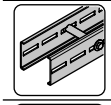
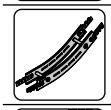
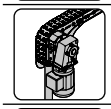
Supporting bracket VF*plus* lateral AL		**No.**
	Set	**3 842 547 461**

Stainless steel system (STS) VarioFlow *plus*



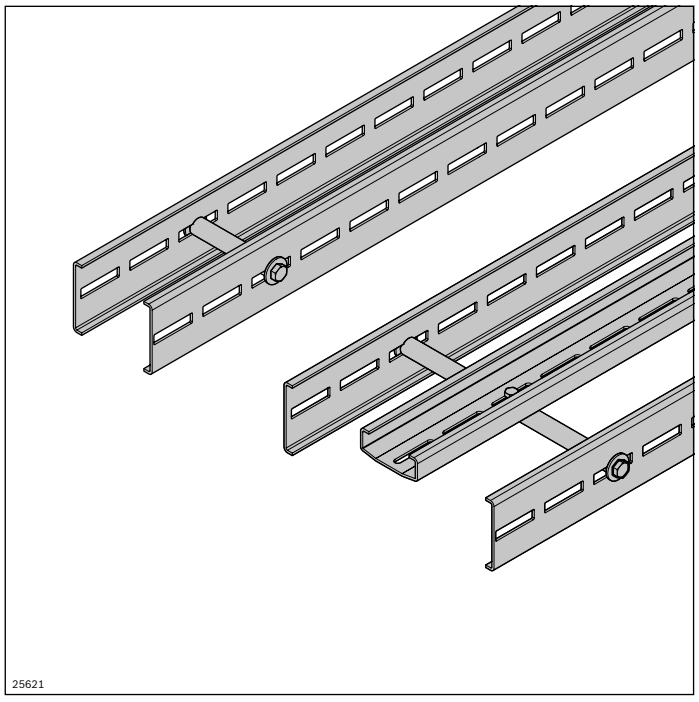


- FDA-compliant materials and easy-to-clean surfaces fulfill the high standards in the areas of the food & packaging and health & care industries where hygiene is crucial
- Mounting of sliding rails without rivets or the need to machine the track bearing surfaces
- Minimal sliding rail interruptions
- FDA-compliant, low-friction materials for components subject to constant friction
- Standardized components that can be used universally
- Continuous product range in the sizes 65, 90, 120, 160, 240, 320

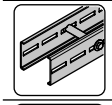
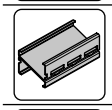
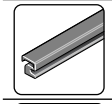
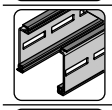
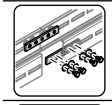
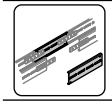
	**Sections STS**	**128**
	**Curves STS**	**140**
	**Drive and return unit STS**	**150**
	**Leg set STS**	**180**

Sections STS





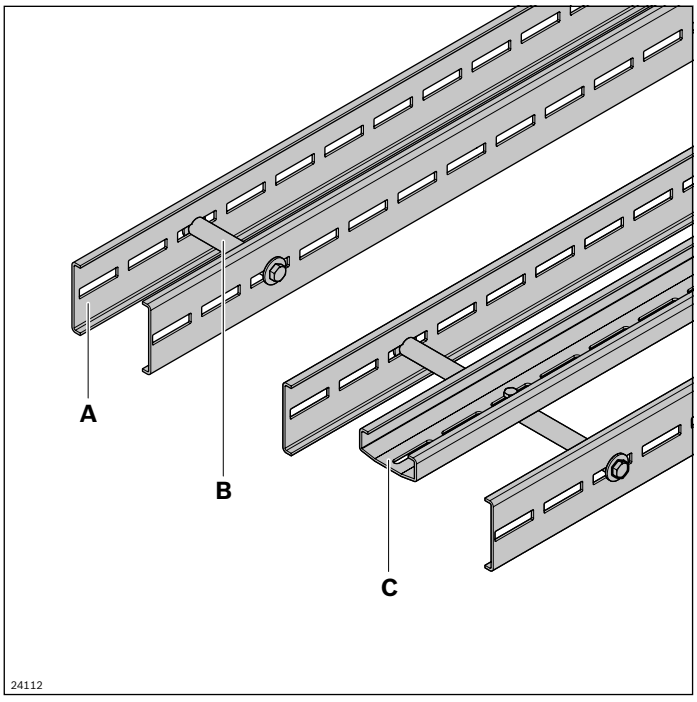
- Easy-to-clean sections due to largely media-resistant components
- Mounting of sliding rails without rivets or the need to machine the track bearing surfaces
- Sliding rails with optimized anti-friction properties and FDA-compliant materials
- One sliding rail cross-section for all sizes
- Few screwed connections
- One profile cross-section for all sizes
- Use of a support profile from size 160

	**Section profile STS open**	**130**
	**Section profile STS Clean**	**132**
	**Sliding rail**	**134**
	**Steel sliding rail**	**136**
	**Profile connector STS**	**138**
	**Assembly module STS**	**139**

Section profile STS open
Cross connector STS
Support profile STS







The open construction of the section profile (**A**) allows dirt or foreign particles to be removed directly.
To build a conveyor section, 2 open section profiles are required, which are connected by cross connectors.
A support profile is necessary for sizes 160 and up.
– Same profile cross-section across all sizes (65-320)

The cross connector (**B**) is the connection of two profile halves to make an open section profile. The size is determined by using cross connectors of different lengths.

From size 160, a support profile (**C**) is required. The support profile is attached to the existing cross connectors.

Open section profile STS (A)
- Elongated holes for attaching a drive/return unit, curves, lateral guides, leg sets, or other accessories
- Simple to clean

Cross connector STS (B)
- Cross connector with mounting option for support profile

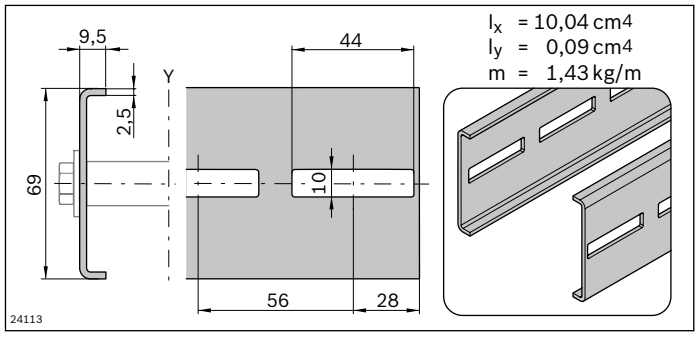
Support profile STS (C)
- With elongated holes for fastening in regular intervals
- Plug-through stainless steel T-nuts as mounting option on the section profile

Required accessories:
– **A:** Sliding rail, see p. 134; profile connector, see p. 138; cross connector, see p. 130; support profile from size 160, see p. 130

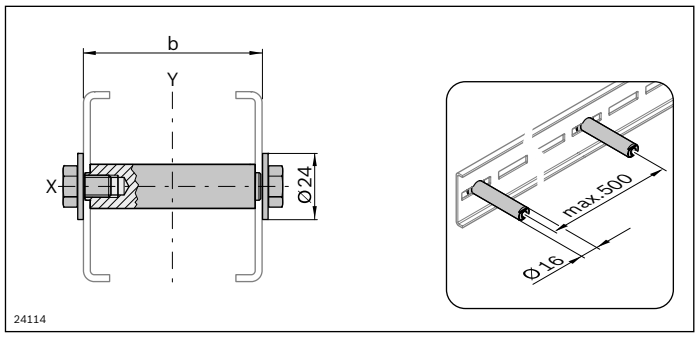
Scope of delivery:
– **B:** Including fastening material

Material:
– **A, B, C:** Non-rusting steel 1.4301

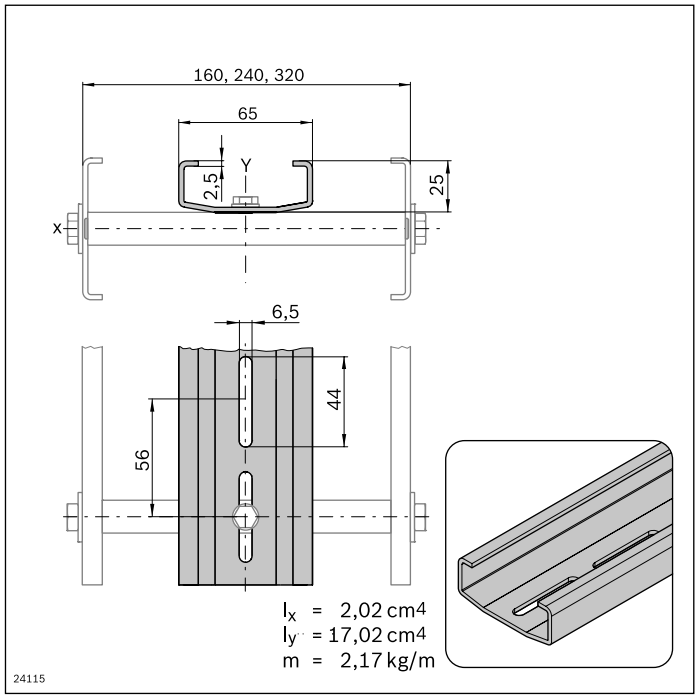
Condition on delivery:
– **A, B:** Assembly required



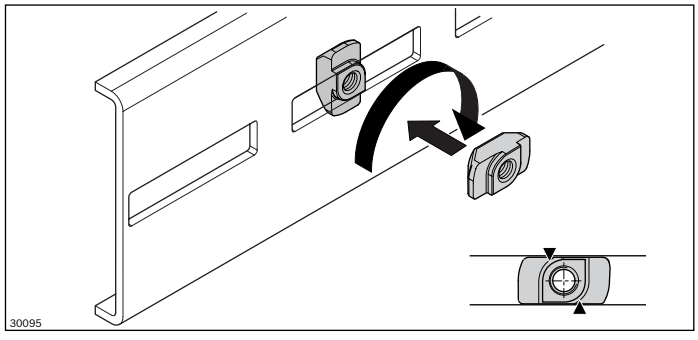
Section profile VF*plus* STS open	**L** (mm)	**No.**
12 pcs	3024	**3 842 546 649**
2 pcs	3024	**3 842 547 905**
1 pc	75 ... 3000	**3 842 996 027/L**



Cross connector STS	**b** (mm)		**No.**
VF*plus* 65 STS	65	10	**3 842 546 684**
VF*plus* 90 STS	90	10	**3 842 546 685**
VF*plus* 120 STS	120	10	**3 842 546 686**
VF*plus* 160 STS	160	10	**3 842 546 687**
VF*plus* 240 STS	240	10	**3 842 546 688**
VF*plus* 320 STS	320	10	**3 842 546 689**



Support profile VF*plus* STS	**L** (mm)	**No.**
12 pcs	3024	**3 842 546 700**
1 pc	3024	**3 842 547 906**
1 pc	75 ... 3000	**3 842 996 029/L**



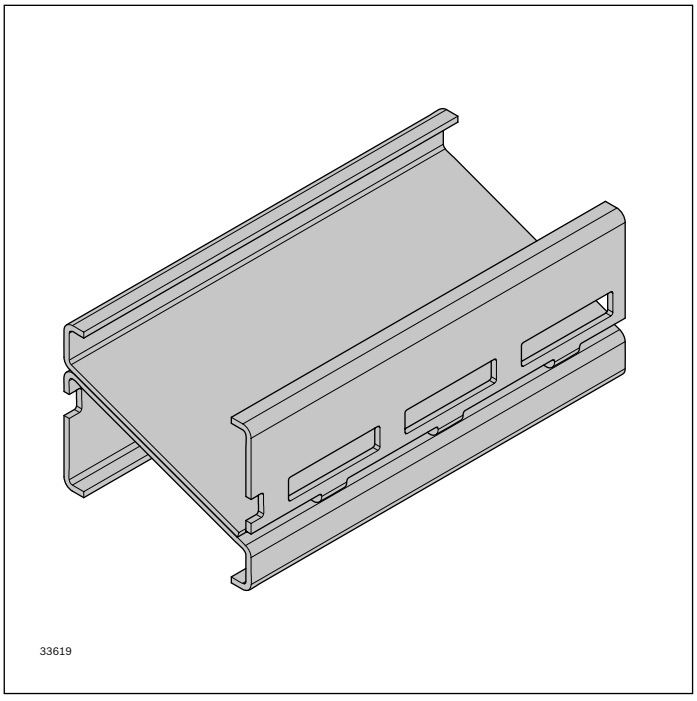
Standard element for the secure connection of accessory parts to the section profile

Notice: T-nuts MGE do not fit in the section profile STS.

T-nut		**No.**
VF*plus* STS M6	20	**3 842 546 706**
VF*plus* STS M8	20	**3 842 546 707**

Section profile STS Clean





The construction of the section profile STS Clean allows for the direct discharge of dirt or foreign particles without them reaching the returning chain.
– Size: 90
– For use in harsh production environments

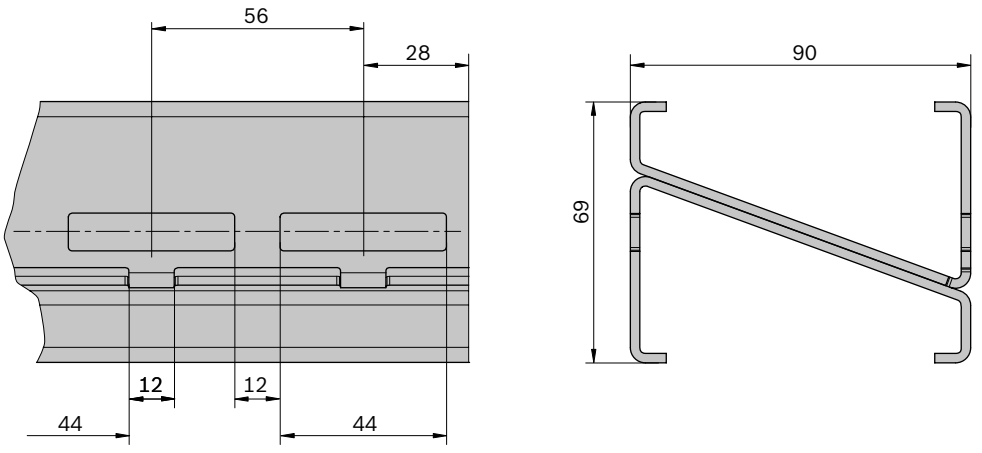
Notice: Not compatible with the system AL.

- Elongated holes for attaching a drive/return unit, curves, lateral guides, supports and other accessories
- Simple to clean

Required accessories:
– Profile connector STS Clean Section, see p. 133
– Sliding rail, see p. 134

Optional accessories:
– T-nut VF*plus* STS, see p. 131

Material:
– Non-rusting steel 1.4301



Section profile STS Clean	**L** (mm)		**No.**
	3024	1	**3 842 553 006**
	75 ... 3000	1	**3 842 996 314**

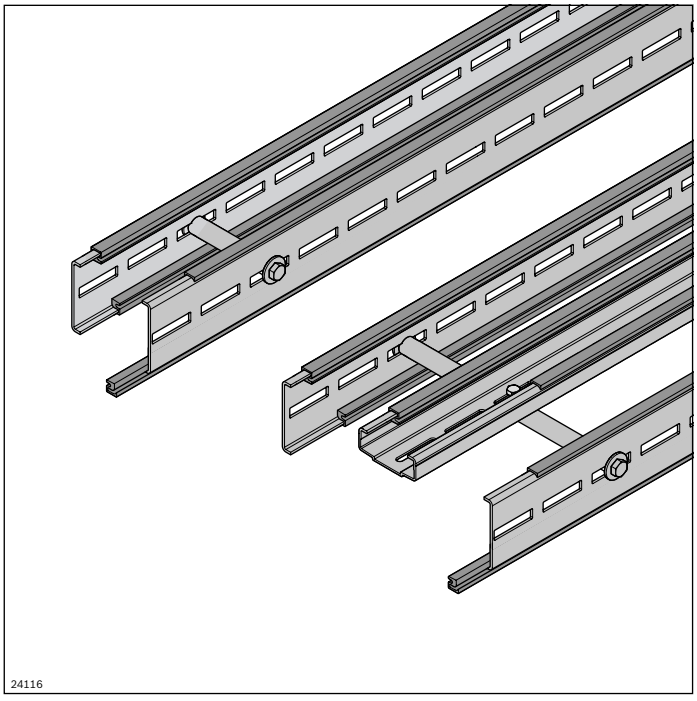
Profile connector STS Clean Section	**H** (mm)		**No.**
	17	10	**3 842 552 927**

Notice: When using the section profile STS Clean with the basic units (head drive, return unit, connection drive) the enclosed profile connector (H = 20 mm) must be replaced with the profile connector STS Clean Section (H = 17 mm) 3 842 552 927.

Sliding rail







- Easy assembly – simply clip onto the section profile
- Secured against axial shifting with lateral screw fittings
- Gliding surface machining: Not required
- Material
  - with sliding rail Premium, Advanced: FDA CFR 21
  - with sliding rail Basic: EU 10/2011, FDA CFR 21
- One cross-section for all section profiles AL and STS

Required accessories:
- Sliding rail assembly tool, see p. 288
- Oval-head screw 2.9x9.5 DIN 7981; DIN EN ISO 7049 see p. 135
  1 screw for each sliding rail section

Material:
- PE-UHMW

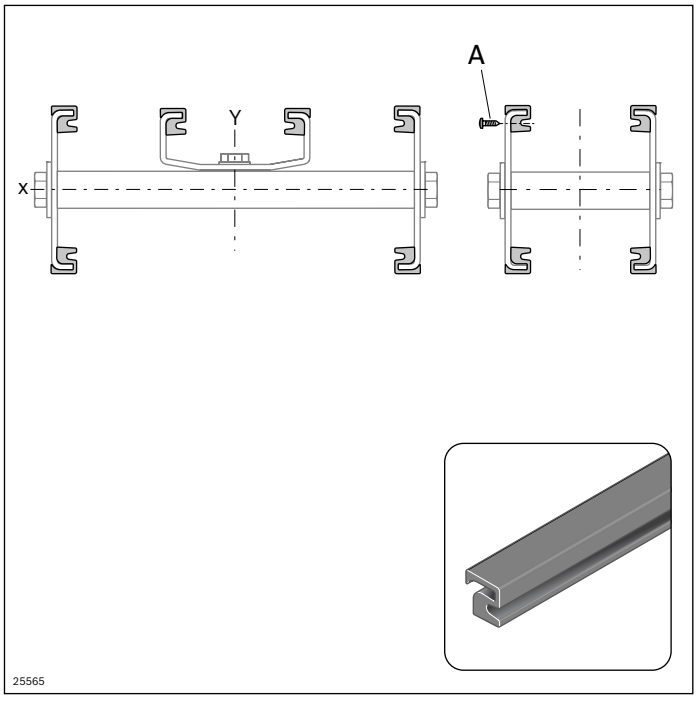
The sliding rail is clipped into the section profile and guides the conveyor chain.
Lateral securing means the sliding surface does not need to be machined. Wear and noise level are thus reduced to a minimum.

Three sliding rails with different main areas of application are available:
- Basic: Straight sections and curve wheels, v_{max} 60 m/min
- Advanced: Sections with sliding curves, v_{max} 60 m/min, clean room
- Premium: Sections with sliding curves, v_{max} 100 m/min, clean room

For the selection of sliding rails, see the "Technical data" chapter on page 300. See also sliding rails ESD on page 192 and steel sliding rail on page 136.

Extend the sliding rail over the component interfaces to ensure minimum wear and noise emissions. Interruptions to the profile or component connection must be avoided. If an interruption is necessary after 10 m, the sliding rail must be attached laterally with a sheet metal screw (**A**).

Notice: After the sliding curves, an interruption is provided as an expansion joint in the inner curve area.



Sliding rail VF*plus*	**Color**	**L** (mm)		**No.**
Premium	gray	30000	1	**3 842 546 116**
Advanced	white	30000	1	**3 842 549 727**
Basic	blue	30000	1	**3 842 549 730**

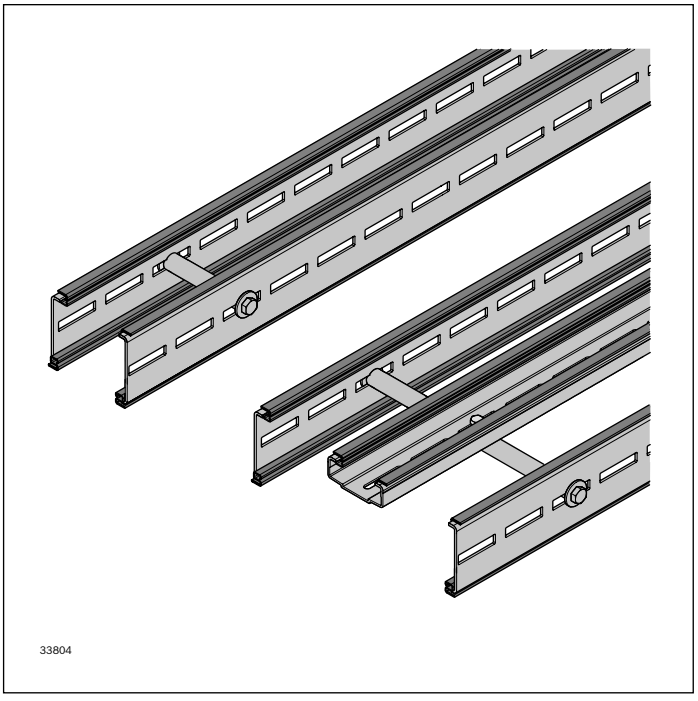
See also sliding rail ESD, see p. 192
and steel sliding rail, see p. 136.

Oval-head screw		**No.**
A	100	**3 842 533 915**

Steel sliding rail







- ▶ Easy assembly – simply clip onto the section profile
- ▶ Secured against axial shifting via lateral fixing
- ▶ Gliding surface machining: Not required
- ▶ One cross-section for all section profiles AL and STS

Required accessories:
- – Pop rivet D3x8 mm, see p. 137
- – Number of rivets:
  - • Straight sliding rail section: 1 rivet
  - • 30°/45° curves: 2 rivets
  - • 90° curve: 3 rivets
  - • 180° curve: 6 rivets

Material:
- – Non-rusting steel 1.4301

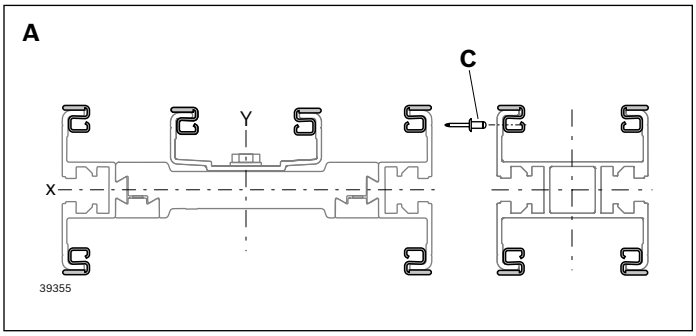
The steel sliding rail is suitable for use in abrasive ambient conditions (reduced service life of the conveyor chain). It is clipped in to the section profile and fixed in place at the side via a pop rivet. The side fixing reduces the friction and the noise level to a minimum. The steel sliding rail butt joints are merely chamfered. The Advanced sliding rail is used in the lower run of the curve wheels.
- – Steel sliding rail straight section (**A**), not bendable
- – Steel sliding rail curve wheels (**B**) 30°, 45°, 90°, 180°
- – Dry, wet and abrasive environment
- – Size:
  - • Straight section: All track widths
  - • Curve wheel 65, 90, 120
- – Not suitable for use in horizontal sliding curves
- – Only sliding rails Advanced or Premium can be used in vertical curves

For the selection of sliding rails, see the "Technical data" chapter on page 300.

Notice: Ensure gap-free assembly (without expansion joint), as foreign bodies could otherwise get trapped in the gap and damage the chain.

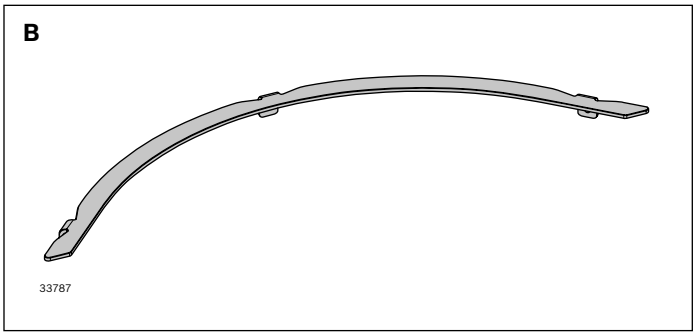
Notice: Non-destructive dismantling of the steel sliding rail is not possible. A target separation point of the system must therefore be defined before assembly. Overlap the steel sliding rail by 10 ... 15 mm on the section profile separation point. This ensures that it is still possible to pull apart the two parts.

Extend the steel sliding rail over the component interfaces to ensure minimum wear and reduced noise emissions. Interruptions directly on the profile or component connection must be avoided.



Sliding rail VF*plus* Steel	**L** (mm)		**No.**
A Straight section	3000	1	**3 842 552 970**

Pop rivet D3x8mm		**No.**
C	100	**3 842 557 004**



Steel sliding rail; curve wheel VF*plus* 65		**No.**
B Steel 30°	1	**3 842 557 030**
B Steel 45°	1	**3 842 557 031**
B Steel 90°	1	**3 842 552 972**
B Steel 180°	1	**3 842 552 973**

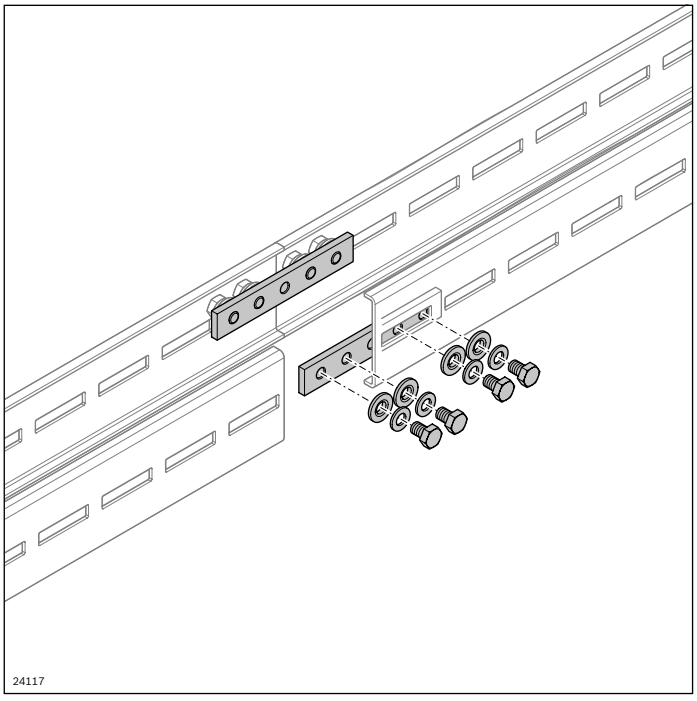
Steel sliding rail; curve wheel VF*plus* 90		**No.**
B Steel 30°	1	**3 842 557 032**
B Steel 45°	1	**3 842 557 033**
B Steel 90°	1	**3 842 552 974**
B Steel 180°	1	**3 842 552 975**

Steel sliding rail; curve wheel VF*plus* 120		**No.**
B Steel 30°	1	**3 842 557 034**
B Steel 45°	1	**3 842 557 035**
B Steel 90°	1	**3 842 557 036**
B Steel 180°	1	**3 842 557 037**

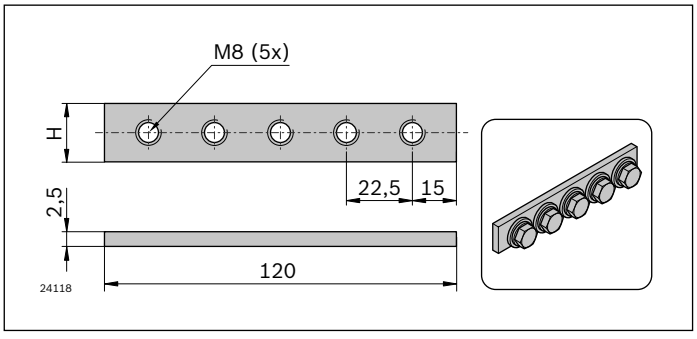
Pop rivet D3x8mm		**No.**
C	100	**3 842 557 004**

Profile connector STS





Two profile connectors are used to connect the end faces of the section profiles.



Profile connector VF*plus* STS	**H** (mm)		**No.**
	20	10	**3 842 547 895**

Profile connector STS Clean Section	**H** (mm)		**No.**
	17	10	**3 842 552 927**

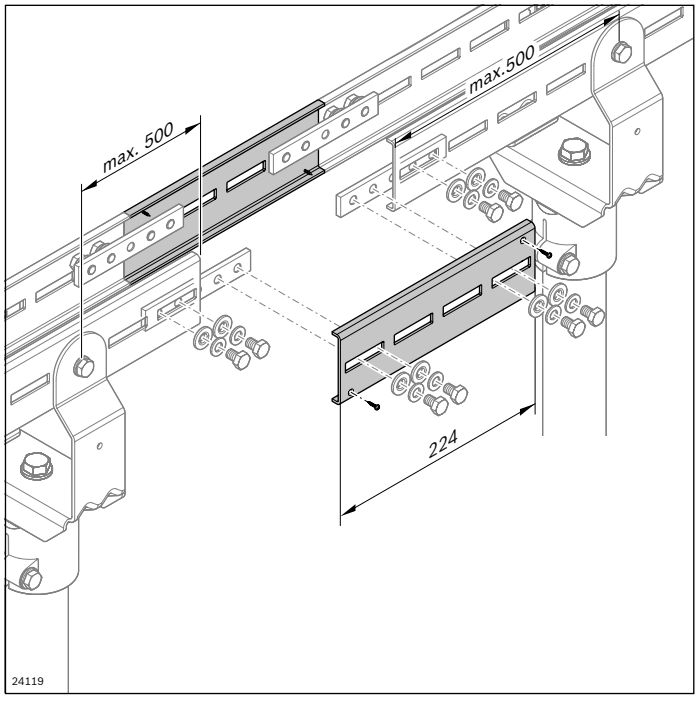
Scope of delivery:
– Complete

Material:
– Non-rusting steel 1.4301

Scope of delivery:
– Assembly required

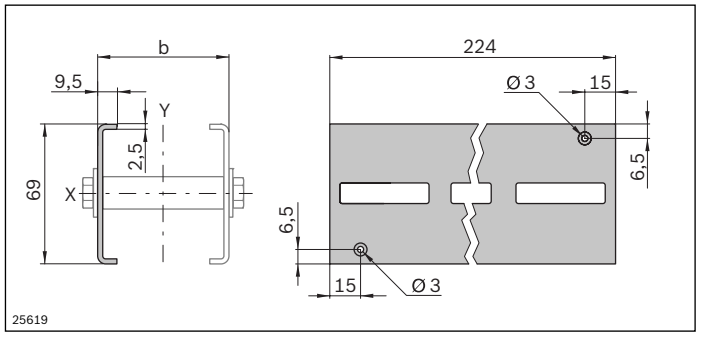
Assembly module STS





The assembly module is used for inserting and closing or opening the chain. It can be installed at any point on the conveyor section that is easy to access in operation.
The assembly module is intended for sections with drives without a chain bag (e.g. wedge conveyor).

- Max. distance from the nearest leg sets on both sides is 500 mm
- The support profile with sliding rail is not interrupted in the assembly module to increase the smooth running
- Sliding rail interruption is only required on the side to be opened



	L (mm)		**No.**
Assembly module VF*plus* STS		1	**3 842 547 900**
Sliding rail VF*plus* Premium	30000	1	**3 842 546 116**
Sliding rail VF*plus* Advanced	30000	1	**3 842 549 727**
Sliding rail VF*plus* Basic	30000	1	**3 842 549 730**
Sliding rail VF*plus* Steel	3000	1	**3 842 552 970**
Sliding rail VF*plus* ESD	30000	1	**3 842 557 000**

Required accessories:

- Sliding rail, see p. 134, 136, 192

Scope of delivery:

- Including 4 profile connectors and sheet-metal screws for fastening the sliding rail

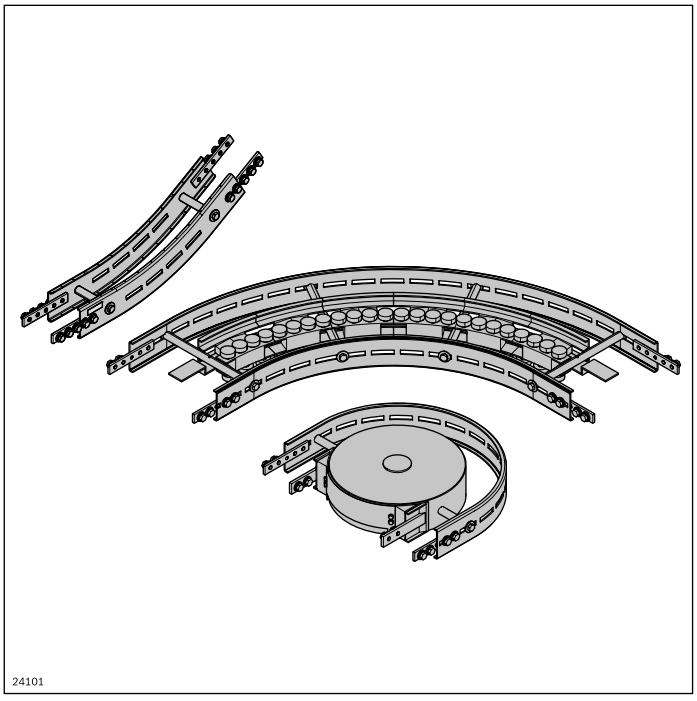
Material:

- Non-rusting steel 1.4301

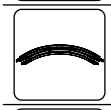
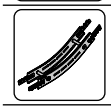
Condition on delivery:

- In single parts

Curves STS

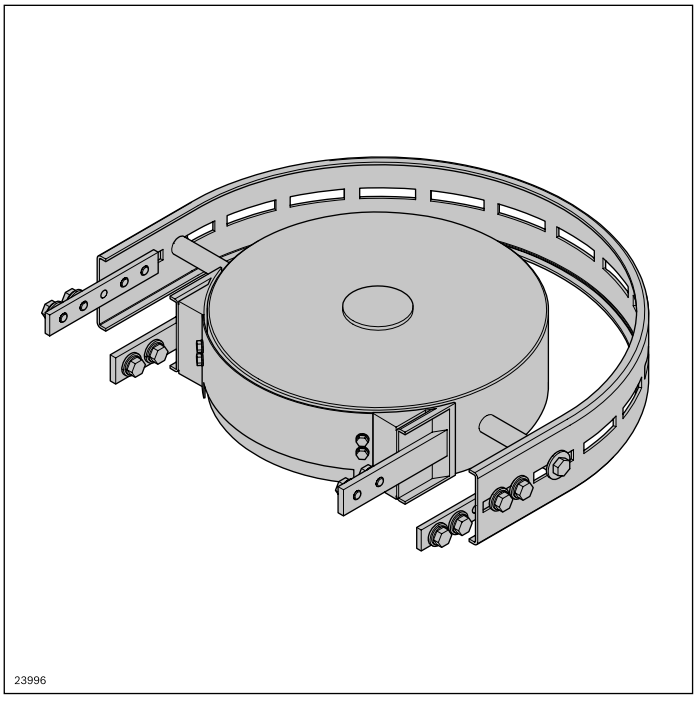


- Longer service life and reduced downtimes thanks to low-friction curve technology
- Components subject to constant friction feature FDA-compliant materials
- Easy to clean thanks to ample draining surfaces
- Capable of accumulation
- Reduced friction on curve wheels and patented roller curves to minimize wear to thereby realize longer sections
- Ball bearings sealed on both sides of non-rusting steel (1.4301) with FDA-compliant special grease in curve wheels and patented roller curves

	**Curve wheel STS**	**142**
	**Sliding curve horizontal STS**	**144**
	**Roller curve horizontal STS**	**146**
	**Vertical curve STS**	**148**

Curve wheel STS





The curve wheel provides a horizontal direction change for the chain. It enables low-friction direction changes with very small radii.
For attachment options, see the matrix on page 313
- Size: 65, 90, 120
- For deflection angles, see table
- Other deflection angles on request
- Suitable chain types: All

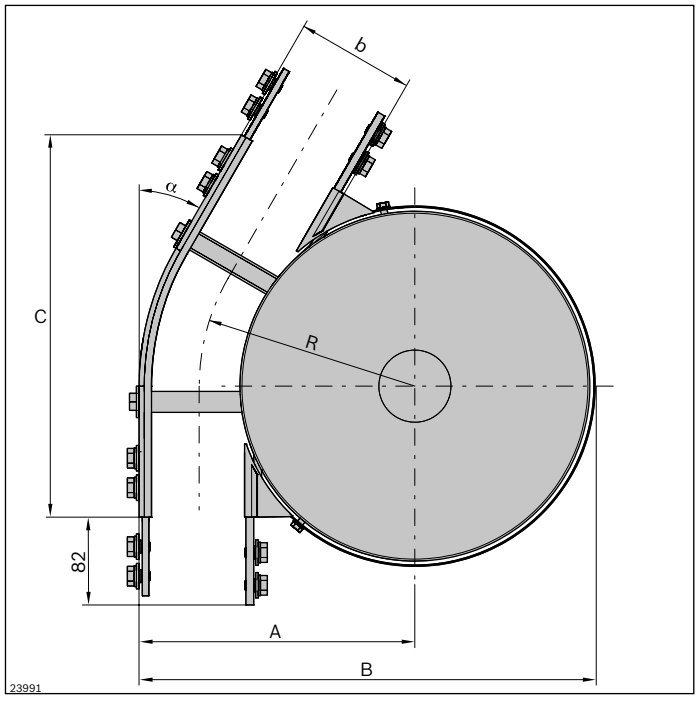
Notice:
- High-pressure cleaning of the ball bearing areas is not permitted
- In combination with the connection drive STS, the lower branch must be covered by the customer

- Easy-to-clean design
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Surfaces in contact with chain made of FDA-compliant materials
- No interfering contours above chain plate height
- Can be used horizontally and vertically (for wedge conveyors)

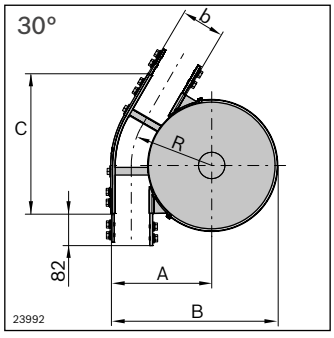
Scope of delivery:
- Including fastening material for mounting to section profiles STS

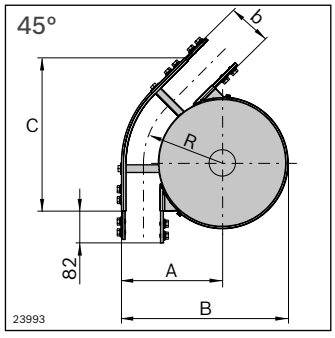
Condition on delivery:
- Assembled

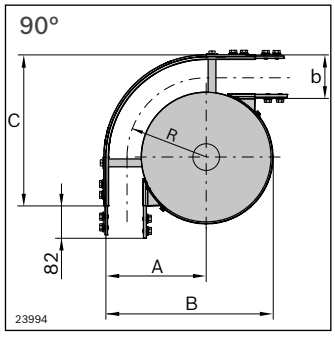
Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA; white
- Ball bearing: Non-rusting steel 1.4301/FDA

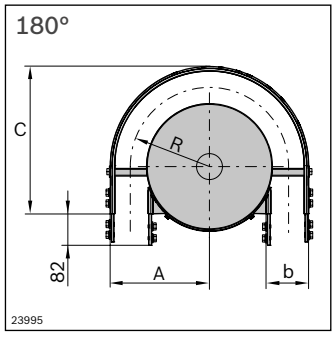


Curve wheel STS	α (°)	No.
VF*plus* 65	30	**3 842 547 111**
	45	**3 842 547 112**
	90	**3 842 547 113**
	180	**3 842 547 114**
VF*plus* 90	30	**3 842 547 115**
	45	**3 842 547 116**
	90	**3 842 547 117**
	180	**3 842 547 118**
VF*plus* 120	30	**3 842 547 119**
	45	**3 842 547 120**
	90	**3 842 547 121**
	180	**3 842 547 122**





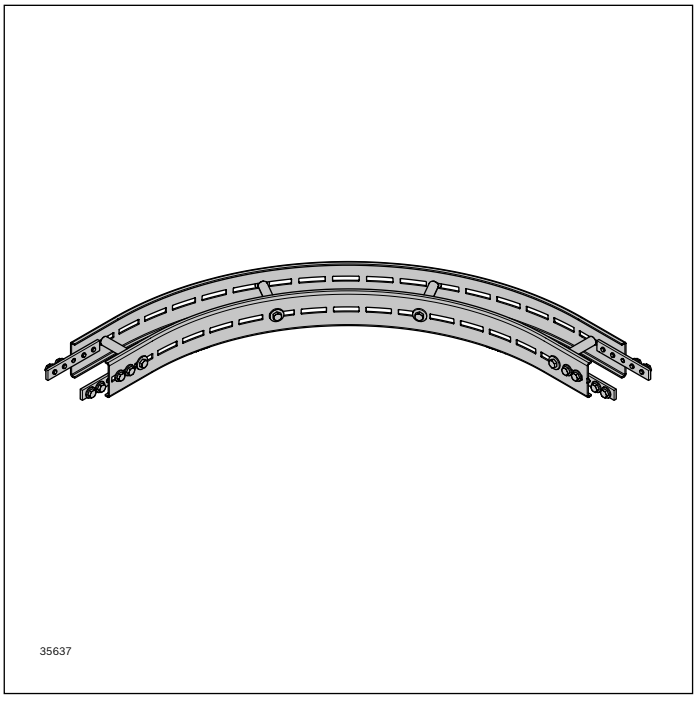




b (mm)	α (°)	**R** (mm)	**A** (mm)	**B** (mm)	**C** (mm)
65	30	153.0	185.5	322.5	279.4
	45	153.0	185.5	322.5	301.9
	90	153.0	185.5	322.5	285.5
	180	153.0	185.5	–	287.5
90	30	165.5	210.5	347.5	291.9
	45	165.5	210.5	347.5	319.6
	90	165.5	210.5	347.5	310.5
	180	165.5	210.5	–	310.5
120	30	180.5	240.5	377.5	306.9
	45	180.5	240.5	377.5	340.8
	90	180.5	240.5	377.5	340.5
	180	180.5	240.5	–	340.5

Sliding curve horizontal STS





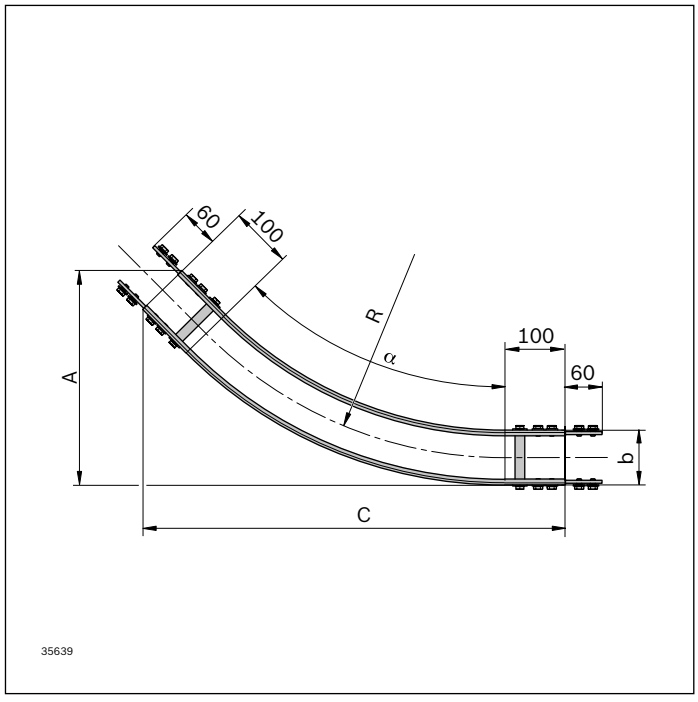
The sliding curve provides a horizontal change in direction for the chain, for when there is not enough space for a curve wheel or the speeds or product dimensions do not permit conveying over a curve wheel. The sliding curve is used to reduce noise at high speeds or when transporting long products in wedge conveyors. The chain tensile force is increased through the ensuing friction.
For attachment options, see the matrix on page 313
- Size: 65, 90, 120
- Deflection angles and radii see table on p. 145, other deflection angles and radii on request
- Suitable chain types: All
- Version with open section profiles
- Requires the use of the sliding rails "Advanced" or "Premium"
- Use in abrasive environments is not permissible

Required accessories:
- Sliding rail: Length calculation, see p. 302

Scope of delivery:
- Including fastening material for mounting to STS section profiles

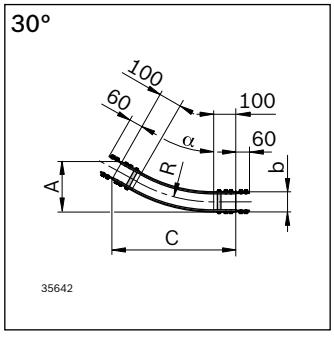
Material:
- Non-rusting steel 1.4301

Condition on delivery:
- Assembled

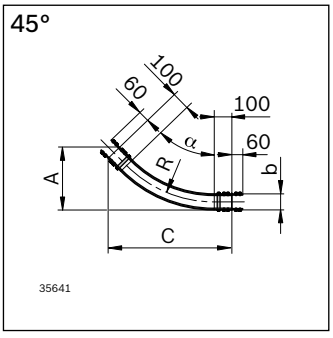


Sliding curve horizontal AL	**α** (°)	**R** (mm)	**No.**
VF*plus* 65	30	700	**3 842 557 051**
	45	700	**3 842 557 052**
	90	700	**3 842 557 053**
VF*plus* 90	45	500	**3 842 557 054**
	90	500	**3 842 557 055**
	30	700	**3 842 557 056**
	45	700	**3 842 557 057**
	90	700	**3 842 557 058**
VF*plus* 120	30	700	**3 842 557 059**
	45	700	**3 842 557 060**
	90	700	**3 842 557 061**

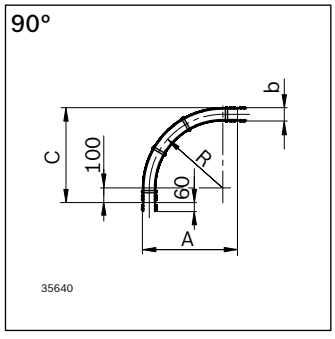
30°



45°

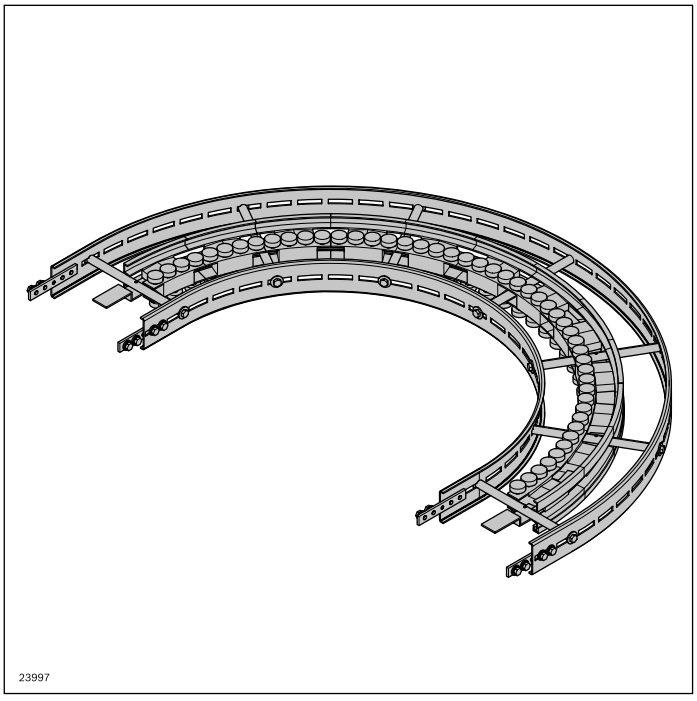


90°



b (mm)	**α** (°)	**R** (mm)	**A** (mm)	**C** (mm)
65	30	700	204.4	552.9
	45	700	331.2	688.7
	90	700	832.5	832.5
90	45	500	294.0	556.1
	90	500	645.0	645.0
	30	700	227.8	559.1
	45	700	352.6	697.5
	90	700	845.0	845.0
120	30	700	255.7	566.6
	45	700	378.2	708.1
	90	700	860.0	860.0

Roller curve horizontal STS



The low-friction roller curve provides a horizontal change in direction for the chain. Plastic-coated roller elements with ball bearings enable longer conveyor sections. The service life of the chain is increased and system costs reduced.
For attachment options and length determination of the support profile, see matrix on page 313
- Size: 160, 240, 320
- See table for the deflection angles, more deflection angles available on request
- Deflection radius: R500
- Suitable chain types: All
- Version with open section profiles

Notice: High-pressure cleaning of the ball bearing areas is not permitted.

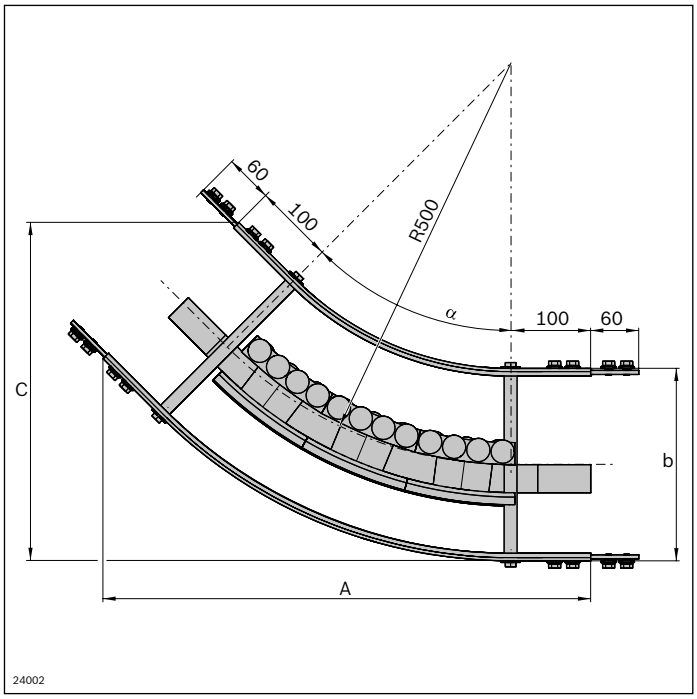
- Patented roller elements for low-friction, quieter changes in chain direction
- Easy-to-clean design
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Surfaces in contact with chain made of FDA-compliant materials

Required accessories:
- Sliding rail: Length calculation, see p. 302

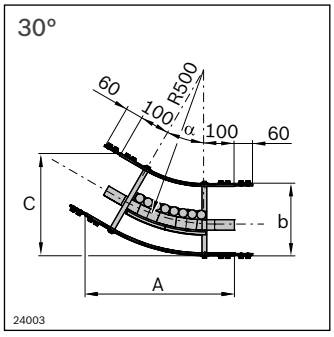
Scope of delivery:
- Including fastening material for mounting to section profiles STS

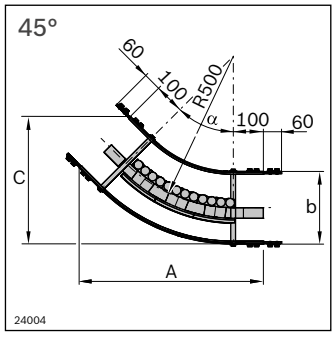
Condition on delivery:
- Assembled

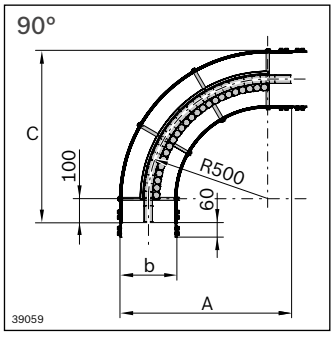
Material:
- Profile: Non-rusting steel 1.4301
- Roller carrier: PA66
- Ball bearing: Non-rusting steel 1.4301/FDA
- Connector: Non-rusting steel 1.4301
- Rollers: PA

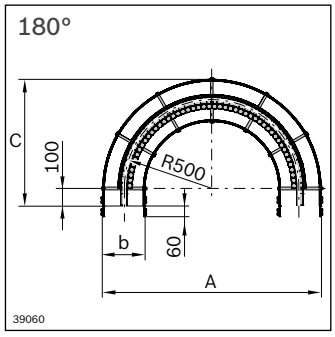


Roller curve STS	α (°)	No.
VF*plus* 160	30	**3 842 547 123**
	45	**3 842 547 124**
	90	**3 842 547 125**
	180	**3 842 547 126**
VF*plus* 240	30	**3 842 547 127**
	45	**3 842 547 128**
	90	**3 842 547 129**
	180	**3 842 547 130**
VF*plus* 320	30	**3 842 547 131**
	45	**3 842 547 132**
	90	**3 842 547 133**
	180	**3 842 547 134**





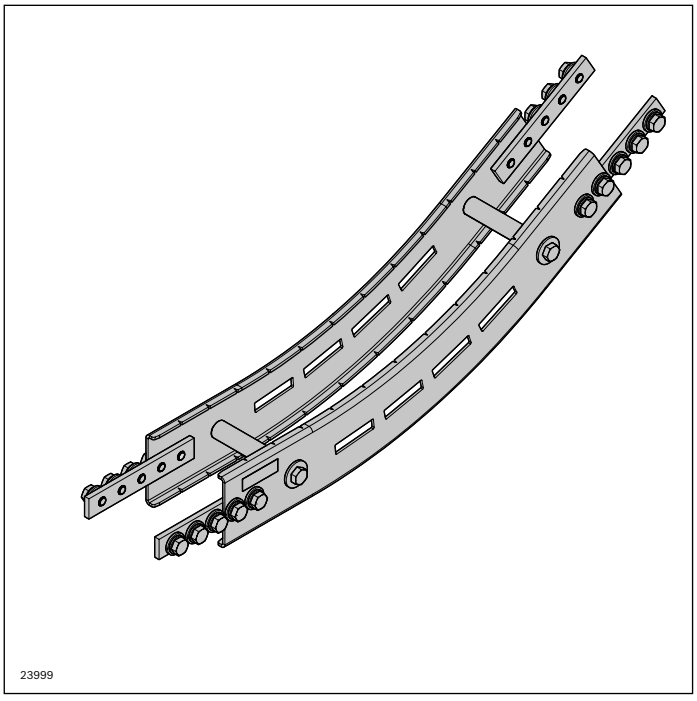




b (mm)	α (°)	**A** (mm)	**C** (mm)
160	30	476.6	266.3
	45	580.8	353.7
	90	680.0	680.0
	180	1160.0	680.0
240	30	496.6	340.9
	45	609.1	422.0
	90	720.0	720.0
	180	1240.0	720.0
320	30	516.6	415.6
	45	637.4	490.3
	90	760.0	760.0
	180	1320.0	760.0

Vertical curve STS





The vertical curve is used for the transition from a horizontal conveyor section to an ascending section and vice versa. The chain tensile force is increased through the ensuing friction.
A vertical curve of 5° is recommended for the infeed and outfeed on the wedge conveyor, especially with small products.
For attachment options, see the matrix on page 313

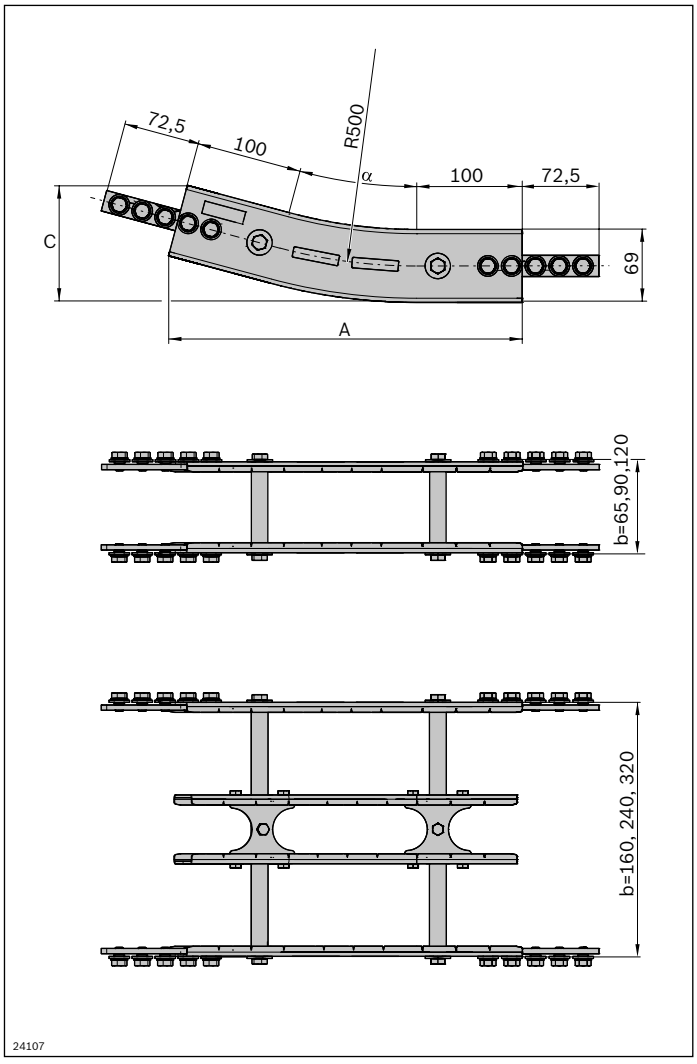
- Size: All
- Deflection angles and radii see table, other deflection angles and radii on request
- Suitable chain types: All
- Version with open section profiles
- Requires the use of the sliding rails "Advanced" or "Premium"

Required accessories:
- Sliding rail: Length calculation, see p. 302

Scope of delivery:
- Including fastening material for mounting to STS section profiles

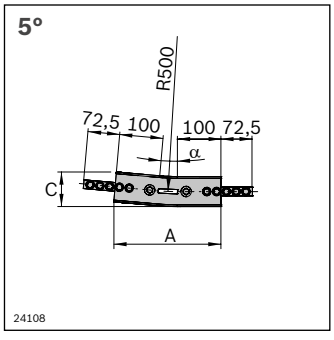
Condition on delivery:
- Assembled

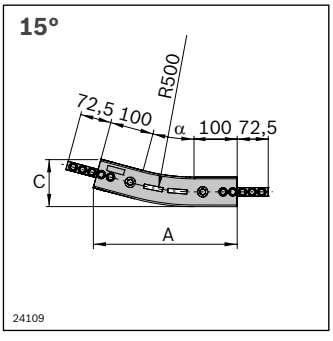
Material:
- Profile: Non-rusting steel 1.4301
- Connector: Non-rusting steel 1.4301
- Support profile from size 160: Non-rusting steel 1.4301

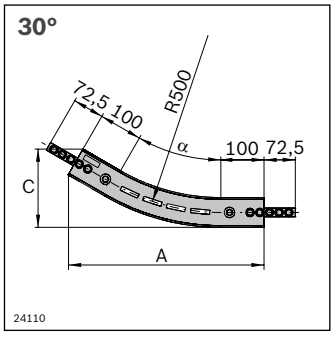


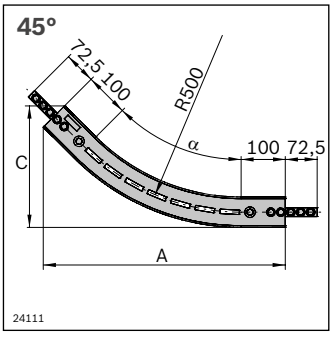
Vertical curve STS	α (°)	**No.**
VF*plus* 65	5	**3 842 547 135**
	15	**3 842 547 136**
	30	**3 842 547 137**
	45	**3 842 547 138**
VF*plus* 90	5	**3 842 547 139**
	15	**3 842 547 140**
	30	**3 842 547 141**
	45	**3 842 547 142**
VF*plus* 120	5	**3 842 547 143**
	15	**3 842 547 144**
	30	**3 842 547 145**
	45	**3 842 547 146**
VF*plus* 160	5	**3 842 547 147**
	15	**3 842 547 148**
	30	**3 842 547 149**
	45	**3 842 547 150**
VF*plus* 240	5	**3 842 547 151**
	15	**3 842 547 152**
	30	**3 842 547 153**
VF*plus* 320	5	**3 842 547 154**
	15	**3 842 547 155**
	30	**3 842 547 156**

b (mm)	α (°)	**R** (mm)	**A** (mm)	**C** (mm)
65-320	5	500	246.2	79.5
	15	500	334.9	110.7
	30	500	453.9	181.4
65-160	45	500	548.7	276.1



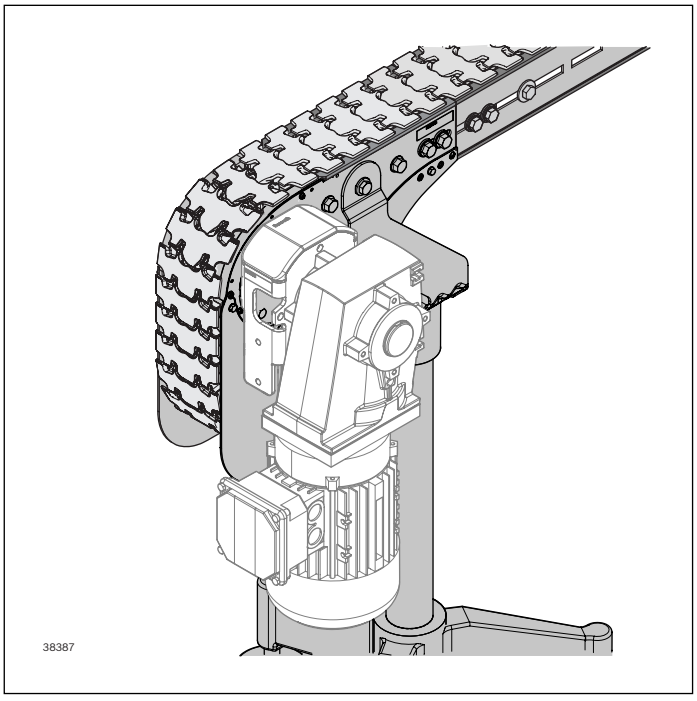




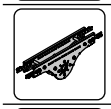
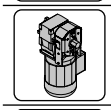
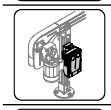
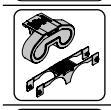
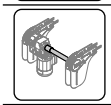


Drive and return unit STS

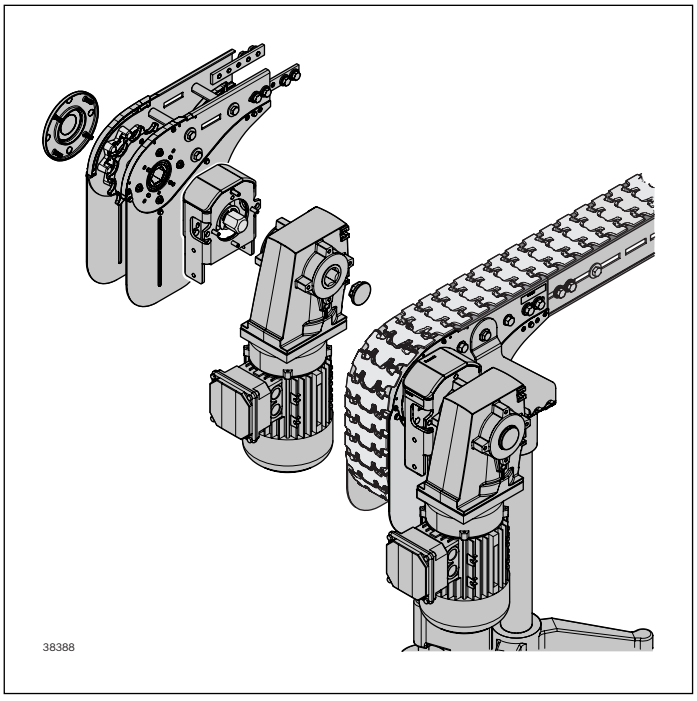




- High flexibility and short delivery times thanks to a novel drive concept
- Basic units with interfaces on both sides for drive kit and transmission (active bridges)
- Free choice of the motor mounting position on site
- Configurable drive kit (standard gear motor or round shaft)
- Multi-track systems with standard components possible
- Integrated sliding rail for reducing noise and wear
- In-stock, standardized components
- Side elements with slots for accommodating holders

	**Basic unit STS** **Head drive direct**	**154**
	**Basic unit STS** **Connection drive**	**156**
	**Basic unit** **Center drive**	**158**
	**Return unit STS** **Closed head drive STS**	**160**
	**90° return unit**	**162**
	**Drive kit**	**164**
	**Frequency converter motec 8400**	**166**
	**Manual control unit** **Switching/potentiometer unit**	**169**
	**Passive/active bridges connection kit**	**170**
	**Synchronous drive** **Connection kit, external motor/internal motor**	**178**

Innovative drive concept



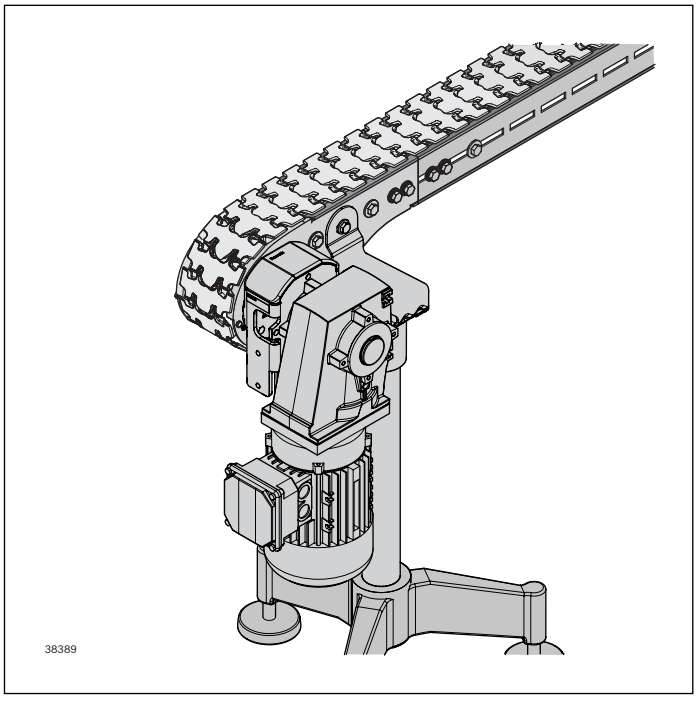
Basic unit STS
(head drive direct, center
or connection drive)
or return unit

+

Configurable drive kit
(standard gear motor or round shaft)

=

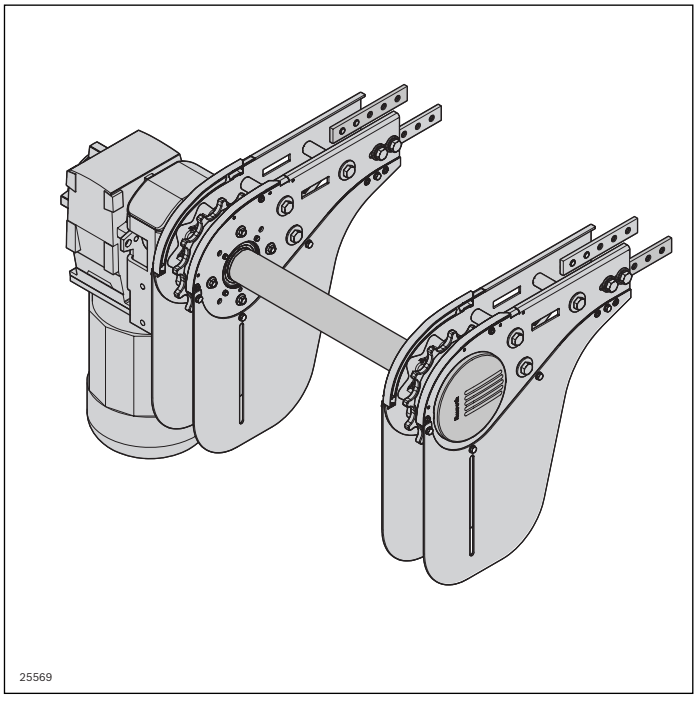
Complete drive



The well thought-out drive solution enables high flexibility and planning freedom

The in-stock, standardized basic units
- Are quickly and easily combined with the configurable drive kit (standard gear motor or customer-specific interface) into a complete drive
- Guarantee fast availability of the few construction kit elements/spare parts

The hollow shaft on both sides in the basic unit and return unit
- Enables a free selection of the motor mounting position on-site
- Offers other interfaces for transmissions (active bridges)



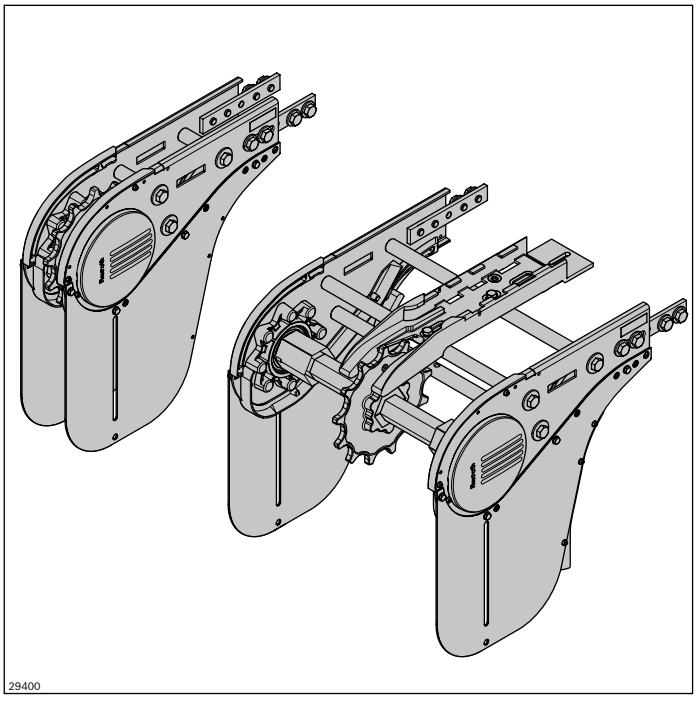
The standard drives are easy to couple and enable straightforward implementation of multi-track systems

For attachment options, see the matrix on page 313

Notice: High-pressure cleaning of the ball bearing areas is not permitted.

Basic unit STS
Head drive direct





The basic unit is quickly turned into a head drive with variable mounting position by adding a drive kit.
With the double-sided hexagonal hollow shaft, other components can be easily driven using a transmission (active bridges).

- Size: All track widths
- Suitable chain types: All
- Permissible chain tensile force: F_{max} = 1250 N
- Section length: L ≤ 30 m
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Not suitable for reversible operation

Notice:

- A chain sprocket must be used to limit the chain slipping back ascending or descending sections.
- Chain sprocket prevents the chain bag from swiveling out

- ▶ Reduced noise emission due to sliding rails guided in the head drive
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Side elements with mounting option to attach holders for lateral guides, or similar

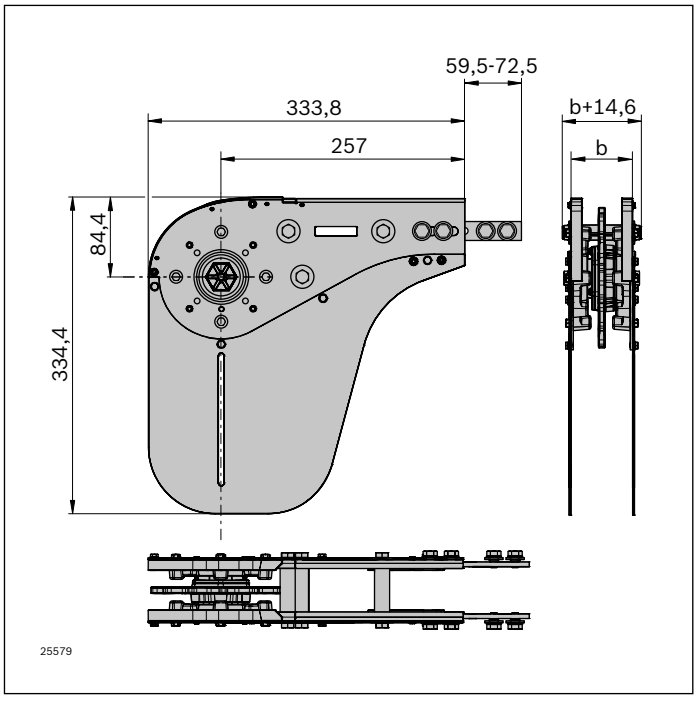
Required accessories:
- Drive kit, see p. 164
- Sliding rail: Length calculation, see p. 302
- Motor leg sets, see p. 183

Optional accessories:
- Connection kit passive bridges, see p. 170ff.
- Connection kit active bridges, see p. 174ff.
- Synchronous drive connection kit, see p. 178
- Chain sprocket for inclined sections, see p. 155

Scope of delivery:
- Including fastening material

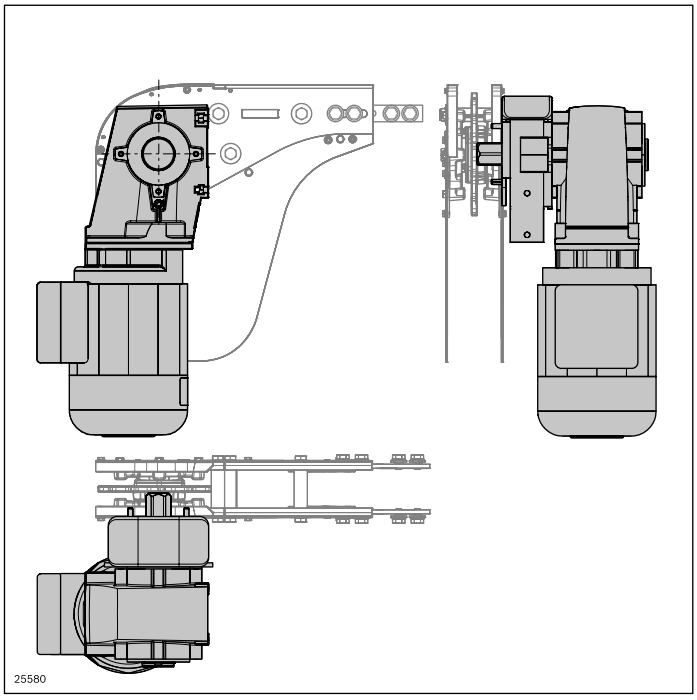
Condition on delivery:
- Assembled
- Connector, chain guard enclosed

Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft up to size 160: PA
  from size 160: Non-rusting steel 1.4301, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



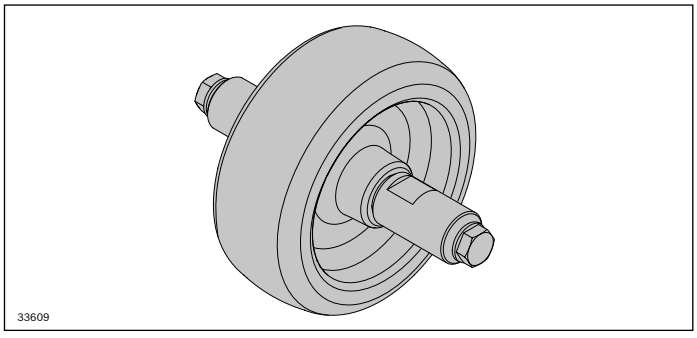
Basic unit STS	No.
VF*plus* 65 direct	**3 842 547 522**
VF*plus* 90 direct	**3 842 547 523**
VF*plus* 120 direct	**3 842 547 524**
VF*plus* 160 direct	**3 842 547 525**
VF*plus* 240 direct	**3 842 547 526**
VF*plus* 320 direct	**3 842 547 527**

Order the drive kit in addition to the basic direct unit STS (see p. 164) to complete your drive.



Drive kit VF*plus*	No.
	3 842 998 291

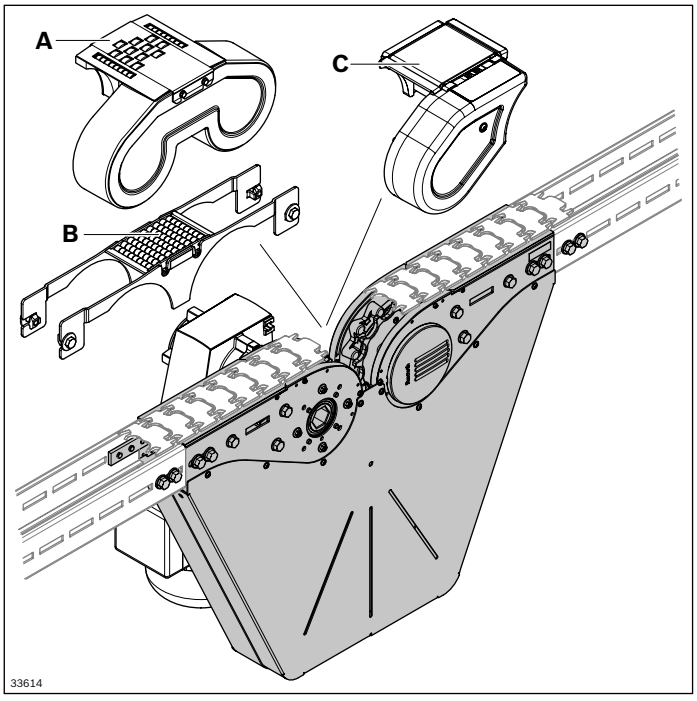
See p. 164



Chain sprocket	No.
VF*plus* 65	**3 842 553 047**
VF*plus* 90	**3 842 553 048**
VF*plus* 120	**3 842 553 049**
VF*plus* 160	**3 842 553 057**
VF*plus* 240	**3 842 553 058**
VF*plus* 320	**3 842 553 059**

Basic unit STS
Connection drive





Notice: The selection of the parameter SP = STS for the drive kit 3 842 998 291 is imperative.

- Reduced noise emission due to sliding rails guided in the connection drive
- Drive kit (motor, coupling, flange) can be mounted right / left
- Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Side elements with slot for attaching holders for lateral guides, or similar

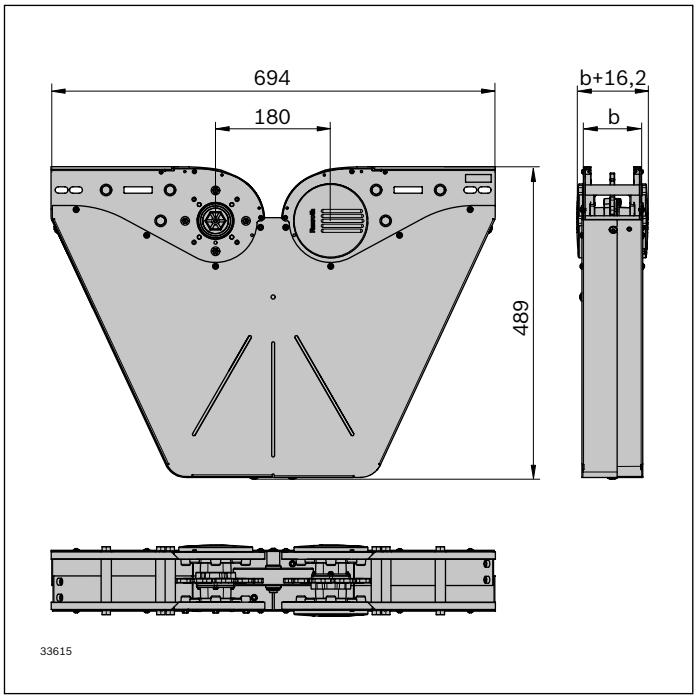
Required accessories:
- Drive kit, see p. 164
- Passive bridges connection kit, see p. 170ff.
- Active bridges connection kit, see p. 174ff.
- Sliding rail: Length calculation, see p. 302

The connection drive is used for driving the conveyor chain in circuit systems with a top-running chain. The basic unit is quickly turned into a connection drive with variable mounting position by adding a drive kit.
An active (**A, C**) or passive bridge (**B**) must be added for transferring the material being transported. The active bridge (**A, C**) is driven by a transmission from the connection drive
- Size: 65, 90
- Suitable chain types: Flat conveyor chain, static friction chain
- Permissible chain tensile force: F_{max} = 1250 N
- Section length: L ≤ 30 m
- Conveying speed: v_N = 2 ... 25 m/min, other speeds available on request
- Chain bag to compensate for chain elongation during service life
- Recommendation: No accumulation operation up to 1500 mm after the connection drive
- When using the section profile STS (open) in conveyor systems without a returning chain, a cover must be placed over the lower run by the customer to ensure personal safety
- Not suitable for reversible operation
- Use in applications ESD with accompanying adapter kit and closed section profiles AL (bridges not conductive!)

Scope of delivery: Including fastening material

Condition on delivery: Assembled

Material:
- Housing: Non-rusting steel 1.4301
- Sprocket, chain guide, hexagonal shaft: PA
- Connector + chain fender: Non-rusting steel 1.4301
- Ball bearing: Non-rusting steel 1.4301/FDA



Basic unit connection drive STS	No.
VF*plus* 65 direct	**3 842 553 914**
VF*plus* 90 direct	**3 842 553 915**

Notice: When using the section profile STS Clean with the basic units (head drive, return unit, connection drive) the enclosed profile connector (H = 20 mm) must be replaced with the profile connector STS Clean Section (H = 17 mm) 3 842 552 927.

Drive kit VF*plus*	No.
	3 842 998 291

SP = STS; see p. 164

Active roller bridge connection kit (A)	No.
VF*plus* 65	**3 842 555 820**
VF*plus* 90	**3 842 555 821**

See p. 176

Active belt bridge connection kit (C)		No.
VF*plus* 65	L	**3 842 558 000**
VF*plus* 65	R	**3 842 558 001**
VF*plus* 90	L	**3 842 558 002**
VF*plus* 90	R	**3 842 558 003**

See p. 174

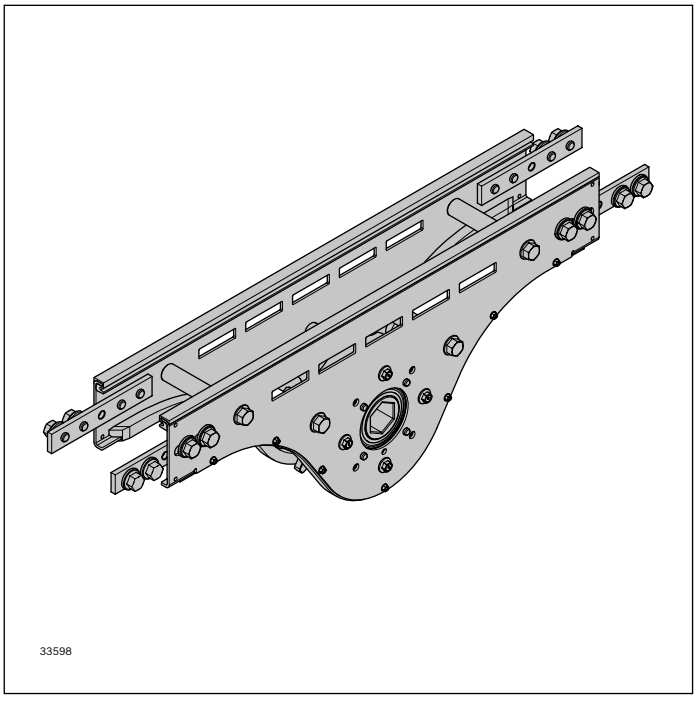
Passive bridge connection kit (B)	No.
VF*plus* 65	**3 842 549 015**
VF*plus* 90	**3 842 549 016**

See p. 170

Basic unit
Center drive







The center drive basic unit is used if the available space is limited at the ends of the sections.
It is quickly turned into a center drive with variable motor mounting position by adding the drive kit
- Size: 65-120
- Chain return on the underside of the profile
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Permissible chain tensile force: F_{max} = 600 N
- Max. conveying length: 7 m
- Because no length compensation (chain bag) is present, the chain length must be checked regularly and shortened if necessary
- Recommendation: No accumulation up to 1000 mm after the return unit
- An assembly module is required for assembling the chain

- Reduced noise emission due to sliding rails guided in the center drive
- Installation of the drive kit possible on the right/left (motor, coupling, flange)
- Drive of a parallel conveyor section using a hexagonal hollow shaft integrated as standard
- Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- Side elements with slot for attaching holders for lateral guides, or similar

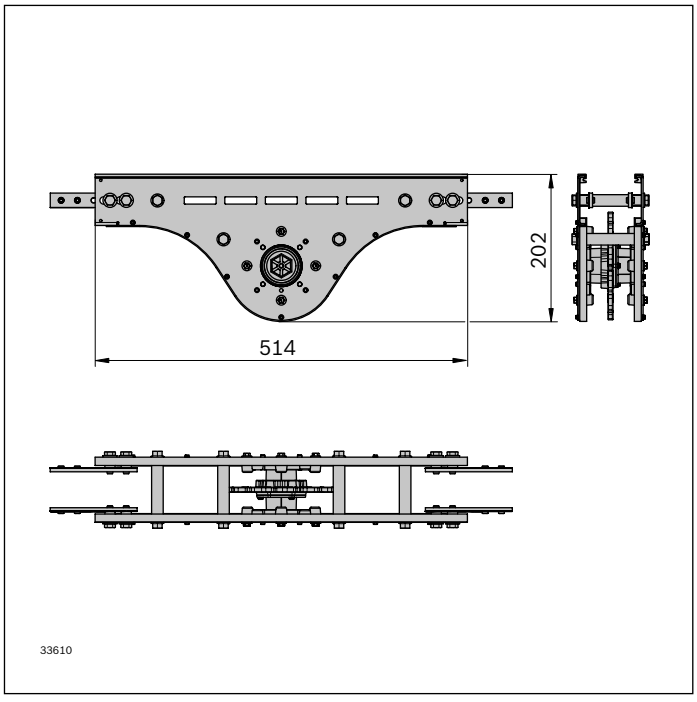
Required accessories:
- Drive kit, see p. 159
- Sliding rail, see p. 134
- Motor leg sets, see p. 183
- Assembly module, see p. 139

Scope of delivery:
- Including fastening material

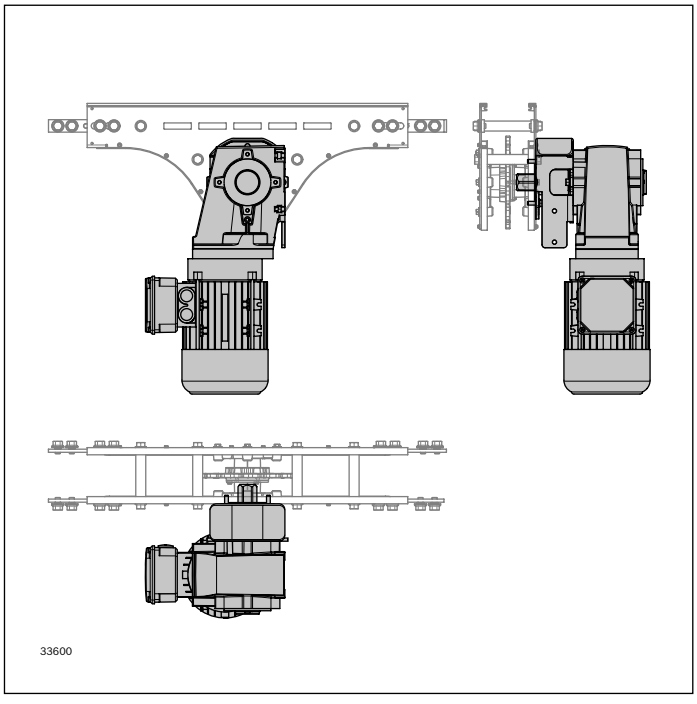
Condition on delivery:
- Assembled (profile connector enclosed)

Optional accessories:
- Synchronous drive connection kit, see p. 178
- Frequency converter, see p. 166

Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft: PA
- Ball bearing: Non-rusting steel 1.4301/FDA



Basic unit with center drive	No.
VF*plus* 65	**3 842 552 940**
VF*plus* 90	**3 842 552 941**
VF*plus* 120	**3 842 552 942**

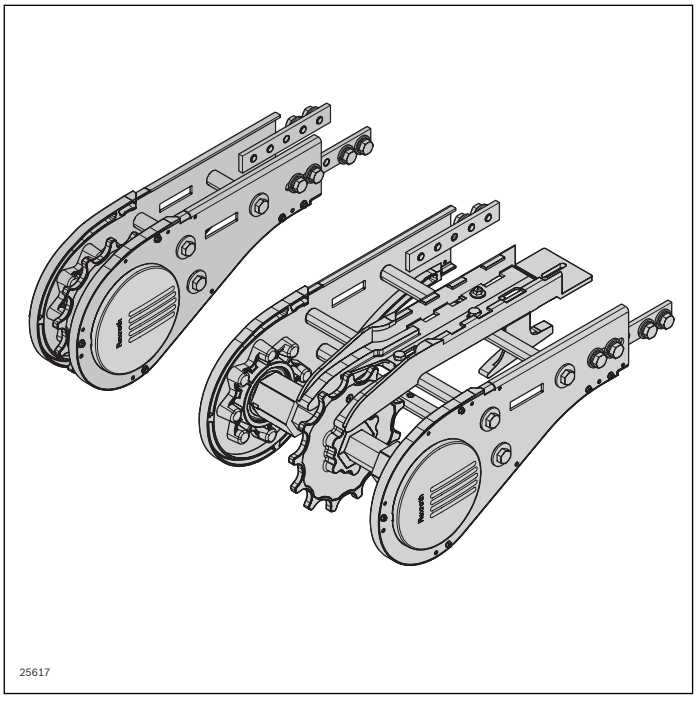


Drive kit VF*plus*	No.
VF*plus* 65	**3 842 998 291**

See p. 164

Return unit STS
Closed head drive STS





Thanks to the innovative drive concept, the return unit can be operated simply by itself or supplemented with a drive kit to be operated as a head drive without chain bag.
The section length is limited to a maximum of 7 m.
- Size: All track widths
- Suitable chain types: All
- Permissible chain tensile force
  Return unit function: F_{max} = 1250 N
  Head drive without chain bag function: F_{max} = 600 N
  With shortened maintenance interval, due to chain elongation
- Section length for return unit function: L ≤ 30 m
  Section length for function as drive: L ≤ 7 m
- Conveying speed: v_N = 2 ... 60 m/min, other speeds available on request
- Use as a drive for wedge conveyors, when combined with a drive kit
- Not suitable for reversible operation

- ▶ Reduced noise emission due to sliding rails guided in the return unit
- ▶ Installation of the drive kit possible on the right/left (motor, coupling, flange)
- ▶ Drive of a parallel conveyor section or bridge using a hexagonal hollow shaft integrated as standard
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Implementation of parallel sections possible through a pluggable shaft
- ▶ Side elements with mounting option to attach holders for lateral guides, or similar

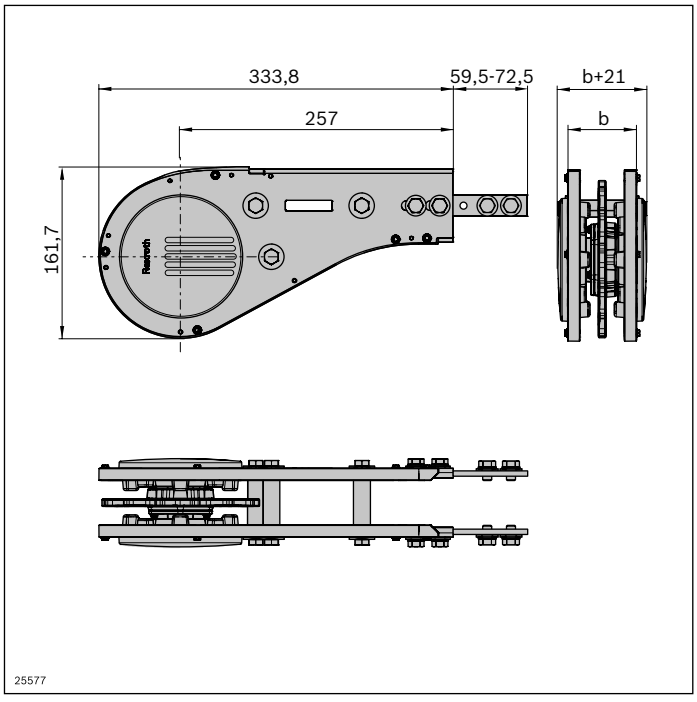
Required accessories:
- Sliding rail: Length calculation, see p. 302

For use as a drive:
- Assembly module, see p. 139
- Drive kit, see p. 164
- Motor leg sets, see p. 183

Scope of delivery:
- Including fastening material

Condition on delivery:
- Assembled, connector enclosed

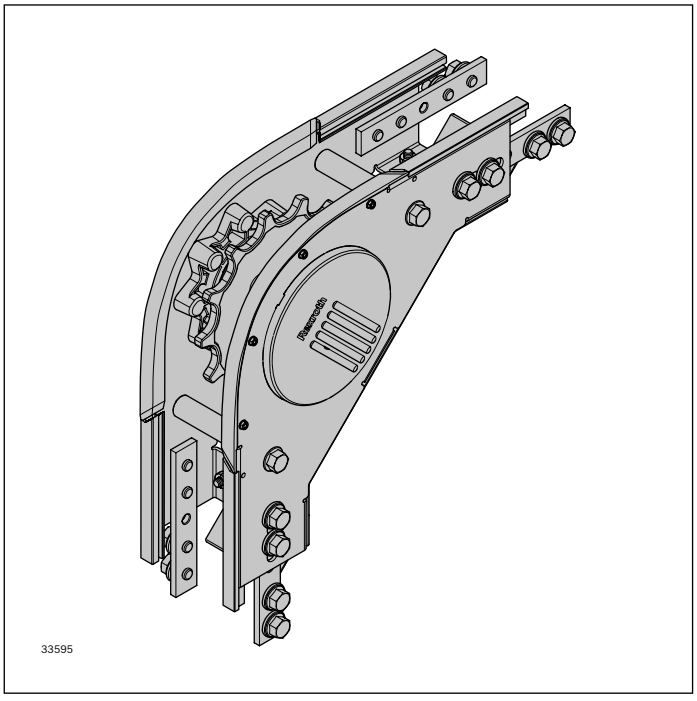
Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft
  up to size 160: PA
  from size 160: Non-rusting steel 1.4301, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



Return unit STS	No.
VF*plus* 65	**3 842 547 528**
VF*plus* 90	**3 842 547 529**
VF*plus* 120	**3 842 547 530**
VF*plus* 160	**3 842 547 531**
VF*plus* 240	**3 842 547 532**
VF*plus* 320	**3 842 547 533**

90° return unit





For building alpine conveyors with chain running only on the upper side.
- Only for use with connection drive (AL and STS)
- Size: 65, 90
- Section length: L_{max} = 30 m

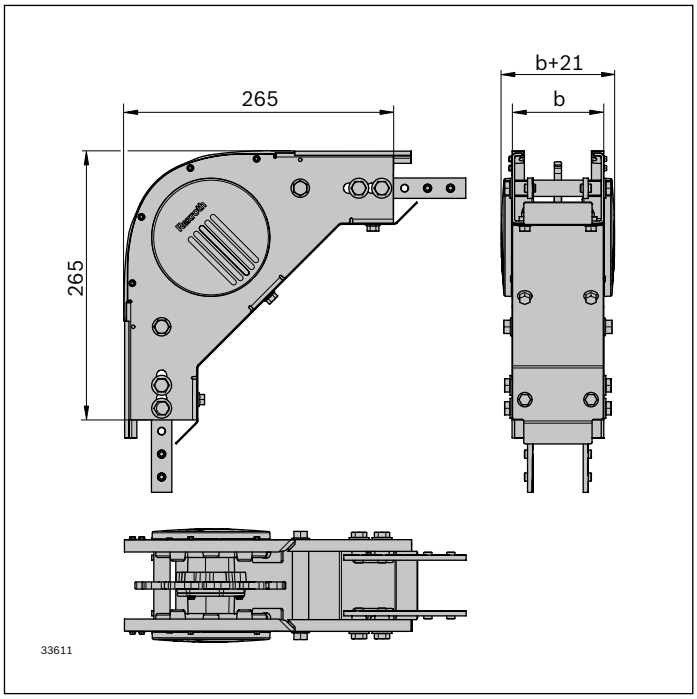
Notice: When using conveyor systems without a returning chain, a cover must be mounted by the customer to ensure personal safety.

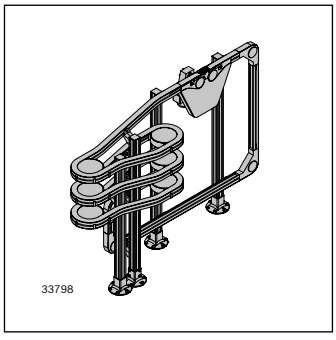
Advantage over alpine conveyor with head drive:
- Shorter chain return, so the required tensile force of the conveyor chain is lower and therefore the possible volume of the alpine conveyor is larger
- No longer necessary to mount the sliding rails required for the chain return on the bottom side of the profile
- The required conveyor chain is shorter

Scope of delivery:
- Including fastening material

Condition on delivery:
- Assembled

Material:
- Housing: Non-rusting steel 1.4301
- Chain wheel: PA
- Chain guide: PA
- Connector: Non-rusting steel 1.4301
- Hexagonal shaft, PA
- Ball bearing: Non-rusting steel 1.4301/FDA



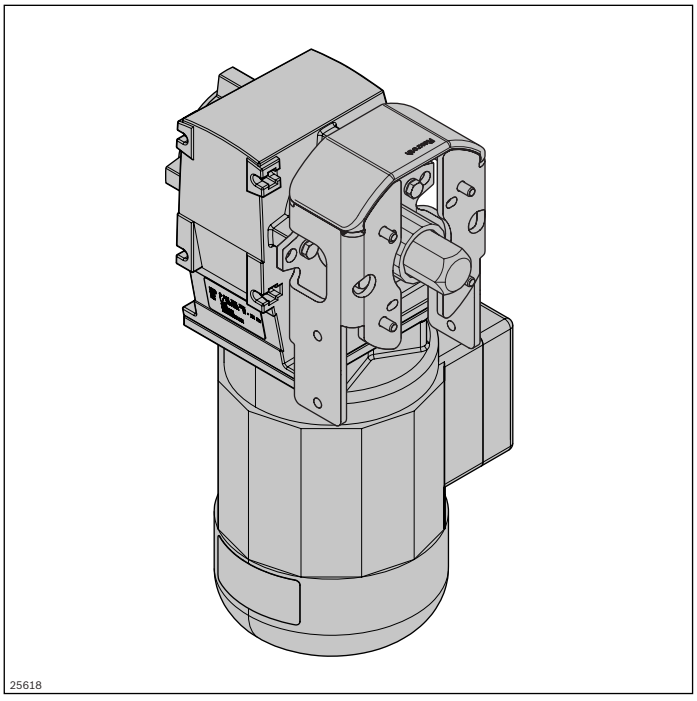


90° return unit		**No.**
VF*plus* 65	1	**3 842 552 984**
VF*plus* 90	1	**3 842 552 985**

Drive kit







The drive kit is designed to operate the basic head drive unit. It contains a flange for attaching the motor to the basic unit, a hexagonal shaft for transmission of force, as well as other optional equipment features.

- Versions in aluminum (SP = AL) or stainless steel (SP = STS)
- With Lenze gear motor (GM = 1) or with an interface for attaching a gear motor SEW SA47 (GM = 2).
  For mounting other gear motors (GM = 0), an adaptation by the customer is required
- Fixed or adjustable speed (v_N). For an adjustable speed, gear motors must be retrofitted with an FU (frequency converter), see p. 166
- Different voltages and supply frequencies (U/f)
- Connections are made using terminal boxes (AT = K) or plugs (AT = S)
- GM = 1 without surface and corrosion protection

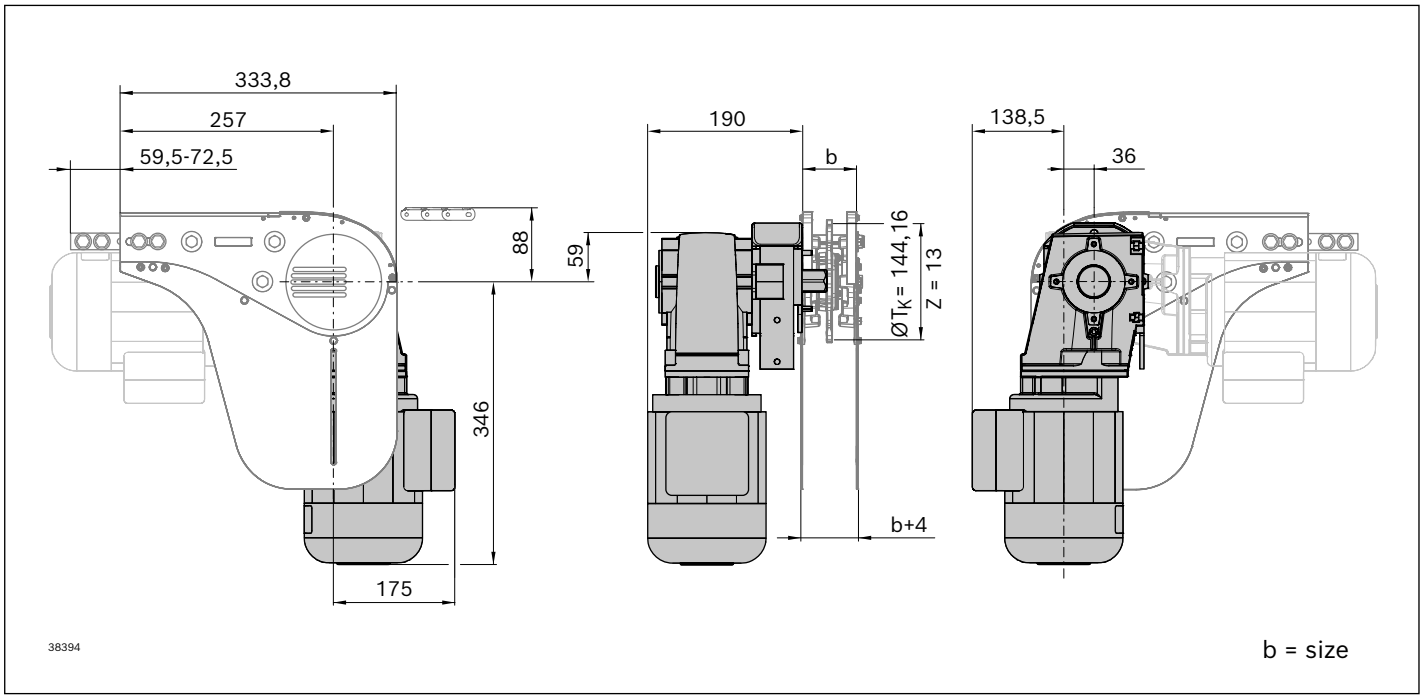
Required accessories:
- Motor leg sets, see p. 183

Optional accessories:
- Frequency converter, see p. 166

Scope of delivery:
- Including fastening material
- Including flange, shaft and gear motor (GM = 1)

Condition on delivery:
- Kit

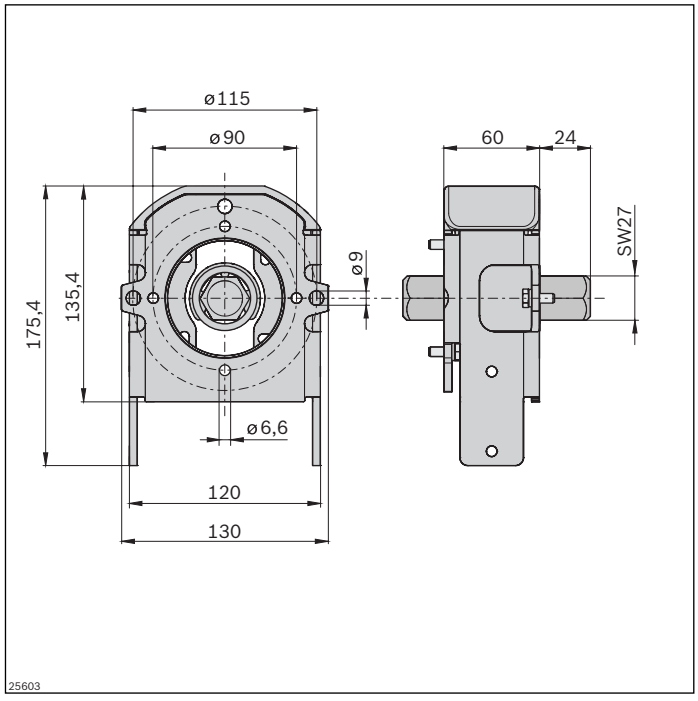
Material:
- Flange, shaft: Non-rusting steel 1.4301
- Motor: Die-cast aluminum
- Cover tube: PE



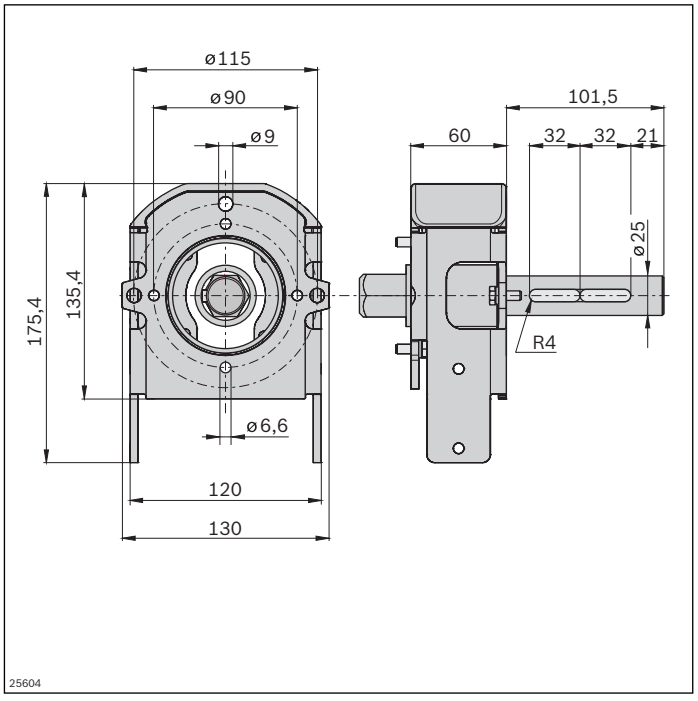
Drive kit VF*plus*	**SP**	**GM**	**v_N** (m/min)	**U/f** (V/Hz) **See p. 305**	**AT**	**No.**
	STS; AL*	0: 1; 2	5, 10, 13, 16, 21, 27, 33, 40, 50		K; S	**3 842 998 291** SP = ... GM = ... v_N = ... U/f = ... AT = ...

* Version AL see p. 92

STS GM = 0



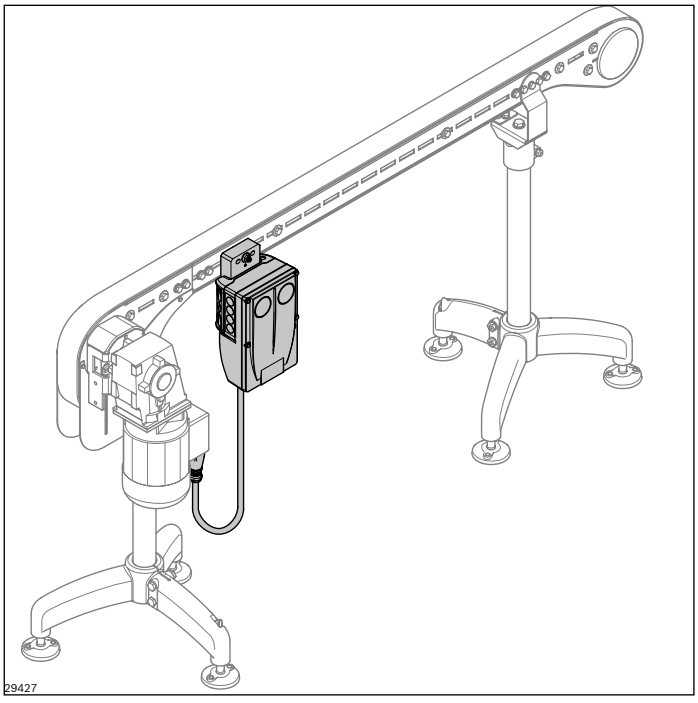
STS GM = 2



Frequency converter motec 8400

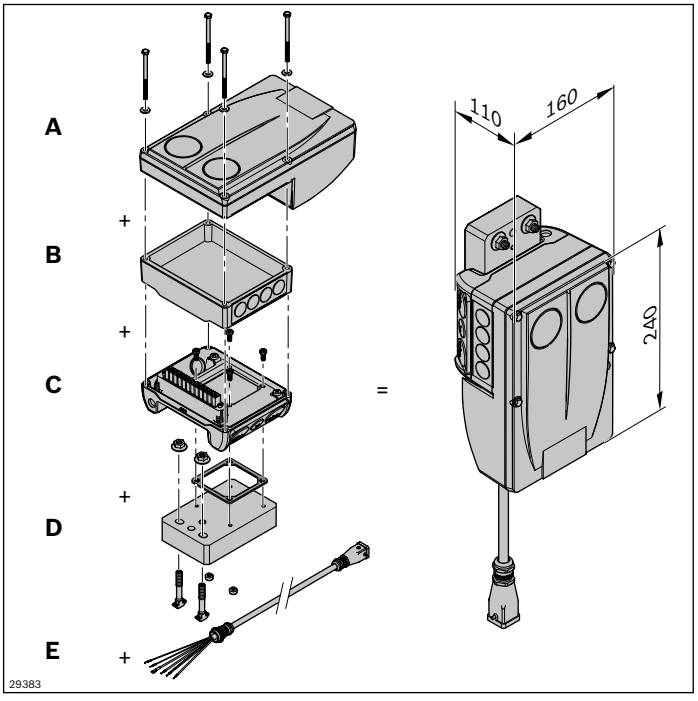






In order to operate a gear motor with adjustable speed, the motor needs to be retrofitted with a frequency converter (FU). The frequency converter has a modular design, whereby it can be easily mounted on a section and connected to the motor by cable.

- Connected load: 0.55 kW
- Speed (v_N) depending on the base speed of the gear motor used

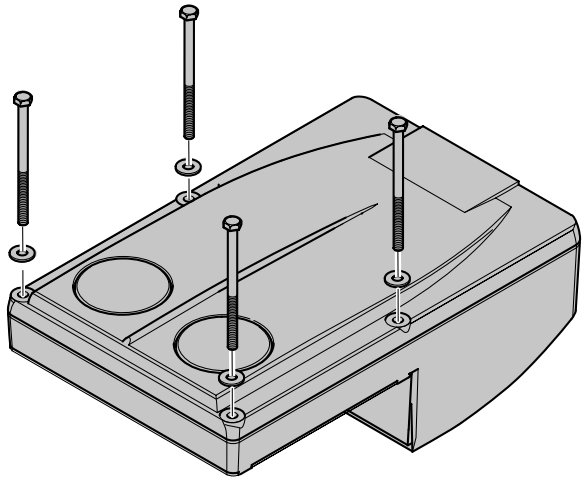


Complete frequency converter consisting of the modules

- Frequency converter power unit (**A**)
- Communication module (**B**)
- Connection unit (**C**)
- Attachment kit (**D**)
- Optional: Connection cable (**E**) for the plug-in connection to the gear motor (AT = S)

The individual modules can be ordered separately and are easy to connect with the screws supplied with the scope of delivery. For the internal and external voltage supply, the modules must be wired by the user (see terminal box assignment, page 309).

A



29384

Frequency converter (A)

Power unit: 0.55 kW

3/PE AC 320 V -0 % ... 528 V +0 %,

45 Hz -0 % .... 65 Hz +0 %

- Easy start-up via manual control unit
- Easy-to-replace memory module
- Large LED status indicator

Frequency converter	No.
0.55 kW power unit	**3 842 553 447**

The speed range of the frequency converter *) is based on the base speed of the motor:

Base speed of motor (m/min) **at 50 Hz**	Min[1] (m/min)	Max[2] (m/min)
5[3]	2	6
10[3]	4	12
13	5	15
16	6	19
21	7	25
27	9	32
33	11	39
40	13	48
50	16	60

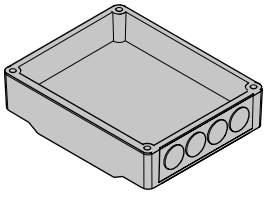
*) By accepting a resulting loss of power, a higher bandwidth can be covered (see p. 309)

[1] Min corresponds to approx. 16 Hz supply frequency

[2] Max corresponds to approx. 60 Hz supply frequency

[3] At 460 V/60 Hz max (m/min) 20 % higher

B



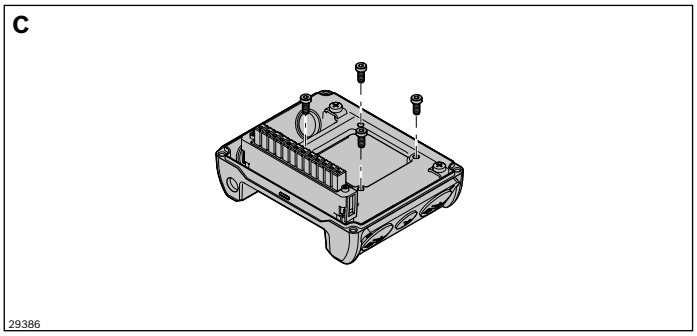
29385

Communication module (B)

- Used to control the frequency converter
- Cable connection options
- Standard version without "integrated safety system STO (safety torque off)" (available on request)

Depending on their function, the individual communication modules are provided with the corresponding connections.

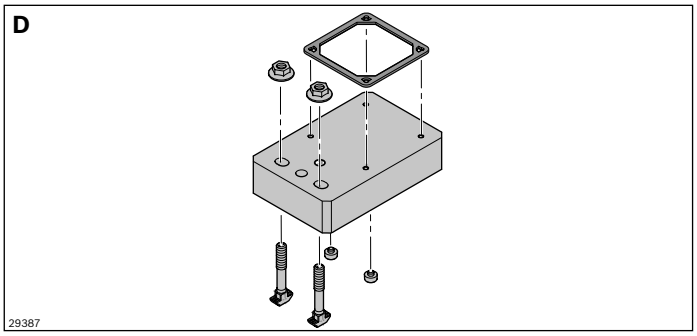
Communication module	No.
Standard I/O	**3 842 553 449**
AS-i	**3 842 553 453**
CANopen	**3 842 553 454**
EtherNet/IP	**3 842 553 451**
EtherCAT	**3 842 553 459**
PROFIBUS	**3 842 553 452**
PROFINET	**3 842 553 450**



Connection unit (C)

– Power grid connection options

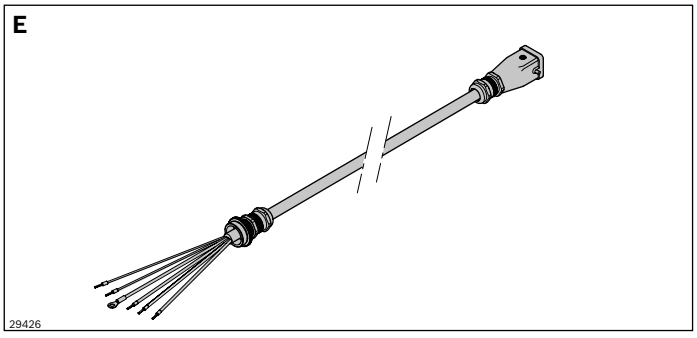
Connection unit	No.
	3 842 553 445



Attachment kit (D)

– For the simple attachment of the frequency converter to the section STS

Attachment kit	No.
	3 842 553 457



Connection cable (E)

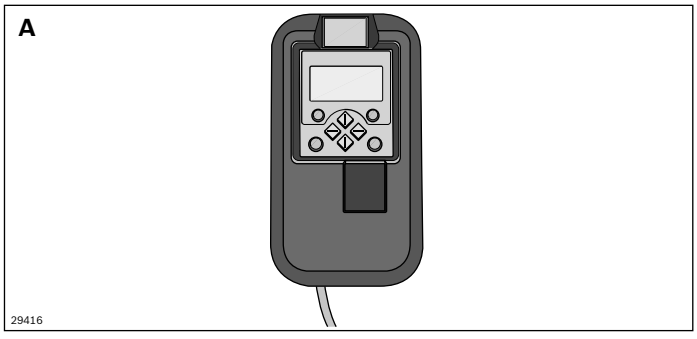
– For connecting the gear motor to the frequency converter (length: 1 m)
– For the drive kit AT = S (direct wiring with AT = K)

Connection cable	No.
	3 842 553 512

Manual control unit
Switching/potentiometer unit

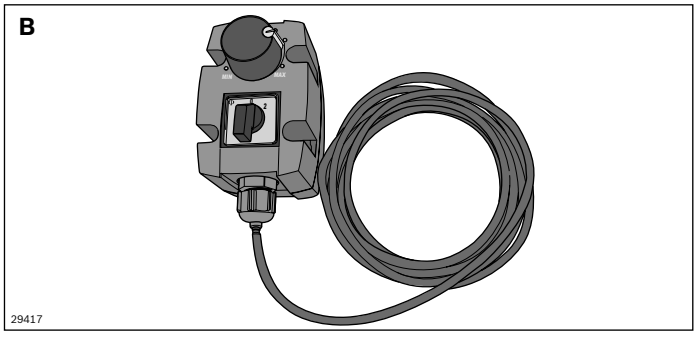






Manual control unit
The manual control unit is required for the parameterization of drives with frequency converters.
In addition, you can:
- Control (e.g. block and release)
- Display operating data
- Steplessly regulate the transport speed
- Transfer parameter sets to other basic devices

Manual control unit	No.
	3 842 552 821



Switching/potentiometer unit
The switching/potentiometer unit is used to fine tune the transport speed within a range that has been preset with the manual control unit. The switching/potentiometer unit is connected to the frequency converter by a cable.
The drive can be started or stopped with the rotary switch.

Notice: It is imperative that the running direction of the chain conveyor is checked prior to start-up.

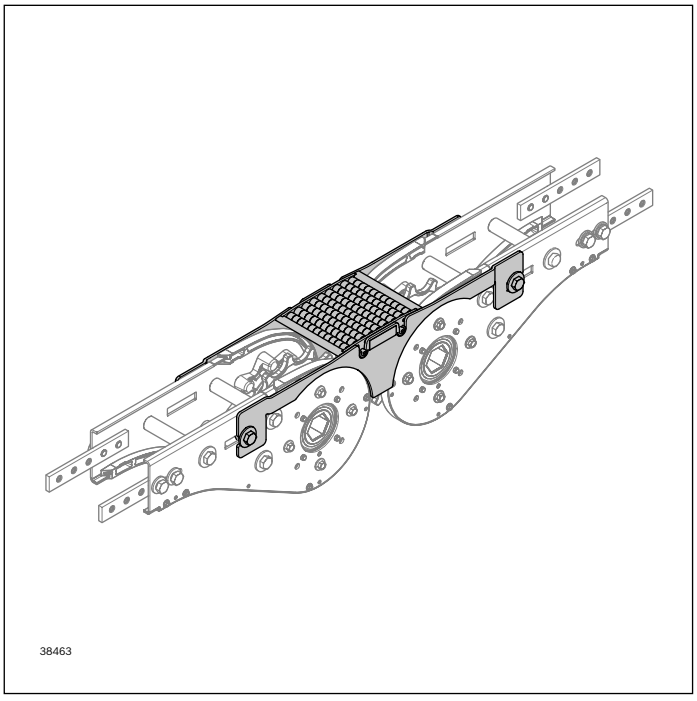
Switching/potentiometer unit	No.
	3 842 553 184

Scope of delivery:
- **A, B:** Including 2.5 m connection cable

Passive bridge connection kit







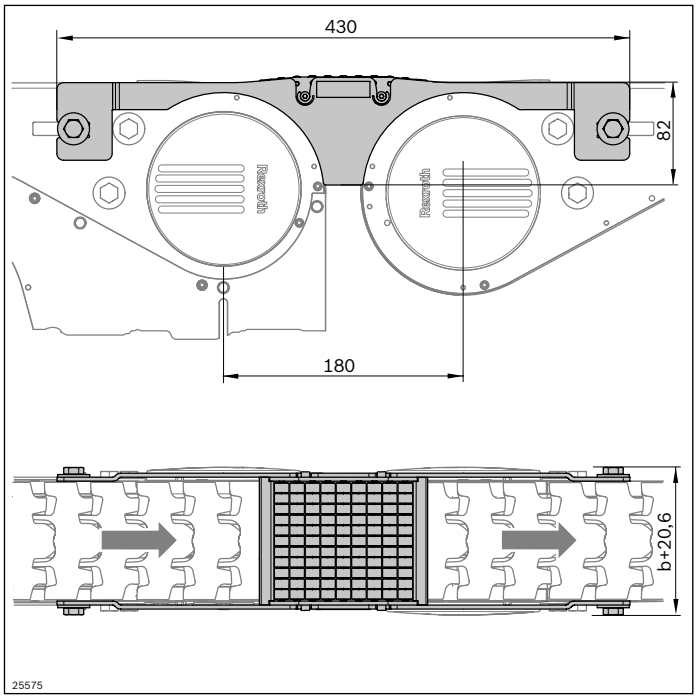
The passive bridge is used as a transfer unit between the basic unit and return unit or with the connection drive to bridge the conveyor trench.
- Size: 65-160
- Only for flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- Height adjustment: Approx. 2 mm
- The conveyed goods are transferred via passive rollers
- Suitable for goods from approx. 300 mm length

▶ Can be retrofitted into a standard configuration at any time

Scope of delivery:
- Including fastening material

Material:
- Non-rusting steel 1.4301, POM

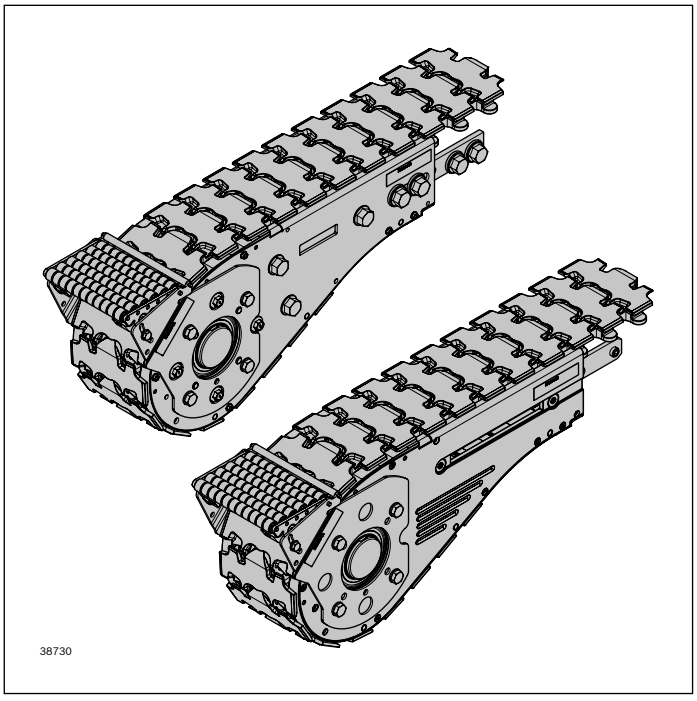
Condition on delivery:
- Some assembly required



Passive bridge connection kit	No.
VF*plus* 65	**3 842 549 015**
VF*plus* 90	**3 842 549 016**
VF*plus* 120	**3 842 549 017**
VF*plus* 160	**3 842 549 018**

Short passive bridge connection kit





The short passive bridge is used as a transfer unit between the basic unit or return unit and a third-party conveyor to bridge the conveyor trench.

- Size: 65-160
- Each in a separate version for a flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- The conveyed goods are transferred via passive rollers
- Suitable for goods from approx. 150 mm length
- Inclination adjustment ±15° (only the gradient)

- ▶ Can be retrofitted into the basic unit and return unit at any time (cannot be combined with the transmission kit)
- ▶ Suitable for mounting on AL and STS

Scope of delivery:

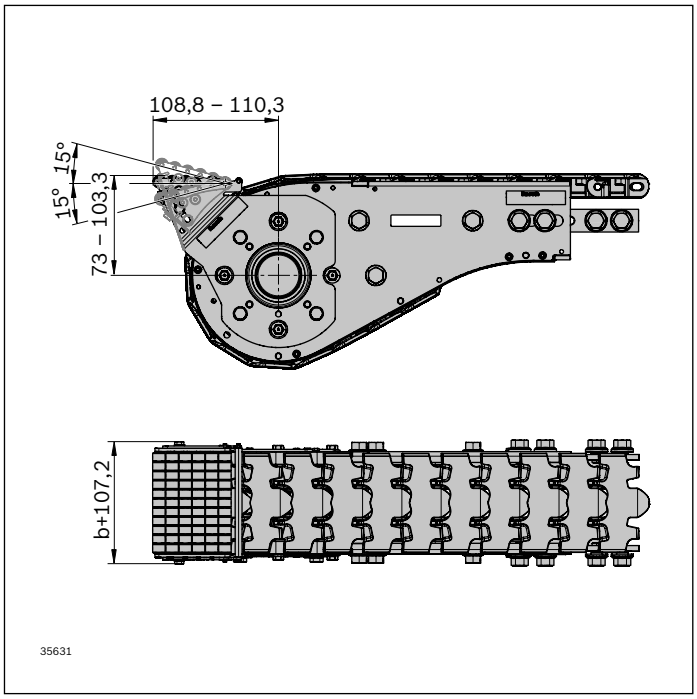
- Including fastening material

Condition on delivery:

- Some assembly required

Material:

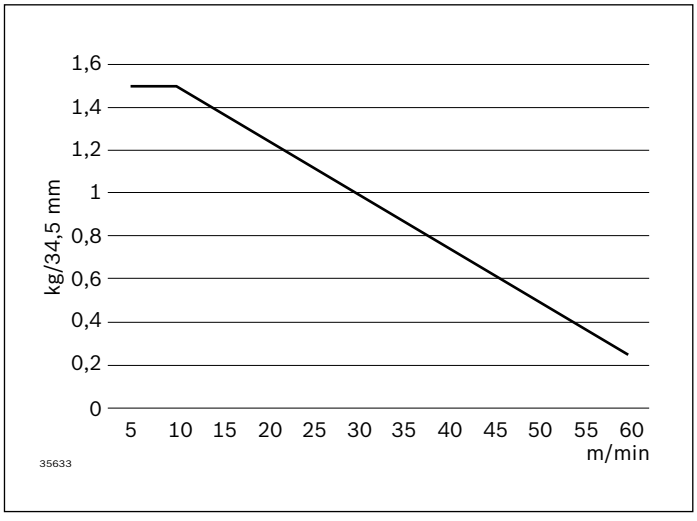
- Non-rusting steel 1.4301, POM



Short passive bridge connection kit for flat conveyor chain	**No.**
VF*plus* 65	**3 842 558 050**
VF*plus* 90	**3 842 558 051**
VF*plus* 120	**3 842 558 052**
VF*plus* 160	**3 842 558 053**

Short passive bridge connection kit for static friction chain	**No.**
VF*plus* 65	**3 842 558 078**
VF*plus* 90	**3 842 558 079**
VF*plus* 120	**3 842 558 080**
VF*plus* 160	**3 842 558 081**

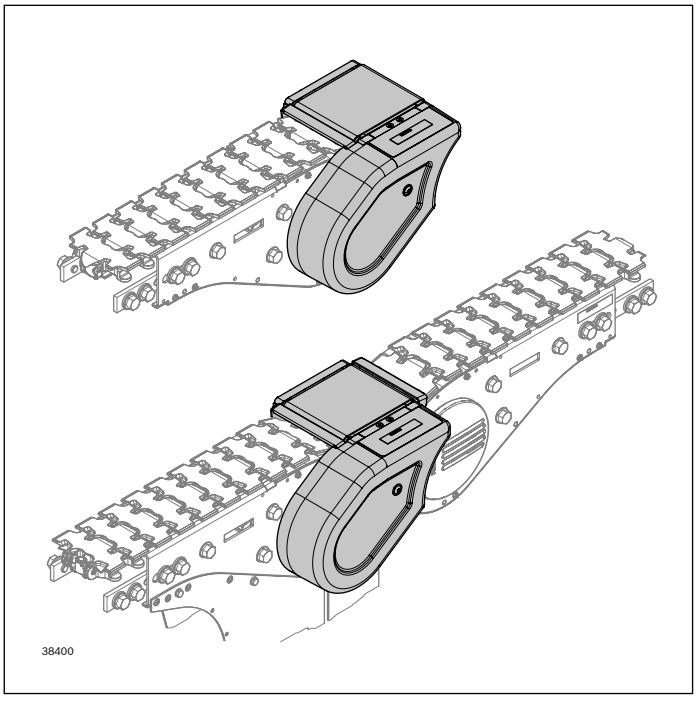
Permissible load depending on the speed



Connection kit active belt bridge







- Simple transmission of the drive force using hexagonal hollow shafts integrated into the base unit or return unit as standard
- Can be retrofitted into a standard configuration at any time
- Easy replacement of the belt from the top

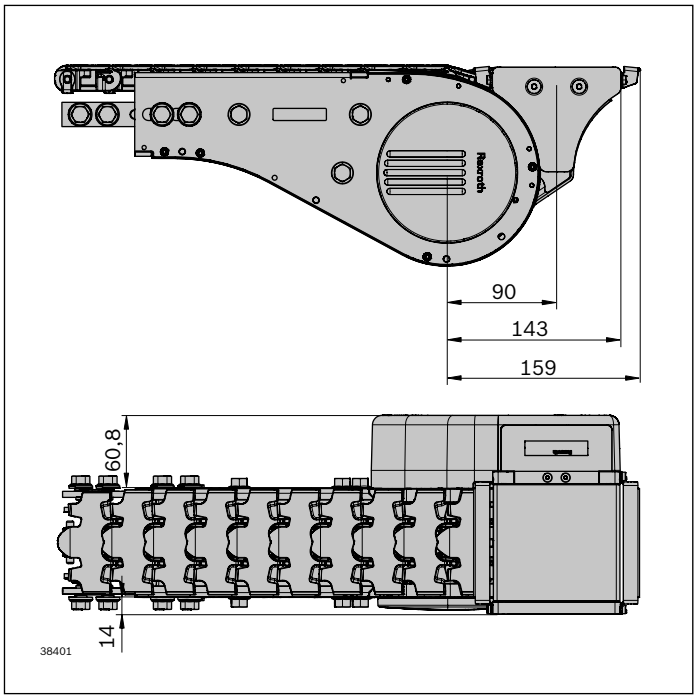
Scope of delivery:
- Including fastening material
- Transmission and protective cover

Material:
- Aluminum, non-rusting steel 1.4301, PA, PE, ABS, PUR

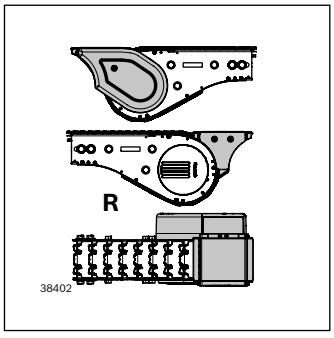
- The active belt bridge is used as a transfer unit for bridging the conveyor trench
  - between the basic unit and return unit
  - between the start or end of a conveyor section and a third-party conveyor
  - in the connection drive
- Size: 65, 90
- Only for flat conveyor chain and static friction chain

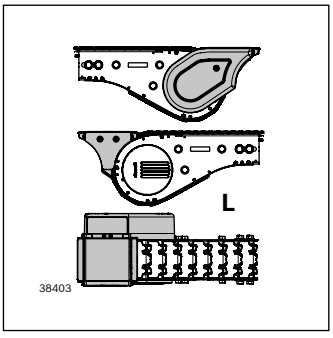
The active belt bridge is driven by a transmission (on the drive or return unit side).
- Suitable for conveyed materials from approx. 80 mm in length (depending on the speed, position of the center of gravity, product friction, etc.)
- Installation possible on both the drive and return side (make sure to use the correct L/R version)
- Not permitted for wet operation, rough ambient conditions or sharp-edged products
- Load depending on the speed (see diagram)
- The speed of the adjacent conveyor should be approximately the same to prevent premature wear

Condition on delivery:
- Some assembly required

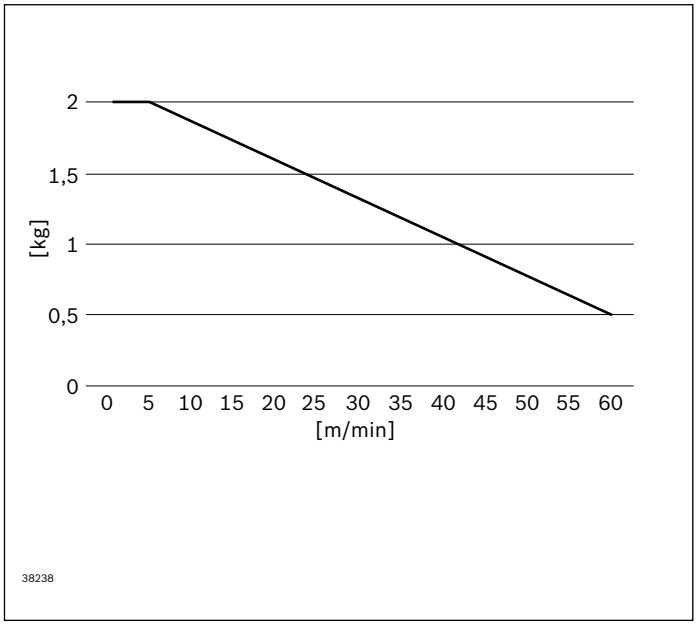


Connection kit active belt bridge		No.
VF*plus* 65	L	**3 842 558 000**
VF*plus* 65	R	**3 842 558 001**
VF*plus* 90	L	**3 842 558 002**
VF*plus* 90	R	**3 842 558 003**





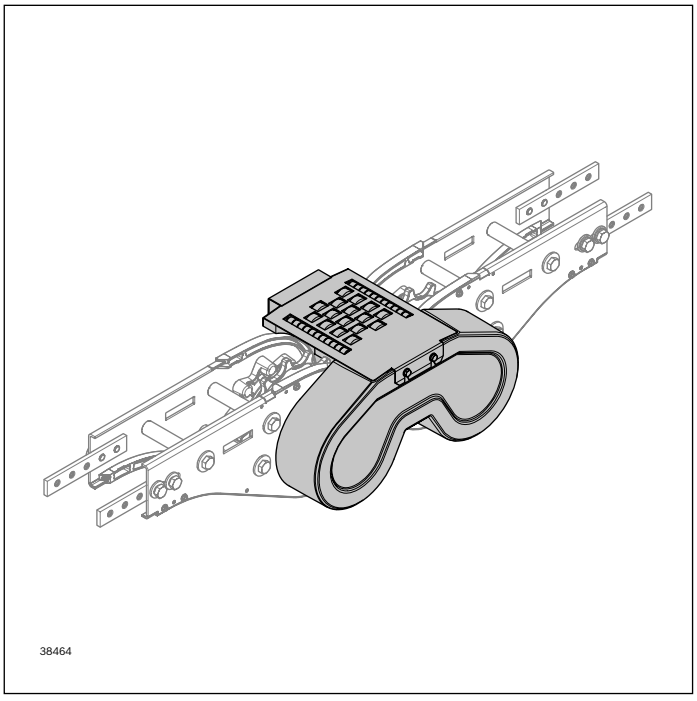
Permissible load depending on the speed



Active roller bridge connection kit







The active roller bridge is used as a transfer unit between the basic unit and return unit or with the connection drive to bridge the conveyor trench. The active roller bridge is driven by a transmission (on the drive or return unit side).

- Size: 65-160
- Only for flat conveyor chain and static friction chain
- For dimensionally stable products with an even transport surface
- Height adjustment: Approx. 2 mm
- Additional versions (e.g. machine variants at the section end) available on request
- Suitable for conveyed materials from approx. 100 mm in length (depending on the speed, position of the center of gravity, product friction, etc.)
- Freely selectable mounting position (L/R)
- Not permitted for wet operation or rough ambient conditions

- ▶ Simple transmission of the drive force using hexagonal hollow shafts integrated into the base unit or return unit as standard

- ▶ Can be retrofitted into a standard configuration at any time

Scope of delivery:

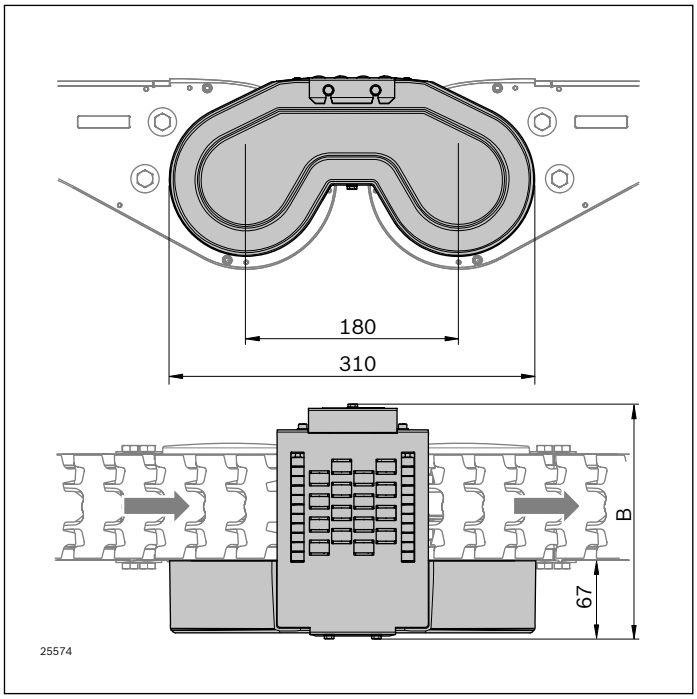
- Including fastening material
- Transmission and protective cover

Condition on delivery:

- Some assembly required

Material:

- Non-rusting steel 1.4301, PA, POM, ABS, PUR

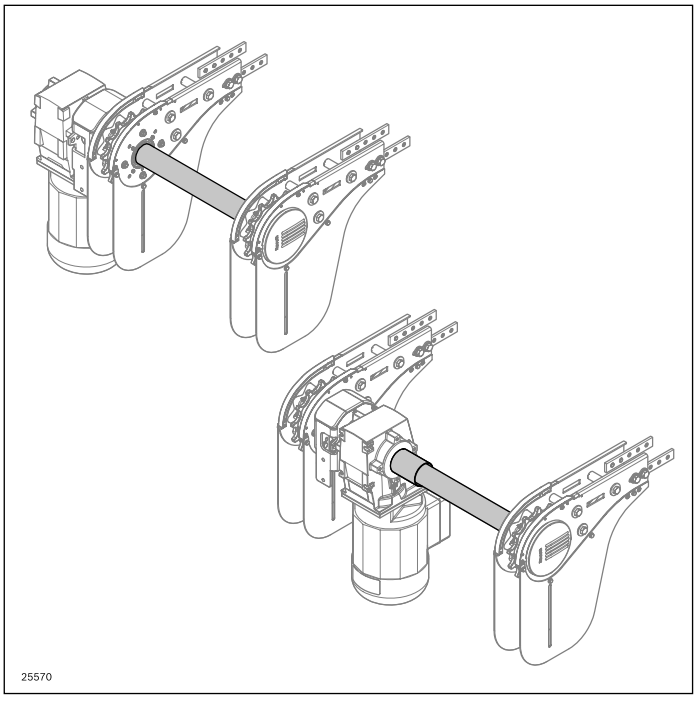


Active roller bridge connection kit	**B**	**No.**
VF*plus* 65	174	**3 842 555 820**
VF*plus* 90	199	**3 842 555 821**
VF*plus* 120	229	**3 842 555 822**
VF*plus* 160	269	**3 842 555 823**

Synchronous drive
Connection kit, external motor/internal motor







The connection kit for a synchronous drive is used to synchronously drive two conveyor sections with only one motor.

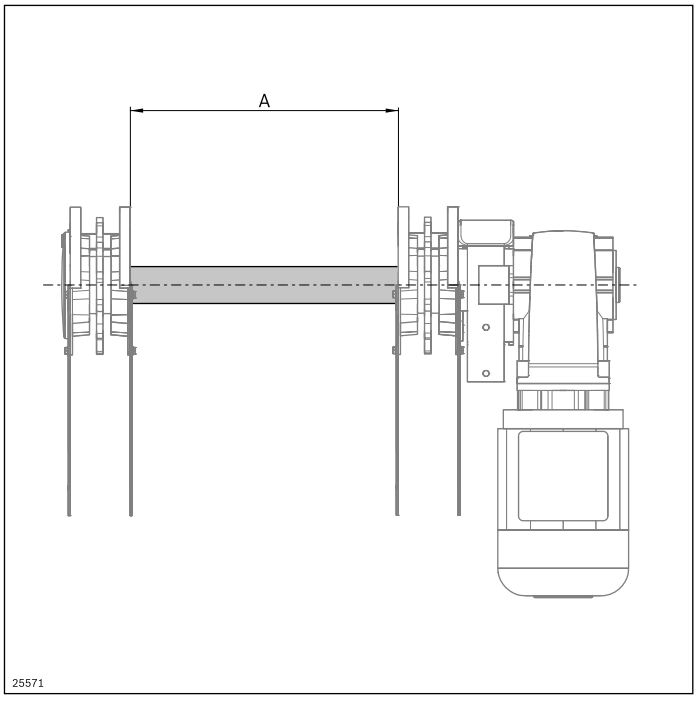
- Exterior synchronous drive:
  - Motor mounting position outside the parallel sections
- Internal synchronous drive:
  - Motor mounting position between the parallel sections for drive kit GM = 1 (see p. 164), customer check required for other motor types

Condition on delivery:

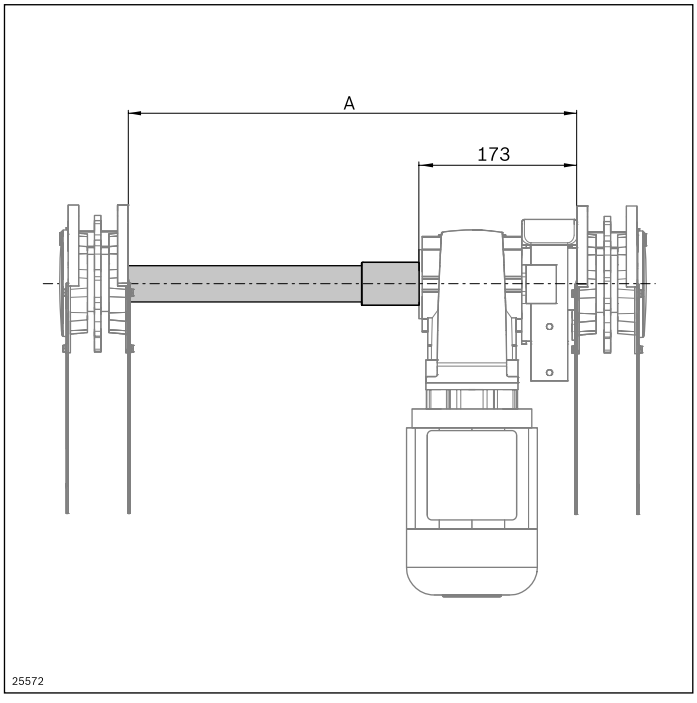
- Assembly required

Material:

- Shaft: Non-rusting steel 1.4301
- Coupling: PA



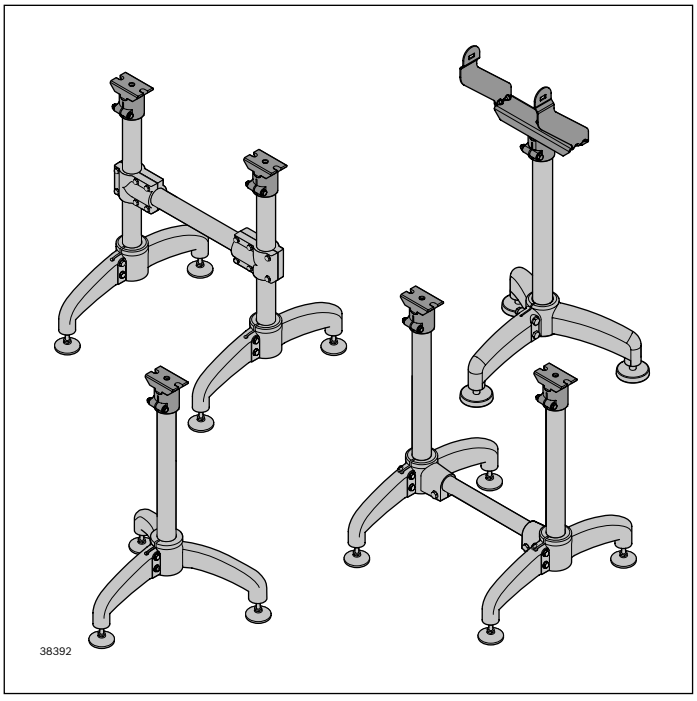
Synchronous drive connection kit	**A** (mm)	**No.**
VF*plus* external motor	15 ... 2940	**3 842 998 774**



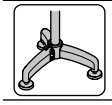
Synchronous drive connection kit	**A** (mm)	**No.**
VF*plus* internal motor	240 ... 3160	**3 842 998 775**

Leg sets STS



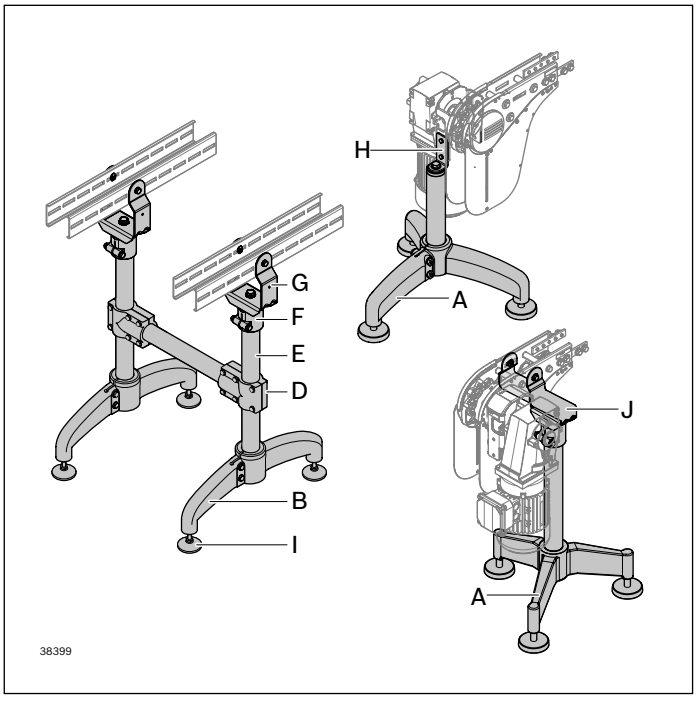


- Fast, simple leg set adjustment thanks to clever product details
- Few screwed connections
- Easy to clean thanks to ample draining surfaces
- Bore for the easy attachment of drop trays, protective devices, etc.
- Supports can also be used in conjunction with sections AL



Leg set STS **182**

Leg set STS



- For dowelling the leveling feet (**I**) drill guides are available on the underside
- Easy-to-clean design with draining surfaces

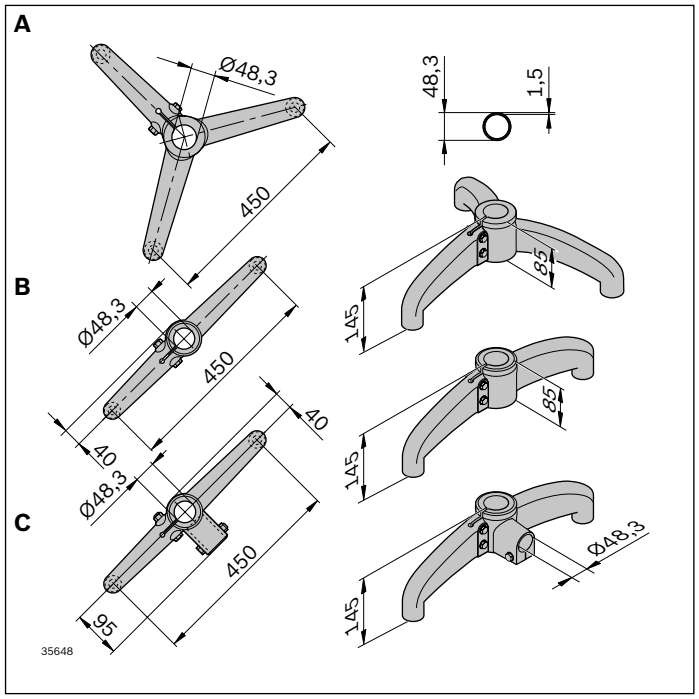
The chain conveyor is placed on the ground by means of supports and fastened.
The support is constructed from single parts:
Foot in three different versions (**A**, **B**, **C**) tube (**E**), flange (**F**) for mounting the holder and holder (**G**) for mounting the section profile.
It is imperative that a separate holder (**J**) is used to support the motors/drives. Holder (**H**) as an additional or optional support on the flange.

- Depending on the speed, accumulation behavior and weight, the supports are to be fixed at a distance of approx. 2 ... 3 m
- The leg sets for the aluminum system (see p. 116, 120) can also be used on the stainless steel system. The holders (**G+J**) can be connected directly to a strut profile 60x60 and a S12x30-T50 (MGE catalog **3 842 530 236**)
- Holders (**J+H**) can only be used for the system STS
- Holder (**G**) can also be used for ascending and descending conveyor sections (up to approx. 28°, depending on the return chain)
- Holder (**G**) with drill guide to fasten drip trays, trap guards for return chains etc., also suitable for section profile 60x60
- Due to stability reasons, cross reinforcements are absolutely necessary when using feet B and C

Scope of delivery:
- Including fastening material

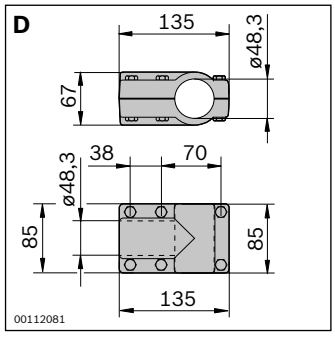
Condition on delivery:
- Assembly required

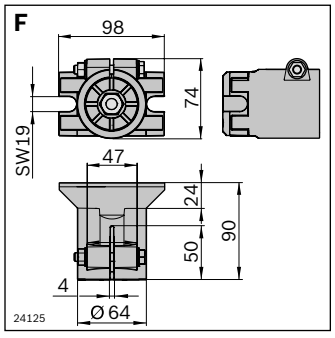
Material:
- **A**, **B**, **C**, **D**, **F**: PA
- **E**, **G, J**: Non-rusting steel 1.4301
- **H**: Non-rusting steel 1.4301 with PA
- **I**: STS with PA



Foot STS		No.
Tripod (A)	1	**3 842 533 307**
Bipod (B)	1	**3 842 533 308**
Two-leg with flange (C)	1	**3 842 533 309**

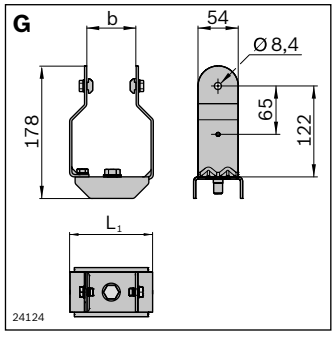
Tube D48.3 x 1.5 STS (E)	**L** (mm)	No.
6 pcs	3000	**3 842 533 901**
1 pc	200 ... 3000	**3 842 993 308/L**

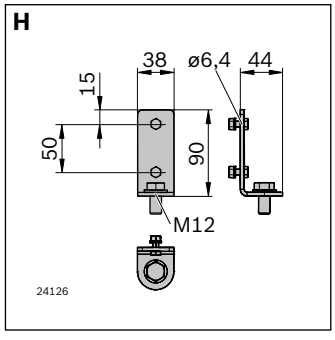




Cross connector (D)		No.
VF*plus* 80x80, black	1	**3 842 533 306**

Flange VF*plus* STS (F)		No.
VF*plus* support	Set	**3 842 547 892**

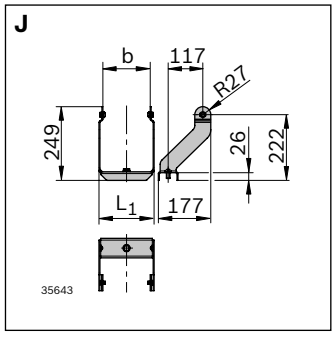


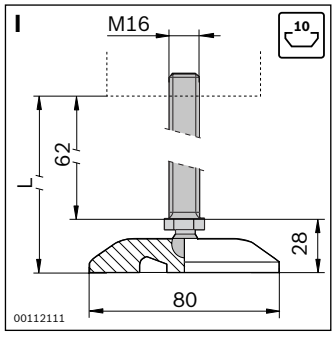


Holder STS (G)	**b** (mm)	**L**$_1$ (mm)		No.
VF*plus* 65 support STS	65	111	Set	**3 842 546 658**
VF*plus* 90 support STS	90	136	Set	**3 842 546 659**
VF*plus* 120 support STS	120	166	Set	**3 842 546 660**
VF*plus* 160 support STS	160	206	Set	**3 842 546 661**
VF*plus* 240 support STS	240	286	Set	**3 842 546 662**
VF*plus* 320 support STS	320	366	Set	**3 842 546 663**

STS motor leg set holder (H)		No.
VF*plus*	Set	**3 842 549 365**

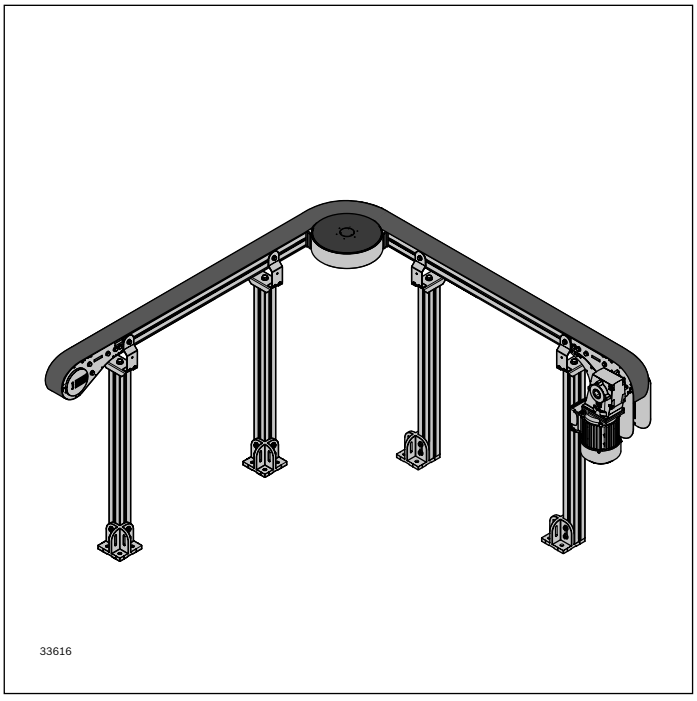
Holder STS (J)	**b** (mm)	**L**$_1$ (mm)		No.
VF*plus* 65 drive STS	65	91	Set	**3 842 559 114**
VF*plus* 90 drive STS	90	116	Set	**3 842 559 115**
VF*plus* 120 drive STS	120	146	Set	**3 842 559 116**
VF*plus* 160 drive STS	160	186	Set	**3 842 559 117**
VF*plus* 240 drive STS	240	266	Set	**3 842 559 118**
VF*plus* 320 drive STS	320	346	Set	**3 842 559 119**





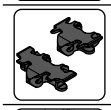
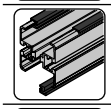
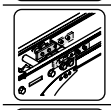
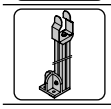
Leveling foot (I)	No.
Adjustable M16x95	**3 842 533 310**

ESD system VarioFlow *plus*



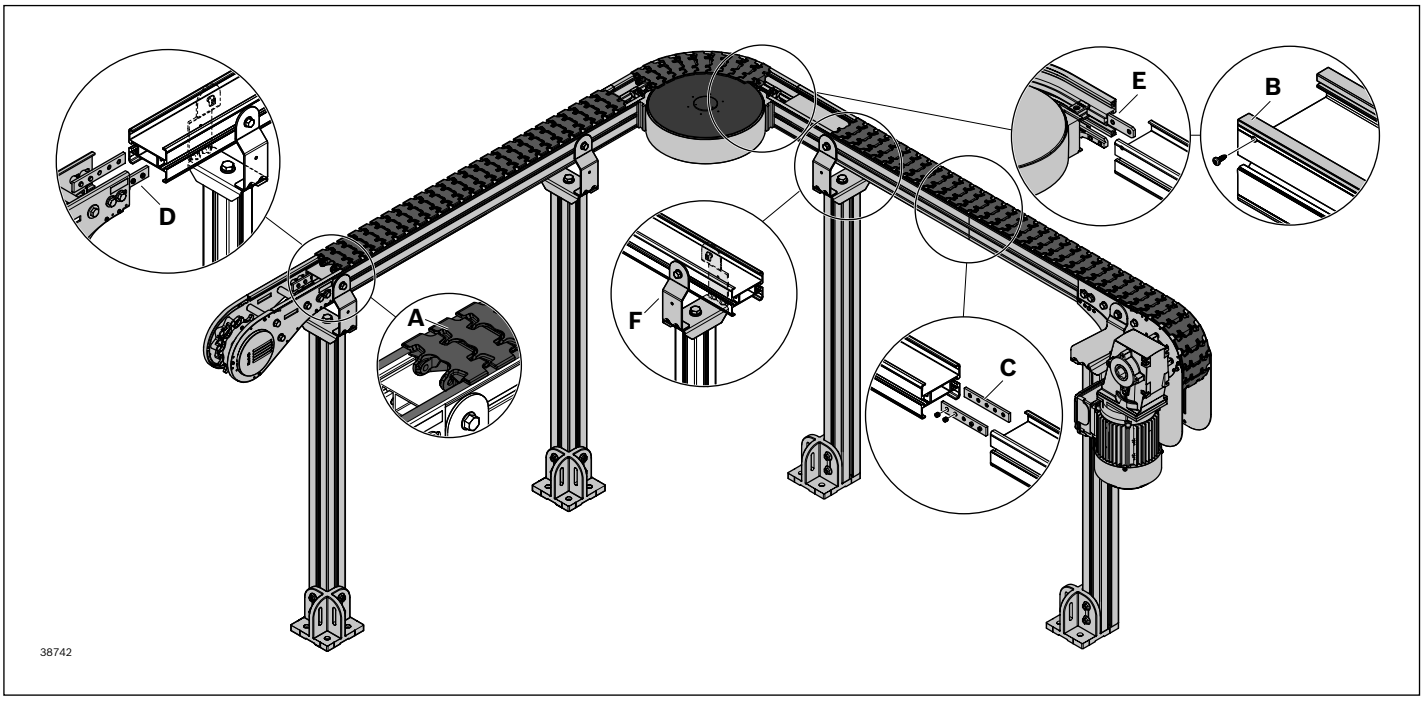
- Components and parts suitable for use in an EPA (ESD Protected Area)
- Conductive components
- Dissipative connection technology
- Size: 65, 90
- Max. speed: 30 m/min
- Max. chain tensile force: 600 N

Notice:
Because sliding friction is involved with the transport medium (chain), static charges cannot be completely avoided. Depending on customer requirements, additional measures may be necessary.

	**Design of an ESD system**	**186**
	**Conveyor chain ESD**	**190**
	**Sliding rail ESD**	**192**
	**Curve wheel AL ESD**	**194**
	**Drive and return unit ESD**	**196**
	**Basic unit** **Curve wheel drive AL ESD**	**198**
	**Adapter AL-STS**	**200**
	**Leg set ESD** **Motor leg set ESD**	**202**

Design of an ESD system

The ESD system comprises a combination of AL, STS and special ESD components.



- **A:** The conveyor chain ESD is deflected to the sliding rail ESD via the extensive support.
- **B:** The sliding rail ESD is deflected to the section profile AL (see p. 54) via the side standard mount[1)]
- **C:** The section profile AL is mounted using the profile connector AL [1)]
- **D:** The drive/return unit STS are mounted on the section profile AL using the adapter AL-STS[1)]. The use of the drive/return unit STS instead of the version AL is necessary to minimize the load creation
- **E:** The curve wheel AL ESD (see p. 194) is screwed with the section profile AL[1)]
- **F:** The leg sets AL are mounted on the section profile AL via holders STS (screws in the slot)[1)]

[1)] T-bolts, nuts and self-tapping screws break through the anodized layer and form a connection to the conductive aluminum core.

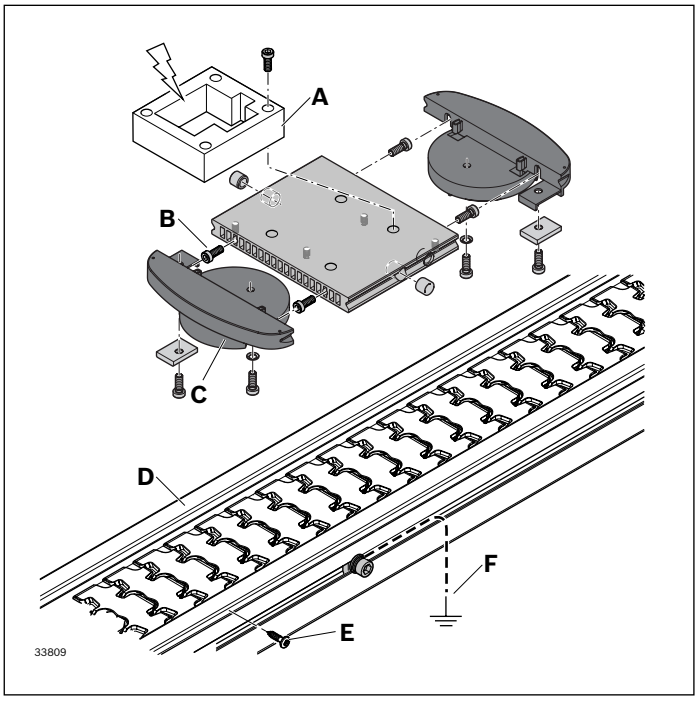
Notice:
When assembling an ESD system, ensure that all components are conductively connected to each other. Horizontal sliding curves are not suitable for use in an EPA due to the high friction.

In an environment designed for ESD, all components should be made from volume or surface conductive material. Since this is not always possible in the VarioFlow *plus* system for technical and economic reasons, the occurrence of charges (that are strongly dependent on the humidity – 40 % minimum should not be fallen short of) cannot be completely excluded for certain components.

No ESD critical processes should be carried out in the vicinity of components such as drives, return units, or bridges. You should move processing-related processes into straight sections and design the complete system according to what your ESD coordinator thinks.

Charges occurring can be discharged through the use of conductive brushes. For machining processes involving particularly sensitive parts, there are numerous components that can be found in Rexroth's Manual Production Systems product range with which individual workstations can be integrated in a VarioFlow *plus* system. These workstations can be implemented, both simply and economically, as completely conductive "islands" according to the ESD requirements.

Caution:
Personal safety always comes before ESD safety!

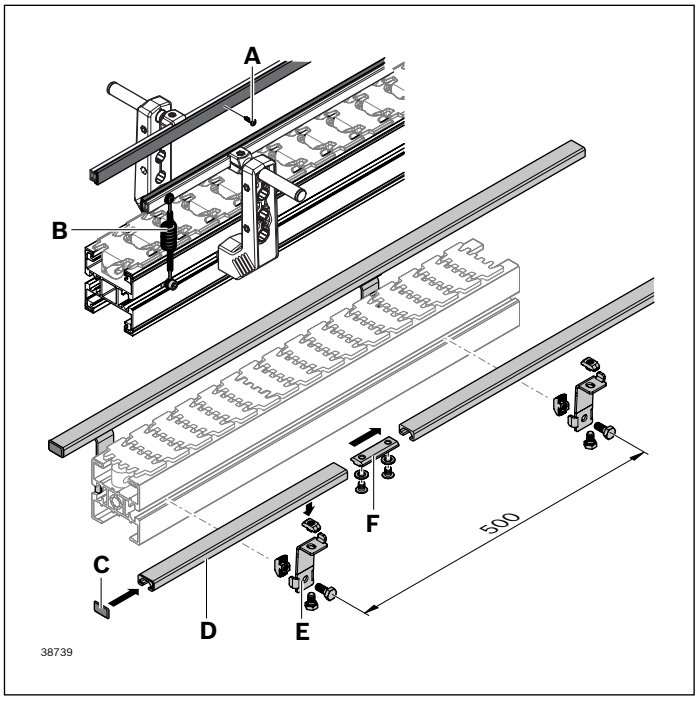


Workpiece pallets

- Product carrier connection made of metal or conductive plastic connections to the plate WT via screw (**A**) (pierced anodized coating)
- Connection to the end caps and the steel wear pad via screws (**B**)
- Connection to the conveyor chain via a large contact area (**C**)
- Connection between the conveyor chain and the sliding rail via a large contact area (**D**)
- Sliding rail connection with section profile via screws (**E**)
- Example connection to the hall potential equalizer with a 1 MΩ protective resistor (**F**)

Notice:

Only the steel wear pad is ESD capable.



Product guide

– Sliding rail connection narrow with profile rail AL via sheet metal screw (3 842 547 908) (**A**)
– Connection between profile rail – section profile AL using a screw (3 842 547 908 or 3 842 533 915), cable and T-nut (**B**) (piercing through the anodized coating and establishing a connection to the conductive aluminum core)

Workpiece pallet product guide

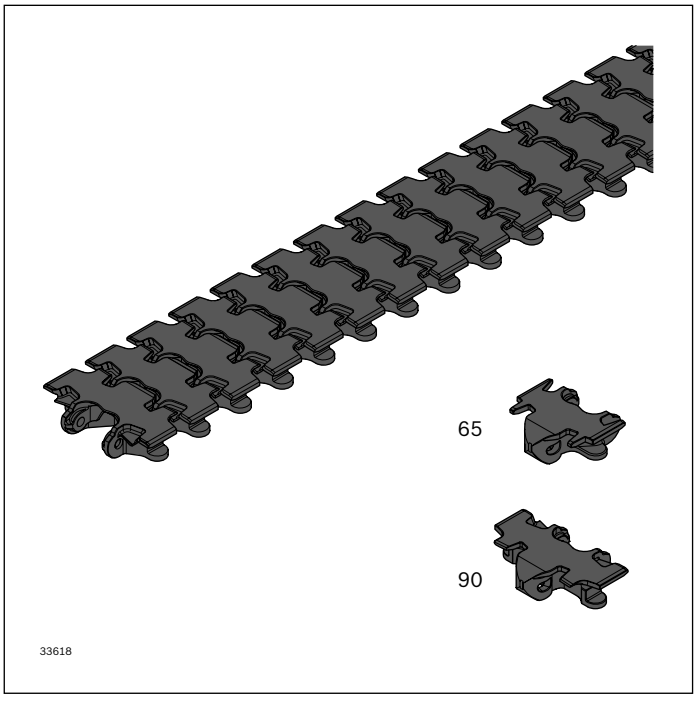
– Connection of lateral guide profile (**D**) with holder (**E**) using T-nuts (broken eloxal layer)
– Connection between 2 lateral guide profiles via profile connector (**F**) with T-nuts (broken anodized layer)

Notice:

The extension of the profile rail AL is only permitted with the profile connector on the outside (see p. 218).

Conveyor chain ESD





The conveyor chain ESD is used to transport products directly or indirectly via workpiece pallets in electrostatically dissipative systems.

- Transport on ascending or descending sections up to about 7° possible, depending on the product (test required)
- Accumulation operation permitted, depending on the product
- Maximum chain tensile force: 600 N
- Conduction resistance: < 10^8 Ω
- Size: 65, 90
- A combination with other types of chains is not permitted, since these are non-conductive

- ▶ Drilling the flat conveyor chain links allows for the simple attachment of superstructures.
  A mold cavity for accommodating a flat hexagon nut/screw M5 is present.
  Max. drilling up to Ø 5 mm since at this point there are no interfering contours in the chain conveyor.

- ▶ Extremely quiet chain running thanks to the patented chain design

Required accessories for individual chain links:

- Chain pin and pivot pin, see p. 191

Scope of delivery:

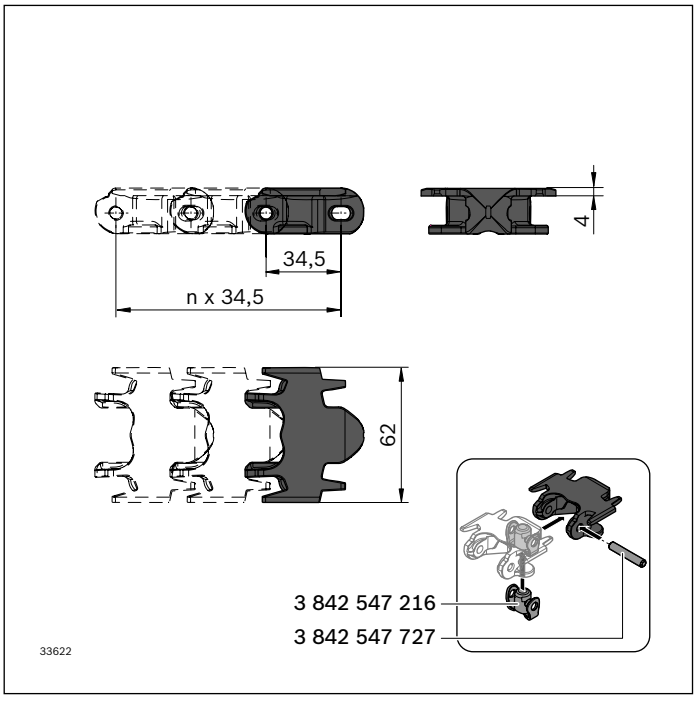
- Chain: Complete, incl. chain pin and pivot pin

Condition on delivery:

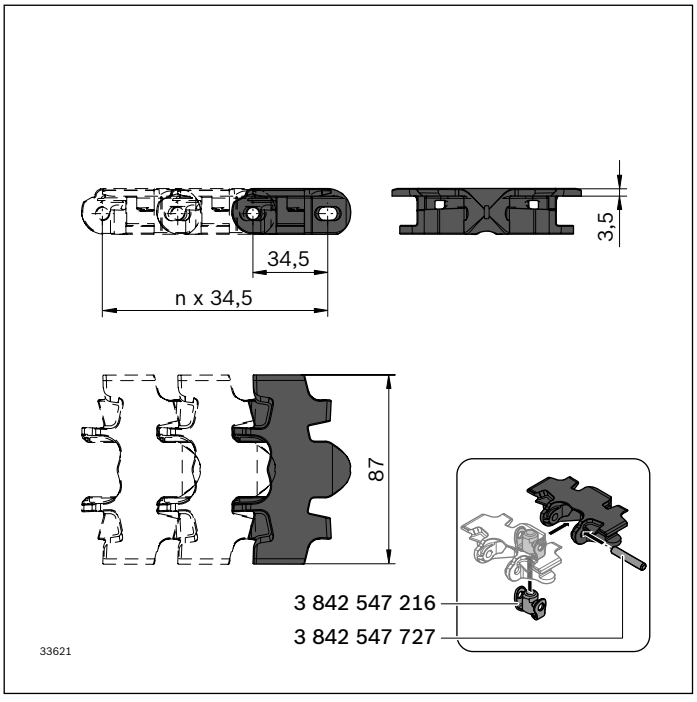
- Chain: Fully assembled

Material:

- Chain link: POM; black
- Chain pin: Non-rusting steel 1.4301
- Pivot pin: PA66

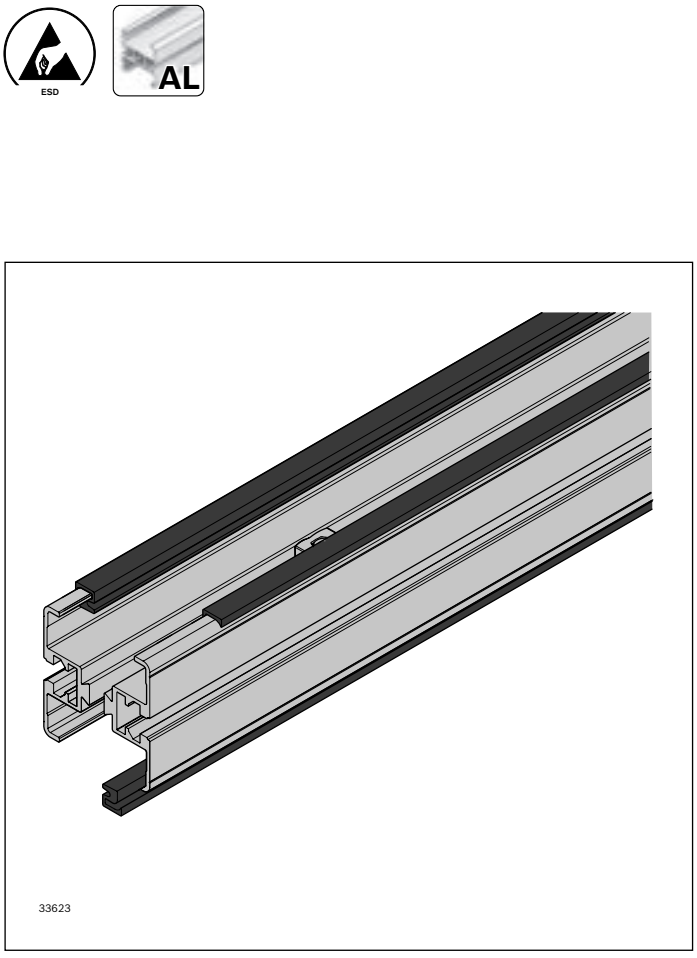


Conveyor chain ESD VF*plus* 65	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 088**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**



Conveyor chain ESD VF*plus* 90	**L** (mm)		**No.**
Conveyor chain	4968	1	**3 842 546 089**
Chain pin		100	**3 842 547 727**
Pivot pin		100	**3 842 547 216**

Sliding rail ESD



- Easy assembly – simply clip onto the section profile
- Secured against axial shifting with lateral screw fittings
- Gliding surface machining: Not required

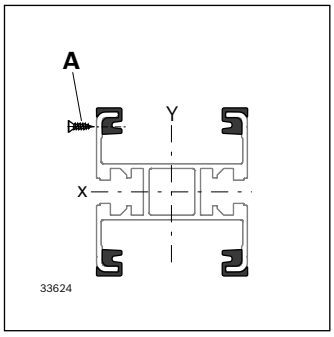
Required accessories:
- Sliding rail assembly tool, see p. 288
- Sheet metal screw 2.9x9.5 DIN 7982; DIN EN ISO 7050
  1 screw for each sliding rail section

Material:
- PE-UHMW

The sliding rail ESD is clipped into the section profile and guides the conveyor chain.
Lateral securing means the sliding surface does not need to be machined. Wear and noise level are thus reduced to a minimum.
The ESD sliding rail screwed to the section profile helps to safely discharge loads.
- Size: 65, 90
- Only for systems AL
- V_{max}: 30 m/min
- Conduction resistance: < 10^8 Ω
- Only suitable for dry operation

Extend the sliding rail over the component interfaces to ensure minimum wear and noise emissions.
Interruptions to the profile or component connection must be avoided. If an interruption is necessary after 10 m and to ensure that charges are transferred safely, the sliding rail must be attached laterally with a sheet metal screw (**A**).

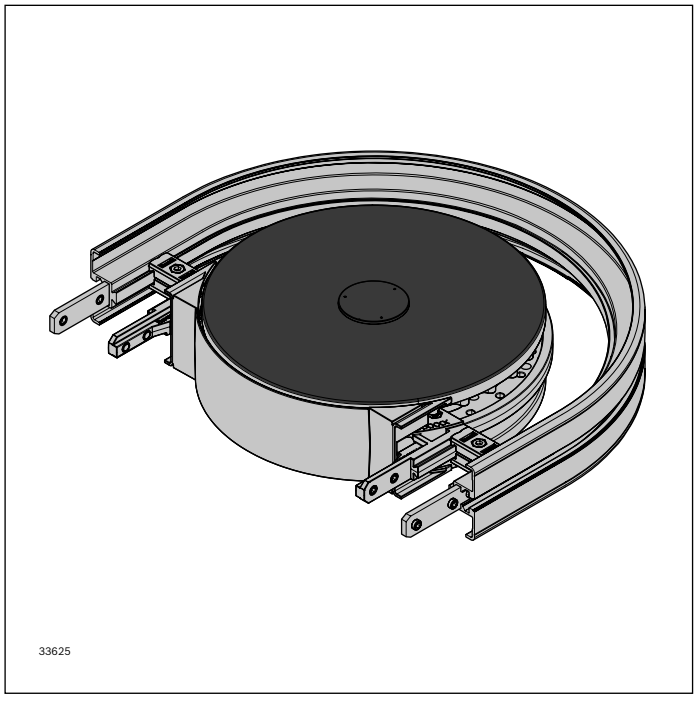
Notice: No horizontal sliding curves allowed.



Sliding rail ESD VF*plus*	**L** (mm)		**No.**
	30000	1	**3 842 557 000**

Sheet metal screw			**No.**
A		100	**3 842 547 908**

Curve wheel AL ESD



The curve wheel AL ESD provides a horizontal direction change for the conveyor chain. It enables low-friction direction changes with very small radii. For attachment options, see the matrix on page "Combination matrix" of page 313

- Size: 65, 90
- Deflection angles see table on page 195, other deflection angles on request
- Suitable chain type: Conveyor chain ESD
- For circuit systems without conveyor chain return in bottom run (using a curve wheel or connection drive), the appropriate cover must be used for personal safety reasons
- With conductive wheel

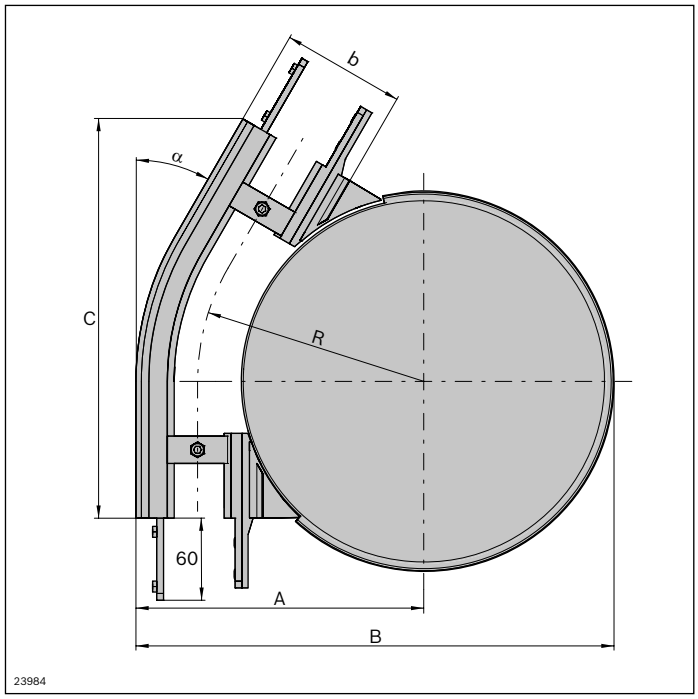
Notice: High-pressure cleaning of the ball bearings is not permitted.

▶ No interfering contours above chain plate height

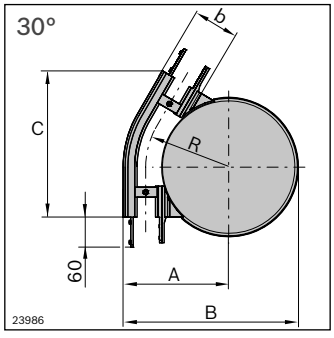
Scope of delivery:
- Including fastening material for mounting to the section profile AL

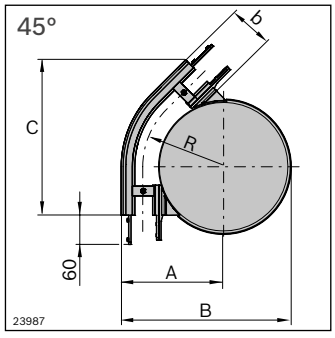
Material:
- Housing: Diecast aluminum
- Chain wheel: PA ESD; black
- Ball bearing: Non-rusting steel 1.4301/FDA

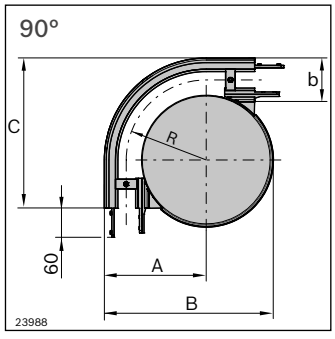
Condition on delivery:
- Assembled

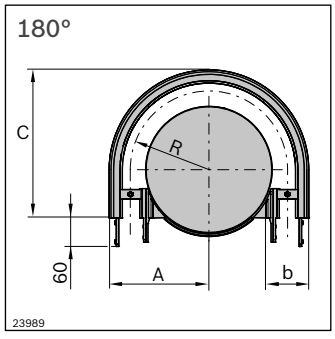


Curve wheel AL ESD	**α** (°)	**No.**
VF*plus* 65	30	**3 842 553 029**
	45	**3 842 553 030**
	90	**3 842 553 031**
	180	**3 842 553 032**
VF*plus* 90	30	**3 842 553 033**
	45	**3 842 553 034**
	90	**3 842 553 035**
	180	**3 842 553 036**

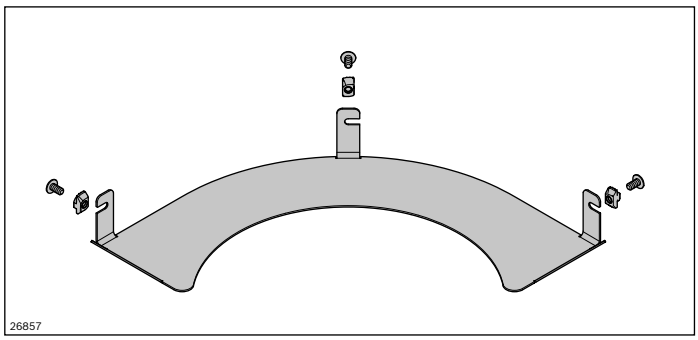






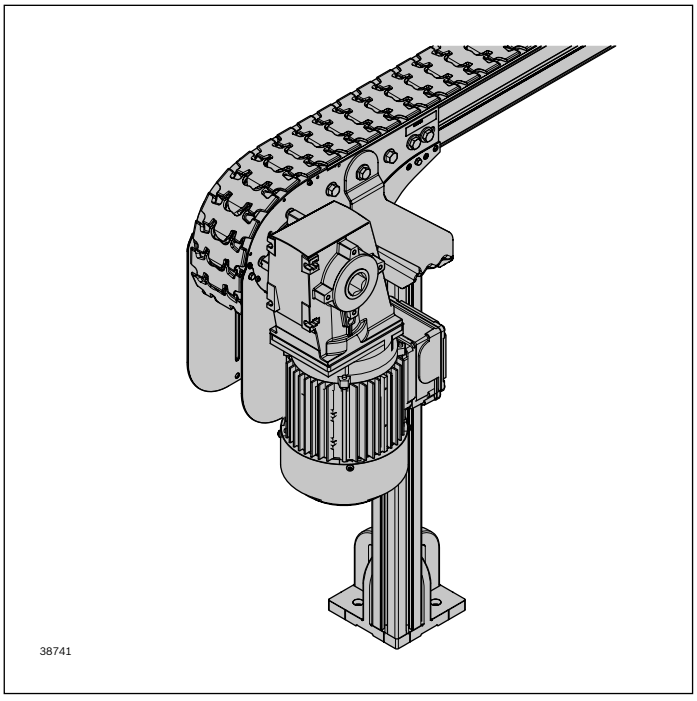


b (mm)	**α** (°)	**R** (mm)	**A** (mm)	**B** (mm)	**C** (mm)
65	30	153.0	185.5	324.5	279.4
	45	153.0	185.5	324.5	301.9
	90	153.0	185.5	324.5	285.5
	180	153.0	185.5	–	285.5
90	30	165.5	210.5	349.5	291.9
	45	165.5	210.5	349.5	319.6
	90	165.5	210.5	349.5	310.5
	180	165.5	210.5	–	310.5



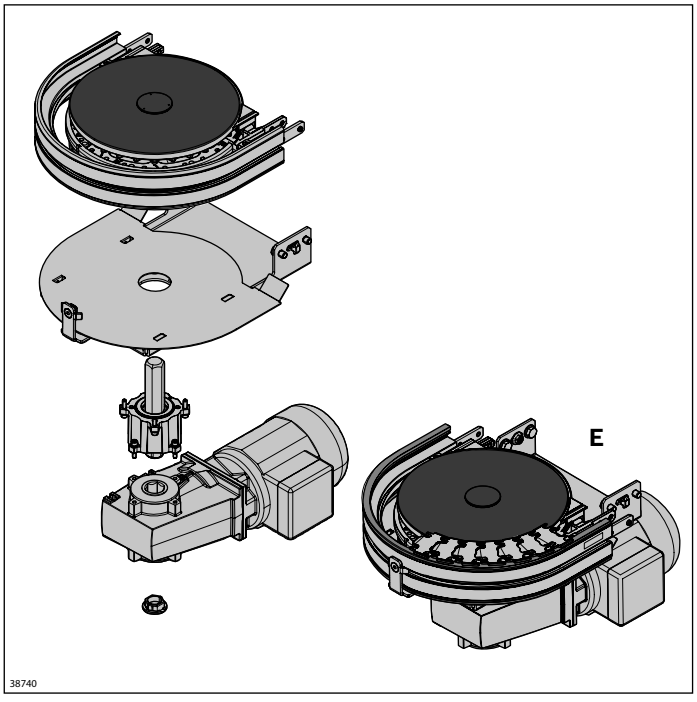
Protective cover AL	**α** (°)	**No.**
VF*plus* 65	30	**3 842 551 545**
	45	**3 842 551 546**
	90	**3 842 551 547**
	180	**3 842 551 548**
VF*plus* 90	30	**3 842 551 549**
	45	**3 842 551 550**
	90	**3 842 551 551**
	180	**3 842 551 552**

Drive and return unit ESD

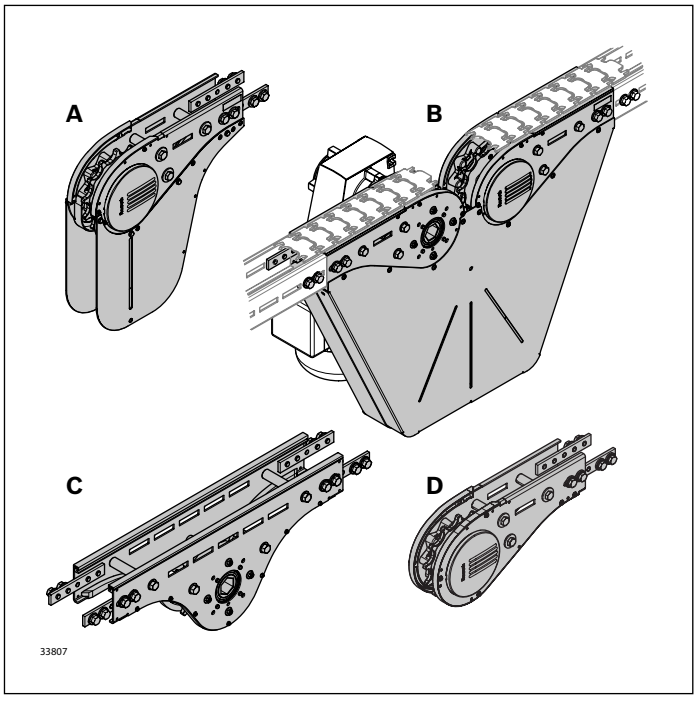


Base unit STS
(head drive direct or
connection or center drive)
or return unit STS
+
Configurable drive kit STS
(standard gear motor or round shaft)
+
Adapter AL-STS
=
Complete drive for ESD systems

Notice: The active and passive bridges are not conductive, meaning that no ESD-critical processes should be carried out near bridges.



Basic unit curve wheel drive ESD
+
Configurable drive kit
(standard gear motor or round shaft)
=
Complete drive



A	Basic unit head drive direct STS	No.
	VF*plus* 65 direct	**3 842 547 522**
	VF*plus* 90 direct	**3 842 547 523**

see p. 154

B	Basic unit connection drive STS	No.
	VF*plus* 65 direct	**3 842 553 914**
	VF*plus* 90 direct	**3 842 553 915**

see p. 156

C	Basic unit center drive STS	No.
	VF*plus* 65 direct	**3 842 552 940**
	VF*plus* 90 direct	**3 842 552 941**

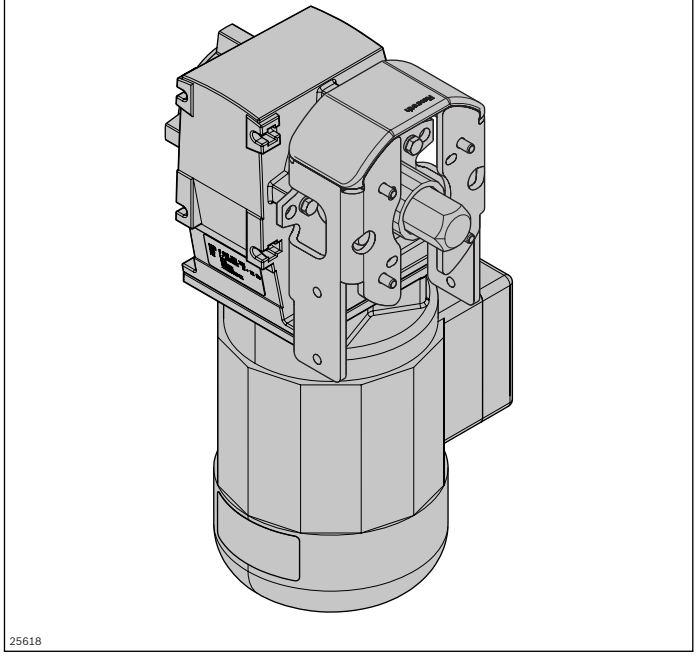
see p. 158

D	Return unit STS	No.
	VF*plus* 65	**3 842 547 528**
	VF*plus* 90	**3 842 547 529**

see p. 160

E	Basic unit curve wheel drive ESD	No.
	VF*plus* 65, 180°	**3 842 553 037**
	VF*plus* 90, 180°	**3 842 553 038**

see p. 198



Drive kit VF*plus*	SP	No.
	STS	**3 842 998 291**

SP = STS, see p. 164

Drive kit curve wheel VF*plus* AL	No.
	3 842 998 742

See also page 94

Notice:

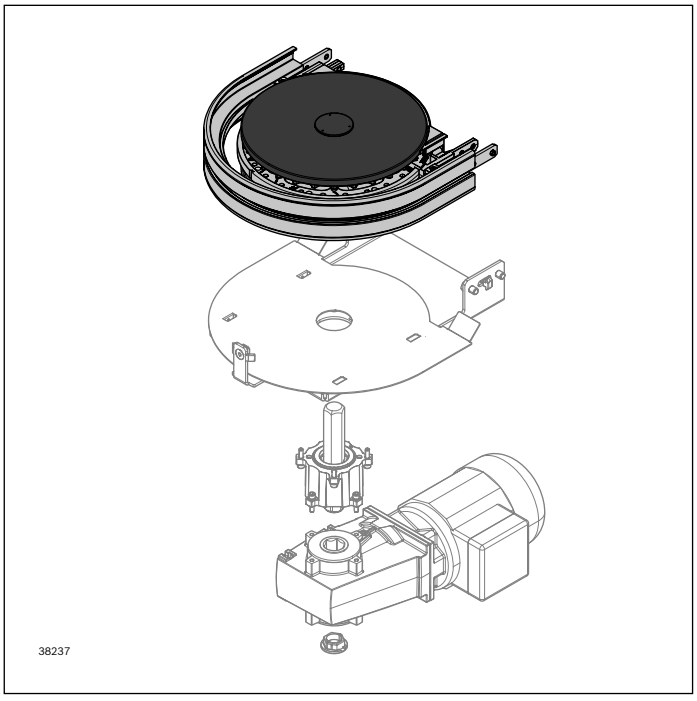
- The drive kit is to be supported with the holder motor leg set STS (3 842 549 365) and an motor leg set ESD
- The selection of the parameter SP = STS is imperative. Even if an aluminum track is used because centering is not possible on an flange AL.

Required accessories:

- Motor leg set ESD, see p. 202

Basic unit
Curve wheel drive AL ESD





The curve wheel drive AL ESD is used for driving the conveyor chain in circuit systems with a top-running chain. Combining the base unit curve wheel 180° AL ESD with the appropriate drive kit quickly turns it into a curve wheel drive.

- Size: 65 and 90
- Suitable chain types: All
- Permissible chain tensile force: F_{max} = 400 N per level
  Section length for closed circuits L ≤ 10 m
- Permissible torque: M_{max} = 60 Nm
  When combining several curve wheel base units, the motor torque must be distributed across the individual levels
- Conveying speed: v_N = 4 ... 21 m/min
  For drives with frequency converters (FU), the speed must be limited to a maximum of 21 m/min using control technology
- Recommendation: No accumulation operation until 1000 mm after the curve wheel drive
- Can only be used with a closed profile

- ▶ Driving several superimposed basic curve wheel units is easily implemented via the integrated hexagonal hollow shafts
- ▶ Ball bearing made of non-rusting steel (1.4301), with seal on both sides and FDA-compliant grease filling
- ▶ Side elements with slot to attach holders for lateral guides, or similar

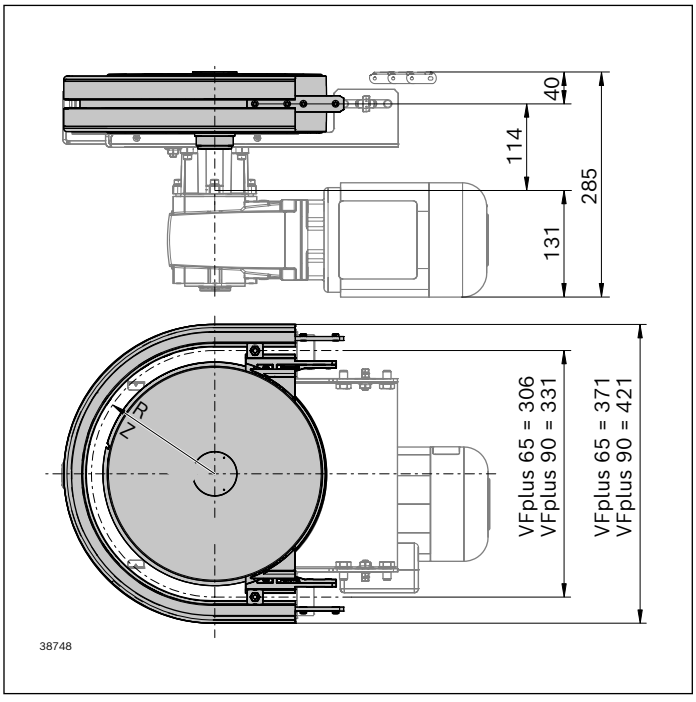
Required accessories:
- Curve wheel drive kit, see p. 94
- Assembly module, see p. 62
- Sliding rail: Length calculation, see p. 302
- Leg set, see p. 119

Optional accessories:
- Alpine conveyor connection kit, see p. 112

Scope of delivery:
- Including fastening material

Condition on delivery:
- Assembly required

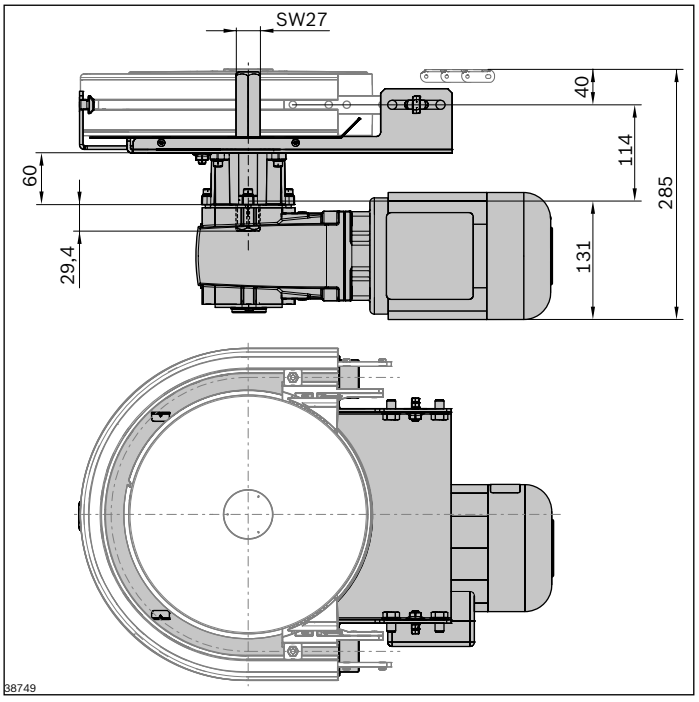
Material:
- Housing: Diecast aluminum
- Chain wheel: PA; black
- Ball bearing: Non-rusting steel 1.4301/FDA



Basic unit curve wheel AL ESD	α (°)	No.
VF*plus* 65	180	**3 842 553 037**
VF*plus* 90	180	**3 842 553 038**

	R (mm)	**Z**[1)]
VF*plus* 65	153.0	28
VF*plus* 90	165.5	30

[1)] Number of teeth



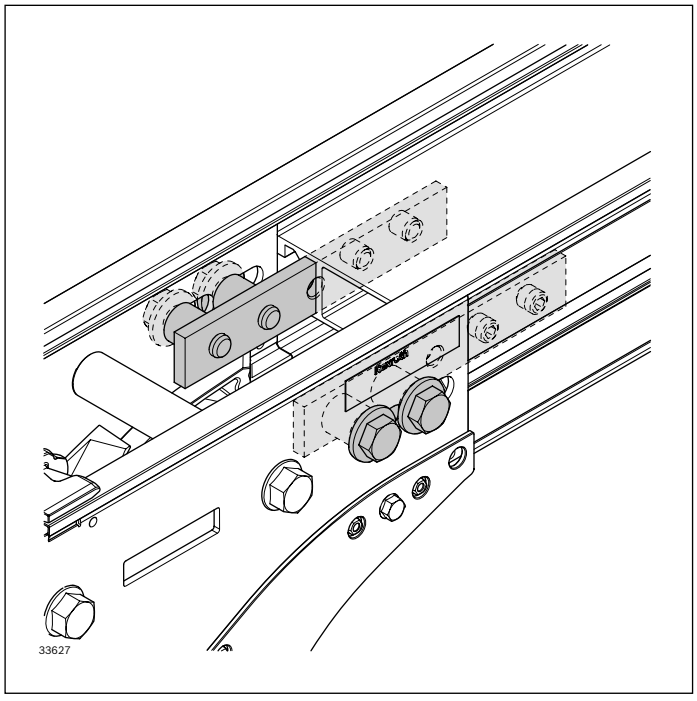
Drive kit curve wheel VF*plus* AL	No.
	3 842 998 742

See also page 94

Notice: The selection of parameter AC = 1 (alpine conveyor) is not permitted

Adapter AL-STS





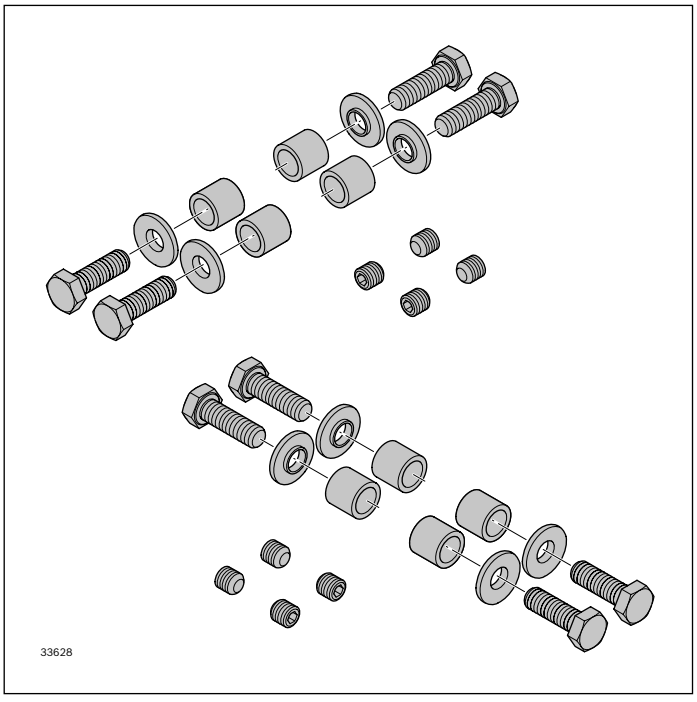
The kit enables the simple connection of the basic unit head STS, connection drive, as well as the return unit with the aluminum system.
When the connection drive is used, the closed section profile AL is to be used for safety reasons.

Scope of delivery:
- 8x hexagon screws
- 8x headless setscrew
- 8x spacers

(Scope of delivery for 2 interfaces AI-STS, e.g. 1 x basic unit head drive + 1 x return unit or 1 x connection, or center drive)

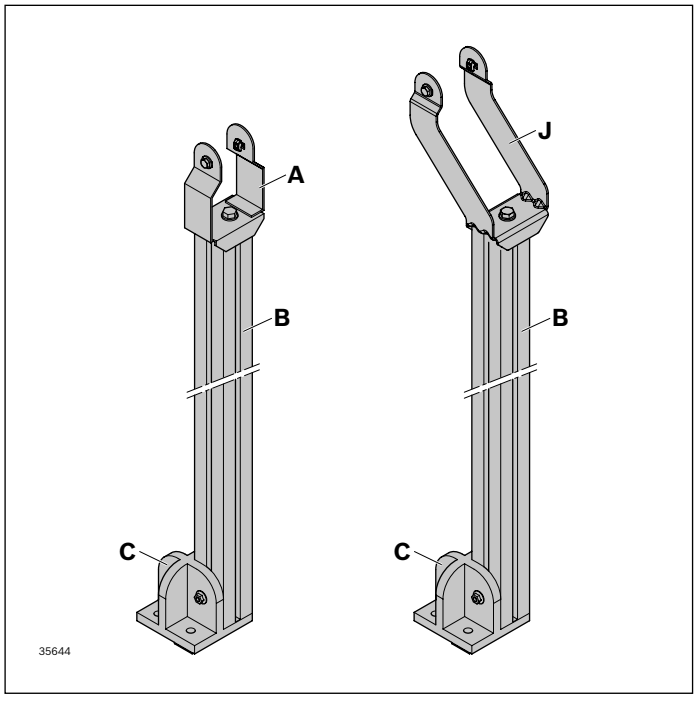
Material:
- Aluminum, steel; galvanized

Condition on delivery:
- Assembly required



Adapter VF*plus* AL-STS	No.
	3 842 552 948

Leg set ESD
Motor leg set ESD



The T-nuts STS included in the scope of delivery of the holder STS (**A**) must be replaced with T-nuts MGE M8. The anodized layer is thereby pierced and connected to the conductive holder STS.

It is imperative that a holder (**J**) is used to support the motors/drives.

The connection between the holders STS (**A+J**) and the core pull of the strut profile AL (**B**) is established via the hexagon screw M12 of the holder STS.

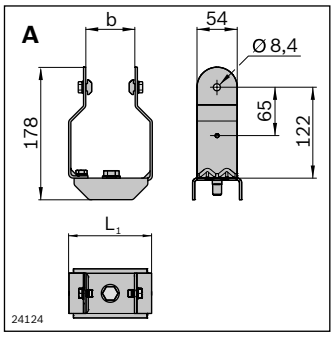
Instead of the coated foot VarioFlow *plus*, the 120x120 base plate (**C**) included in the MGE program must be used. The connection of the base plate to the strut profile is done using T-bolts and flange nuts.

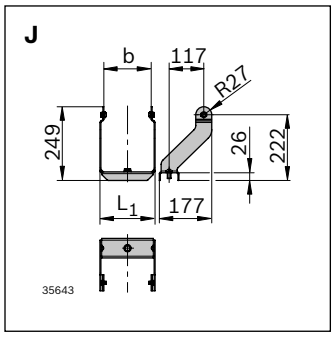
Required accessories for base plate (**C**):
- 4x T-bolts M8x30, 3 842 528 721, see p. 64
- 4x flange nuts, 3 842 345 081, see p. 64

Required accessories for holder attachment (**A**):
- 2x T-nuts M8 for each holder, 3 842 530 287

Scope of delivery:
- Including fastening material

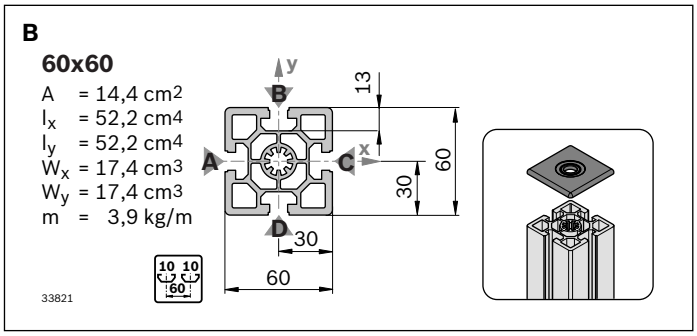
Material:
- **A**, **J:** Non-rusting steel 1.4301
- **B:** Aluminum
- **C:** Diecast aluminum





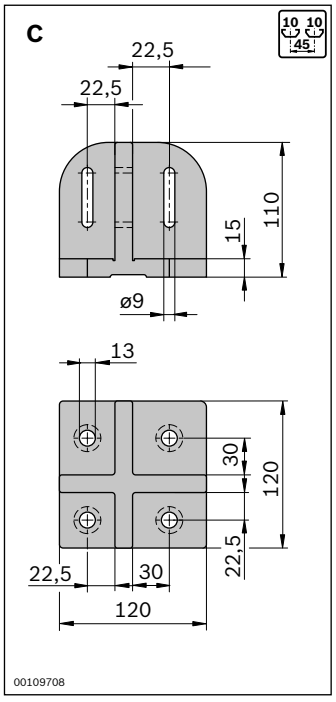
Holder STS (A)	**b** (mm)	L_1 (mm)		No.
VF*plus* 65 support STS	65	111	Set	**3 842 546 658**
VF*plus* 90 support STS	90	136	Set	**3 842 546 659**

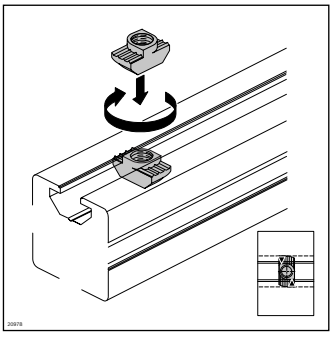
Holder STS (J)	**b** (mm)	L_1 (mm)		No.
VF*plus* 65 drive STS	65	91	Set	**3 842 559 114**
VF*plus* 90 drive STS	90	116	Set	**3 842 559 115**



Strut profile 60x60	**L** (mm)	No.
1 pc M12	60 ... 5600	**3 842 990 351/L**

Profile finishing: Thread cutting M12,
see MGE catalog, chapter Strut profiles





Cover cap with hole	ESD		No.
60x60, black		20	**3 842 548 811**

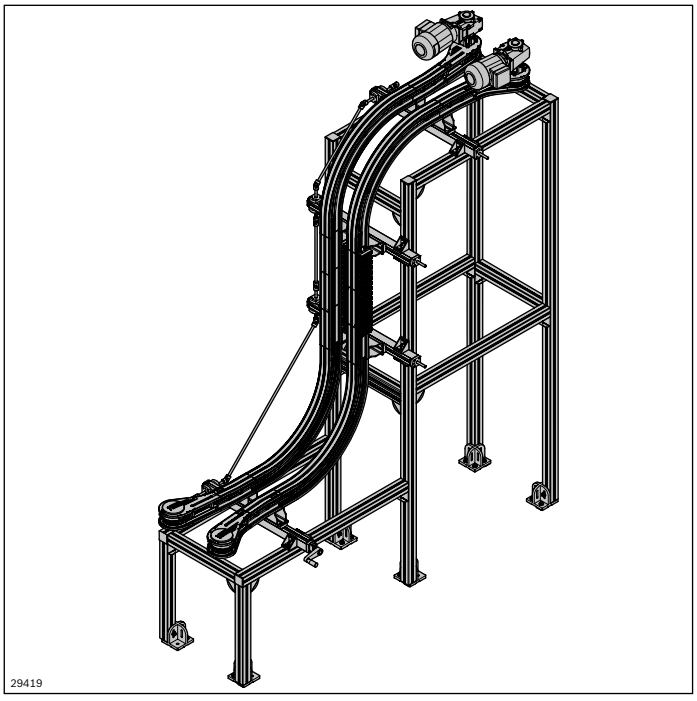
Base plate (C)	ESD	No.
120x120		**3 842 527 553**

T-nut, 10 mm slot	Slot	M	ESD		No.
Steel; zinc-plated	10	M8		100	**3 842 530 287**

Wedge conveyor

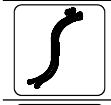
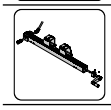






A wedge conveyor is always used if the conveyed product
- cannot be transported vertically on a standard conveyor due to its design
- cannot manage steep inclinations (> 30°) due to the position of its center of gravity
- could be damaged by lateral or upper guides due to its sensitive surfaces
- must not slide on 90° gradient or decline section (as it would occur with a cleated chain system)
- should be conveyed without synchronization

A wedge conveyor has two conveyors arranged in parallel to each other which can be quickly set at variable widths by means of the adjustment unit (AL).

	**Setting up a wedge conveyor**	**206**
	**Wedge conveyor adjustment unit**	**208**

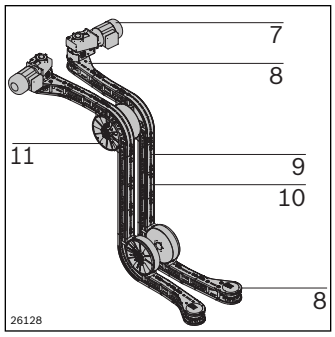
Setting up a wedge conveyor

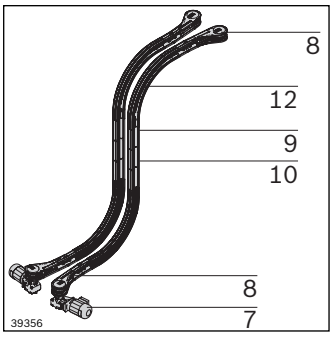




- Size: 90
- The length of the wedge conveyor is limited to 7 m
- A curve wheel or sliding curves are available for the return unit of the chain, depending on the product size and version
- Only closed head drive (return unit) can be used
- The assembly module (see p. 62/139) is mandatory
- The use of a 5° vertical curve is also recommended (see p. 139/148) for the infeed and outfeed, especially for small products
- Requires the use of the sliding rails Advanced or Premium (see p. 56/134)

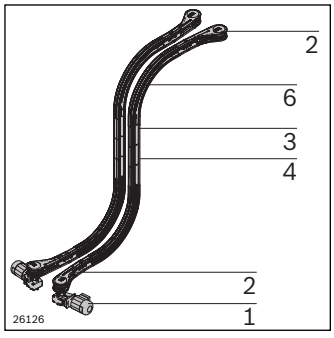


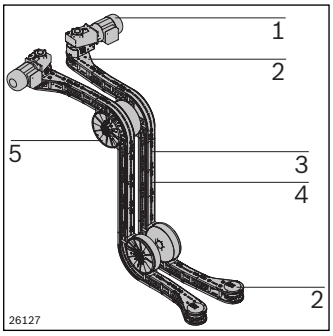




7 Drive kit STS, see p. 164
8 Return unit STS/Closed head drive STS, see p. 160
9 Section profile STS, see p. 130
10 Assembly module STS, see p. 139
11 Curve wheel STS, see p. 142
12 Sliding curve horizontal STS, see p. 144

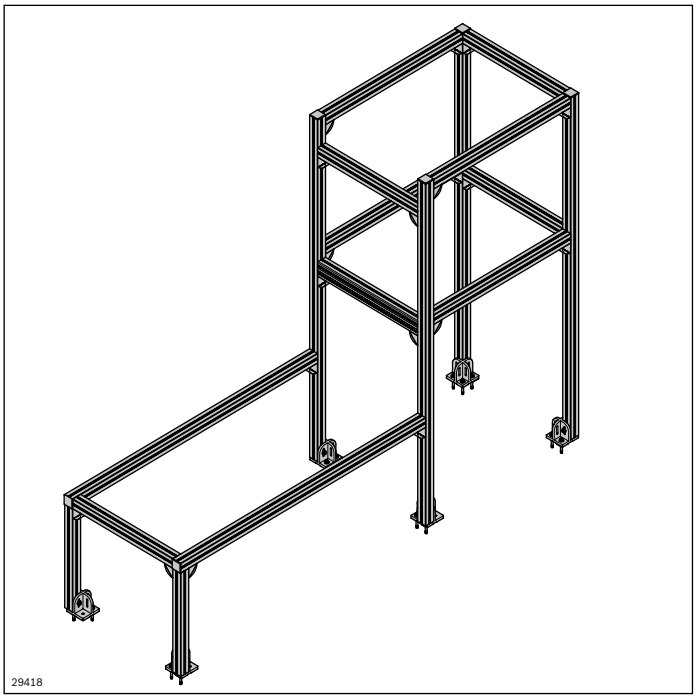




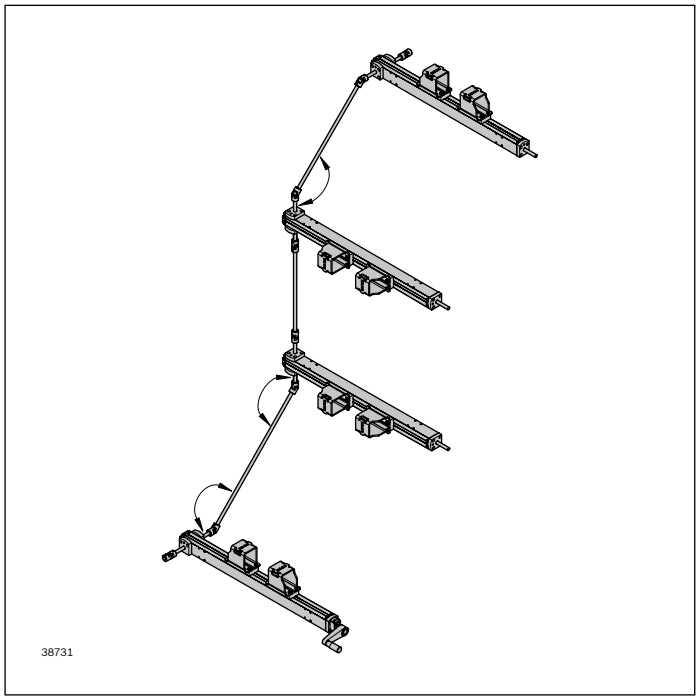


1 Drive kit AL, see p. 92
2 Return unit AL/closed head drive AL, see p. 86
3 Section profile AL, see p. 52/54
4 Assembly module AL, see p. 62
5 Curve wheel AL, see p. 68
6 Sliding curve horizontal AL, see p. 72

Frame made out of components MGE

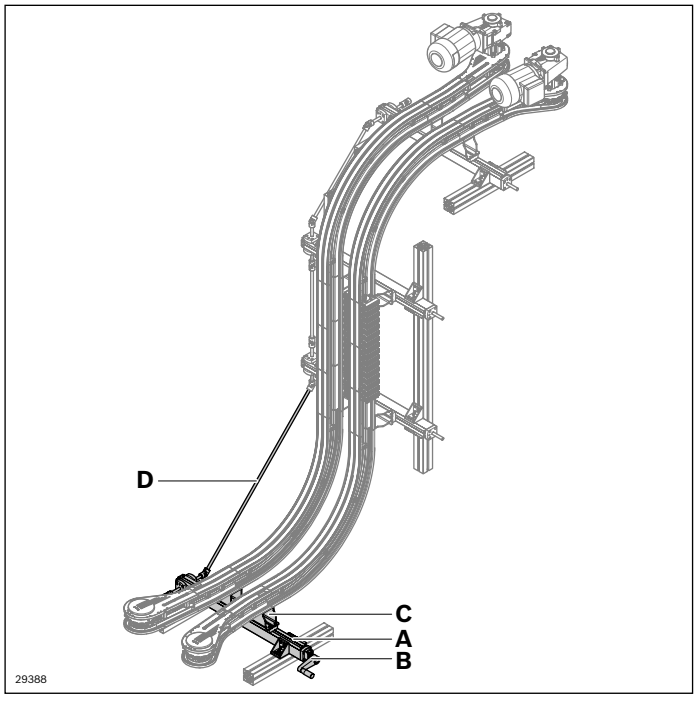


Adjustment unit for width adjustment see p. 208



Wedge conveyor adjustment unit





The adjustment unit is suitable for easily setting the wedge conveyor width during a format change for product widths ranging from 0 ... 410 mm.

The self-locking adjustment unit (**A**) can be simply mounted on the section profile VarioFlow *plus* using the connection kit (**C**) and connected to additional adjustment units via the profile rail (**D**).

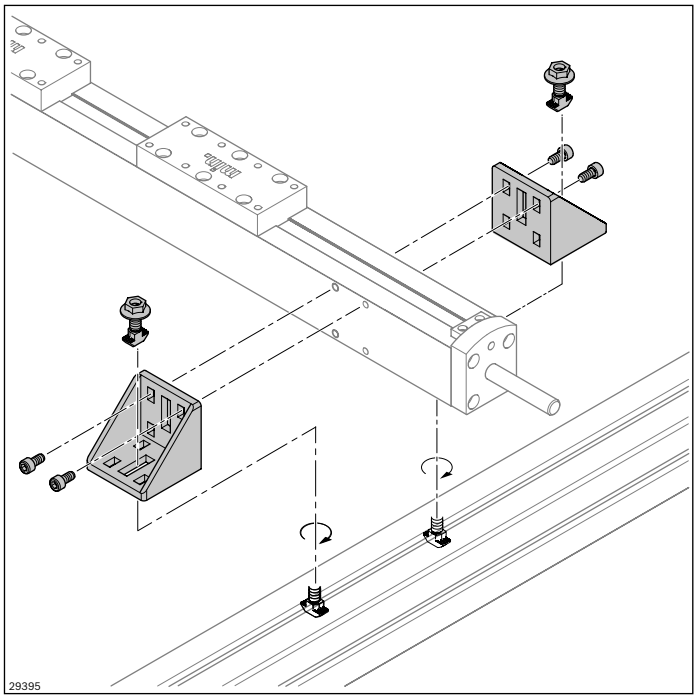
The crank handle (**B**) with counter facilitates the setting of fixed track widths.

Required accessories:
- **B:** Crank handle incl. counter
- **C:** Connection kit (set)
- **D:** Profile rail (see p. 209)

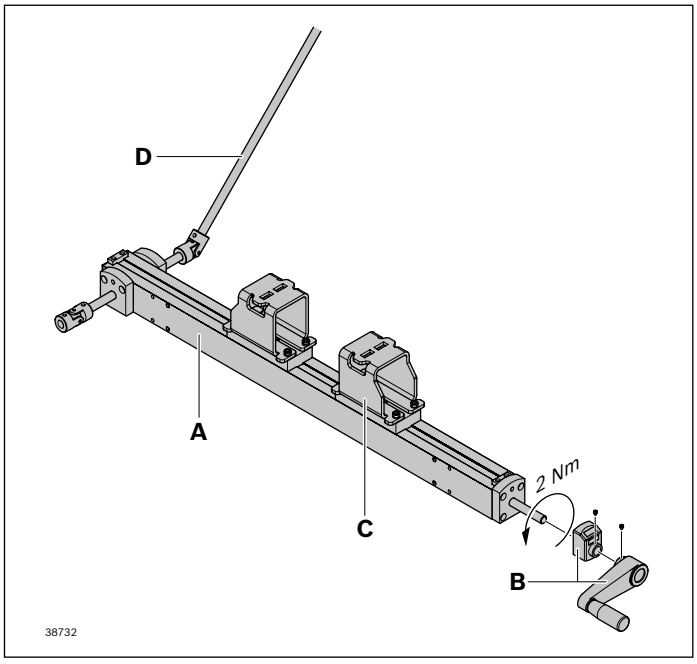
Scope of delivery:
- **A:** Including two universal joints
- **B:** Including counter
- **C:** Including fastening material

Material:
- **A:** Aluminum, anodized; brass, steel
- **C:** Steel, galvanized

Condition on delivery:
- **A:** Assembled
- **B:** Some assembly required
- **C:** Assembly required



The adjustment unit can be fitted onto a frame made out of profiles MGE with four 60x60 brackets (3 842 523 546) and 8 ISO 4762-M6x16



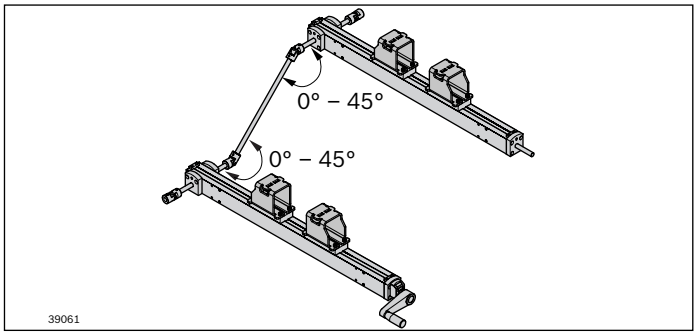
Adjustment unit (A)	No.
1 pc	**3 842 547 971**

Crank handle (B)	No.
1 pc	**3 842 547 990**

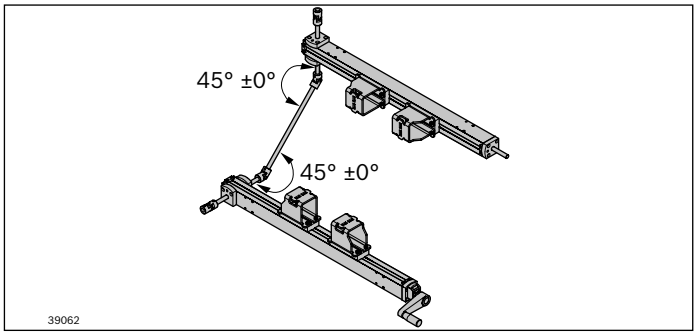
Connection kit (C)	No.
1 pc	**3 842 547 729**

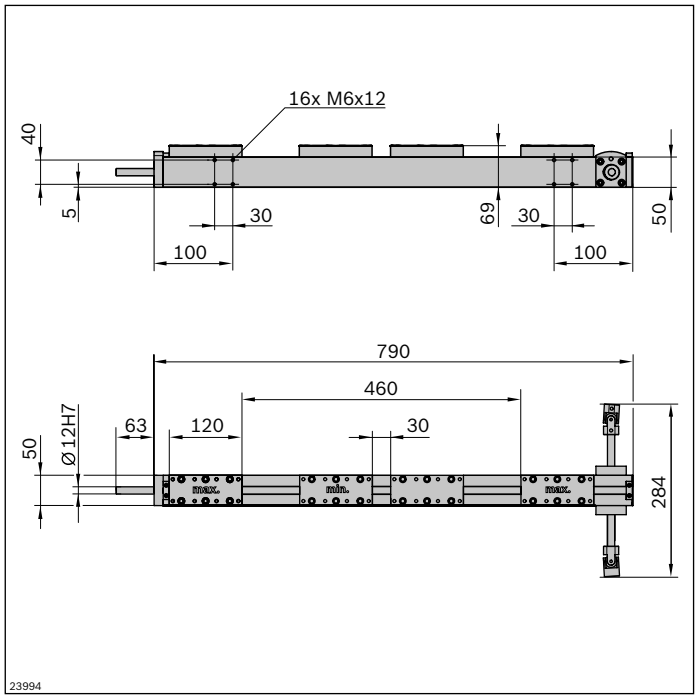
Profile rail D12 (D)	No.
1 pc	**3 842 993 306/L**
6 pcs	**3 842 533 841**

Linear alignment of the shafts

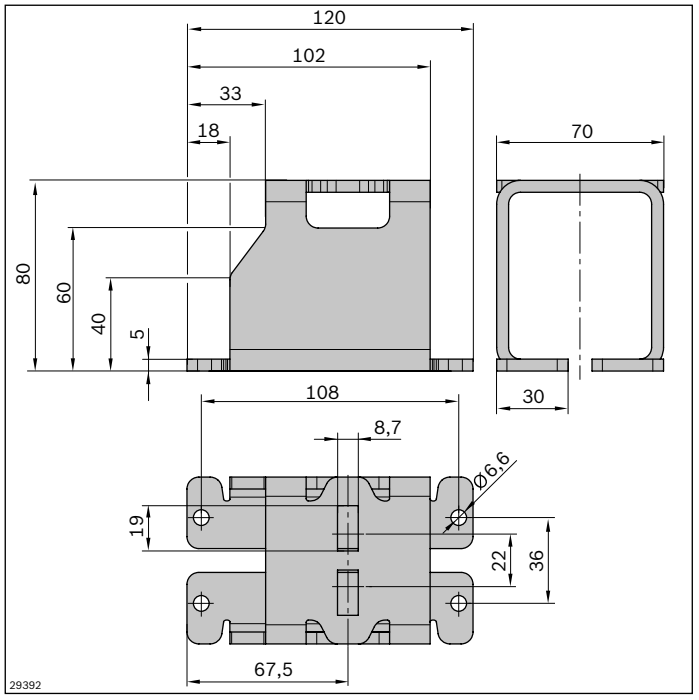


90° offset alignment of the shafts



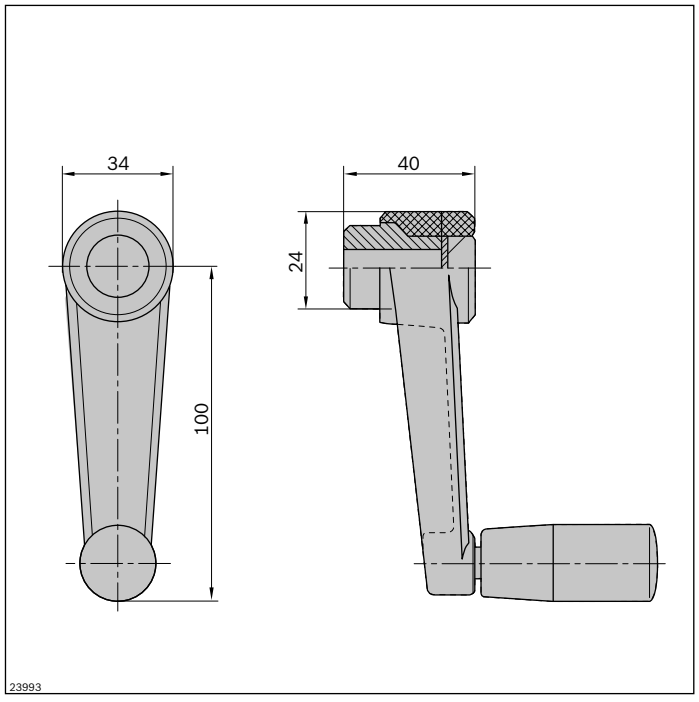


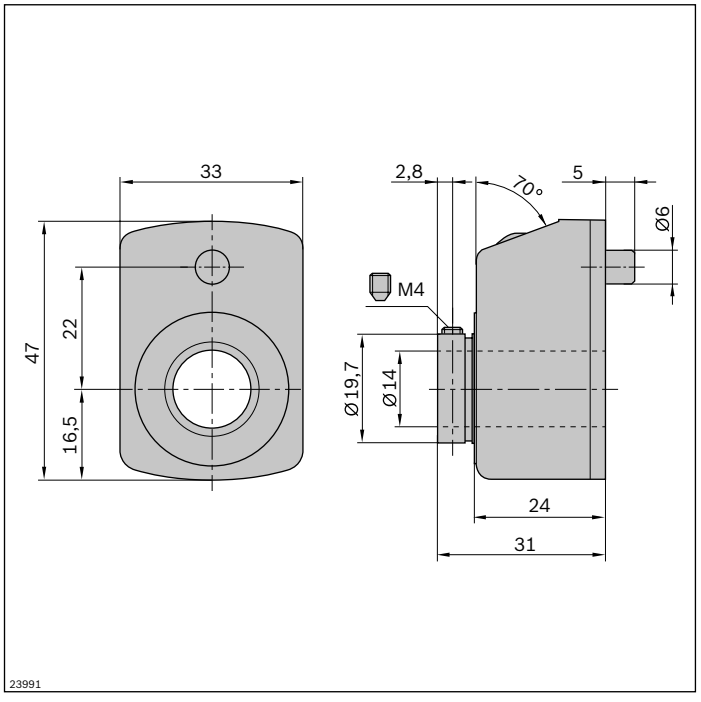
Adjustment unit



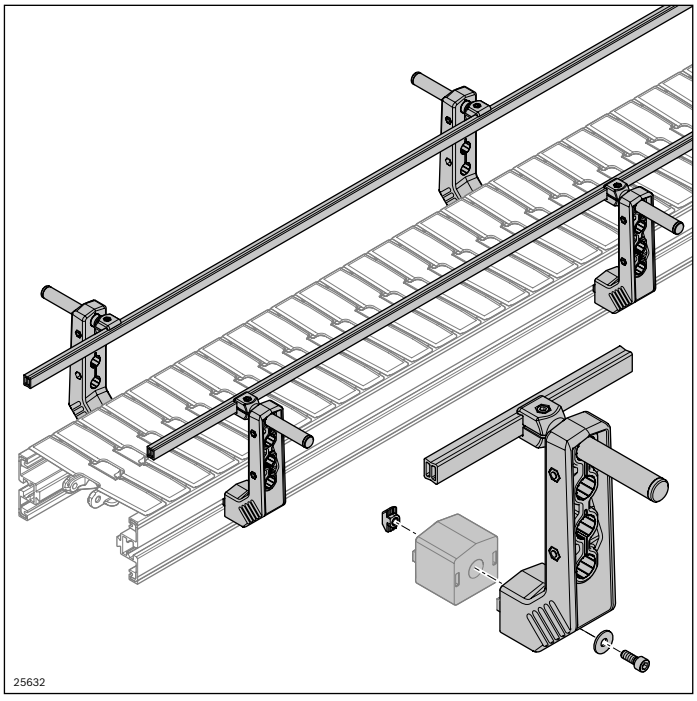
Connection kit

Crank handle

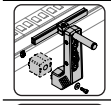
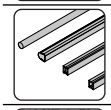
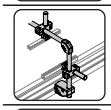
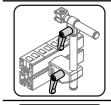
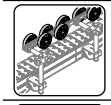




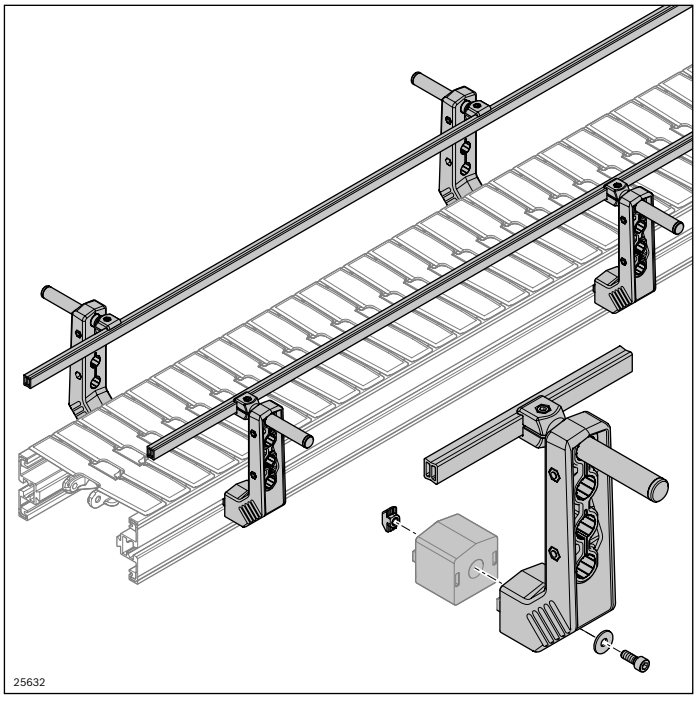
Product guide



- Optimum adaptation to the conveyed material due to a variety of combination options
- Universal use in aluminum and stainless steel system
- Minimal planning effort thanks to clear construction kit
- Easy to clean thanks to ample draining surfaces

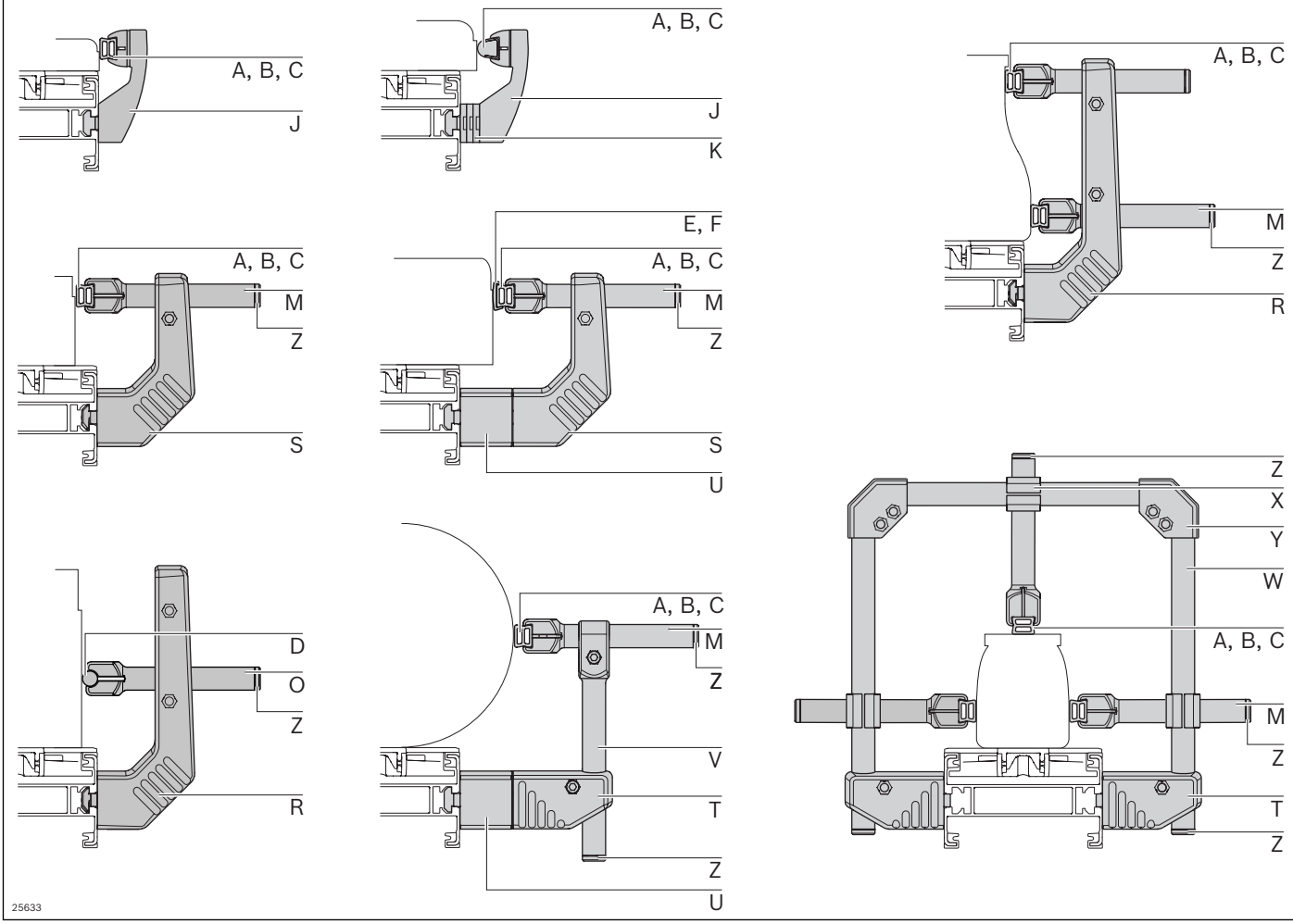
	**Components for lateral guides**	**214**
	**Profile rails for lateral guides**	**216**
	**Holder for lateral guide, fixed**	**219**
	**Holder for lateral guide, variable**	**221**
	**Clamping lever**	**227**
	**Pressure roller**	**228**
	**Pneumatically adjustable lateral guide**	**230**
	**Barrier**	**232**
	**Universal diverter**	**234**

Components for lateral guides



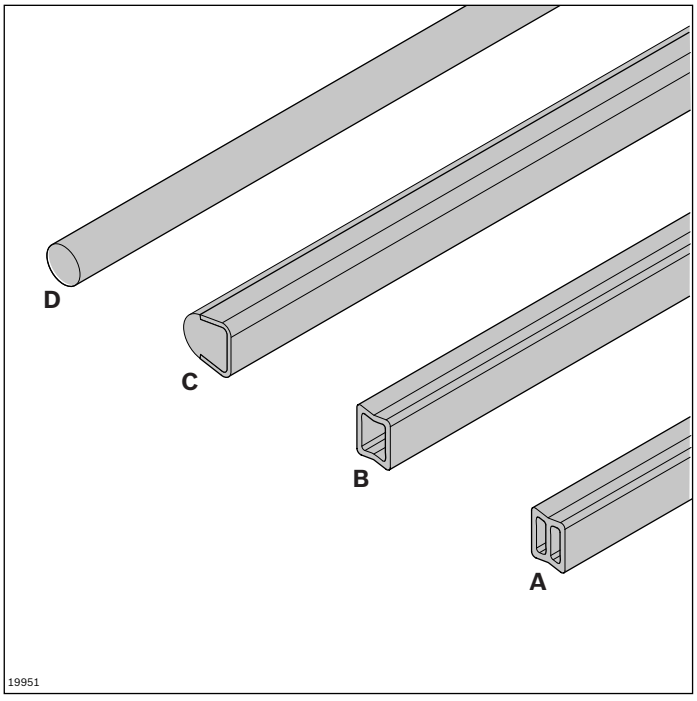
- Wide variety of profile rail and holder combinations for individual solutions
- Easy to clean
- Robust
- Only one tool required for adjustment
- Interface slot 10 mm

Mounting variants

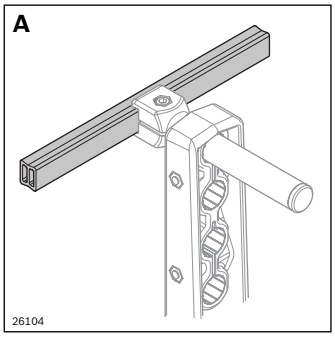


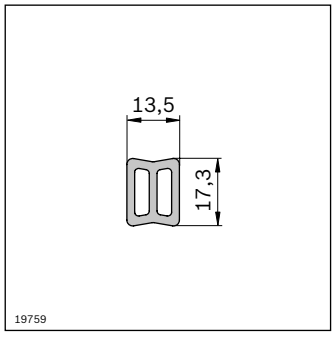
A: Aluminum profile rail, see p. 216
B: Profile rail HDPE, see p. 217
C: Profile rail 17x17.5, see p. 217
D: Profile rail D12, see p. 217
E: Sliding rail, narrow, see p. 217
F: Sliding rail, high, see p. 218
J: Holder, fixed, see p. 220
K: Spacer plate, see p. 220
M: Clamping holder C L100, see p. 223
O: Clamping holder D12 L100, see p. 223
R: Holder L204, see p. 224
S: Holder L134, see p. 224
T: Holder L45, see p. 225
U: Spacer, see p. 225
V: Vertical clamping holder D18 L160, see p. 225
W: Tube D18, see p. 226
X: Cross piece, see p. 226
Y: Corner piece, see p. 226
Z: Plug, see p. 226

Profile rails for lateral guides



- Profile rails for lateral guiding of transported material
- Compatible with holders for lateral guide, fixed (see p. 219), and holders for lateral guide, flexible (see p. 221)
- Various materials and geometries for different applications



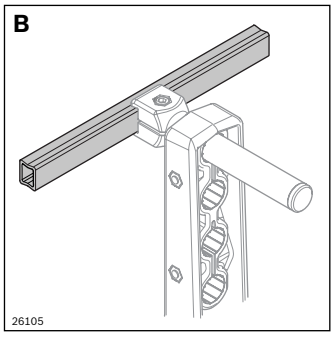


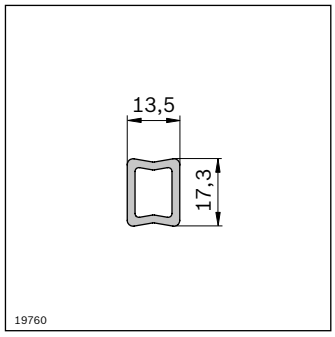
- Aluminum profile rail for robust lateral guides
- Holder distance: max. 750 mm, less with accumulation pressure

Aluminum profile rail			**L** (mm)	**No.**
A	1 pc		200 ... 3000	**3 842 993 887/L**
A	20 pcs		3000	**3 842 538 829**

Material: Aluminum; natural, anodized

Accessories: Sliding rail narrow (**E**); sliding rail high (**F**); outer profile connector (**G**); inner profile connector (**H**); cover cap (**I**); clamping holder C L100 (**M**); clamping holder C (**N**); holder (**J**); clamping head (**L**); clamping head (**Q**)



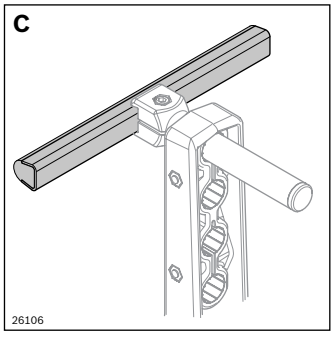


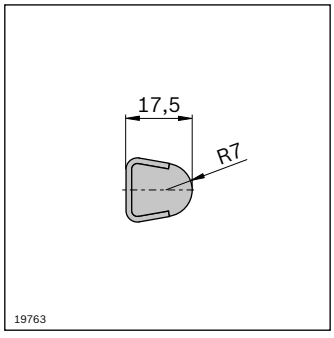
- Profile rail HDPE for light applications
- Bendable
- Spacer distance: Approx. 300 mm

Profile rail HDPE			**L** (mm)	**No.**
B	1 pc		3000	**3 842 538 388**

Material: HDPE; gray

Accessories: Sliding rail narrow (**E**); sliding rail high (**F**); outer profile connector (**G**); inner profile connector (**H**); cover cap (**I**); clamping holder C L100 (**M**); clamping holder C (**N**); holder (**J**); clamping head (**L**); clamping head (**Q**)



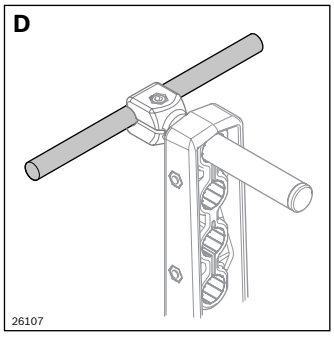


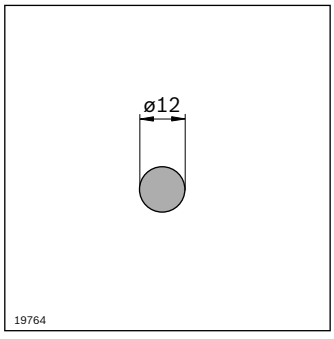
- Profile rail 17x17.5 in robust design made of stainless steel 1.4301 with guide PE protecting the product
- Holder distance: Max. 750 mm, less with accumulation pressure

Profile rail 17x17.5			**L** (mm)	**No.**
C	1 pc		200 ... 3000	**3 842 994 863/L**
C	20 pcs		3000	**3 842 529 850**

Material: Steel; stainless/PE; natural

Accessories: Outer profile connector (**G**); clamping holder C L100 (**M**); clamping holder C (**N**); holder (**J**); clamping head (**L**); clamping head (**Q**)



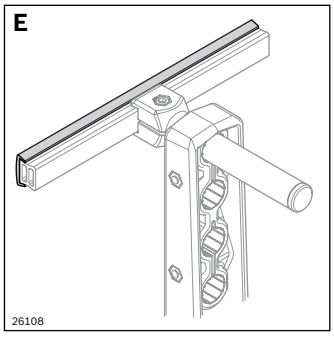


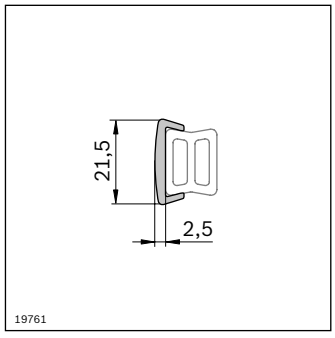
- Profile rail D12 in robust design made of stainless steel 1.4301
- Holder distance: Max. 750 mm, less with accumulation pressure

Profile rail D12			**L** (mm)	**No.**
D	1 pc		200 ... 3000	**3 842 993 306/L**
D	6 pcs		3000	**3 842 533 841**

Material: Steel; stainless

Accessories: Clamping holder D12 L100 (**O**); clamping holder D12 (**P**)

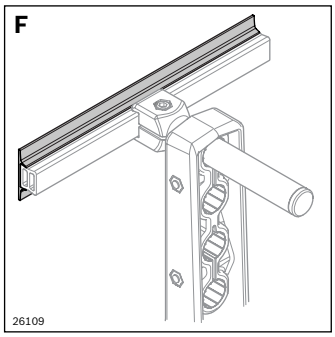


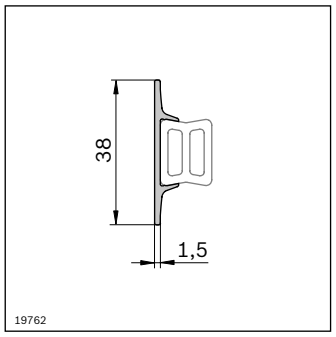


- Clip-on sliding rail for aluminum or profile rail HDPE
- For gentle product transport and minimum wear to profile rail HDPE

Sliding rail, narrow	**L** (mm)	**ESD**	**No.**
E	3000		**3 842 538 209**
E	3000	⚠	**3 842 539 340**

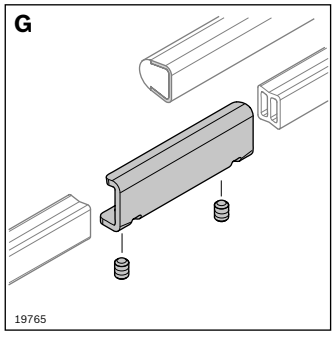
Material: HDPE; gray
ESD: PE-UHMW, conductive, black





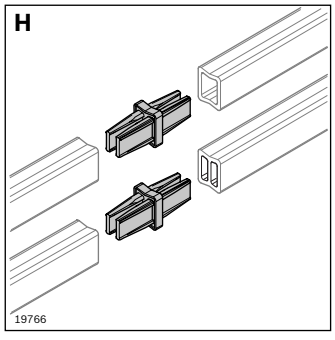
– Clip-on sliding rail for aluminum or profile rail HDPE
– Wide guiding surface
– For gentle product transport and minimum wear to profile rail HDPE

Sliding rail, high	**L** (mm)	**No.**
F	3000	**3 842 538 389**
Material: HDPE; gray		



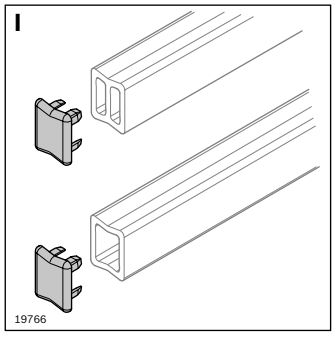
– Outer profile connector for aluminum profile rails (**A**), profile rail HDPE (**B**), 17x17.5 profile rail (**C**)

Outer profile connector		**No.**
G	10	**3 842 539 613**
Material: Steel; stainless Scope of delivery: Including 2 x headless setscrew		



– Inner profile connector for profile rail in aluminum (**A**), HDPE (**B**)

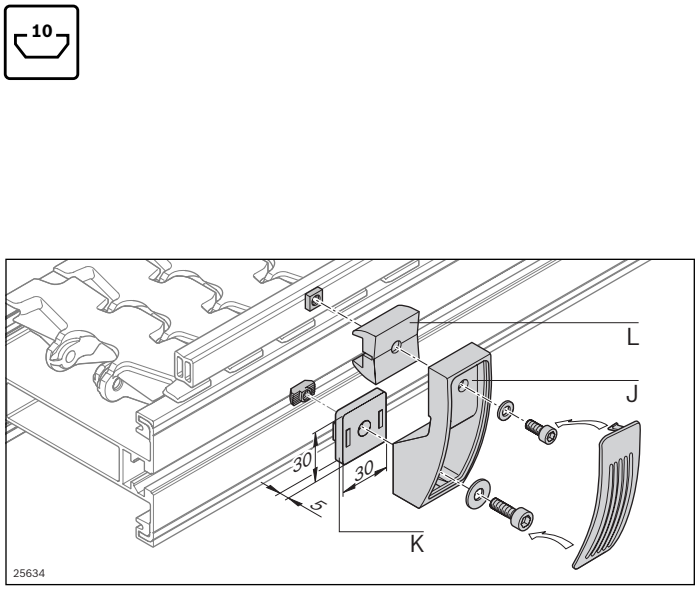
Internal profile connector		**No.**
H	10	**3 842 539 345**
Material: PA; black, conductive		

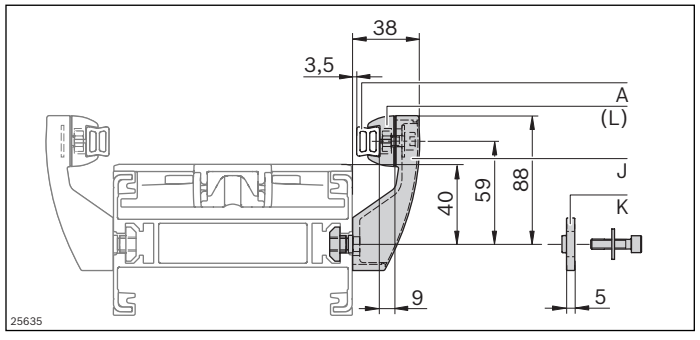


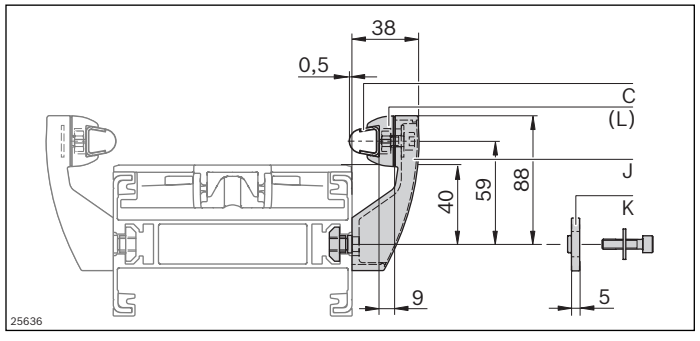
– Cover cap for aluminum (**A**) profile rail, HDPE (**B**) profile rail

Cover cap		**No.**
I	10	**3 842 538 208**
Material: PA; black, conductive		

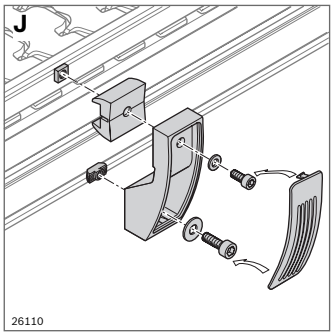
Holder for lateral guide, fixed

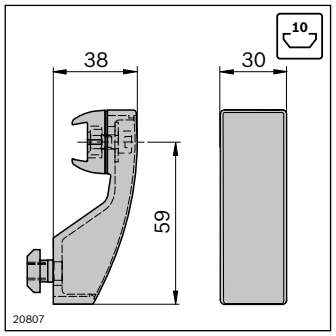






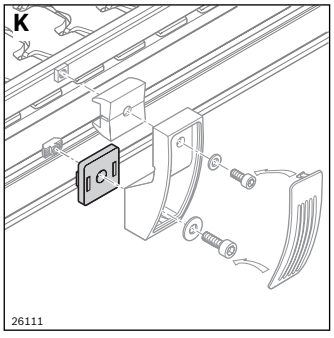
– Holders for lateral guides with fixed installation height and fixed guide width

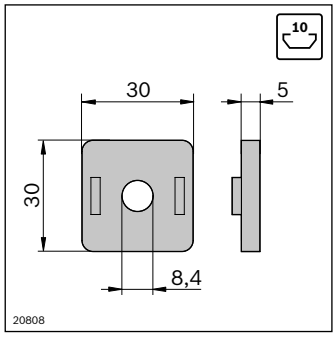




– Holder, fixed, for profile rail in aluminum (**A**), HDPE (**B**) and 17x17.5 (**C**)
– For fixed guide width
– Spacer plate (**K**) for guide width enlargement

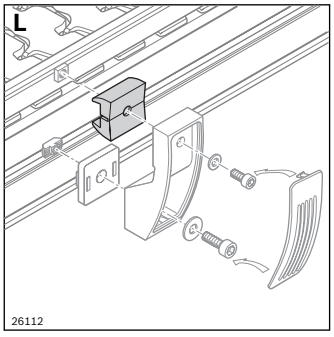
Holder, fixed		**No.**
J Set		**3 842 527 851**
Material:	PA, black Fastening material: Steel; zinc-plated	
Scope of delivery:	Including clamping head, fastening material	

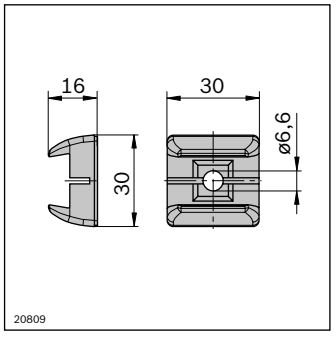




– Spacer plate for holders, fixed, to enlarge the guide width

Spacer plate		**No.**
K	10	**3 842 527 738**
Material:	PA; black	

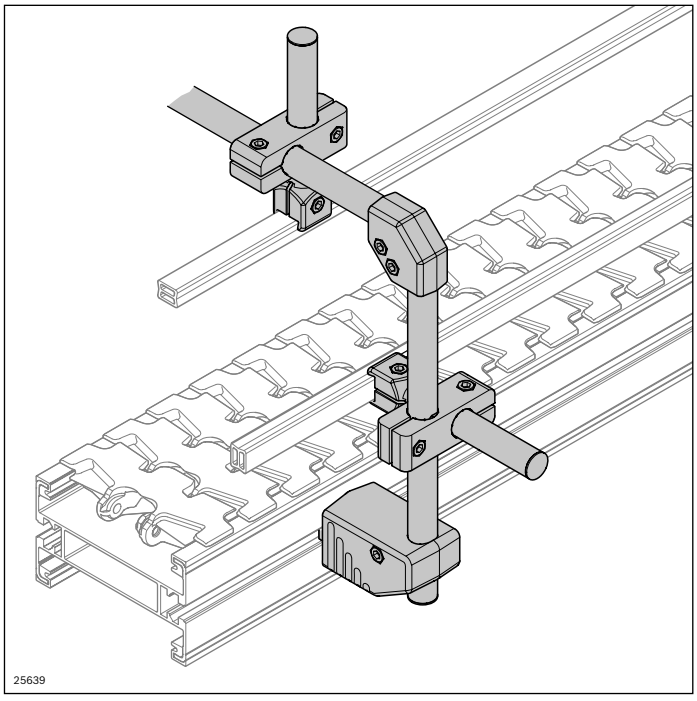




– Clamping head for on-site construction of supports for protruding transported material

Clamping head		**No.**
L Set	10	**3 842 536 295**
Material:	PA, black Fastening material: Steel; zinc-plated	
Scope of delivery:	Including fastening material	

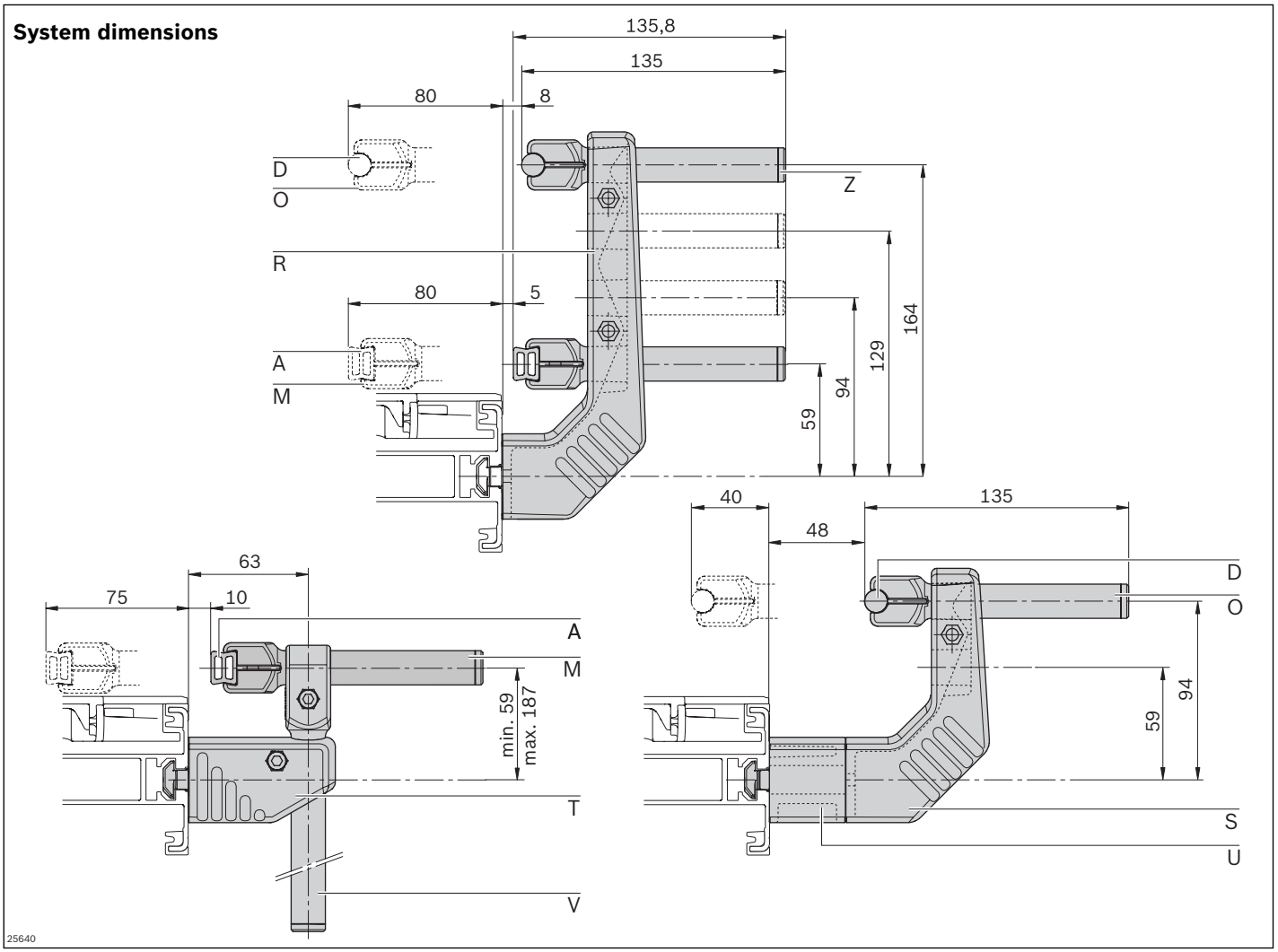
Holder for lateral guide, variable



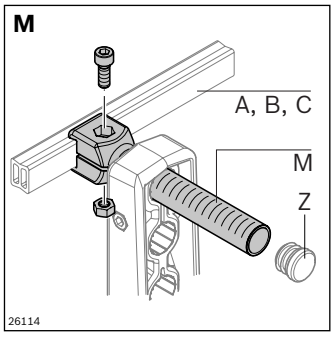
- Holder and clamping holder allow for the variable adjustment of the guide height and width
- Easy to clean

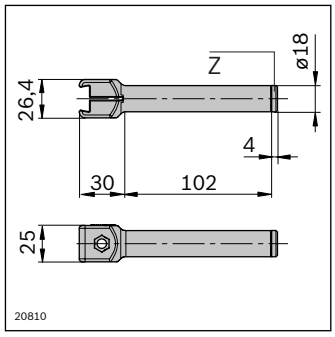
Notice: For lateral guide stability, at least two holders must be connected with a continuous profile rail.

System dimensions



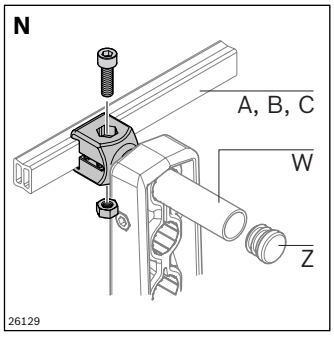
A: Aluminum profile rail, see p. 216
D: Profile rail D12, see p. 217
M: Clamping holder C L100, see p. 223
O: Clamping holder D12 L100, see p. 223
R: Holder L204, see p. 224
S: Holder L134, see p. 224
T: Holder L45, see p. 225
U: Spacer, see p. 225
V: Vertical clamping holder D18 L160, see p. 225
Z: Plug, see p. 226

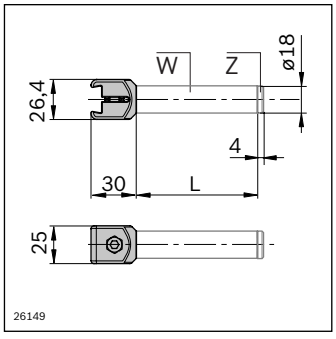




- Clamping holder C L100 for supporting aluminum (**A**), HDPE (**B**) or 17x17.5 (**C**) profile rail versions
- Scaling in mm and inch for simple alignment

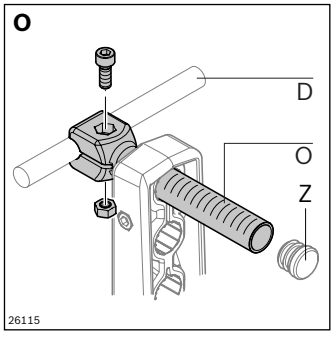
Clamping holder C L100		**No.**
M	10	**3 842 539 499**
Material:	Clamping holder: PA; black Nut, screw: Steel; stainless	
Accessories:	Plug (**Z**)	

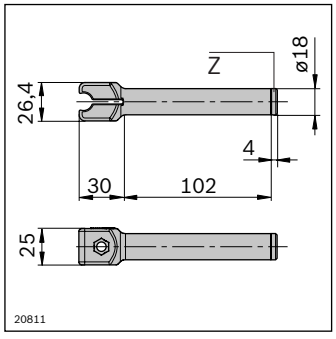




- Clamping holder C for mounting profile rails aluminum (**A**), HDPE (**B**) or 17x17.5 (**C**) profile rail versions
- In conjunction with tube 18 (**W**) for constructing longer clamping holders

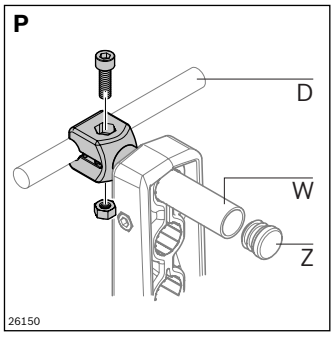
Clamping holder C		**No.**
N	10	**3 842 547 228**
Material:	Clamping holder: PA; black Nut, screw: Steel; stainless	
Accessories:	Plug (**Z**) Tube D18 (**W**)	

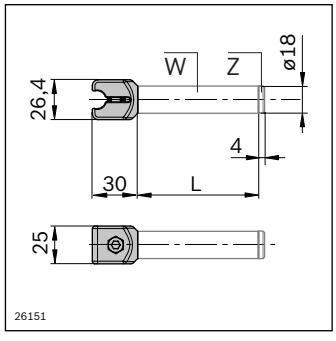




- Clamping holder D12 L100 for supporting profile rails D12 (**D**)
- Scaling in mm and inch for simple alignment

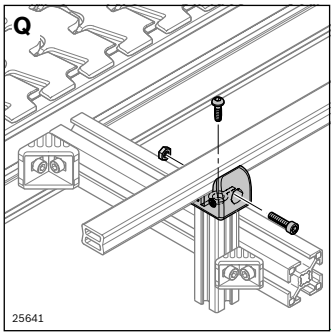
Clamping holder D12 L100		**No.**
O	10	**3 842 539 498**
Material:	Clamping holder: PA; black Nut, screw: Steel; stainless	
Accessories:	Plug (**Z**)	

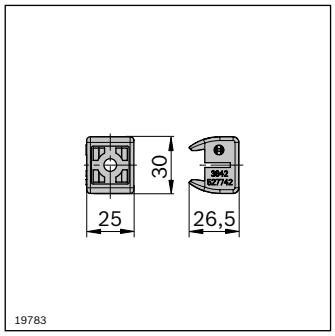




- Clamping holder D12 for supporting profile rails D12 (**D**)
- In conjunction with tube 18 (**W**) for constructing longer clamping holders

Clamping holder D12		**No.**
P	10	**3 842 547 227**
Material:	Clamping holder: PA; black Nut, screw: Steel; stainless	
Accessories:	Plug (**Z**) Tube D18 (**W**)	

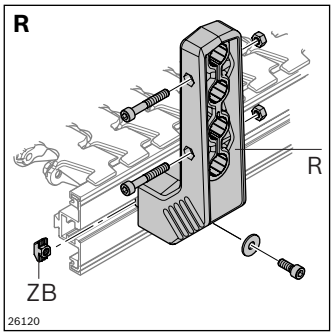


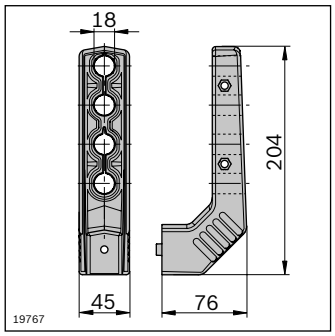


- Clamping head for supporting aluminum (**A**), HDPE (**B**) or stainless steel 1.4301 profile rail versions with PE guide (**C**)
- Direct mounting on profiles with 10 mm slot

Clamping head		**No.**
Q Set	10	**3 842 528 009**

Material: Clamping holder: PA, black
Fastening material: Steel; zinc-plated
Scope of delivery: Including fastening material

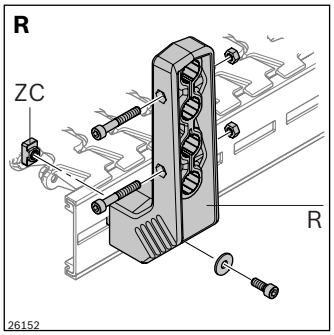


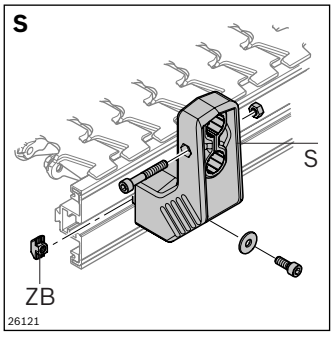


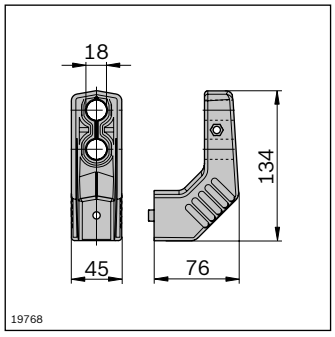
- Holder for fastening clamping holders C, C L100, D12, or D12 L100
- Various installation heights possible for clamping holders
- Variable guide widths possible
- Spacer (**U**) for added enlargement of guide width

Holder L204		**No.**
R Set		**3 842 539 494**
ZB T-nut for AL	100	**3 842 530 285**
ZC T-nut for STS	20	**3 842 546 706**

Material: PA, black
Fastening material: Steel; stainless
Scope of delivery: Including fastening material (except for T-nuts)
Required accessories: T-nut for AL or STS
Optional accessories: Spacer (**U**)



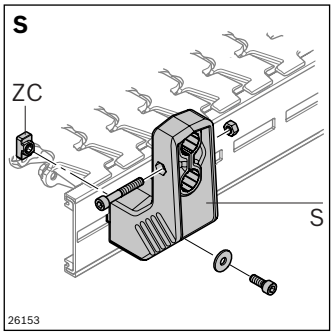


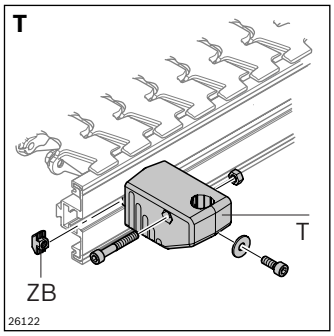


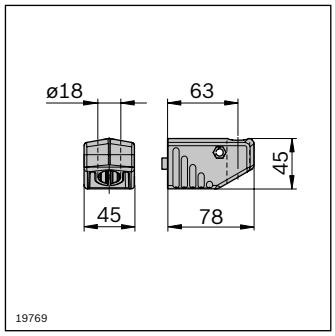
- Holder for mounting clamping holders C, C L100, D12 or D12 L100
- Various installation heights possible for clamping holders
- Variable guide widths possible
- Spacer (**U**) for added enlargement of guide width

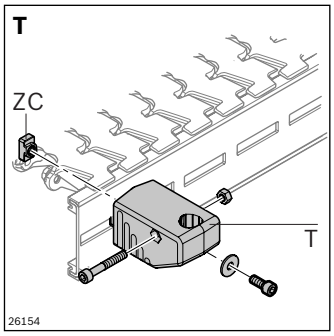
Holder L134		**No.**
S Set		**3 842 539 495**
ZB T-nut for AL	100	**3 842 530 285**
ZC T-nut for STS	20	**3 842 546 706**

Material: PA, black
Fastening material: Steel; stainless
Scope of delivery: Including fastening material (except for T-nuts)
Required accessories: T-nut for AL or STS
Optional accessories: Spacer (**U**)





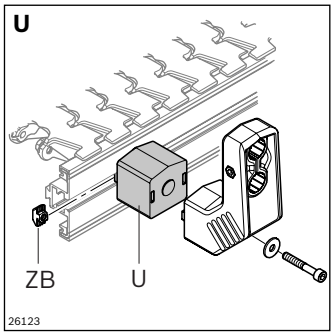


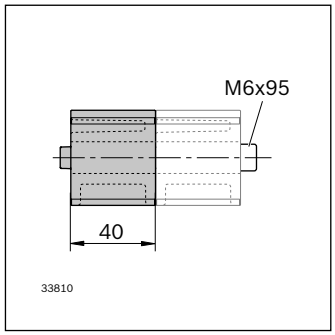


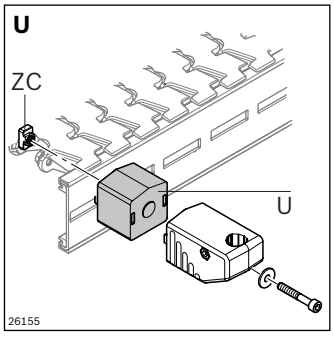
- Holder L45 for fastening vertical clamping holders or tube D18
- For infinitely height-adjustable lateral guides
- Spacer (**U**) for enlargement of guide width

Holder L45		**No.**
T Set	10	**3 842 539 496**
ZB T-nut for AL	100	**3 842 530 285**
ZC T-nut for STS	20	**3 842 546 706**

Material:	PA, black Fastening material: Steel; stainless
Scope of delivery:	Including fastening material (except for T-nuts)
Required accessories:	T-nut for AL or STS
Optional accessories:	Spacer (**U**)



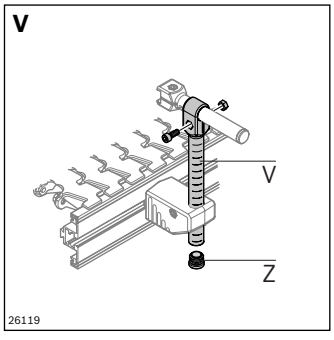


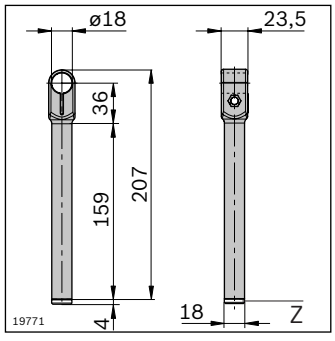


- Spacer for guide width enlargement

Spacer		**No.**
U Set	10	**3 842 539 497**
ZB T-nut for AL	100	**3 842 530 285**
ZC T-nut for STS	20	**3 842 546 706**

Material:	PA, black Fastening material: Steel; stainless
Scope of delivery:	Including fastening material (except for T-nuts)
Required accessories:	T-nut for AL or STS

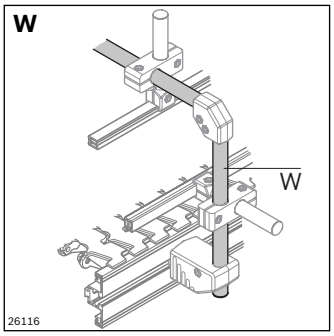


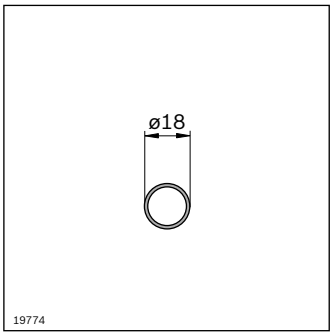


- Vertical clamping holder for constructing height-adjustable guides

Vertical clamping holder D18 L160		**No.**
V	10	**3 842 539 500**

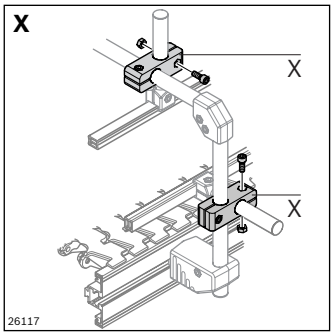
Material:	PA; black Nut, screw: Steel; stainless
Accessories:	Plug (**Z**)

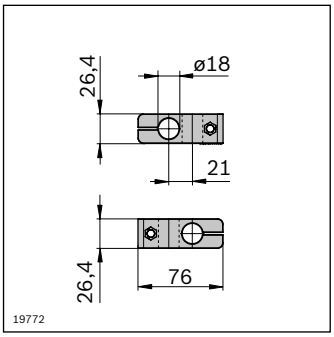




– Tube D18 for constructing height-adjustable vertical holders or cross members for upper guides

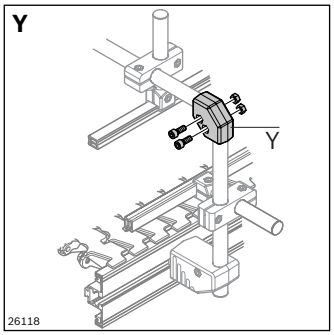
Tube D18	**L** (mm)	**No.**
W	3000	**3 842 539 339**
Material:	Non-rusting steel 1.4301	
Accessories:	Plug (**Z**)	

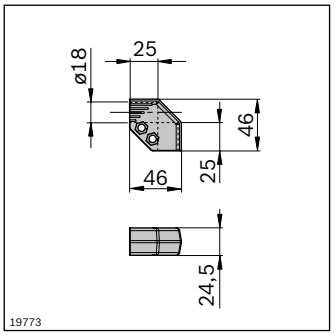




– Cross piece for the intersecting, right-angled connection of tubes D18 (**W**) and clamping holders C L100 (**M**) or D12 L100 (**O**)

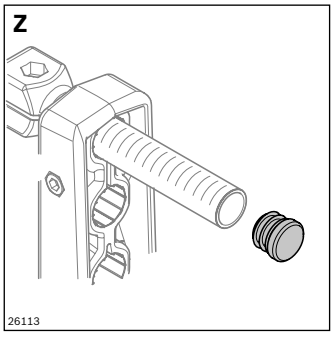
Cross piece		**No.**
X	10	**3 842 539 501**
Material:	Cross piece: PA; black Nut, screw: Steel; stainless	





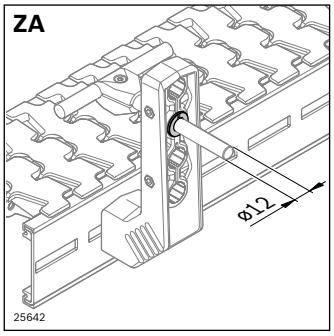
– Corner piece for end-to-end, perpendicular connections of tubes D18 (**W**) and clamping holders C L100 (**M**) or D12 L100 (**O**)

Corner piece		**No.**
Y	10	**3 842 539 505**
Material:	Corner piece PA; black Nut, screw: Steel; stainless	



– Plug for clamping head C L100 (**M**), clamping holder D12 L100 (**O**), vertical clamping holder D18 L160 (**V**) or tube D18 (**W**)

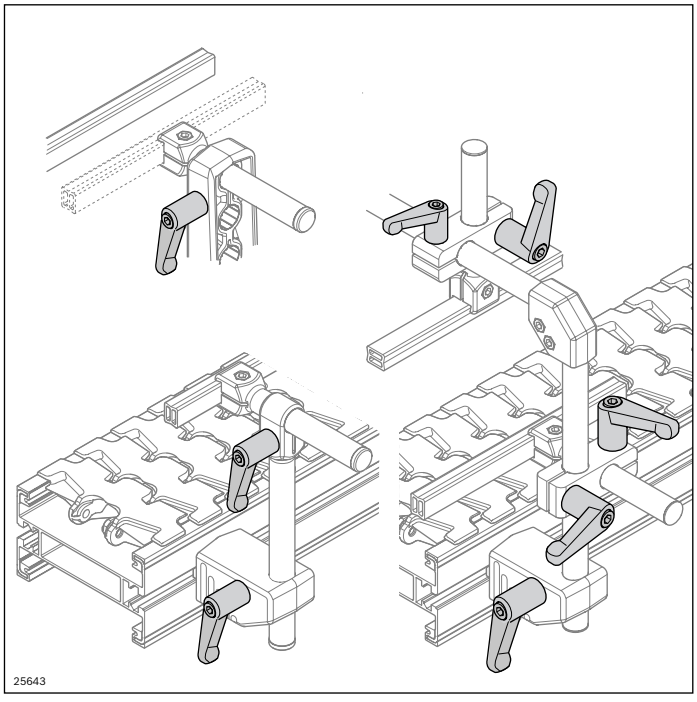
Plug		**No.**
Z	10	**3 842 539 826**
Material:	PA; black	



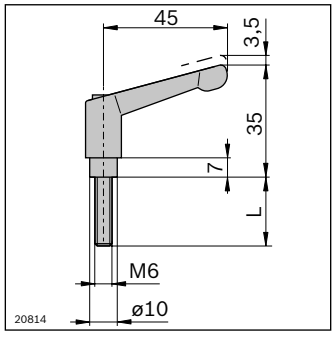
– Reducing adapter for mounting round profiles ø12 in attachments D18, e.g. for customer-specific clamping holder

Reducing adapter		**No.**
ZA	20	**3 842 539 344**
Material:	PA; black	

Clamping lever



- For easy adjustment of lateral guide holders
- Clamping lever M6x25 for the cross piece
- Clamping lever M6x40 for the holder



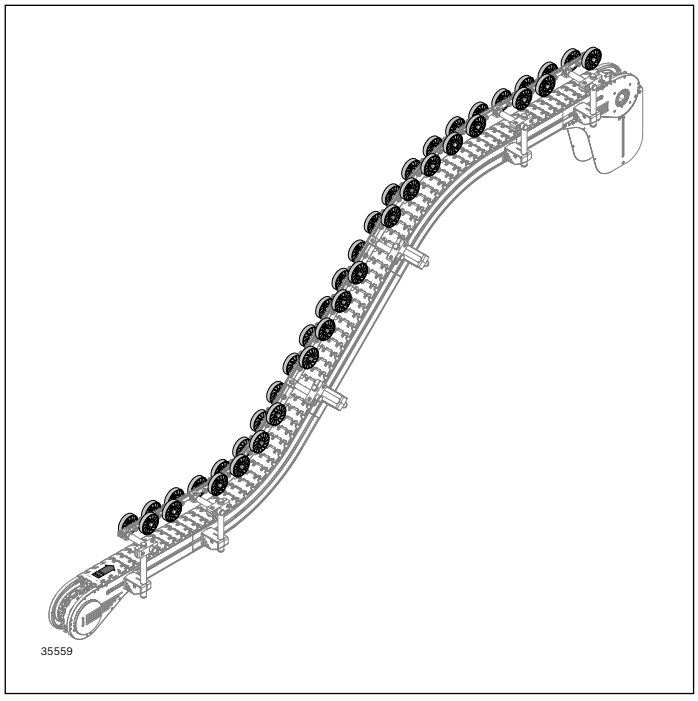
Clamping lever	**L** (mm)	**No.**
M6x25	25	**3 842 528 540**
M6x40	40	**3 842 528 539**

Material: Lever: Diecast zinc; black plastic coated
Screws: Steel; zinc-plated and black chrome-plated

Pressure roller







Enables the cost-effective vertical transport of light products. The contact pressure on the flat conveyor chain increases the friction, thereby enabling reliable transport in a vertical section.

- Vmax: 60 m/min
- Max. product weight depending on the conveying angle (see table)
- Operating temperature: 0 - 60 °C
- Clean and dry environment
- No transport of sharp-edged products
- No direct UV radiation
- Minimum product length about 60 mm (both sides of roller)
- Minimum product length about 90 mm (one side of roller)
- For safe transport, a flat, stable product surface is required
- Product height ≤ product length ≤ product width
- Tolerance of the product height +/- 1 mm

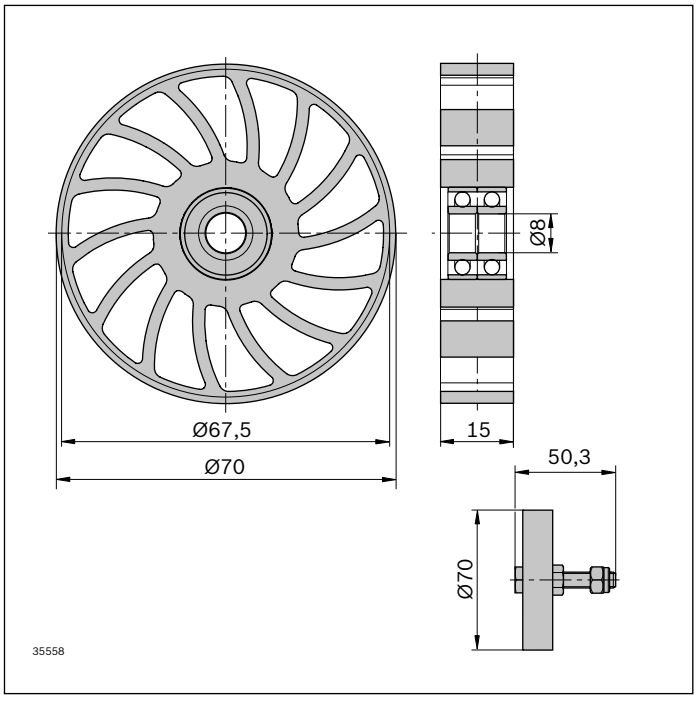
The pressure rollers with ball bearing are installed by the customer in short distances on the profile rail 3 842 993 887 (which is provided with holes by the customer).
The components from the lateral guide range serve as connections to the conveyor section.

Scope of delivery:

- Including fastening material

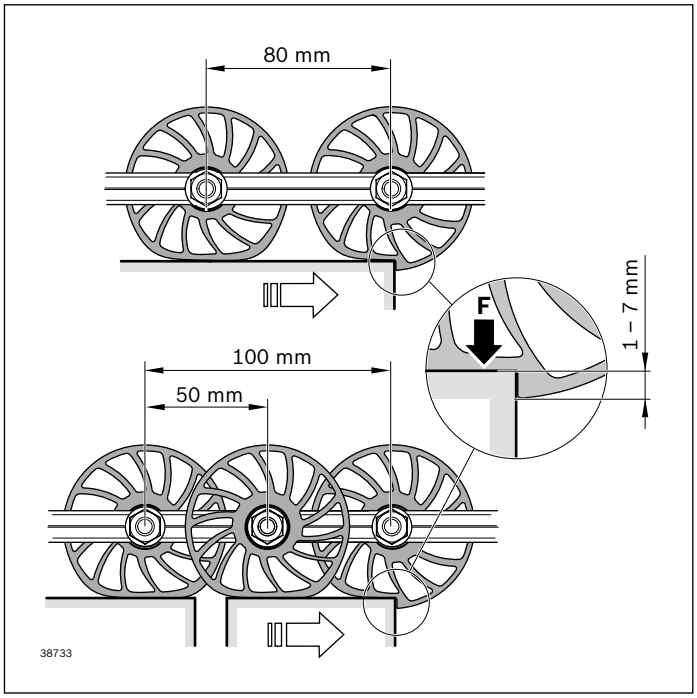
Material:

- Ball bearing: Stainless steel, sealed on both sides
- Roller: PU

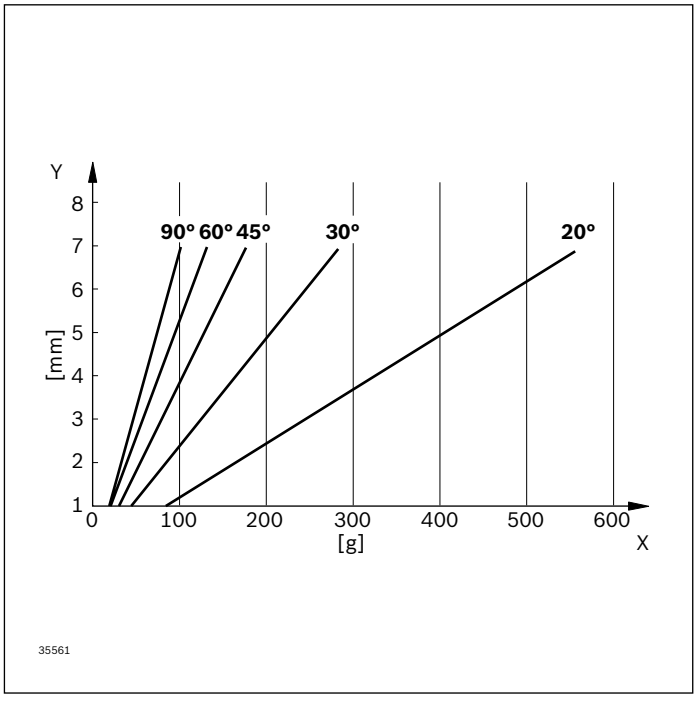


Pressure roller	No.
10	**3 842 552 950**

Pressure roller indentation depth



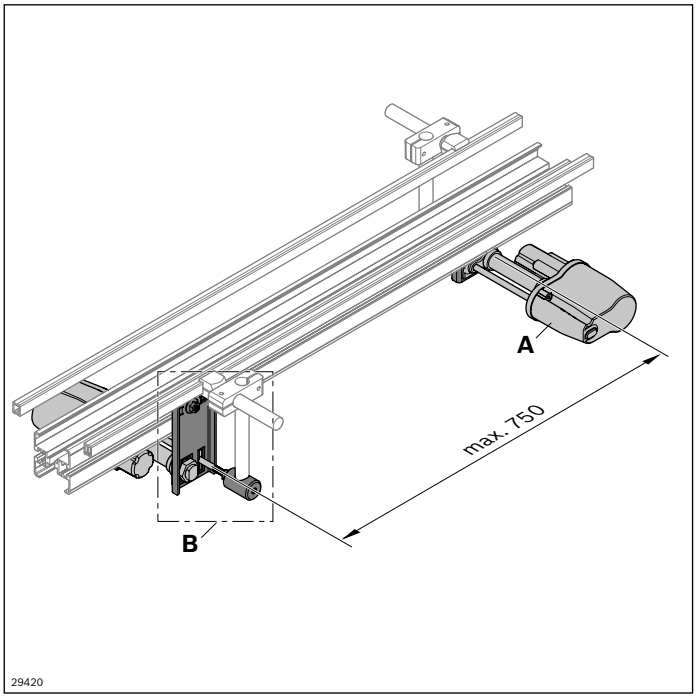
Product weight depending on the conveying angle



Y-axis: Pressure roller indentation depth in (mm)
X-axis: Product weight in (g)

Pneumatically adjustable lateral guide





The complete lateral guide can be adapted to rapidly changing product dimensions, especially when the conveyors are not easily accessible. The pneumatically adjustable lateral guide is composed of the adjustment unit (**A**), the assembly kit (**B**) and components from the lateral guide program.

- Size: 65-320
- Max. pressure against the lateral guide (on one side): 30 N/700 mm
- Synchronous, balanced adjustment
- Adjustment by means of pneumatic valve (operating pressure 4 ... 5 bar, switching every 2 sec. (depending on length of the pneumatic pipes and the number of adjustment units per valve))
- Adjustment range for each side: 16 stroke à 2 mm = 32 mm, after 16 switching operations the adjustment unit returns to its initial position
- Maximum number of adjustment units per valve: 8 pcs
- User-side position monitoring is recommended

▶ Mounting and adjustment mechanisms are placed under the conveyor system for easy accessibility of the transported material

▶ Mounting and adjustment also in horizontal and vertical curves. A customer-side adjustment is required for horizontal curves

Required accessories:

- Tube 18 mm (**W**), cross piece (**X**), clamping holder (**M,O**), profile rail (**A, B, C, D**) (see p. 212ff.)
- One 4/2 directional control valve per 8 adjustment units

Scope of delivery:

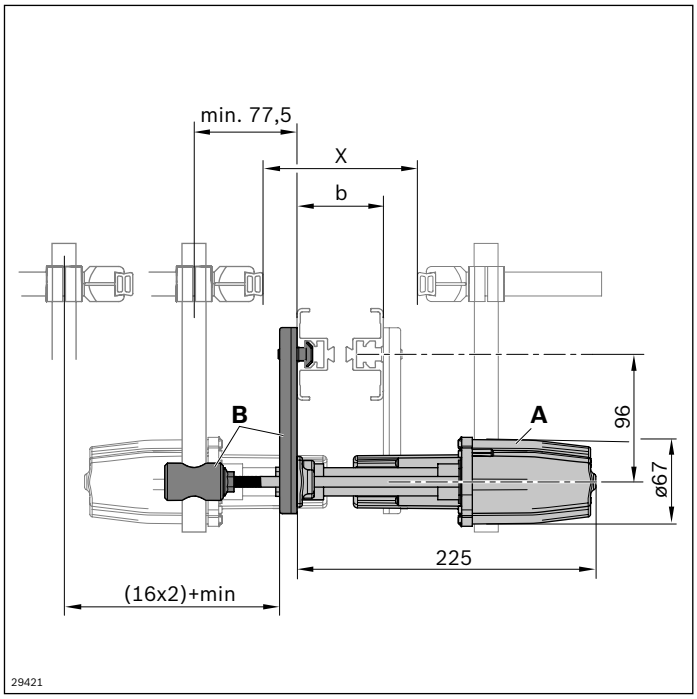
- **B:** Including fastening material

Condition on delivery:

- **A:** Assembled
- **B:** Assembly required

Material:

- **A:** AL anodized, PE, steel, galvanized steel, PA
- **B:** Galvanized steel, AL anodized



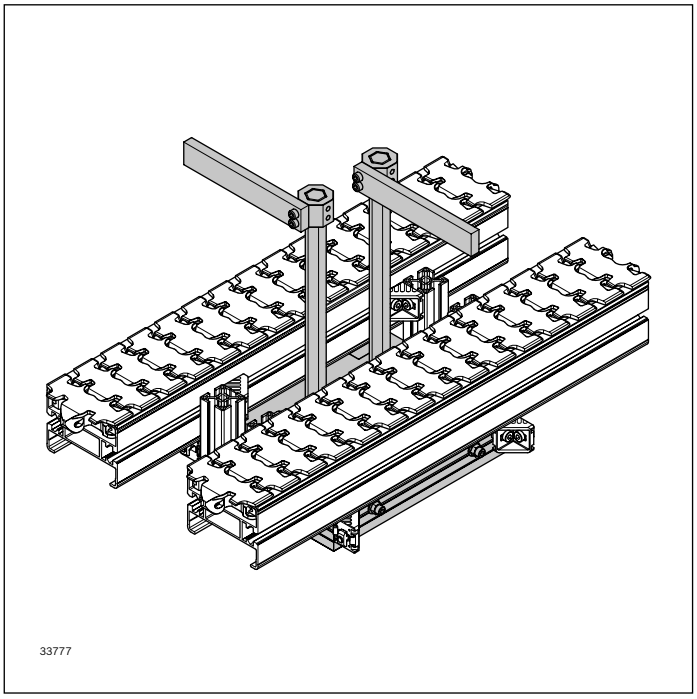
Adjustment unit	No.
A	**3 842 547 707**

Assembly kit	No.
B	**3 842 547 718**

Track width b	X min	X max
65	0	116
90	0	141
120	0	171
160	0	211
240	0	291
320	0	371

Barrier





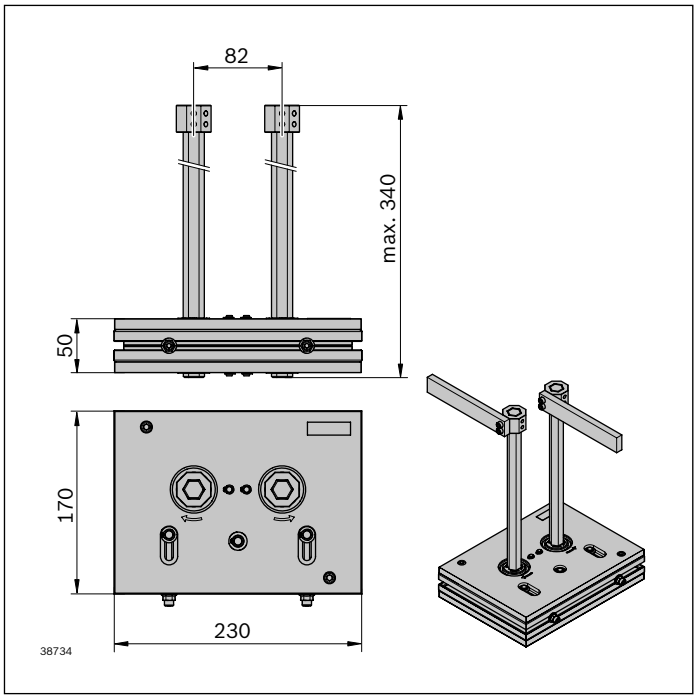
For the control-free merging of two sections into one.
The product that arrives first has right of way (Traffic Police).
- Size: All track widths
- Only suitable for dry operation
- The height of the barrier arm should be set as close as possible to the surface of the chain (any protrusion can be shortened if necessary)
- Minimum clearance between parallel sections: 40 mm
- Minimum-maximum load: See diagram on page 233
- For higher loads, the accumulation pressure must be reduced, e.g. via pre-singulation

- ▶ Barrier length adjustable to product width
- ▶ Reducing accumulation pressure through pre-isolation

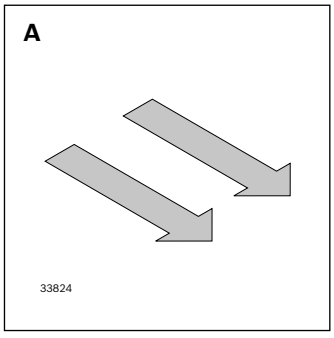
Scope of delivery:
- Including fastening material
  (includes all necessary basic components for the installation)

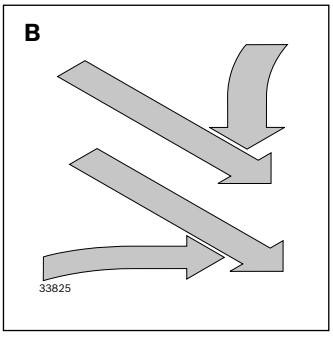
Material:
- Aluminum, steel

Condition on delivery:
- Some assembly required



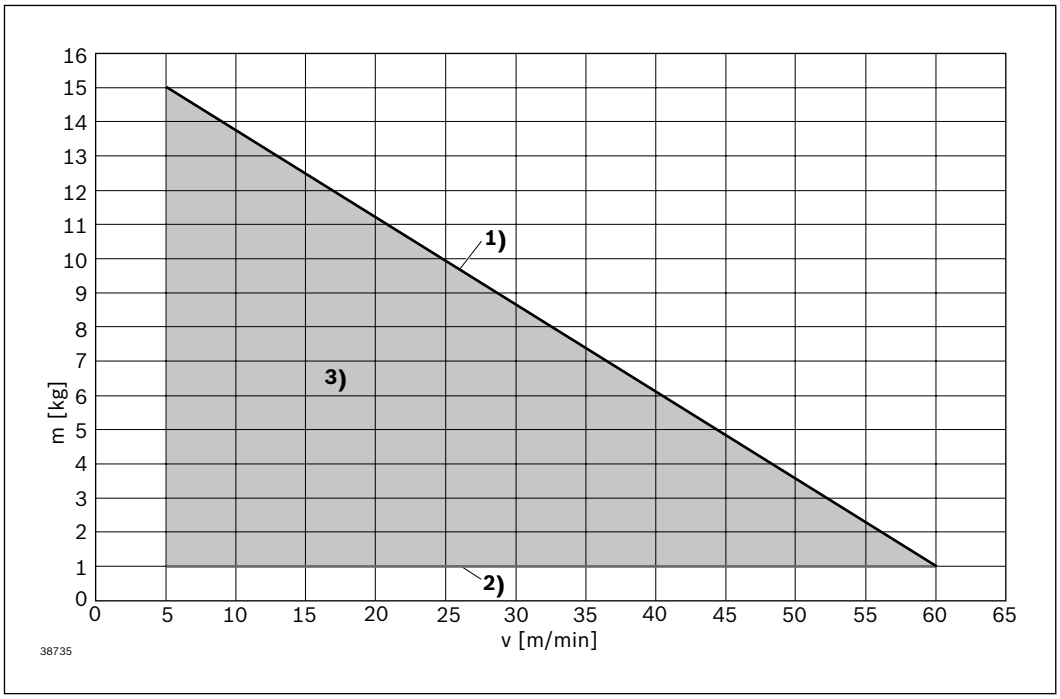
Barrier	No.
	3 842 553 070





A: Standard solution, scope of delivery
B: Adaptation of the barrier by the customer possible via MGE components

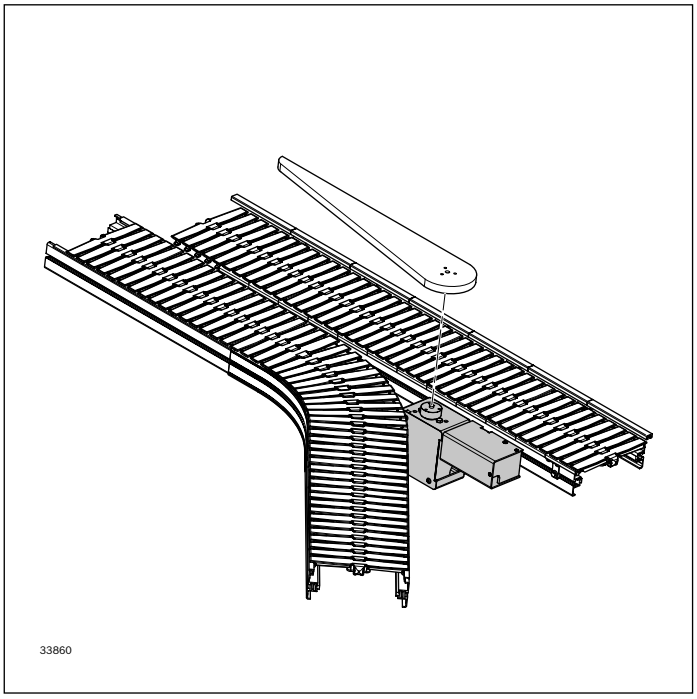
Minimum/maximum load



m (kg) mass
v (min/max) speed
1) Maximum load
2) Minimum load
3) Permissible range

Universal diverter





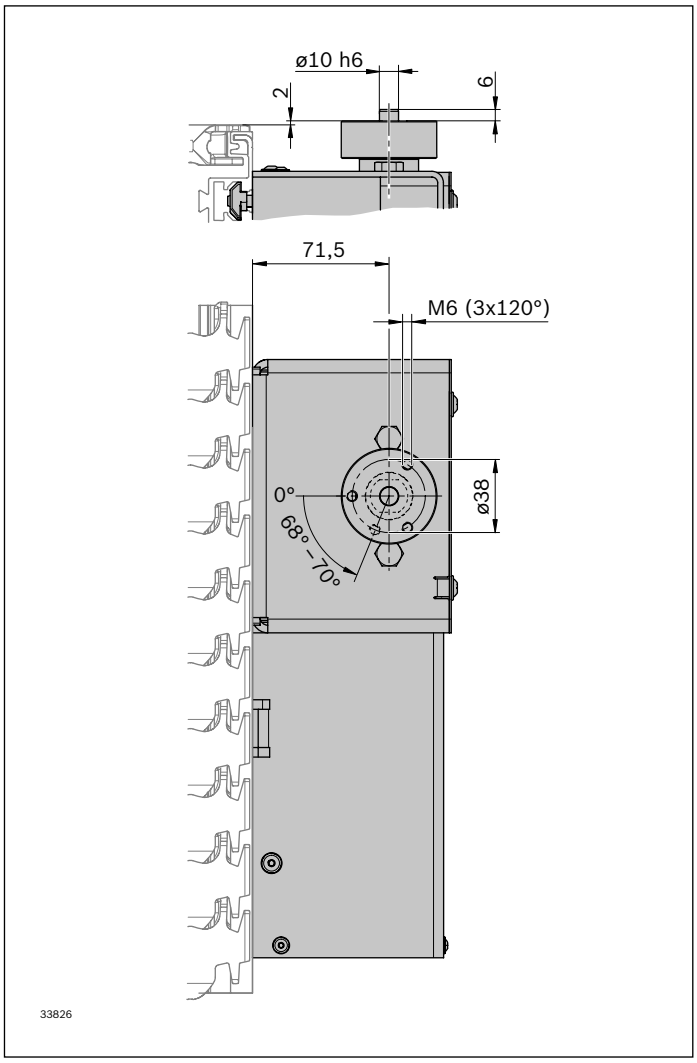
For changing tracks between main and secondary section
- Size: All track widths (max. product width = chain width)
- Pneumatically operated
- Max. product weight: 20 kg

Notice:
- The diverter arm and the end stop must be prepared by the user depending on the track width and product size
- For stability reasons, the closed section profile must be used for track widths 65-120, or, if open section profiles are used, two cross connectors must be used in the fixing area of the universal diverter

Required accessories:
- Diverter arm
- End stop (open/branch: Against lateral guide or on user-side)
- For the cylinder:
  - 2x G1/8" throttle check valves
  - 2x sensors
  - 2x sensor supports
  - 1x 5/2 directional valve
- Cylinder description ISO 6432 with:
  - Piston ø25
  - Piston rod thread M10x1.25
  - Connections G1/8"
  - Piston rods ø10
  - Cylinder outer thread M22x1.5

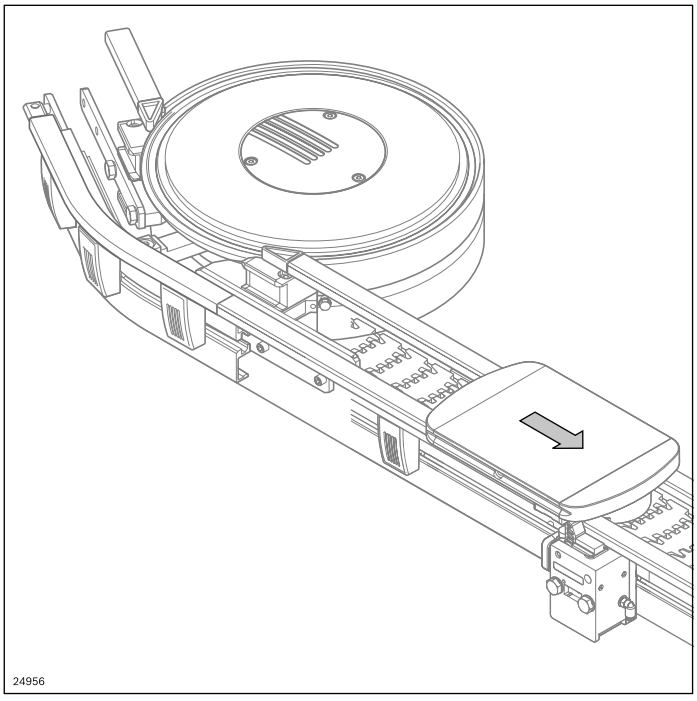
Scope of delivery:
- Partially assembled kit

Material:
- Steel, aluminum, PC

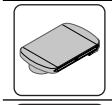
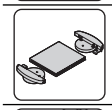
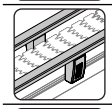
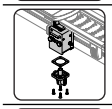
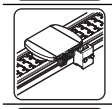
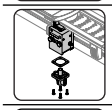
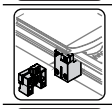
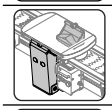
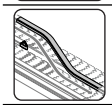
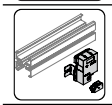


Universal diverter	No.
	3 842 547 703

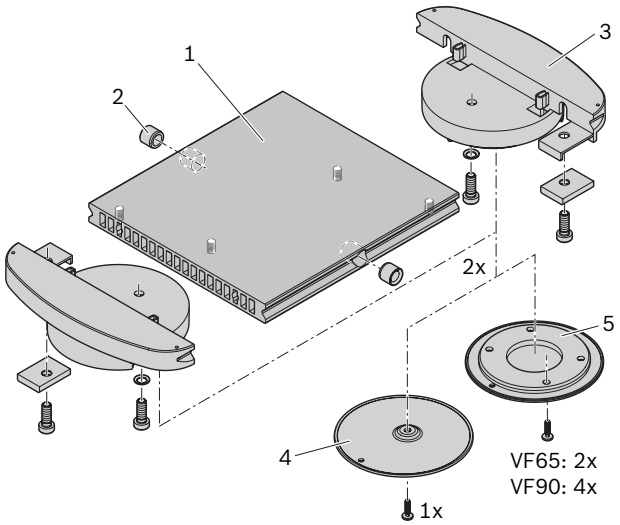
Workpiece pallet system (WT)



- Secure transport of parts thanks to the modular design with comprehensive additional components
- Numerous components for control WT such as diverter, stopper, positioning unit, etc.
- Selection of wear pads with different materials
- Compatible with the identification system ID 15

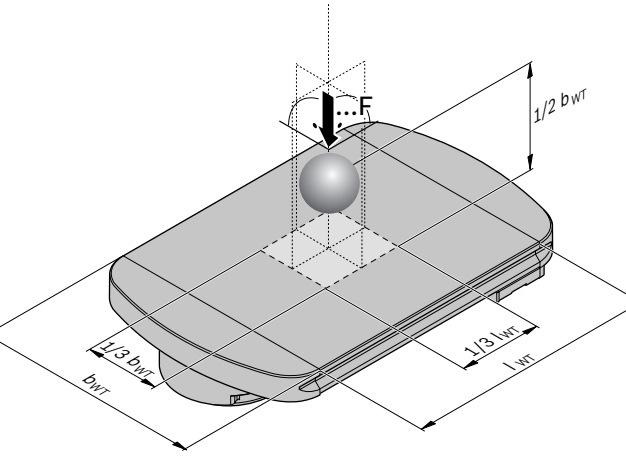
	**VarioFlow workpiece pallet (WT)**	**238**
	**WT plate** **End piece**	**240**
	**Lateral guide for workpiece pallets**	**242**
	**Curve wheel lateral guide**	**246**
	**Stop gate**	**248**
	**Return stop WT**	**250**
	**Stop gate position sensing**	**252**
	**Switch bracket**	**254**
	**Positioning unit**	**260**
	**Section transfer**	**268**
	**Diverter**	**270**
	**Junction**	**278**
	**Rocker system WT**	**282**

VarioFlow workpiece pallet (WT)



1: WT plate
2: Centering bushing
3: End pieces
4: Wear pad WT, steel
or
5: Wear pad WT PE

00137554



Optimum center of gravity range
for smooth operation

00123130

For transporting products that are not suitable for accumulation operation or are unstable due to their geometry

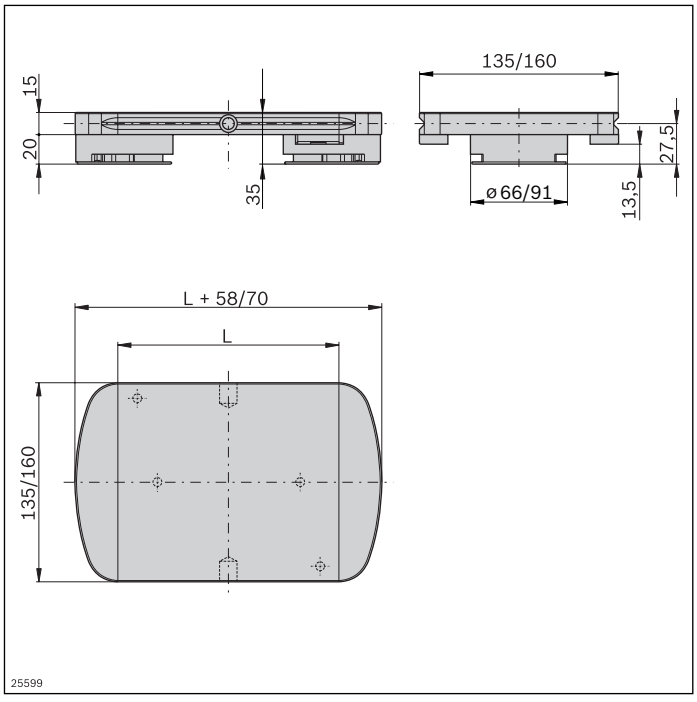
- Max. transport speed for operation with workpiece pallets: v_N = 18 m/min
- Wear pads WT either made of:
  - Steel, for use in harsh environments
  - PE, for use in clean environments
- WT load (workpiece, support, etc.)
  - Size 65: 8 kg
  - Size 90: 8 kg
- The modular concept allows for WT lengths of up to 500 mm*. With centering bushings for positioning in the positioning unit.
  * For WT with L > 300 mm, combine 2 curve wheels 90° with intermediate section (min. 200 mm).
  Max. WT length (incl. end pieces) for 180° curve wheel:
  - Size 65: 360 mm
  - Size 90: 410 mm
- Minimum length of the workpiece pallets:
  - Size 65: L_{min} = 76 mm
  - Size 90: L_{min} = 114 mm
- Minimum length of the workpiece pallets in order to be positioned by the positioning unit (see p. 260):
  - Size 65: L_{min} = 125 mm
  - Size 90: L_{min} = 125 mm

Minimum length WT for passive bridge L ≥ 300

- ▶ Level WT surfaces with no indentations
- ▶ The entire top of the WT can be built upon since everything else on the section is ready-mounted below the top of the WT.
- ▶ Compatible with the identification systems ID 15 and ID 200. Integrated installation of a mobile data tag is possible.
- ▶ The product can also protrude beyond the WT if the position of the center of gravity is taken into consideration.

Material:

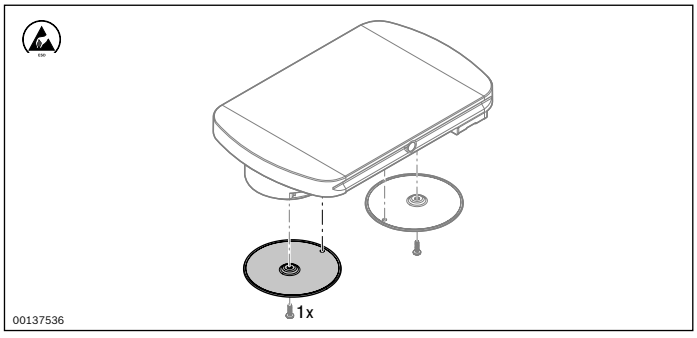
- WT plate: Aluminum; natural, anodized
- End pieces: PA; black
- Workpiece pallet wear pads: Steel, stainless, HV ≥ 480 or PE



Workpiece pallet[1]	L (mm)		No.
VF*plus* 65	150	1	**3 842 541 888**
VF*plus* 90	175	1	**3 842 541 889**

[1] Mounted without wear pad, with positioning bushing

The mounted workpiece pallet must be provided with wear pads (steel or PE) by the customer.

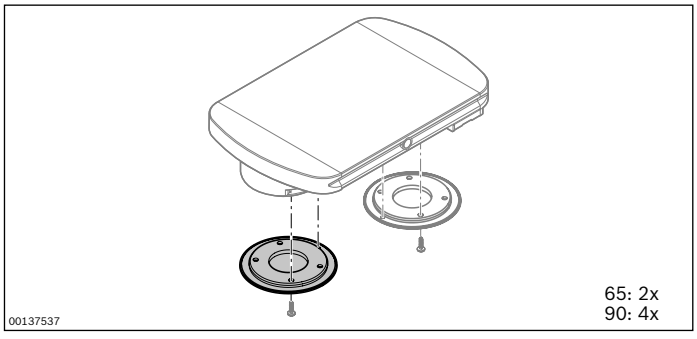


Steel wear pad		No.
VF*plus* 65	10	**3 842 528 773**
VF*plus* 90	10	**3 842 528 772**

Required accessories:

– Screw **3 842 543 246** (not in scope of delivery)

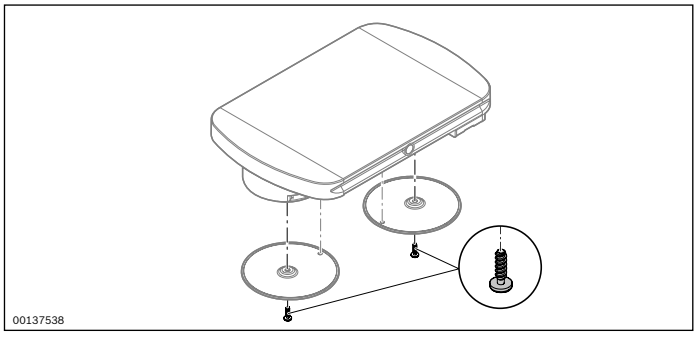
Notice: We recommend using the gray chain, see p. 19.



PE wear pad		No.
VF*plus* 65	10	**3 842 541 566**
VF*plus* 90	10	**3 842 541 567**

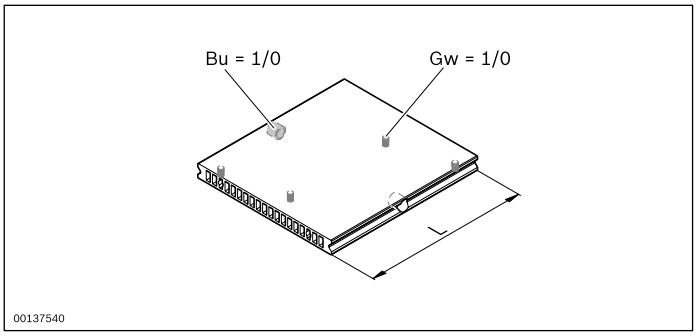
Required accessories:

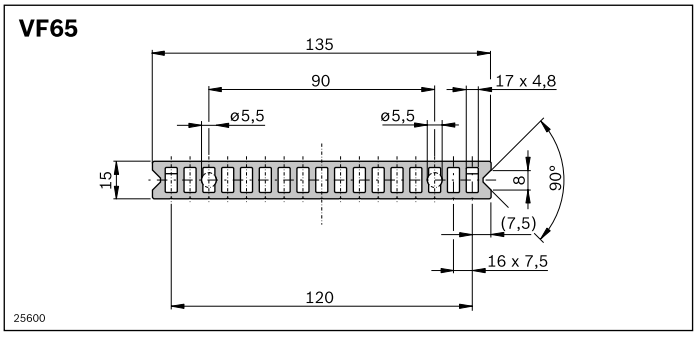
– Screw **3 842 543 246** (not in scope of delivery)

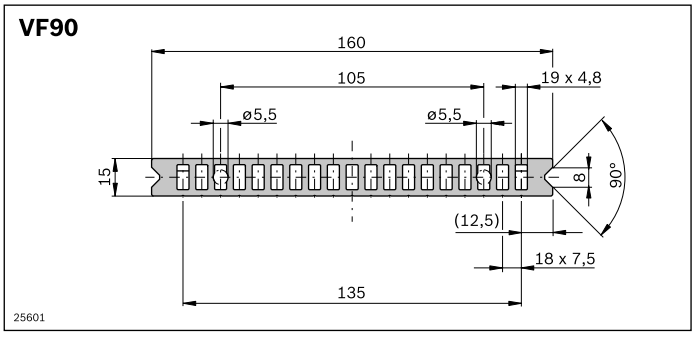


Screw		No.
	100	**3 842 543 246**

WT plate
End piece



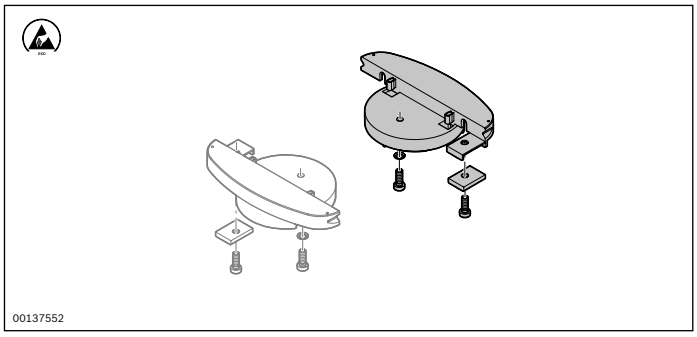




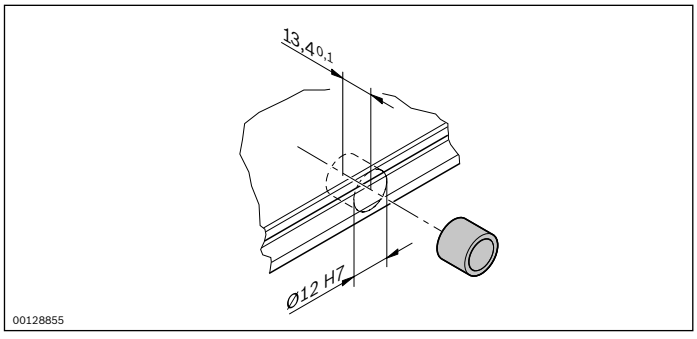
WT plate	Bu	Gw	L (mm)	No.
VF*plus* 65	0; 1	0; 1	30 ... 6000	**3 842 996 204/...**
VF*plus* 90	0; 1	0; 1	30 ... 6000	**3 842 996 205/...**

Parameter	Size	L_{min} (mm)	L_{max} (mm)
Bu = 1	65/90	125	500
Gw = 1	65	76	500
	90	114	500

Bu = 1: with holes for centering bushings for positioning in the positioning unit (centering bushings not in scope of delivery)
Bu = 0: without holes for centering bushings
Gw = 1: with holes to assemble the end pieces
Gw = 0: without holes to assemble the end pieces

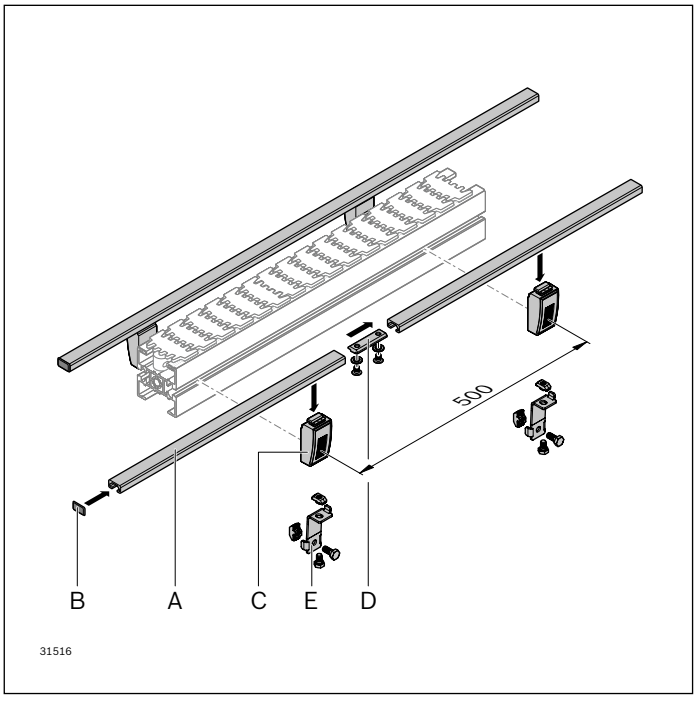


End piece		No.
VF*plus* 65	10	**3 842 541 902**
VF*plus* 90	10	**3 842 541 903**



Centering bushing		No.
	1	**3 842 535 081**

Lateral guide for workpiece pallets



- Lateral guide of the workpiece pallets

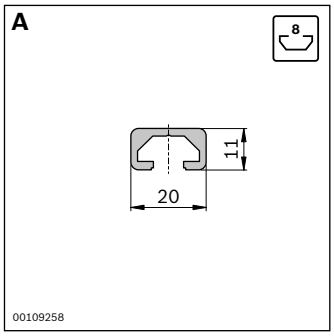
Optional accessories:
– **A:** Bending tool for lateral guide: See p. 290

Scope of delivery:
– **C, D, E:** Including fastening material (as shown)

Material:
– **A:** Aluminum; natural, anodized
– **B, C:** PA; black
– **D:** Steel; zinc-plated
– **E:** Non-rusting steel 1.4301
Fastening material: Steel; zinc-plated

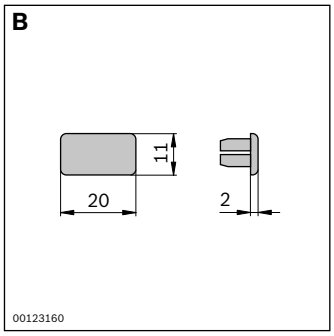
- Strut profile (**A**) for lateral guiding of workpiece pallets
Pre-bent lateral guides for curves on request
- Profile connector (**D**) to connect the end face of the profiles (**A**).
- Cover cap (**B**) to protect dirt from entering and injuries at open profile ends.
- Lateral guide holder (**C**) for simple installation in straight sections
- Lateral guide HD holder (**E**) in robust design for straight sections and in the curve area
- Distance of the holders (**C**, **E**) in the conveying direction: 500 mm
- Number of holders (**C**, **E**) in the curve area: 3 holders recommended

A



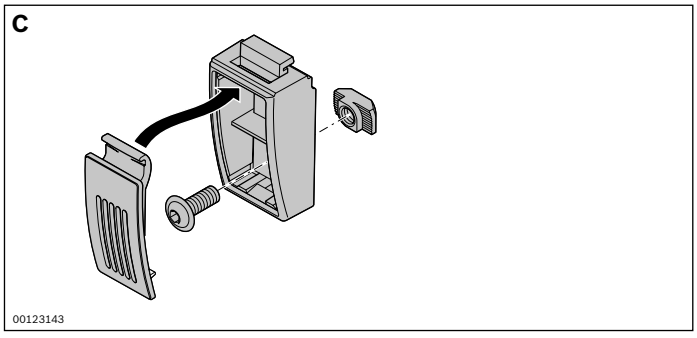
Strut profile 11x20		L (mm)	No.
A	10 pcs	2000	**3 842 513 581**
A	1 pc	30 ... 2000	**3 842 992 476/...**

B



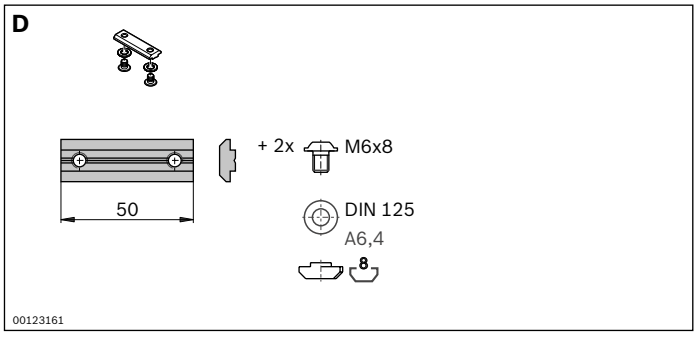
Cover cap 11x20		ESD		No.
B	Black		20	**3 842 551 045**
B	Signal gray		20	**3 842 551 044**

C



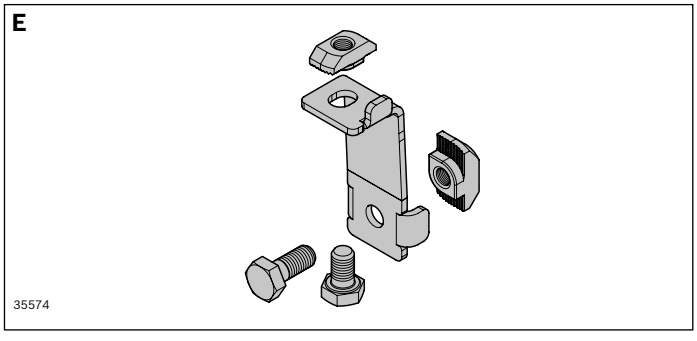
Lateral guide holder		No.
C	10	**3 842 531 552**

D

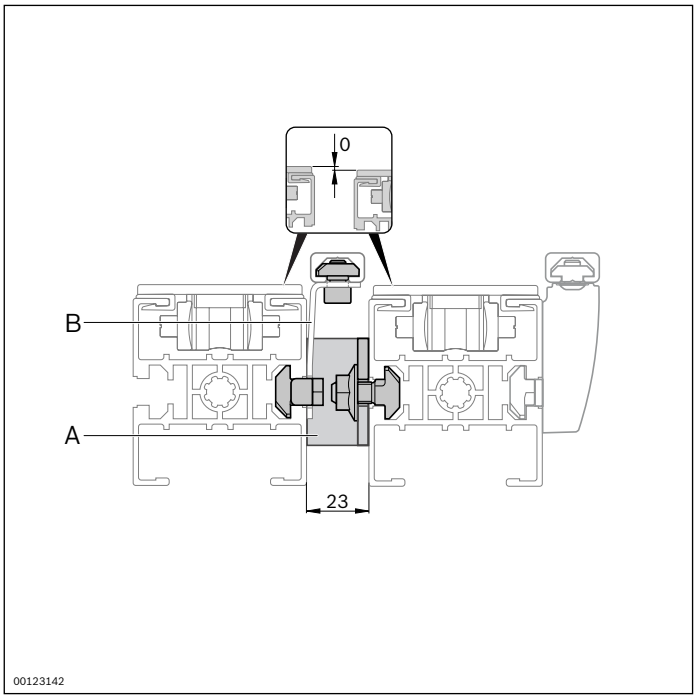


Profile connector		No.
D	10	**3 842 536 787**

E



Lateral guide holder HD		No.
E	10	**3 842 557 005**



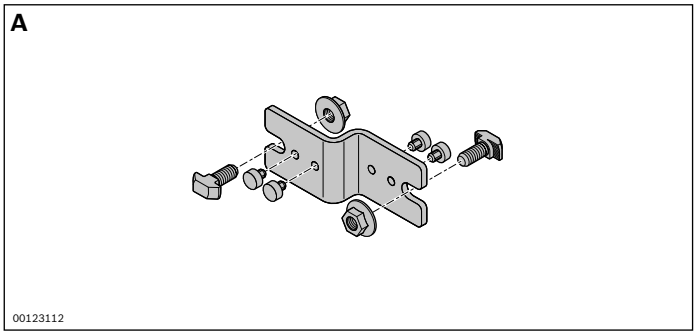
The middle lateral guide is used alternately by both sides. The section link (23 mm) (**A**) is used in combination with the holder for lateral guides (23 mm) (**B**) as a spacer between sections.

– The use of a section transfer (see p. 268), diverter (see p. 270) or junction (see p. 278), requires parallel section spacing of 23 mm.

Material:

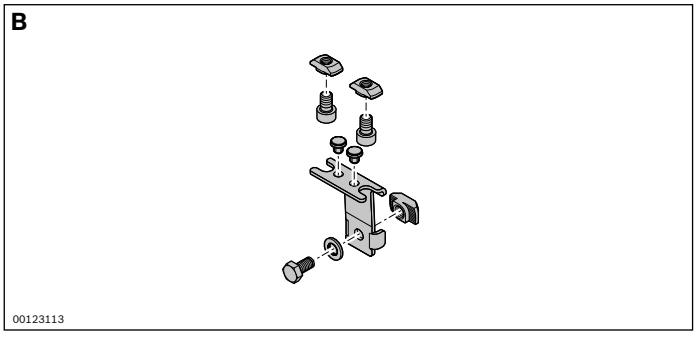
– **A, B:** Non-rusting steel
– Fastening parts: Steel; galvanized

A



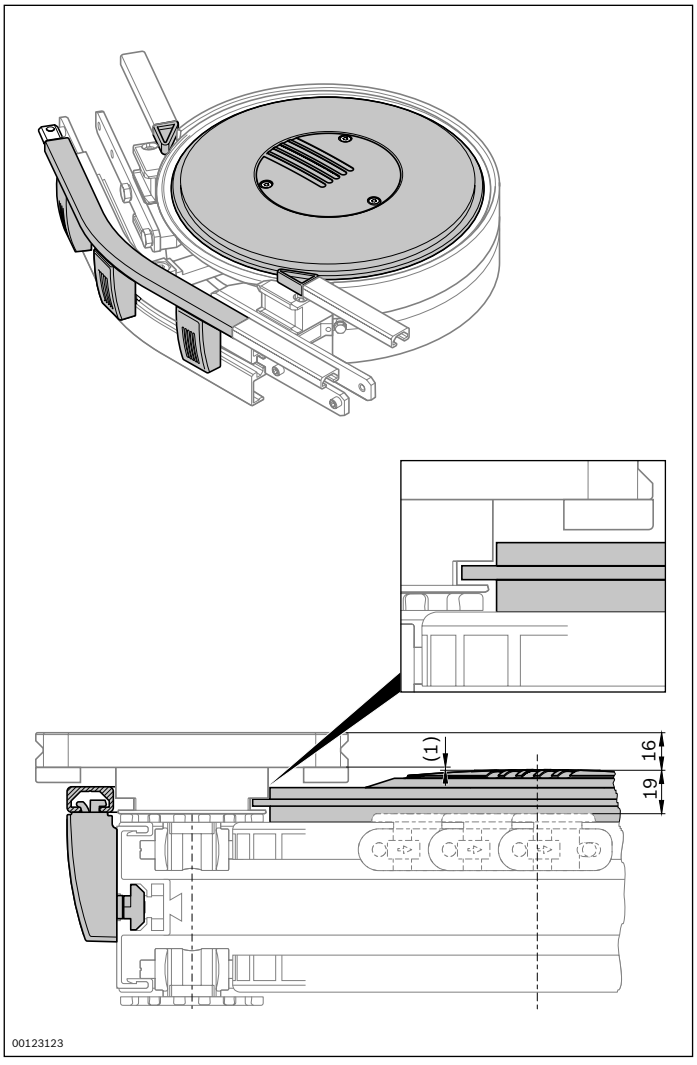
Section link		No.
A	10	**3 842 532 998**

B



Holder for lateral guide		No.
B	10	**3 842 532 980**

Curve wheel lateral guide



Lateral guide of the workpiece pallets (WT) in the curve wheel or curve wheel drive.

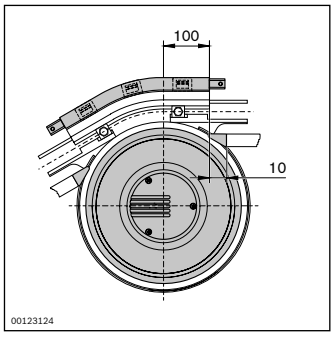
- Prevents the WT from ascending in accumulation operation or tipping over at high conveying speeds
- Complete kit for mounting on an existing curve wheel or curve wheel drive
- Lateral guide for curves with other angles as well as lateral guide for curves available on request

Scope of delivery:

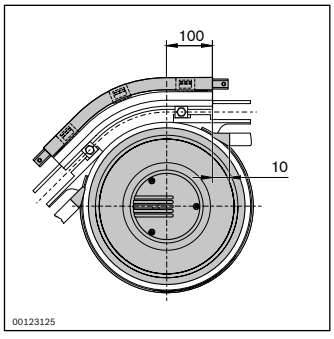
- Kit incl. fastening parts (as shown)

Material:

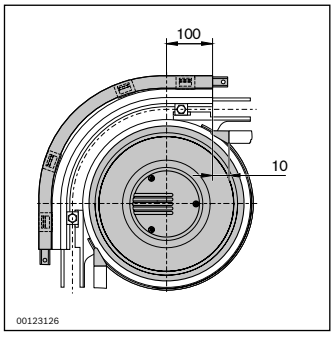
- Guide rail: Aluminum; natural, anodized
- Guide disc, holder: PA; black
- Fastening parts: Steel; galvanized



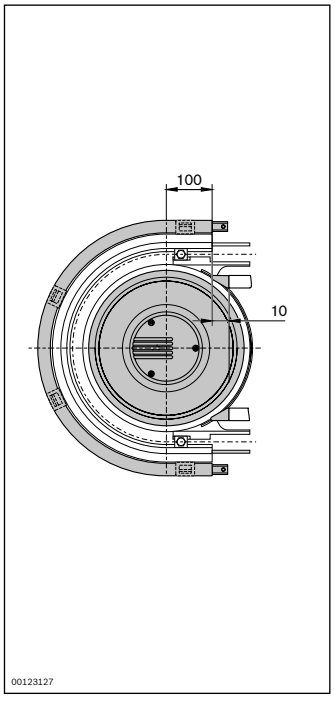
30° lateral guide	**No.**
VF*plus* 65	**3 842 547 949**
VF*plus* 90	**3 842 547 953**



45° lateral guide	**No.**
VF*plus* 65	**3 842 547 950**
VF*plus* 90	**3 842 547 954**

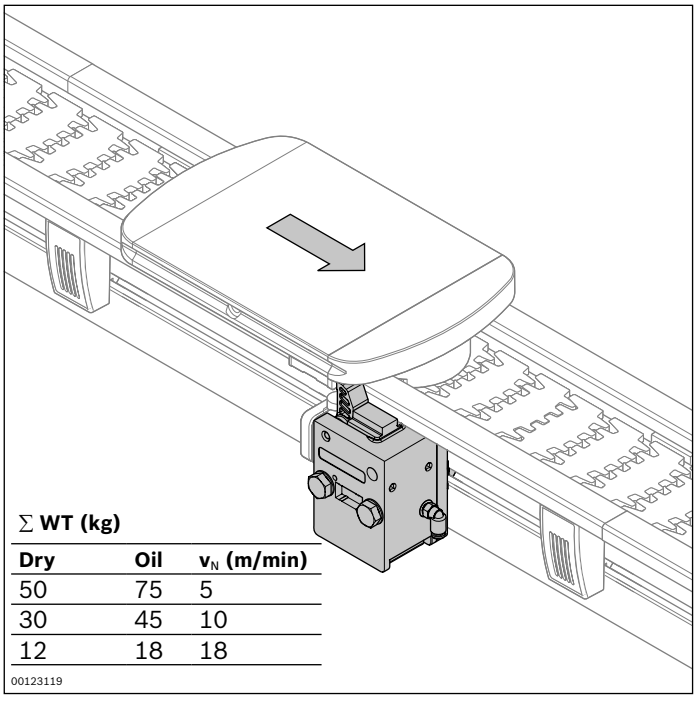


90° lateral guide	**No.**
VF*plus* 65	**3 842 547 951**
VF*plus* 90	**3 842 547 955**



180° lateral guide	**No.**
VF*plus* 65	**3 842 547 952**
VF*plus* 90	**3 842 547 956**

Stop gate VE-VF
Stop gate VE-VF/M



∑ WT (kg)

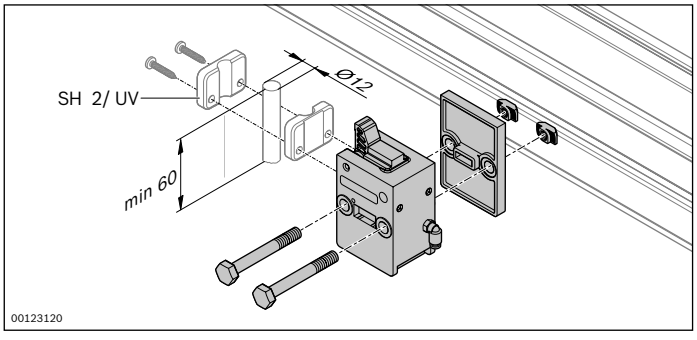
Dry	Oil	v_N (m/min)
50	75	5
30	45	10
12	18	18

00123119

Stop gate for securely stopping a workpiece pallet
- Suitable for retrofitting without disrupting the lateral guide
- The stop gate can be installed in any position
- Switch bracket for installation on stop gate see p. 254, max. accumulation load 50 kg
- Available in two versions:
  - VE-VF for dry or oily ambient conditions
  - VE-VF/M for corrosive ambient conditions

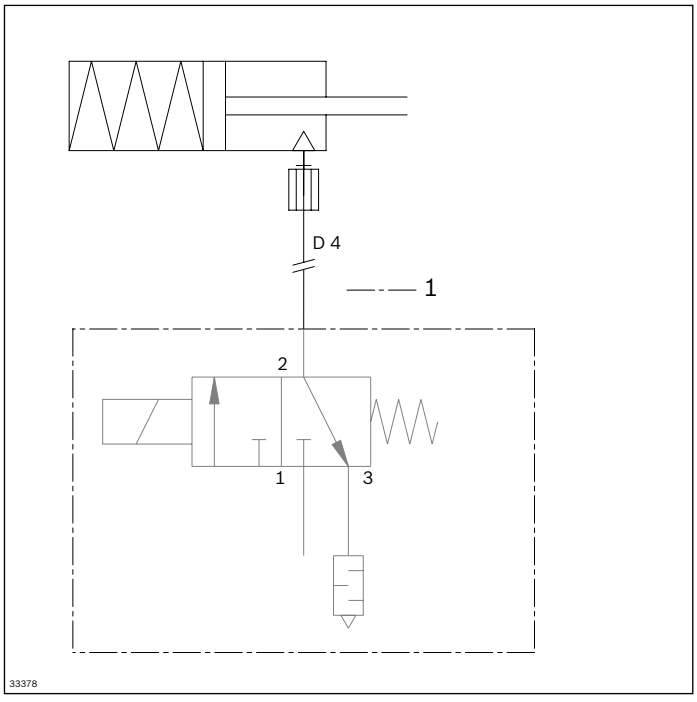
Scope of delivery:
- Including fastening parts (as shown)

Material:
- Stop gate VE-VF: PA; black
- Stop gate VE-VF/M: PA, gray,
  Functional components in the stop gate:
  Non-rusting steel 1.4301
- Fastening material: Steel; zinc-plated



00123120

Stop gate	No.
VE-VF	**3 842 528 852**
VE-VF/M	**3 842 559 135**

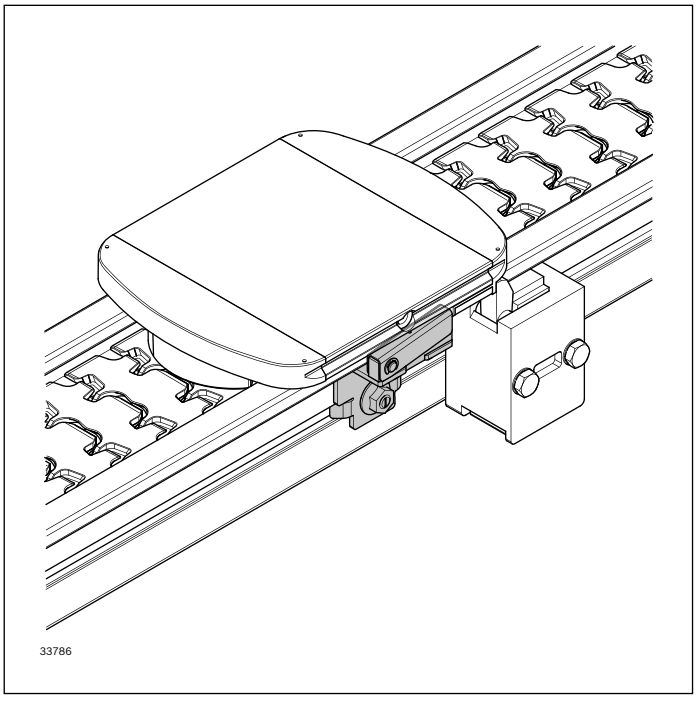


1 Not included in the scope of delivery

Circuit diagram

Return stop WT





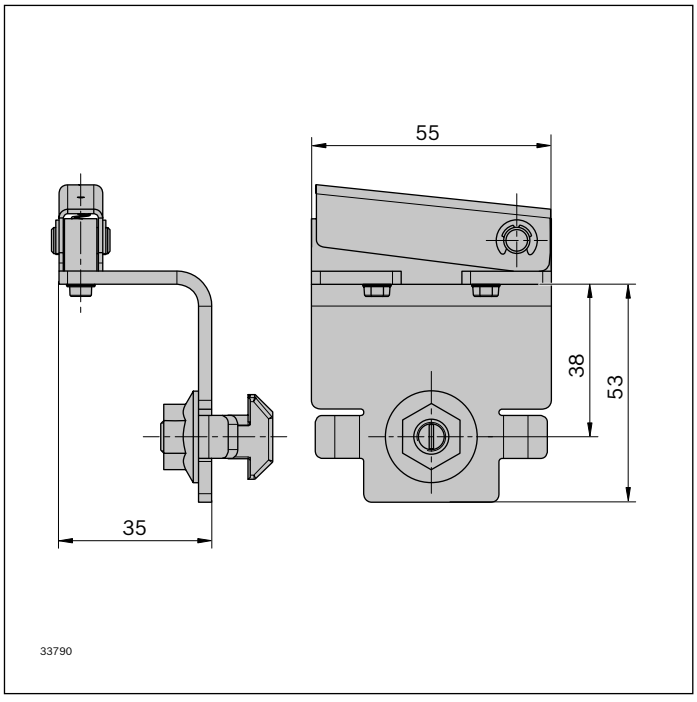
The return stop prevents the VarioFlow*plus* workpiece pallet from rebounding from the stop gate or prevents a backward movement of the workpiece pallet when the chain is turned off and released.
– Additional WT load max. 8 kg
– The return stop is attached behind the WT stop surface

- Can be attached both left and right on the section profile
- Simple and low-cost construction
- Non-rotating
- Also suitable for retrofitting without disrupting the lateral guide

Scope of delivery:
– Including fastening material

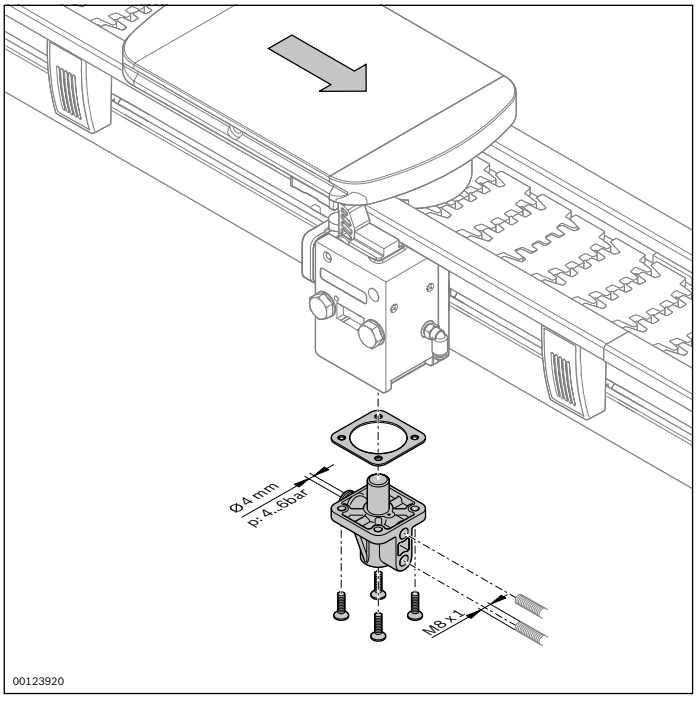
Condition on delivery:
– Assembled

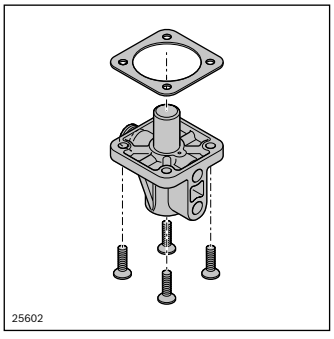
Material:
– Non-rusting steel 1.4301, galvanized steel, PA



Return stop	No.
	3 842 553 090

Stop gate position sensing



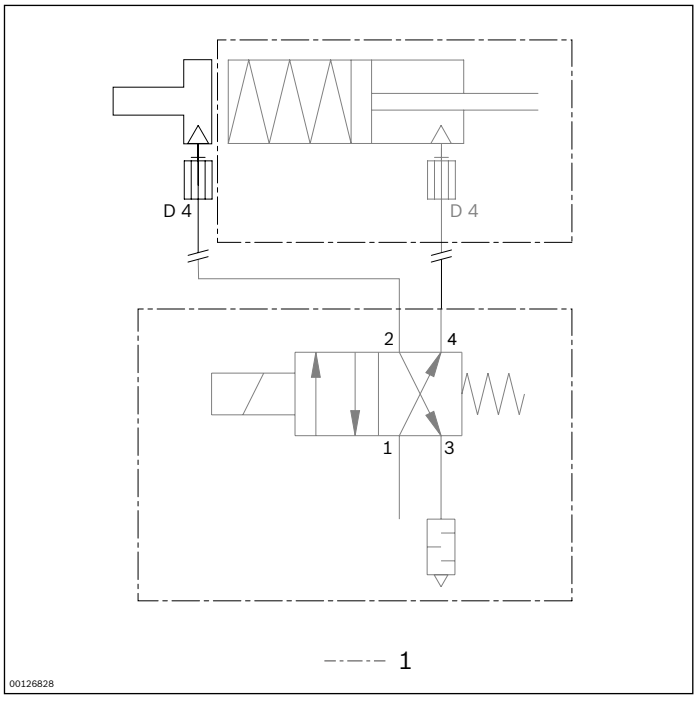


For querying the position of the stop gate via sensors and/or accelerating the pneumatic closing of the stop gate
– For retrofitting on the stop gate VE 2/VF

Required accessories:
– Sensor (3 842 551 761) M8x1 with switching distance S_N ≥ 2 mm

Material:
– Position sensor: PA; black
– Fastening parts: Steel; galvanized

Stop gate position sensing	No.
	3 842 528 817



Circuit diagram

1 Not included in the scope of delivery

Switch bracket SH VF/U



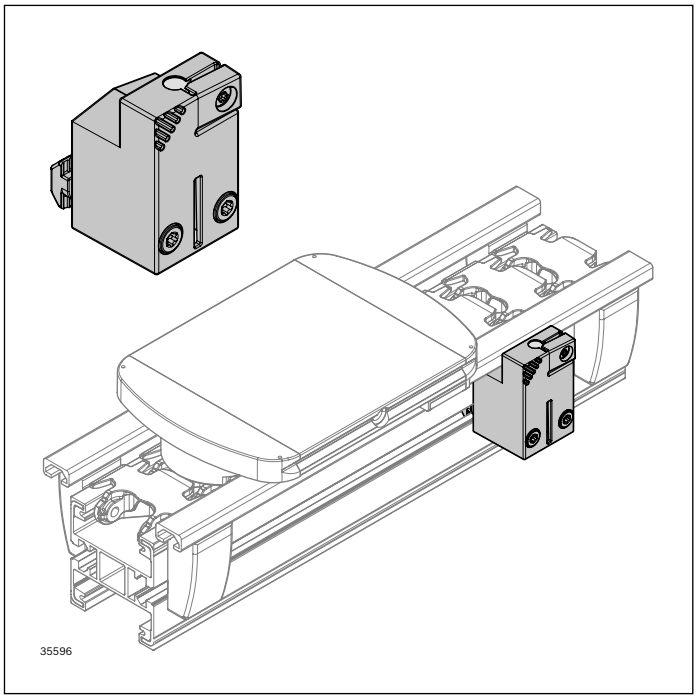
- Suitable for retrofitting without disrupting the lateral guide
- The switch bracket can be installed in any position

Required accessories:
– Sensor M12 x 60, 3 842 558 990

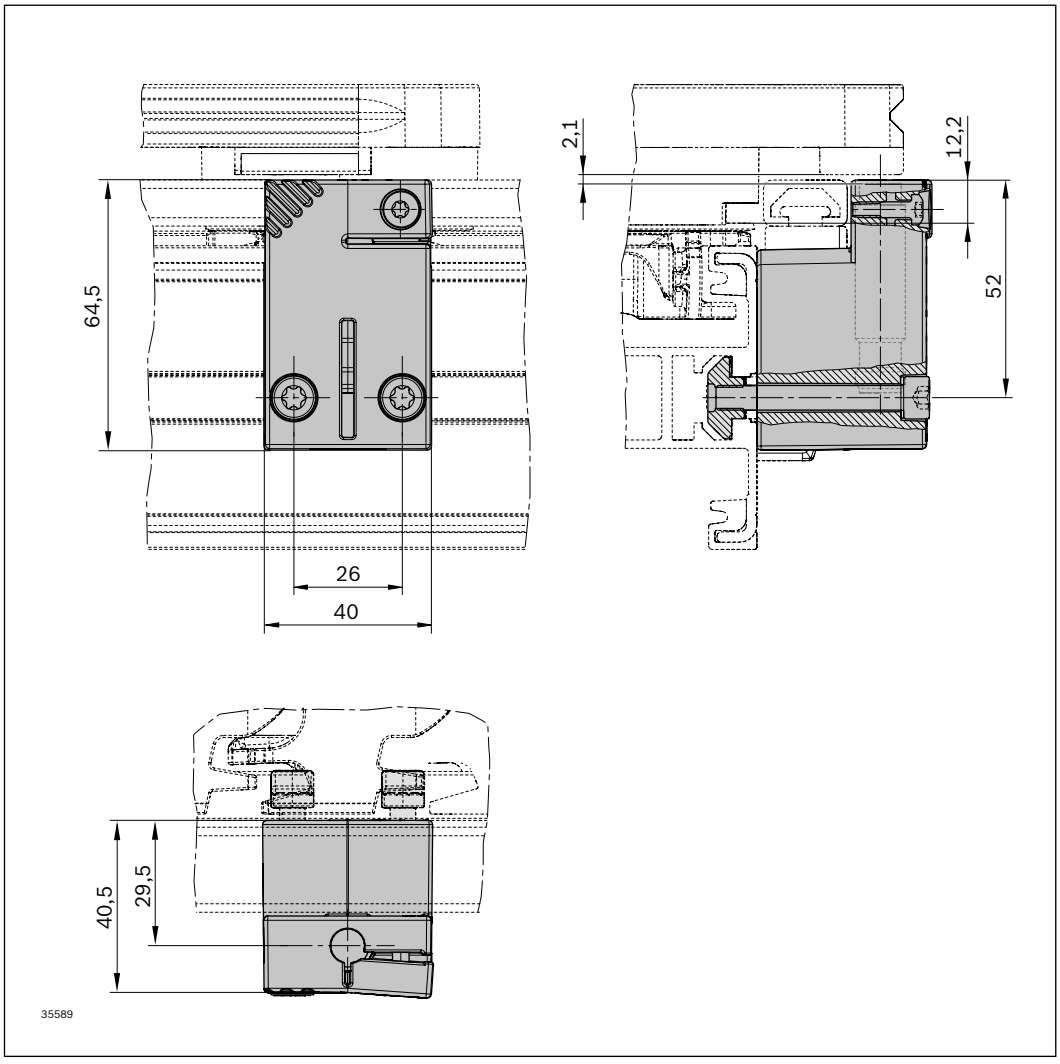
Scope of delivery:
– Including fastening material

Material:
– Switch bracket: PA; black
– Fastening material: Steel; zinc-plated

– Switch bracket for 12 mm sensor
– Simple, fast mounting and replacement of the sensor without adjustment through flush installation with defined switching distance
– Changing the sensor is quick and easy by loosening a separate clamping screw
  The switch bracket stays in position
– Inspection window to recognize the operating state of the sensor



Switch bracket	No.
SH VF/U	**3 842 557 603**



Switch bracket SH VF/UV



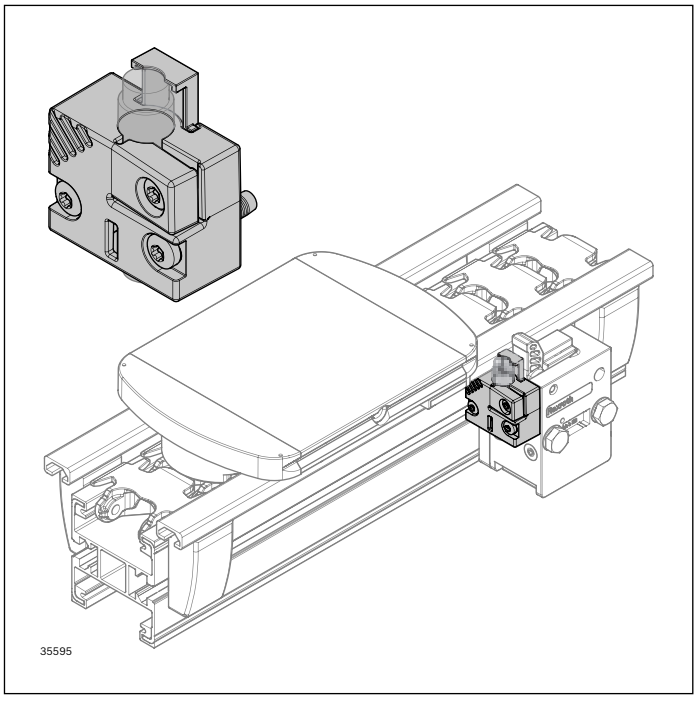
- Can be attached to both sides of the stop gate VE 2/VF
- For querying the workpiece pallet position before and/or after the stop gate

Required accessories:
– Sensor M12 x 45, 3 842 557 633 or
M12 x 44, 3 842 549 813

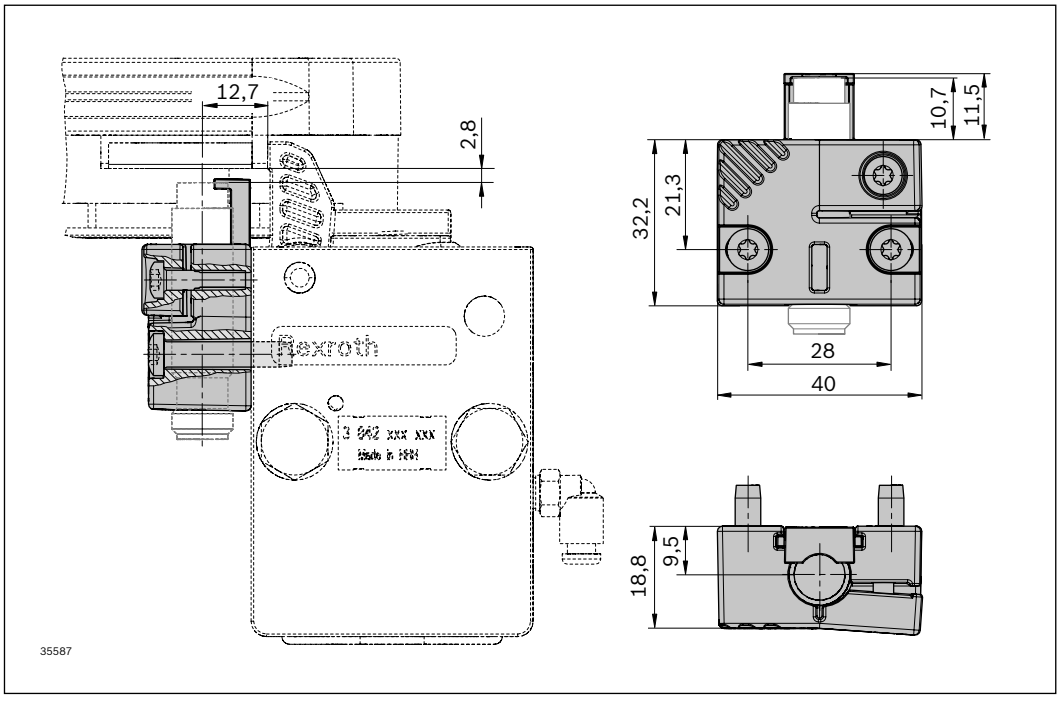
Scope of delivery:
– Including fastening material

Material:
– Switch bracket: PA; black
– Fastening material: Steel; zinc-plated

– Switch bracket for a 12 mm sensor, for installing on stop gate VE 2/VF
– Simple, fast mounting and replacement of the sensor without adjustment through flush installation with defined switching distance
– Changing the sensor is quick and easy by loosening a separate clamping screw
The switch bracket stays in position



Switch bracket	No.
SH VF/UV	**3 842 557 601**



Sensors



- Detecting the position of a workpiece pallet
- Stop gate / positioning unit position sensing

Required accessories:
- Switch bracket SH VF/U
- Switch bracket SH VF/UV
- Stop gate / positioning unit position sensing

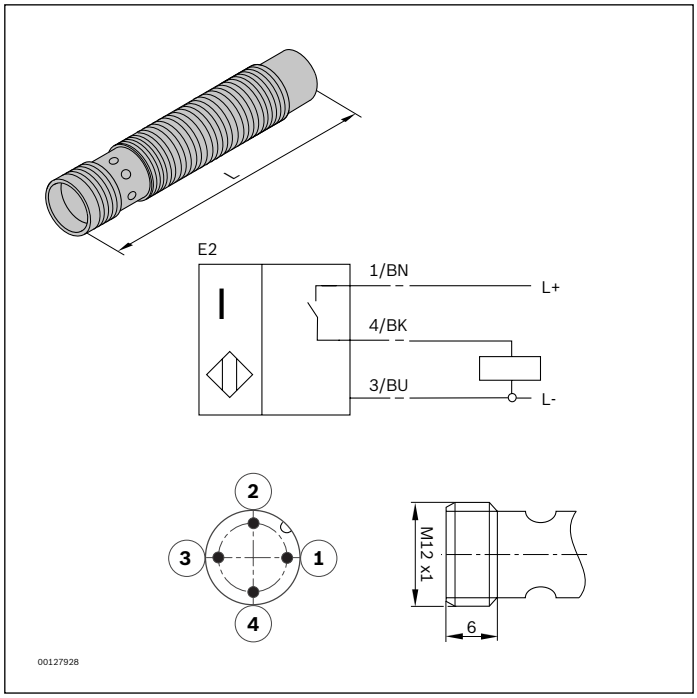
Sensor	No.
M12x45 sensor	**3 842 557 633**
M12x45 sensor	**3 842 549 814**
M12x60 sensor	**3 842 558 990**
M12x44 sensor	**3 842 549 813**
M12x44 sensor	**3 842 549 811**
M8x30 sensor	**3 842 551 761**

Sensor application matrix

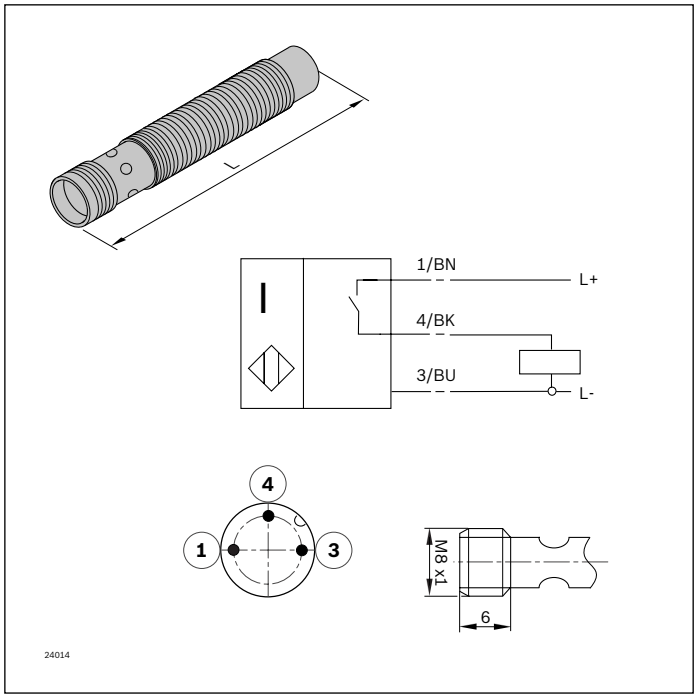
	Diameter with connector	**Sensor**			
	M12 with M12	**3 842 557 633**	**3 842 558 990**		**3 842 549 814**
	M12 with M8	**3 842 549 813**			**3 842 549 811**
	M8 with M8			**3 842 551 761**	
WT position sensing	SH VF/U		X		
	SH VF/UV	(X)	X		
Stop gate position sensing	Position sensing			X	
Positioning unit position sensing	Position sensing				X

Material number			**3 842 557 633**	**3 842 549 814**	**3 842 558 990**	**3 842 549 813**	**3 842 549 811**	**3 842 551 761**
Properties								
Protection rating			IP 68	IP 67	IP 68	IP 67	IP 67	IP 68
Material			Housing: CuZn; nickelfree coating Active surface: LCP	Housing: CuZn; nickelfree coating Active surface: LCP	Housing: CuZn; nickelfree coating Active surface: LCP	Housing: CuZn; nickelfree coating Active surface: PBT	Housing: CuZn; nickelfree coating Active surface: LCP	Housing: Non-rusting steel 1.4301 Active surface: PBT
Max. operating temperature	T	°C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C
Dimensions		mm	M12 x 45	M12 x 45	M12 x 60	M12 x 44	M12 x 44	M8 x 30
Length	L	mm	45	45	60	44	44	30
Connector			M12x1	M12x1	M12x1	M8x1	M8x1	M8x1
Additional information								
Rated switching distance	S_N	mm	8	4	8	8	4	2
Switching frequency		Hz	500	300	1000	800	2500	1500
Operating current		mA	200	200	200	200	200	200
Mechanical installation			Not flush	Flush	Not flush	Not flush	Flush	Flush
Function indicator			LED	LED	LED	LED	LED	LED
Switching output			PNP	PNP	PNP	PNP	PNP	PNP
Switching function			Normally open (NO)	Normally open (NO)	Normally open (NO)	Normally open (NO)	Normally open (NO)	Normally open (NO)
Operating voltage		V DC	10 ... 30	10 ... 30	10 ... 30	10 ... 30	10 ... 30	10 ... 30
Approvals			cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC	cULus, CE, EAC
Conformity with standards			IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2

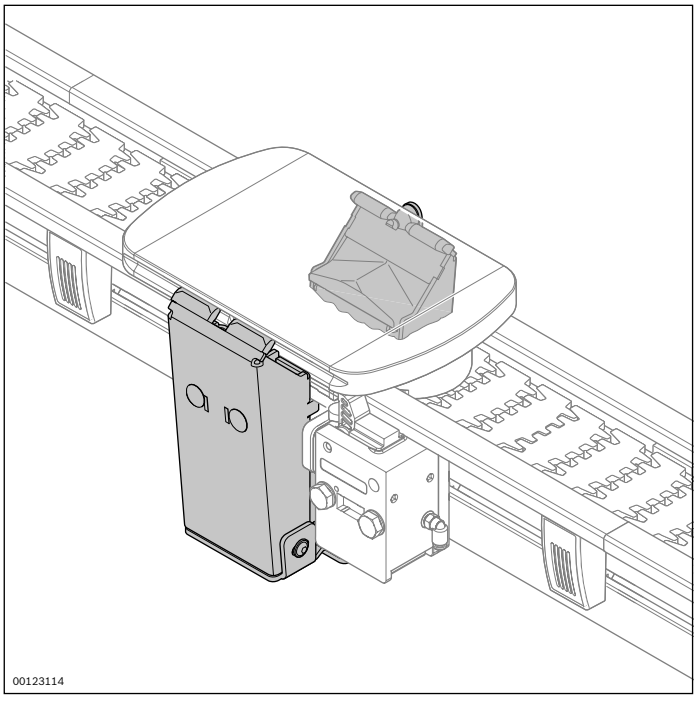
M12x1



M8x1



Positioning unit PE-VF/H

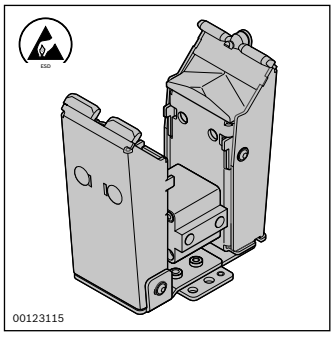


Required accessories:
- 2 throttle check valves G 1/8" (not included in the scope of delivery)

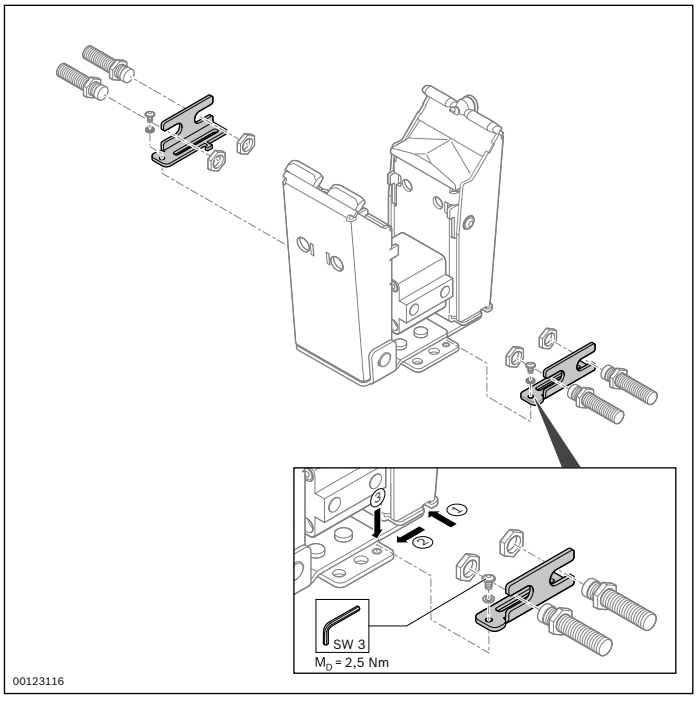
Scope of delivery:
- Including fastening parts (as shown)

Material:
- Positioning unit: Stainless steel
- Fastening parts: Steel; galvanized
- Cover caps: PA
- Clamping claws: PU

The plier-shaped form of the positioning unit (PE) makes it highly resistant to dirt and shavings and thus suitable for dirty environments. The WT is lifted approx. 1 mm above the transport level, thus eliminating the load on the conveyor chain during processing.
- Positioning accuracy in the direction of transport: ± 0.15 mm (transverse: ± 0.1 mm, height: ± 0.1 mm)
- Maximum vertical press force (p = 4 bar): 400 N
- Maximum retention force (p = 4 bar) in the direction of transport: 300 N
- Suitable for retrofitting without disrupting the lateral guide
- The switch bracket can be installed in any position
- Minimum length of the workpiece pallets in order to incorporate the positioning unit:
  Size 65: L = 125 mm
  size 90: L = 125 mm
- Two positioning units can be combined for workpiece pallets with L > 250 mm. For this, the positioning mandrel is removed from one of the PEs and the workpiece pallets are fitted with eccentric centering bushings by the customer
- Position inquiry with assembly kit and 2 proximity switches M12x1 on the housing (proximity switches not in the scope of delivery) or with **3 842 535 150** on the cylinder
- Max. torque in the pliers area: 60 Nm

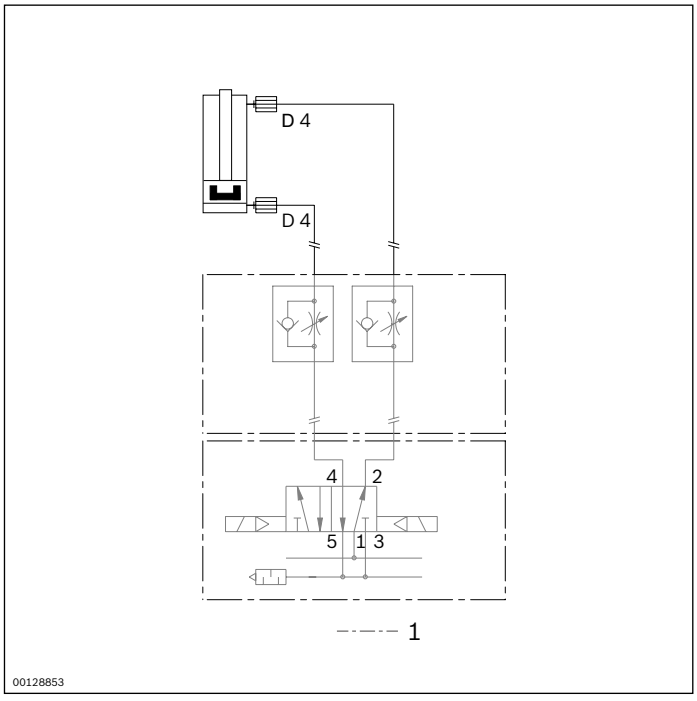


Positioning unit	No.
	3 842 532 762



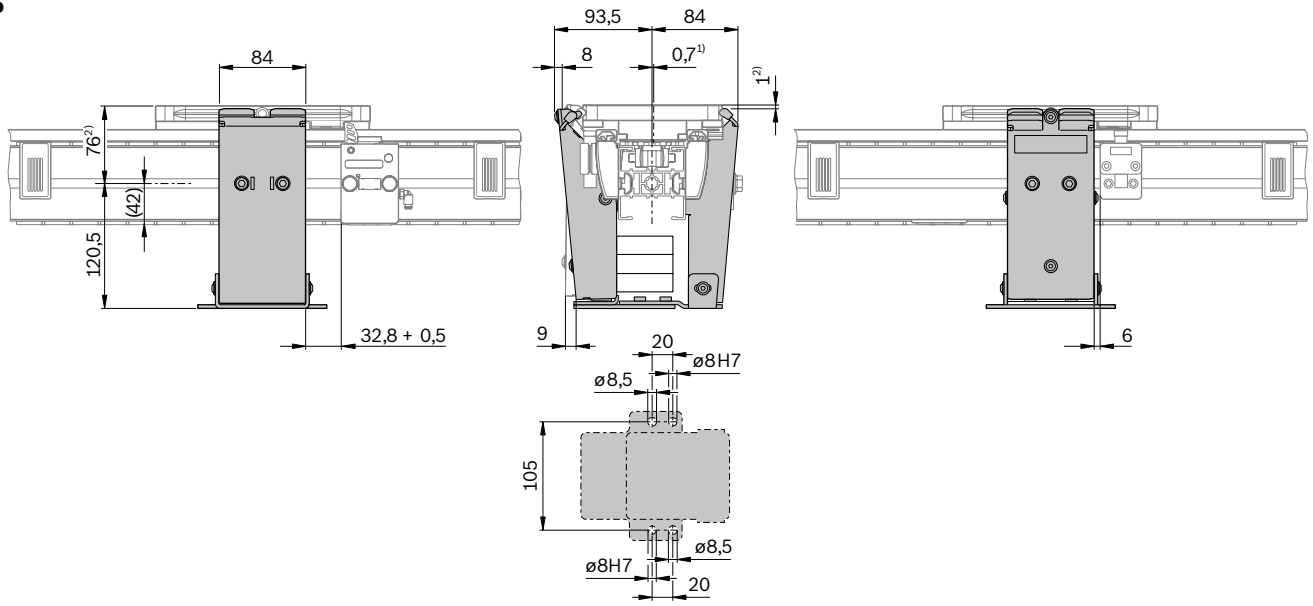
Position monitoring kit	No.
	3 842 535 801

Circuit diagram



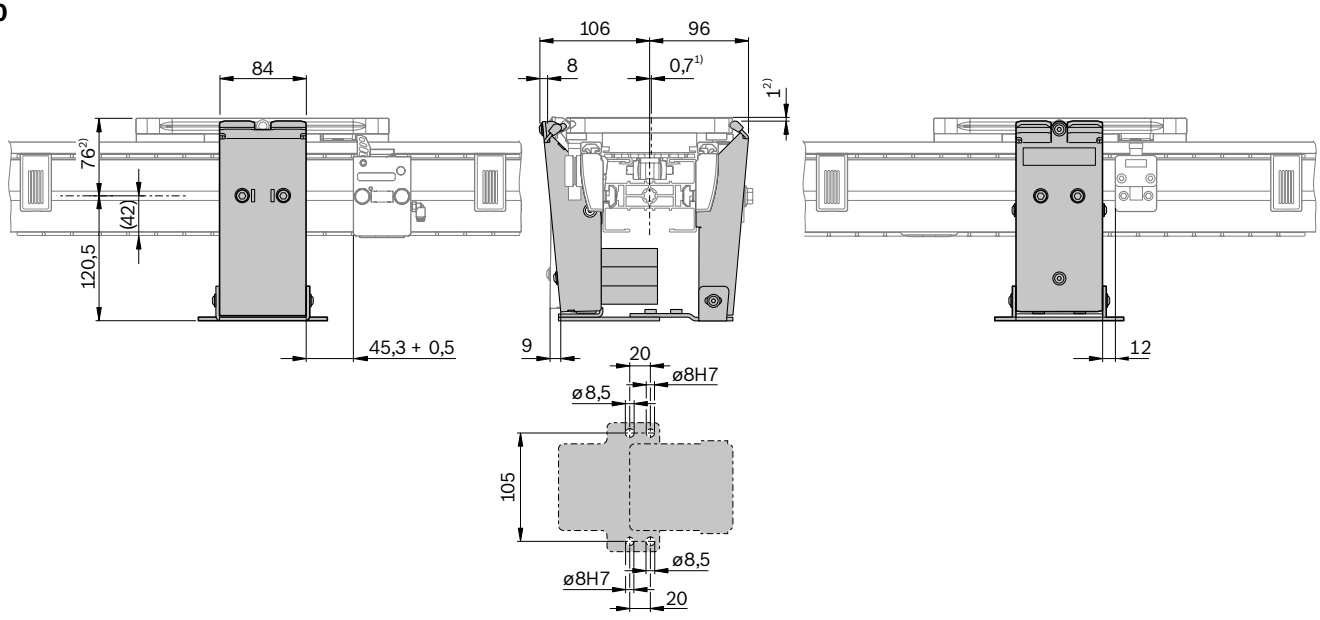
1 Not included in the scope of delivery

VF 65



00123117

VF 90

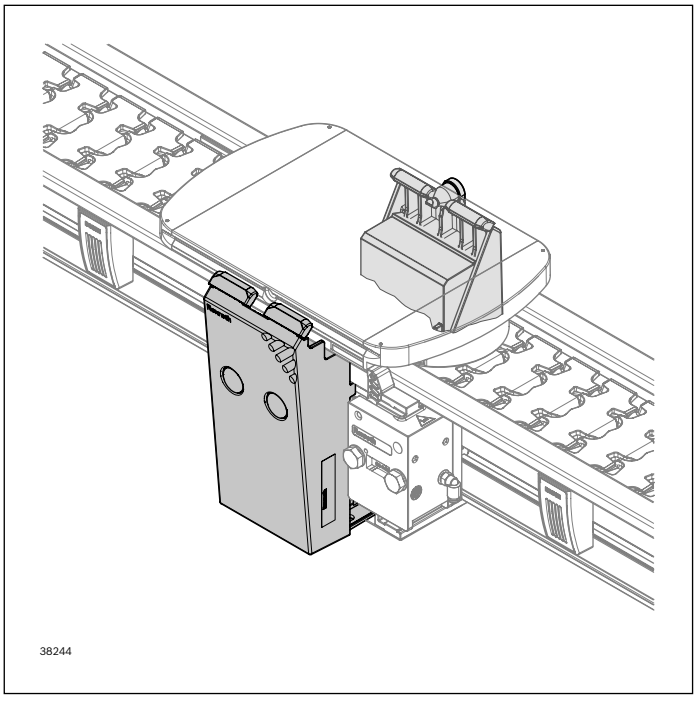


00123118

[1)] Center offset of the workpiece pallet when it is positioned

[2)] Height offset of the workpiece pallet when it is positioned

Positioning unit PE-VF/C

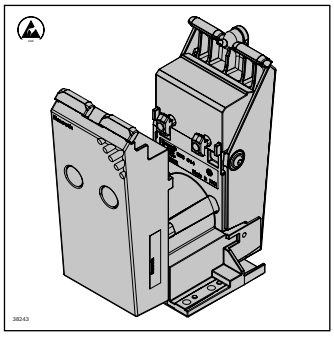


Required accessories:
- 2x throttle check valve G 1/8"
- Position sensor:
  - 2x sensor M12x45, 3 842 557 633
  - 1x switch bracket SH 2/HQ-R, 3 842 557 606
  - 1x switch bracket SH 2/HQ-L, 3 842 557 607

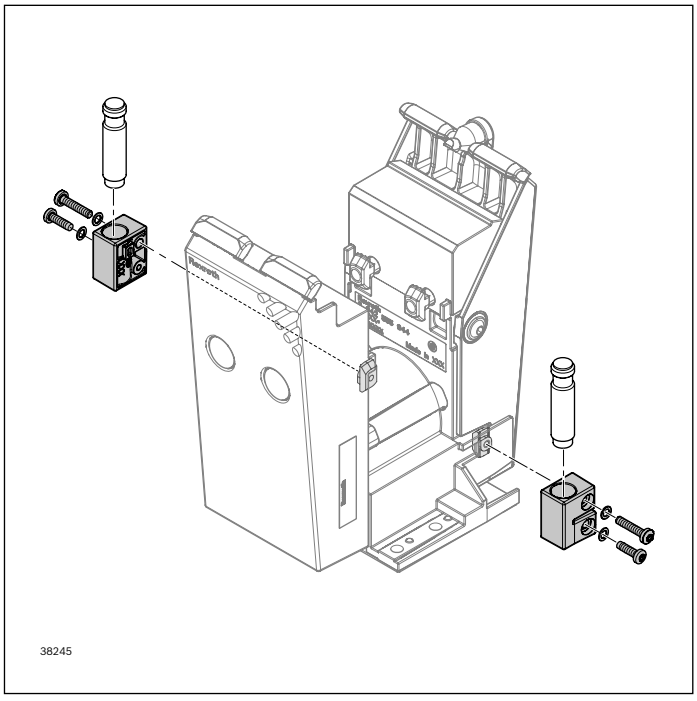
Scope of delivery:
- Including fastening parts (as shown)

Material:
- Positioning unit: Diecast aluminum
- Fastening parts: Steel; galvanized
- Cover caps: PA
- Clamping claws: PU

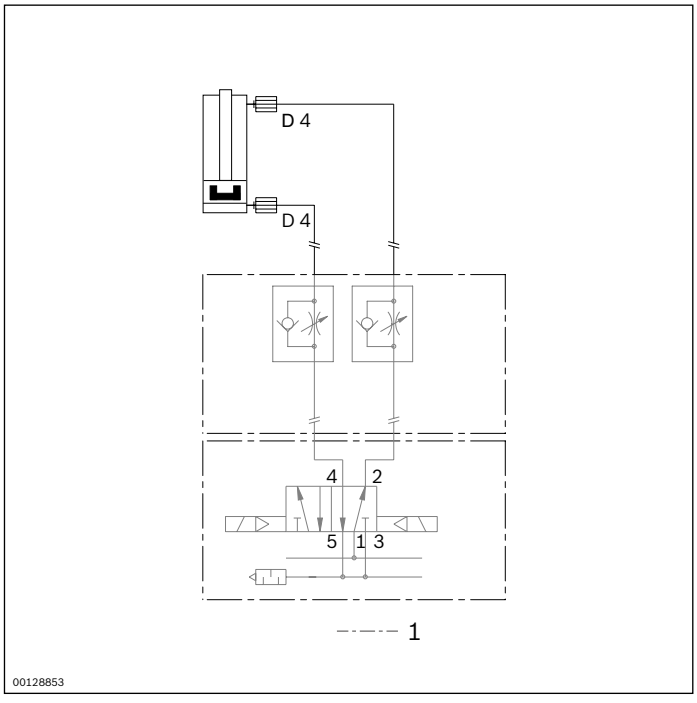
The positioning unit PE-VF/C is intended for use in clean ambient conditions. The WT is lifted approx. 1 mm above the transport level, thus eliminating the load on the conveyor chain during processing.
For rough ambient conditions, the positioning unit PE-VF/H is available.
- Positioning accuracy in the direction of transport: ± 0.15 mm (transverse: ± 0.1 mm, height: ± 0.1 mm)
- Maximum vertical press force (p = 4 bar): 400 N
- Maximum retention force (p = 4 bar) in the direction of transport: 300 N
- Maximum permissible torque in the plier area: 60 Nm
- Suitable for retrofitting without disrupting the lateral guide
- The switch bracket can be installed in any position
- Minimum length of the workpiece pallets in order to incorporate the positioning unit:
  Size 65: L = 125 mm
  size 90: L = 125 mm
- 2 positioning units can be combined for workpiece pallets with L > 250 mm. For this, the positioning mandrel is removed from one of the PEs and the workpiece pallets are fitted with eccentric centering bushings by the customer
- Position sensors (parts not included in the scope of delivery) with 2x sensor M12x45 (3 842 557 633) and 1x switch bracket each SH 2/HQ-R (3 842 557 606) and SH 2/HQ-L (3 842 557 607)



Positioning unit	No.
PE-VF/C	**3 842 557 090**



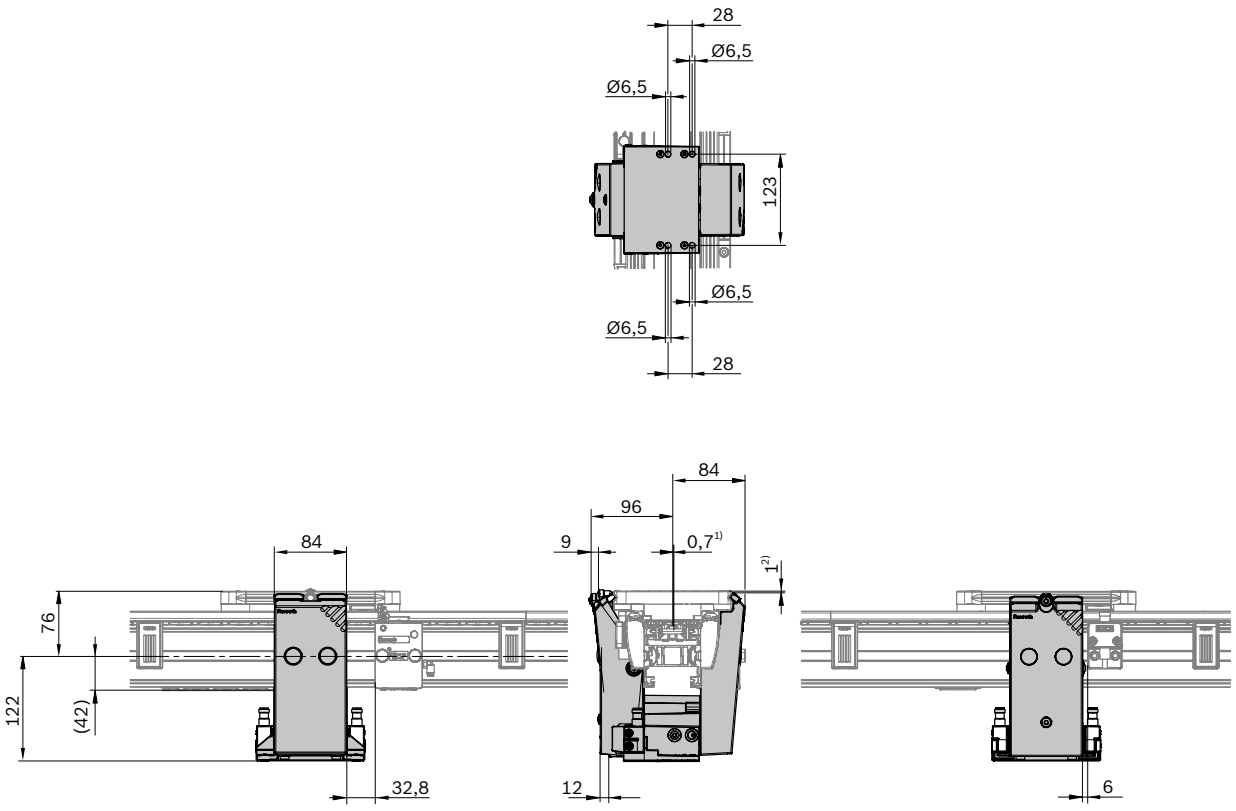
Position sensor	No.
M12x45 sensor	**3 842 557 633**
SH 2/HQ-R switch bracket	**3 842 557 606**
SH 2/HQ-L switch bracket	**3 842 557 607**



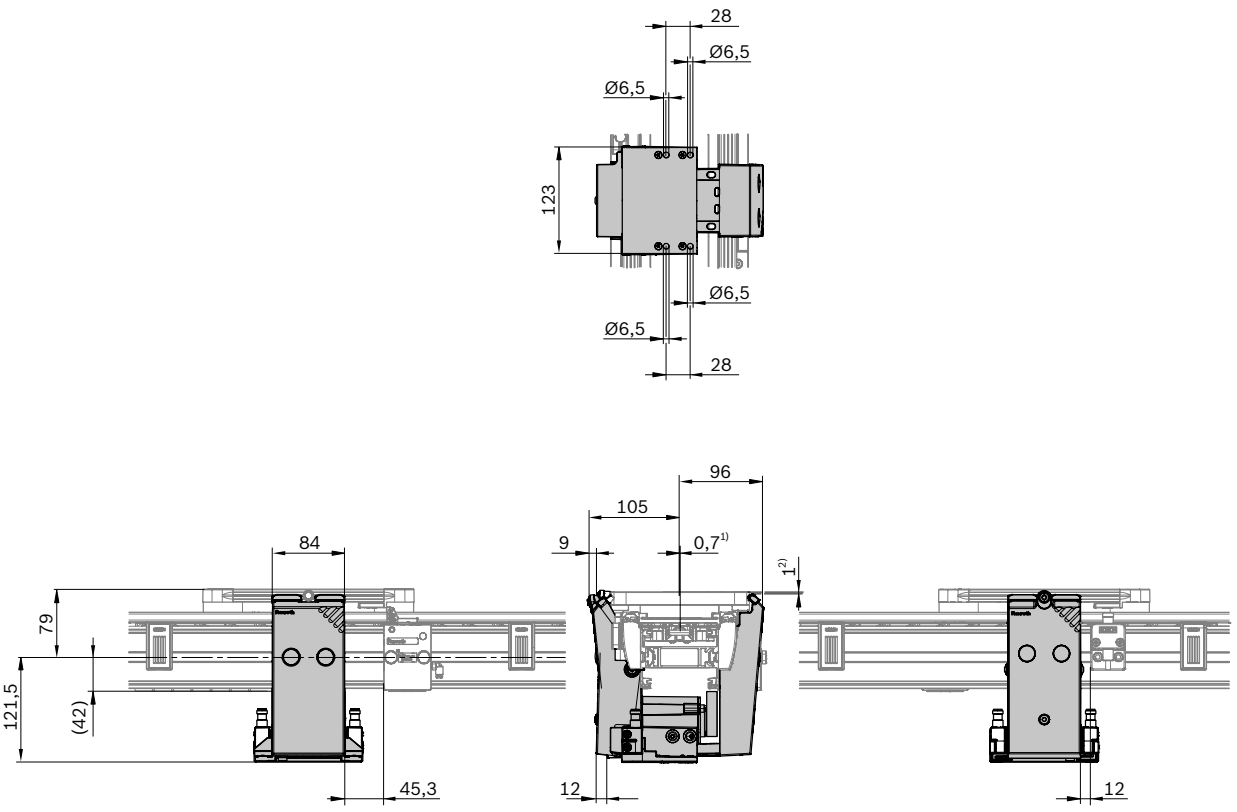
Circuit diagram

1 Not included in the scope of delivery

VF 65



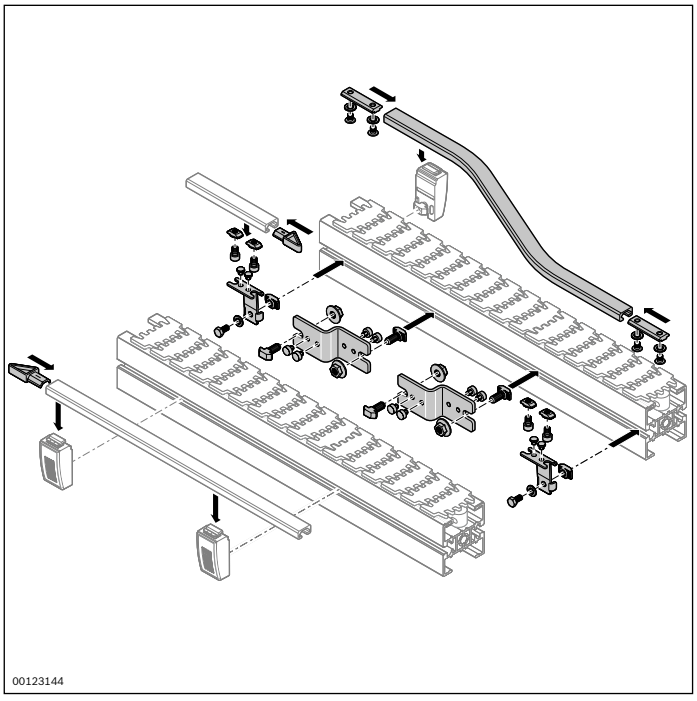
VF 90



[1)] Center offset of the workpiece pallet when it is positioned

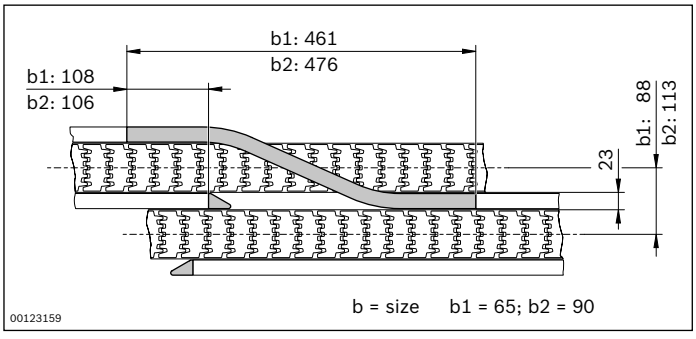
[2)] Height offset of the workpiece pallet when it is positioned

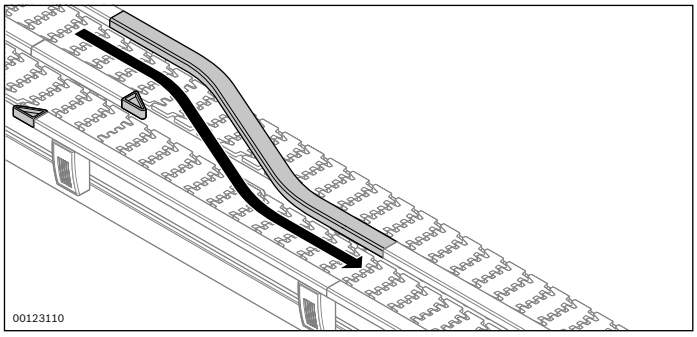
Section transfer



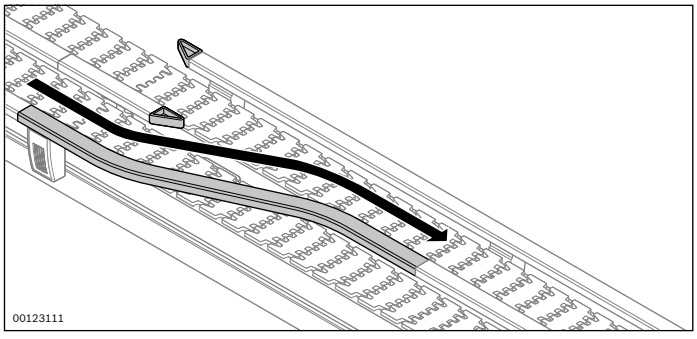
Assembly kit for a simple track change between two straight, parallel conveyor sections

Material:
- Guide rail: Aluminum; natural, anodized
- Section link, holder: Stainless steel
- Fastening parts: Steel; zinc-plated
- End caps: PA; black



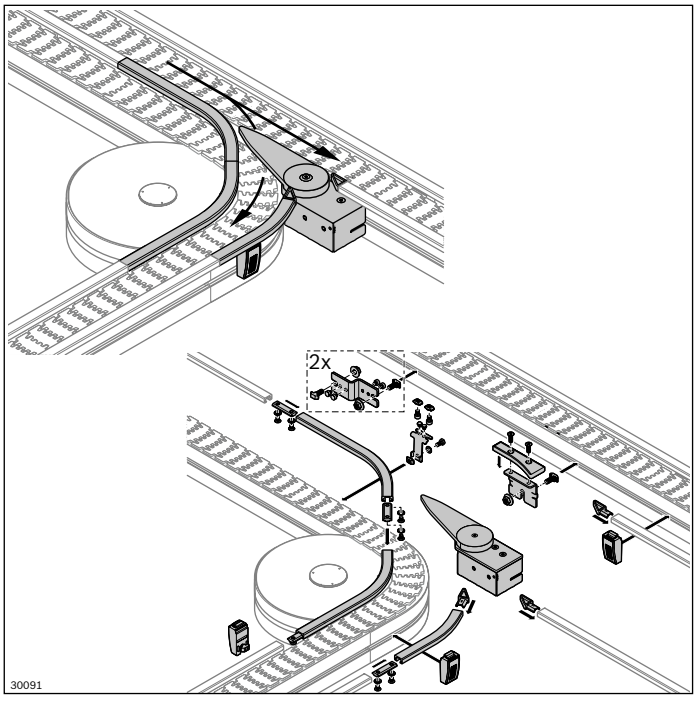


Section transfer, right	No.
VF*plus* 65	**3 842 535 003**
VF*plus* 90	**3 842 535 001**



Section transfer, left	No.
VF*plus* 65	**3 842 535 004**
VF*plus* 90	**3 842 535 002**

Diverter

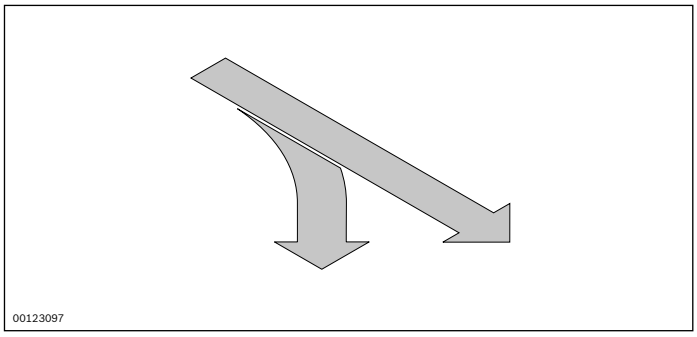


Required accessories:
- 2 throttle check valves G 1/8" (not included in the scope of delivery)

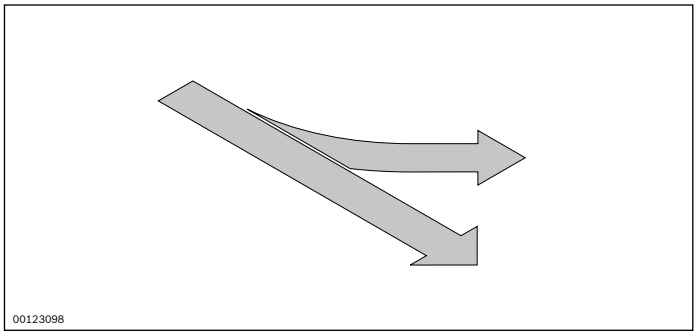
Scope of delivery:
- Kit incl. fastening parts (as shown)

Material:
- Diverter blade, sliding surface support: PA; black

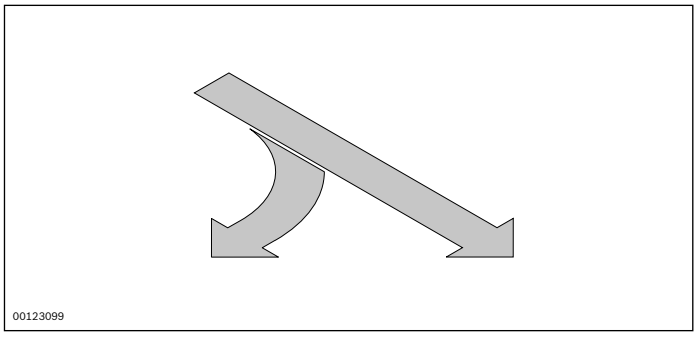
For optionally changing tracks between different, curving conveyor sections
- Complete assembly kit to install on existing sections or curve wheels
- The support enables the workpiece pallet to move safely over the section gap with no danger of tipping.
  No accumulation operation against the diverter blade!



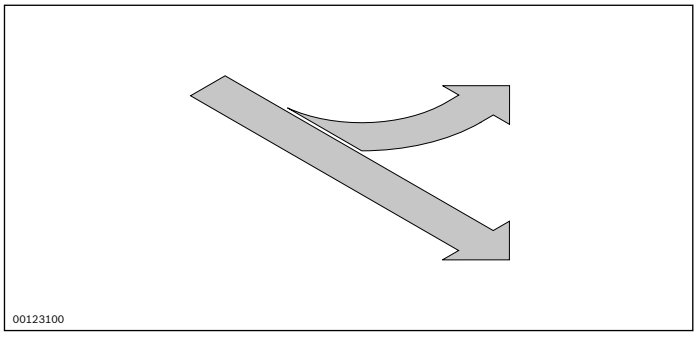
45° diverter, right	**No.**
VF*plus* 65	**3 842 551 104**
VF*plus* 90	**3 842 551 090**



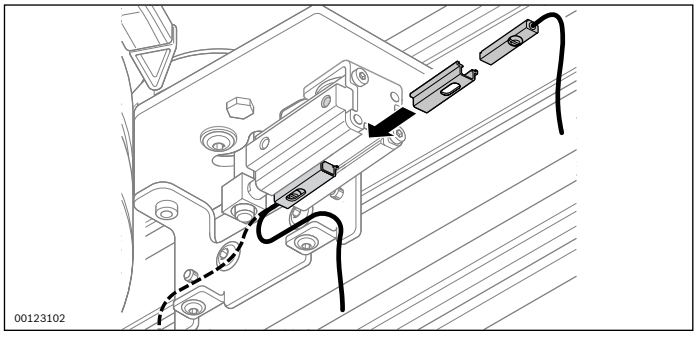
45° diverter, left	**No.**
VF*plus* 65	**3 842 551 105**
VF*plus* 90	**3 842 551 091**



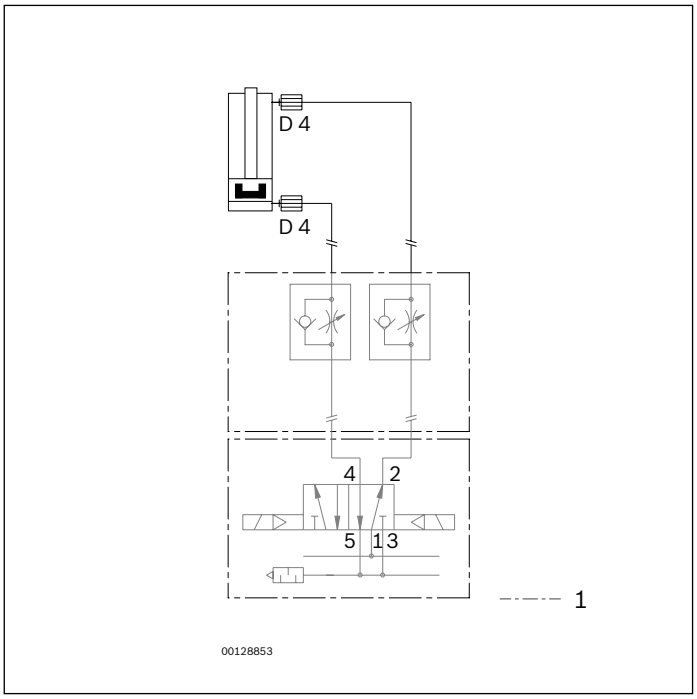
90° diverter, right	**No.**
VF*plus* 65	**3 842 551 111**
VF*plus* 90	**3 842 551 110**



90° diverter, left	**No.**
VF*plus* 65	**3 842 551 121**
VF*plus* 90	**3 842 551 100**

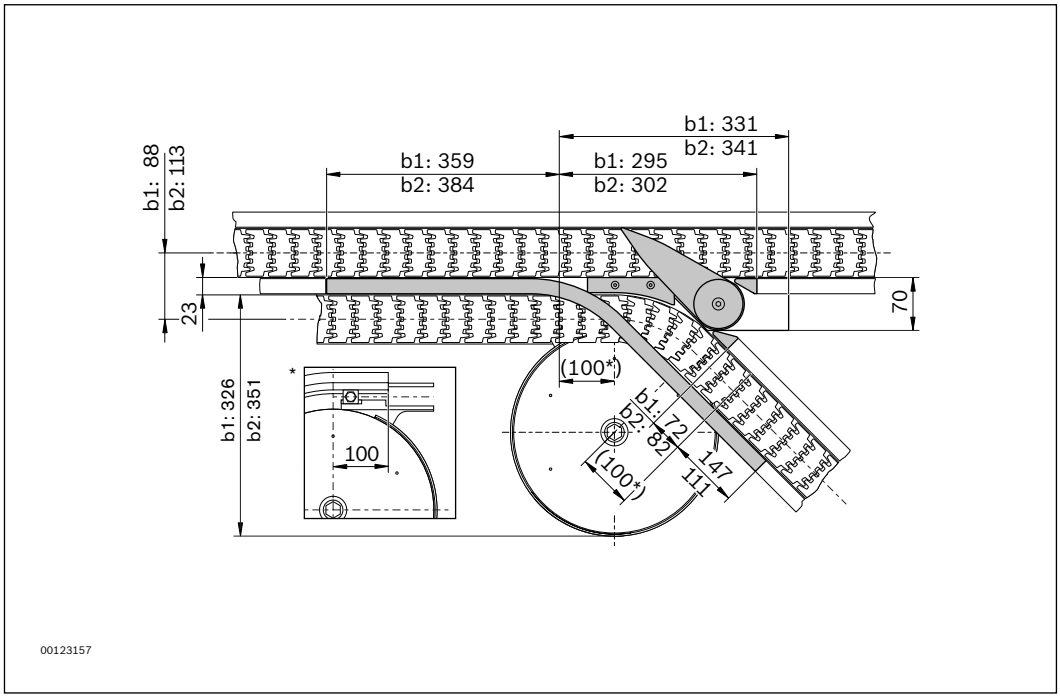


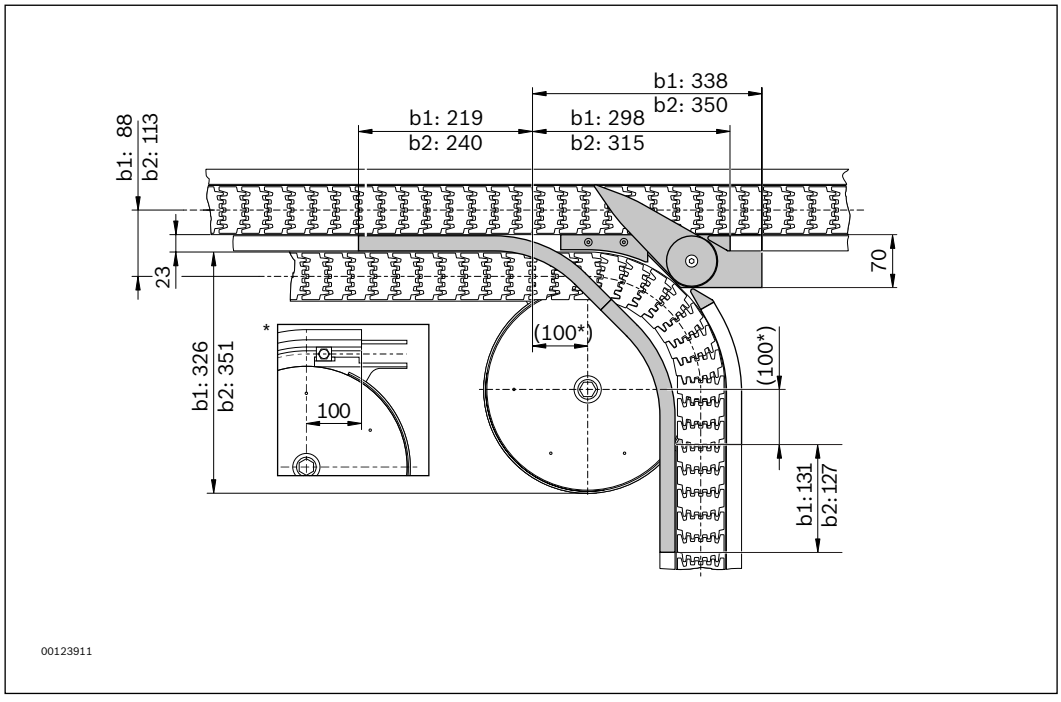
Position sensor diverter	**No.**
	3 842 535 150



Circuit diagram

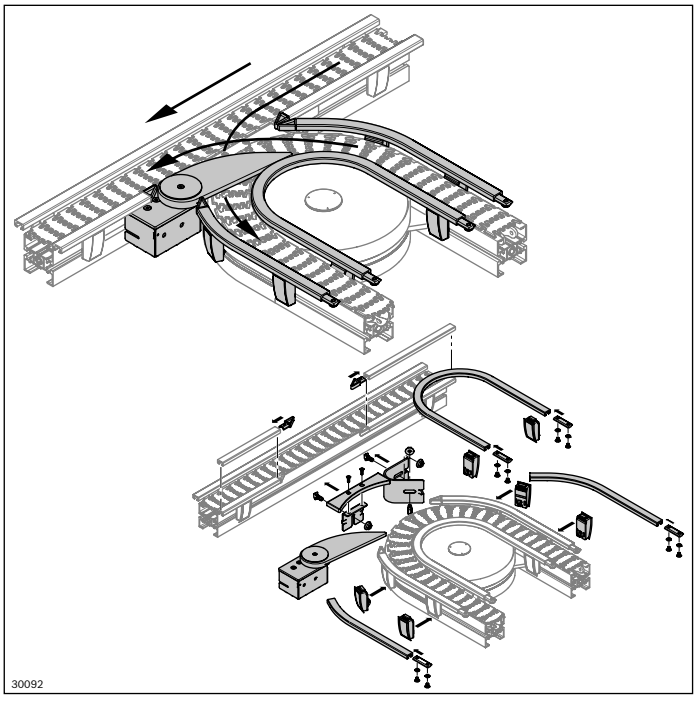
1 Not included in the scope of delivery





b = size
b1 = 65; b2 = 90

Cross-diverter



The cross-diverter combines the functions of junction and diverter in a shorter overall length.

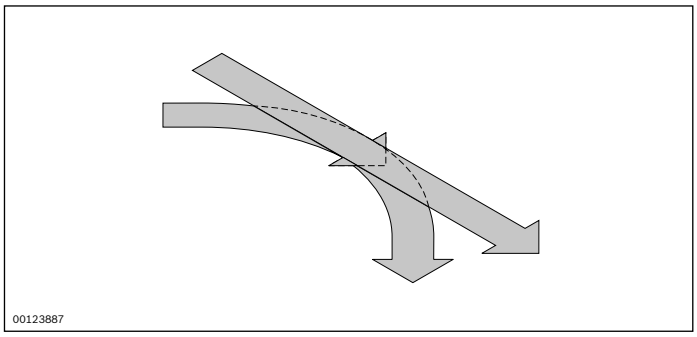
- Complete assembly kit to install on existing sections or curve wheels
- For problem-free section transfer, the load center of gravity must be in the center of the optimal range (see p. 238)
- Permitted speed range:
  min. 4 m/min, max. 18 m/min
- The support enables the workpiece pallet to move safely over the section gap with no danger of tipping.
  No accumulation operation against the diverter blade!

Scope of delivery:

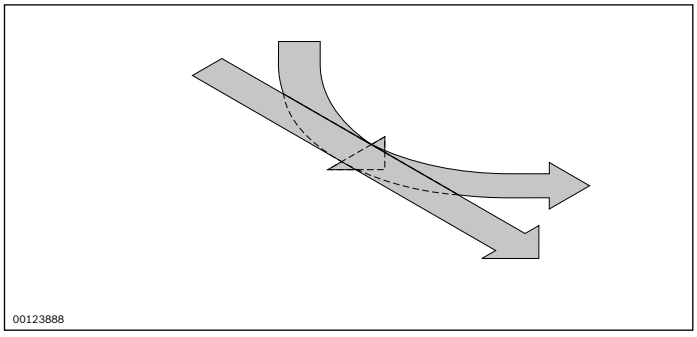
- Kit incl. fastening parts (as shown)

Material:

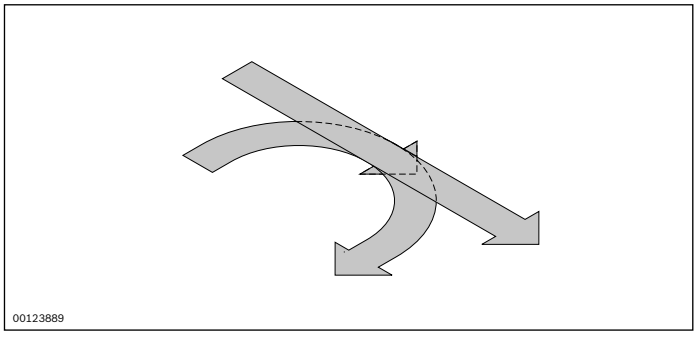
- Diverter blade, sliding surface support: PA; black



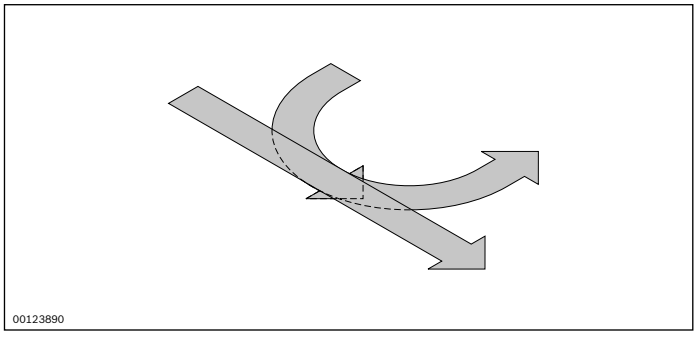
45° cross-diverter, right	**No.**
VF*plus* 65	**3 842 551 086**
VF*plus* 90	**3 842 551 084**



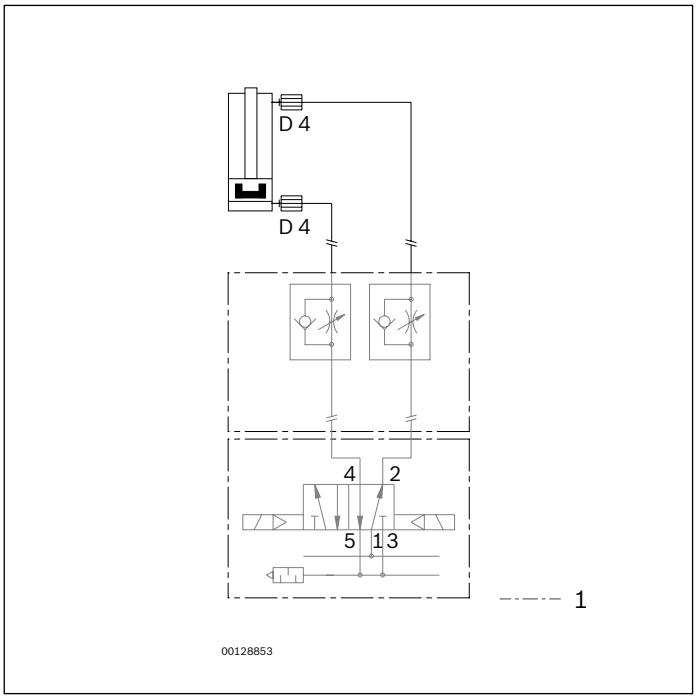
45° cross-diverter, left	**No.**
VF*plus* 65	**3 842 551 140**
VF*plus* 90	**3 842 551 139**



90° cross-diverter, right	**No.**
VF*plus* 65	**3 842 551 108**
VF*plus* 90	**3 842 551 074**

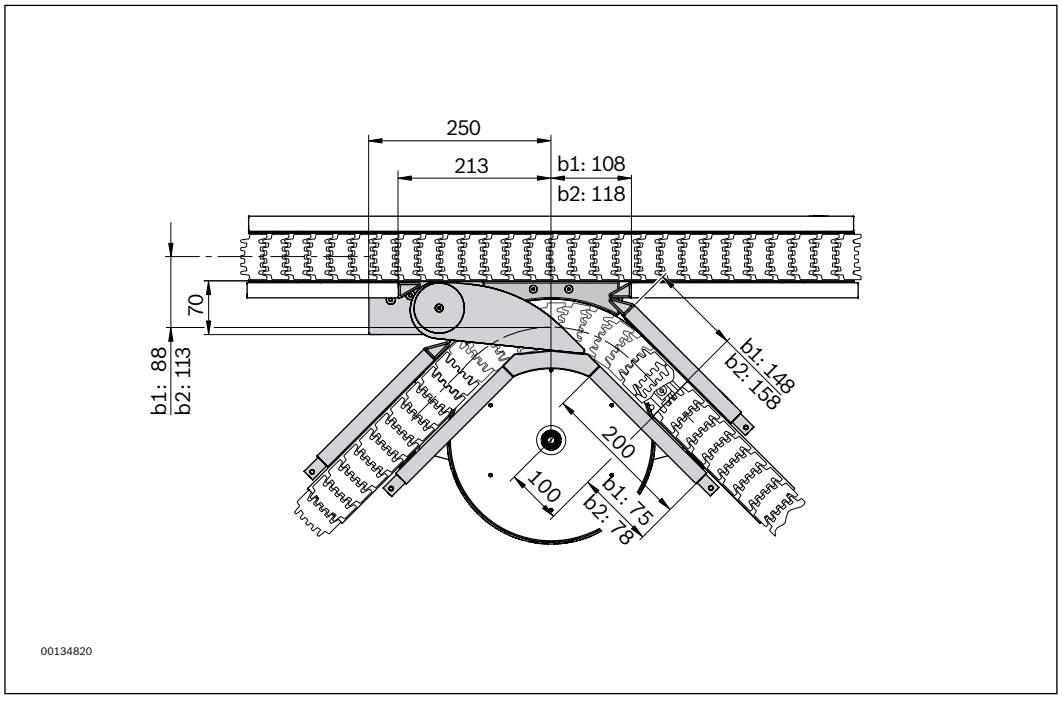


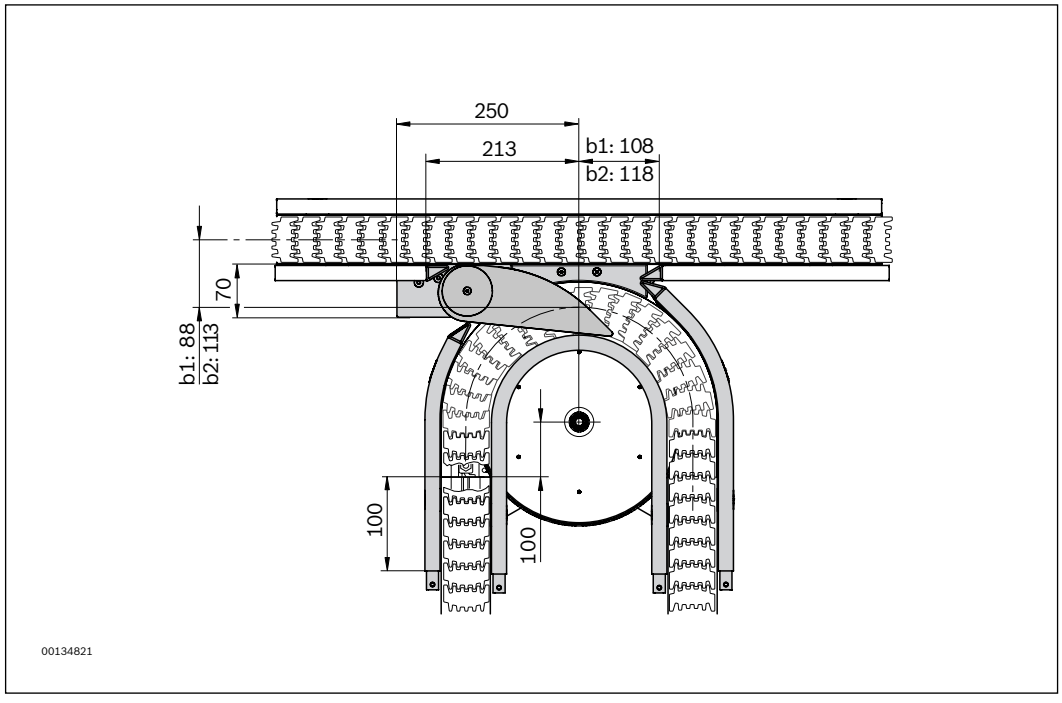
90° cross-diverter, left	**No.**
VF*plus* 65	**3 842 551 141**
VF*plus* 90	**3 842 551 138**



Circuit diagram

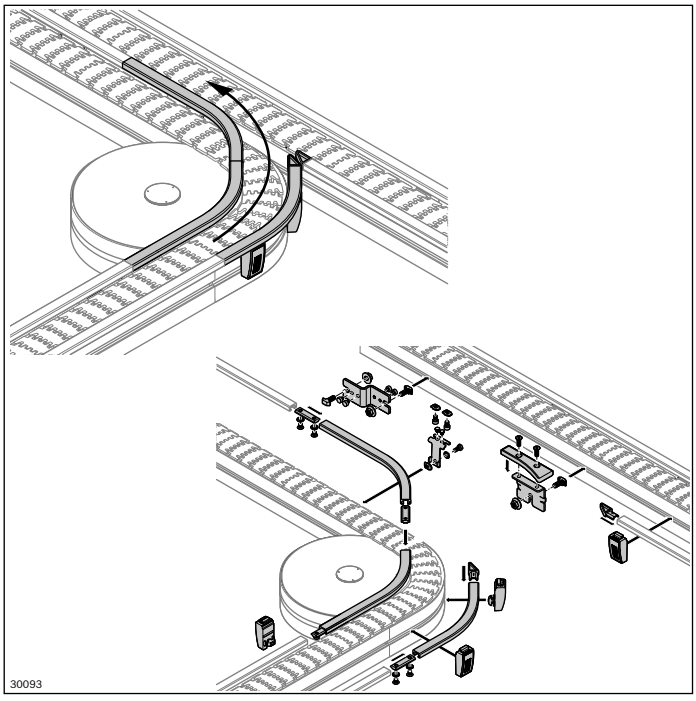
1 Not included in the scope of delivery





b = size
b1 = 65; b2 = 90

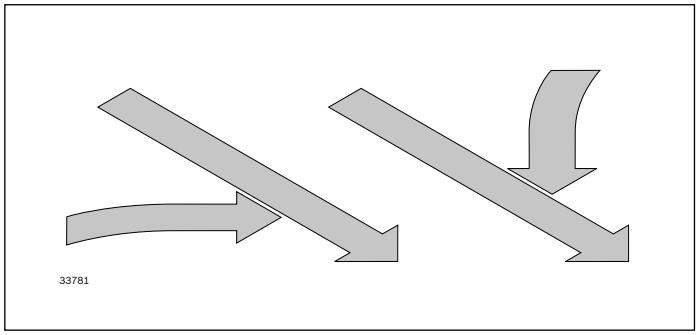
Junction



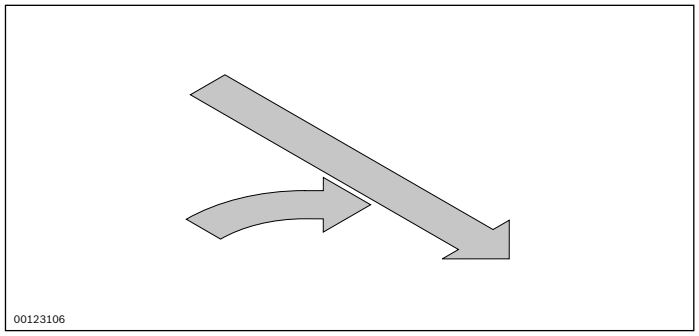
Scope of delivery:
– Kit incl. fastening parts (as shown)

Material:
– Sliding surface support: PA; black

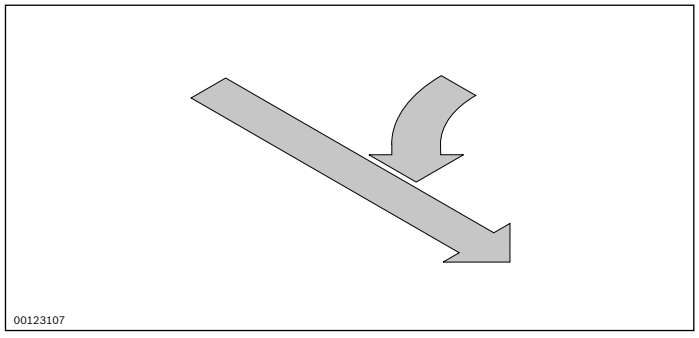
Used for the junction of different, curving conveyor sections
– Complete assembly kit to install on existing sections or curve wheels
– The support enables the workpiece pallet to move over the section gap with no danger of tipping



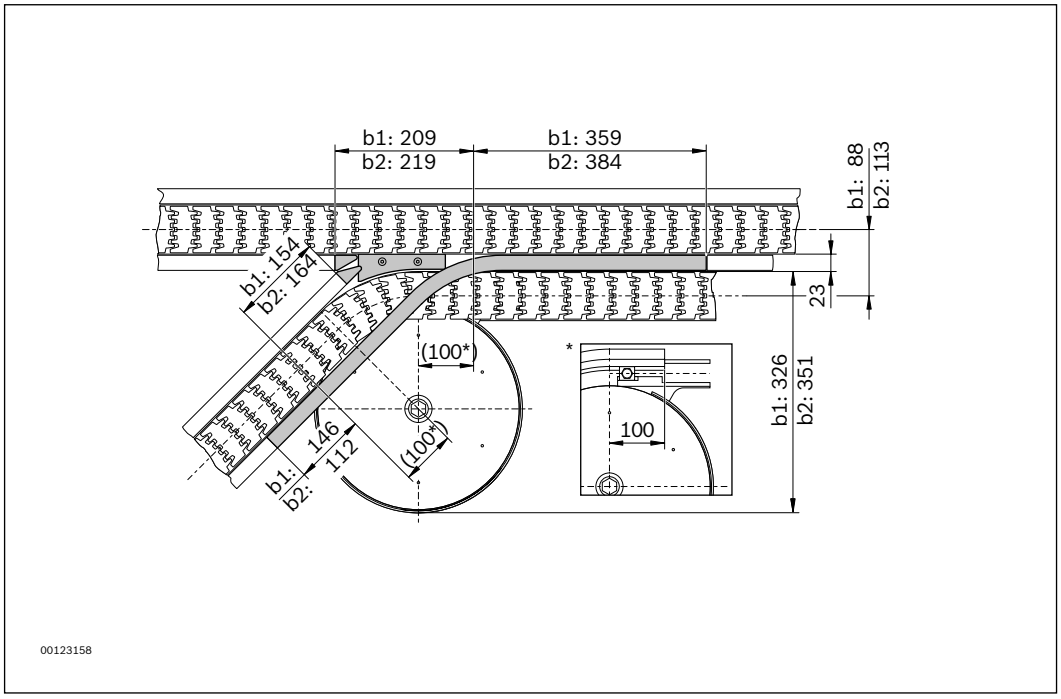
45° junction, right/left	**No.**
VF*plus* 65/90	**3 842 551 122**

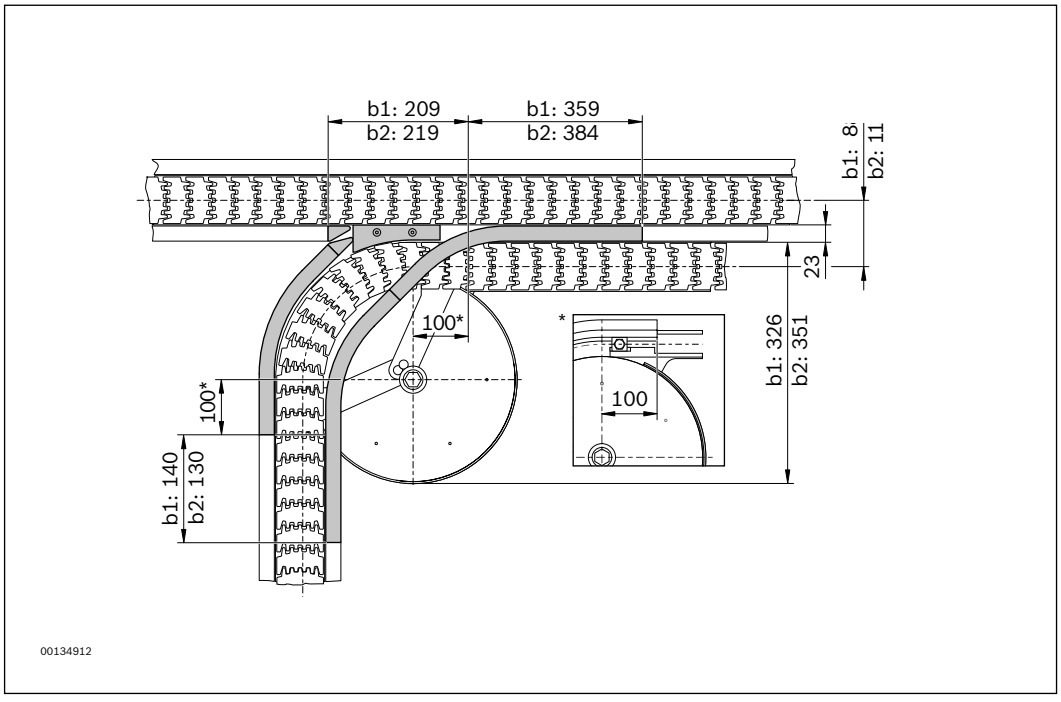


90° junction, right	**No.**
VF*plus* 65	**3 842 551 128**
VF*plus* 90	**3 842 551 125**



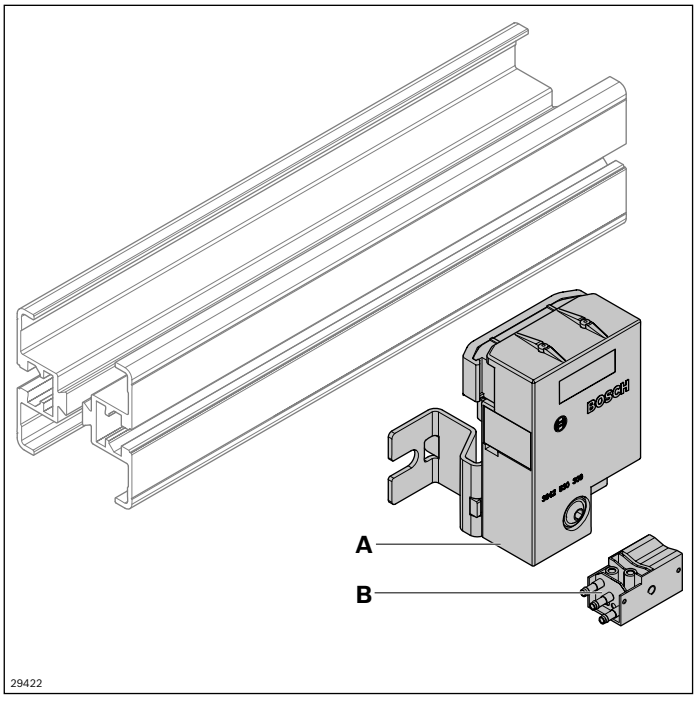
90° junction, left	**No.**
VF*plus* 65	**3 842 551 137**
VF*plus* 90	**3 842 551 124**





b = size;
b1 = 65; b2 = 90

Rocker system WT



The rocker can be used for area monitoring, accumulation pressure regulation, and workpiece pallet recognition.
A query can be either made electrically with a proximity switch or pneumatically to directly convert the shutter actuation into a pneumatic signal. Simple, purely pneumatic accumulation pressure regulation can be established in conjunction with a stop gate VE 2/VF.
– Monitoring range: 60 mm

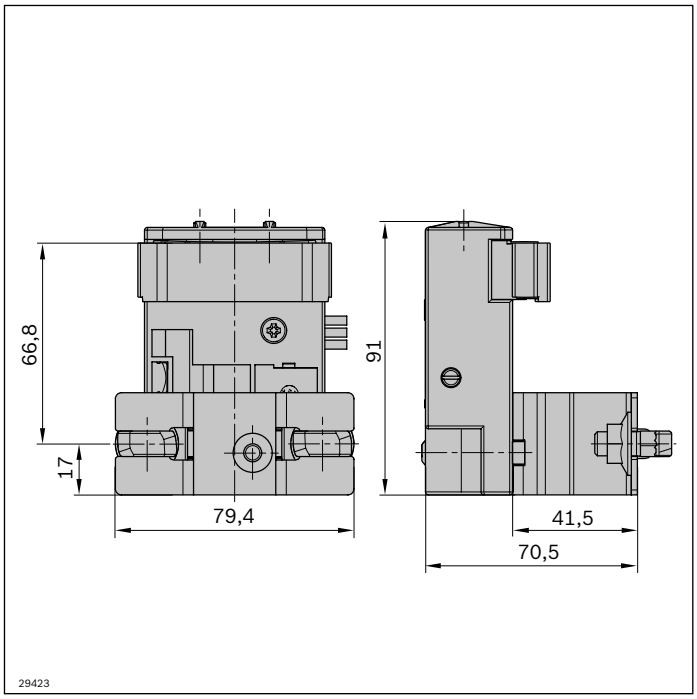
- The rocker does not protrude beyond the top edge of the workpiece pallet
- A sideways query on the workpiece pallet plate ensures the lateral guide profiles are not interrupted

Accessories:
– Pneumatic cylinder switch (**B**) (3 842 532 151)
– 12 mm proximity switch, round with switching distance S_N >4 mm

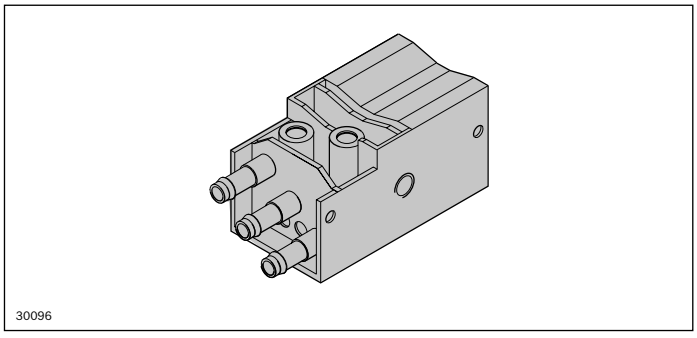
Scope of delivery:
– Set incl. fastening material

Material:
– Non-rusting steel 1.4301, PA

Condition on delivery:
– Some assembly required

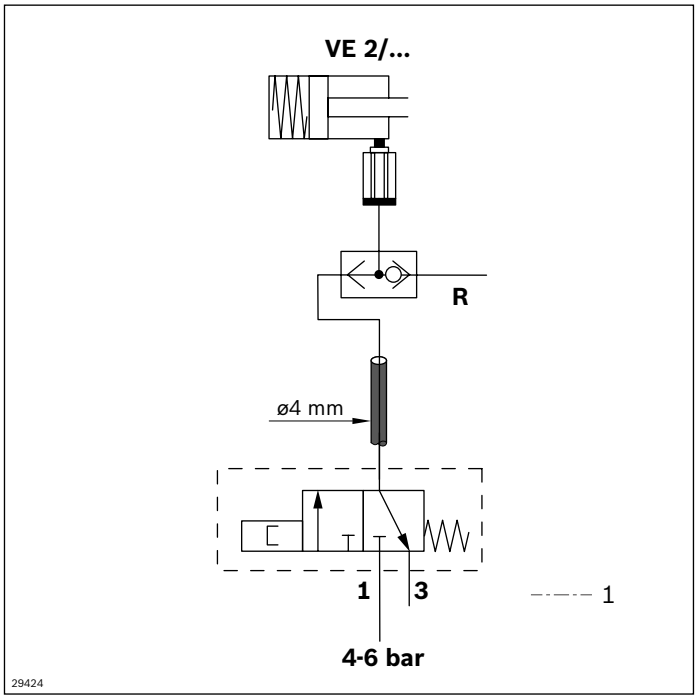


Rocker		No.
A	1 pc	**3 842 547 464**



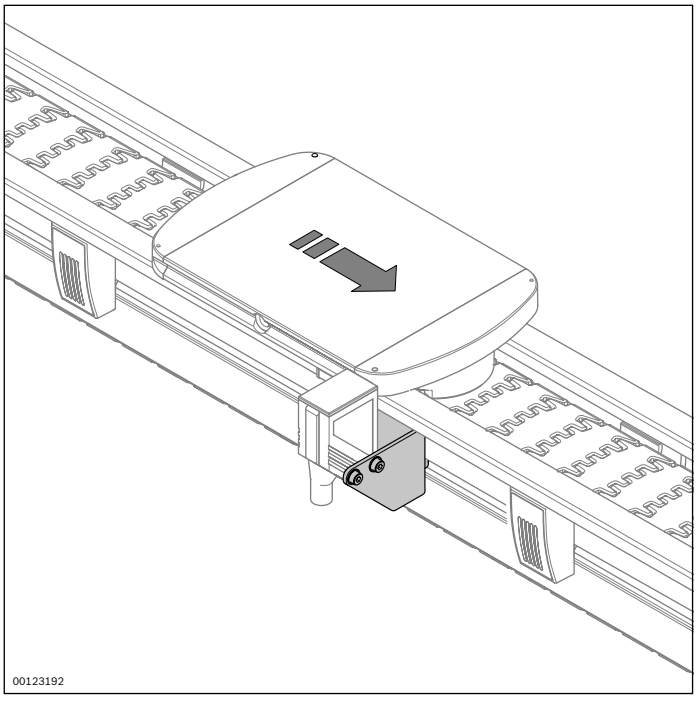
Pneumatic cylinder switch		No.
B	1 pc	**3 842 532 151**

Circuit diagram



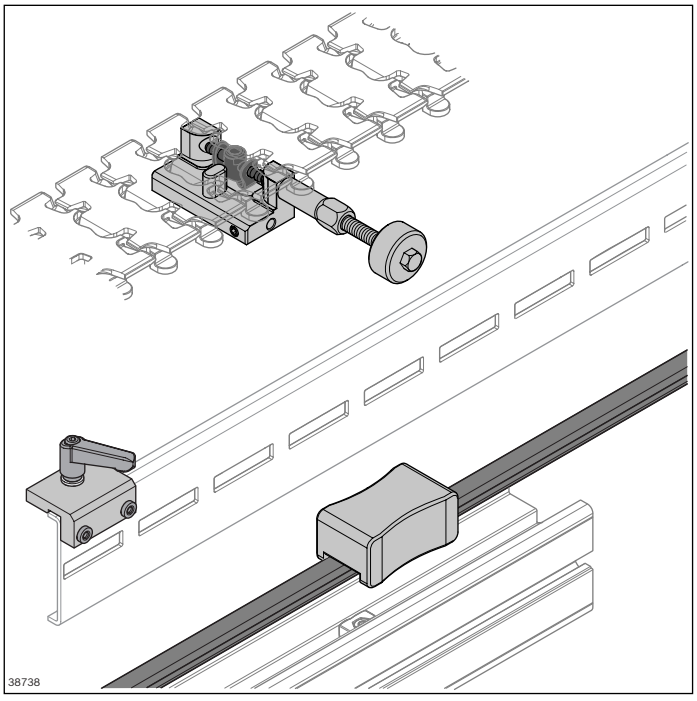
1 Not included in the scope of delivery

Identification systems ID 15 and ID 200

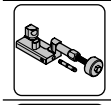
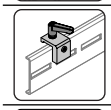
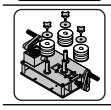


Assembly kits and mobile data tags for identification systems ID 15 and ID 200 for use in VarioFlow *plus* systems can be found in the RFID systems catalog (3 842 541 003).

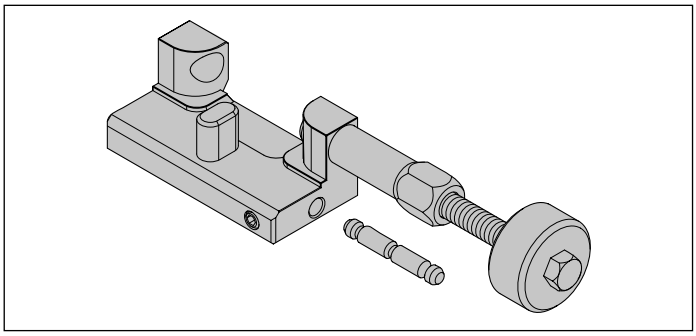
Tools



Convenient assembly with the appropriate tool

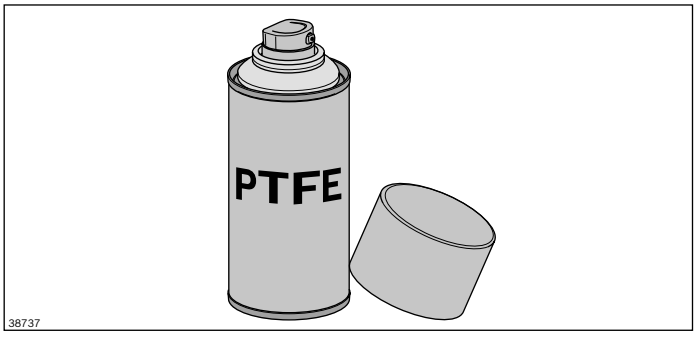
	**Chain assembly tool**	**288**
	**PTFE spray**	**288**
	**Sliding rail assembly tool**	**288**
	**Drilling jig**	**289**
	**Miter cutter**	**289**
	**Safety coupling tool**	**289**
	**Bending tool for lateral guide**	**290**

Tools



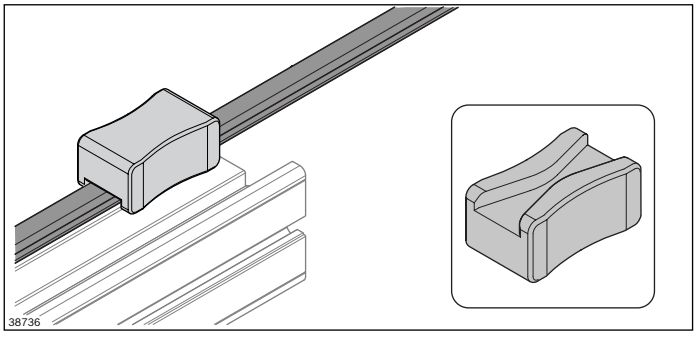
- Very compact assembly tool for use in constricted spaces to insert and remove the chain pin
- Simple overhead two-hand assembly is also always guaranteed
- A hexagon on the spindle makes it possible to use a cordless screwdriver as drive

Chain assembly tool	No.
	3 842 557 025



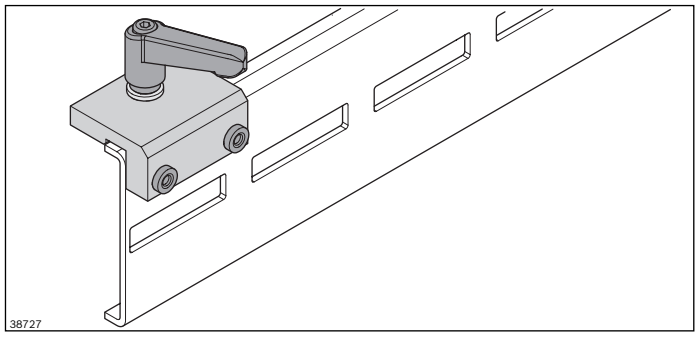
- PTFE spray for reducing friction and noise emission

PTFE spray	No.
	3 842 546 150



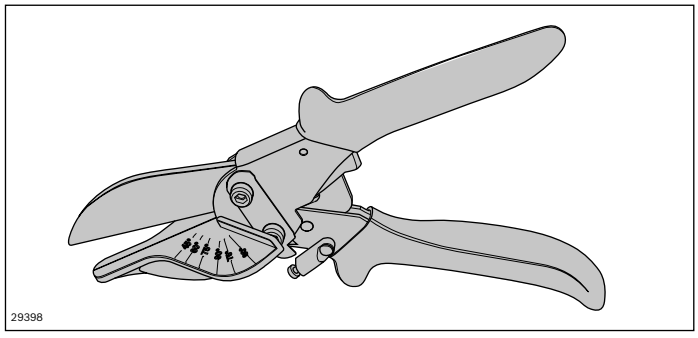
- Assembly tool to easily and effortlessly clip the sliding rail onto the section profile

Sliding rail assembly tool	No.
	3 842 549 738



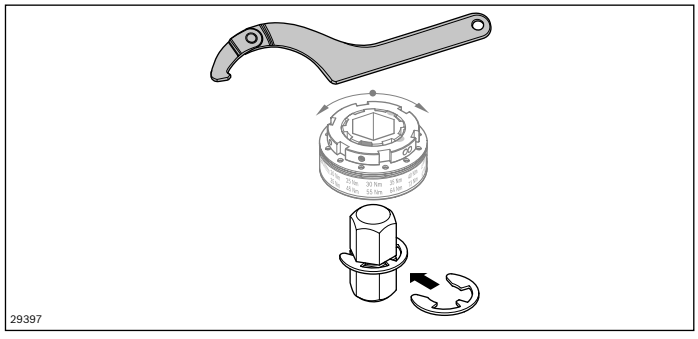
- The drilling jig can be right or left-justified and is used to drill an accurately positioned hole to secure the sliding rail both on the section profile as well as on the support profile

Drilling jig	No.
	3 842 553 518



- The sliding rail can be easily and quickly cut to the correct length and angle with the miter cutter

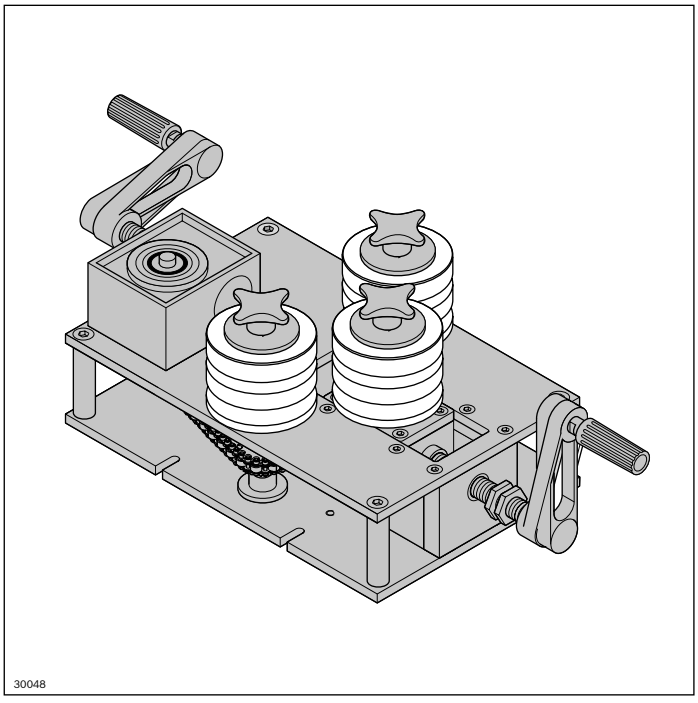
Miter cutter	No.
	3 842 547 982



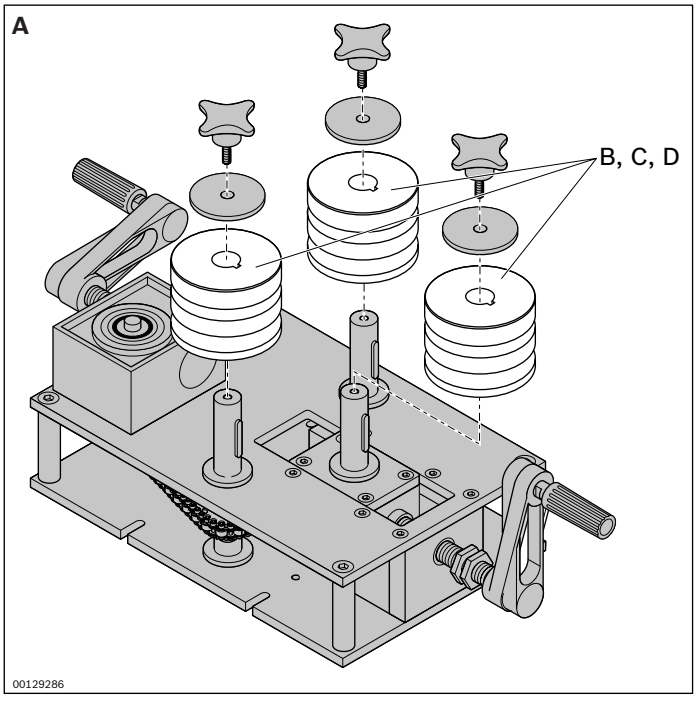
- Tool for setting the customer-specific torque of the optionally available safety coupling of the drive kit

Safety coupling tool	No.
	3 842 549 388

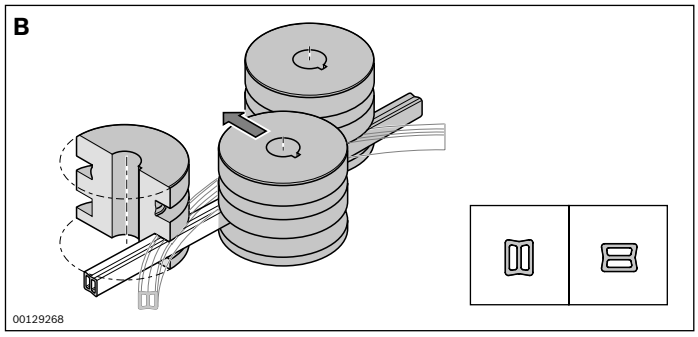
Bending tool for lateral guide



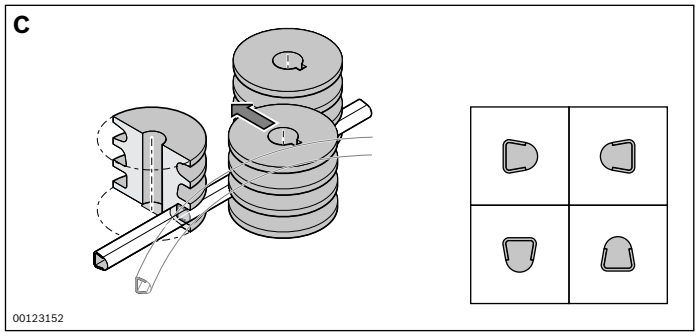
Crank-operated bending tool (A, without roller set) for bending profiles. Roller set adjusted to fit the profile rail to laterally guide the transported material.
We recommend that you let your Bosch Rexroth distribution partner carry out the bending of lateral guides.



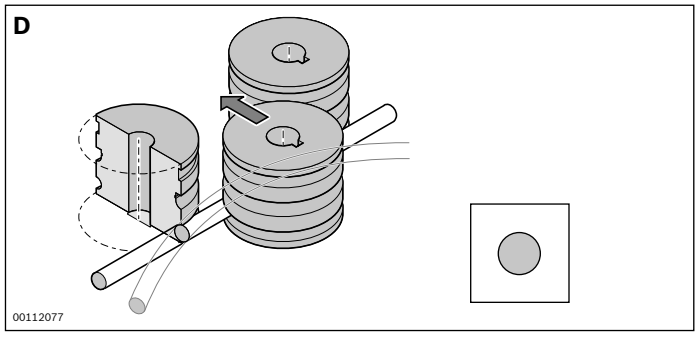
Bending tool for lateral guide		No.
A	1	**3 842 528 531**



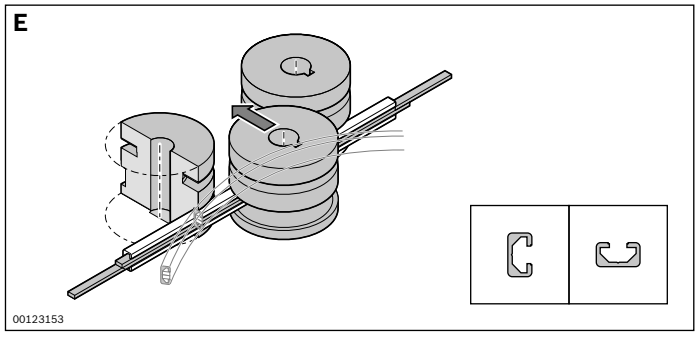
Roller set	No.	
B	1	**3 842 538 773**



Roller set	No.	
C	1	**3 842 529 236**

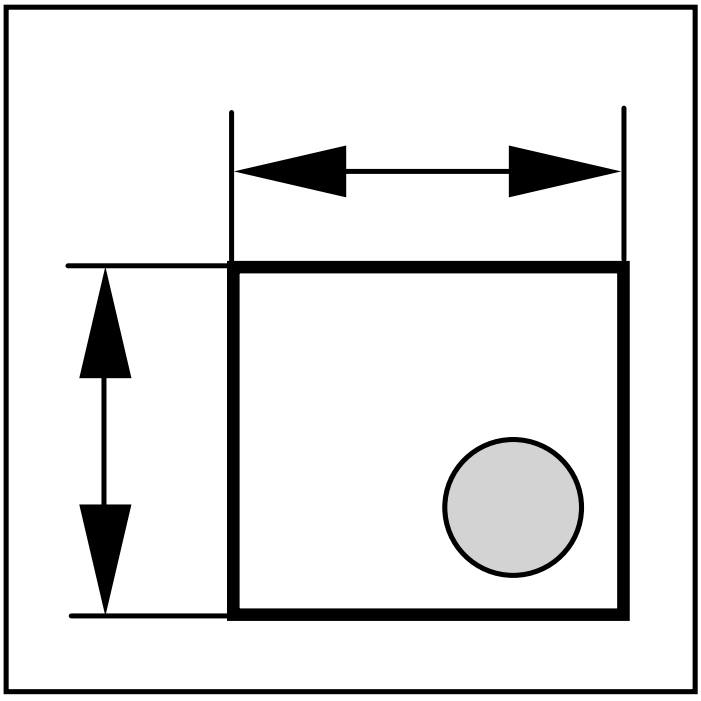


Roller set	No.	
D	1	**3 842 533 921**



Roller set	No.	
E	1	**3 842 532 259**

Technical data



Calculation of chain tensile forces	**294**
Sliding rail selection	**300**
Actual chain and sliding rail lengths of the components	**302**
Drive data/Motor data	**303**
Transport and nominal speed vN	**306**
Motor connection	**307**
Frequency converter motec 8400 (FU)	**308**
Ordering parameters for motors SEW (GM = 2)	**310**
Combination matrix	**313**
Use in clean rooms	**316**
Conveyor noise level	**318**
Resistance of the chain against chemicals	**320**
Material use	**322**

Calculation of chain tensile forces

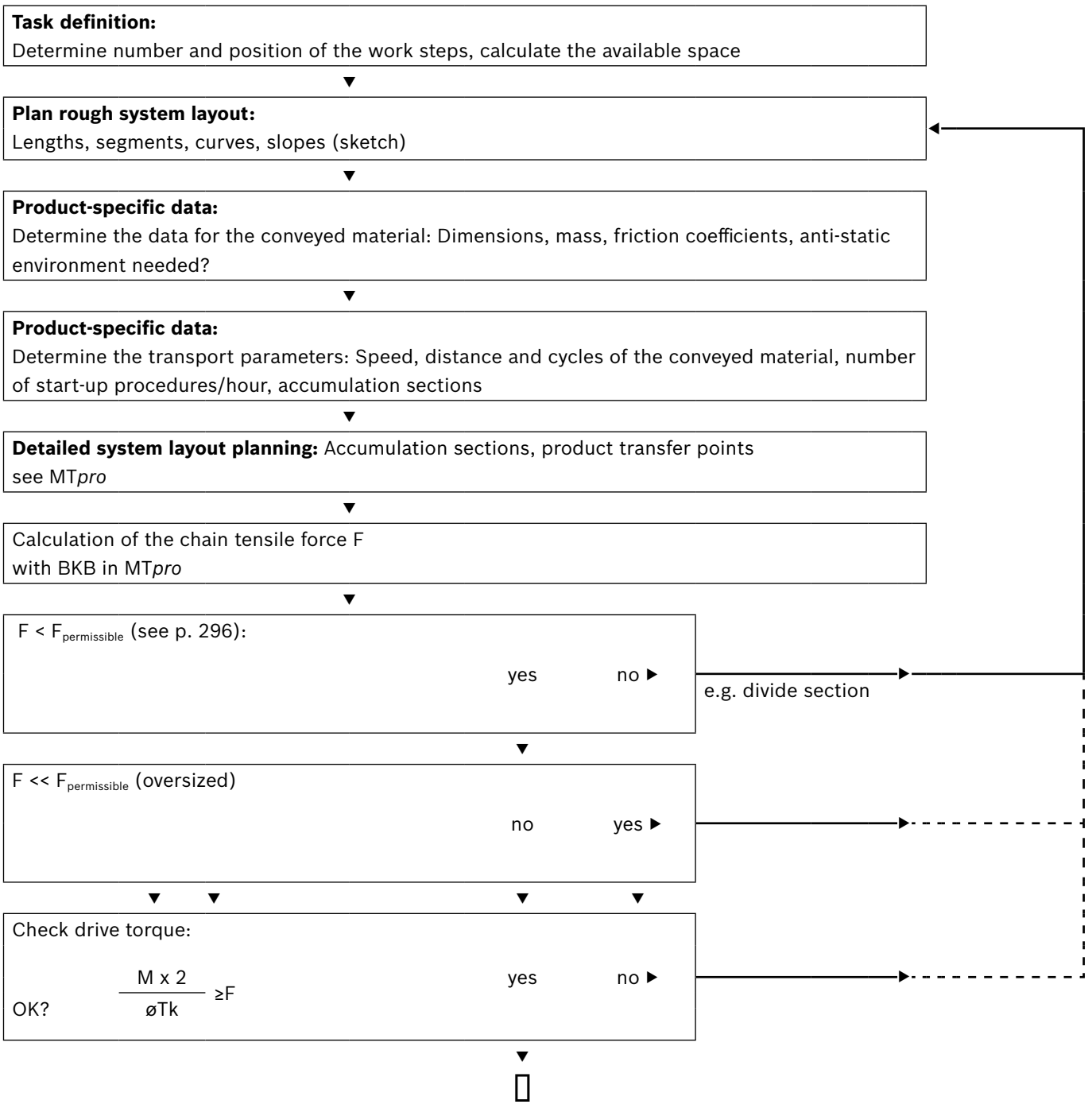


MT*pro* with BKB*soft* – the software for chain calculation
With the BKB*soft* software you can calculate the maximum chain tensile force and the required drive torque quickly and efficiently.

The tensile force of the conveyor chain is made up of multiple individual forces:
- Sliding friction force between unloaded chain and sliding rail
- Sliding friction force between loaded chain and sliding rail
- Sliding friction force between accumulated goods and chain
- Tangential components of the goods' and chain's force due to weight in inclining sections
- Sliding friction force in curves, between the chain and the inner sliding rail in the curve

The BKB*soft* calculation software, included in the MT*pro* planning tool, assists you when designing and making the necessary calculations for your VarioFlow chain conveyor system.

Layout procedure for a chain conveyor system



$$F_{permissible} = F_{(a)} \cdot K_T \cdot c_B$$

$$F_{(v)} < F_{(L)} \Rightarrow F_{(a)} = F_{(v)}$$
$$F_{(v)} > F_{(L)} \Rightarrow F_{(a)} = F_{(L)}$$

$F_{(v)}$, see p. 297
$F_{(L)}$, see p. 298
K_T, see p. 298
c_B, see p. 299

Calculating the permissible chain tensile force and the permissible drive torque
The permissible chain tensile force depends on the transport speed as well as the ambient and operating conditions.
If the calculated chain tensile force exceeds the permissible force, you can:
– Divide the section into various chain conveyors.
– Alter the system layout, e.g. by replacing curves with curve wheels or, if possible, shorten the section.
– Shorten the accumulation sections.
– Reduce the speed.

$$M = M_N \cdot \frac{P_V}{P_N}$$

M_N, see p. 306

$\frac{P_V}{P_N}$ see p. 305

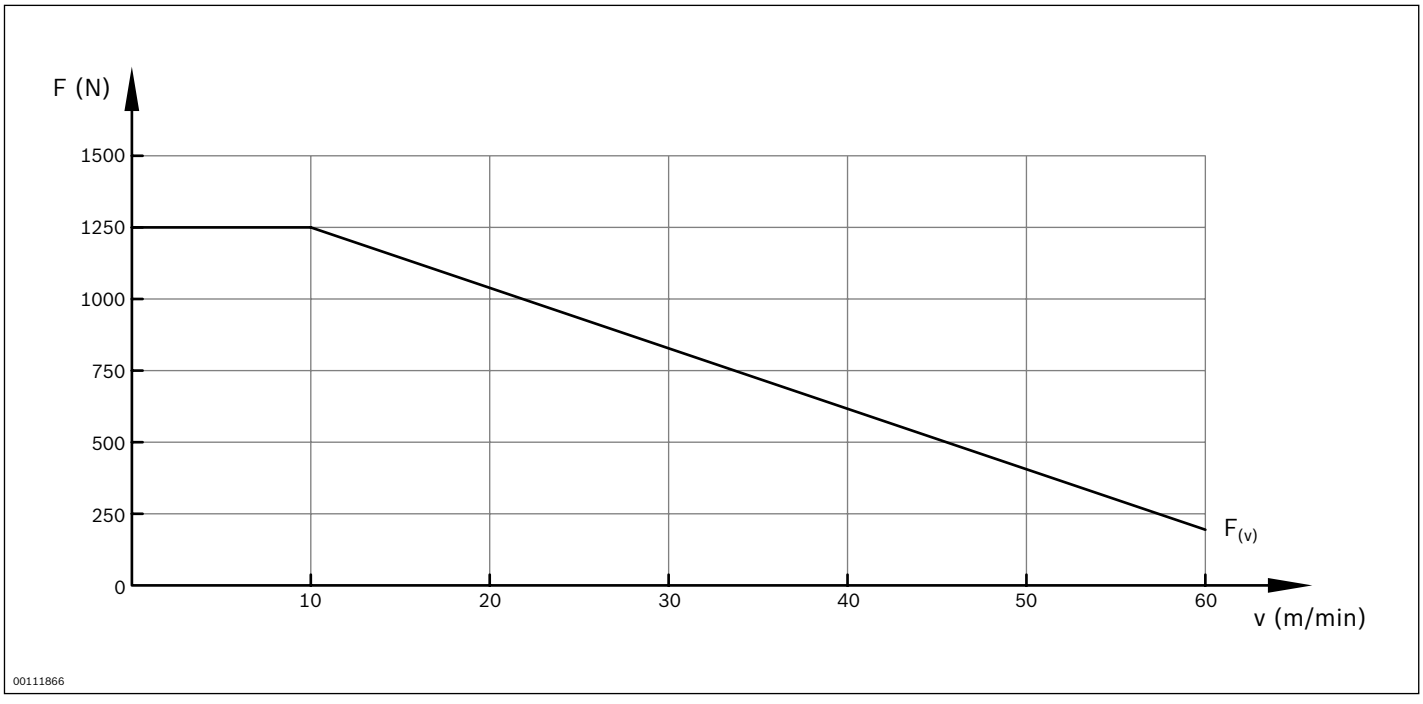
The permissible drive torque of a gear motor is dependent on the transport speed (v), the operating mode (with/without FU), the ambient temperature and the mains frequency.
If the necessary calculated drive torque is greater than that of the selected gear motor, you have the following options:
– Reduce the chain tensile force (F).
– Reduce the speed (v) and use a gear motor with a higher drive torque, see p. 304.
– Change the operating conditions (e. g. the ambient temperature).

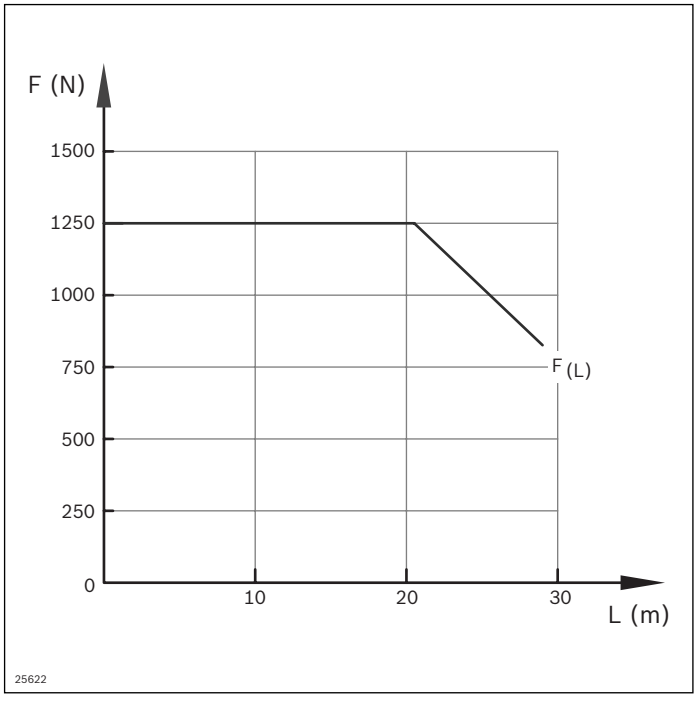
Conveyor chain
The technical data of the conveyor chain are included in the chain tensile force calculation as basic data.
Please observe the dependence of the breaking force values on the temperature, see p. 298

Permissible section load of the conveyed goods q_{Fi}:
30 N/chain link (34.5 mm)

	Conveyor chain section load (own weight N/m)						
	Flat conveyor chain	**Static friction chain**	**Accumulation roller chain**	**Universal chain**	**Cleated chain**	**Clamping chain 3L**	**Clamping chain 5L**
VF*plus* 65	9.5	10	16.0	9.5	10.0		
VF*plus* 90	11.7	12.4	20.5	11.7	12.4	25.3	27.6
VF*plus* 120	13.5	14.5	25.4	13.5			
VF*plus* 160	16.7	18.1					
VF*plus* 240	20.4	22.5					
VF*plus* 320	22.3	25.2					

Permissible chain tensile force depending on the speed $F_{(v)}$ (N); max. 1250 N





Permissible chain tensile force depending on the length of the conveyor section; $F_{(L)}$ (N); max. 1250 N

Breaking force and chain elongation depending on the ambient temperature

The chain material (POM) displays viscoelastic behavior just as every polymer does. This elongates the chain during operation and it is necessary to regularly check the chain elongation and shorten the chain if needed.
A VarioFlow chain conveyor system can be operated without product accumulation and without curves in a temperature range from 0 °C ... + 60 °C. The influence of temperature needs to be taken into account in accumulation operation and for systems with curves.

Other temperatures available on request

Temperature T (°C)	**Breaking force factor K_T**	**Chain elongation** (%)
0	1.12	-0.2
20	1.00	0
40	0.96	0.2
60	0.94	0.5

Stick-slip effect

On conveyor systems with plastic chains, slipping known as the stick-slip effect (chain movement against the running direction) may occur in the rear transport area (before the return unit). This is the effect whereby sections of chain take on different running speeds in certain areas, ranging through to a brief standstill.
The effect is more pronounced the larger the distance from the drive. There is no stick-slip effect on the drive unit, as the chain is kept under optimal tension by the chain sprocket.

As a general rule, the stick-slip effect is mostly a visual and not a functional impediment for the continuous material flow. For certain applications, it is important to ensure that sections that may be susceptible to slipping are not used at points in the system with part positioning (e.g. printing).

Curve angles (horizontal/vertical)	**Curve factor k_α**
0° (section without curves)	1.0
Curve wheel 0° ... 180°	1.0
5°	1.05
7.5°	1.05
15°	1.1
30°	1.2
45°	1.3
60°	1.4
90°	1.6

Curve factor k_α

Additional sliding friction forces occur in curves.
They depend on the curve angle and are included in the required chain tensile force calculation via the curve factor.

Start-up procedures/h	**Operating factor c_B**
0 ... 1	1.0
2 ... 10	0.83
11 ... 30	0.71
> 30	0.62

Operating factor c_B

The permissible chain tensile force depends on the number of start-up procedures per time unit. Clocked operation leads to increased chain stress. The application factor is reduced when using a motor control such as a frequency converter. Intermediate values should be interpolated.

Sliding rail selection

Sliding rail / Range of application	Basic	Advanced	Premium	ESD	Steel [2]
v_{max} (m/min)	60	60	100	30	60
Size 65-120	✓	✓	✓	✓ [1]	✓
Size 160-320	✓	✓	✓	✓	✓
Sliding curves horizontal/vertical	✓	✓	✓	✓	✓
Cleanroom use Clean Room	✓	✓	✓	✓	✓

[1] Only size 65, 90

[2] When used in curve wheels, the steel sliding rail curve wheel is to be used in the upper branch (Basic, Advanced or Premium must be used in the lower branch)

Notice: We recommend using a homogeneous sliding rail variant throughout the entire section, i.e. no mixing of Basic, Advanced, Premium, ESD or steel sliding rails within a section.

Condition of contact surfaces	Basic	Advanced	Premium	ESD	Steel
1	0.20	0.15	0.15	0.25	0.26
2	0.25	0.20	0.20	–	0.26
3	>0.25	>0.20	>0.20	–	>0.26

1 Dry, clean =
* No build-up of particles
* Regular cleaning ≤ 1 x/week

2 Remove built-up particles and non-abrasive liquids occasionally, depending on degree of contamination

3 Constant exposure to particles and liquids, but no abrasive media
Please contact www.boschrexroth.com.

Sliding friction factor between sliding rail and chain
Average value, related to the total chain running time. The sliding friction factor increases along with increasing running time. Use of PTFE spray (3 842 546 150) reduces this value.

Material	Condition of contact surfaces	POM	Steel-plated
Plastic	Dry	0.25	–
	Water	0.25	–
	Refrigerant	0.12	–
	Oil	0.12	–
Paper	Dry	0.30	
Glass	Dry	0.18	0.25[3)]
	Water	0.18	
	Refrigerant	0.17	
	Oil	0.17	
Metal	Dry	0.26	0.25[3)]
	Water	0.26	
	Refrigerant	0.11	
	Oil	0.11	

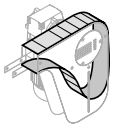
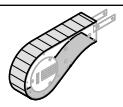
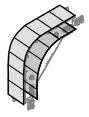
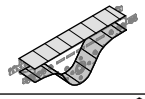
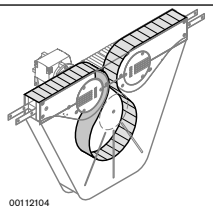
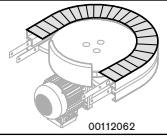
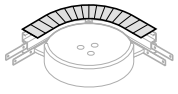
[3)] With sharp-edged parts, the value must be experimentally determined.

Sliding friction factor between goods and chain

Sliding friction factors typical for a product type. The actual factors must be determined by experimentation for a precise result.

Actual chain and sliding rail lengths of the components

For an estimated chain and sliding rail length calculation

		Actual chain length (m) **Size**					**Effective sliding rail length** (m) **Size**			
		65	**90**	**120**	**160-320**		**65**	**90**	**120**	**160-320**
Head drive		0.881					2x 0.2			4x 0.2
Return unit		0.742					2x 0.2			4x 0.2
90° return unit		0.483					4x 117			
Center drive		1.1385					2x 514			
Connection drive		1.51				 00112104	4x 0.2			
Curve wheel drive		0.68	0.72			 00112062	0.82	0.91		
Curve wheel	30°	2x 0.28	2x 0.28	2x 0.29		 00112058	2x 0.34	2x 0.35	2x 0.38	
	45°	2x 0.32	2x 0.33	2x 0.34			2x 0.38	2x 0.41	2x 0.44	
	90°	2x 0.44	2x 0.46	2x 0.48			2x 0.53	2x 0.58	2x 0.63	
	180°	2x 0.68	2x 0.72	2x 0.77			2x 0.82	2x 0.91	2x 1.01	
Roller curve (R500)	30°				2x 0.46					5x 0.46
	45°				2x 0.59					5x 0.59
	90°				2x 0.98					5x 0.98
	180°				2x 1.77					5x 1.77
Sliding curve horizontal (R700)	30°	2x 0.56					4x 0.56			
	45°	2x 0.75					4x 0.75			
	90°	2x 1.3					4x 1.3			
Vertical curve	5°	2x 0.24				 00112059	4x 0.24			8x 0.24 *)
	7.5°	2x 0.26					4x 0.26			8x 0.26 *)
	15°	2x 0.33					4x 0.33			8x 0.33 *)
	30°	2x 0.46					4x 0.46			8x 0.46 *)
	45°	2x 0.59					4x 0.59			8x 0.59 *)
Assembly module		2x 0.24				 00112061	4x 0.24			6x 0.24

*) With support profile

Drive data

Definition of the basic principles of motor specifications
The specified performances, torques and revolutions per minute are rounded values and apply to:

- Operating time/day = 8 h (100 % duty cycle)
- Uniform operation (continual), no, or very light, impacts in a rotational direction at 10 switching cycles/hour
- Installation positions and designs described in the catalog
- Maintenance-free gears with life-long lubrication,
- Ambient operating temperature 0 ... 60 °C. Gear unit with life-long lubrication for ambient operating temperature ≤ 0 °C available on request
- Protection class IP 55
- f_{mains} = 50 Hz constant
- T_U = 20 °C for gears
  40 °C for motors
- Installation altitude ≤ 1000 m above mean sea level
- If the drive is overloaded, the service life is reduced.
  Overload by 10 %: = 75 % service life
  Overload by 20 %: = 50 % service life
- The gear motor (GM = 1) corresponds to the operating mode S1 (continuous operation)

In the case of other operating conditions, the achievable values may differ from those stated.
In the case of extreme operating conditions, please consult your distribution partner.

Motor data

Electrical connection requirements:
Connection to a 3-phase, 5-wire system (L1, L2, L3, N, PE), a connection diagram is included in the terminal box.
All motors are equipped with a thermal contact*), which must be connected to an overload switch-off.

All of the motors comply with protection type IP 55.

*) Bi-metal thermal contact, opening, tripping at 150 °C ± 5 °C.

Motor for push-on gearbox (with plug AT=S)



Gear motor (with plug AT=S)



Country classification

	Europe	Switzerland	USA	Canada	Brazil	Australia	New Zealand	South Korea	China	India
Line voltage (3x....)	400 V	400 V	480 V[1)]	480 V[1)] 575 V	220 V 380 V[3)] 440 V[1)]	400 V 415 V[2)]	400 V 415 V[2)]	220 V 380 V[3)] 440 V[1)]	380 V[2)]	415 V[2)]
Line voltage tolerance	±10 %	±10 %	±10 %	±10 %	±10 %	±5 %	±5 %			±5 %
Mains frequency	50 Hz	50 Hz	60 Hz	60 Hz	60 Hz	50 Hz	50 Hz	60 Hz	50 Hz	50 Hz

[1)] ~ 460 V / 60 Hz
[2)] ~ 400 V / 50 Hz
[3)] ~ 400 V / 60 Hz

Motor data (GM = 1)

Performance data

Notice: Values are typical. Subject to change. See motor type plate for official data. Please note the country assignment.

Voltage class	**A**	**A**	**B**	**D**
Circuit	**Δ**	**Y**	**Y**	**Y**
Voltage U at f = 50 Hz	200 V ±10 %		400 V +10...-12 %	
Voltage U at f = 60 Hz	220 V ±10 %	400 V ±10 %	460 V +10...-12 %	575 V ±10 %

			Current consumption at rated power			**Power factor**	**Power output at**	
Motor type	**IE3**	**I_N** (A)	**I_N** (A)	**I_N** (A)	**I_N** (A)	**cos φ**	**(50Hz) P** (kW)	**(60Hz) P** (kW)
524	x	0.65	0.35	0.32	0.24	0.6	0.09	0.1
624	x	1.15	0.65	0.55	0.45	0.66	0.18	0.22
634	x	1.65	0.9	0.85	0.65	0.6	0.25	0.29
714b	x	1.9	1.1	0.95	0.75	0.73	0.37	0.42
804a	x	3.1	1.8	1.45	1.15	0.65	0.55	0.63
716	x	1.3	0.75	0.6	0.62	0.68	0.18	0.22
734	x	1.9	1.05	0.95	0.72	0.74	0.37	0.42
734a	x	2.5	1.4	1.3	1	0.66	0.45	0.52
714a	x	1.65	0.95	0.85	0.65	0.60	0.25	0.29
716a	x	1.3	0.75	0.6	0.52	0.61	0.18	0.22
718b	x	0.95	0.55	0.48	0.38	0.6	0.12	0.14
814	x	3.1	1.7	1.45	1.1	0.69	0.55	0.63
824	x	4.1	2.25	2	1.6	0.66	0.75	0.86

Suitable for continuous operation, start-stop operation with a duty cycle of up to 70 % and frequency converter operation.

Certification for the motor, cable and plug components:

IE3 motors: CE, cURUS, CCC

Gear motor

3-phase motors	
T_U (°C)	**P_V / P_N**
< 40	1[1)]
45	0.95
50	0.90
55	0.85
60	0.8

[1)] Rated motor power (0.37; 0.25; 0.12 kW)

Rated motor power

The ambient operating temperature T_U influences the rated power P_N of the gear motors.

Transport and nominal speed v_N

The transport speed v_N is specified for the rated output and frequencies of 50 Hz or 60 Hz.

The actual values v vary depending on:

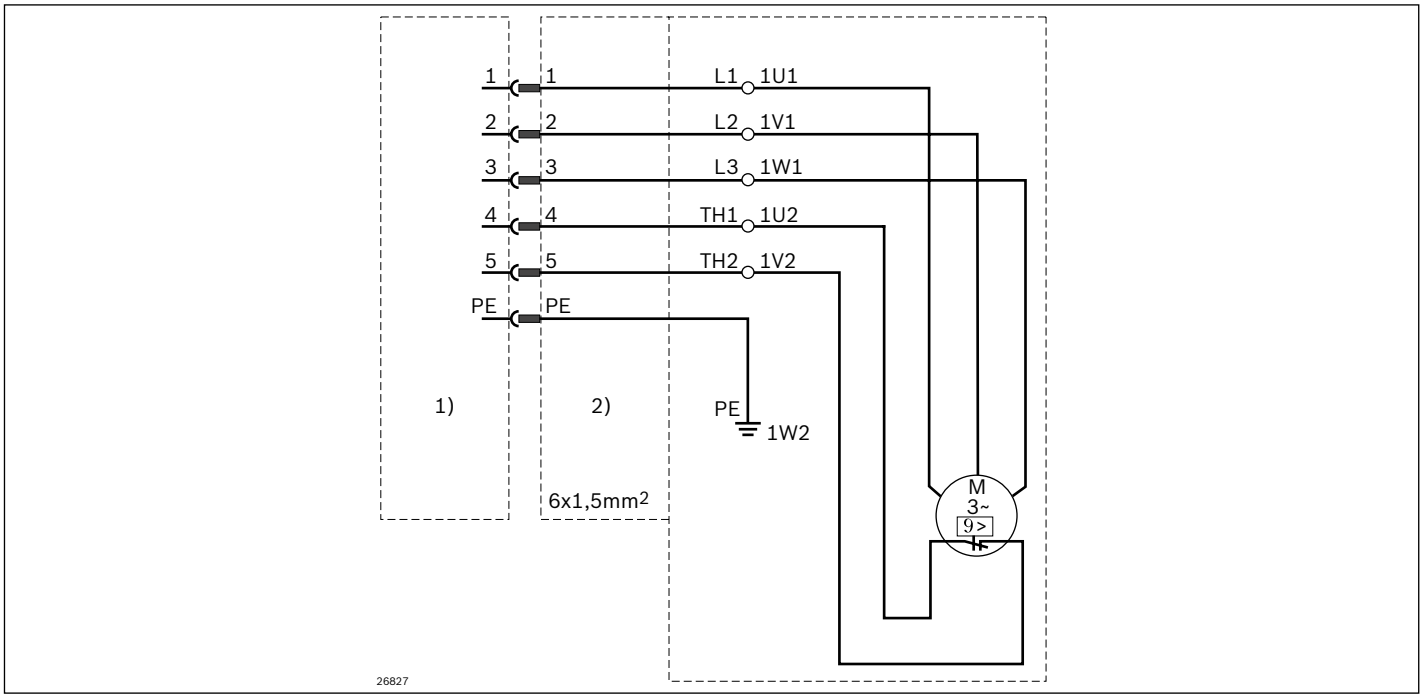
- Tolerance of the standard motors
- Performance range of the motors
- Load on the conveyor section

Modular unit	**50 Hz** (see p. 305)					**Motor type**	**60 Hz** (see p. 305)				**Motor type**
	v_N (m/min)	v[1] (m/min)	i	n2[3] (min^{-1})	M_N (Nm)		v[1] (m/min)	i	n2[3] (min^{-1})	M_N (Nm)	
Head drive/ center drive	5	5.2	60	11.5	94	718b	6.4	60	14	92	718b
	10	10.6	60	23.3	97	714a	8.3	60	18.3	108	716a
	13	13.2	47	29.2	114	714b	12.9	60	28.5	92	714a
	16	16.8	37	37.1	91	714b	15.9	47	35.0	108	714b
	21	21.6	29	47.7	71	714b	20.2	37	44.5	87	714b
	27	27.2	23	60.0	57	714b	26.0	29	57.3	67	714b
	33	33.3	19	73.5	46	714b	32.6	23	72.0	53	714b
	40	40.8	15	90.0	38	714b	39.9	19	88.2	44	714b
	50	49.9	12	110.2	30	714b	48.9	15	108.0	36	714b
Connection drive	5	5.2	60	11.5	94	718b	6.4	60	14	92	718b
	10	10.6	60	23.3	97	714a	8.3	60	18.3	108	716a
	13	13.2	47	29.2	114	714b	12.9	60	28.5	92	714a
	16	16.8	37	37.1	91	714b	15.9	47	35.0	108	714b
	21	21.6	29	47.7	71	714b	20.2	37	44.5	87	714b
	27	27.2	23	60.0	57	714b	26.0	29	57.3	67	714b
Curve wheel drive VF65	5	5.2	128	5.4	60[2]	718b	6.2	128	6.5	60[2]	718b
	10	11.1	60	11.5	60[2]	718b	13.5	60	14	60[2]	718b
	13	14.5	60	15.1	60[2]	716a	17.6	60	18.3	60[2]	716a
	21	22.4	60	23.3	60[2]	714a	27.4	60	28.5	60[2]	714a
Curve wheel drive VF90	5	5.6	128	5.4	60[2]	718b	6.8	128	6.5	60[2]	718b
	10	12.0	60	11.5	60[2]	718b	14.6	60	14	60[2]	718b
	13	15.7	60	15.1	60[2]	716a	19.0	60	18.3	60[2]	716a
	21	24.2	60	23.3	60[2]	714a	29.6	60	28.5	60[2]	714a

[1] Transport speeds at other voltages/frequencies available on request
[2] Torque limited to 60 Nm by coupling
[3] Gear unit output speed

Motor connection

Motor connection with plug (AT = S), circuit diagram

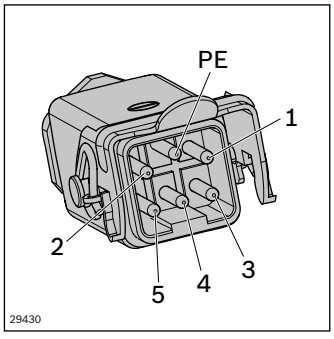


1) Connection cable side
2) Motor side

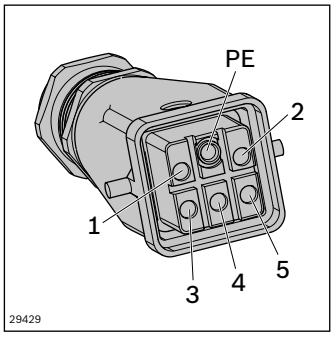
The connector consists of UL components.

Connection list

3~ motor connection terminals	Pin no.	Code
U1	1	L1
V1	2	L2
W1	3	L3
TW1	4	Th1
TW2	5	Th2
	PE	PE



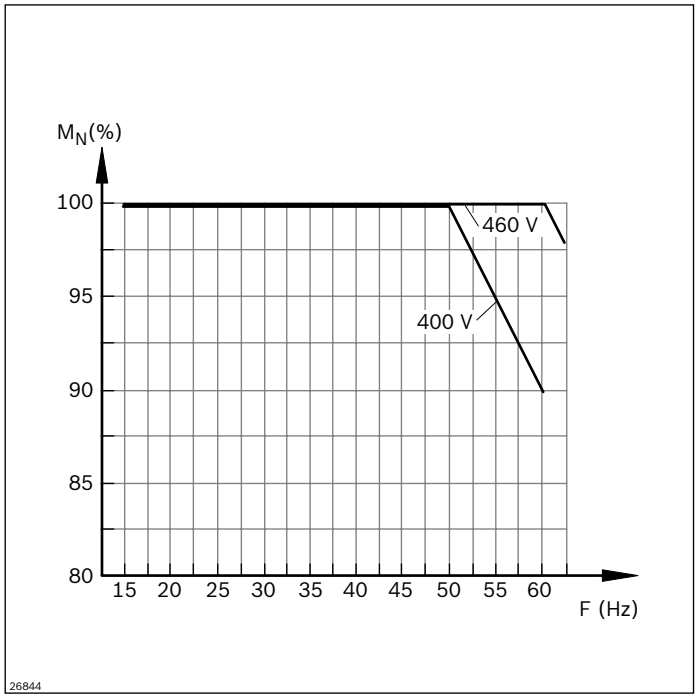
Motor side



Connection cable side

Frequency converter motec 8400 (FU)

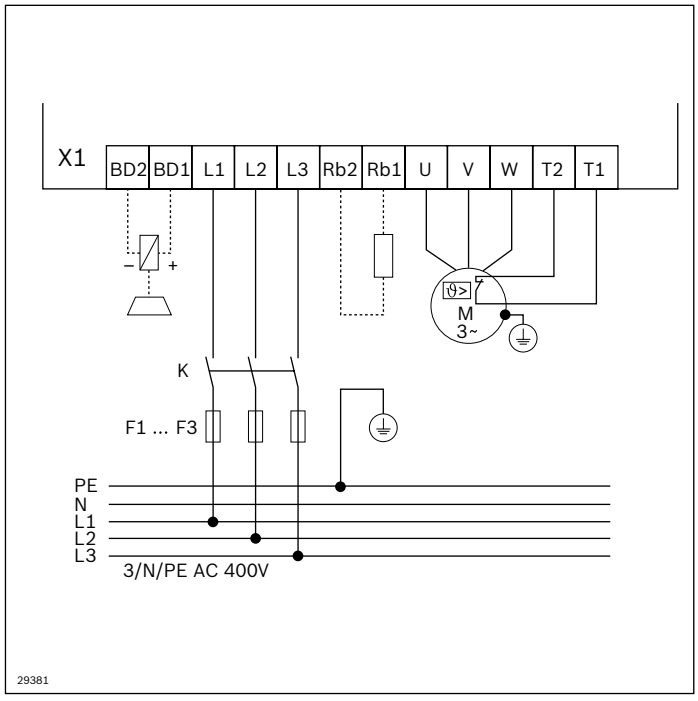
Drive spectrum of motors with frequency converters (FU)



Technical information:
At rotating field frequencies of ≥ 15 Hz, the motor can be operated under normal operating conditions without an external fan. The motor's thermal conditions should be considered at rotating field frequencies of ≤ 20 Hz. In the range 20 ... 50 Hz, the full torque is available. At rotating field frequencies > 50 Hz, higher speeds can also be achieved with a corresponding drop in performance.

Base speed of motor (m/min) **at 50 Hz**	**Min**[1] (m/min)	**Max**[2] (m/min)	**Max** (m/min) **at max. 80 % torque**
5[3]	2	6	8
10[3]	4	12	16
13	5	15	21
16	6	19	26
21	7	25	34
27	9	32	43
33	11	39	52
40	13	48	–
50	16	60	–

[1] Min corresponds to approx. 16 Hz supply frequency
[2] Max corresponds to approx. 60 Hz supply frequency
[3] At 460 V/60 Hz max (m/min) 20 % higher



——— Minimum wiring required for operation
----*)---- Additional wiring to change rotational direction

Frequency converter (FU) accessories

In order to operate a drive with a frequency converter (FU), the user needs to work out the minimum wiring for the internal and external voltage supply (see terminal assignment plan left).

Ordering parameters for SEW motors (GM = 2)

The following ordering information is required if using gear motors from SEW-Eurodrive GmbH & Co, Bruchsal:

- Motor type
- Ratio
- Installation position
- Drive output position
- Terminal box position
- Cable entry (fig. 4)
- Motor voltage/frequency*)
- Thermal class*)
- Motor protection class*)

*) www.seweurodrive.com

Gear motors for mains frequency f = 50 Hz

v_N (m/min)	Ist v_N (m/min)	Motor type	Ratio	Drive speed gear motor	N (kW)	M_{max} (Nm)
5	4.9	SA47 DR63L4/TH	110.73	12.0	0.25	90
5[1)]	6.2	SA47 DR63L4/TH	201.00	6.5	0.25	90 / 60[3)]
5[2)]	6.7	SA47 DR63L4/TH	201.00	6.5	0.25	90 / 60[3)]
7	6.2	SA47 DR63L4/TH	84.00	15.0	0.25	90
10	9.9	SA47 DRS71S4/TH	54.59	25.0	0.37	90
10[1)]	10.5	SA47 DRS71S4/TH	128.10	11.0	0.37	90 / 60[3)]
10[2)]	10.4	SA47 DRS71M4/TH	137.05	10.0	0.37	90 / 60[3)]
13	12.8	SA47 DRS71M4/TH	44.22	31.0	0.37	90
13[1)]	14.4	SA47 DRS71M4/TH	94.08	15.0	0.37	90 / 60[3)]
13[2)]	12.5	SA47 DRS71S4/TH	110.73	12.0	0.37	90 / 60[3)]
16	14.9	SA47 DRS71S4/TH	38.23	36.0	0.37	78
21	19.9	SA47 DRS71S4/TH	29.00	48.0	0.37	60
21[1)]	21.1	SA47 DRS71S4/TH	63.80	31.0	0.37	60
21[2)]	20.7	SA47 DRS71S4/TH	69.39	20.0	0.37	60
27	24.4	SA47 DRS71S4/TH	23.20	59.0	0.37	49
33	32.3	SA47 DRS71S4/TH	17.62	78.0	0.37	40
40	39.7	SA47 DRS71M4/TH	14.24	97.0	0.55	48
50	46.4	SA47 DRS71M4/TH	12.10	114.0	0.55	41
4 ... 26	2.22 ... 22.0	SA47 DRS71S4 MM05	54.59	5.3 ... 53.0	0.55	69 ... 81
16 ... 60	6.7 ... 68.3	SA47 DRS71M4 MM07	17.62	16 ... 165.0	0.75	36 ... 39

For basic unit curve wheel drive:

[1)] VF*plus* 65 (z = 28 / ø306 mm)

[2)] VF*plus* 90 (z = 30 / ø331 mm)

[3)] at KPG = 1 limited to 60 Nm

Gear motors for mains frequency f = 60 Hz

v_N (m/min)	Ist v_N (m/min)	Motor type	Ratio	Drive speed gear motor	N (kW)	M_{max} (Nm)
5	4.9	SA47 DR63L4/TH	128.10	12.0	0.25	90
5[1)]	7.4	SA47 DR63L4/TH	201.00	7.8	0.25	90 / 60[3)]
5[2)]	8.1	SA47 DR63L4/TH	201.00	7.8	0.25	90 / 60[3)]
7	7.0	SA47 DR63L4/TH	94.08	16.8	0.25	90
10	9.9	SA47 DRS71S4/TH	63.80	24.0	0.25	90
10[1)]	9.4	SA47 DRS71S4/TH	158.12	9.8	0.25	90 / 60[3)]
10[2)]	10.2	SA47 DRS71M4/TH	158.12	9.8	0.25	90 / 60[3)]
13	12.4	SA47 DRS71M4/TH	54.59	30.0	0.37	90
13[1)]	13.8	SA47 DRS71M4/TH	110.73	14.4	0.37	90 / 60[3)]
13[2)]	13.7	SA47 DRS71S4/TH	128.10	13.2	0.37	90 / 60[3)]
16	15.4	SA47 DRS71S4/TH	44.22	37.2	0.37	90
21	20.9	SA47 DRS71S4/TH	32.48	50.4	0.37	67
21[1)]	21.9	SA47 DRS71S4/TH	71.75	22.8	0.37	67 / 60[3)]
21[2)]	23.7	SA47 DRS71S4/TH	71.75	22.8	0.37	67 / 60[3)]
27	27.8	SA47 DRS71S4/TH	24.77	67.2	0.37	52
33	33.8	SA47 DRS71S4/TH	20.33	81.6	0.37	46
40	41.7	SA47 DRS71M4/TH	16.47	100.8	0.37	37
50	47.7	SA47 DRS71M4/TH	14.24	116.4	0.55	48
4 ... 26	2.22 ... 22.0	SA47 DRS71S4 MM05	54.59	5.3 ... 53.0	0.55	69 ... 81
16 ... 60	6.7 ... 68.3	SA47 DRS71M4 MM07	17.62	16 ... 165.0	0.75	36 ... 39

For basic unit curve wheel drive:

[1)] VF*plus* 65 (z = 28 / ø306 mm)

[2)] VF*plus* 90 (z = 30 / ø331 mm)

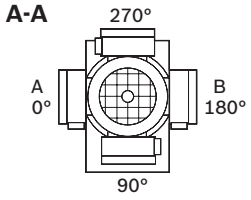
[3)] at KPG = 1 limited to 60 Nm

Head drive direct

Motor mounting	Installation position	Drive output	Terminal box
R	M2 (M1)	B	0°
L	M2 (M1)	A	180°

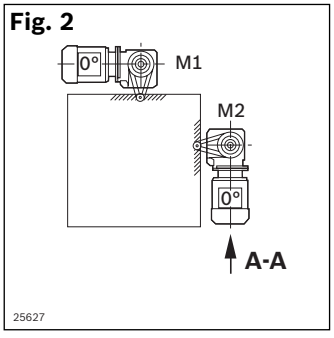
Position of terminal box

Fig. 1



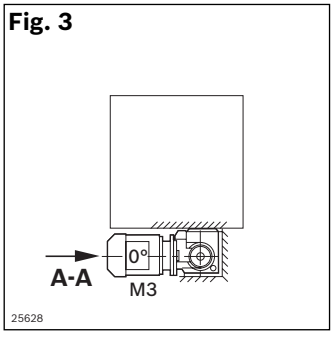
Installation position horizontal top/vertical

Fig. 2



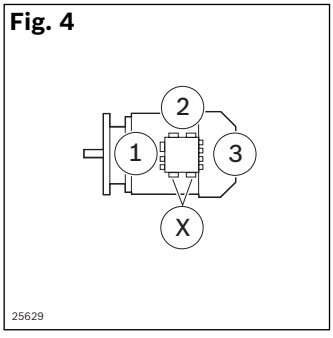
Installation position horizontal (above top edge chain)

Fig. 3



Cable entry point

Fig. 4



Combination matrix



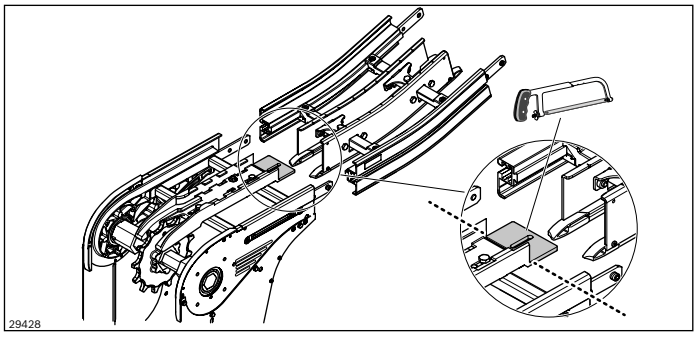
		Straight			Curves				Drives				Return unit		
		Section profile AL open	Section profile AL closed	Assembly module	Curve wheel	Roller curve*	Horizontal sliding curve	Vertical curve	Head drive	Curve wheel drive	Connection drive	Center drive (STS)	Basic unit	90° **(STS)	Transmission kit
Straight	Section profile AL open	J													
	Section profile AL closed	J	J												
	Assembly module	J	J	N											
Curves	Curve wheel	J	J	L[2)]	L[2)]										
	Roller curve*	J	N	J	N	L[1)]									
	Horizontal sliding curve	J	J	J	J	N	L[1)]								
	Vertical curve	J	J	J	J	L[1)]	L[1)]	L[1)]							
Drives	Head drive	J	J	L[2)]	L[2)]	L[1, 4)]	L[1)]	L[1, 4)]	N						
	Curve wheel drive	J	J	L[2)]	L[2)]	N	L[1)]	L[1)]	N	N					
	Connection drive	J	J	L[2)]	L[2)]	N	L[1)]	L[1)]	N	N	N				
	Center drive (STS)**	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	N	L[1, 5)]	L[1, 5)]	N	N	N	N			
Return unit	Basic unit	J	J	L[2)]	L[2)]	L[1, 4)]	L[1)]	L[1, 4)]	L[2)]	N	N	L[2, 3)]	L[2, 3)]		
	90° (STS)**	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	N	L[1, 5)]	L[1, 5)]	N	N	L[2, 5)]	N	N	L[2)]	
Transmission kit		N	N	N	N	N	N	N	J	N	J	N	J	N	N

J	possible without restrictions
L	possible with restrictions
N	not possible

* Support profile must project 76+2 mm into the roller curve.

** AL-STS adapter included in scope of delivery.

[1)] Profile connector not required
[2)] Use of a profile piece (L_{min} = 120 mm)
[3)] Assembly module required
[4)] For sizes 160-320: Shorten the support rail on the dotted line (see figure below)
[5)] Use of the AL-STS adapter





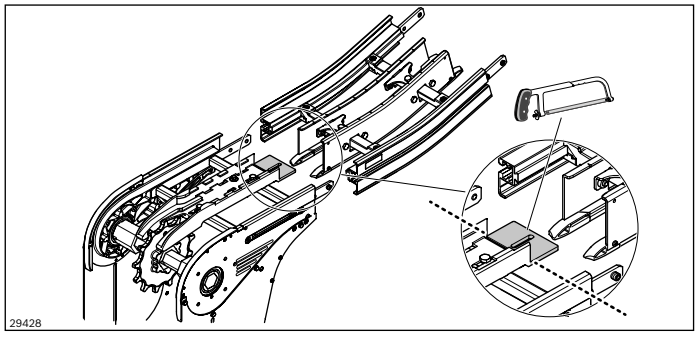
		Straight			Curves			Drives			Return unit	
		Section profile STS open	Section profile STS Clean	Assembly module	Curve wheel	Roller curve*	Vertical curve	Head drive	Connection drive	Center drive	Basic unit	90° **
Straight	Section profile STS open	J										
	Section profile STS Clean	L[6)]	L[6)]									
	Assembly module	J	L[6)]	N								
Curves	Curve wheel	J	L[6)]	J	L[2, 7)]							
	Roller curve*	J	N	J	N	L[1)]						
	Vertical curve	J	L[6)]	J	L[1)]	L[1)]	L[1)]					
Drives	Head drive	J	L[6)]	J	L[1)]	L[1, 4)]	L[1, 4)]	N				
	Connection drive	J	L[6)]	J	L[1)]	N	L[1)]	N	N			
	Center drive**	J	L[6)]	J	L[1)]	N	L[1)]	N	N	N		
Return unit	Basic unit	J	L[6)]	J	L[1)]	L[1, 4)]	L[1, 4)]	L[1)]	L[1)]	L[1, 3)]	L[1, 3)]	
	90° **	J	L[6)]	J	L[1)]	N	L[1)]	L[1)]	L[1)]	N	N	L[1)]

J	possible without restrictions
L	possible with restrictions
N	not possible

* Support profile must project 76+2 mm into the roller curve.

** AL-STS adapter included in scope of delivery.

[1)] Profile connector not required
[2)] Use of a profile piece (L_{min} = 224 mm)
[3)] Assembly module required
[4)] For sizes 160-320: Shorten the support rail on the dotted line (see figure below)
[5)] Use of the adapter AL-STS
[6)] Replacement of the standard profile connector with profile connector STS Clean Section
[7)] Directly possible with left-right change (one profile connector no longer required)





		Straight			Curves		Drives			Return unit	
		Section profile AL open	Section profile AL closed	Assembly module	Curve wheel ESD	Vertical curve (STS)	Head drive (STS)	Connection drive (STS)	Center drive (STS)	Basic unit (STS)	90° ** (STS)
Straight	Section profile AL open	J									
	Section profile AL closed	J	J								
	Assembly module	J	J	N							
Curves	Curve wheel ESD	J	J	L[2)]	L[2)]						
	Vertical curve	J	J	L[2)]	L[2)]	L[1)]					
Drives	Head drive (STS)	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	L[1, 5)]	N				
	Connection drive (STS)	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	L[1, 5)]	N	N			
	Center drive (STS)**	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	L[1, 5)]	N	N	N		
Return unit	Basic unit (STS)	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	L[1, 5)]	L[2)]	N	L[2)]	L[2, 3)]	
	90° (STS)**	L[5)]	L[5)]	L[2, 5)]	L[2, 5)]	L[1, 5)]	L[2)]	L[2)]	N	N	L[2)]

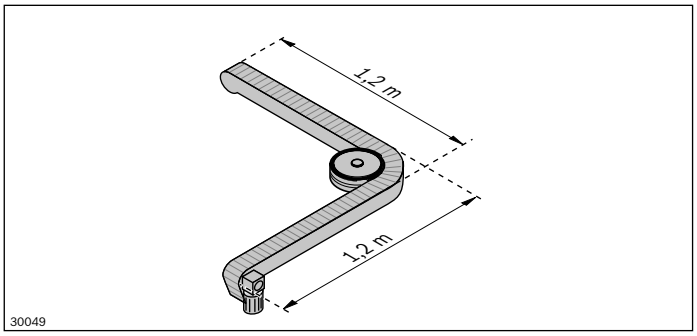
J	possible without restrictions
L	possible with restrictions
N	not possible

* Support profile must project 76+2 mm into the roller curve.

** AL-STS adapter included in scope of delivery.

[1)] Profile connector not required
[2)] Use of a profile piece (L_{min} = 224 mm)
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Use in clean rooms



Values for Premium and Advanced sliding rails

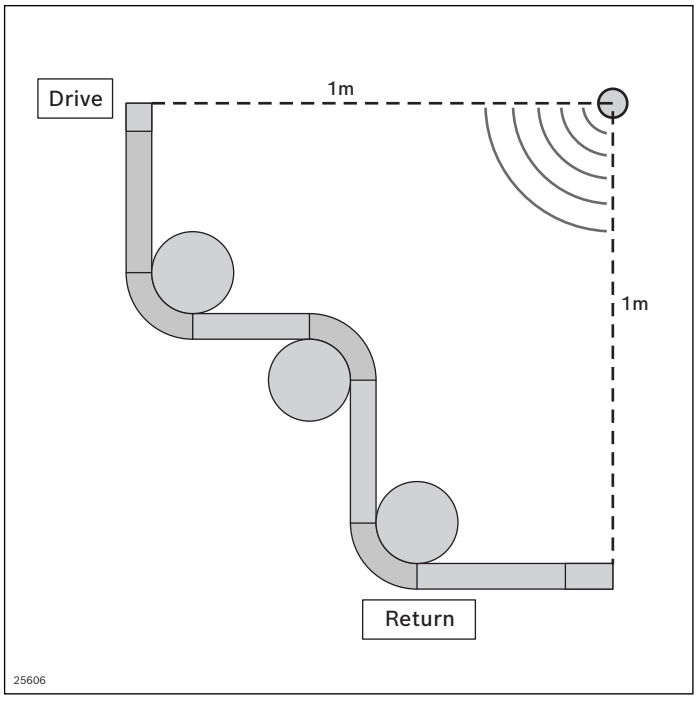
Speed v (m/min)	ISO class
6	6
20	7
50	7

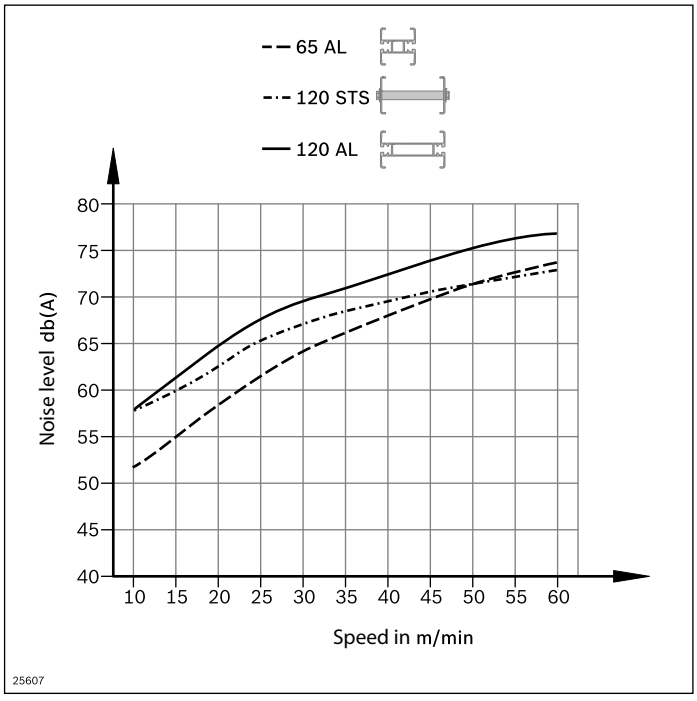
The conveyor system VarioFlow *plus* 90 has been tested for clean room suitability according to the procedures described in the EN ISO 14644-1 standard for clean room and cleanliness suitability testing. The subsequent measurement results for a conveyor system VarioFlow *plus* 90 (AL) were obtained:
The results are based on an application in an L-configuration using a 90° curve wheel and flat conveyor chain, without load!

Before commissioning a chain conveyor system in a clean room, the following must be observed:
- Install the sliding rails according to the assembly instructions (avoid joints, round off all edges and intersections on the sliding rails)
- Check the chain inlets and outlets, if necessary round off edges
- Check the intersections, if necessary round off edges
- Run in for approx. 100 hours to adapt the sliding rail and chain (abrasion and unevenness of plastics)
- Clean the system and the chain
- Transfer of the system via airlock into the clean room
- Repeatedly clean the system and the chain with isopropanol

Due to the identical system configurations of sizes 65 and 120, the result can also be transferred to these sizes.
Sliding curves are not suitable for use in clean rooms due to the increased friction and associated wear.

Conveyor noise level

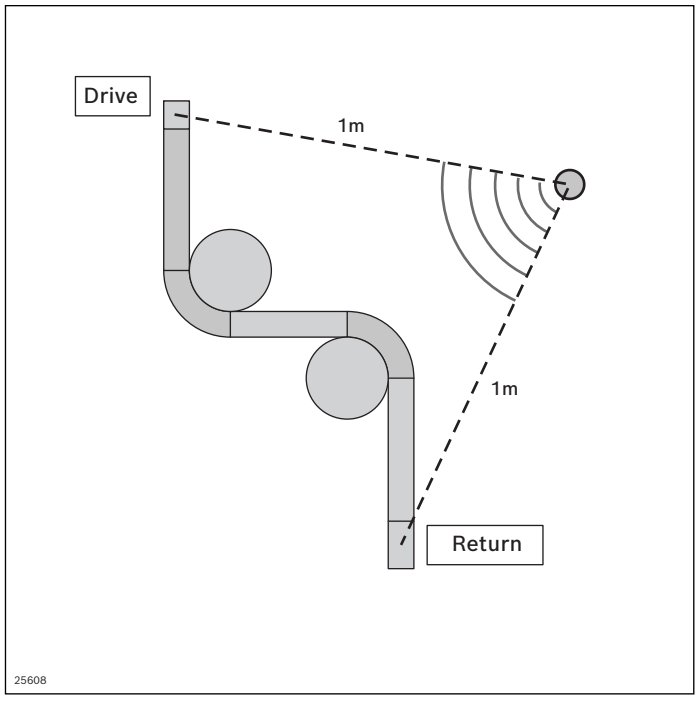


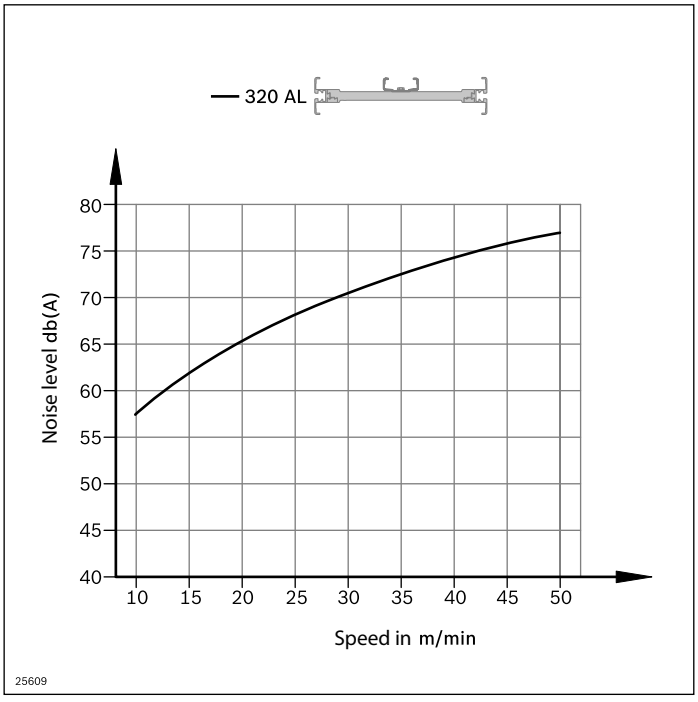


The noise generated by the conveyor chain will decrease after a few days of operation. Generally, a higher speed will result in a higher noise level. The actual noise level depends on several factors:

- The product on the conveyor medium
- The chain type
- The drive type
- The installation location and fastening of the system (floor, ceiling, wall)
- The ambient conditions (vibrating objects, hard reflective walls, integrated systems of other makes, hall structures)
- The quality of system assembly and layout in accordance with the assembly instructions (sliding rail transitions, joints)
- The surrounding equipment
- Conveyor layout and dimensions

Typical noise levels are shown in the graphic. The noise level was measured at the transport height with a distance of 1 m from the conveyor.
The measurement was taken in an industrial hall (ambient noise from approx. 50 dB (A) to 63 dB (A)) with chain speeds up to 60 m/min and medium length chain bag.


Drive
1m
1m
Return
25608


320 AL
Noise level db(A)
80
75
70
65
60
55
50
45
40
10
15
20
25
30
35
40
45
50
Speed in m/min
25609

Resistance of the chain against chemicals

Chemical	Material
Acids:	**POM**
Benzoic acid	0
Hydrogen cyanide	–
Boric acid	0
Chromic acid	–
Acetic acid	0
Hydrofluoric acid	–
Tannic acid	0
Oleic acid	0
Oxalic acid	–
Perchloric acid	–
Phosphoric acid	–
Phthalic acid	–
Nitric acid	–
Hydrochloric acid	–
Sulfuric acid	–
Tartaric acid	0
Citric acid	0

++ = high resistance
+ = limited resistance
0, – = unsuitable material combination
·/· = no available data

The materials used are resistant to most chemicals used in industrial applications, even in case of longer contact. For some of the chemicals, the reaction also depends on the concentration and the state of aggregation. Contact with the following substances should be avoided:

- Acids with a pH level ≤ 4
- Bases with a pH value ≥ 9
- Chlorinated hydrocarbons (e.g. trichloroethylene/Tri).

For accurate information on resistance, contact the chemical manufacturer; only they can give an official answer to your question. The materials used in the individual components can be found on pages 322 and 323.

Chemical	Material
Alkaline substances:	**POM**
Ammonia (dissolved)	++
Lime hydrate	++
Sodium hydroxide	++
Caustic potash	++
Salts:	
Basic salts	++
Potassium bicarbonate	+
Potassium permanganate	+
Sodium cyanide	+
Sodium hypochloride	0
Neutral salts	++
Acidic salts	+
Solvents/organic media:	
Acetone	+
Solvents/organic media:	
Aniline	+
Gasoline	+
Benzene	++
Butanol	+
Chlorobenzene	++
Chloroform	++
Acetic ether	++
Ethyl alcohol	++
Ethyl ether	++
Formalin	+
Heptane	+
Methyl alcohol	++
Methyl ethyl ketone	++
Nitrobenzene	+

Chemical	Material
Solvents/organic media:	
Phenol	0
Carbon disulfide	++
Turpentine substitute	·/·
Carbon tetrachloride	++
Toluene	++
Gases:	
Chlorine (wet)	–
Chlorine (dry)	+
Carbon dioxide	0
Carbon monoxide	+
Sulfur dioxide (wet)	–
Sulfur dioxide (dry)	+
Hydrogen sulfide	0

Material use

Chains

	Steel, non-rusting	POM	PA	TPE
Flat conveyor chain	x	x	x	
Static friction chain	x	x	x	x
Accumulation roller chain	x	x	x	
Roller cleated chain ø20	x	x	x	
Roller cleated chain ø35	x	x	x	
Cleated chain	x	x	x	
Universal chain	x	x	x	
Steel-plated conveyor chain	x	x	x	
Flocked chain	x	x	x	
Clamping chain	x	x	x	x
Conveyor chain ESD	x	x	x	

Drives

	Aluminum	Diecast aluminum	Steel; galvanized	Steel, non-rusting	Steel	PA	POM	PP
Head/connection drive AL	x	x	x	x		x		x
Head/connection/curve wheel drive AL incl. ball catch coupling	x	x	x	x	x	x		x
Head/connection/center drive STS				x		x		x
Return unit AL	x	x	x	x		x		x
Return unit STS				x		x		x
90° return unit				x		x		x
Connection kit passive bridges				x			x	

Sections

	Anodized aluminum	Diecast aluminum	Steel, galvanized	Steel, non-rusting	Brass, nickel-plated	PA	PP	PE-UHMW	PE	HDPE
Straight section AL	x	x	x							
Straight section STS				x						
Vertical + horizontal sliding curve AL	x		x							
Vertical sliding curve STS				x						
Curve wheel AL	x	x	x	x		x				
Curve wheel STS				x		x				
Roller curve AL	x	x	x	x		x		x		
Roller curve STS				x		x		x		
Chain assembly module AL	x		x							
Chain assembly module STS				x						
Leg sets AL	x	x	x				x			
Leg sets STS			x	x	x	x				
Product guide	x		x	x		x			x	x
Plastic sliding rail								x		
Sliding rail STS				x						

Material number overview

3 842 191 182	63	3 842 539 494	224	3 842 546 098	25	3 842 547 069	71
3 842 345 081	64	3 842 539 495	224	3 842 546 107	33	3 842 547 070	71
3 842 513 581	243	3 842 539 496	225	3 842 546 116	57, 62,	3 842 547 071	71
3 842 518 367	63	3 842 539 497	225		135, 139	3 842 547 072	73
3 842 518 368	63	3 842 539 498	223	3 842 546 120	81	3 842 547 073	73
3 842 518 369	63	3 842 539 499	223	3 842 546 121	81	3 842 547 074	73
3 842 523 258	63	3 842 539 500	225	3 842 546 122	81	3 842 547 075	73
3 842 527 553	203	3 842 539 501	226	3 842 546 123	81	3 842 547 076	73
3 842 527 738	220	3 842 539 505	226	3 842 546 124	81	3 842 547 077	73
3 842 527 851	220	3 842 539 613	218	3 842 546 125	81	3 842 547 078	73
3 842 528 009	224	3 842 539 826	226	3 842 546 150	288	3 842 547 079	73
3 842 528 531	290	3 842 540 173	121	3 842 546 625	117	3 842 547 080	73
3 842 528 539	227	3 842 540 668	118	3 842 546 626	117	3 842 547 081	73
3 842 528 540	227	3 842 541 003	284	3 842 546 627	117	3 842 547 082	73
3 842 528 715	64	3 842 541 246	65	3 842 546 628	121	3 842 547 083	75
3 842 528 718	64	3 842 541 409	65	3 842 546 629	121	3 842 547 084	75
3 842 528 721	64	3 842 541 566	239	3 842 546 630	121	3 842 547 085	75
3 842 528 724	64	3 842 541 567	239	3 842 546 632	123	3 842 547 086	75
3 842 528 727	64	3 842 541 888	239	3 842 546 643	53	3 842 547 087	75
3 842 528 772	239	3 842 541 889	239	3 842 546 644	53	3 842 547 088	75
3 842 528 773	239	3 842 541 902	241	3 842 546 645	53	3 842 547 089	75
3 842 528 817	252	3 842 541 903	241	3 842 546 647	55	3 842 547 090	75
3 842 528 852	248	3 842 543 246	239	3 842 546 649	131	3 842 547 091	75
3 842 529 236	291	3 842 544 875	117, 119	3 842 546 658	183, 203	3 842 547 092	75
3 842 529 347	121	3 842 546 000	19	3 842 546 659	183, 203	3 842 547 093	75
3 842 529 386	119	3 842 546 001	19	3 842 546 660	183	3 842 547 094	75
3 842 529 850	217	3 842 546 002	19	3 842 546 661	183	3 842 547 095	75
3 842 530 236	182	3 842 546 006	23	3 842 546 662	183	3 842 547 096	75
3 842 530 277	60	3 842 546 007	23	3 842 546 663	183	3 842 547 097	75
3 842 530 281	65	3 842 546 008	23	3 842 546 670	55	3 842 547 098	75
3 842 530 283	65	3 842 546 012	39	3 842 546 672	55	3 842 547 099	75
3 842 530 285	65,	3 842 546 013	39	3 842 546 673	55	3 842 547 100	75
	224, 225	3 842 546 014	40	3 842 546 674	55	3 842 547 101	75
3 842 530 287	65, 203	3 842 546 015	37	3 842 546 675	55	3 842 547 102	75
3 842 531 552	243	3 842 546 016	37	3 842 546 676	55	3 842 547 103	75
3 842 532 151	283	3 842 546 017	27	3 842 546 677	55	3 842 547 104	75
3 842 532 259	291	3 842 546 018	27	3 842 546 684	131	3 842 547 105	75
3 842 532 762	261	3 842 546 019	28	3 842 546 685	131	3 842 547 106	75
3 842 532 980	244	3 842 546 020	31	3 842 546 686	131	3 842 547 107	75
3 842 532 998	244	3 842 546 021	31	3 842 546 687	131	3 842 547 108	75
3 842 533 306	183	3 842 546 028	20, 21,	3 842 546 688	131	3 842 547 109	75
3 842 533 307	183		24, 25	3 842 546 689	131	3 842 547 110	75
3 842 533 308	183	3 842 546 069	19	3 842 546 700	131	3 842 547 111	143
3 842 533 309	183	3 842 546 070	19	3 842 546 705	55	3 842 547 112	143
3 842 533 310	183	3 842 546 071	19	3 842 546 706	131,	3 842 547 113	143
3 842 533 841	209, 217	3 842 546 072	20		224, 225	3 842 547 114	143
3 842 533 901	183	3 842 546 073	20	3 842 546 707	131	3 842 547 115	143
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rexroth
A Bosch Company

Bosch Rexroth AG
Postfach 30 02 07
70442 Stuttgart, Germany
www.boschrexroth.com



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