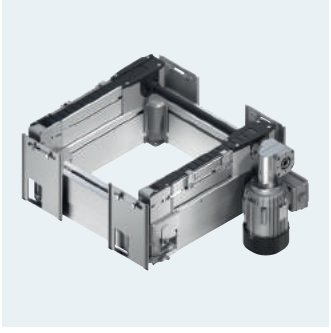
The Drive & Control Company

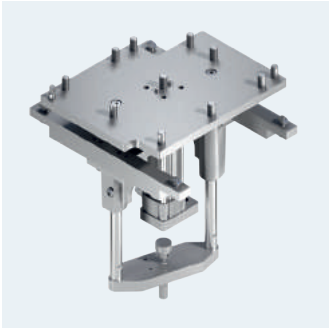
Rexroth
Bosch Group

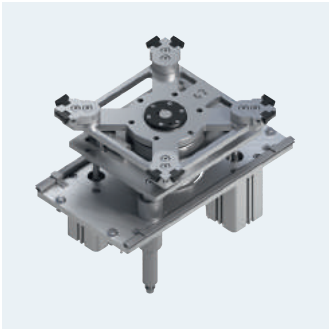
TS 2*plus* transfer system

7.0









Symbols

Product features



Permissible load, single load



Permissible load, sum of loads


Conveying level



Unit with energy-efficient drive available


Lateral separation


Central separation

EPA ESD-protected area

Potential applications



Suitable for use in clean rooms



Suitable for use in dry rooms

Additional information



Positioning accuracy



Vertical process force

Conveyor medium


Belt


Toothed belt


Plastic flat top chain


Plastic accumulation roller chain



Steel accumulation roller chain



V*plus* accumulation roller chain


Duplex chain


Rounded belt



Specific section load/cm
= total workpiece pallet weight/support surface length

Ordering information

Explanation

Packing unit = minimum order quantity (here: 10 items)

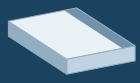
Example: Packing unit contains 10 items, material number 3 842 523 258
Order 1x 3 842 523 258 = delivery of 1x minimum order quantity 3 842 523 258 = 10 items
Order 15x 3 842 523 258 = delivery of 2x minimum order quantity 3 842 523 258 = 20 items

Delivery unit = delivery quantity (here: 16 items)

Example: Delivery unit contains 16 items, material number 3 842 532 695
Order 1x 3 842 532 695 – delivery of 1x delivery quantity 3 842 532 695, SP 2/B, l = 6070 mm = 16 items
Order 15x 3 842 532 695 – delivery of 15x delivery quantity 3 842 532 695 SP 2/B, l = 6070 mm = 240 items

TS 2*plus* system overview

Workpiece pallet

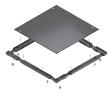




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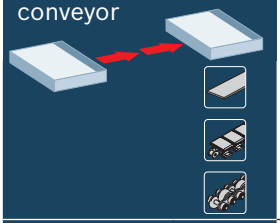


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Longitudinal conveyor





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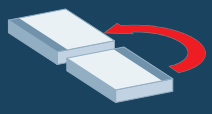
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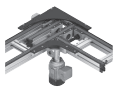
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Curves





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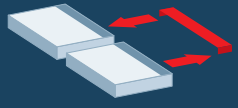


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Transverse conveyor





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Leg sets





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See page 6-10

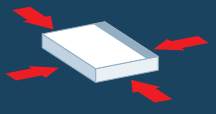


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Positioning and orientation





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Transportation control





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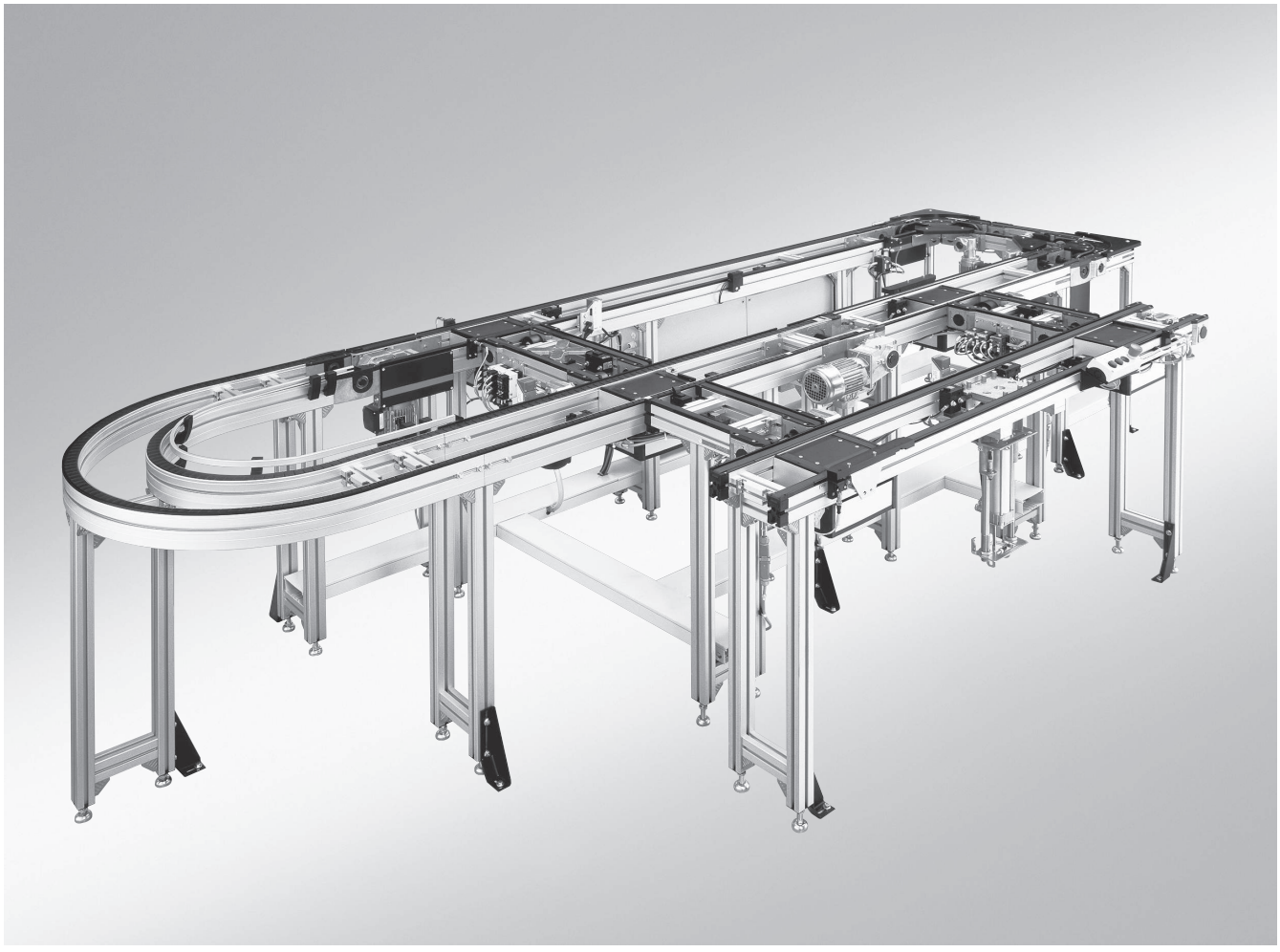


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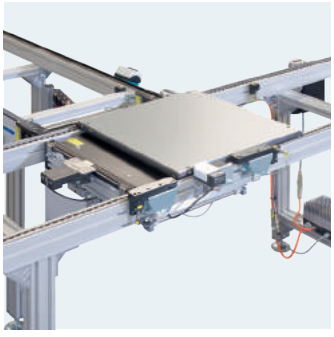
TS 2*plus* transfer system	1
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TS 2*plus* transfer system

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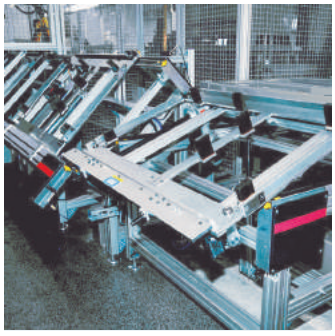


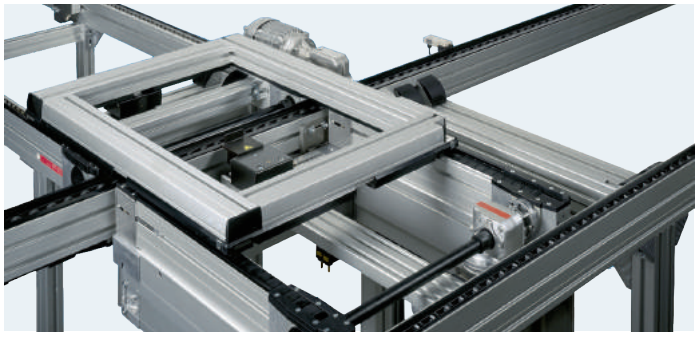


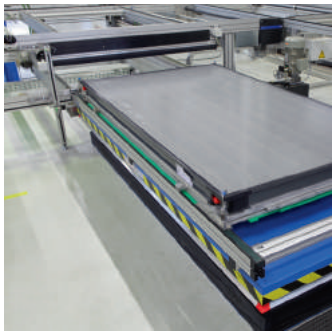
TS 2*plus* features

The Rexroth TS 2*plus* transfer system is designed for the transportation of workpiece pallets weighing up to 240 kg and is a good all-rounder in economical production. It is a diverse modular system that meets the requirements of a wide range of different products.

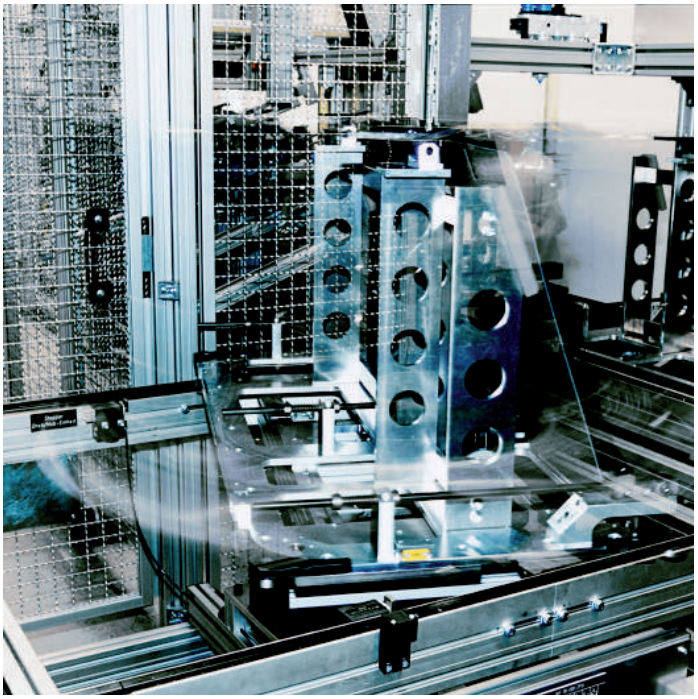
TS 2*plus* features standardized modular units, that can be combined in many ways to create a single system. This permits a wide range of variants to be constructed and tailor made for individual requirements. The modular design permits the cost-effective use of ratio potentials in production. All components are of robust design and can therefore be reused for mounting future product generations.











Diverse, sturdy, adaptable

Due to the large number of modular components incorporated in the system, it can be adapted to suit specific production conditions and individual layouts without requiring any extra parts:

- Four types of conveyor media (polyamide belts, toothed belts, flat top chains and accumulation roller chains) which can be combined together to meet the needs of the assembly process
- Workpiece pallets dimensions (from 160 x 160 mm up to 1200 x 1200 mm) specifically designed for the product sizes
- A high maximum load of up to 240 kg per workpiece pallet

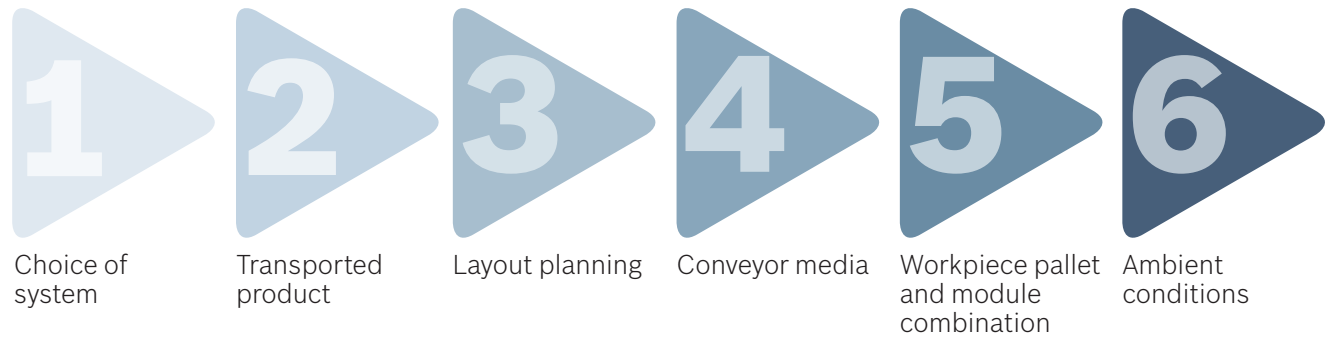
Special TS 2*plus* units

Apart from the different types of conveyor media, the TS 2*plus* also provides an abundance of specific components for curves, transverse conveyors, positioning units and drive units. The time and effort spent on planning and designing can be reduced to a minimum using predefined macro modules.
Material combinations that can be ordered from the catalog have been optimized for standard operation with TS 2*plus*. For special applications, additional material combinations are available. Your Rexroth representative will be pleased to support you in choosing an appropriate solution where required.

Operating principle

On an assembly line, a transfer system transports workpieces from one station to another. Two constantly moving belts, toothed belts, flat top chains, accumulation roller chains or round belts convey the workpiece pallets (WT) by means of friction. The workpiece pallets hold the workpieces. All workpiece finishing takes place on the workpiece pallets. Information about destination and processing stage are carried in the workpiece pallet memory. The stop gate (VE) stops the workpiece pallet at the stations (areas for manual work or automatic stations), while the conveyor medium continues moving. Several workpiece pallets can build up in front of individual stations to form small buffers. Once a processing stage is completed at the station, the workpiece pallet is released to travel on to the next work station. The pneumatic stop gate is opened, either manually or with a station control. At the end of the assembly process the workpiece is removed from the workpiece pallet.

In a few steps for the best solution

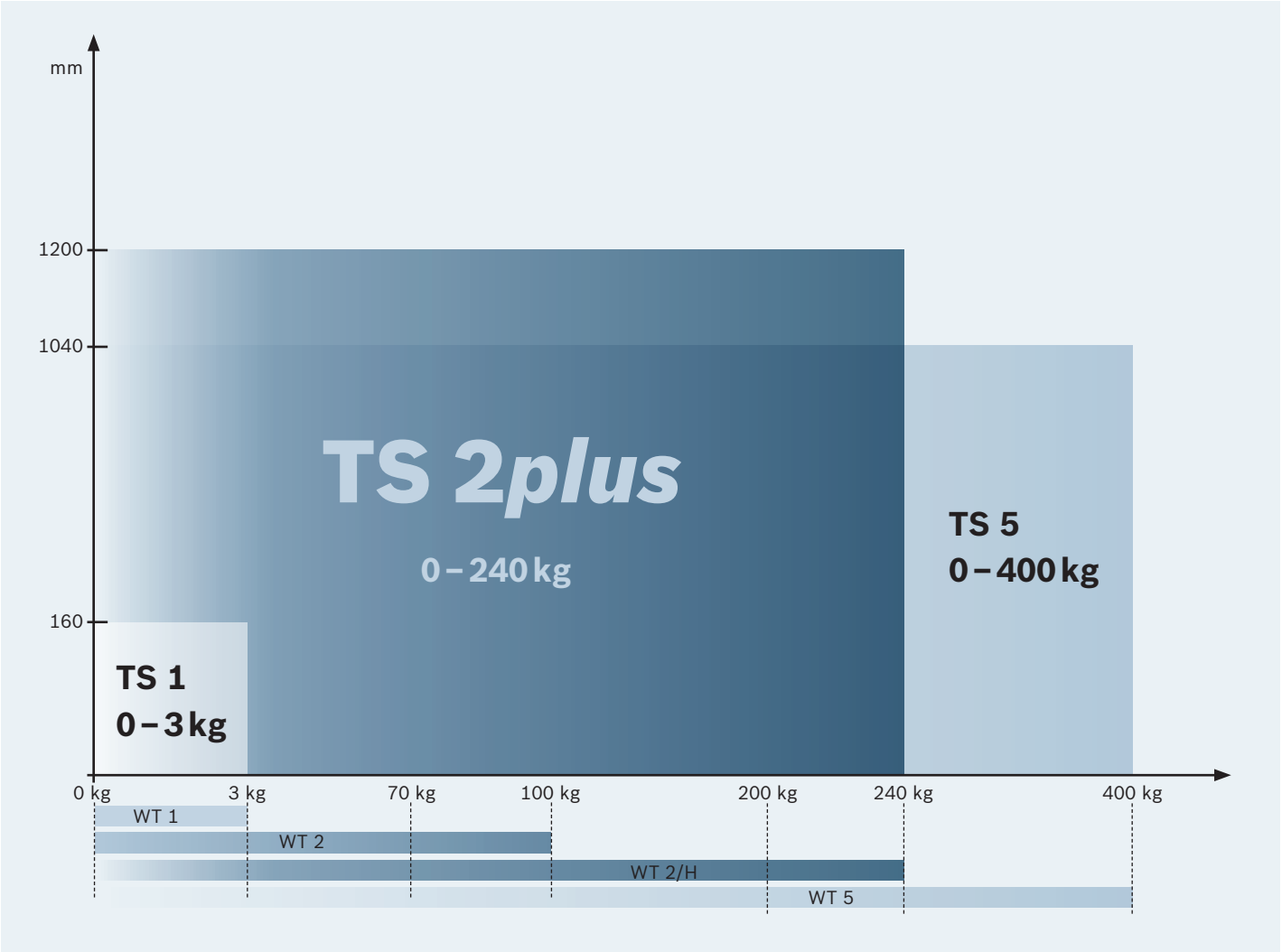


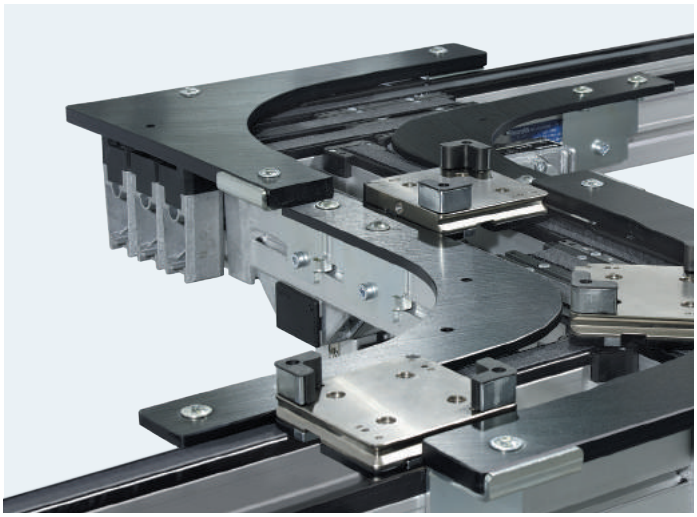
Operating principle

1. Choice of system

To ensure the most economical operation possible, an assembly line requires precise forward planning. Later conversions must be as simple and cost-effective to execute as possible in order to be able to respond to future market requirements. The key factors when selecting a suitable transfer system are the weight and quality of the workpieces to be conveyed as well as the particular production environment.

The flexible modular TS 2*plus* transfer system from Rexroth covers a very wide range of requirements: With the wide range of mutually compatible units and macro modules permit a large variety of layouts with manual and automatic processing stations to be created. Solutions for maximum positioning accuracy or for especially heavy workpieces can be implemented easily using standard components. The future-proof TS 2*plus* transfer systems are designed for high availability, even under the harshest conditions.

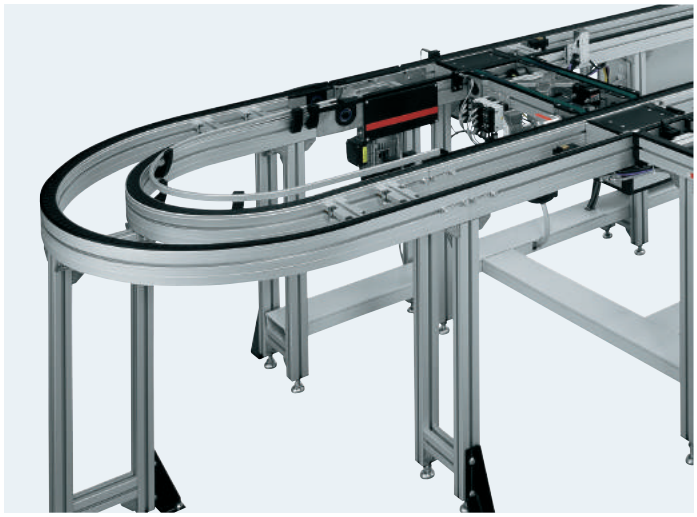




TS 1

TS 1
0 – 3 kg

The TS 1 transfer system is specifically tailored to small, lightweight products and assemblies, which require high positioning accuracy and repeatability.



TS 2*plus*

TS 2*plus*
0 – 240 kg

In the automotive industry and the electronics industry, household appliances and electronics manufacturing: With their diverse system components, TS 2*plus* assembly lines are suitable for use in a wide range of industries.



TS 5

TS 5
0 – 400 kg

The roller conveyor of the TS 5 transfer system conveys loads of up to 400 kg, over long distances where necessary, while its robust construction make it especially suitable for harsh environments.

Operating principle

2. Transported product

Workpiece pallet (WT)

The workpiece pallet (WT) transports the workpiece from one processing station to the next on the transfer system. Rexroth workpiece pallets are available in several versions for different applications: The complete plastic WT 2/E handles the transportation and positioning of lighter workpieces. The more robust WT 2 and WT 2/H models, with their steel or aluminum carrying plates, are also suitable for medium and heavy loads.

The WT 2 series workpiece pallets can be configured from components for the individual workpieces. A selection of various frame modules and carrying plates is available for this purpose.

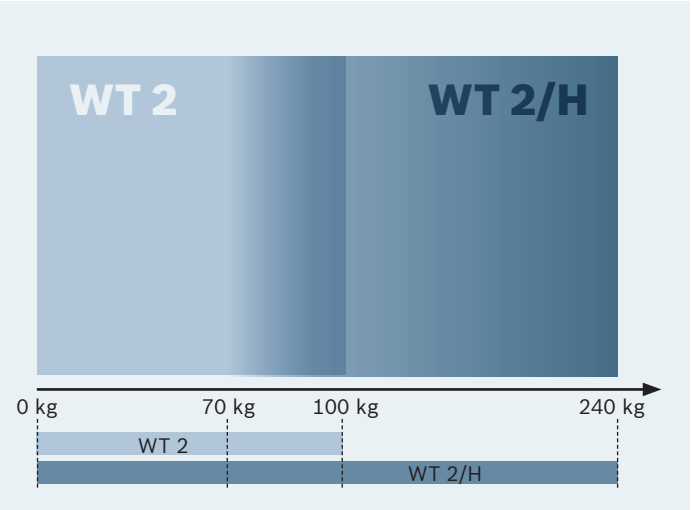
Because the workpiece pallets must be loaded as centrally as possible for optimal transportation, it is advisable to choose larger sized carrying plates for heavier workpieces or for those with uneven weight distribution.

Permitted weights

The WT total weight is limited for each WT size so that the permitted surface pressure is not exceeded.
The WT total weight results from the following:

- Workpiece pallet mass
- Workpiece pallet load (workpiece, pick-up, etc.)
- Weight of the special equipment (data storage, etc.)

For workpiece pallets that are not square, please note that the permissible WT total weight (m_G) may be different for longitudinal conveyors and transverse conveyors and the shorter side is the determining factor for the maximum WT load.

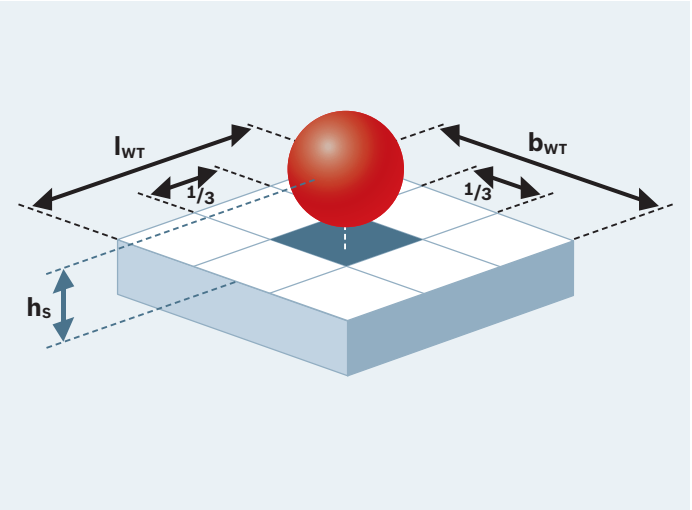


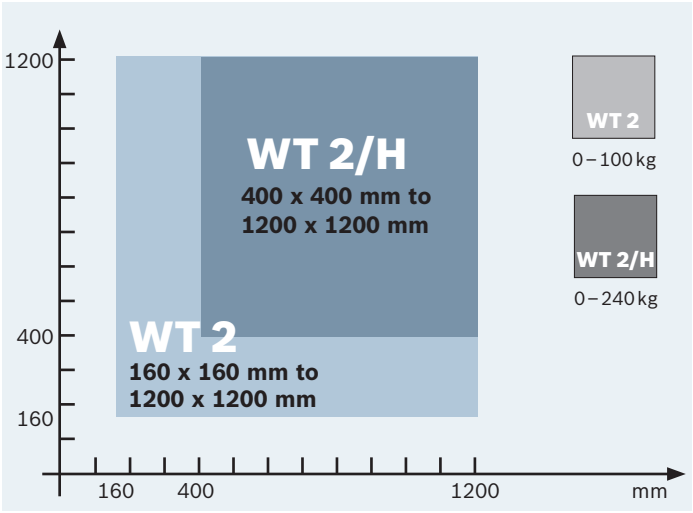
Permissible gravity center position

When separating pallets or changing directions, it is important to observe the position of the gravity center load on the workpiece pallet to ensure that the acceleration forces can be absorbed without any interferences.
Generally we recommend that:

- the load should be positioned in the center of the workpiece pallet
- the center of gravity should not exceed a height h_s of 1/2 b_{WT} (with $b_{WT} \leq l_{WT}$).

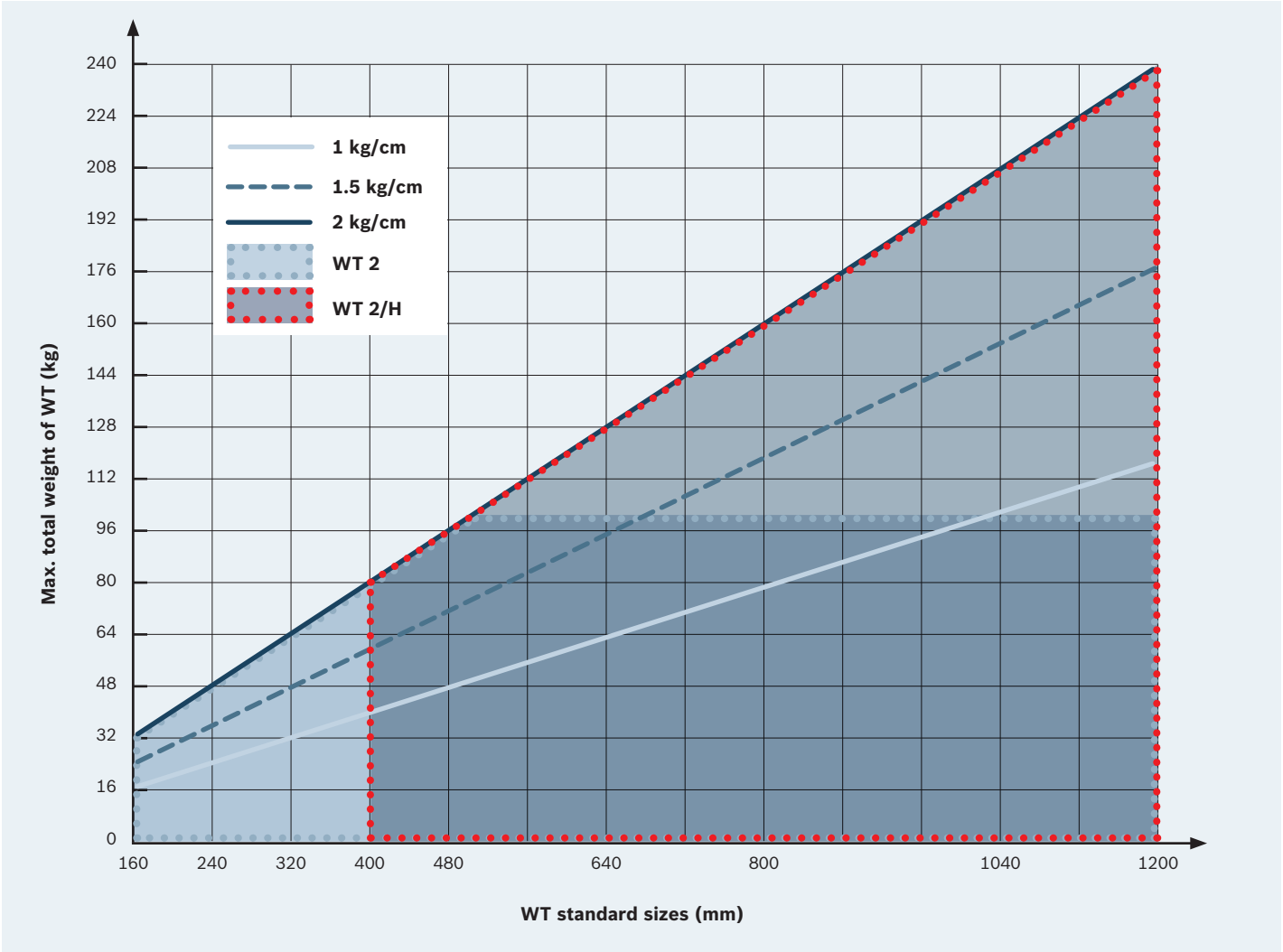
The specified performance data relate to the illustrated gravity center position.





Available workpiece pallet (WT) dimensions

Workpiece pallets with a surface from 160 x 160 mm up to 1200 x 1200 mm (WT 2) or with a surface from 400 x 400 mm up to 1200 x 1200 mm (WT 2/H) allow for correct adaptation to the particular workpiece geometry. If necessary, a number of workpieces can be accommodated on a single workpiece pallet (WT).



Operating principle

3. Layout planning

When planning the system layout, it is very important to take into account the individual requirements, targets and priorities of the company. A very flexible system is often required for complex assembly procedures. This may be due to:

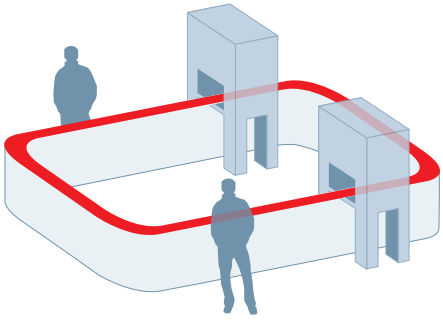
- frequent product alterations
- cycle problems due to different models
- differences in the work involved at each station
- frequent product alterations
- great fluctuation in number of workpieces

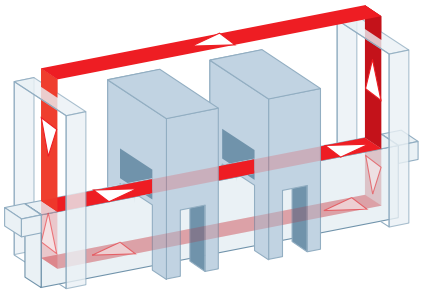
In cases like this, it is practical to transfer the workpiece pallet off the main conveyor (main circuit) into a shunt system which is independent of the main cycle. The term main circuit is used to describe workplaces or stations arranged in series.
A shunt is when workpiece pallets are directed out of the main circuit for processing independently of the main cycle, and then reintegrated in the main circuit.

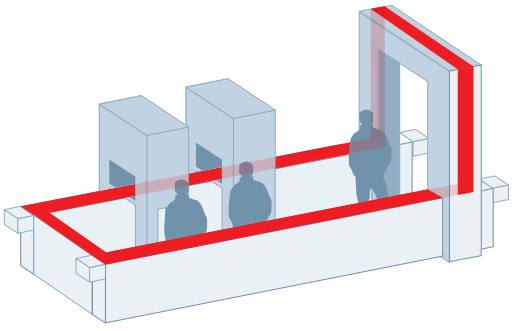


System layouts

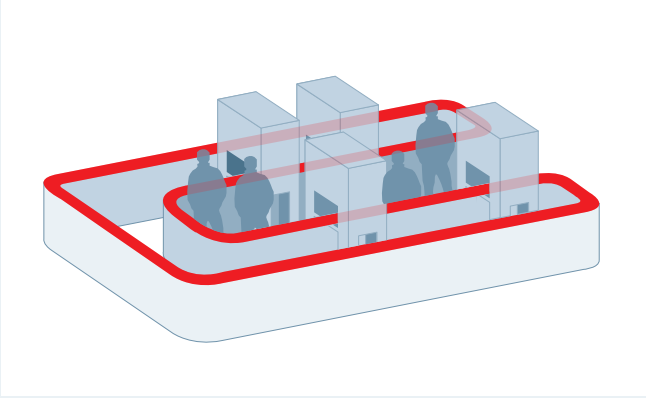
Main circuit







- Rectangular circuit

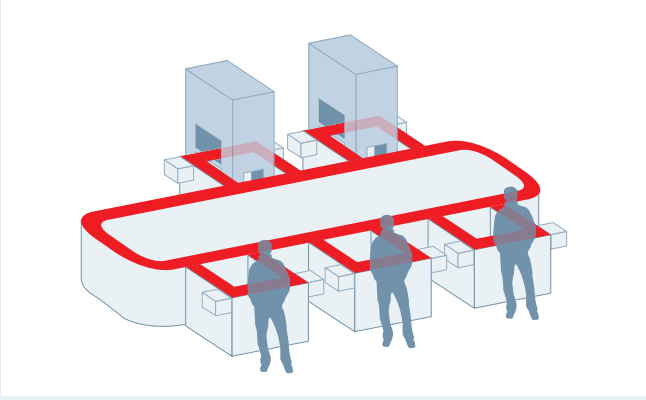


- U-shape

Shunt

- Production line construction (with lift*)

  * Our partners can advise you about lifts.

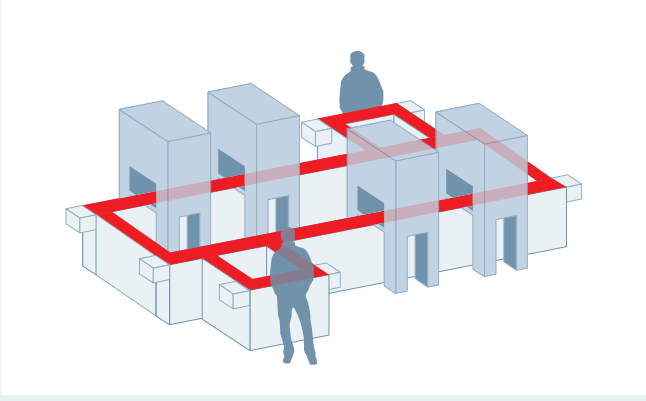


- Parallel workplaces

Mixed systems

- U-shape (with lift)

  *Our partners can advise you about lifts.



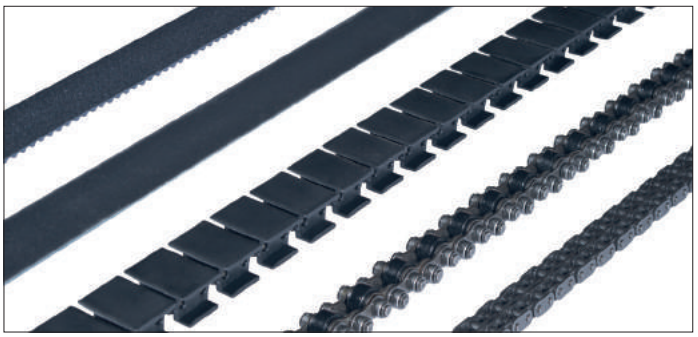
- Rectangular circuits with parallel workplaces

Operating principle

4. Conveyor media

The load carrying capacity of a workpiece pallet results from the

- combination of conveyor medium, glide profiles, and workpiece pallet wear pad as well as
- the surface length on the conveyor medium.



Toothed belts, belts, plastic flat top chains, roller chains, duplex chains (from left to right)

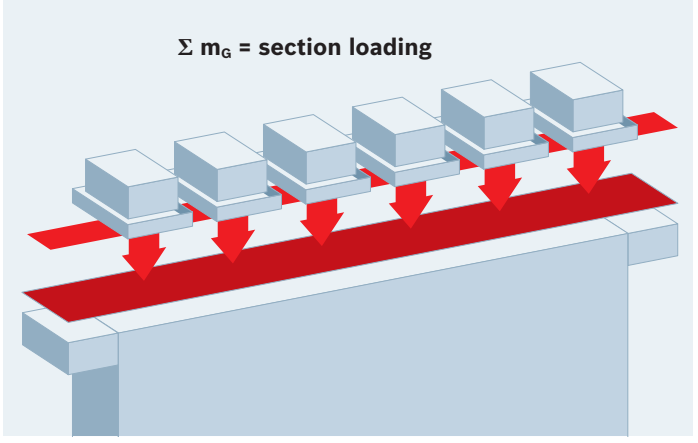
	PA **Standard wear pad**				PE **Special wear pad**			
Conveyor medium								
Steel glide profile								
Plastic glide profile								



Specific section load/cm = overall workpiece pallet mass /support surface length

Permitted section loading

When designing the conveyor sections, it is important to ensure that the **sum of the total weights of all workpiece pallets**, which re on the conveyor section in accumulation operation at one time, **is less** than the **permitted load for the conveyor section.**
The permitted section loading in accumulation is specified on individual drive modules and belt sections. If the permitted section loading for the conveyor section is exceeded, the section must be divided into several individual sections.



Operating principle

5. Combination of conveyor media, glide profiles and components

Assignment of weight classes – products

Workpiece pallet	**WT 2 ≤ 400 mm**	**WT 2**	**WT 2-H**	**WT 2-H**
Typical total weights of the WT in the application	Load 0 – 30 kg	Load 30 – 100 kg	Load 30 – 100 kg	Load 100 – 240 kg
Lift positioning unit (HP)/ positioning unit (PE)	PE 2 (F ≤ 30 kg)			
		PE 2/X (F ≤ 100 kg)	PE 2/H (F ≤ 240 kg)	PE 2/H (F ≤ 240 kg)
	HP 2/L (F ≤ 40 kg)	HP 2/L (F ≤ 40 kg)		
	HP 2 (F ≤ 110 kg)	HP 2 (F ≤ 110 kg)		
	PE 2/XX (F ≤ bel)	PE 2/XX (F ≤ bel)	PE 2/XX (F ≤ bel)	PE 2/XX (F ≤ bel)
	PE 2/XP (F ≤ 100 kN)			
Stop gate (VE)	VE 2 (F ≤ 200 kg)	VE 2 (F ≤ 200 kg)	VE 2/D100-H	VE 2/D100-H
	VE 2/L (F ≤ 200 kg)	VE 2/L (F ≤ 200 kg)	VE 2/D250-H	VE 2/D250-H
	VE 2/M (F ≤ 200 kg)	VE 2/M (F ≤ 200 kg)		
	VE 2/S (F ≤ 140 kg)	VE 2/S (F ≤ 140 kg)		
	VE 2/X (F ≤ 450 kg)	VE 2/X (F ≤ 450 kg)		
	VE 2/D-60 (F ≤ 60 kg)	VE 2/D-60 (F ≤ 60 kg)		
	VE 2/D-175 (F ≤ 100 kg)	VE 2/D-175 (F ≤ 100 kg)		
	VE 2/D-200 (F ≤ 200 kg)	VE 2/D-200 (F ≤ 200 kg)		
Damper (DA)	DA 2/10 (F ≤ 20 kg)			
	DA 2/30 (F ≤ 60 kg)			
	DA 2/100 (F ≤ 100 kg)	DA 2/100 (F ≤ 100 kg)		
			DA 2/100-H (F ≤ 100 kg)	DA 2/100-H (F ≤ 100 kg)
			DA 2/250-H (F ≤ 240 kg)	DA 2/250-H (F ≤ 240 kg)
		DA 2/150-E	DA 2/150-E	
Switch bracket (SH)	SH 2/S	SH 2/S		
	SH 2/ST	SH 2/ST		
	SH 2/S-H	SH 2/S-H	SH 2/S-H	SH 2/S-H
	SH 2/U	SH 2/U		
	SH 2/UV	SH 2/UV		
	SH 2/U-H	SH 2/U-H		
	SH 2/SF	SH 2/SF		
Rocker (WI)	WI 2	WI 2		

Operating principle

6. Ambient conditions

Materials used, resistance to media

Rexroth transfer systems are manufactured with high-quality materials to ensure continuous use. They are resistant to lubricating and cleansing agents that are common in an industrial environment.
However, we cannot guarantee that the products contained in this catalog are resistant to all combinations of testing liquids, gases, or solvents. Please contact your Rexroth representative if you have any doubts.



Environmental conditions – climatic

The transfer systems have been designed for stationary use in a location that is protected from the elements.

Operating temperature

+5 ... +40 °C
-5 ... +60 °C with 20% less load

Storage temperature

-25 °C ... +70 °C

Relative humidity

5 ... 85%, non-condensing
1 ... 2% (dry room) on request

Air pressure

> 84 kPa as appropriate
Installation altitude < 1400 m above mean sea level.
Load values are reduced by 15% when the system is set up at a location that is over 1400 m above sea level.





Environmental conditions – biological

Avoid molds, fungi, rodents, and other vermin.

Environmental conditions – chemical

Do not set up near industrial systems with chemical emissions.



Environmental conditions – physical

Do not set up near sources of shavings, sand or dust.
Do not set up in areas that are regularly jarred by high forces caused by, e.g., presses, heavy machinery, etc.



Suitability for electrostatically sensitive areas

Almost all of the components and parts in Rexroth transfer systems are ESD-compatible or available in ESD-compatible design. They can thus principally be used in EPA (ESD-protected areas). We do, however, recommend that you contact your Rexroth representative.



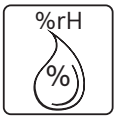
Oil

Use in oily environments

For applications where process-related oil can enter the transfer system, we recommend using chains as the conveyor medium (accumulation roller chains, V*plus* chains or flat top chains). We do, however, recommend that you contact your Rexroth representative.







Use in dry rooms

TS 2*plus* has been tested and approved with all conveyor media for use in dry rooms with a relative humidity of 1 ... 2%, e.g., for the production of Li-Ion battery cells. Your Rexroth representative will be pleased to advise you about this.







Use in cleanrooms

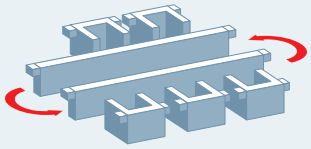
Almost all the components have been approved by the IPA*) for use in clean rooms and for clean room class 7 according to DIN EN ISO 14644-1. Please note that some clean room-compatible components have been specially modified. Please contact your Rexroth representative if you require clean room components.

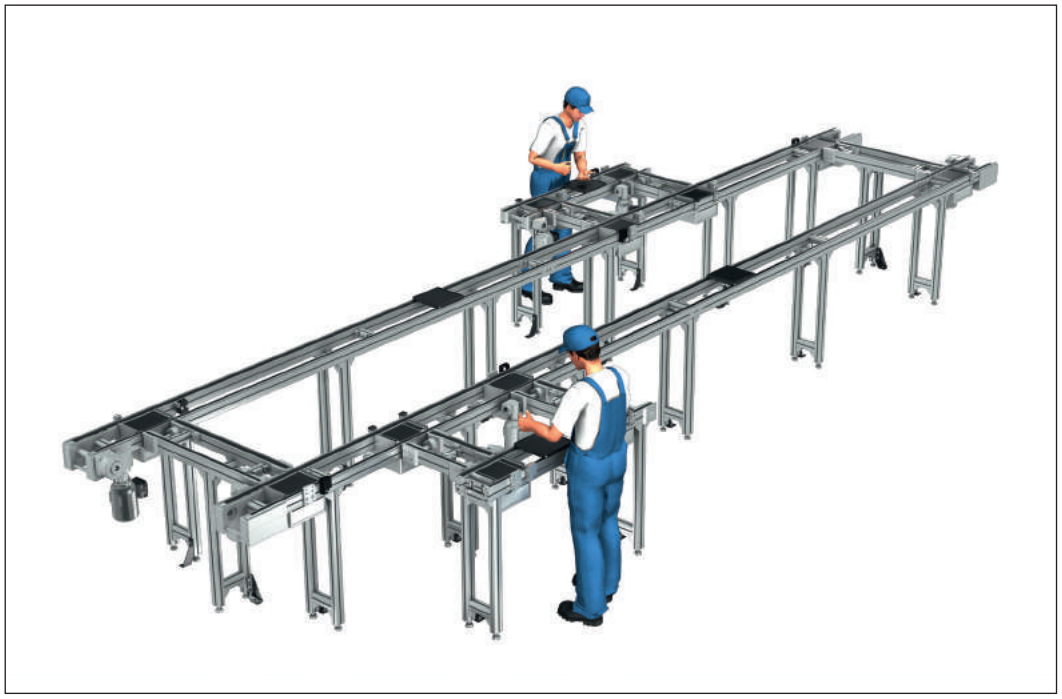
* Fraunhofer Institute for Manufacturing Engineering and Automation, Stuttgart, Germany

Design ideas

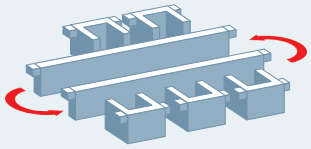
Systems

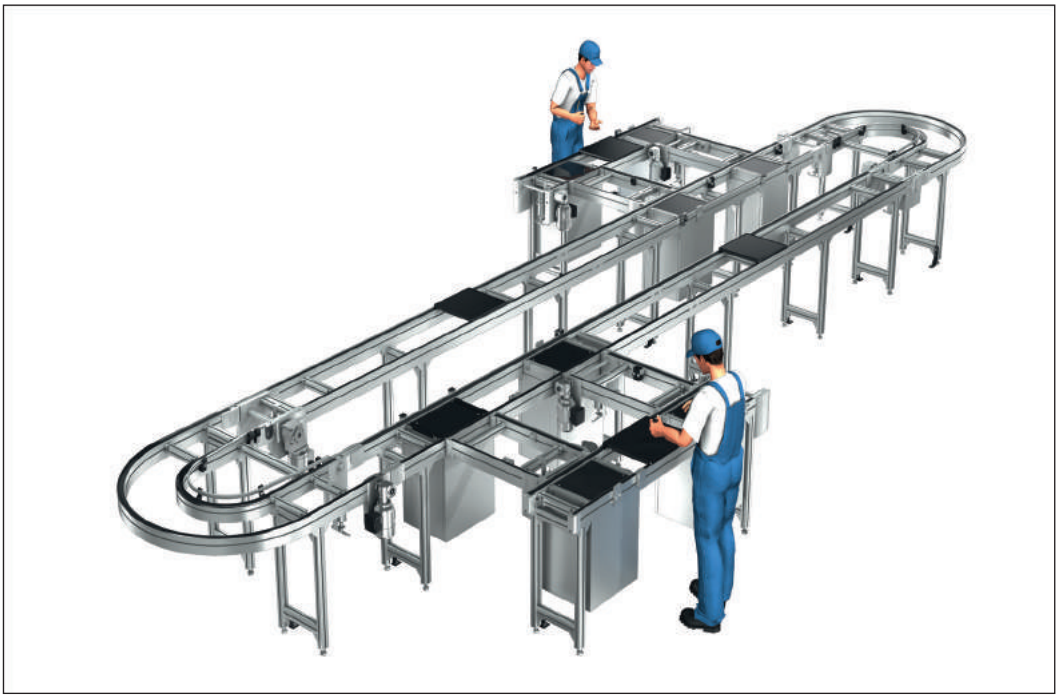
Layout example with 240 x 240 mm workpiece pallets, conveyor medium: belts, toothed belts





Layout example with 640 x 640 mm workpiece pallets, conveyor medium: accumulation roller chain, flat top chain





Identification and data tag systems

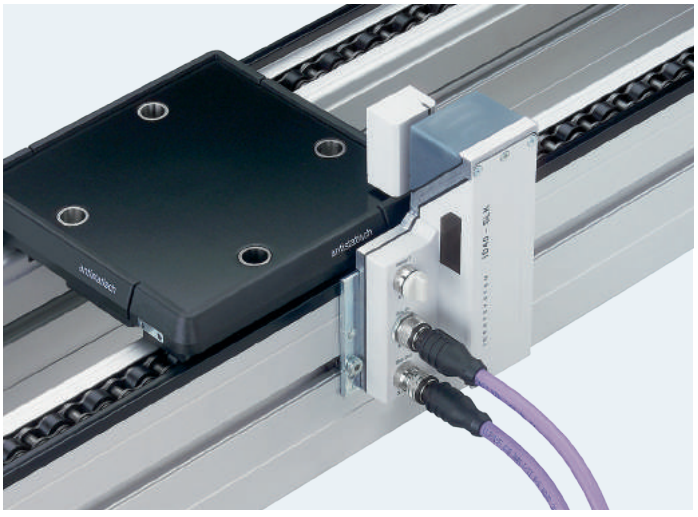
Identification and data storage systems store all product and process-related data directly on the workpiece pallet and enable local or central data processing. Identification and data tag systems are used to control numerous production and transport systems in assembly technology applications.

Data related to objects is the basis for

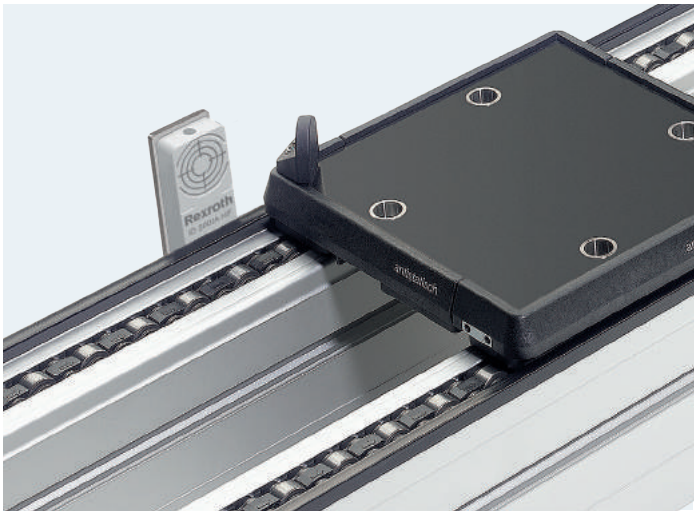
- for targeted control of processes and processing steps
- infeeding or outfeeding workpiece pallets according to type or variant when manufacturing product variants on flexible assembly systems.



ID 15



ID 40



ID 200

You can find the current range of Rexroth identification and data tag systems in the RFID systems catalog.

Identification systems catalog

DE no. 3 842 541 003



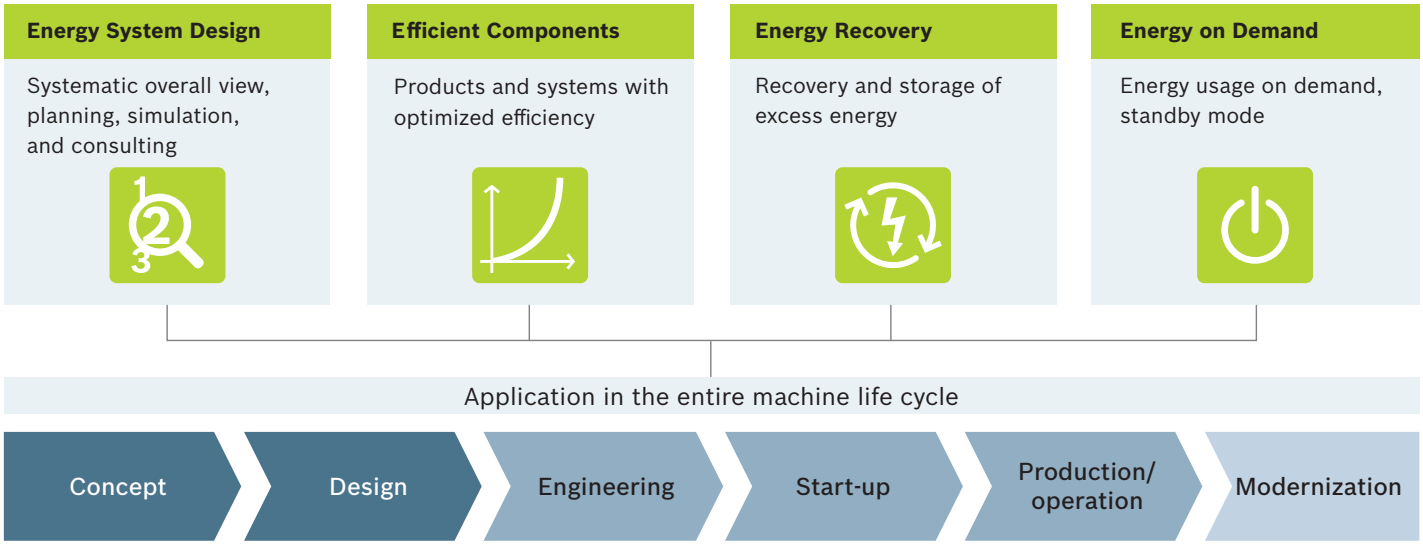
Energy efficiency – Rexroth 4EE

4EE ENERGY EFFICIENCY

Energy efficiency – a key factor for corporate success

From an economic point of view, energy efficiency and reduced emissions lower operating costs and offer a competitive edge in the fiercely competitive global market. In addition, they help support compliance with environmental standards.

All potentials for optimization are used effectively when not only the details of a system but the system as a whole is optimized. The 4EE system features four levers:



Efficient system layout

To achieve high energy efficiency, the system must be examined as a whole as early as in the planning phase. The TS 2*plus* modular system offers numerous modules, all of which enable you to implement a transfer system tailored precisely to the particular application. This effectively prevents over-dimensioning and high energy losses from the outset.

Energy-efficient modules

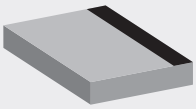
The TS 2*plus* modules are equipped with particularly energy-efficient drives. The efficiency of most of the motors already exceed future requirements. The interplay of friction-optimized materials, e.g., on slide rails, friction-minimizing gear oils and numerous further design details ensures perfect coordination in the overall system.

Energy use on demand

Minimal energy consumption requires the ability to be able to switch off system components on demand. The majority of motors in the TS 2*plus* system are designed for start-stop operation and frequency converter operation.

Worldwide approval

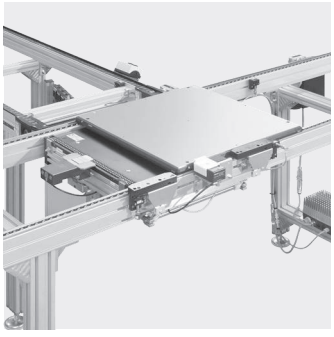
For international use, most of the motors feature CE, cURus and CCC approvals.

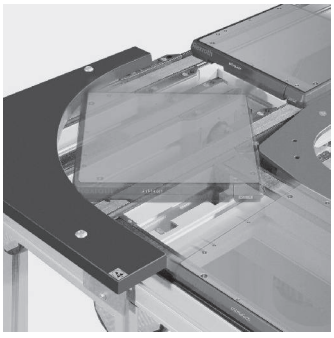


Workpiece pallets

Workpiece pallet selection **2-2**







Workpiece pallet selection

The workpiece pallet (WT) is used in the transfer system to convey the workpiece through the processing stations.
To guarantee an optimal transport, it should be loaded in the center.

Workpiece pallet applications

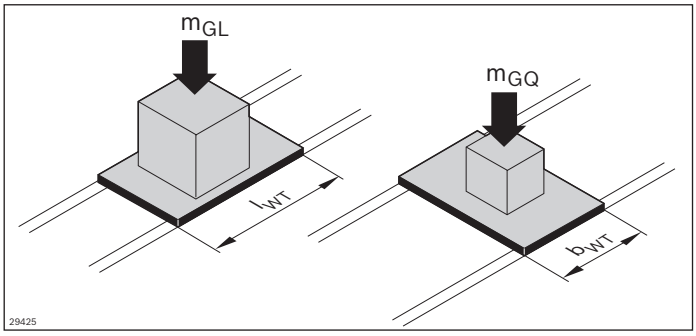
- Integrated positioning bushings enable defined positioning of the incoming workpiece in the processing station
- Optionally available data tags can provide work-related information during processing. This information can be evaluated on-site and also updated

Various WT workpiece pallets are available:
- The WT 2/E is an especially inexpensive, light-weight workpiece pallet with an all-plastic design that can be used for simple conveying and positioning tasks (see p. 2-6)
- The WT 2 is a sturdy and universally applicable workpiece pallet with a steel or aluminum carrying plate (see p. 2-8)
- The WT-2 components enable individual configuration of the WT using various frame modules and carrying plates, including those provided by the customer (see p 2-12) Total weight of workpiece pallets up to 100 kg
- The WT 2/H with aluminum carrying plate for applications with total weights up to 240 kg (see p 2-34)
- WT 2/F with an aluminum frame profile design can be used for large workpieces. Grooves throughout the frame profile make it easier to install parts holders (see p. 2-47). Total weight of workpiece pallets up to 100 kg
- WT 2/F-H with the same aluminum carrying plate, but in the heavy duty version up to 240 kg (see p 2-50)

Size, combination with conveyor medium

The permitted total weight m_G of a workpiece pallet results from the
- combination of conveyor medium, glide profiles, and workpiece pallet wear pad as well as
- the surface length on the conveyor medium (see p. 1-10)

The surface length on the conveyor medium may vary in longitudinal and transverse conveying with non-square pallets. The shorter side of the workpiece pallet determines the maximum permitted total weight.



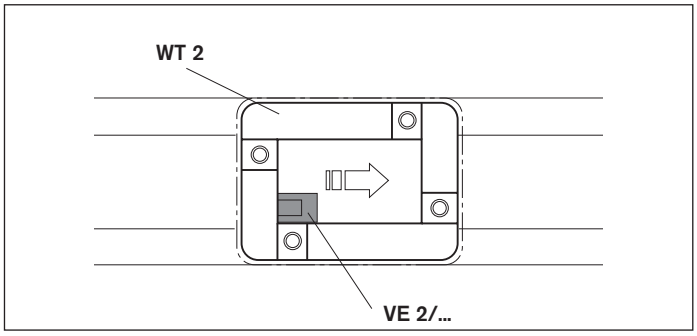
The following estimated parameters can be used:
- **Conveyor media belt and toothed belt:** A surface load of up to 1 kg/cm is permissible on workpiece pallets with PA wear pads.
- **Conveyor medium flat top chain:** PA wear pads on the workpiece pallets are recommended in the combination with a plastic flat top chain. This permits surface loads of up to 1 kg/cm in the standard design with plastic glide profiles in the section profile. Bearing loads of 1.5 kg/cm are possible with the optionally available version with steel glide profiles.
- **Conveyor medium accumulation roller chain:** In conjunction with PE wear pads on the workpiece pallets, the standard design with plastic glide profiles in the section profile permits surface loads of up to 1.5 kg/cm. The optionally available version with steel glide profiles and the accumulation roller chain with steel rollers can tolerate surface loads of 2 kg/cm

When WT 2/E, WT 2 and WT 2/F workpiece pallets are used, the VE 2/... stop gates are mounted directly on the section for lateral separation.
The WT 2/E, WT 2 and WT 2/F are used up to 100 kg.

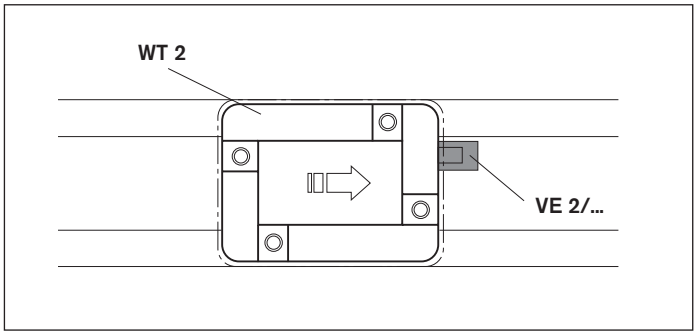
When WT 2/H and WT 2/F-H are used, the VE 2/D...-H stop gates are mounted by a cross strut for central separation.
WT 2/H or WT 2/F-H are used for heavy duty versions up to workpiece pallet total weights of 240 kg.

All VE 2/... (without VE 2/...-H) can be used for lateral separation.
All VE 2/D...-H can be used for central separation.

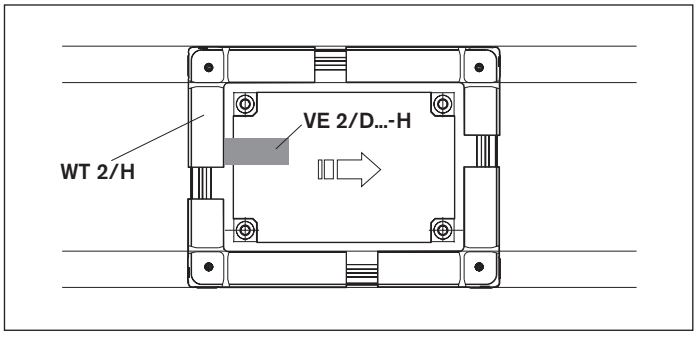
Mounting in rear right position in the direction of transport, on the **inside** of the workpiece pallet surface



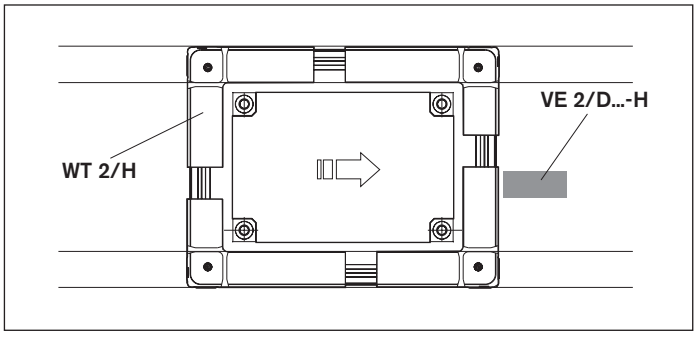
Mounting in front left position in the direction of transport, on the **outside** of the workpiece pallet surface



Mounting inside the workpiece pallet surface



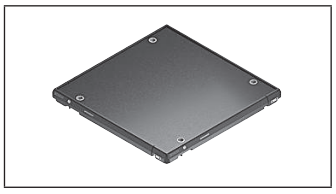
Mounting outside the workpiece pallet surface



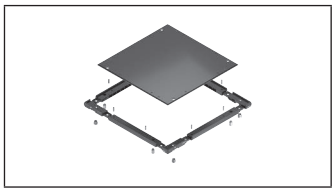
The size and position of the positioning bushings is different for the workpiece pallets for lateral separation compared to the types for central separation. This must be considered when selecting the positioning units. For more information, see also the table on p. 1-11



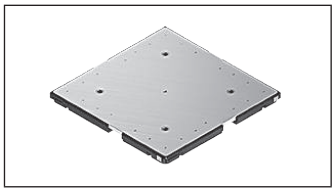
WT 2/E workpiece pallet 12 **2-6**



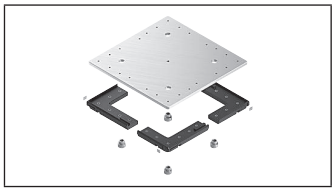
WT 2 workpiece pallet 100 **2-8**



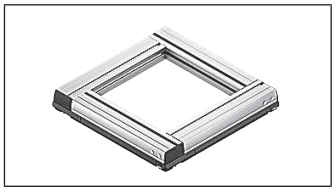
Components for WT 2 workpiece pallets 100 **2-12**



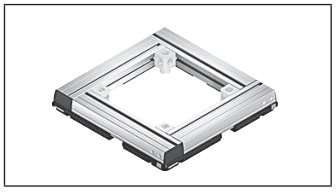
WT 2/H workpiece pallets 240 **2-34**



Components for WT 2/H workpiece pallets 240 **2-40**

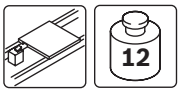


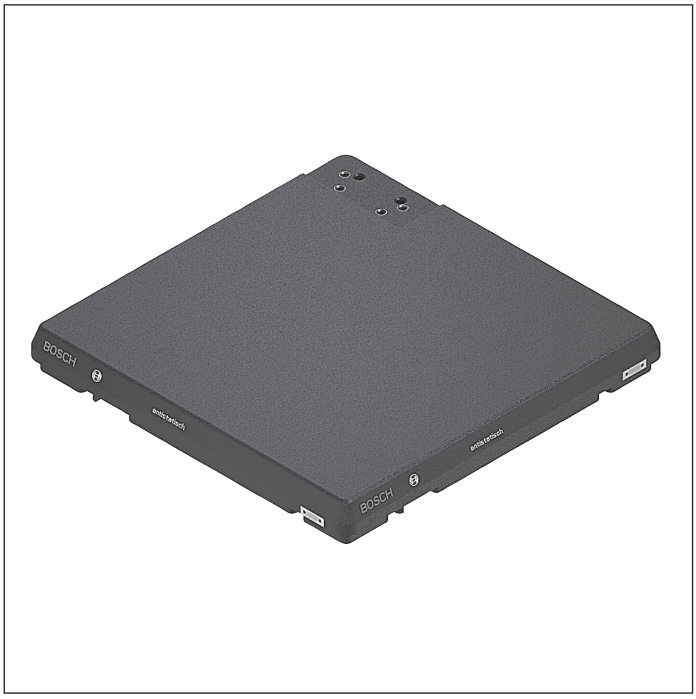
WT 2/F workpiece pallets 100 **2-47**



WT 2/F-H workpiece pallet 240 **2-50**

WT 2/E workpiece pallet





- Integrated positioning bushings for a positioning accuracy of ± 0.3 mm
- Prepared for the installation of mobile data tags from the ID 10, ID 40 and ID 200 identification systems
- Not suitable for accumulation roller chains
- A standard size with the dimensions b_{WT} x l_{WT} = 240 x 240 mm
- Material: All-plastic polyamide version (PA 6)

WT 2/E is a cost-effective workpiece pallet with an all-plastic design, suitable for applications with low loads from above and on the joints of up to 0.5 kg/cm.

Accessories

Recommended accessories

- ID 40 attachment kit 3842532630 (see RFID systems catalog)

Delivery notes

Scope of delivery

- Workpiece pallet, complete

Condition on delivery

- Fully assembled

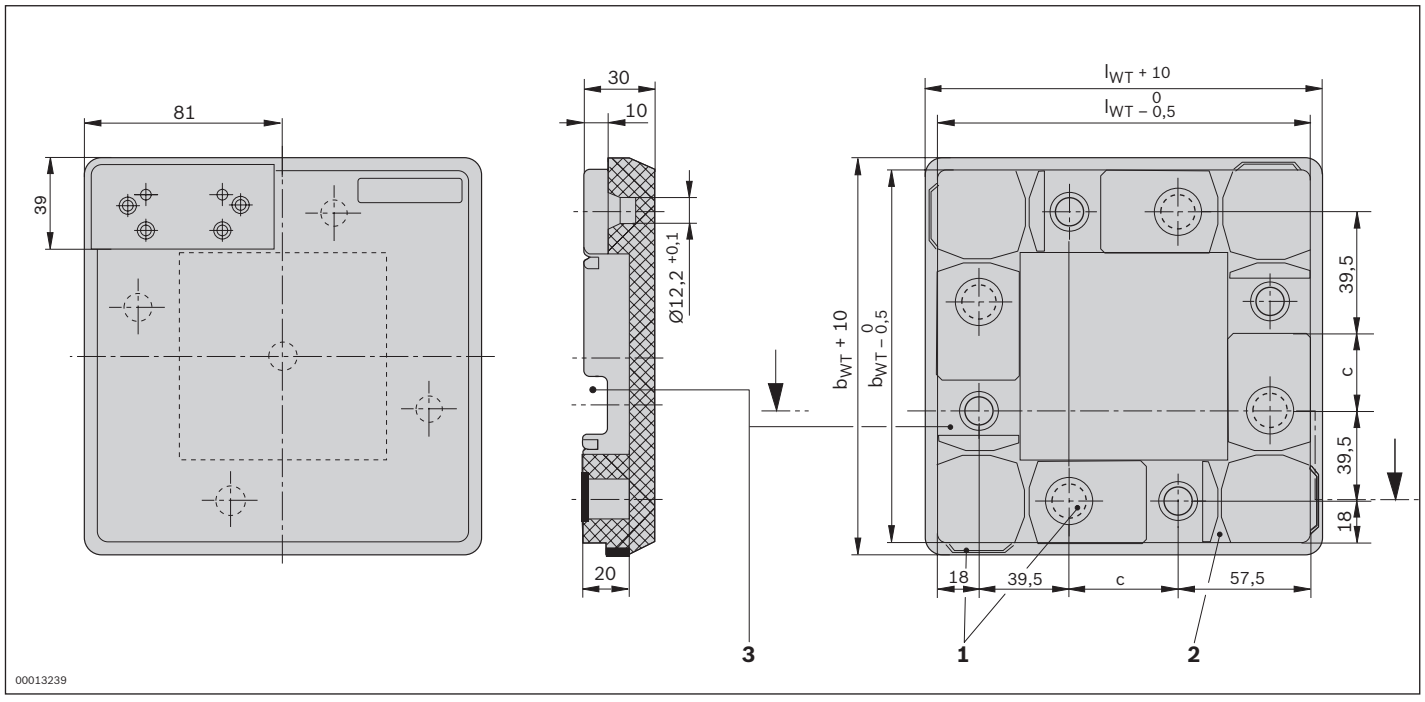
Ordering information

Product designation	Material number
WT 2/E workpiece pallet	3842352171

Technical data

Material number			**3842352171**
Features			
Plate thickness	d_{Pl}	mm	10
Flatness	□	mm	1
Workpiece pallet mass	m_{WT}	kg	1.6

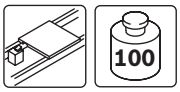
Dimensions

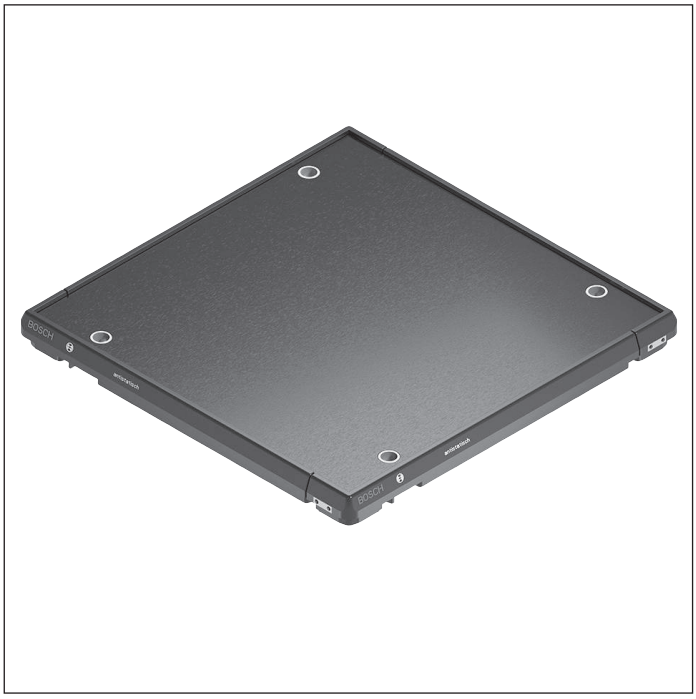


No production drawing
1 Exciter plate
2 Guide groove
3 Stop gate aperture

Width of workpiece pallet b_{WT} (mm)	**Length of workpiece pallet l_{WT} (mm)**	**Workpiece pallet mass m_{WT} (kg)**	**Dimension c (mm)**
240	240	1.6	125

WT 2 workpiece pallet, fully assembled





- Suitable for belt, toothed belt, and flat top chain
- Robust workpiece pallet with high rigidity
- Integrated positioning bushings
- Prepared for installation of mobile data tags from the ID 15, ID 40 and ID 200 identification systems
- Not suitable for accumulation roller chains
- Plastic frame modules with universal steel carrying plate
- 15 standard sizes
- Suitable for use in an EPA
- Material:
  - Frame module with polyamide (PA) wear pad
  - Steel carrying plate (4.8 mm)

WT 2 is a sturdy workpiece pallet with high rigidity in a composite plastic-steel construction used to pick up and convey workpieces in the TS 2*plus* transfer system.
From size 400 x 400 mm, the workpiece pallet plates are executed as standard with two or four additional threaded holes for reinforcing bolts. Number given in carrying plate table on page 2-27.

Delivery notes

Scope of delivery

- Carrying plate
- Frame modules
- Connection elements
- Positioning bushings

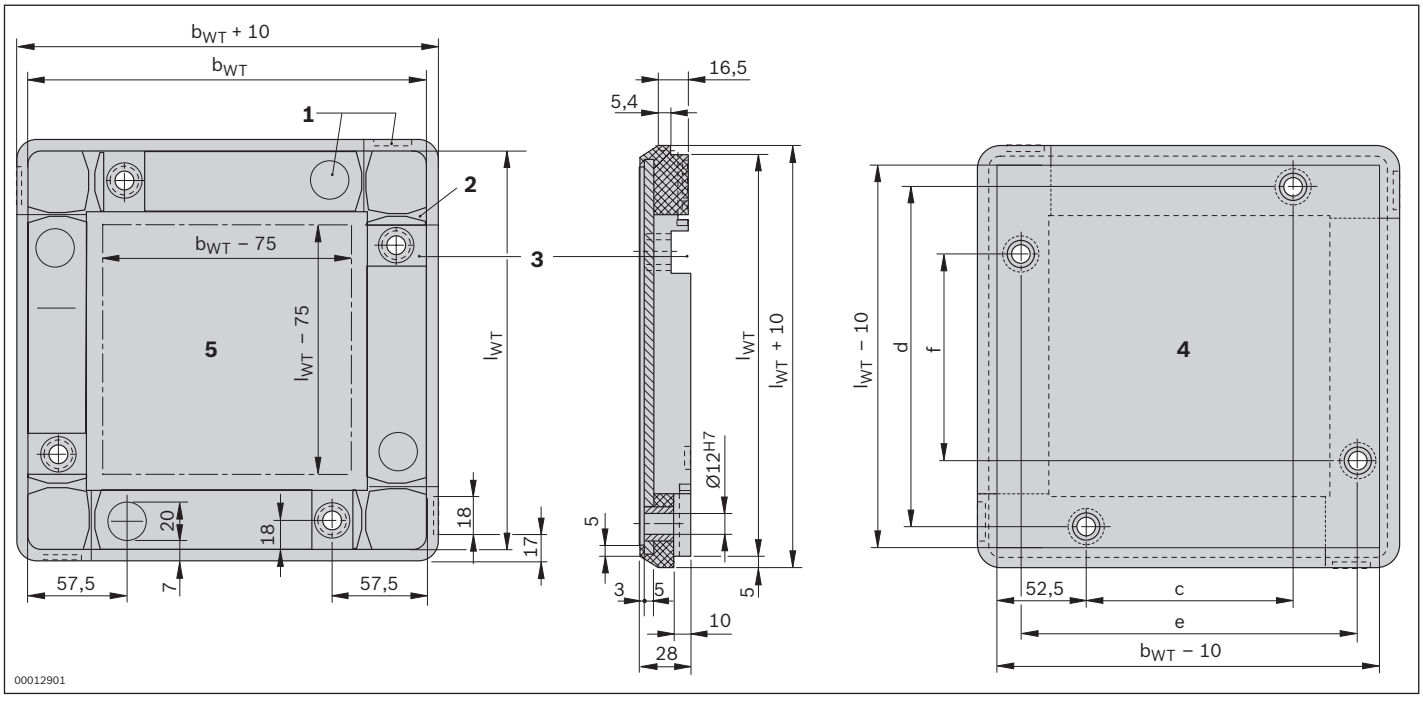
Condition on delivery

- Fully assembled

Ordering information

Product designation	Workpiece pallet b_{WT} x l_{WT}	Material number
WT 2 workpiece pallet	160 x 160	0842090030
WT 2 workpiece pallet	160 x 240	0842090032
WT 2 workpiece pallet	160 x 320	0842090034
WT 2 workpiece pallet	240 x 240	0842090039
WT 2 workpiece pallet	240 x 320	0842090041
WT 2 workpiece pallet	240 x 400	0842090043
WT 2 workpiece pallet	320 x 320	0842090048
WT 2 workpiece pallet	320 x 400	0842090050
WT 2 workpiece pallet	320 x 480	0842090051
WT 2 workpiece pallet	400 x 400	0842090080
WT 2 workpiece pallet	400 x 480	0842090081
WT 2 workpiece pallet	400 x 640	0842090083
WT 2 workpiece pallet	480 x 480	0842090086
WT 2 workpiece pallet	480 x 640	0842090088
WT 2 workpiece pallet	640 x 640	3842523405

Dimensions

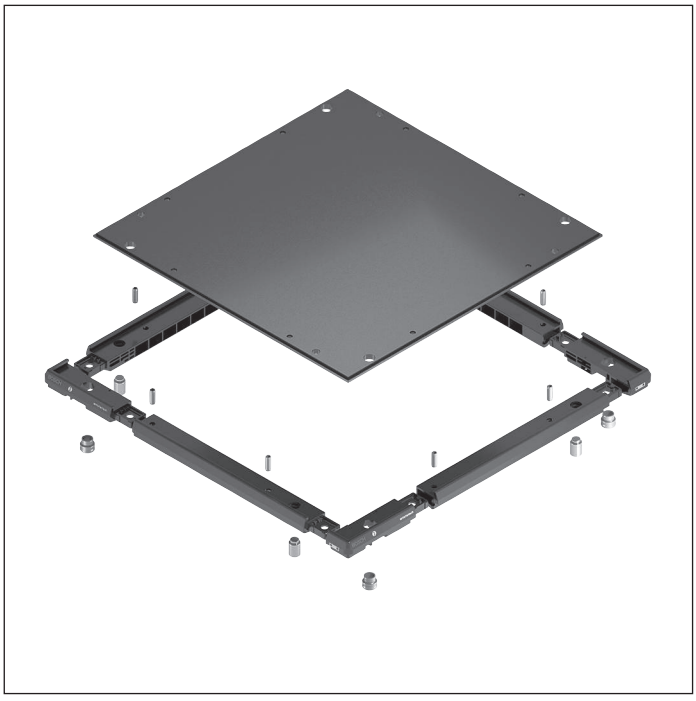


No production drawing
1 Exciter plate
2 Guide groove
3 Stop gate aperture
4 Top clearance
5 Bottom clearance

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Plate thickness d_{PI} (mm)	Flatness □ (mm)	Plate mass m_{PI} (kg)	Workpiece pallet mass m_{WT} (kg)	Dimension c (mm)	Dimension d (mm)	Dimension e (mm)	Dimension f (mm)
160	160	4.8	0.3	0.9	1.2	45	124	124	45
160	240	4.8	0.3	1.3	1.8	45	204	124	125
160	320	4.8	0.3	1.8	2.3	45	284	124	205
240	240	4.8	0.3	2.0	2.5	125	204	204	125
240	320	4.8	0.5	2.7	3.3	125	284	204	205
240	400	4.8	0.5	3.4	4.1	125	364	204	285
320	320	4.8	0.5	3.6	4.4	205	284	284	205
320	400	4.8	0.6	4.6	5.4	205	364	284	285
320	480	4.8	0.6	5.5	6.4	205	444	284	365
400	400	4.8	0.6	5.9	6.6	285	364	364	285
400	480	4.8	0.6	7.0	8.0	285	444	364	365
400	640	4.8	0.8	9.3	11.0	285	604	364	525
480	480	4.8	0.8	8.3	9.7	365	444	444	365
480	640	4.8	1.0	11.4	12.4	365	604	444	525
640	640	4.8	1.0	15.3	16.3	525	604	604	525

Components for WT 2 workpiece pallets

To fulfill special needs, the workpiece pallets can also be individually configured in a design where the carrying plate is assembled by the customer. In addition to frame modules with different wear pads, various carrying plates, positioning bushings and all the necessary fastening elements are available.



Frame modules

- PA frame modules are the basic solution for use on belts, toothed belts, and plastic flat top chains
- PA wear pads are required for use on conveyor medium accumulation roller chains and duplex chains
- Reinforced (PA or PE) for workpiece pallet total weights > 50 kg and conveyor speeds > 12 m/min

Carrying plates

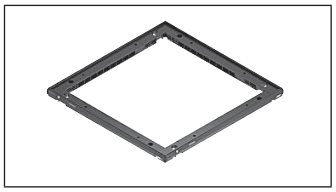
- Steel carrying plates with a thickness of 4.8 mm for workpiece pallets up to medium size High stability allows for easy integration of your own workpiece supports
- Aluminum carrying plates with a thickness of 8 mm or 12.7 mm are a light and rigid alternative for medium and large workpiece pallets

Positioning bushings

- For defined pick-up of the workpiece pallet in the positioning units

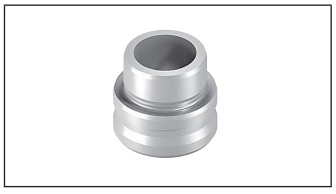
Accessories

- Dowel pins to connect the extension modules to the carrying plate
- Bolts in combination with reinforced frame modules for large workpiece pallets (from 400 x 400 mm) and weights over 50 kg to max. 100 kg.



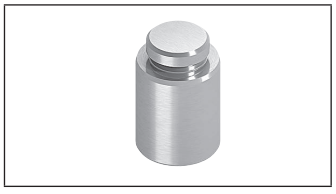
Frame modules, standard/reinforced **2-47**



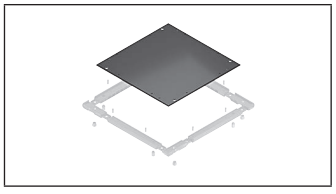


Positioning bushings **2-22**

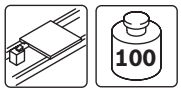




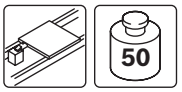
Bolts **2-25**

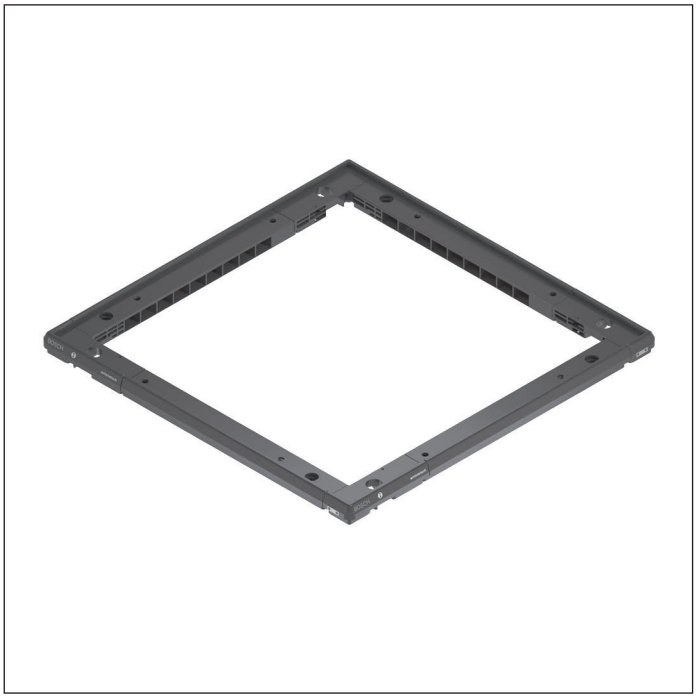


Carrying plates **2-26**



Standard frame module



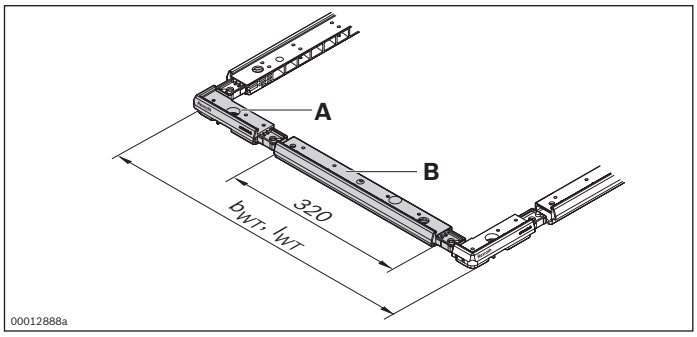


- Corner modules with standard side lengths of 160 to 400 mm
- Frame extension module, 320 mm
- Material:
  - Corner/extension module (PA) with PA (= polyamide) wear pad
    or
  - Corner/extension module (PA) with PE (= polyethylene) wear pad
- Reinforced frame modules are required for total weights m_G > 50 kg and for conveyor speeds v_N >12 m/min
- Can be combined with WT 2 carrying plates

Frame modules are used for self-assembly of workpiece pallets. The PA basic solution is suitable for use on the belt/toothed belt and flat top chain conveyor media.

Frame modules with PE wear pads are required for use on the duplex chain and accumulation roller chain conveyor media. The PE pad is not suitable for accumulation operation on ESD flat top chains.

Ordering information



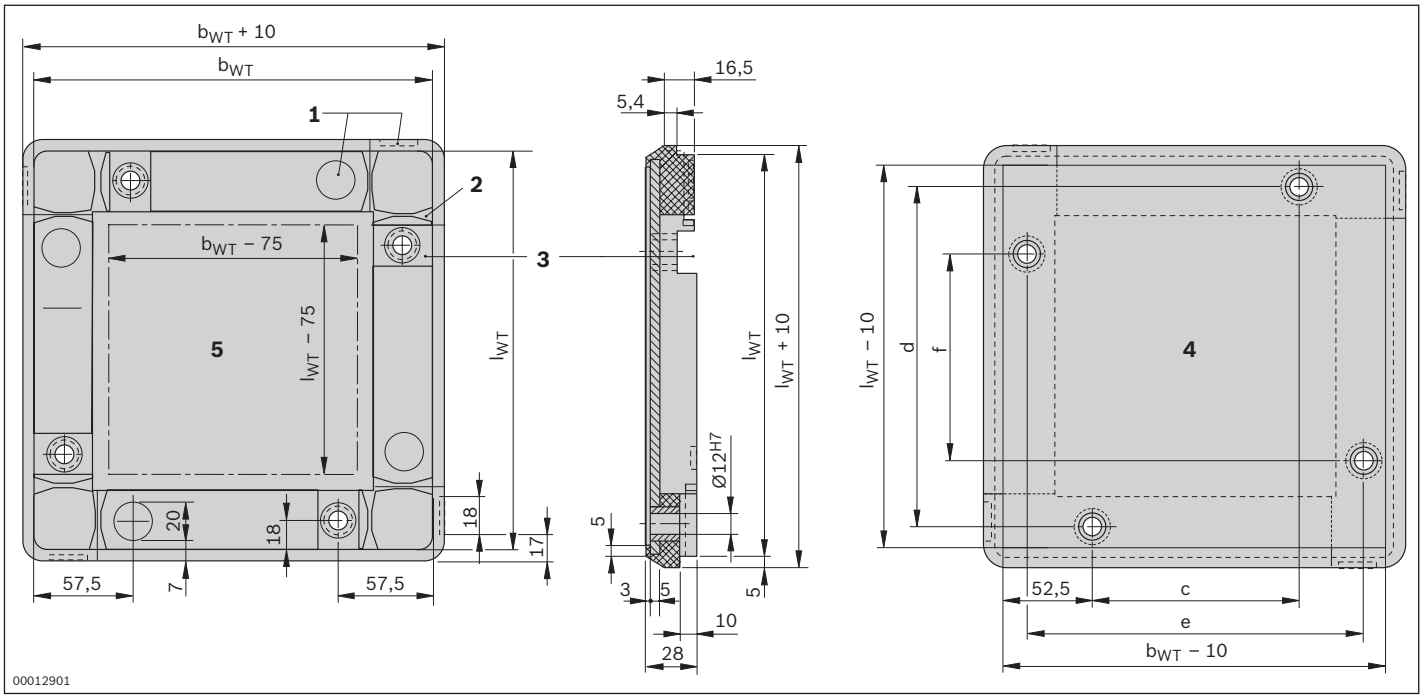
A Corner module
B Extension module

Product designation	b_{WT}, l_{WT} (mm)	Material number
Standard frame module, corner module (PA)	160	3842174301
Standard frame module, corner module (PA)	240	3842174302
Standard frame module, corner module (PA)	320	3842174303
Standard frame module, corner module (PA)	400	3842174304
Standard frame module, corner module (PA+PE)[1]	160	3842526760
Standard frame module, corner module (PA+PE)	240	3842526761
Standard frame module, corner module (PA+PE)	320	3842526762
Standard frame module, corner module (PA+PE)	400	3842526763

[1] No exciter plate for position sensing from below with inductive sensors is included. Only lateral position sensing is possible with this design.

Product designation	l (mm)	Material number
Standard frame module, extension module (PA)	320	3842513458
Standard frame module, extension module (PA+PE)	320	3842526764

Dimensions

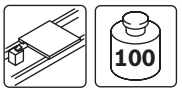


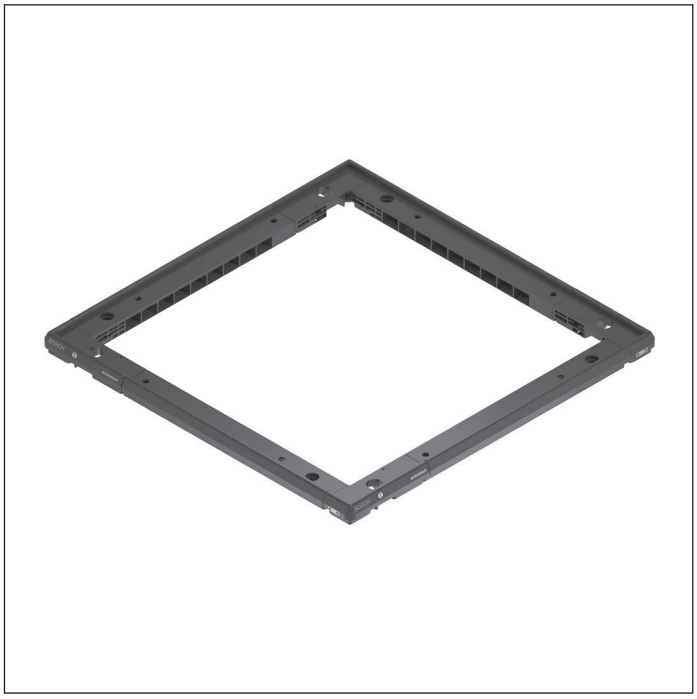
1 Exciter plate
2 Guide groove
3 Stop gate aperture
4 Top clearance
5 Bottom clearance

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Plate mass m_{PI}[1] (kg)	Plate mass m_{PI}[2] (kg)	Plate mass m_{PI}[3] (kg)	Dimension c (mm)	Dimension d (mm)	Dimension e (mm)	Dimension f (mm)
160	160	0.9			45	124	124	45
160	240	1.4			45	204	124	125
240	240	2.1			125	204	204	125
160	320	1.8			45	284	124	205
240	320	2.8			125	284	204	205
320	320	4.3	2.1		205	284	284	205
240	400	4.1	2.0		125	364	204	285
320	400	5.3	3.7		205	364	284	285
400	400	6.6	3.4	5.3	285	364	364	285
320	480	6.4	3.2	5.1	205	444	284	365
400	480	7.0	4.0	6.4	285	444	364	365
480	480	9.3	4.9	7.7	365	444	444	365
400	640	10.4	5.4	8.6	285	604	364	525
480	640	12.3	6.5	10.3	365	604	444	525
640	640	16.3	8.7	13.8	525	604	604	525
400	800			10.8	285	764	364	685
480	800			12.9	365	764	444	685
640	800			17.3	525	764	604	685
800	800			21.7	685	764	764	685
640	1040			22.5	525	1004	604	925
800	1040			28.2	685	1004	764	925
800	1200			36.0	685	1164	764	1085
1040	1040			40.6	925	1004	1004	925
1040	1200			46.9	925	1164	1004	1085
1200	1200			54.1	1085	1164	1164	1085

[1] 4.8 mm steel
[2] 8.0 mm aluminum
[3] 12.7 mm aluminum

Reinforced frame module





- For self-assembly of workpiece pallets from 400 x 400 mm. Required for workpiece pallet total weights m_G > 50 kg and for conveyor speeds v_N > 12 m/min
- Corner module, 400 mm
- Frame extension module, 320 mm
- Wide variety of workpiece pallet sizes possible through combinations of standard modules
- Material:
  - Corner/extension module (PA) with PA (= polyamide) wear pad
    or
  - Corner/extension module (PA) with PE (= polyethylene) wear pad
- Can be combined with WT 2 carrying plates

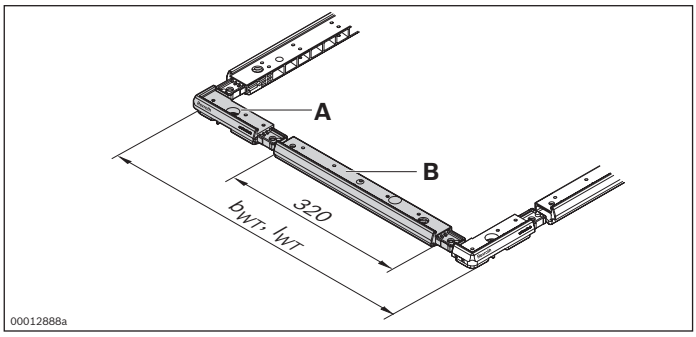
Reinforced frame modules are used for self-assembly of workpiece pallets with dimensions from 400 x 400 mm. Required for workpiece pallet total weights > 50 kg or for conveyor speeds v_N > 12 m/min.
The PA basic solution for use on conveyor media belts/toothed belts is suitable for use on the belt/toothed belt and plastic flat top chain conveyor media.
Frame modules with PE wear pads are required for use on the duplex chain and accumulation roller chain conveyor media.

Accessories

Required accessories

- Bolt, see p. 2-25

Ordering information

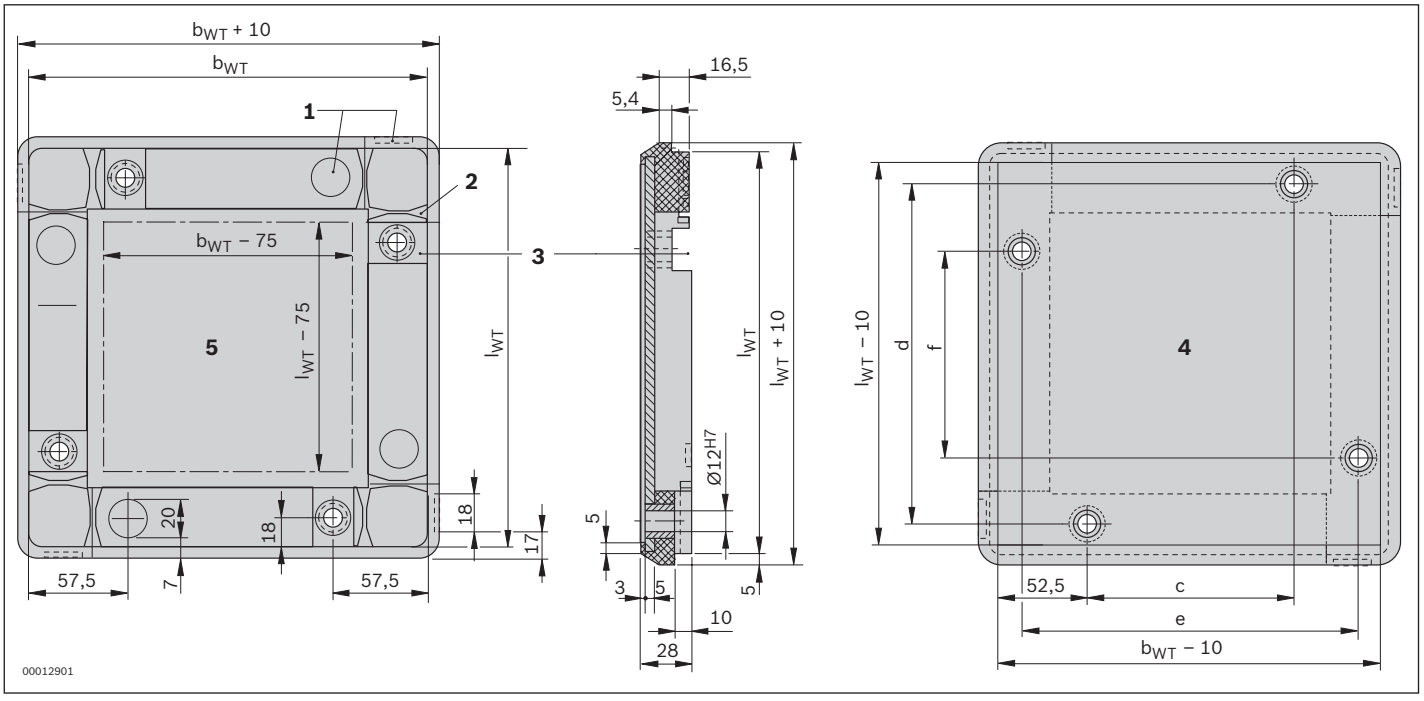


A Corner module
B Extension module

Product designation	b_{WT}, l_{WT} (mm)	Material number
Reinforced frame module, corner module (PA)	400	3842525998
Reinforced frame module, corner module (PA+PE)	400	3842528292

Product designation	l (mm)	Material number
Reinforced frame module, extension module (PA)	320	3842525999
Reinforced frame module, extension module (PA+PE)	320	3842528293

Dimensions



1 Exciter plate
2 Guide groove
3 Stop gate aperture
4 Top clearance
5 Bottom clearance

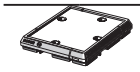
Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Plate mass m_{Pl}[1] (kg)	Plate mass m_{Pl}[2] (kg)	Plate mass m_{Pl}[3] (kg)	Dimension c (mm)	Dimension d (mm)	Dimension e (mm)	Dimension f (mm)
160	160	0.9			45	124	124	45
160	240	1.4			45	204	124	125
240	240	2.1			125	204	204	125
160	320	1.8			45	284	124	205
240	320	2.8			125	284	204	205
320	320	4.3	2.1		205	284	284	205
240	400	4.1	2.0		125	364	204	285
320	400	5.3	3.7		205	364	284	285
400	400	6.6	3.4	5.3	285	364	364	285
320	480	6.4	3.2	5.1	205	444	284	365
400	480	7.0	4.0	6.4	285	444	364	365
480	480	9.3	4.9	7.7	365	444	444	365
400	640	10.4	5.4	8.6	285	604	364	525
480	640	12.3	6.5	10.3	365	604	444	525
640	640	16.3	8.7	13.8	525	604	604	525
400	800			10.8	285	764	364	685
480	800			12.9	365	764	444	685
640	800			17.3	525	764	604	685
800	800			21.7	685	764	764	685
640	1040			22.5	525	1004	604	925
800	1040			28.2	685	1004	764	925
800	1200			36.0	685	1164	764	1085
1040	1040			40.6	925	1004	1004	925
1040	1200			46.9	925	1164	1004	1085
1200	1200			54.1	1085	1164	1164	1085

[1] 4.8 mm steel
[2] 8.0 mm aluminum
[3] 12.7 mm aluminum

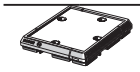
WT 2: Components

WT 2: Frame modules with PA wear pad – parts list

For $m_G \leq 50$ kg or $v_N \leq 12$ m/min workpiece pallets

						
b_{WT} (mm)	l_{WT} (mm)	3842174301	3842174302	3842174303	3842174304	3842513458
160	**160**	4				
160	**240**	2	2			
160	**320**	2		2		
240	**240**		4			
240	**320**		2	2		
240	**400**		2		2	
320	**320**			4		
320	**400**			2	2	
320	**480**	2		2		2
400	**400**				4	
400	**480**	2			2	2
400	**640**			2	2	2
400	**800**	2			2	4
480	**480**	4				4
480	**640**	2		2		4
480	**800**	4				6
640	**640**			4		4
640	**800**	2		2		6
640	**1040**			2	2	6
800	**800**	4				8
800	**1040**	2			2	8
800	**1200**	2	2			10
1040	**1040**				4	8
1040	**1200**		2		2	10
1200	**1200**		4			12

For $m_G > 50$ kg and $v_N > 12$ m/min workpiece pallets

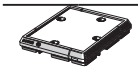
								
b_{WT} (mm)	l_{WT} (mm)	3842174301	3842174302	3842174303	3842174304	3842513458	3842525998*)	3842525999*)
320	**480**	2		2				2
400	**400**						4	
400	**480**	2					2	2
400	**640**			2			2	2
400	**800**	2				2	2	2
480	**480**	4						4
480	**640**	2		2				4
480	**800**	4				2		4
640	**640**			4				4
640	**800**	2		2		2		4
640	**1040**			2	2	2		4
800	**800**	4				4		4
800	**1040**	2			2	4		4
800	**1200**	2	2			6		4
1040	**1040**				4	4		4
1040	**1200**		2		2	6		4
1200	**1200**		4			8		4

* Reinforced module
[1] With the 160 mm frame module with PE wear pad (3842526760), no exciter plate is included for sensing with inductive sensors from below. Only lateral position sensing is possible with this design.

2

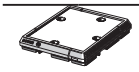
WT 2: Frame modules with PE wear pad – parts list

For $m_G \leq 50$ kg or $v_N \leq 12$ m/min workpiece pallets



b_{WT} (mm)	l_{WT} (mm)	3842526760[1]	3842526761	3842526762	3842526763	3842526764
160	**160**	4				
160	**240**	2	2			
160	**320**	2		2		
240	**240**		4			
240	**320**		2	2		
240	**400**		2		2	
320	**320**			4		
320	**400**			2	2	
320	**480**	2		2		2
400	**400**				4	
400	**480**	2			2	2
400	**640**			2	2	2
400	**800**	2			2	4
480	**480**	4				4
480	**640**	2		2		4
480	**800**	4				6
640	**640**			4		4
640	**800**	2		2		6
640	**1040**			2	2	6
800	**800**	4				8
800	**1040**	2			2	8
800	**1200**	2	2			10
1040	**1040**				4	8
1040	**1200**		2		2	10
1200	**1200**		4			12

For $m_G > 50$ kg and $v_N > 12$ m/min workpiece pallets

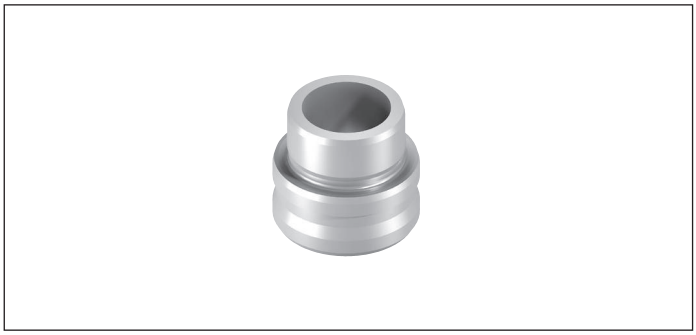


b_{WT} (mm)	l_{WT} (mm)	3842526760[1]	3842526761	3842526762	3842526763	3842526764	3842528292*	3842528293*
320	**480**	2		2				2
400	**400**						4	
400	**480**	2					2	2
400	**640**			2			2	2
400	**800**	2				2	2	2
480	**480**	4						4
480	**640**	2		2				4
480	**800**	4				2		4
640	**640**			4				4
640	**800**	2		2		2		4
640	**1040**			2	2	2		4
800	**800**	4				4		4
800	**1040**	2			2	4		4
800	**1200**	2	2			6		4
1040	**1040**				4	4		4
1040	**1200**		2		2	6		4
1200	**1200**		4			8		4

* Reinforced module

[1] With the 160 mm frame module with PE wear pad (3842526760), no exciter plate is included for sensing with inductive sensors from below. Only lateral position sensing is possible with this design.

Positioning bushing



- For supporting the workpiece pallet in positioning units
- Used to mount frame modules and carrying plates
- Positioning bushings increase the empty weight of the workpiece pallet
- Material: Steel, hardened
- Can be combined with frame modules of the WT 2 workpiece pallet

Accessories

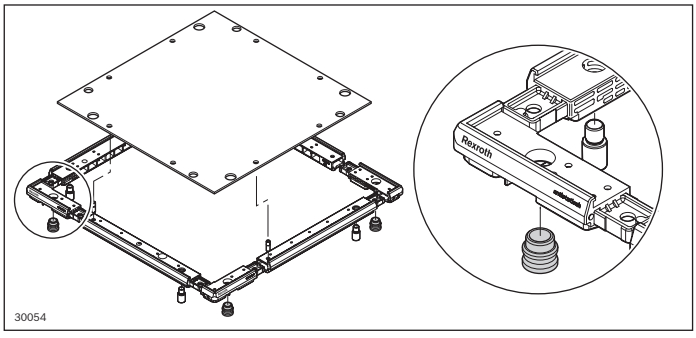
Required mounting accessories

- Press-fit mandrel, see p. 2-23

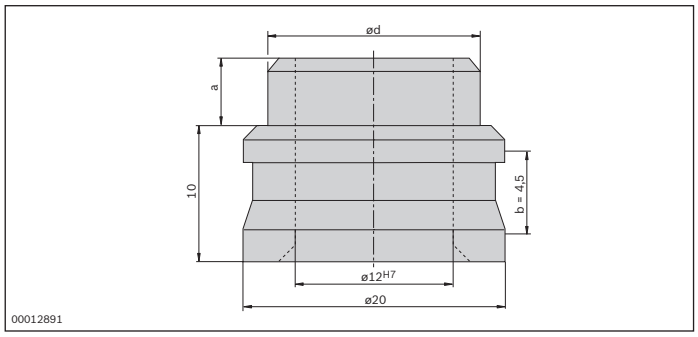
Ordering information

Product designation	Delivery unit	Material number
D20 x 4.8 positioning bushing	1	3842174341
D20 x 8 positioning bushing	1	3842524614
D20 x 12.7 positioning bushing	1	3842524615

Technical data



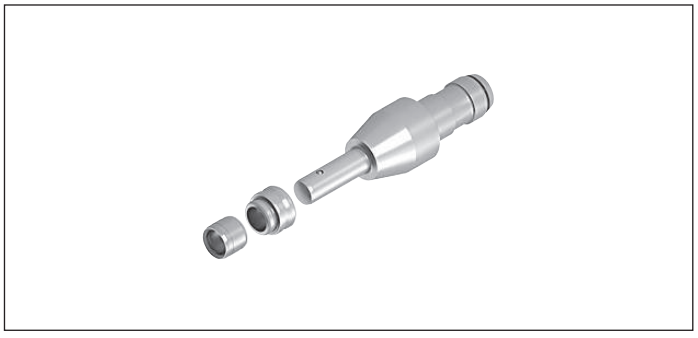
Dimensions



Dimension must to correspond to the WT plate thickness.
Note: The dimension 12H7 refers to the state before press-fitting. After press-fitting with the mandrel the dimension 12H7 is guaranteed to be in the "b" range.

Material number	Dimension a (mm)	Lower dimension for a A_U (mm)	Dimension d (mm)	Upper dimension for d A_O (mm)	Lower dimension for d A_U (mm)
3842174341	4.8	-0.1	16	+0.034	+0.024
3842524614	8	-0.1	16	+0.05	+0.04
3842524615	12.7	-0.1	16	+0.05	+0.04

Press-fit mandrel



- Material: Steel, hardened
- Can be combined with positioning bushings of the WT 2 workpiece pallet

The press-fit mandrel is used when mounting the pallet for pressing the positioning bushings into the carrying plate.

Accessories

Required accessories

- Positioning bushing, see p. 2-22

Ordering information

Product designation	Material number
Press-fit mandrel	3842525846

Dowel pin



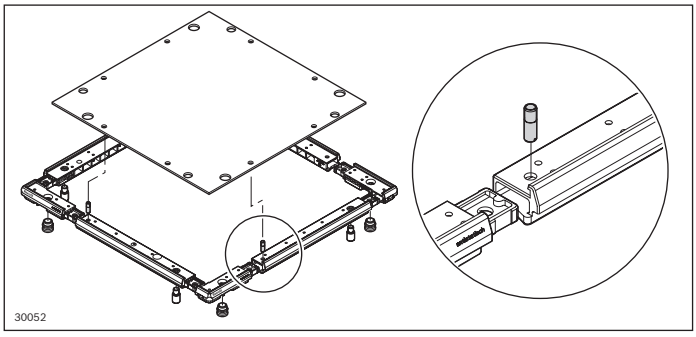
- To connect the carrying plate and the standard frame extension module, two dowel pins are required
- To connect the carrying plate and the reinforced frame extension module, one dowel pin is required
- Material: Steel
- Can be combined with frame modules of the WT 2 workpiece pallet

The dowel pin is used to connect the carrying plate and the frame extension module.

Ordering information

Product designation	Packaging unit	Material number
Dowel pin	100	3842532812

Technical data



Bolts



- For absorbing the stop forces on the stop gate
- Material: steel; galvanized
- Can be combined with reinforced frame modules of the WT 2 workpiece pallet

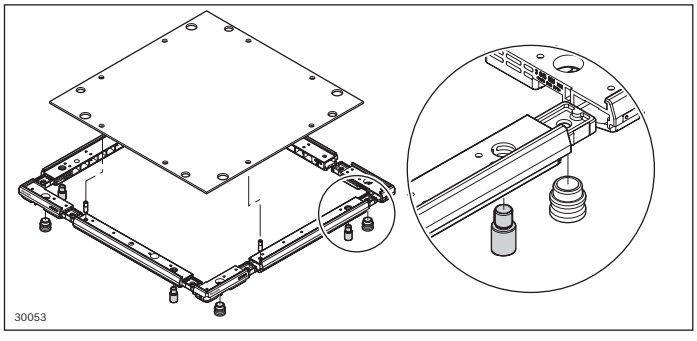
All WT plates from b_{WT} x l_{WT} = 400 x 400 mm are equipped with four threaded bores for reinforcement bolts as standard. An exception is the 480 x 320 mm WT plate, which is executed with only two threaded bores.

Ordering information

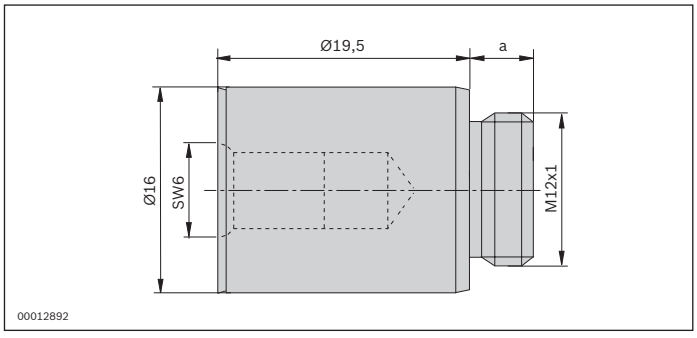
Product designation	Dimension a* (mm)	Lower dimension for a A_U (mm)	Delivery unit	Material number
Bolt, D16 a = 4.8	4.8	-0.2	1	3842525803
Bolt, D16 a = 8	8	-0.2	1	3842525804
Bolt, D16 a = 12.7	12.7	-0.2	1	3842525805

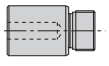
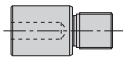
* The dimension must correspond to the plate thickness.

Technical data

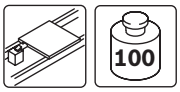


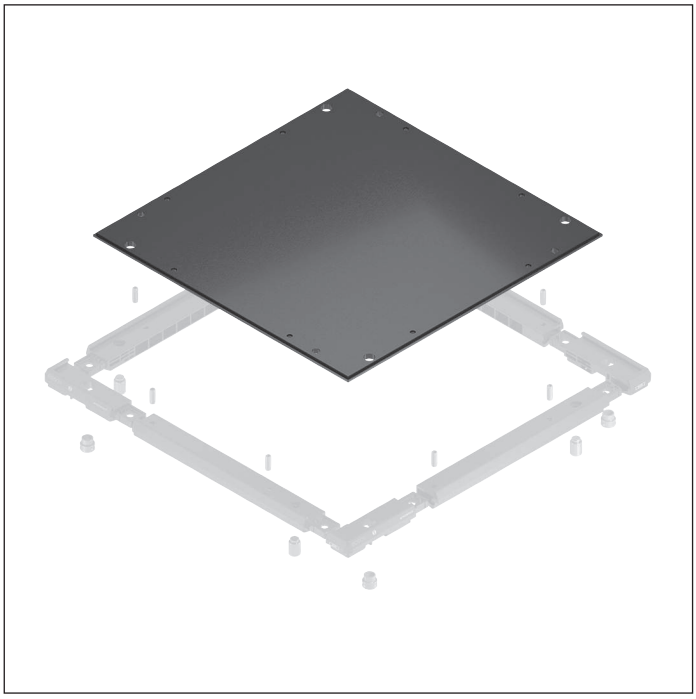
Dimensions



	Dimension a (mm)
 33017	4.8
 33018	8
 33019	12.7

Carrying plate





Carrying plates are used for self-assembly of WT 2 workpiece pallets using frame modules and mounting elements.

- For self-assembly of workpiece pallets for product pick-up
- Completely drilled and ready for assembly
- 15 standard sizes in steel, 4.8 mm thick, with KTL (cataphoretic primer) coating
- 10 standard sizes in aluminum, 8 mm thick
- 13 standard sizes in aluminum, 12.7 mm thick
- You will find drilling plans for identification and data storage systems in the RFID systems catalog
- Can be combined with frame modules of the WT 2 workpiece pallet

Ordering information

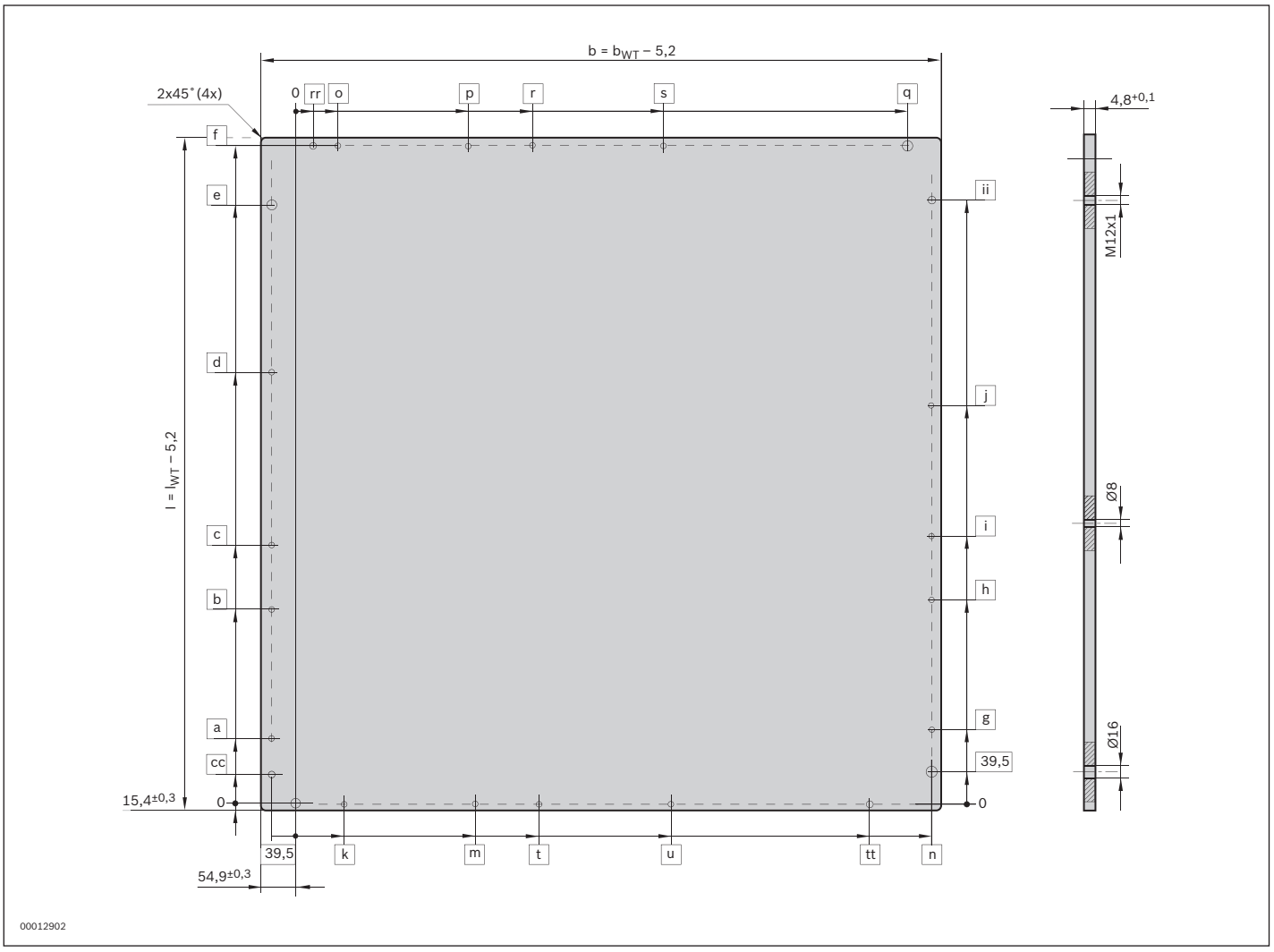
Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Plate thickness d_{Pl} (mm)	Flatness □ (mm)	Plate mass m_{Pl} (kg)	Material number, steel	Plate thickness d_{Pl} (mm)	Flatness □ (mm)	Plate mass m_{Pl} (kg)	Material number, aluminum	Plate thickness d_{Pl} (mm)	Flatness □ (mm)	Plate mass m_{Pl} (kg)	Material number, aluminum
160	160	4.8	0.3	0.9	**3842174311**								
160	240	4.8	0.3	1.4	**3842174313**								
240	240	4.8	0.3	2.1	**3842174321**								
160	320	4.8	0.3	1.8	**3842174315**								
240	320	4.8	0.5	2.8	**3842174323**								
320	320	4.8	0.5	4.3	**3842174331**	8.0	0.5	2.1	**3842524595**				
240	400	4.8	0.5	4.1	**3842174325**	8.0	0.5	2.0	**3842524594**				
320	400	4.8	0.6	5.3	**3842174333**	8.0	0.6	3.7	**3842524596**				
400	400	4.8	0.6	6.6	**3842174375**[2]	8.0	0.6	3.4	**3842524598**[2]	12.7	0.6	5.3	**3842538307**[2]
320	480	4.8	0.6	6.4	**3842174334**	8.0	0.6	3.7	**3842524597**[1]	12.7	0.6	5.1	**3842538346**[1]
400	480	4.8	0.6	7.0	**3842174376**[2]	8.0	0.6	4.0	**3842524599**[2]	12.7	0.6	6.4	**3842538308**[2]
480	480	4.8	0.8	9.3	**3842174381**[2]	8.0	0.8	4.9	**3842524602**[2]	12.7	0.8	7.7	**3842538309**[2]
400	640	4.8	0.8	10.4	**3842174378**[)]	8.0	0.8	5.4	**3842524600**[2]	12.7	0.8	8.6	**3842538310**[2]
480	640	4.8	1.0	12.3	**3842174383**[2]	8.0	1.0	6.5	**3842524603**[2]	12.7	1.0	10.3	**3842538311**[2]
640	640	4.8	1.0	16.3	**3842523381**[2]	8.0	1.0	8.7	**3842524605**[2]	12.7	1.0	13.8	**3842538312**[2]
400	800									12.7	1.0	10.8	**3842524601**[2]
480	800									12.7	1.0	12.9	**3842524604**[2]
640	800									12.7	1.0	17.3	**3842524606**[2]
800	800									12.7	1.0	21.7	**3842524608**[2]
640	1040									12.7	1.2	22.5	**3842524607**[2]
800	1040									12.7	1.2	28.2	**3842524609**[2]
800	1200									12.7	1.2	36.0	**3842548684**
1040	1040									12.7	1.2	40.6	**3842548685**
1040	1200									12.7	1.2	46.9	**3842548686**
1200	1200									12.7	1.2	54.1	**3842548687**

[1] With two threaded bores for reinforcing bolts

[2] With four threaded bores for reinforcing bolts

Dimensions

Steel carrying plate (4.8 mm)



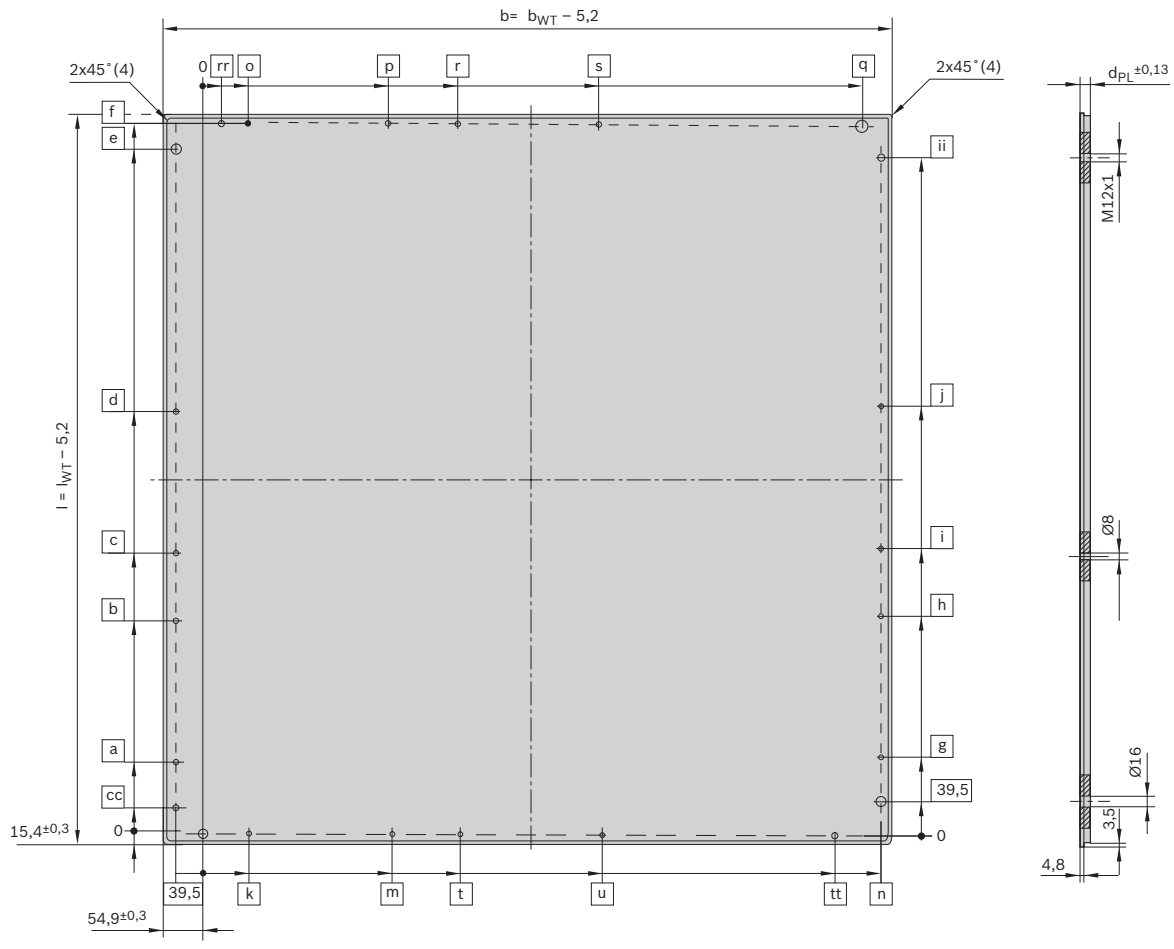
No production drawing

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Flat-ness □ (mm)	a	b	c	cc	d	e	f	g	h	i	ii	j	k
160	160	0.3						84.5	124						
160	240	0.3						164.5	204						
160	320	0.3						244.5	284						
240	240	0.3						164.5	204						
240	320	0.5						244.5	284						
240	400	0.5						324.5	364						
320	320	0.5						244.5	284						
320	400	0.6						324.5	364						
320	480	0.6	108.5	323.5				404.5	444	120.5	335.5				
400	400	0.6				59.5		324.5	364				304.5		
400	480	0.6	108.5	323.5		59.5		404.5	444	120.5	335.5		384.5		
400	640	0.8	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		
480	480	0.8	108.5	323.5		59.5		404.5	444	120.5	335.5		384.5		81
480	640	1.0	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		81
640	640	1.0	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		241

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	m	n	o	p	q	r	rr	s	t	tt	u	Material number
160	160		84.5			45							**3842174311**
160	240		84.5			45							**3842174313**
160	320		84.5			45							**3842174315**
240	240		164.5			125							**3842174321**
240	320		164.5			125							**3842174323**
240	400		164.5			125							**3842174325**
320	320		244.5			205							**3842174331**
320	400		244.5			205							**3842174333**
320	480		244.5			205							**3842174334**
400	400		324.5			285		20			265		**3842174375**
400	480		324.5			285		20			265		**3842174376**
400	640		324.5			285		20			265		**3842174378**
480	480	296	404.5	69	284	365		20			345		**3842174381**
480	640	296	404.5	69	284	365		20			345		**3842174383**
640	640	456	564.5	69	284	525		20			505		**3842523381**

Dimensions

Aluminum carrying plate (8 mm)

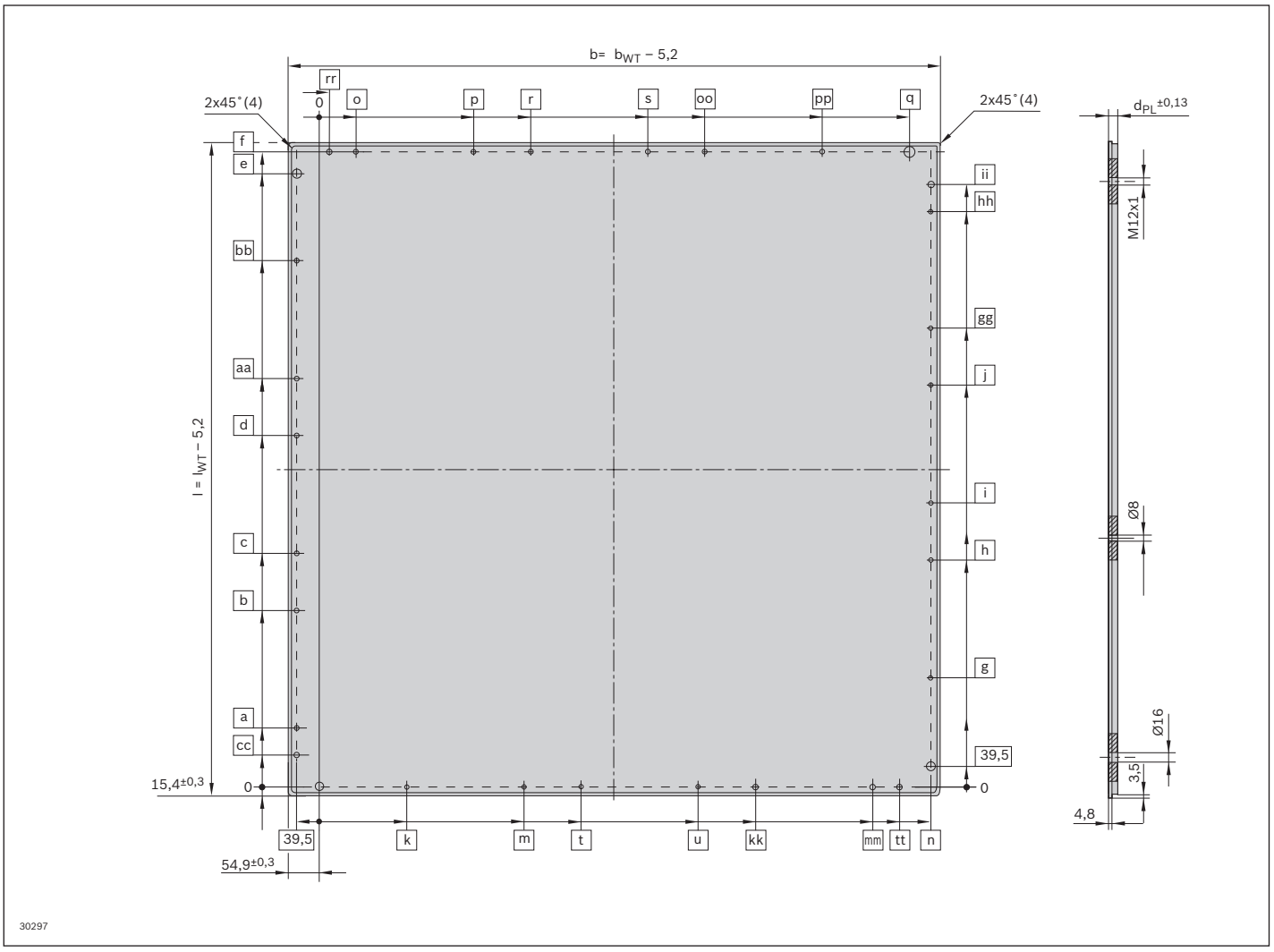


No production drawing

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Flatness □ (mm)	a	b	c	cc	d	e	f	g	h	i	ii	j	k
240	400	0.5						324.5	364						
320	320	0.5						244.5	284						
320	400	0.6						324.5	364						
320	480	0.6	108.5	323.5		59.5		404.5	444	120.5	335.5		384.5		
400	400	0.6				59.5		324.5	364				304.5		
400	480	0.6	108.5	323.5		59.5		404.5	444	120.5	335.5		384.5		
400	640	0.8	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		
480	480	0.8	108.5	323.5		59.5		404.5	444	120.5	335.5		384.5		81
480	640	1.0	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		81
640	640	1.0	108.5	323.5		59.5		564.5	604	280.5	495.5		544.5		241

b_{WT} (mm)	l_{WT} (mm)	m	n	o	p	q	r	rr	s	t	tt	u	d_{PI}	Material number
240	400		164.5			125							8.0	**3842524594**
320	320		244.5			205							8.0	**3842524595**
320	400		244.5			205							8.0	**3842524596**
320	480		244.5			205							8.0	**3842524597**
400	400		324.5			285		20			265		8.0	**3842524598**
400	480		324.5			285		20			265		8.0	**3842524599**
400	640		324.5			285		20			265		8.0	**3842524600**
480	480	296	404.5	69	284	365		20			345		8.0	**3842524602**
480	640	296	404.5	69	284	365		20			345		8.0	**3842524603**
640	640	296	404.5	69	284	525		20			505		8.0	**3842524605**

Aluminum carrying plate (12.7 mm) dimensions



No production drawing

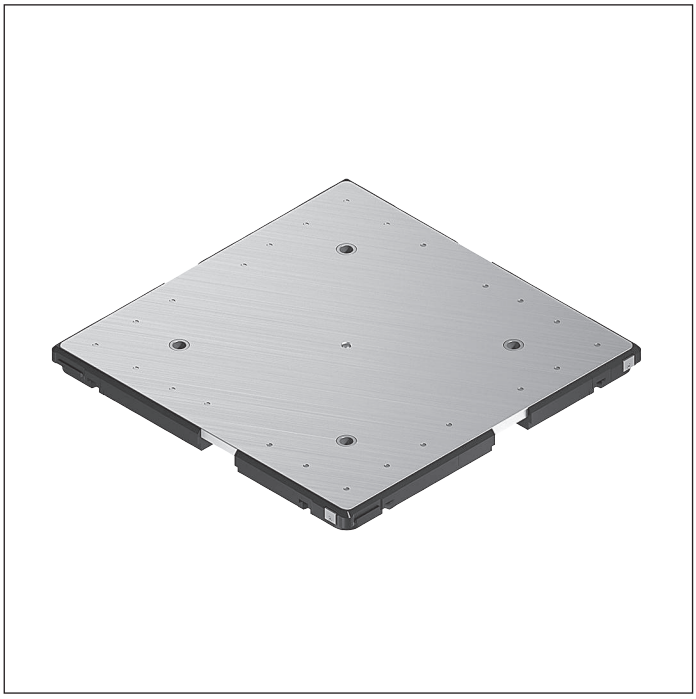
Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Flatness □ (mm)	a	b	c	cc	d	aa	bb	e	f	g	h
320	480	0.6	108.5	323.5		59.5				404.5	444	120.5	335.5
400	400	0.6				59.5				324.5	364		
400	480	0.6	108.5	323.5		59.5				404.5	444	120.5	335.5
400	640	0.8	108.5	323.5		59.5				564.5	604	280.5	495.5
400	800	1.0	108.5	323.5	428.5	59.5	643.5			724.5	764	120.5	335.5
480	480	0.8	108.5	323.5		59.5				404.5	444	120.5	335.5
480	640	1.0	108.5	323.5		59.5				564.5	604	280.5	495.5
480	800	1.0	108.5	323.5	428.5	59.5	643.5			724.5	764	120.5	335.5
640	640	1.0	108.5	323.5		59.5				564.5	604	280.5	495.5
640	800	1.0	108.5	323.5	428.5	59.5	643.5			724.5	764	120.5	335.5
640	1040	1.2	108.5	323.5	428.5	59.5	643.5			964.5	1004	360.5	575.5
800	800	1.0	108.5	323.5	428.5	59.5	643.5			724.5	764	120.5	335.5
800	1040	1.2	108.5	323.5	428.5	59.5	643.5			964.5	1004	360.5	575.5
800	1200	1.2	108.5	323.5	428.5	59.5	643.5	748.5	963.5	1124.5	1164	200.5	415.5
1040	1040	1.2	108.5	323.5	428.5	59.5	643.5			964.5	1004	360.5	575.5
1040	1200	1.2	108.5	323.5	428.5	59.5	643.5	748.5	963.5	1124.5	1164	200.5	415.5
1200	1200	1.2	108.5	323.5	428.5	59.5	643.5	748.5	963.5	1124.5	1164	200.5	415.5

b_{WT} (mm)	l_{WT} (mm)	i	ii	j	k	gg	hh	m	n	o	p	q	r
320	480		384.5						244.5			205	
400	400		304.5						324.5			285	
400	480		384.5						324.5			285	
400	640		544.5						324.5			285	
400	800	440.5	704.5	655.5					324.5			285	
480	480		384.5		81			296	404.5	69	284	365	
480	640		544.5		81			296	404.5	69	284	365	
480	800	440.5	704.5	655.5	81			296	404.5	69	284	365	
640	640		544.5		241			296	404.5	69	284	525	
640	800	440.5	704.5	655.5	241			456	564.5	69	284	525	
640	1040	680.5	944.5	895.5	241			456	564.5	69	284	525	
800	800	440.5	704.5	655.5	81			296	724.5	69	284	685	389
800	1040	680.5	944.5	895.5	81			296	724.5	69	284	685	389
800	1200	520.5	1104.5	735.5	81	840.5	1055.5	296	724.5	69	284	685	389
1040	1040	680.5	944.5	895.5	321			536	964.5	69	284	925	389
1040	1200	520.5	1104.5	735.5	321	840.5	1055.5	536	964.5	69	284	925	389
1200	1200	520.5	1104.5	735.5	161	840.5	1055.5	376	1124.5	69	284	1085	389

b_{WT} (mm)	l_{WT} (mm)	rr	s	t	tt	u	kk	mm	oo	pp	d_{PI}	Material number
320	480										12.7	**3842538346**
400	400	20			265						12.7	**3842538307**
400	480	20			265						12.7	**3842538308**
400	640	20			265						12.7	**3842538310**
400	800	20			265						12.7	**3842524601**
480	480	20			345						12.7	**3842538309**
480	640	20			345						12.7	**3842538311**
480	800	20			345						12.7	**3842524604**
640	640	20			505						12.7	**3842538312**
640	800	20			505						12.7	**3842524606**
640	1040	20			505						12.7	**3842524607**
800	800	20	604	401	665	616					12.7	**3842524608**
800	1040	20	604	401	665	616					12.7	**3842524609**
800	1200	20	604	401	665	616					12.7	**3842548684**
1040	1040	20	604	641	905	856					12.7	**3842548685**
1040	1200	20	604	641	905	856					12.7	**3842548686**
1200	1200	20	604	481	1065	696	801	1016	709	924	12.7	**3842548687**

WT 2/H workpiece pallet





Pick-up and transportation of workpieces in the TS 2*plus* transfer system.

- Workpiece pallet for especially high maximum permitted total weight up to 240 kg (2 kg/cm length) in combination with accumulation roller chain conveyor medium
- Fully assembled or as a kit for self-assembly
- PE wear pads for quiet operation and low wear
- Integrated stop damper, ensures quiet running onto other workpiece pallets
- 17 standard sizes
- For workpiece pallet dimensions l_{WT} x b_{WT} = 400 x 400 mm up to 1200 x 1200 mm
- Special dimensions on request
- Universal aluminum carrying plate with two carrying plate thicknesses:
  d = 12.70 mm
  d = 19.05 mm
- Suitable for use in an EPA
- Material:
  - Aluminum carrying plate
  - Corner module and slider with PE (= polyethylene) wear pad

Accessories

Recommended accessories

- 2x WT 2/H (LE 2) positioning bushing kit, see p. 2-46
  Positioning bushings are required when using a PE 2/H positioning unit

Delivery notes

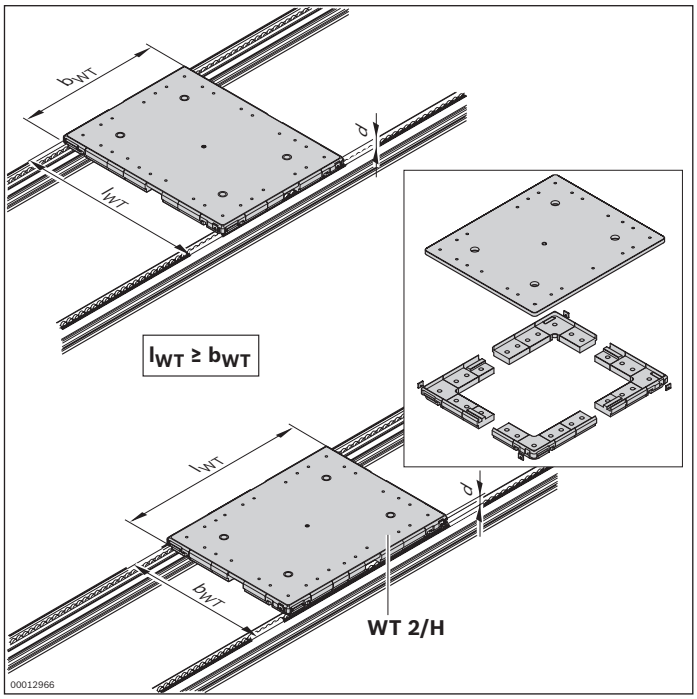
Scope of delivery

- Carrying plate
- Corner module
- Wear pads
- Damping elements

Condition on delivery

- Assembled (MT = 1)
- Kit, not assembled (MT = 0)

Ordering information



Material number		3842998751[1] 3842998755[2]
b_{WT} (mm)	Width of workpiece pallet	400; 480; 640; 800; 1040; 1200
l_{WT} (mm)	Length of workpiece pallet	400; 480; 640; 800; 1040; 1200
b_{WT} x l_{WT} (mm x mm)	Combination options	400 x 400; 480; 640; 800; 480 x 480; 640; 800 640 x 640; 800; 1040; 1200; 800 x 800; 1040; 1200 1040 x 1040; 1200 1200 x 1200
MT	Kit 0 = not assembled 1 = assembled	0; 1

[1)] Plate thickness 12.7 mm
[2)] Plate thickness 19.05 mm

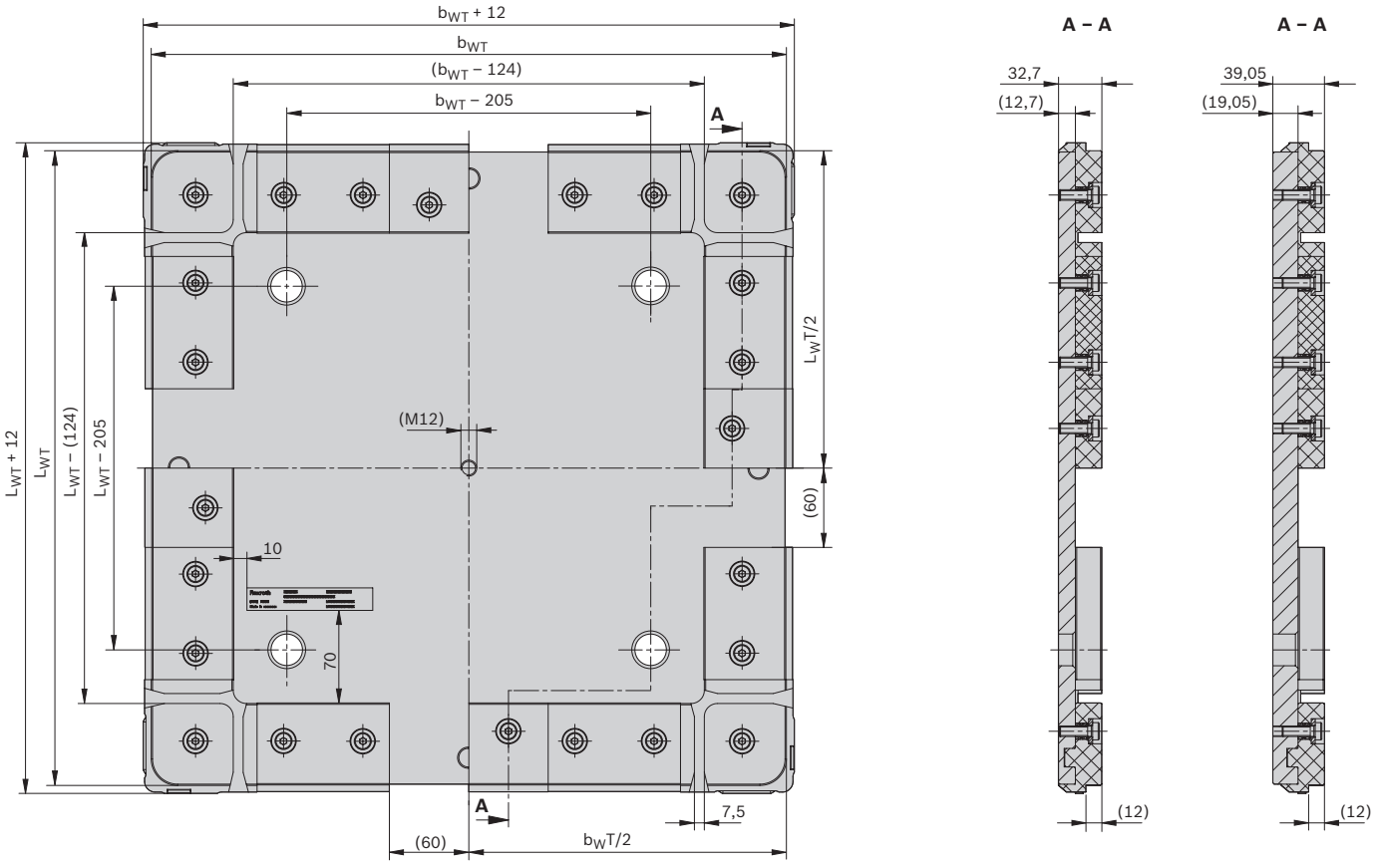
Technical data

Material number			3842998751	3842998755
Load				
Max. total weight of workpiece pallet	m_G	kg	240	240
Plate thickness	d_{Pl}	mm	12.7	19.05

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Workpiece pallet mass 3842998751[1] m_{WT} (kg)	Flatness 3842998751[1] □ (mm)	Workpiece pallet mass 3842998755[2] m_{WT} (kg)	Flatness 3842998755[2] □ (mm)
400	400	6.9	0.4	9.6	0.4
400	480	8.2	0.6	11.5	0.6
400	640	10.9	0.8	15.2	0.8
400	800	13.5	1.0	18.9	1.0
480	480	9.8	0.6	13.7	0.6
480	640	12.9	0.8	18.1	0.8
480	800	16.0	1.0	22.5	1.0
640	640	16.8	0.8	23.7	0.8
640	800	20.7	1.0	29.4	1.0
640	1040	26.6	1.2	37.9	1.2
640	1200	30.6	1.2	43.6	1.2
800	800	25.6	1.0	36.5	1.0
800	1040	32.8	1.2	46.9	1.2
800	1200	37.6	1.2	53.9	1.2
1040	1040	41.9	1.2	60.3	1.2
1040	1200	48.1	1.2	69.3	1.2
1200	1200	55.1	1.2	79.6	1.2

[1] Plate thickness 12.7 mm
[2)] Plate thickness 19.05 mm

Dimensions

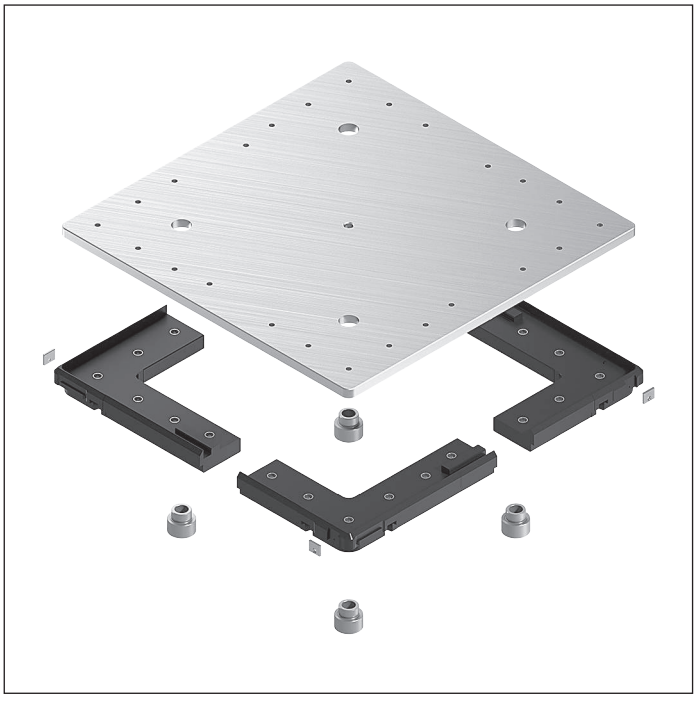


No production drawing



Components for WT 2/H workpiece pallets

To fulfill special needs, the workpiece pallets can also be individually configured in a design where the carrying plate is assembled by the customer. In addition to frame modules, various carrying plates, positioning bushings, and all the necessary fastening elements are available.



WT 2/H workpiece pallet mounting kit

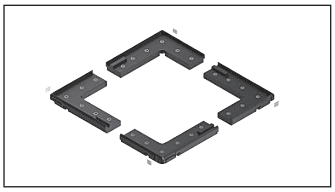
- Suitable for WT 2/H aluminum carrying plates and high WT bearing loads
- PE wear pads for quiet operation and low wear
- Suitable for accumulation roller chains

Carrying plates

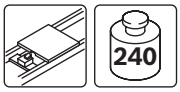
- Aluminum carrying plates with a thickness of 12.70 mm or 19.05 mm are a light and rigid alternative for large workpiece pallets

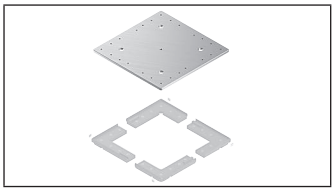
Positioning bushings

- For defined pick-up of the workpiece pallet in the positioning units

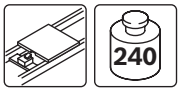


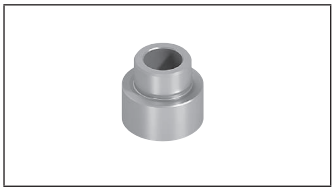
WT 2/H workpiece pallet mounting kit **2-40**





Carrying plate **2-42**



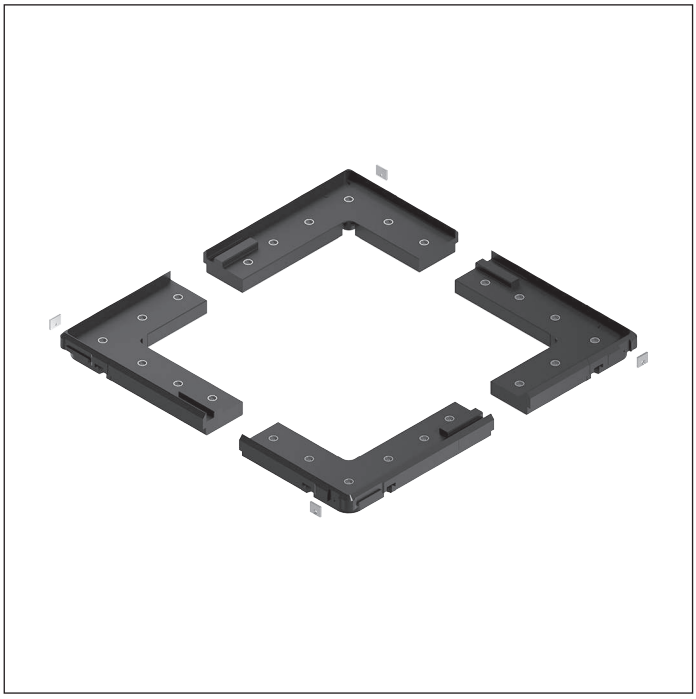


WT 2/H positioning bushing kit **2-46**



WT 2/H workpiece pallet kit





- Workpiece pallet kit without carrying plate for self-assembly or for adaptation to specific customer requirements
- PE wear pads for quiet operation and low wear
- Integrated stop damper, ensures quiet running onto other workpiece pallets
- 17 standard sizes
- For workpiece pallet dimensions
  b_{WT} x l_{WT} = 400 x 400 mm up to 1200 x 1200 mm
- Special dimensions on request
- Suitable for use in an EPA
- Material: PE (= polyethylene) wear pad

Accessories

Recommended accessories

- 2x WT 2/H (LE 2) positioning bushing kit, see p. 2-46
  Positioning bushings are required when using a PE 2/H positioning unit

Delivery notes

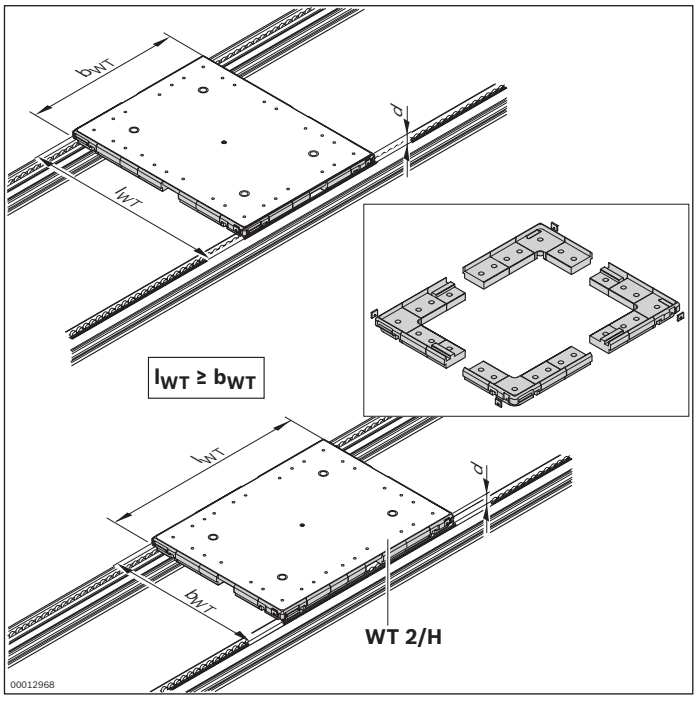
Scope of delivery

- Corner module
- Glider with PE wear pads
- Damping elements

Condition on delivery

- Parts kit without carrying plate
- Not assembled

Ordering information



Material number		**3842998756**
b_{WT} (mm)	Width of workpiece pallet	400; 480; 640; 800; 1040; 1200
l_{WT} (mm)	Length of workpiece pallet	400; 480; 640; 800; 1040; 1200
b_{WT} x l_{WT} (mm x mm)	Combination options	400 x 400; 480; 640; 800; 480 x 480; 640; 800 640 x 640; 800; 1040; 1200; 800 x 800; 1040; 1200 1040 x 1040; 1200 1200 x 1200

Technical data

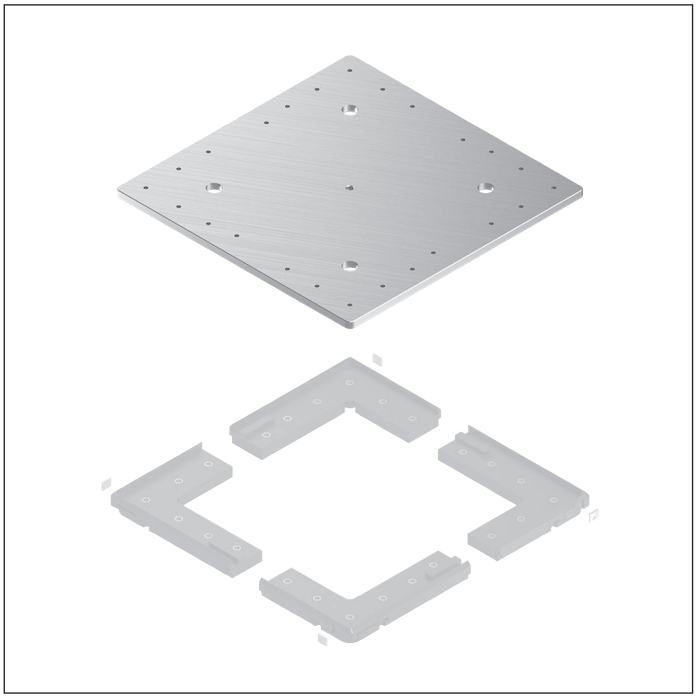
Material number			**3842998756**
Load			
Max. total weight of workpiece pallet	m_G	kg	240

Dimensions

Width of workpiece pallet b_{WT} (mm)	**Length of workpiece pallet l_{WT} (mm)**	**Frame module weight m (kg)**
400	400	1.7
400	480	1.9
400	640	2.4
400	800	2.8
480	480	2.2
480	640	2.6
480	800	3.1
640	640	3.0
640	800	3.5
640	1040	4.1
640	1200	4.6
800	800	4.0
800	1040	4.6
800	1200	5.0
1040	1040	5.2
1040	1200	5.7
1200	1200	6.1

Carrying plate



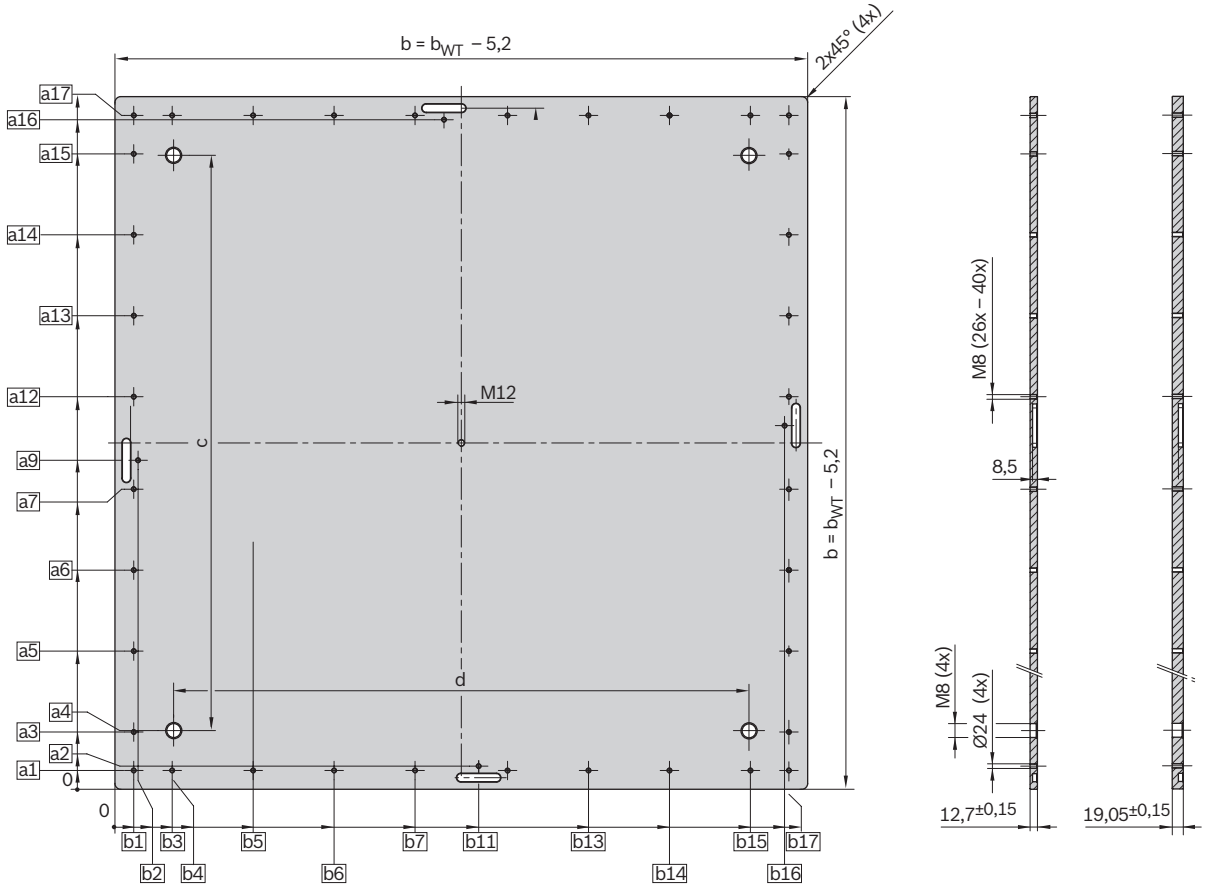


- Aluminum carrying plates for high loads with large workpiece pallets
- For workpiece pallet self-assembly for product support or for adaptation to specific customer requirements
- Completely drilled and ready for assembly
- 17 standard sizes
- Universal aluminum carrying plate with two carrying plate thicknesses:
  d = 12.70 mm
  d = 19.05 mm
- Can be combined with WT 2/H workpiece pallet kit

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Plate thickness d_{Pl} (mm)	Flatness □ (mm)	Plate mass m_{Pl} (kg)	Material number	Plate thickness d_{Pl} (mm)	Flatness □ (mm)	Plate mass m_{Pl} (kg)	Material number
400	400	12.7	0.4	5.2	**3842548420**				
400	480	12.7	0.6	6.3	**3842548421**				
400	640	12.7	0.8	8.5	**3842548422**				
400	800	12.7	1.0	10.7	**3842548440**				
480	480	12.7	0.6	7.6	**3842548688**				
480	640	12.7	0.8	10.3	**3842548689**				
480	800	12.7	1.0	12.9	**3842548691**				
640	640	12.7	0.8	13.8	**3842548690**				
640	800	12.7	1.0	17.3	**3842548692**				
640	1040	12.7	1.2	22.5	**3842548694**				
640	1200	12.7	1.2	26.0	**3842548697**				
800	800	12.7	1.0	21.6	**3842548693**				
800	1040	12.7	1.2	28.2	**3842548695**				
800	1200	12.7	1.2	32.6	**3842548698**				
1040	1040	12.7	1.2	36.7	**3842548696**				
1040	1200	12.7	1.2	42.2	**3842548699**				
1200	1200	12.7	1.2	49.0	**3842548405**				
400	400					19.05	0.4	7.9	**3842548424**
400	480					19.05	0.6	9.5	**3842548425**
400	640					19.05	0.8	12.8	**3842548426**
400	800					19.05	1.0	16.1	**3842548439**
480	480					19.05	0.6	11.5	**3842548407**
480	640					19.05	0.8	15.4	**3842548408**
480	800					19.05	1.0	19.4	**3842548410**
640	640					19.05	0.8	20.7	**3842548409**
640	800					19.05	1.0	25.9	**3842548411**
640	1040					19.05	1.2	33.8	**3842548413**
640	1200					19.05	1.2	39.1	**3842548416**
800	800					19.05	1.0	32.5	**3842548412**
800	1040					19.05	1.2	42.3	**3842548414**
800	1200					19.05	1.2	48.9	**3842548417**
1040	1040					19.05	1.2	55.2	**3842548415**
1040	1200					19.05	1.2	63.7	**3842548418**
1200	1200					19.05	1.2	73.5	**3842548419**

Dimensions

Aluminum carrying plate

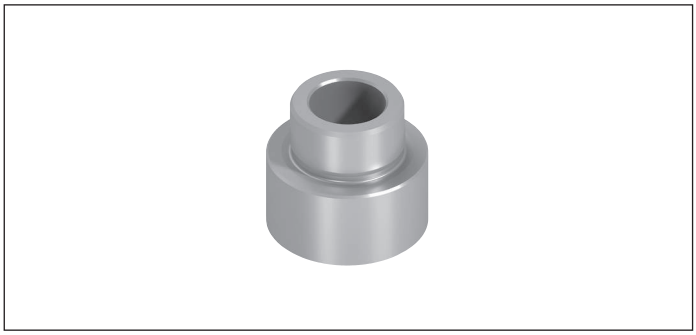


No production drawing

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Dimension a1 (mm)	Dimension a2 (mm)	Dimension a3 (mm)	Dimension a4 (mm)	Dimension a5 (mm)	Dimension a6 (mm)	Dimension a7 (mm)	Dimension a9 (mm)	Dimension a12 (mm)	Dimension a13 (mm)	Dimension a14 (mm)	Dimension a15 (mm)	Dimension a16 (mm)	Dimension a17 (mm)	Dimension c (mm)
400	400	32.5	40.0	109.0	101.5				169.0				289.0	358.0	365.5	195.0
400	480	32.5	40.0	99.0	101.5			159.0	209.0	319.0			379.0	438.0	445.5	295.0
400	640	32.5	40.0	99.0	101.5			239.0	289.0	399.0			539.0	598.0	605.5	435.0
400	800	32.5	40.0	99.0	101.5	209.0		319.0	369.0	479.0	589.0		699.0	758.0	765.5	595.0
480	480	32.5	40.0	99.0	101.5			159.0	209.0	319.0			379.0	438.0	445.5	275.0
480	640	32.5	40.0	99.0	101.5			239.0	289.0	399.0			539.0	598.0	605.5	435.0
480	800	32.5	40.0	99.0	101.5	209.0		319.0	369.0	479.0	589.0		699.0	758.0	765.5	595.0
640	640	32.5	40.0	99.0	101.5			239.0	289.0	399.0			539.0	598.0	605.5	435.0
640	800	32.5	40.0	99.0	101.5	209.0		319.0	369.0	479.0	589.0		699.0	758.0	765.5	595.0
640	1040	32.5	40.0	99.0	101.5	269.0		439.0	489.0	599.0	769.0		939.0	998.0	1005.5	835.0
640	1200	32.5	40.0	99.0	101.5	239.0	379.0	519.0	569.0	679.0	819.0	959.0	1099.0	1158.0	1165.5	995.0
800	800	32.5	40.0	99.0	101.5	209.0		319.0	369.0	479.0	589.0		699.0	758.0	765.5	595.0
800	1040	32.5	40.0	99.0	101.5	269.0		439.0	489.0	599.0	769.0		939.0	998.0	1005.5	835.0
800	1200	32.5	40.0	99.0	101.5	239.0	379.0	519.0	569.0	679.0	819.0	859.0	1099.0	1158.0	1165.5	995.0
1040	1040	32.5	40.0	99.0	101.5	269.0		439.0	489.0	599.0	769.0		939.0	998.0	1005.5	835.0
1040	1200	32.5	40.0	99.0	101.5	239.0	379.0	519.0	569.0	679.0	819.0	859.0	1099.0	1158.0	1165.5	995.0
1200	1200	32.5	40.0	99.0	101.5	239.0	379.0	519.0	569.0	679.0	819.0	859.0	1099.0	1158.0	1165.5	995.0

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Dimension b1 (mm)	Dimension b2 (mm)	Dimension b3 (mm)	Dimension b4 (mm)	Dimension b5 (mm)	Dimension b6 (mm)	Dimension b7 (mm)	Dimension b11 (mm)	Dimension b13 (mm)	Dimension b14 (mm)	Dimension b15 (mm)	Dimension b16 (mm)	Dimension b17 (mm)	Dimension d (mm)
400	400	32.5	40.0	109.0	101.5				229.0			289.0	358.0	365.5	195.0
400	480	32.5	40.0	109.0	101.5				229.0			289.0	358.0	365.5	195.0
400	640	32.5	40.0	109.0	101.5				229.0			289.0	358.0	365.5	195.0
400	800	32.5	40.0	109.0	101.5				229.0			289.0	358.0	365.5	195.0
480	480	32.5	40.0	99.0	101.5			159.0	269.0			379.0	438.0	445.5	275.0
480	640	32.5	40.0	99.0	101.5			159.0	269.0			379.0	438.0	445.5	275.0
480	800	32.5	40.0	99.0	101.5			159.0	269.0			379.0	438.0	445.5	275.0
640	640	32.5	40.0	99.0	101.5			239.0	349.0			539.0	598.0	605.5	435.0
640	800	32.5	40.0	99.0	101.5			239.0	349.0			539.0	598.0	605.5	435.0
640	1040	32.5	40.0	99.0	101.5			239.0	349.0			539.0	598.0	605.5	435.0
640	1200	32.5	40.0	99.0	101.5			239.0	349.0			539.0	598.0	605.5	435.0
800	800	32.5	40.0	99.0	101.5	209.0		319.0	429.0	589.0		699.0	758.0	765.5	595.0
800	1040	32.5	40.0	99.0	101.5	209.0		319.0	429.0	589.0		699.0	758.0	765.5	595.0
800	1200	32.5	40.0	99.0	101.5	209.0		319.0	429.0	589.0		699.0	758.0	765.5	595.0
1040	1040	32.5	40.0	99.0	101.5	269.0		439.0	549.0	769.0		939.0	998.0	1005.5	835.0
1040	1200	32.5	40.0	99.0	101.5	269.0		439.0	549.0	769.0		939.0	998.0	1005.5	835.0
1200	1200	32.5	40.0	99.0	101.5	239.0	379.0	519.0	629.0	819.0	959.0	1099.0	1158.0	1165.5	995.0

WT 2/H positioning bushing kit



- For defined pick-up of the workpiece pallet in positioning units
- Material: Steel
- Can be combined with WT 2/H workpiece pallet carrying plates

Accessories

Required accessories

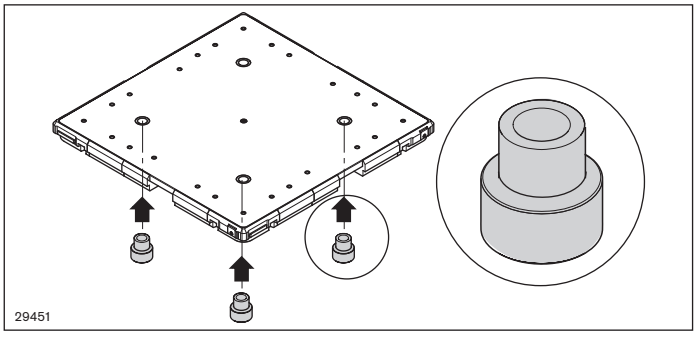
- Positioning bushings are required when using a PE 2/H positioning unit

Ordering information

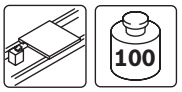
Product designation	Delivery unit	Material number
WT 2/H positioning bushing kit	2	3842531354

Technical data

Material number		3842531354
Features		
Mass	kg	0.6



WT 2/F frame workpiece pallet





- Frame workpiece pallet, fully assembled or as a kit for self-assembly
- Low weight and high stability thanks to aluminum frame construction
- Especially suitable for low-cost transportation of large products
- Continuous standard grooves to easily fasten cross struts and workpiece supports
- Integrated positioning bushings
- Various wear pads for use on all conveyor media
- PA wear pads (LS = 0) for use on belts, toothed belts, or flat top chains
- PE wear pads (LS = 1) for use on accumulation roller chains

Delivery notes

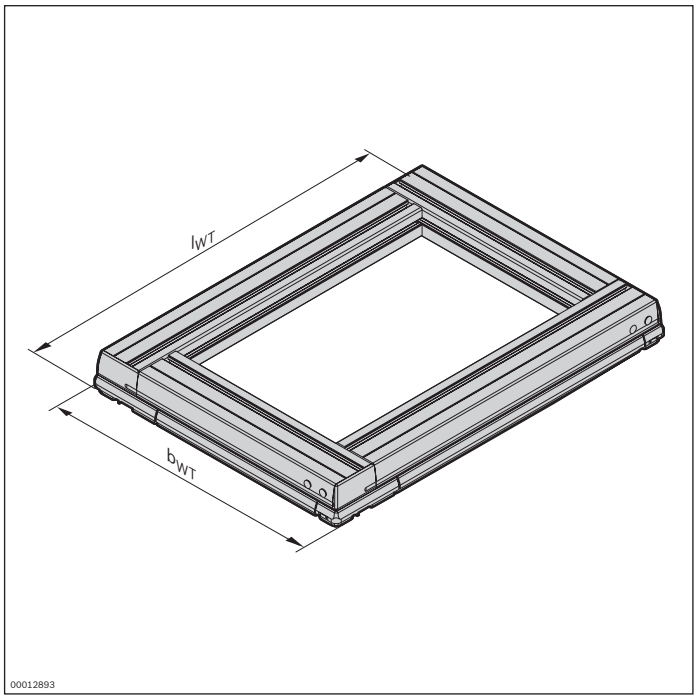
Scope of delivery

- Frame modules
- Connection elements
- Positioning bushings

Condition on delivery

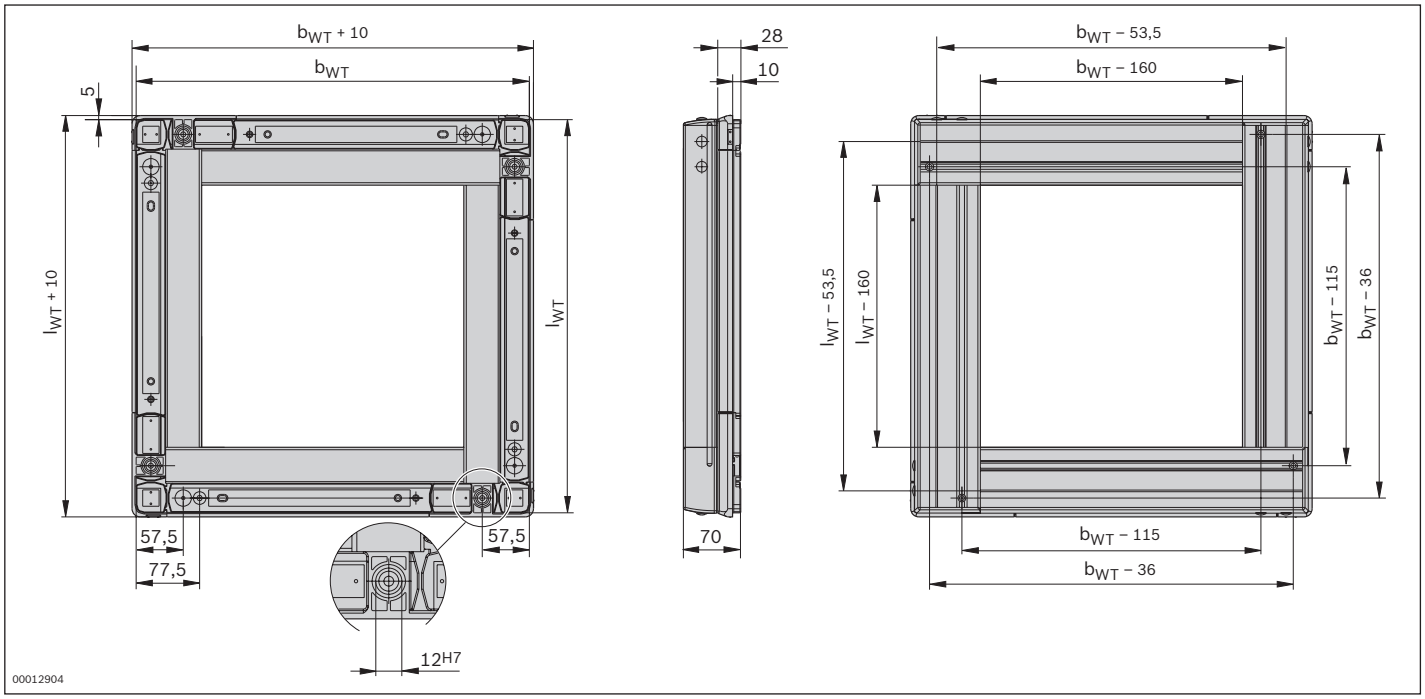
- Assembled (MT = 1)
- Kit, not assembled (MT = 0)

Ordering information



Material number		**3842999941**
b_{WT} (mm)	Width of workpiece pallet	400; 480; 640; 800
l_{WT} (mm)	Length of workpiece pallet	400; 480; 640; 800; 1040
b_{WT} x l_{WT} (mm x mm)	Combination options	400 x 400; 480; 640; 800; 480 x 480; 640; 800 640 x 640; 800; 1040; 1200; 800 x 800; 1040; 1200 1040 x 1040; 1200 1200 x 1200
MT	Kit 0 = not assembled 1 = assembled	0; 1
LS	Wear pad 0 = PA 1 = PE	0; 1

Dimensions



No production drawing

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Workpiece pallet mass m_{WT} (kg)
400	400	6.6
400	480	7.1
400	640	8.9
400	800	10.8
480	480	7.7
480	640	9.4
480	800	11.4
640	640	11.2
640	800	12.5
640	1040	15.0
640	1200	16.8
800	800	13.9
800	1040	16.0
800	1200	18.4
1040	1040	19.1
1040	1200	20.7
1200	1200	22.2

WT 2/F-H frame workpiece pallet





- Frame workpiece pallet for especially high maximum permitted total weight up to 240 kg (2 kg/cm length) in combination with accumulation roller chain conveyor medium
- Fully assembled or unassembled as a kit
- Low weights and high stability thanks to aluminum frame construction
- Standard grooves to easily fasten cross struts and workpiece supports
- PE wear pads for quiet operation and low wear
- Integrated stop damper, ensures quiet running onto other workpiece pallets
- For workpiece pallet dimensions
  b_{WT} x l_{WT} = 400 x 400 mm up to 1200 x 1200 mm
- Special dimensions on request
- Suitable for use in an EPA
- Material:
  Frame module with PE (= polyethylene) wear pad

Pick-up and transportation of workpieces in the TS 2*plus* transfer system.

Accessories

Recommended accessories

- 2x WT 2/F-H (LE 2) positioning bushing kits, see p. 2-53

Delivery notes

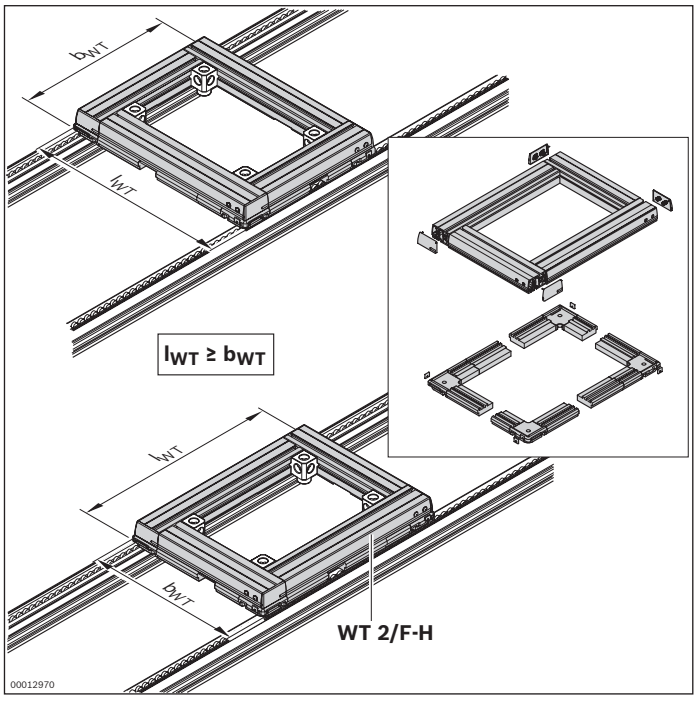
Scope of delivery

- Corner module
- Wear pads
- Damping elements
- Frame modules
- Bracket caps

Condition on delivery

- Assembled (MT = 1)
- Kit, not assembled (MT = 0)

Ordering information

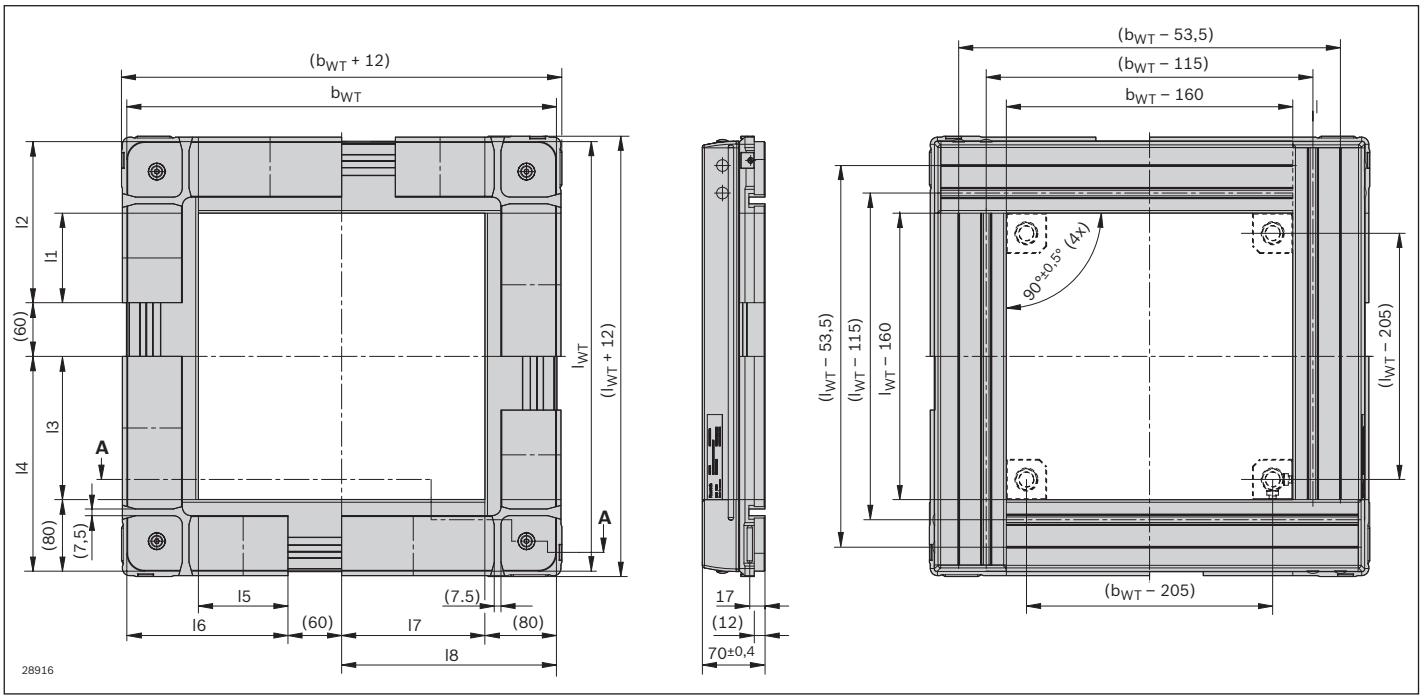


Material number		**3842998757**
b_{WT} (mm)	Width of workpiece pallet	400; 480; 640; 800; 1040; 1200
l_{WT} (mm)	Length of workpiece pallet	400; 480; 640; 800; 1040; 1200
b_{WT} x l_{WT} (mm x mm)	Combination options	400 x 400; 480; 640; 800; 480 x 480; 640; 800 640 x 640; 800; 1040; 1200; 800 x 800; 1040; 1200 1040 x 1040; 1200 1200 x 1200
MT	Kit 0 = not assembled 1 = assembled	0; 1

Technical data

Material number			**3842998757**
Load			
Max. total weight of workpiece pallet	m_G	kg	240

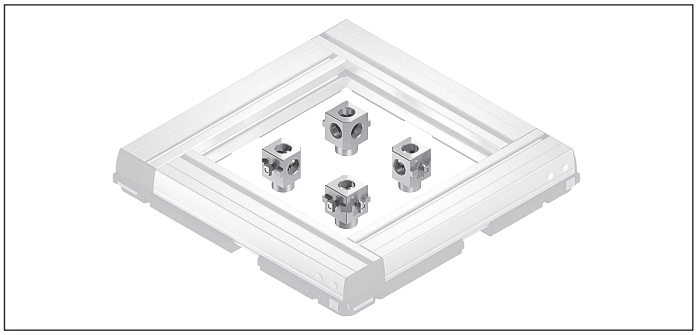
Dimensions



No production drawing

Width of workpiece pallet b_{WT} (mm)	Length of workpiece pallet l_{WT} (mm)	Workpiece pallet mass m_{WT} (kg)	Dimension l1 (mm)	Dimension l2 (mm)	Dimension l3 (mm)	Dimension l4 (mm)	Dimension l5 (mm)	Dimension l6 (mm)	Dimension l7 (mm)	Dimension l8 (mm)
400	400	7.3	60	140	120	200	60	140	120	200
400	480	8.2	100	180	160	240	60	140	120	200
400	640	10.1	180	260	240	320	60	140	120	200
400	800	11.9	260	340	320	400	60	140	120	200
480	480	9.1	100	180	160	240	100	180	160	240
480	640	11.0	180	260	240	320	100	180	160	240
480	800	12.8	260	340	320	400	100	180	160	240
640	640	12.8	180	260	240	320	180	260	240	320
640	800	14.7	260	340	320	400	180	260	240	320
640	1040	17.4	380	460	440	520	180	260	240	320
640	1200	19.3	460	540	520	600	180	260	240	320
800	800	16.5	260	340	320	400	260	340	320	400
800	1040	19.3	380	460	440	520	260	340	320	400
800	1200	21.1	460	540	520	600	260	340	320	400
1040	1040	22.0	380	460	440	520	380	460	440	520
1040	1200	23.9	460	540	520	600	380	460	440	520
1200	1200	25.7	460	540	520	600	460	540	520	600

WT 2/F-H positioning bushing kit



- Positioning bushings are used for defined support of the workpiece pallet in positioning units
- Material: Steel
- Can be combined with the WT 2/F-H frame module

Accessories

Required accessories

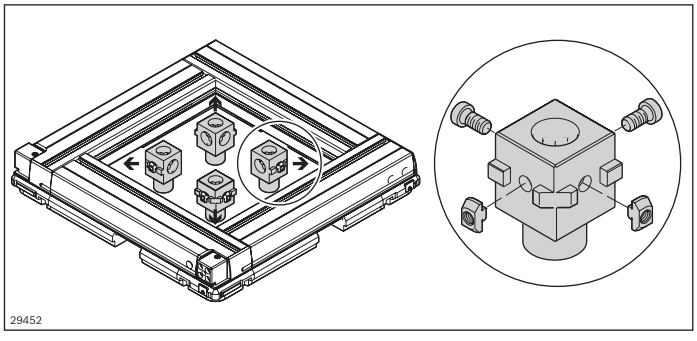
- Positioning bushings are required when using a PE 2/H positioning unit

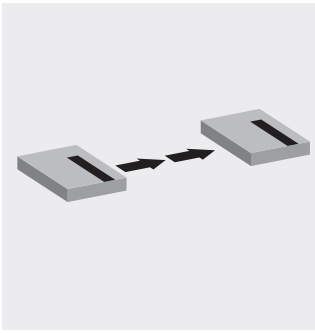
Ordering information

Product designation	Delivery unit	Material number
WT 2/F-H positioning bushing kit	2	3842530529

Technical data

Material number		3842530529
Features		
Mass	kg	1.3



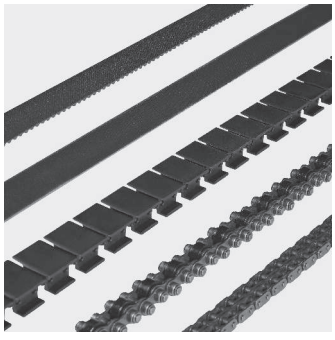


Longitudinal conveyor

Conveyor media selection **3-2**

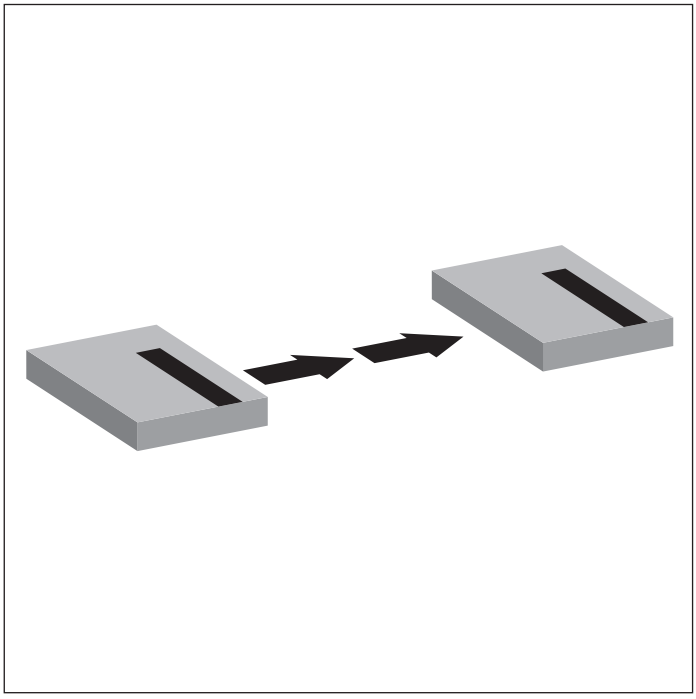






Conveyor media selection

Belts, toothed belts, flat top chains, and accumulation roller chains are available conveyor belts for longitudinal conveying.



Belts/toothed belts

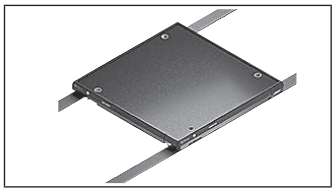
All toothed belts and the belt are suitable for use in EPAs (ESD-protected areas). The belt has been designed for loads of up to 250 kg and is pretensioned with a special device and then bonded to form a continuous belt. It is mainly used in systems with light conveying loads and section lengths of over 2 m.
Belt sections with toothed belts are available for shorter sections. The workpiece pallet is conveyed on the back side, which has been reinforced with fabric. A change to the conveying direction (reversible operation) is also possible.

Flat top chain

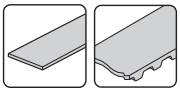
Plastic flat top chains have wear-free polyamide caps on each chain link which reduce friction and help the system run more quietly. A marked cap is available for the chain joint. A design that is also flexible on the side enables use of the plastic flat top chain in curves. It is mainly used in systems with medium conveying loads.

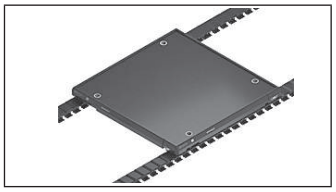
Accumulation roller chain

The roller elements of the accumulation roller chain allow the chain to lightly roll underneath the workpiece pallet when pallets accumulate. It is mainly used to convey heavy loads in rough environments. Both types of chains are closed using a master link to create an endless chain (1 master link each in scope of delivery).



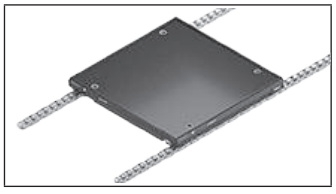
Belt and toothed belt conveyor medium **3-4**





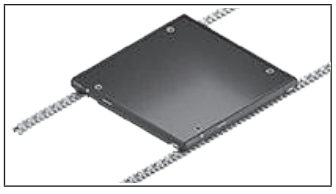
Flat top chain conveyor medium **3-50**





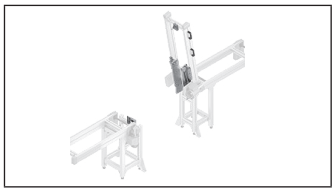
Accumulation roller chain conveyor medium **3-120**



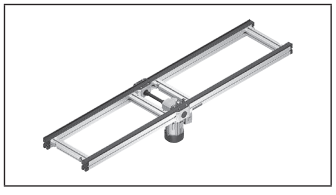


V*plus* accumulation roller chain conveyor medium **3-192**

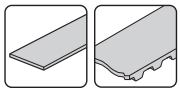




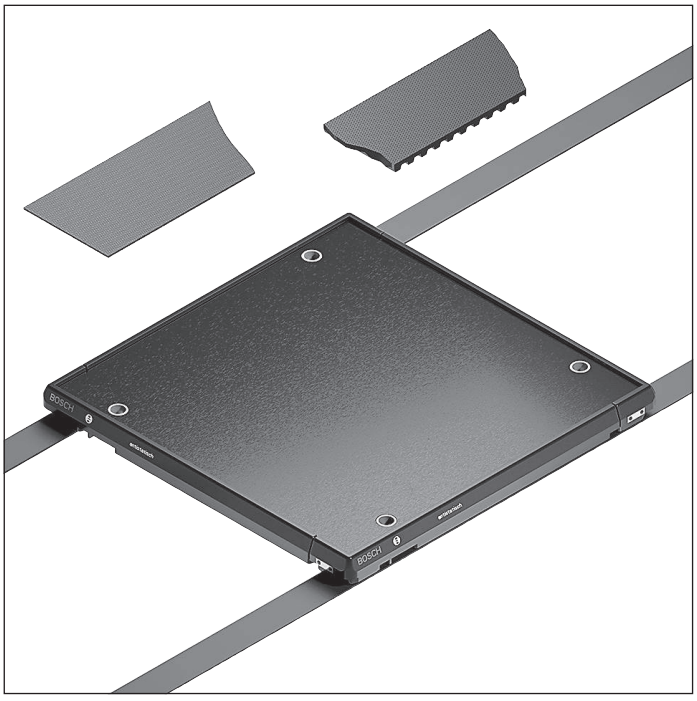
LG 2/H lift gate **3-226**



Connection kits **3-236**

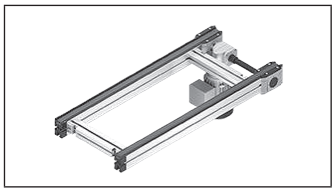


Belt and toothed belt conveyor medium



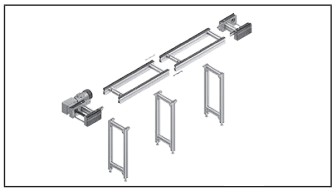
The belt and toothed belt conveyor media are suitable for conveying small and medium-sized workpiece pallets in clean, dry environments. The high flexibility and flat design of the conveyor media allow for narrow conveyor trenches between section profiles.
Whereas the belt is an especially economical conveyor medium, primarily utilized on longer section segments, the toothed belt is suitable for shorter section segments and/or driving neighboring modules without their own drives.

The conveyor media, or the modules equipped with these media, are used for assembly of lightweight products, e.g., electrical household appliances. Features such as a low risk of drawing-in and low profile construction height, as well as quiet operation, facilitate use at manual assembly stations. A surface load of up to 1 kg/cm is permissible on workpiece pallets with PA wear pads.



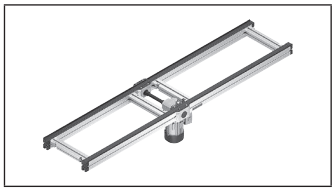
BS 2 belt sections **3-6**





Parts for AS 2, UM 2, ST 2 conveyor units **3-16**





Connection kits **3-236**

BS 2 belt section



- Ready for operation conveyor section with own drive
- Accumulation operation possible
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Reversible operation possible
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The belt section is a ready for operation conveyor section with own drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Accessories

Recommended accessories

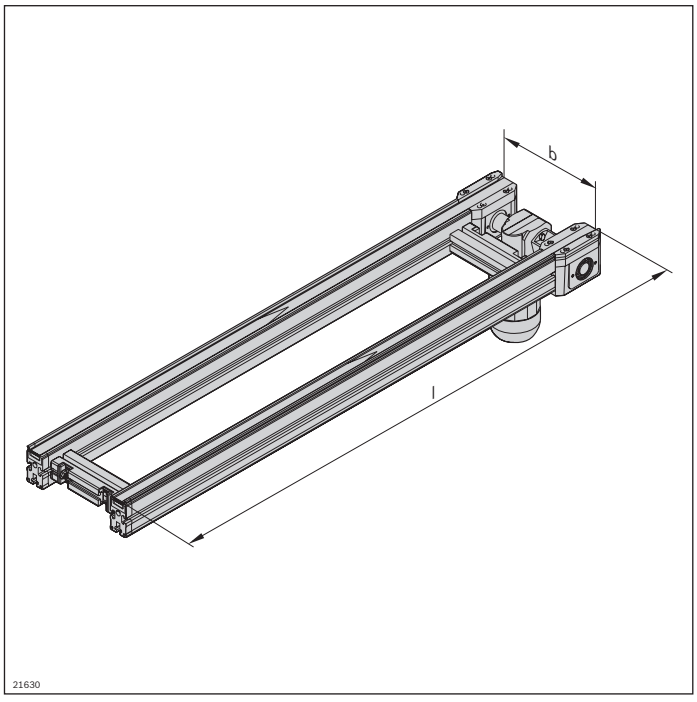
- Connection kit, see page 3-236
- SZ 2 leg sets, see page 6-2

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842999716
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1)]
l (mm)	Length	240 ... 6000[2)]
v_N (m/min)	Nominal speed	0[3)]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4)]

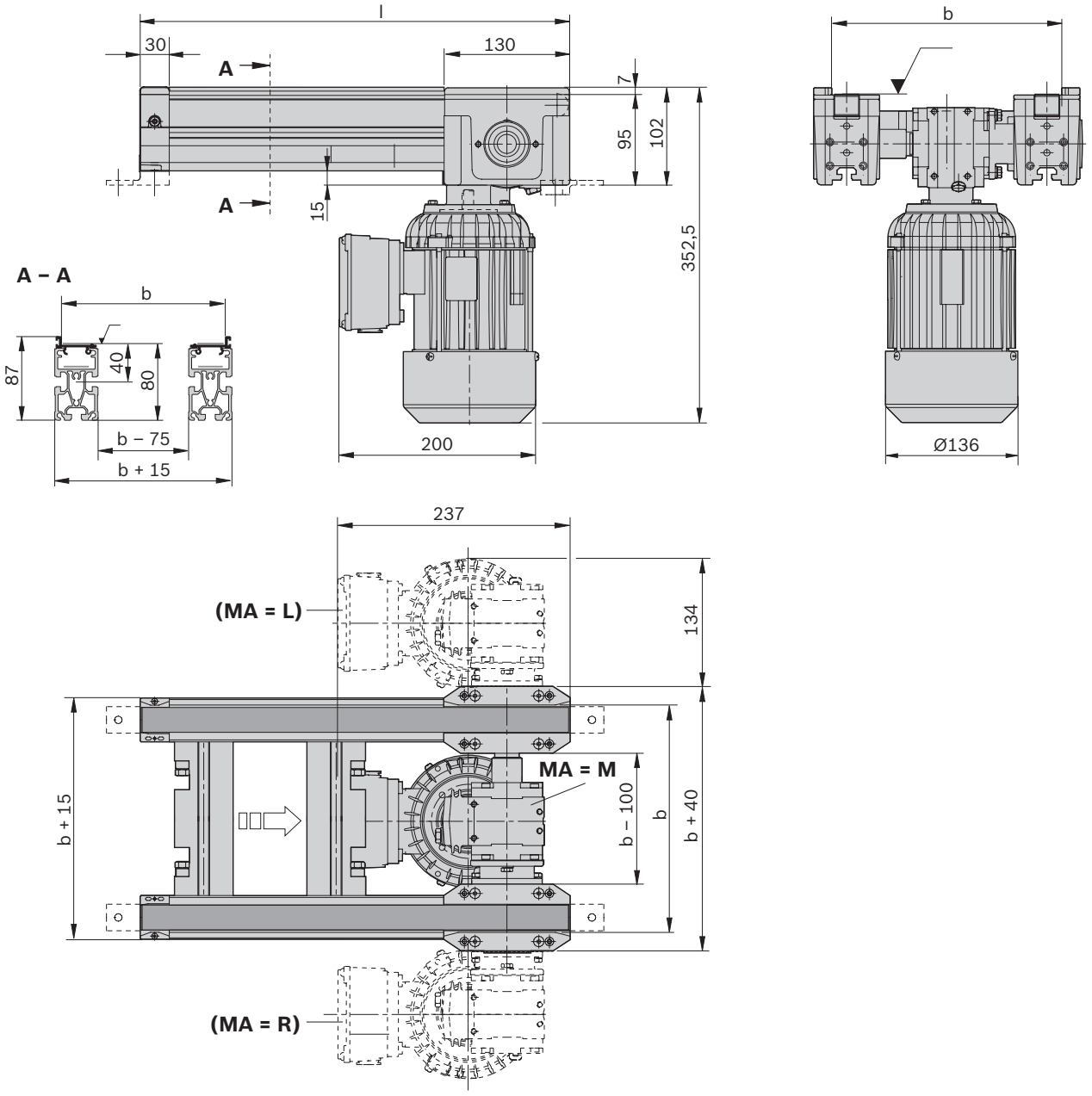
[1)] Individual width variants available
[2)] l is rounded in accordance with the toothed belt pitch
[3)] v_N = 0: without motor or gear
[4)] When MA = M and b = 160 mm, the max. section load is only 30 kg

Technical data

Material number			3842999716
Load			
Max. section load in accumulation operation		kg	60[5]
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Guide profile: polyamide Glide profile: polyamide
Dimensions			
Length	l	mm	240 ... 6000

[5)] When MA = M and b = 160 mm, the max. section load is only 30 kg

Dimensions


l
30
130
A
A
7
95
102
15
352,5
200
b
Ø136
A – A
b
87
40
80
b – 75
b + 15
237
(MA = L)
134
MA = M
b + 15
b – 100
b
b + 40
(MA = R)
00012812

BS 2/M belt section





- Functional operation conveyor complete with drive
- Accumulation operation possible
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Reversible operation possible
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The belt section is a conveyor section that is ready for operation with own drive for the transportation of workpiece pallets. It is suitable for all installation situations in which the motor cannot be fitted to the end of the belt section.

Accessories

Recommended accessories

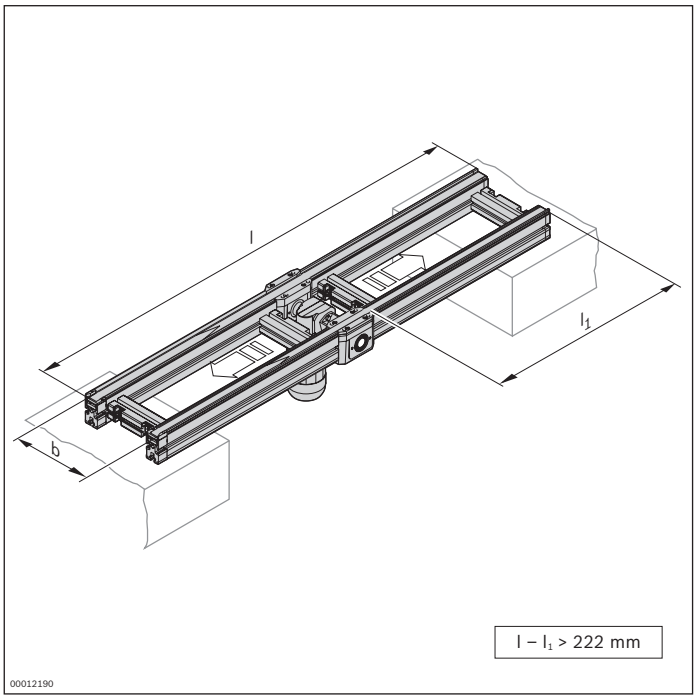
- Connection kit, see page 3-236
- SZ 2/... leg sets, see page 6-2

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842999717
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
l (mm)	Length	310 ... 6000[2]
l_1 (mm)	Length	90 ... 5770
v_N (m/min)	Nominal speed	0[3]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4)]

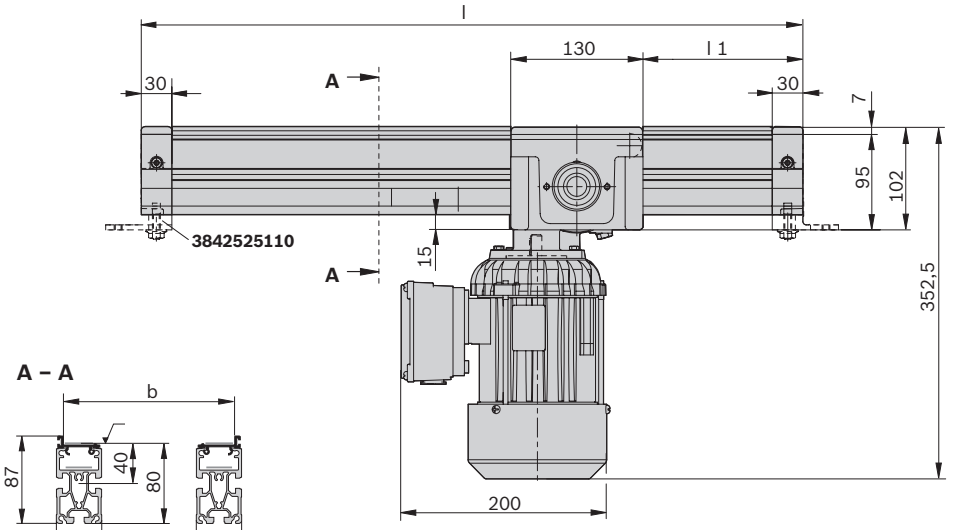
[1)] Individual width variants available
[2)] l is rounded in accordance with the toothed belt pitch
l – l_1 > 222 mm
[3)] v_N = 0: without motor or gear
[4)] When MA = M and b = 160 mm, the max. section load is only 30 kg

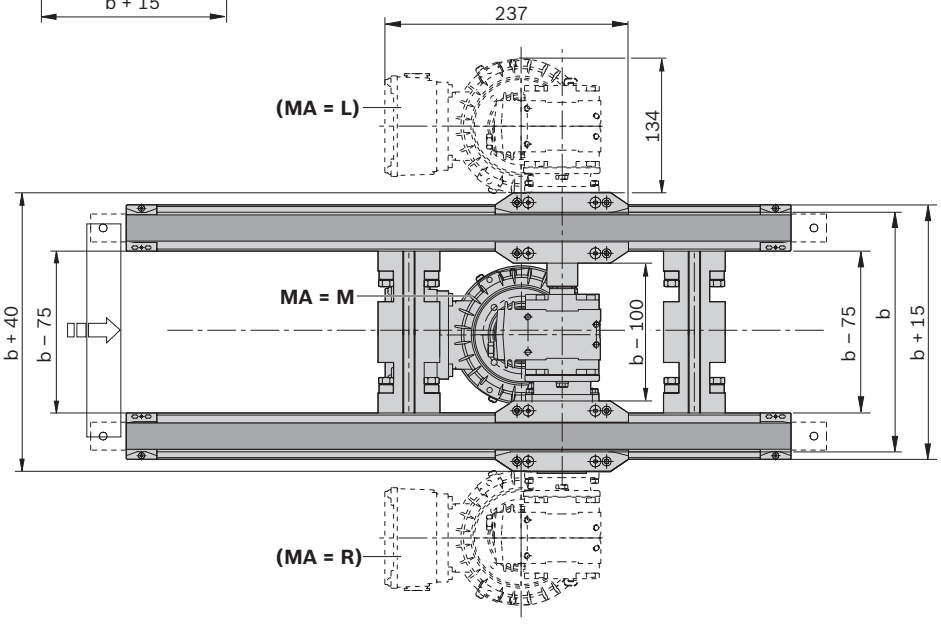
Technical data

Material number			3842999717
Load			
Max. section load in accumulation operation		kg	60[5]
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Guide profile: Polyamide Glide profile: Polyamide
Dimensions			
Length	l	mm	310 ... 6000

[5] When MA = M and b = 160 mm, the max. section load is only 30 kg

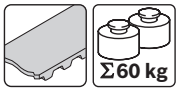
Dimensions





00012813

Transmission drive





For mounting larger third-party motors for the transmission of higher drive torques (maximum section loads of the belt section must not be exceeded).

Accessories

Required accessories

- BS 2 (see p. 3-6) or BS 2/M (see p. 3-9) belt section
- Gear motor
- Torque support (to be supplied by the operator)

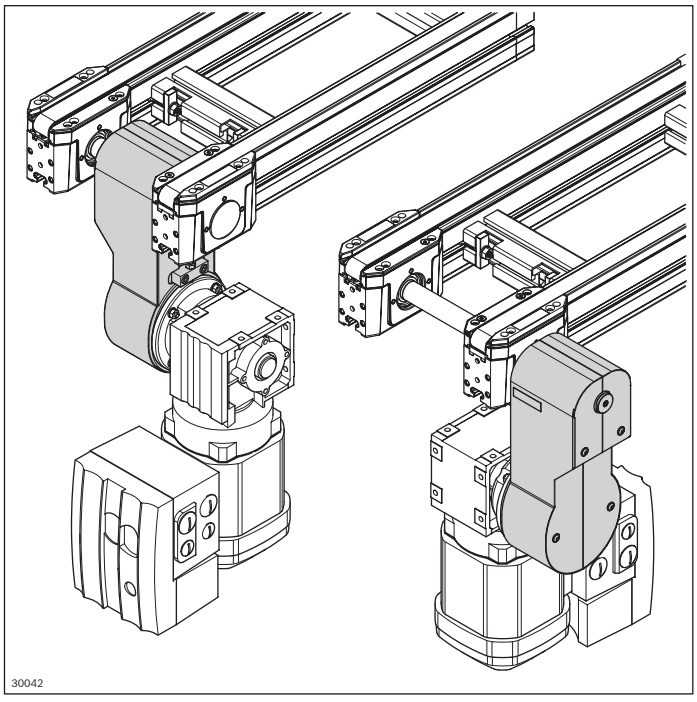
Delivery notes

Condition on delivery

- Unassembled in parts
- Bearing already press-fitted
- Including adapter set and additional hexagonal shaft

- Timing belt side drive for gear motors that must be constructed set lower so that they can be driven over
- Suitable for flange mounted gears, flange diameter 120 mm (B5 version with worm gear) and hollow shaft, diameter 20 mm
- Designed for Spiroplan SEW, WAF20, WAF30 or WAF37 right-angle gear motors and SAF37 worm gear motors
- Reversible operation possible
- Suitable for mounting to BS 2 and BS 2/M belt sections
- Maximum transferable torque (on the gear output): m_{max} = 12 Nm
- Only suspended mounting of the gear motor is permitted

Ordering information

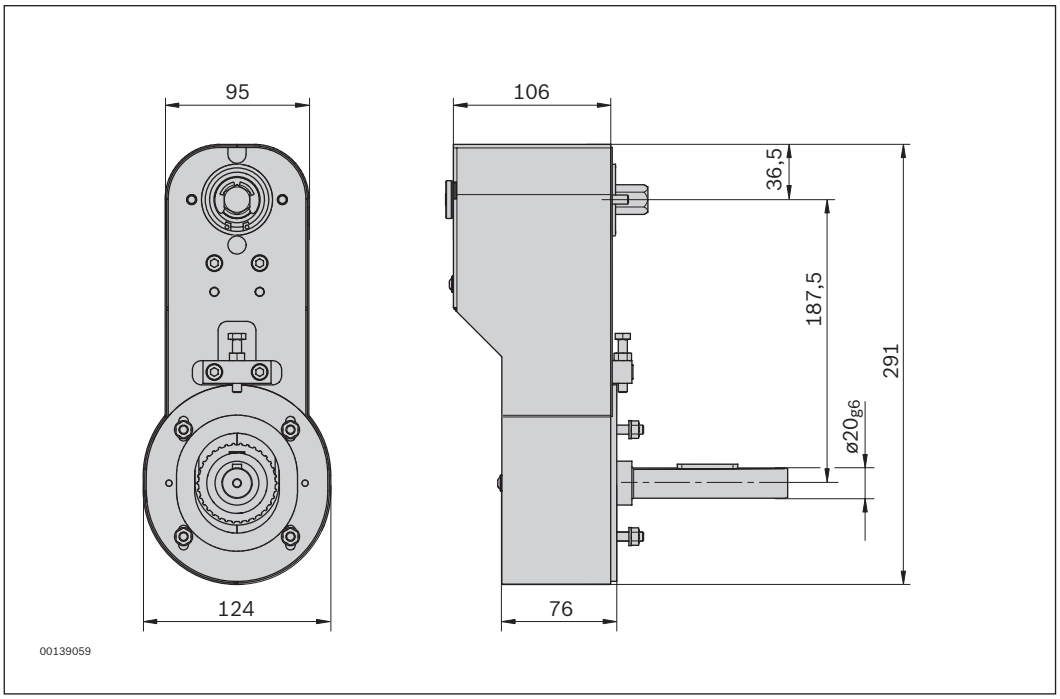


Product designation	Material number
Transmission drive	3842542550

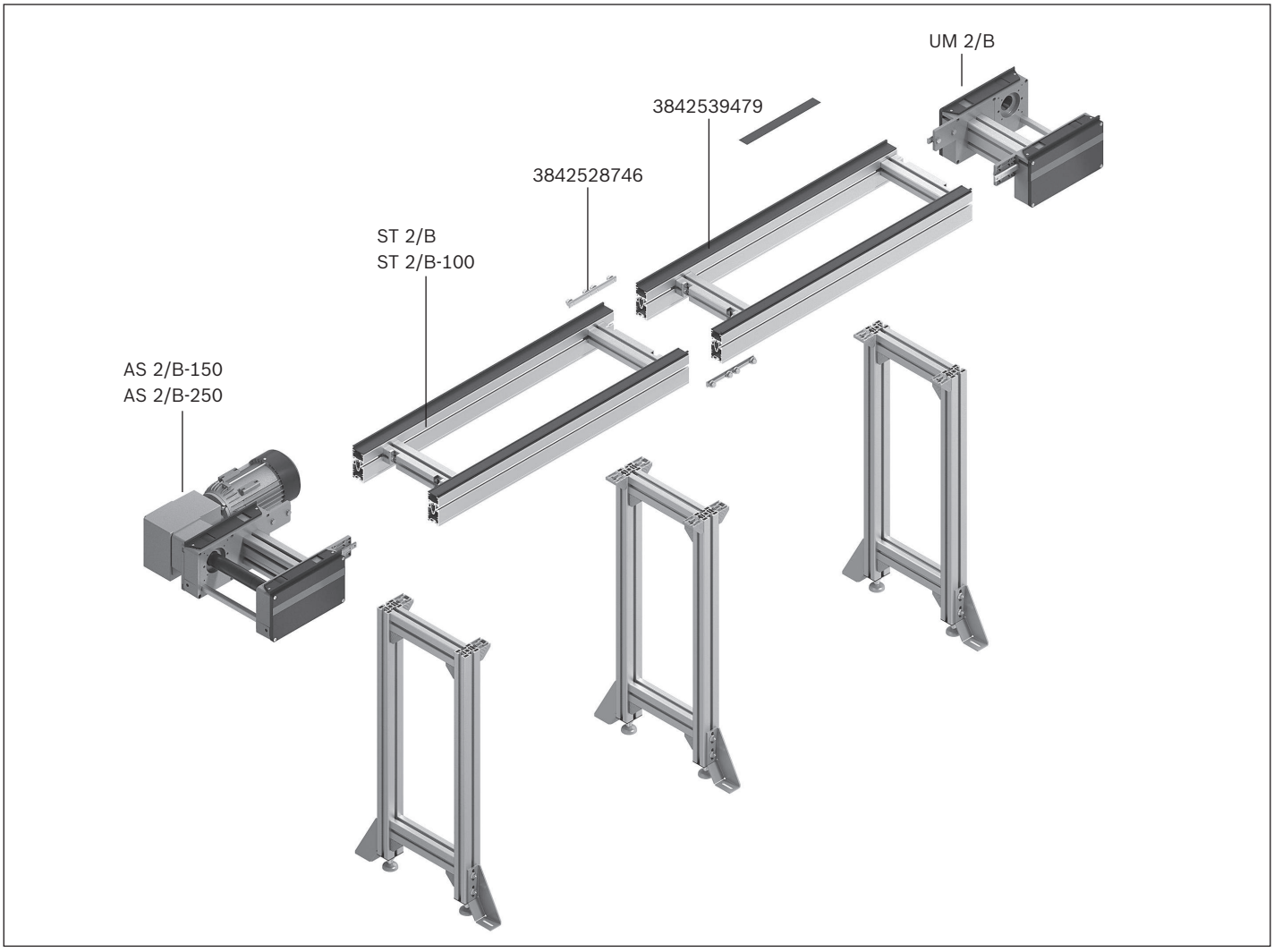
Technical data

Material number		3842542550
Load		
Maximum transferable torque	Nm	12
Features		
ESD		Yes

Dimensions



Conveyor units
Parts for belt conveyor medium

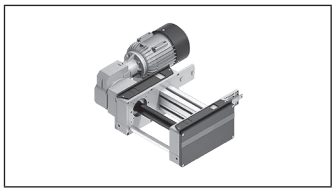


A conveyor unit is a complete unit used for linear conveying of workpiece pallets. It consists of:

- AS 2/B-... drive module, see p. 3-18
- UM 2/B return unit, see p. 3-24
- ST 2/... section, see p. 3-28
- SZ 2/... leg sets, see page 6-2

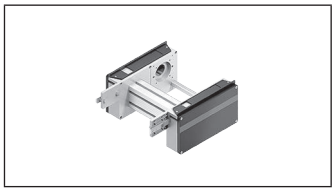
The UM 2/B and AS 2/B may be set up right next to each other, which allows for conveyor unit combinations.

The drive module is designed for section loads up to m_G = 150 kg or up to m_G = 250 kg per conveyor unit.



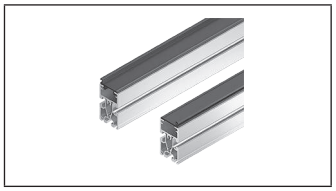
AS 2/B drive module **3-18**





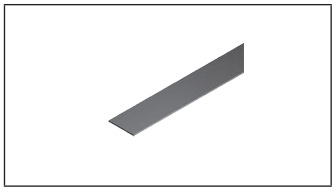
UM 2/B return unit **3-24**





ST 2/B section, components **3-28**

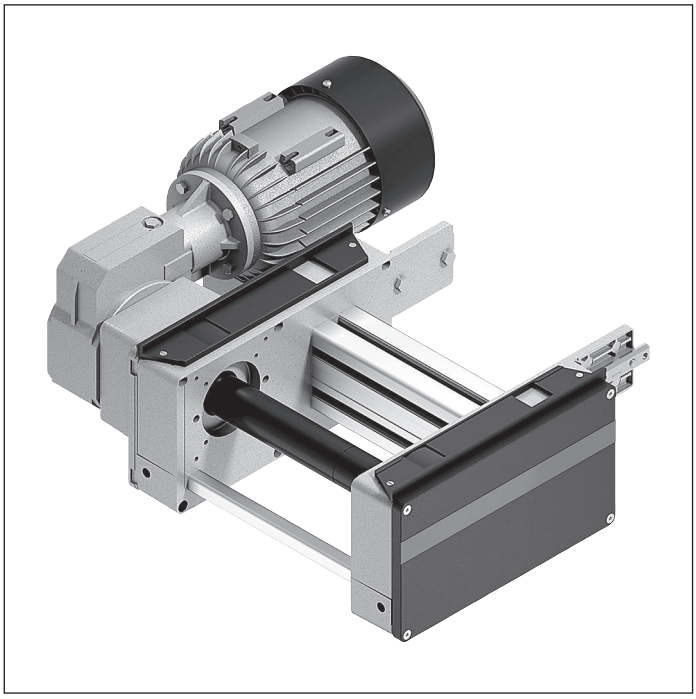




Belt conveyor medium, accessories **3-45**



AS 2/B-150 drive module



- Conveyor medium: Belt (suitable for use in an EPA)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Accumulation operation possible

The AS 2/B-... drive module drives the conveyor medium belt in self-built conveyor section elements with section, return unit and conveyor belt or serves as a transverse section.

Accessories

Required accessories

- RB 2 roller track (3842532822, see p. 3-27) with adjacent longitudinal sections and workpiece pallet lengths of < 320 mm
- RB 2/UM 2 roller track set (3842558657 see p. 5-88) for use in transverse sections with adjacent longitudinal sections

Delivery notes

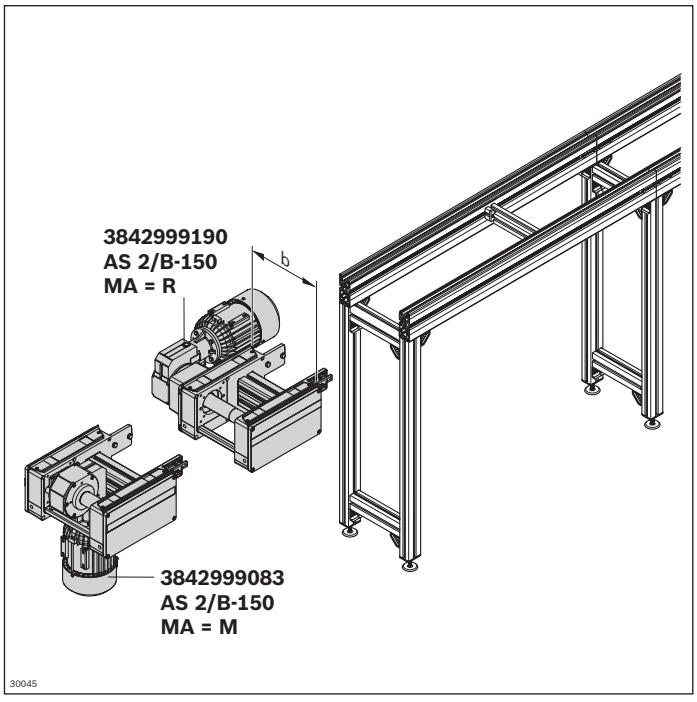
Scope of delivery

- AS 2/B-150 drive module
- Includes fastening material to mount on the ST 2 conveyor section, as well as to mount on an adjacent return unit.

Condition on delivery

- Fully assembled

Ordering information



Material number		3842999083	3842999190
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200	
		160 ... 1200[1]	
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15[3]; 18	
U (V)	Voltage	See motor data, p. 11-24ff	
f (Hz)	Frequency	See motor data, p. 11-24ff	
AT	Motor connection S = cable/plug K = terminal box	S; K	
MA	Motor mounting R = right L = left M = center	R[4]; L[4]; M	

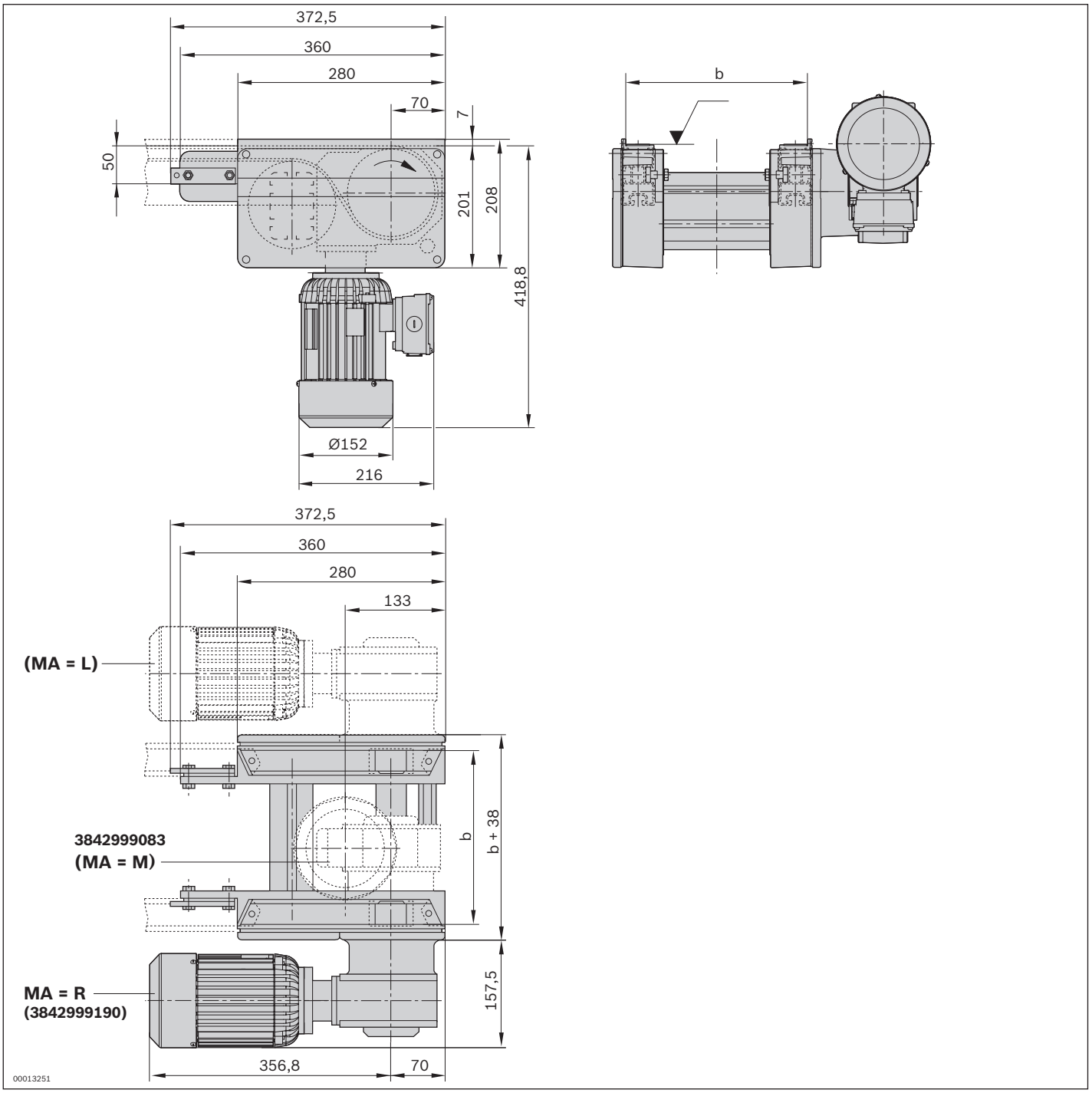
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Not possible at f = 60 Hz
[4] The following applies to 3842999190: MA = R; L

Technical data

Material number Motor mounting			**3842999083** MA = M	**3842999190** MA = R, L
Load				
Max. section load in accumulation operation		kg	150	150
Features				
ESD			Yes	Yes
Additional information				
Required conveyor medium length*	l_{AS}	mm	660	660

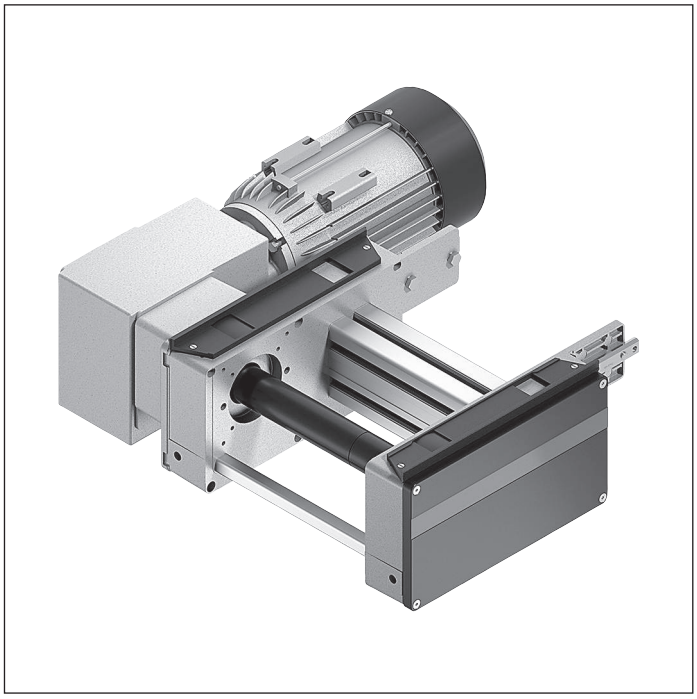
* Formula for calculating the conveyor medium, see p. 3-46

Dimensions


372,5
360
280
70
7
50
201
208
418,8
Ø152
216
b
372,5
360
280
133
(MA = L)
3842999083
(MA = M)
MA = R
(3842999190)
b
b + 38
157,5
356,8
70
00013251

AS 2/B-250 drive module





- Conveyor medium: Belt (suitable for use in an EPA)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Accumulation operation possible

The AS 2/B-... drive module drives the conveyor medium belt in self-built conveyor section elements with section, return unit and conveyor belt or serves as a transverse section.

Accessories

Required accessories

- RB 2 roller track (3842532822, see p. 3-27) with adjacent longitudinal sections and workpiece pallet lengths of < 320 mm
- RB 2/UM 2 roller track set (3842558657 see p. 5-88) for use in transverse sections with adjacent longitudinal sections

Delivery notes

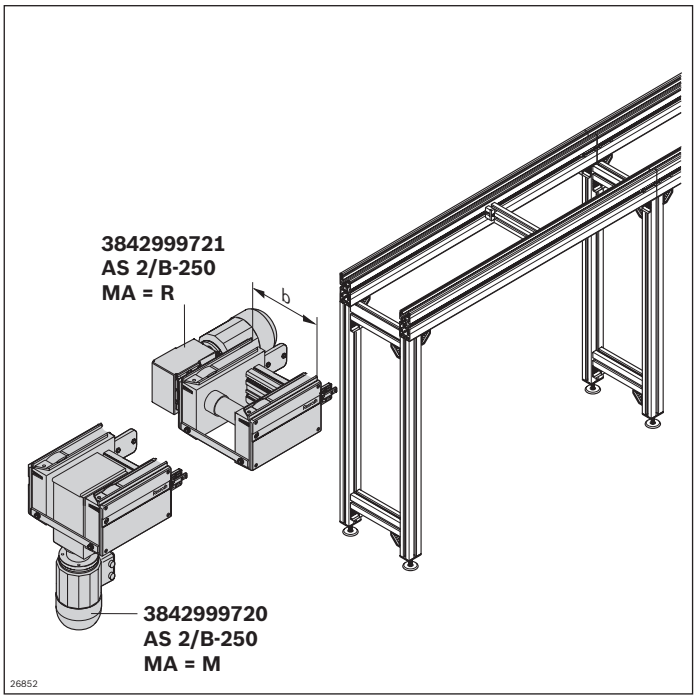
Scope of delivery

- AS 2/B-250 drive module
- Includes fastening material to mount on the ST 2 conveyor section, as well as to mount on an adjacent return unit.

Condition on delivery

- Fully assembled

Ordering information



Material number		3842999720	3842999721
b (mm)	Track width in direction of transport	160; 240[1]; 320; 400; 480; 640; 800; 1040; 1200	
		240 ... 1200[2]	
v_N (m/min)	Nominal speed	0[3]; 6; 9; 12; 15; 18	
U (V)	Voltage	See motor data, p. 11-24ff	
f (Hz)	Frequency	See motor data, p. 11-24ff	
AT	Motor connection S = cable/plug K = terminal box	S; K	
MA	Motor mounting R = right L = left M = center	R[4]; L[4]; M[1]	

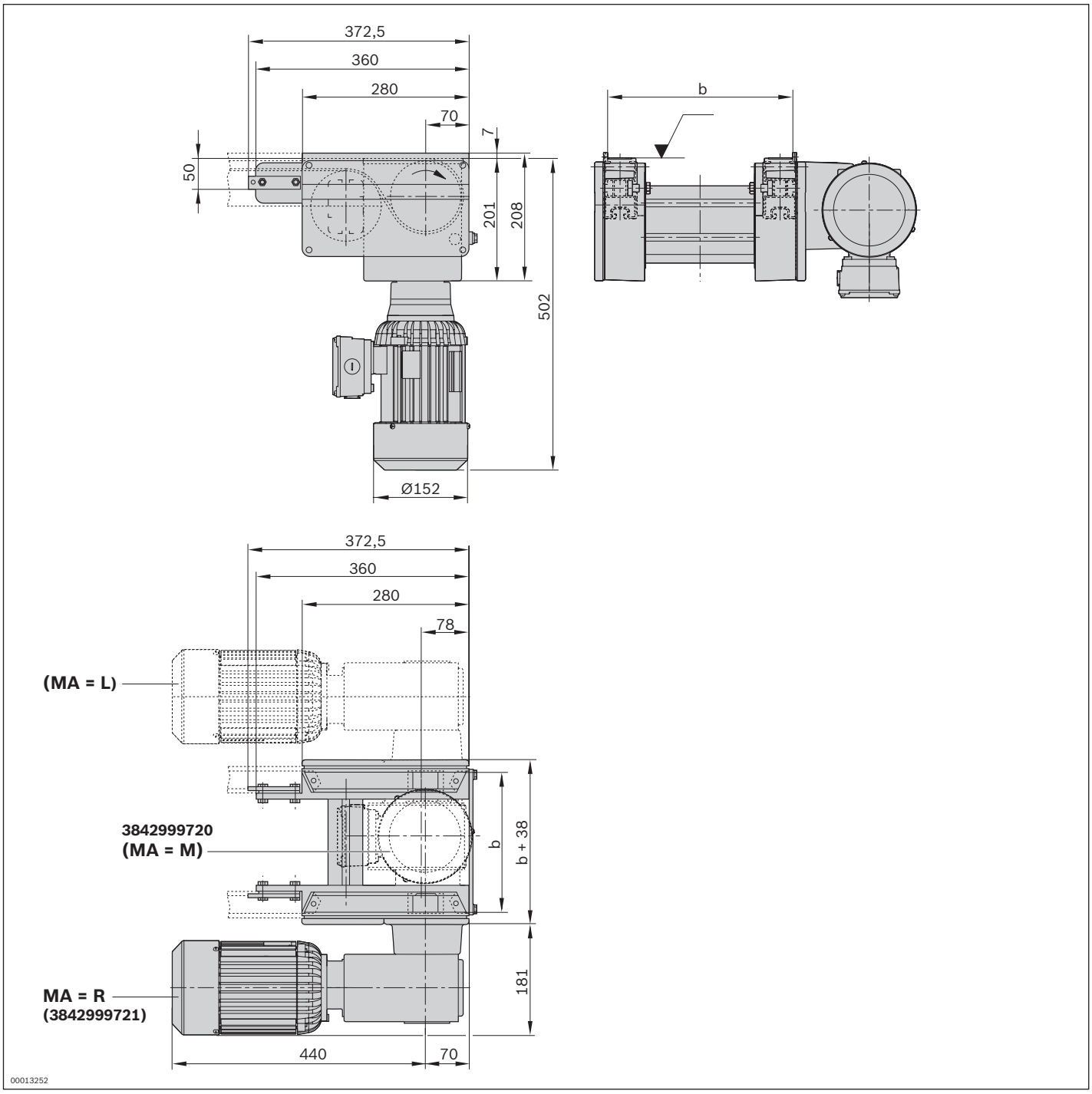
[1] The following applies to 3842999720: MA = M and b ≥ 240 mm
[2] Individual width variants available
[3] v_N = 0: without motor or gear
[4] The following applies to 3842999721: MA = R; L

Technical data

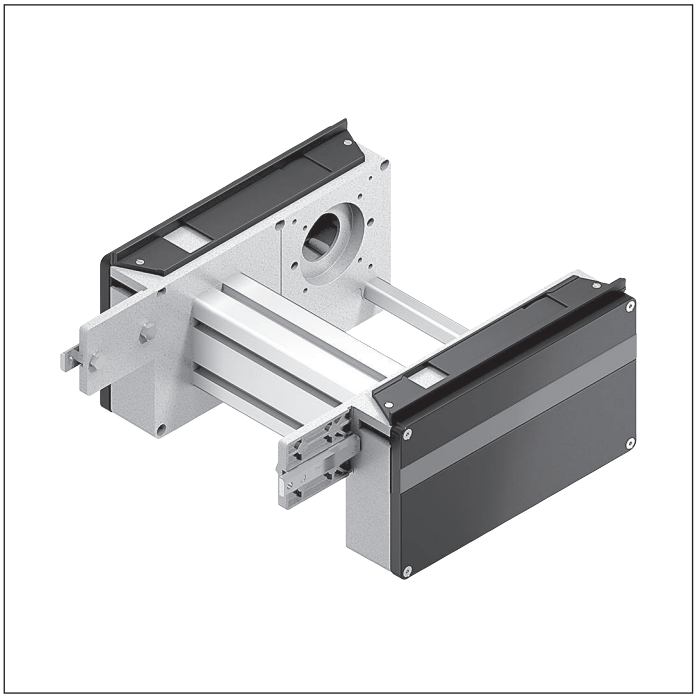
Material number Motor mounting			**3842999720** MA = M for b ≥ 240 mm	**3842999721** MA = R, L
Load				
Max. section load in accumulation operation		kg	250	250
Features				
ESD			Yes	Yes
Additional information				
Required conveyor medium length*	l_{AS}	mm	660	660

* Formula for calculating the conveyor medium, see p. 3-46

Dimensions


372,5
360
280
70
7
50
201
208
502
Ø152
b
372,5
360
280
78
(MA = L)
3842999720
(MA = M)
b
b + 38
MA = R
(3842999721)
181
440
70
00013252

UM 2/B return unit



- Conveyor medium: Belt (suitable for use in an EPA)
- For use in conjunction with all AS 2/B drive modules
- Max. permissible section load up to 250 kg in accumulation operation per conveyor unit

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Delivery notes

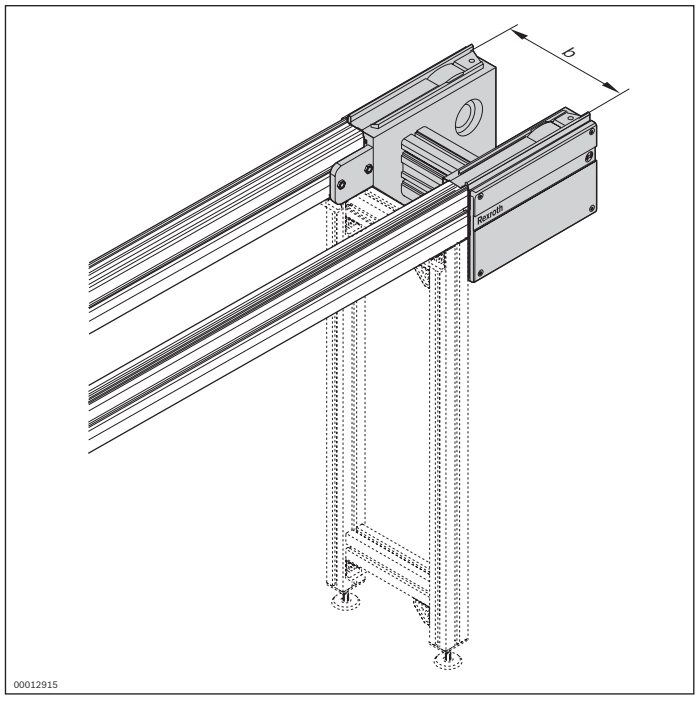
Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information



Material number		3842999090
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

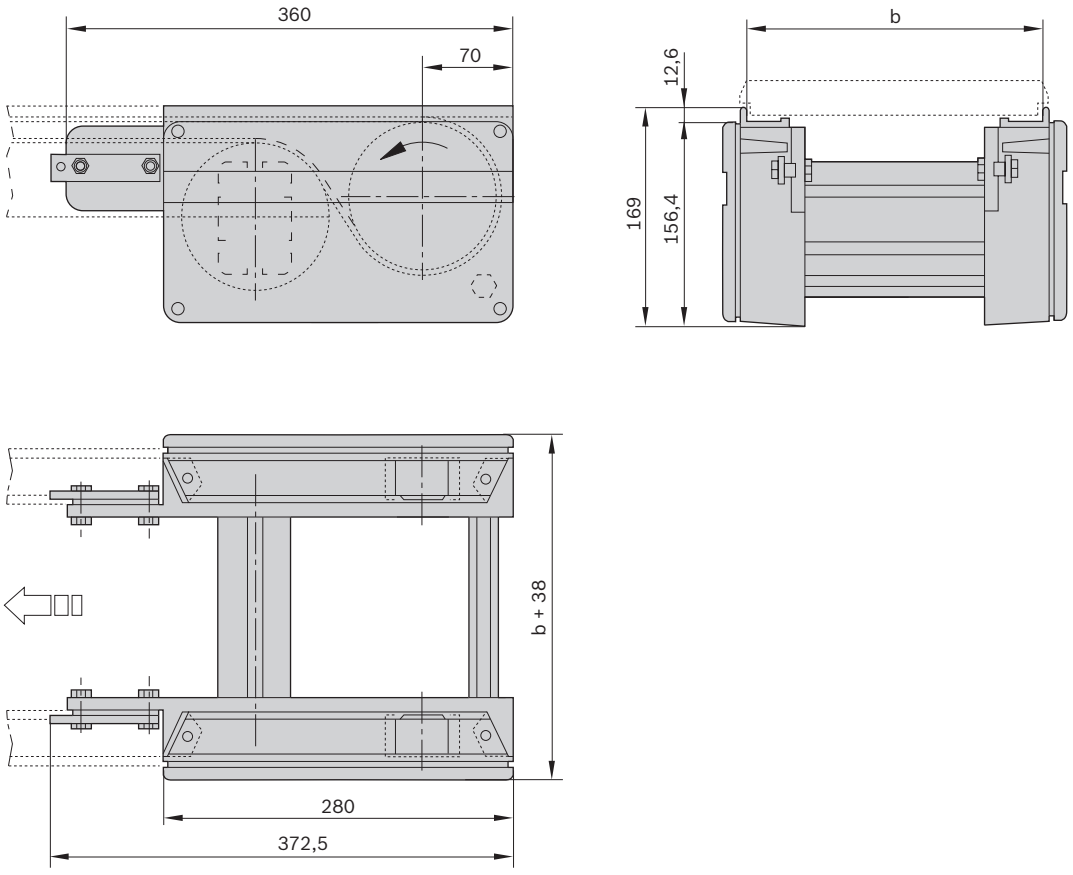
3

Technical data

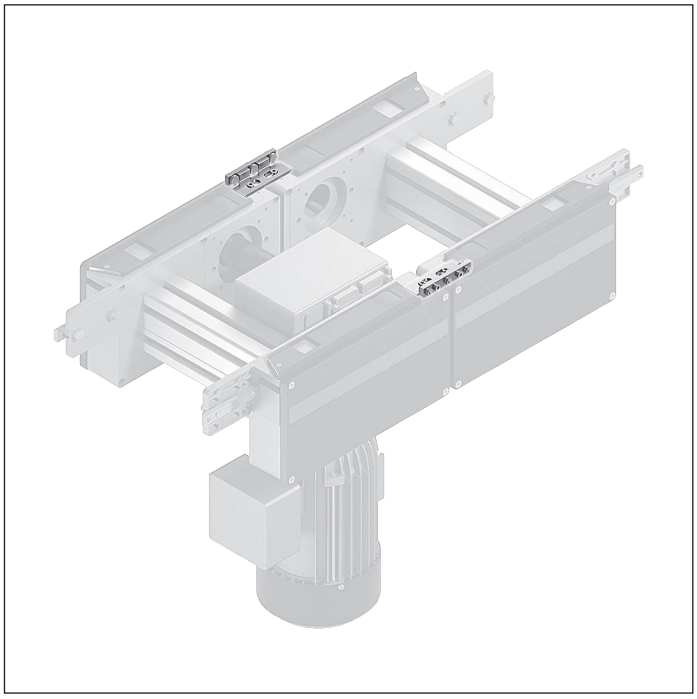
Material number			3842999090
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	660

* Formula for calculating the conveyor medium, see p. 3-46

Dimensions



RB 2 roller track



- It is used to support the workpiece pallets at the transition point between a conveyor unit and another adjacent conveyor unit. Necessary for workpiece pallets with l_{WT} < 320 mm.
- Universal design

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

- Fully assembled

Ordering information

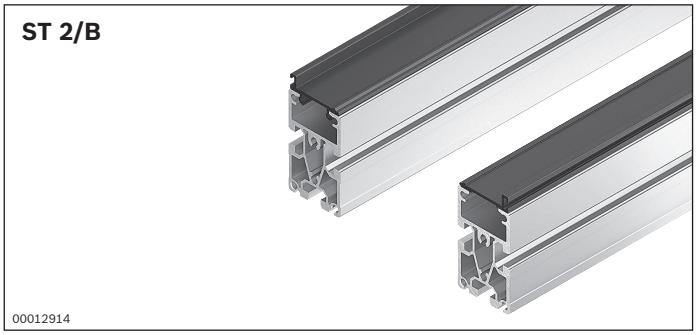
Product designation	Packaging unit	Material number
RB 2 roller track	2	3842532822

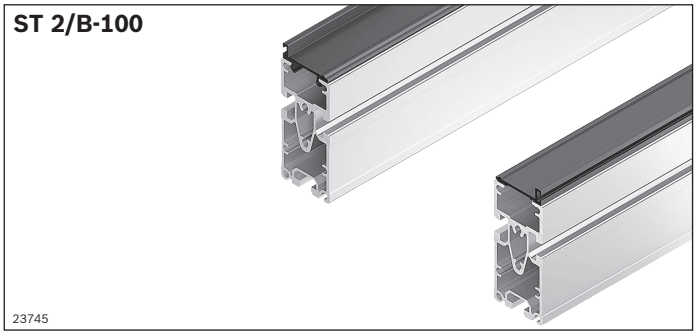
Technical data

Material number	3842532822
Features	
ESD	Yes
Material specification	Roller carrier: Aluminum Rollers: Steel; hardened

ST 2/B section, ST 2/B-100 section







- For conveyor unit self-assembly
- Easy insertion of the guide profile into the section profile
- Easily replaceable when worn out
- Conveyor medium: Belt (suitable for use in an EPA)

The section is used for self-construction of conveyor units in conjunction with the AS 2/B drive module and the UM 2/B return unit.

Accessories

Recommended accessories

- SZ 2 leg sets, see page 6-2
- Profile connector, see p. 3-40
- Cross connector, see p. 3-41

Delivery notes

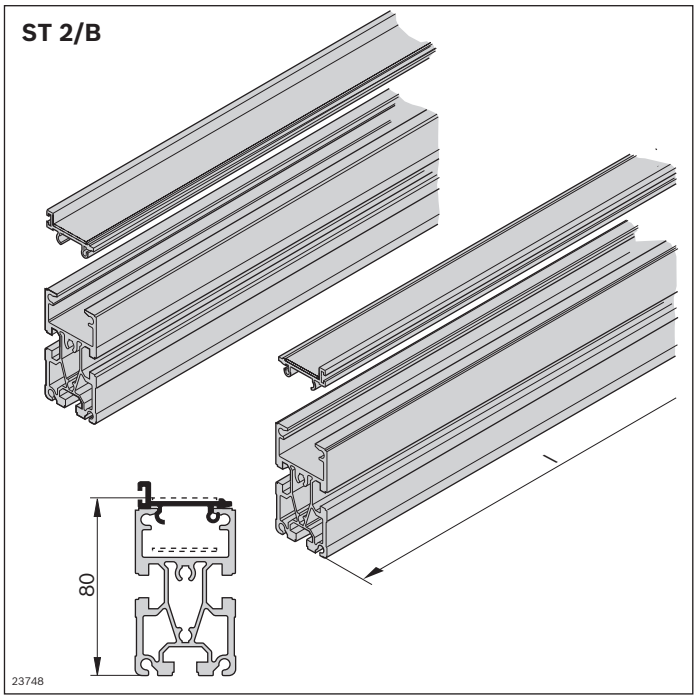
Scope of delivery

- ST 2/B: 2x SP 2/B section profile, 2x FP 2/B guide profile
- ST 2/B-100: 2x SP 2/B-100 section profile, 2x FP 2/B guide profile

Condition on delivery

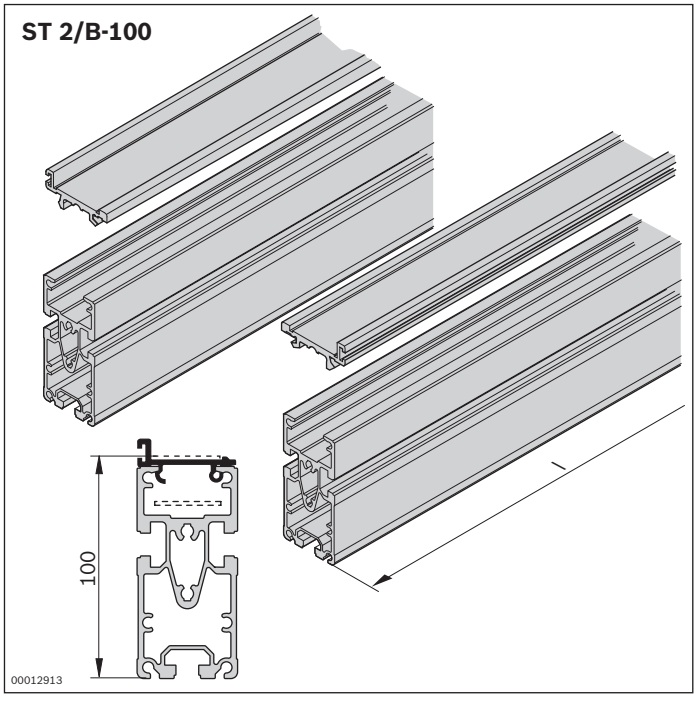
- Not assembled

Ordering information



ST 2/B section

Material number		3842992650
l (mm)	Length	60 ... 6000
h (mm)	Height to conveying level	80



ST 2/B-100 section

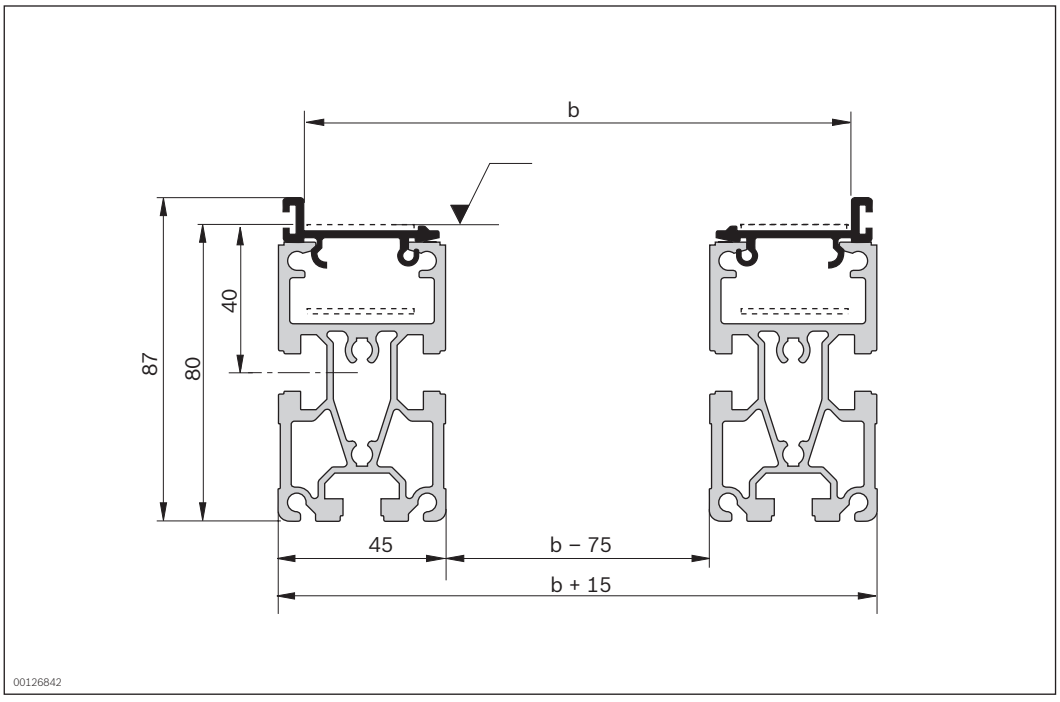
Material number		3842994927
l (mm)	Length	60 ... 6000
h (mm)	Height to conveying level	100

Technical data

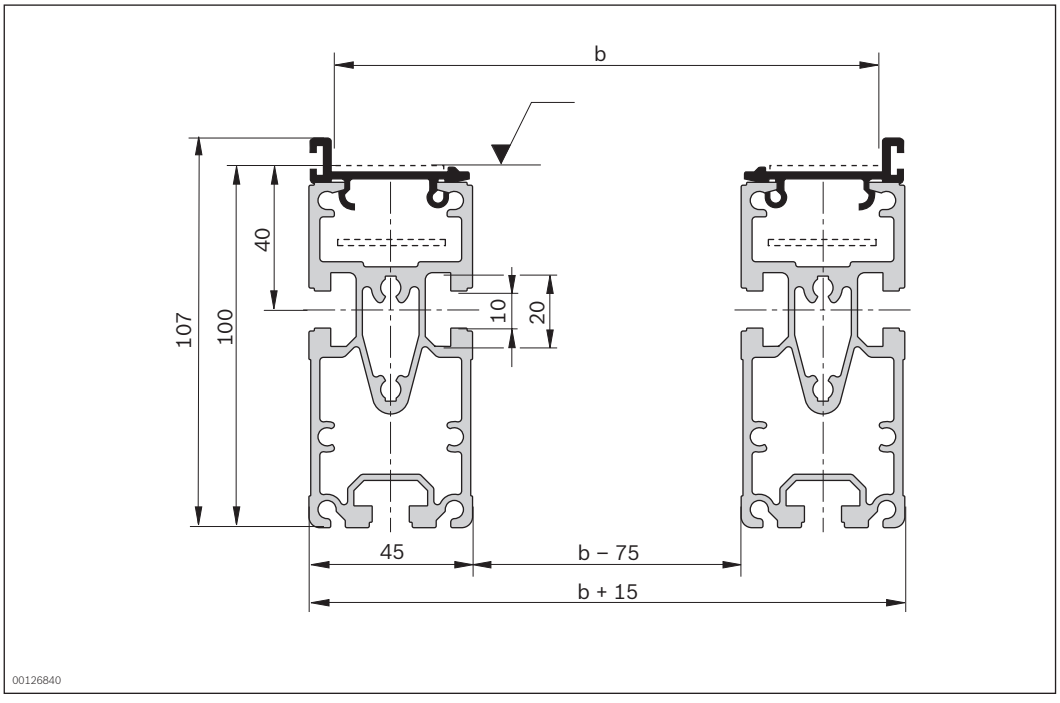
Material number Product designation			**3842992650** ST 2/B section	**3842994927** ST 2/B-100 section
Features				
ESD			Yes	Yes
Material specification			Section profile: Aluminum; anodized Guide profile: polyamide	Section profile: Aluminum; anodized Guide profile: polyamide
Dimensions				
Length	l	mm	60 ... 6000	60 ... 6000
Height to conveying level	h	mm	80	100

Dimensions

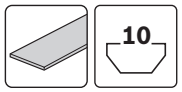
ST 2/B



ST 2/B-100



SP 2/B section profile





- Used for self-construction of low-profile conveyor units and the conveyor media belt
- For use in conjunction with all AS 2/B drive modules, UM 2/B return units and FP 2/B guide profiles
- Longitudinal grooves for easy mounting
- ST 2/B to be used in sections

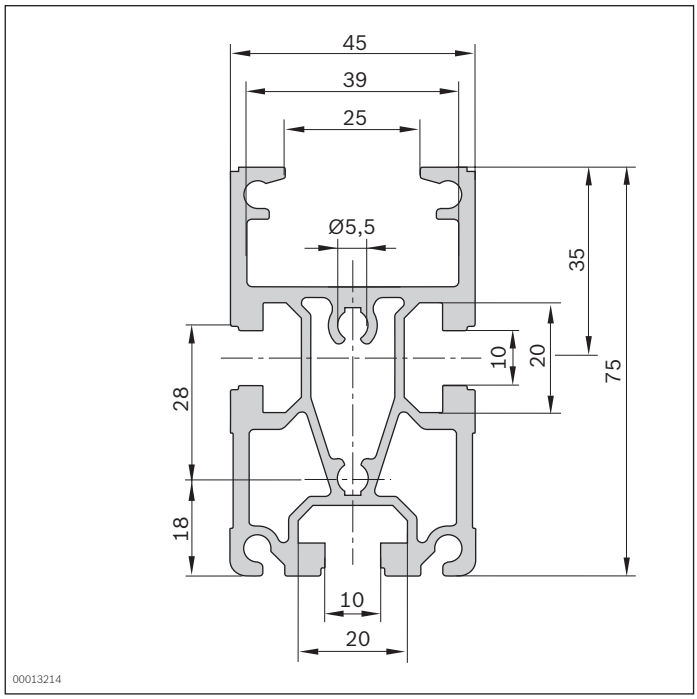
Ordering information

Product designation	l (mm)	Delivery unit	Material number
SP 2/B 16 x 6070 mm section profile	6070	16	3842532695
SP 2/B section profile	60 ... 6000		3842992884

Technical data

Material number			3842532695	3842992884
Load				
Moment of inertia	I_x	cm^4	49.6	49.6
	I_y	cm^4	25.8	25.8
Moment of resistance	W_x	cm^3	12.1	12.1
	W_y	cm^3	11.5	11.5
Features				
Material specification			Aluminum, natural; anodized	Aluminum, natural; anodized
Mass	m	kg/m	2.8	2.8
Dimensions				
Length	l	mm	6070	
Length	l	mm		60 ... 6000
Profile surface	A	cm^2	10.4	10.4

Dimensions



SP 2/B-50 section profile





- Used for self-construction of low-profile conveyor units and the conveyor media belt
- For use in conjunction with all AS 2/B drive modules, UM 2/B return units and FP 2/B guide profiles
- Longitudinal grooves for easy mounting
- Suitable for installation at manual workplaces

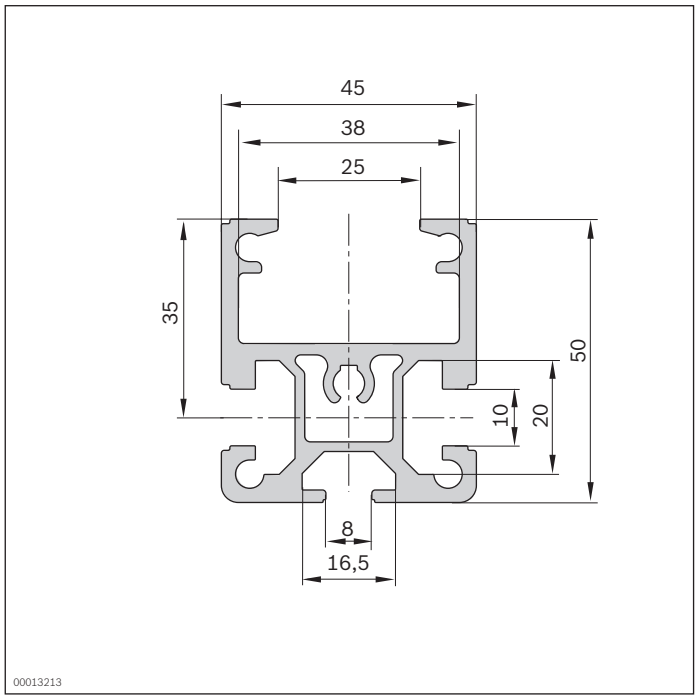
Ordering information

Product designation	l (mm)	l (mm)	Delivery unit	Material number
SP 2/B-50 20 x 6070 mm section profile	6070		20	3842532697
SP 2/B-50 section profile		60 ... 6000		3842992903

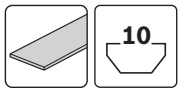
Technical data

Material number			3842532697	3842992903
Load				
Moment of inertia	I_x	cm^4	46.2	46.2
	I_y	cm^4	16.9	16.9
Moment of resistance	W_x	cm^3	5.3	5.3
	W_y	cm^3	7.5	7.5
Features				
Material specification			Aluminum, natural; anodized	Aluminum, natural; anodized
Mass	m	kg/m	1.9	1.9
Dimensions				
Length	l	mm	6070	
Length	l	mm		60 ... 6000
Profile surface	A	cm^2	6.9	6.9

Dimensions



SP 2/BH section profile





- Used for self-construction of low-profile conveyor units and the conveyor media belt
- For use in conjunction with all AS 2/B drive modules, UM 2/B return units and FP 2/B guide profiles
- Longitudinal grooves for easy mounting
- In tough design

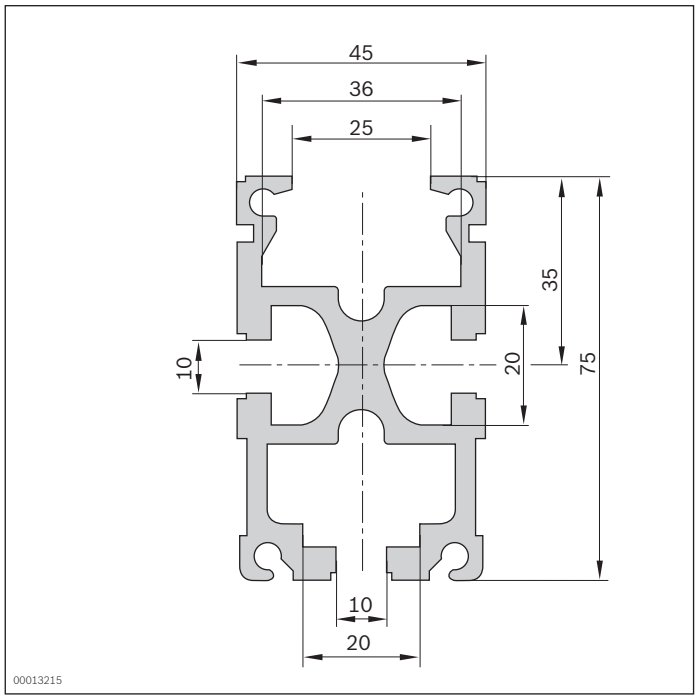
Ordering information

Product designation	l (mm)	l (mm)	Delivery unit	Material number
SP 2/BH 16 x 6070 mm section profile	6070		16	3842532696
SP 2/BH section profile		60 ... 6000		3842990409

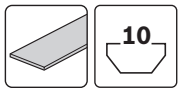
Technical data

Material number			3842532696	3842990409
Load				
Moment of inertia	I_x	cm^4	53.7	53.7
	I_y	cm^4	28.6	28.6
Moment of resistance	W_x	cm^3	14.0	14.0
	W_y	cm^3	13.8	13.8
Features				
Material specification			Aluminum, natural; anodized	Aluminum, natural; anodized
Mass	m	kg/m	3.3	3.3
Dimensions				
Length	l	mm	6070	
Length	l	mm		60 ... 6000
Profile surface	A	cm^2	12.4	12.4

Dimensions



SP 2/B-100 section profile





- Used for self-construction of conveyor units with a height of 100 mm and the conveyor medium belt
- For use in conjunction with all AS 2/B drive modules, UM 2/B return units and FP 2/B guide profiles
- Longitudinal grooves for easy mounting
- For use in assembly systems with mixed conveyor media, e.g., belt and flat top chain

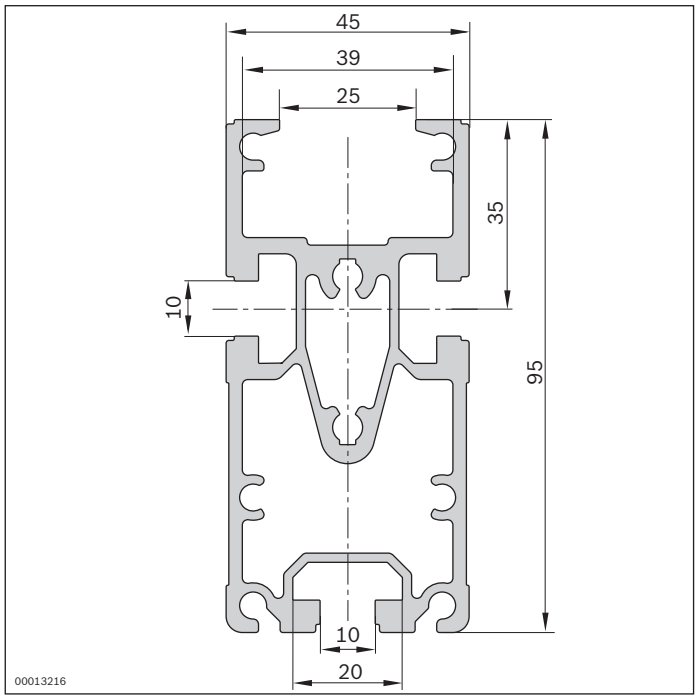
Ordering information

Product designation	l (mm)	l (mm)	Delivery unit	Material number
SP 2/B-100 16 x 6070 mm section profile	6070		16	3842532608
SP 2/B-100 section profile		60 ... 6000		3842993259

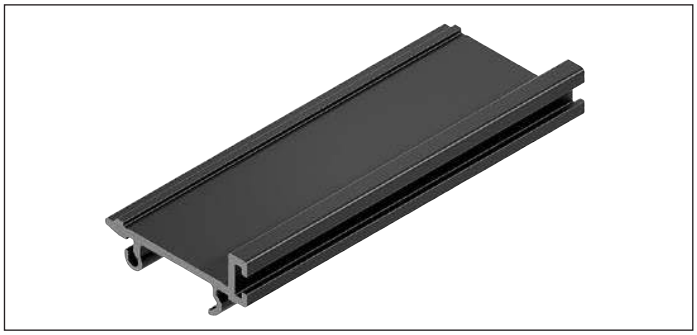
Technical data

Material number			3842532608	3842993259
Load				
Moment of inertia	I_x	cm^4	95.1	95.1
	I_y	cm^4	30.4	30.4
Moment of resistance	W_x	cm^3	20.0	20.0
	W_y	cm^3	13.5	13.5
Features				
Material specification			Aluminum, natural; anodized	Aluminum, natural; anodized
Mass	m	kg/m	3.2	3.2
Dimensions				
Length	l	mm	6070	
Length	l	mm		60 ... 6000
Profile surface	A	cm^2	11.9	11.9

Dimensions



FP 2/B guide profile



- For belt guide
- For clipping onto the SP 2/B section profiles

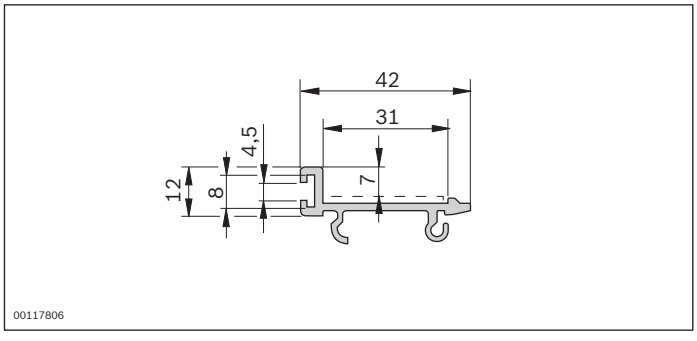
Ordering information

Product designation	l (mm)	Delivery unit	Material number
FP 2/B guide profile	6000	16	3842532675

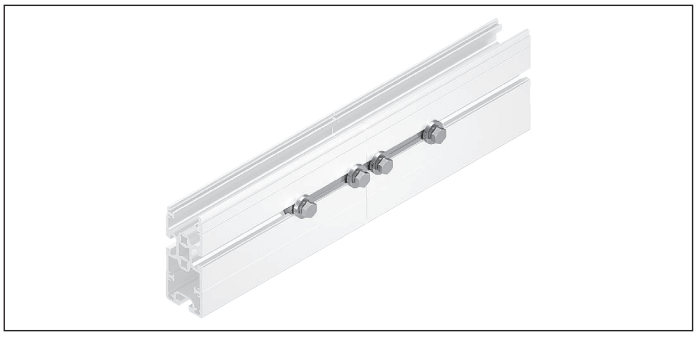
Technical data

Material number			**3842532675**
Features			
ESD			Yes
Material specification			Plastic, PA (suitable for use in an EPA)
Dimensions			
Length	l	mm	6000

Dimensions



Profile connector



- For the end-to-end connecting of two profiles SP 2/...
  Two profile connectors are required for each profile joint
- For conveyor unit self-assembly
- For use in conjunction with all AS 2/B drive modules, UM 2/B return units and SP 2/B section profiles

Delivery notes

Scope of delivery

- Profile connector, screws

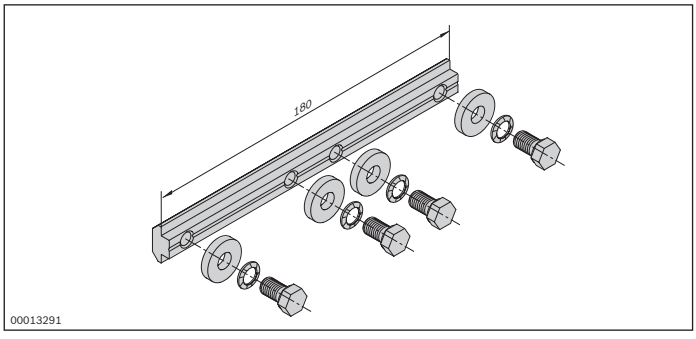
Ordering information

Product designation	Material number
Profile connector	3842528746

Technical data

Material number	3842528746
Features	
Material specification	Steel; galvanized

Dimensions



QV 2 cross connector



- For conveyor unit self-assembly
- For connecting section profiles and defining the track width
- Can be combined with all SP 2 section profiles

Formula for calculating the number of cross connectors needed

A_{QV} = (l/2000 mm) + 1

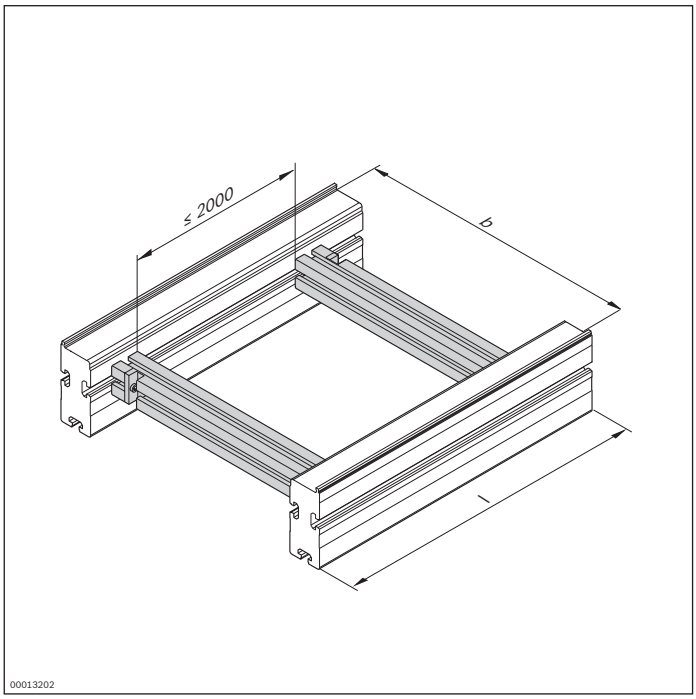
A_{QV} = Number of cross connectors
l = section length

Delivery notes

Scope of delivery

- 45x60 strut profile, finished
- 2x fastening material to mount on an ST 2 section

Ordering information



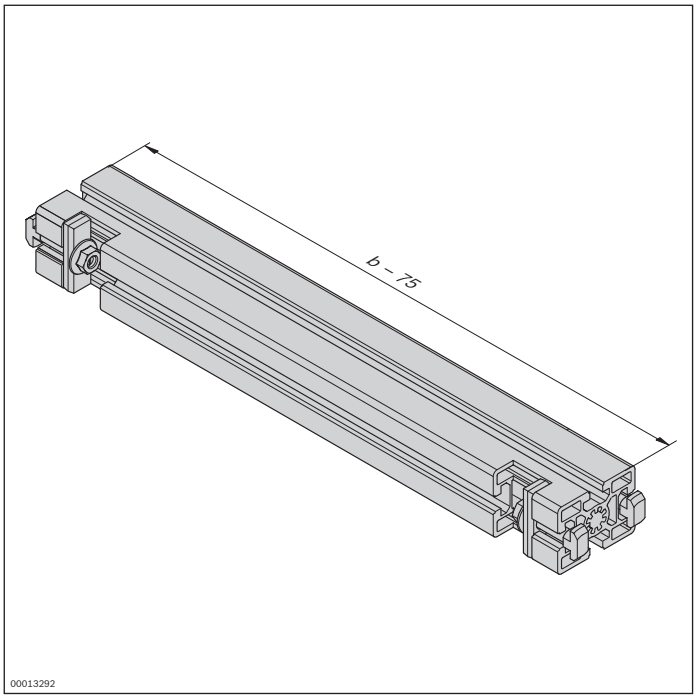
Material number		3842994635
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

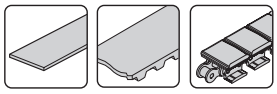
Technical data

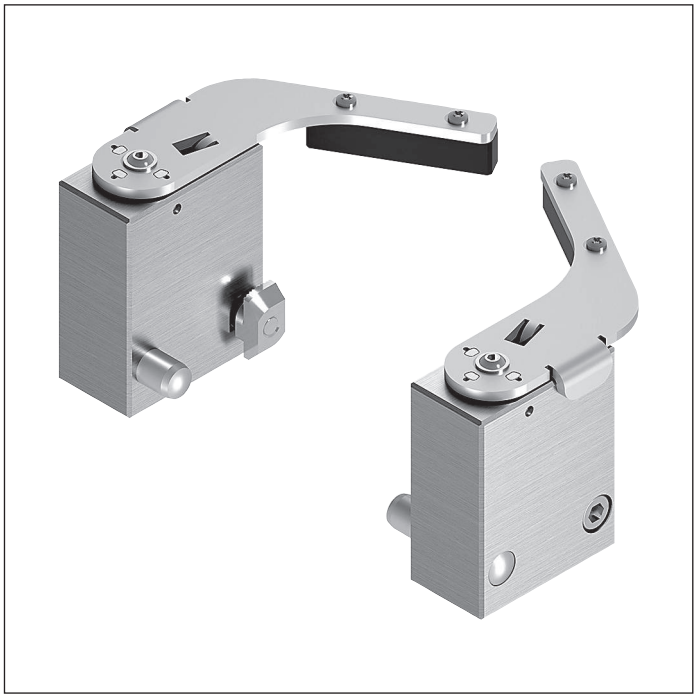
Material number	3842994635
Features	
Material specification	Aluminum, natural; anodized

Dimensions



Scraper





- To scrape small parts from the conveyor medium
- For use with workpiece pallets with a minimum weight of 3 kg
- Conveyor media: Belt, toothed belt and flat top chain
- May be mounted on the right side (R) or left side (L)
- Reversible operation is not possible on sections with scrapers

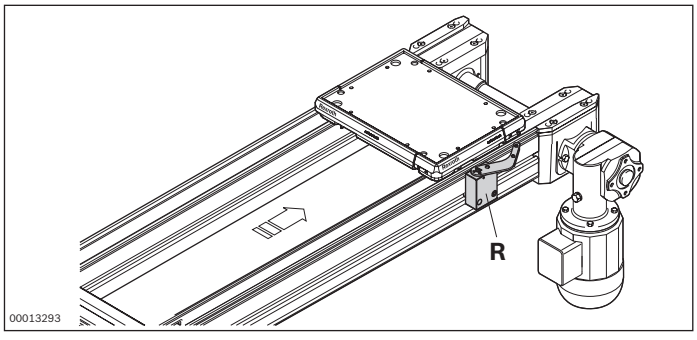
Delivery notes

Scope of delivery

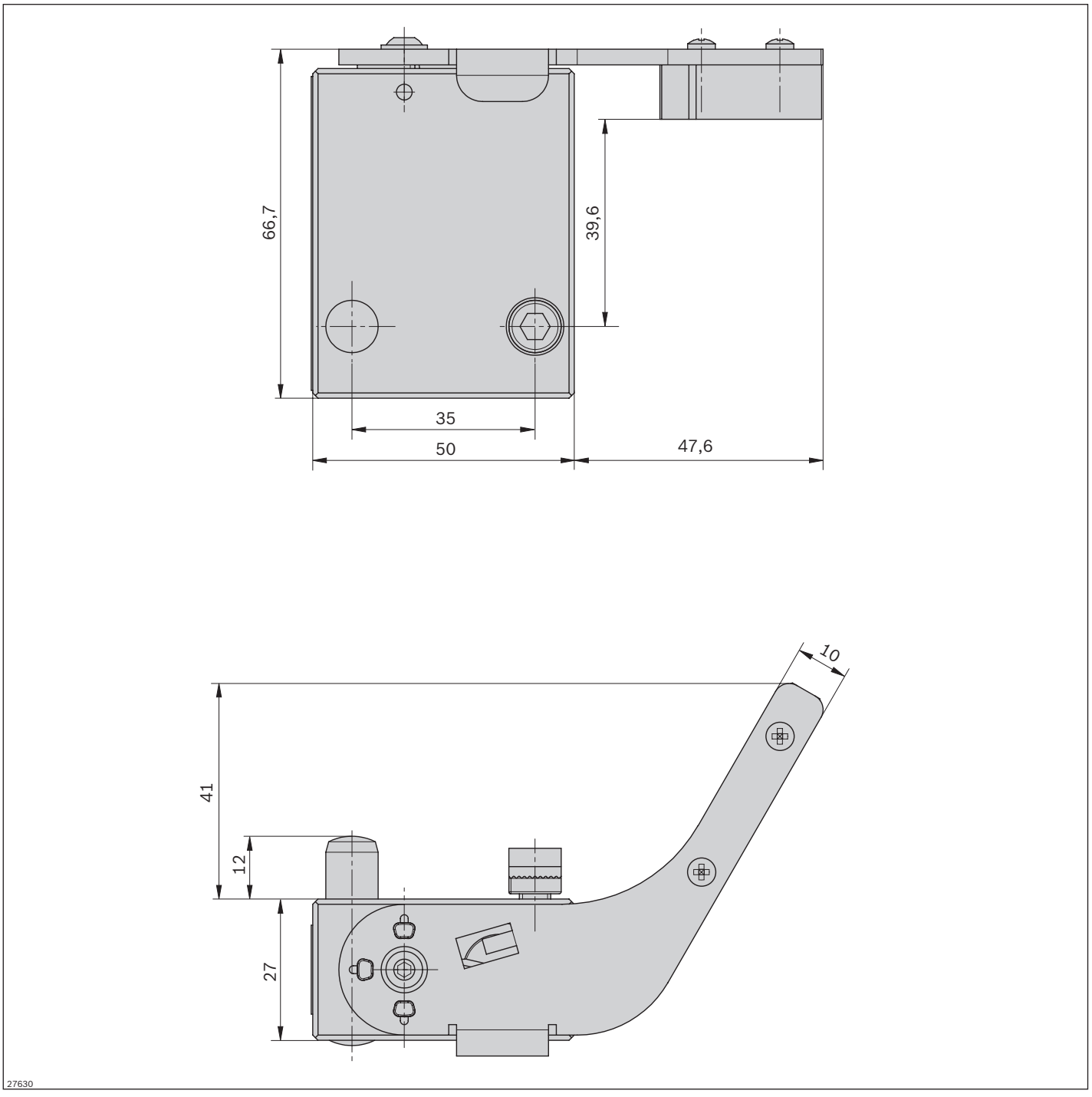
- 1x scraper, right or left, including fastening material

Ordering information

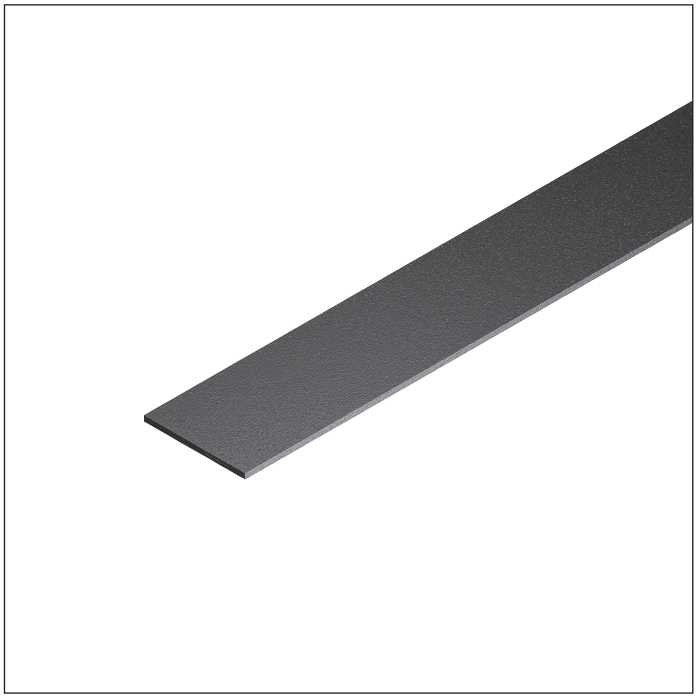
Product designation	Material number
Scraper, right	3842532679
Scraper, left	3842532680



Dimensions



GT 2 belt



The belt used as a conveyor medium transports the workpiece pallets into the transfer system. The belts are pretensioned during installation and bonded to form a continuous belt. A belt assembly tool kit is used for jointing, tensioning and bonding.

Accessories

Required accessories

- Belt mounting tool kit, see p. 3-48
- Glue, see p. 3-47

Ordering information

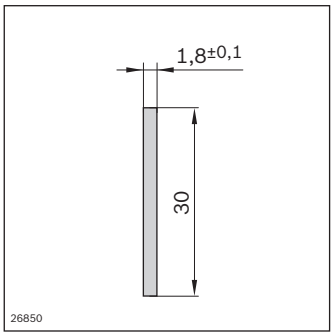
Product designation	l (m)	l (m)	Material number
GT 2 belt	250		3842539479
GT 2 belt		1 ... 250[1]	3842992811

[1] Order and delivery are only possible up to the next full meter

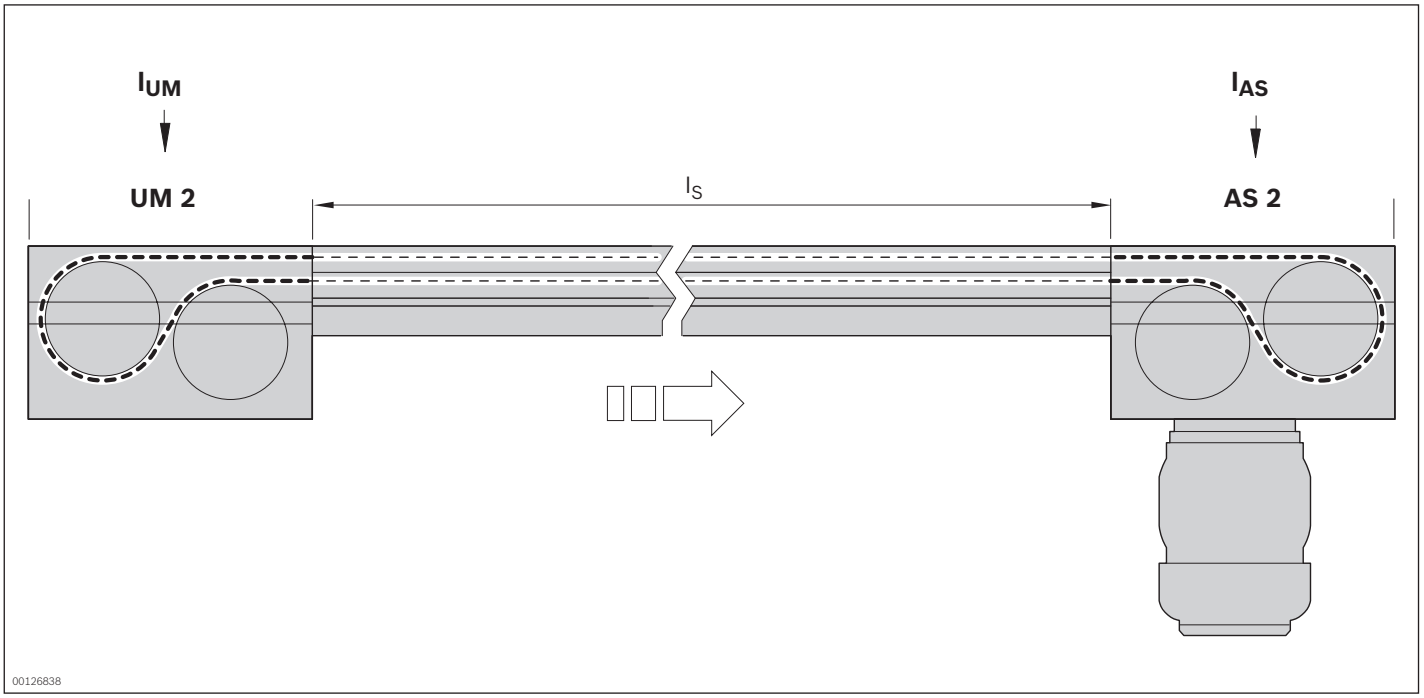
Technical data

Material number			3842539479	3842992811
Features				
ESD			Yes	Yes
Material specification			Polyamide (PA)	Polyamide (PA)
Dimensions				
Length	l	m	250	
Length	l	m		1 ... 250

Dimensions



Calculating the required length of the conveyor medium



The required belt length is determined using the following formula.

Note: A pretensioning factor F is required for the belt, see the "Pretensioning factor F for belts" overview.

$$l_B = ((2 \times l_S + l_{AS} + l_{UM}) \times F) + 60$$

l_B = Length of belt
l_S = Length of section
l_{AS} = Length of the conveyor medium at the drive module
l_{UM} = Length of the conveyor medium at the return unit
F = pretensioning factor

Pretensioning factor F for belt
With BS 2, when $l_S \leq 4000$ mm, F = 0.98
With BS 2, when $l_S > 4000$ mm, F = 0.975
With AS 2/B-250, F = 0.965

Length of the conveyor medium for belt
l_{UM} = 660 mm
l_{AS} = 660 mm

Belt expansion
at $l_S \leq 4000$ mm, = 2%
at $l_S > 4000$ mm = 2.5%
at AS 2/B-250, = 3,5%

Glue



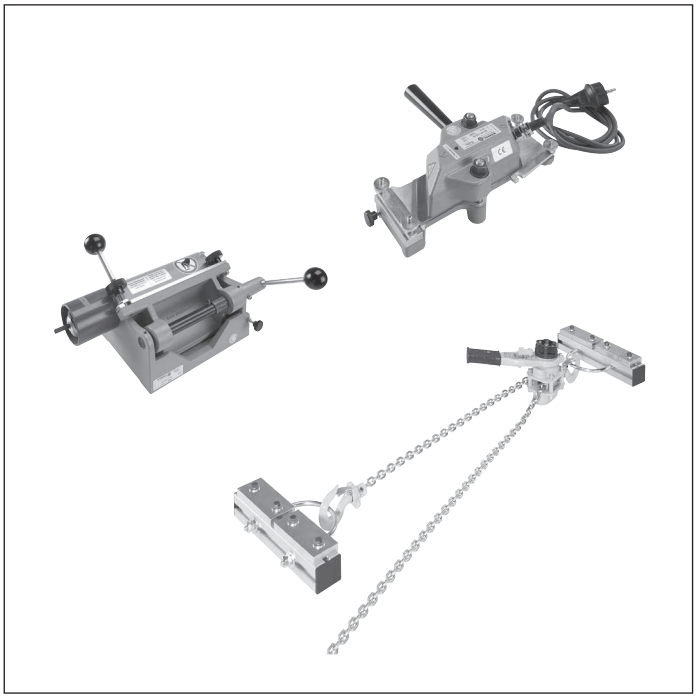


- Used for bonding belts
- For use in connection with the belt assembly tool kit
- For industrial use only
- Follow the safety instructions

Ordering information

Product designation	Material number
Glue, 50 ml	3842315106

Belt assembly tool



- Skiving device for reducing belts at connection points
- Heat press to glue the belt ends thermally
- Belt pretensioning device

The belt assembly tool is used to join the ends of belts for section lengths l > 2000 mm.

Accessories

Required accessories

- Glue, see p. 3-47

Recommended accessories

- Second heating press for the simultaneous bonding of adjacent belts

Delivery notes

Scope of delivery

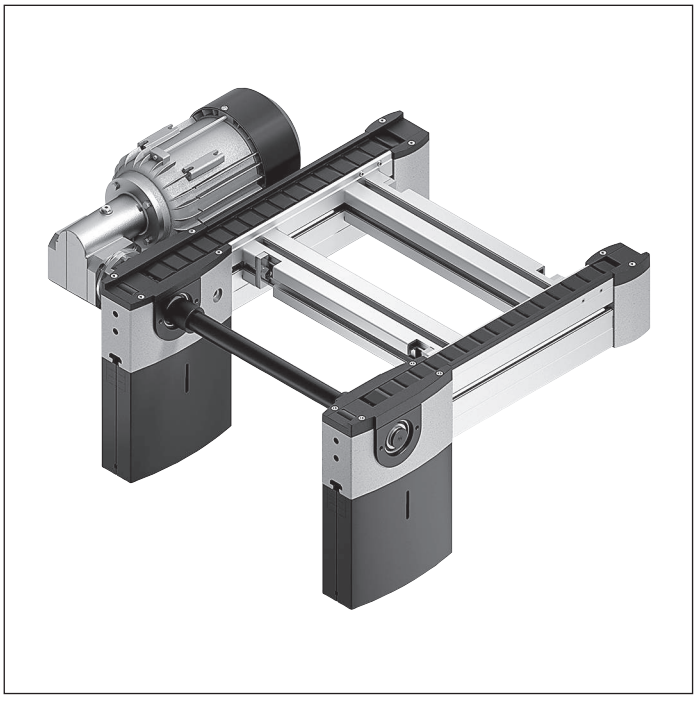
- Skiving device
- Heating press
- Pretensioning device
- Abrasive belt
- Brush

Ordering information

Product designation	Material number
Heating press, single	3842315101
Belt mounting tool kit	3842532810



Flat top chain conveyor medium

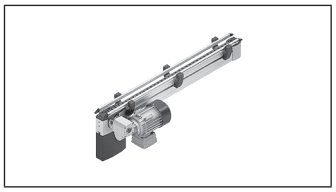


The flat top chain conveys primarily medium and large-sized workpiece pallets in environments with low to moderate production emissions.
The arcing capacity of the plastic flat top chain permits continuous drive combinations with curve arcs
(see p. 4-32).
PA wear pads on the workpiece pallets are recommended in the combination with the plastic flat top chain. This permits in the standard design with plastic glide profiles in the section profile surface loads of up to 1 kg/cm, whereas the optionally available version with steel glide profiles can tolerate surface loads of up to 1.5 kg/cm.

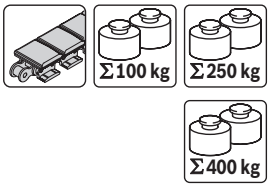
A particularly robust combination can be created from the HD profiles in combination with steel glide profiles and steel guide profile.

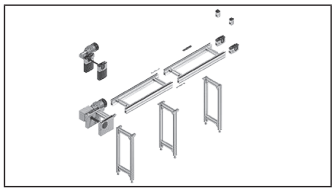
Reversible operation is not permitted with the flat top chain conveyor medium.

If flat top chains are used, the LU2 automatic lubrication unit is highly recommended.



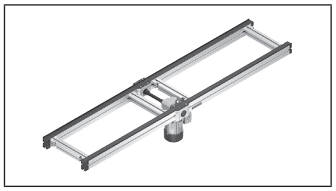
Single-track CS/C section, BS 2/C belt sections **3-52**





Parts for AS 2/..., UM 2/..., ST 2...
conveyor units **3-66**

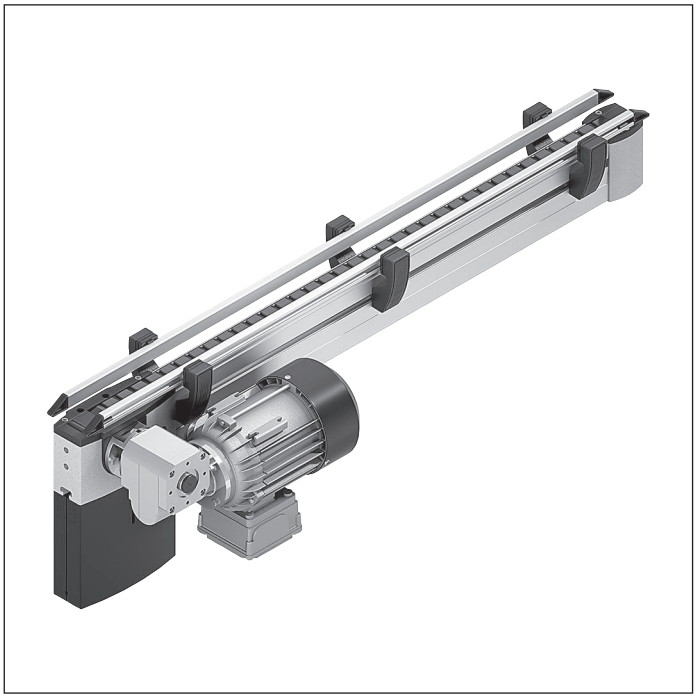




Connection kits **3-236**

Single-track CS/C section





- Motor connection: optionally with cable/plug or terminal box
- Motor mounting right or left
- Conveyor medium: plastic flat top chain (with KA = A suitable for use in an EPA)
- Special models on request
- Reversible operation is possible for l ≤ 2000 mm and environments without small parts

The single-track CS/C section is a conveyor section that is ready for operation with own drive for the transportation of small parts for mounting and assembly workstations.

Accessories

Recommended accessories

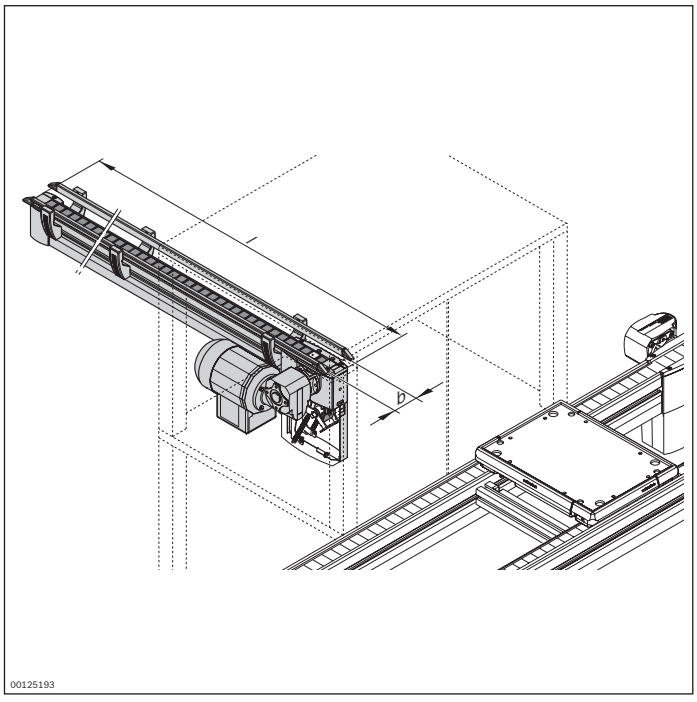
- Connection kits, see page 3-236
- SZ 2 leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842998277**
b (mm)	Track width in direction of transport	42; 52; 62; 72
l (mm)	Length	350 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L
KA	Chain version Chain in standard version (KA = N) Chain suitable for use in an EPA (KA = A)	N; A

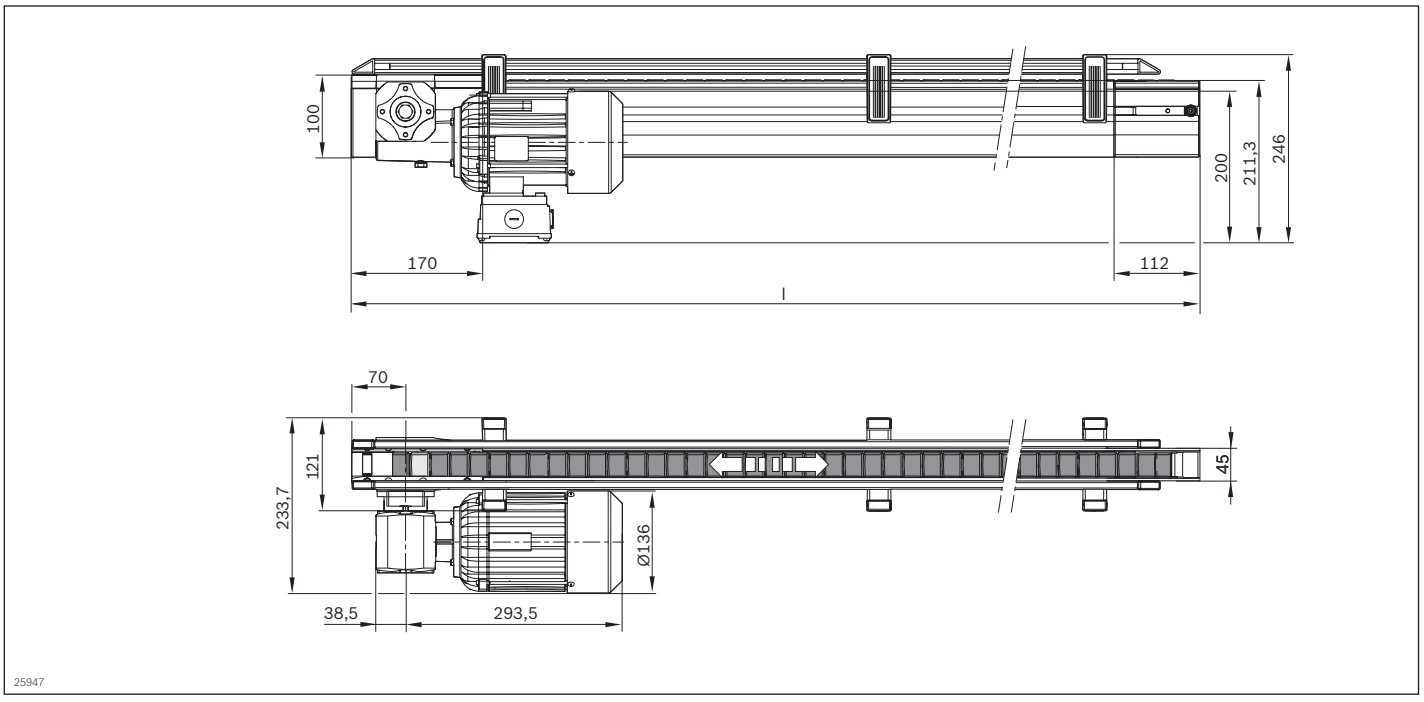
Technical data

Material number				**3842998277**
Load				
Max. section load in accumulation operation		kg	at l = 2001 ... 6000 mm 100	at l = 350 ... 2000 mm 70
Features				
ESD				yes, with KA = A*
Max. operating temperature	T	°C		+40
Dimensions				
Length	l	mm		350 ... 6000

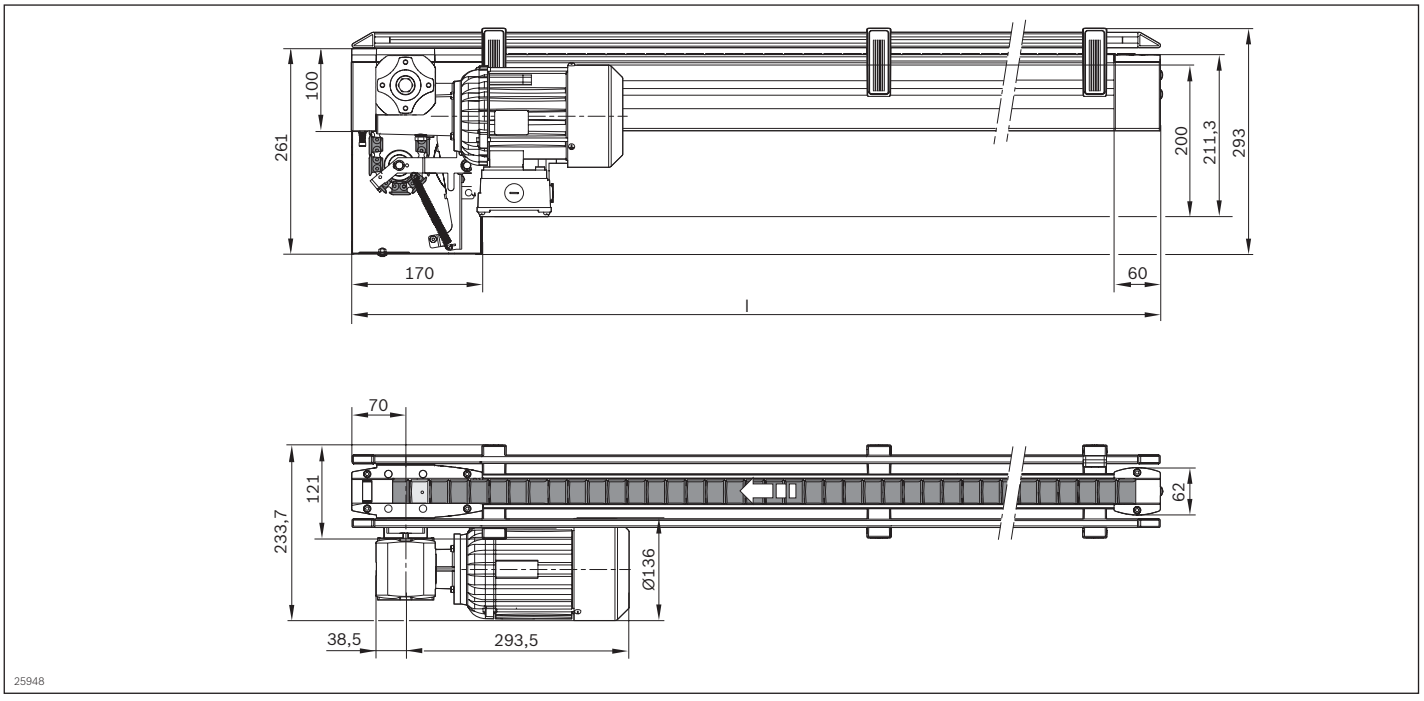
* Chain suitable for use in an EPA (KA = A)

Dimensions

CS/C ≤ 2000 mm

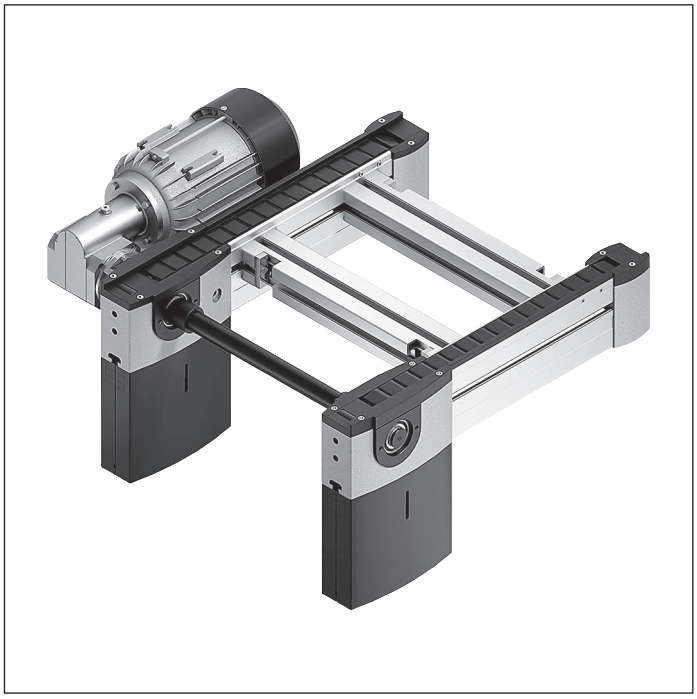


CS/C > 2000 mm



BS 2/C-100 belt section





- Functional operation conveyor complete with drive
- Longitudinal conveying of the workpiece pallet on conveyor sections of up to 6000 mm
- Transverse conveyor between parallel conveyor sections
- Conveyor medium: plastic flat top chain (with KA = A suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with medium accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The belt section is a ready for operation conveyor section with own drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Accessories

Recommended accessories

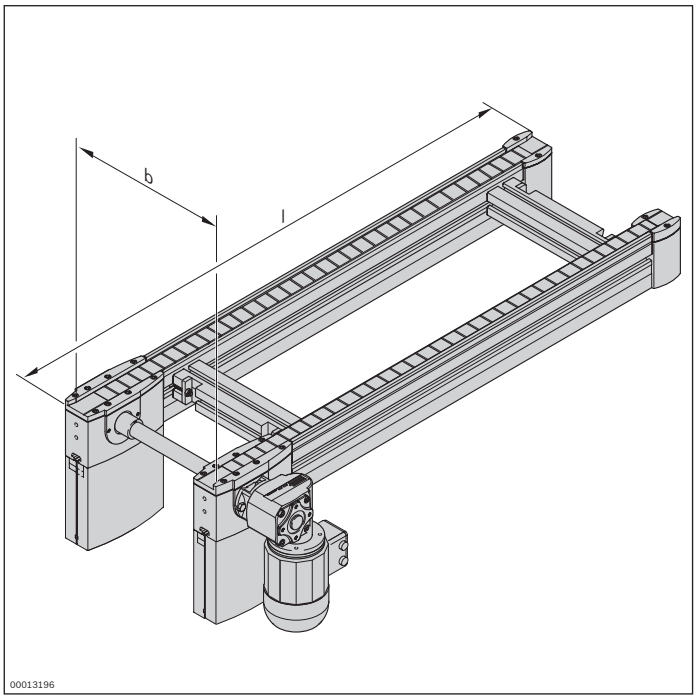
- Connection kits, see page 3-236
- SZ 2 leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842999917**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
l (mm)	Length	300 ... 6000
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[3]
KA	Chain version Chain in standard version (KA = N) Chain suitable for use in an EPA (KA = A)	N; A

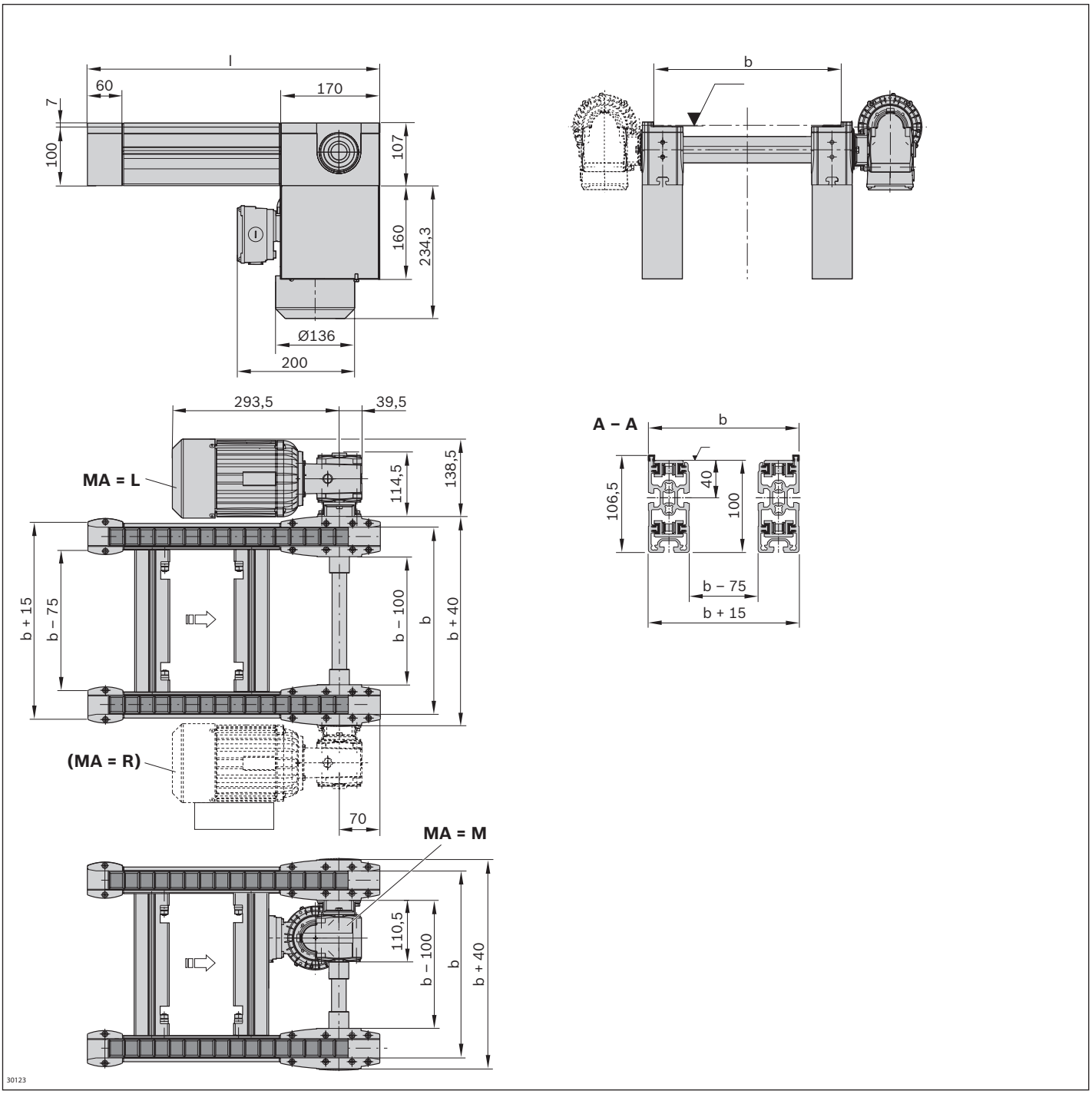
[1)] Individual width variants available
[2)] v_N = 0: without motor or gear
[3)] MA = M only for b ≥ 240 mm

Technical data

Material number			**3842999917**
Load			
Max. section load in accumulation operation		kg	100
Features			
ESD			yes, with KA = A*
Material specification			Section profile: Aluminum, natural; anodized Guide profile: Polyamide Glide profile: Polyamide
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	300 ... 6000

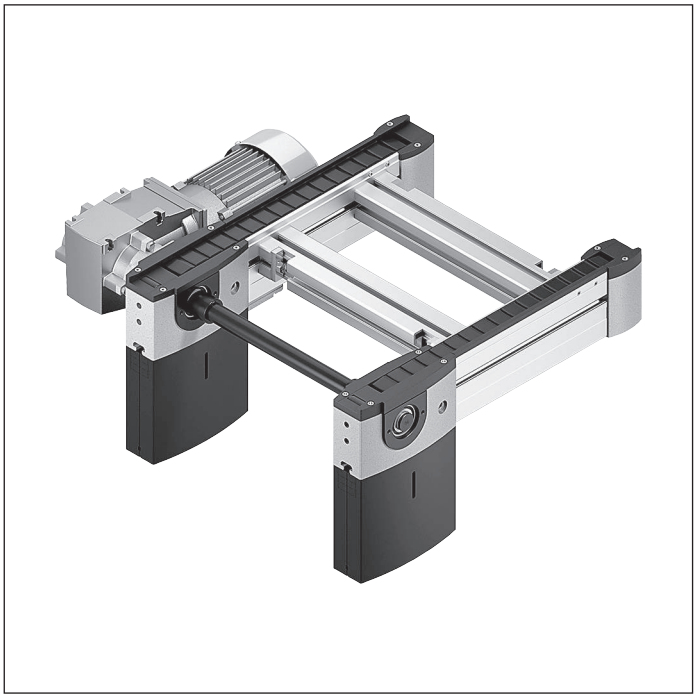
*) Chain suitable for use in an EPA (KA = A)

Dimensions


l
60
170
7
100
107
160
234,3
Ø136
200
b
293,5
39,5
MA = L
114,5
138,5
b + 15
b – 75
b – 100
b
b + 40
(MA = R)
70
MA = M
110,5
b – 100
b
b + 40
A – A
b
106,5
40
100
b – 75
b + 15
30123

BS 2/C-250 belt section





- Functional operation conveyor complete with drive
- Longitudinal conveying of the workpiece pallet on conveyor sections of up to 6000 mm
- Transverse conveying between parallel conveyor sections in conjunction with lift transverse units
- Conveyor medium: plastic flat top chain (with KA = A suitable for use in an EPA)
- Motor mounting right or left
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with medium accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The belt section is a ready for operation conveyor section with own drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Accessories

Recommended accessories

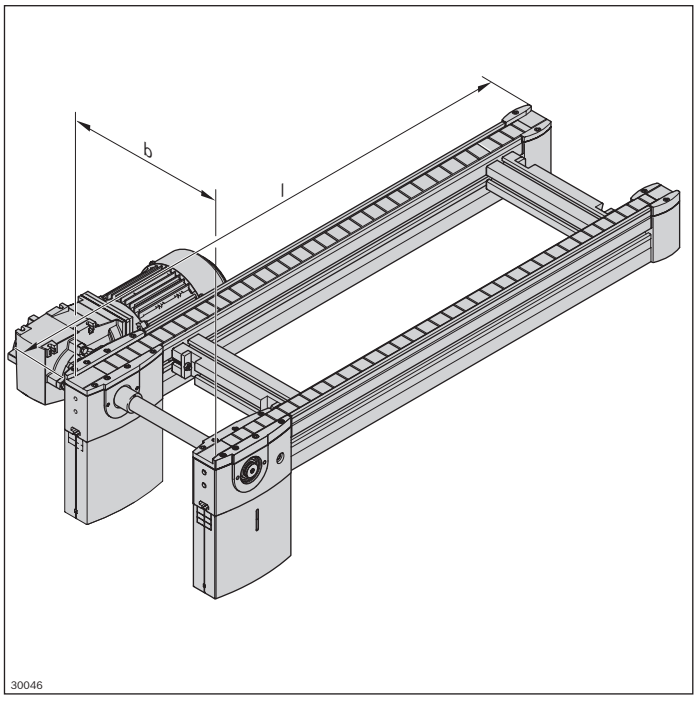
- Connection kits, see page 3-236
- SZ 2 leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842999985**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
l (mm)	Length	300 ... 6000
v_N (m/min)	Nominal speed	0[1]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting[2] R = right L = left	R; L
KA	Chain version Chain in standard version (KA = N) Chain suitable for use in an EPA (KA = A)	N; A

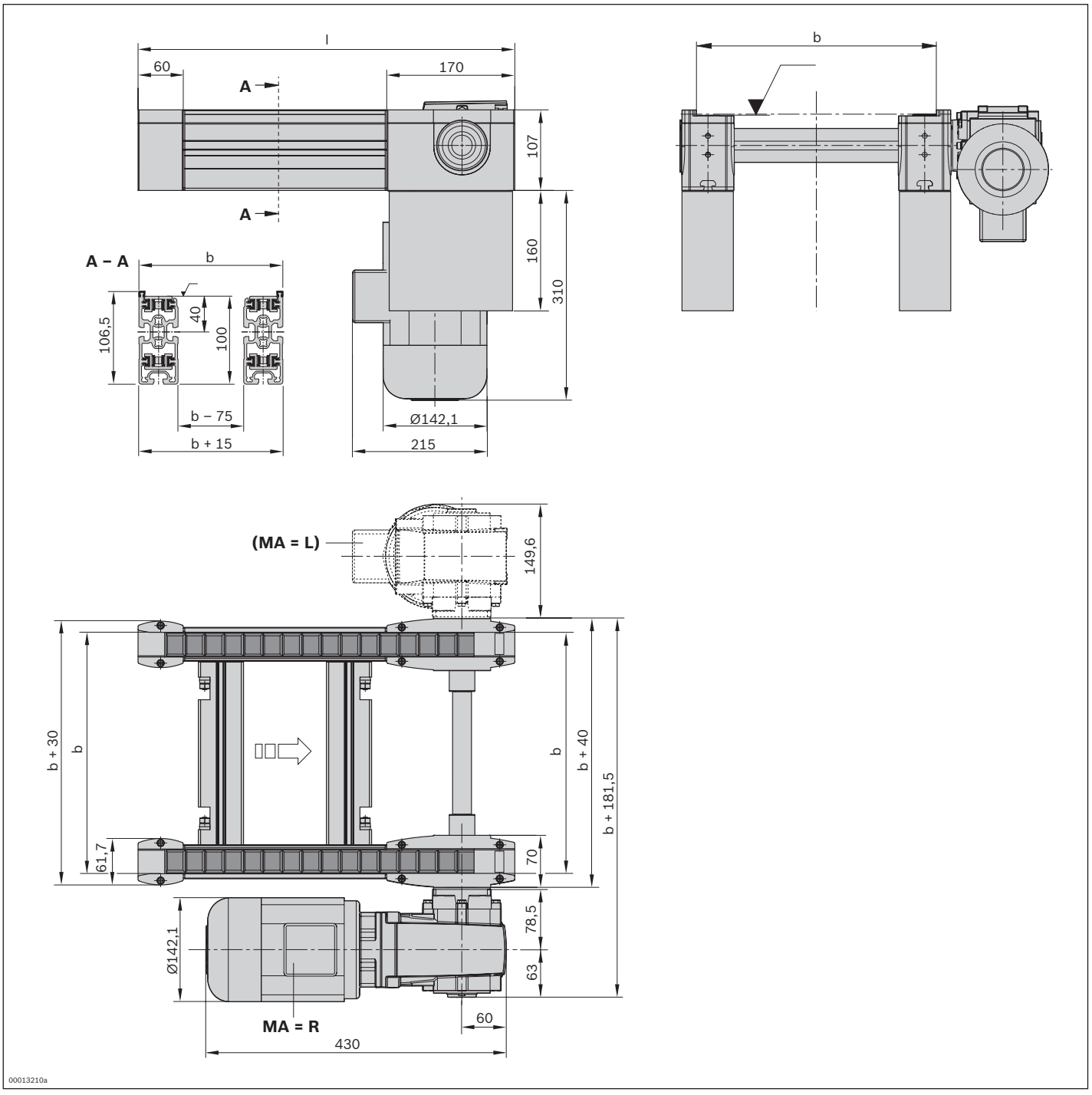
[1] v_N = 0: without motor or gear
[2] Geometry does not permit MA = M

Technical data

Material number			**3842999985**
Load			
Max. section load in accumulation operation		kg	250
Features			
ESD			yes, with KA = A*
Material specification			Section profile: Aluminum, natural; anodized Guide profile: Polyamide Glide profile: Polyamide
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	300 ... 6000

* Chain suitable for use in an EPA (KA = A)

Dimensions


l
60
170
A
A
107
160
310
A – A
b
106,5
40
100
b – 75
b + 15
Ø142,1
215
b
(MA = L)
149,6
b + 30
b
b
b + 40
b + 181,5
61,7
70
78,5
63
Ø142,1
MA = R
60
430
00013210a

BS 2/C-H belt section



- Functional operation conveyor complete with drive
- Sturdy design for especially heavy-duty systems
- Longitudinal conveying of the workpiece pallet on conveyor sections of 6000 mm
- Transverse conveying between parallel conveyor sections in conjunction with lift transverse units
- Conveyor medium: plastic flat top chain (with KA = A suitable for use in an EPA)
- Motor mounting right, left or central
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Stainless steel workpiece pallet lateral guide
- Reversible operation not permitted
- Profile width: 50 mm
- Use with high accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The belt section is a ready for operation conveyor section with own drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Accessories

Recommended accessories

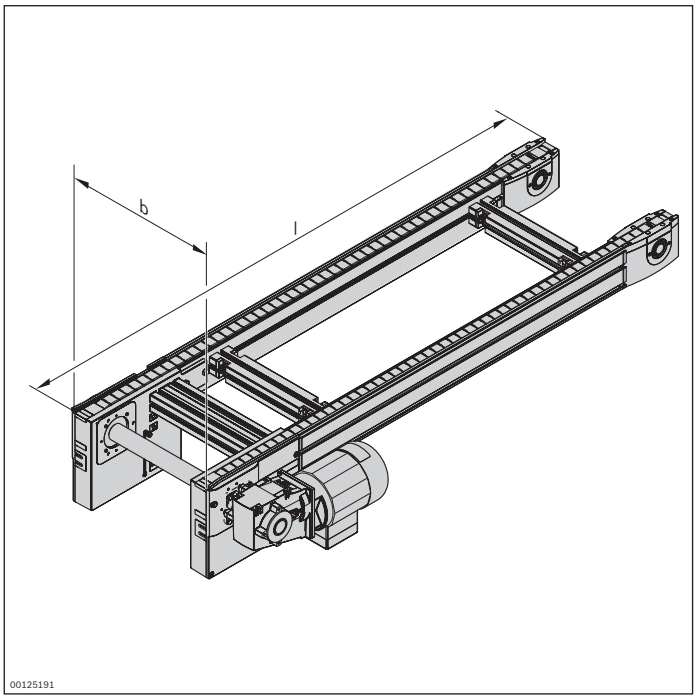
- Connection kits, see page 3-236
- SZ 2/...-H leg sets, see p. 6-2
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842998239**
b (mm)	Track width in direction of transport	400 ... 1200
l (mm)	Length	650 ... 6000
v_N (m/min)	Nominal speed	0[1]; 6; 9; 12; 15; 18[2]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M
KA	Chain version Chain in standard version (KA = N) Chain suitable for use in an EPA (KA = A)	N; A
GP	Glide profile Corrosion-resistant steel (GP = 1) Plastic (GP = 0)	0; 1

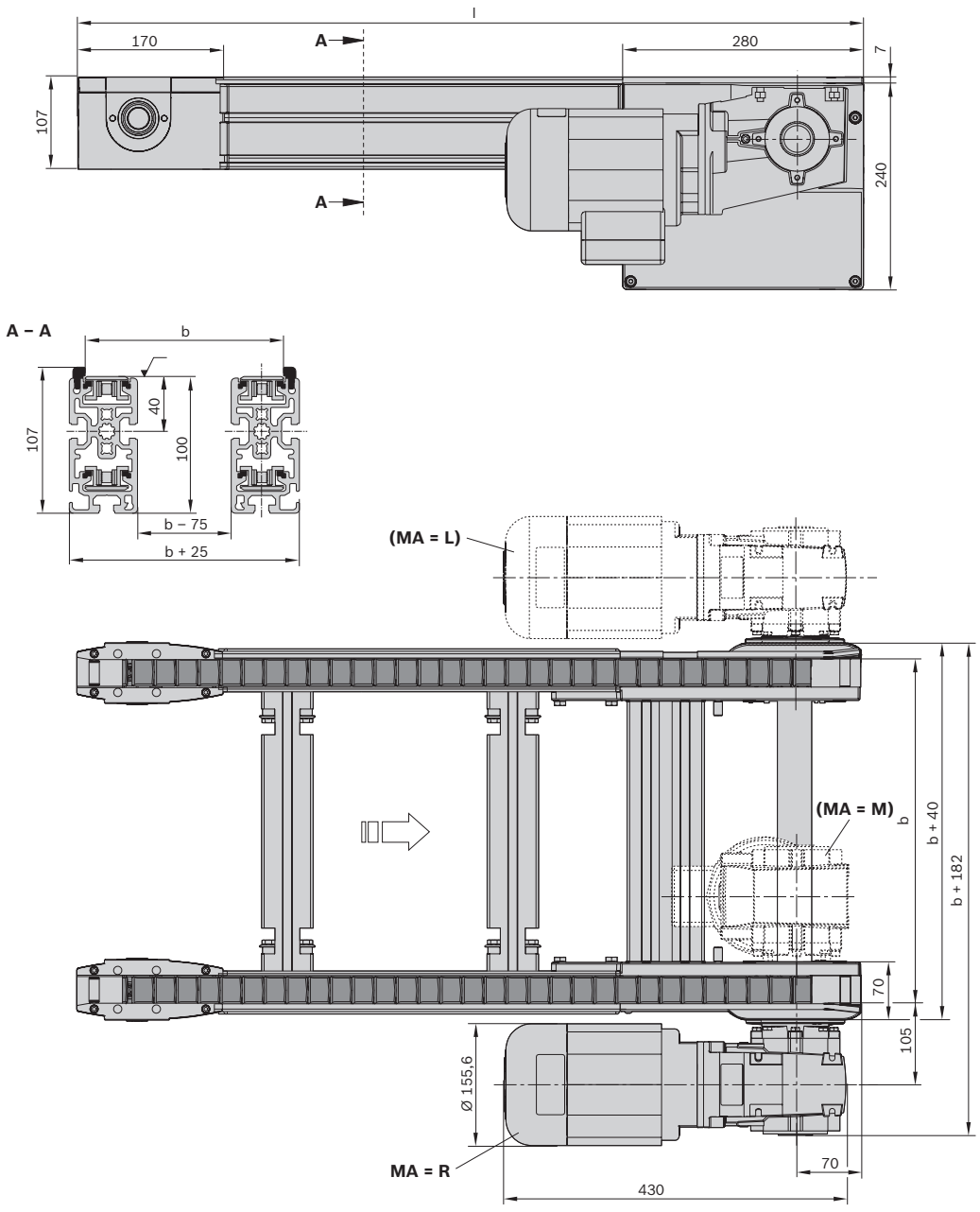
[1] v_N = 0: without motor or gear
[2] Not possible if f = 60 Hz

Technical data

Material number			**3842998239**
Load			
Max. section load in accumulation operation		kg	400
Features			
ESD			yes, with KA = A*
Material specification			Section profile: Aluminum, natural; anodized Lateral guide: Stainless steel glide profile: Steel/plastic; corrosion-resistant
Dimensions			
Length	l	mm	650 ... 6000

* Chain suitable for use in an EPA (KA = A)

Dimensions


l
170
A
280
7
107
240
A
A – A
b
40
107
100
b – 75
b + 25
(MA = L)
(MA = M)
b
b + 40
b + 182
70
105
Ø 155.6
MA = R
70
430
30041

BS 2/C+R connection belt



- Conveyor medium: Toothed belt (suitable for use in an EPA)

The head-to-head connection of the drive and return heads results in short, non-driven sections. The connection belt is used to bridge these > 180 mm conveyor trenches by using short l_{WT} < 320 mm workpiece pallets.

Delivery notes

Condition on delivery

- Fully assembled

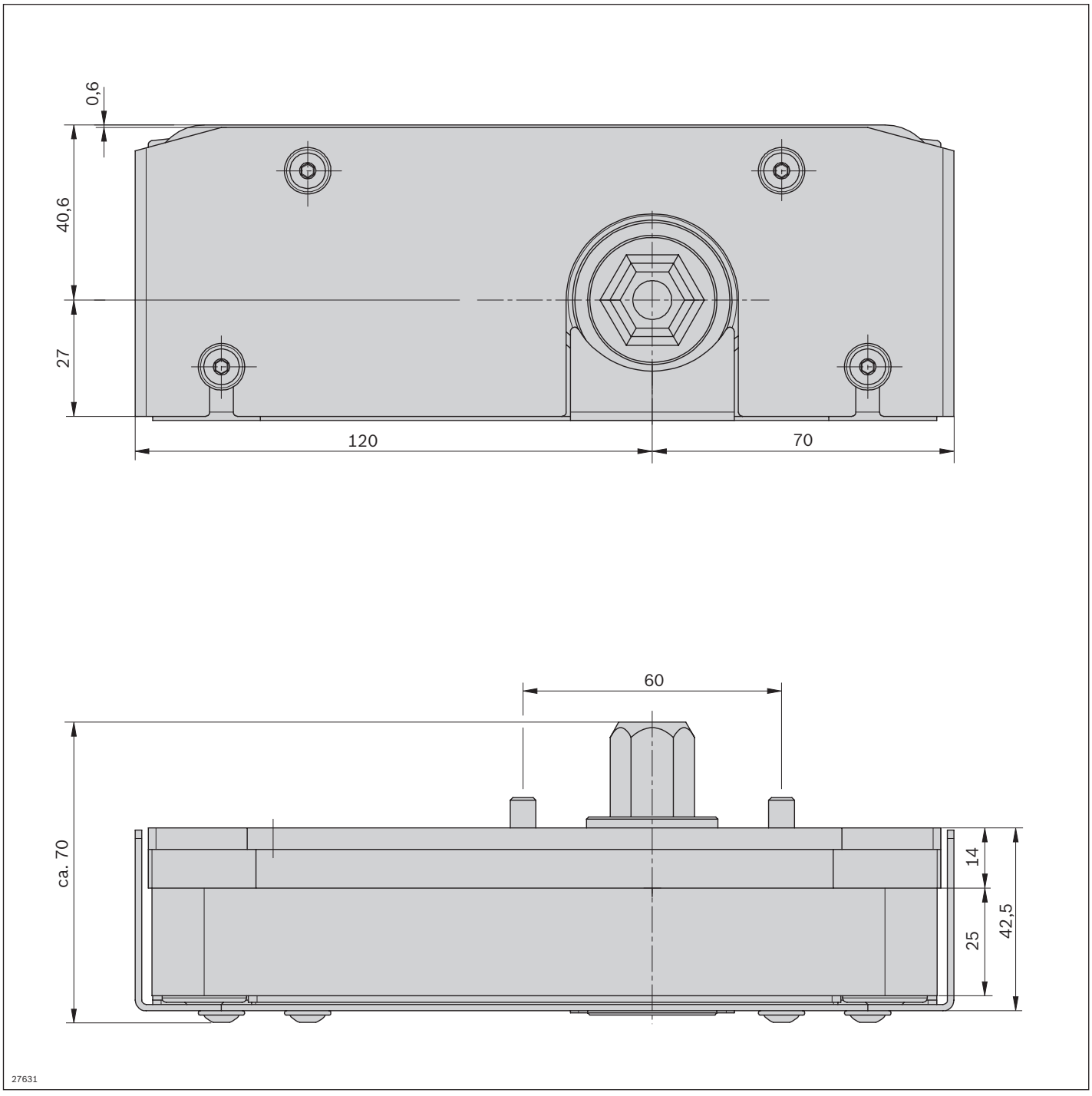
Ordering information

Product designation	Material number
Connection belt, left	3842528480
Connection belt, right	3842539096

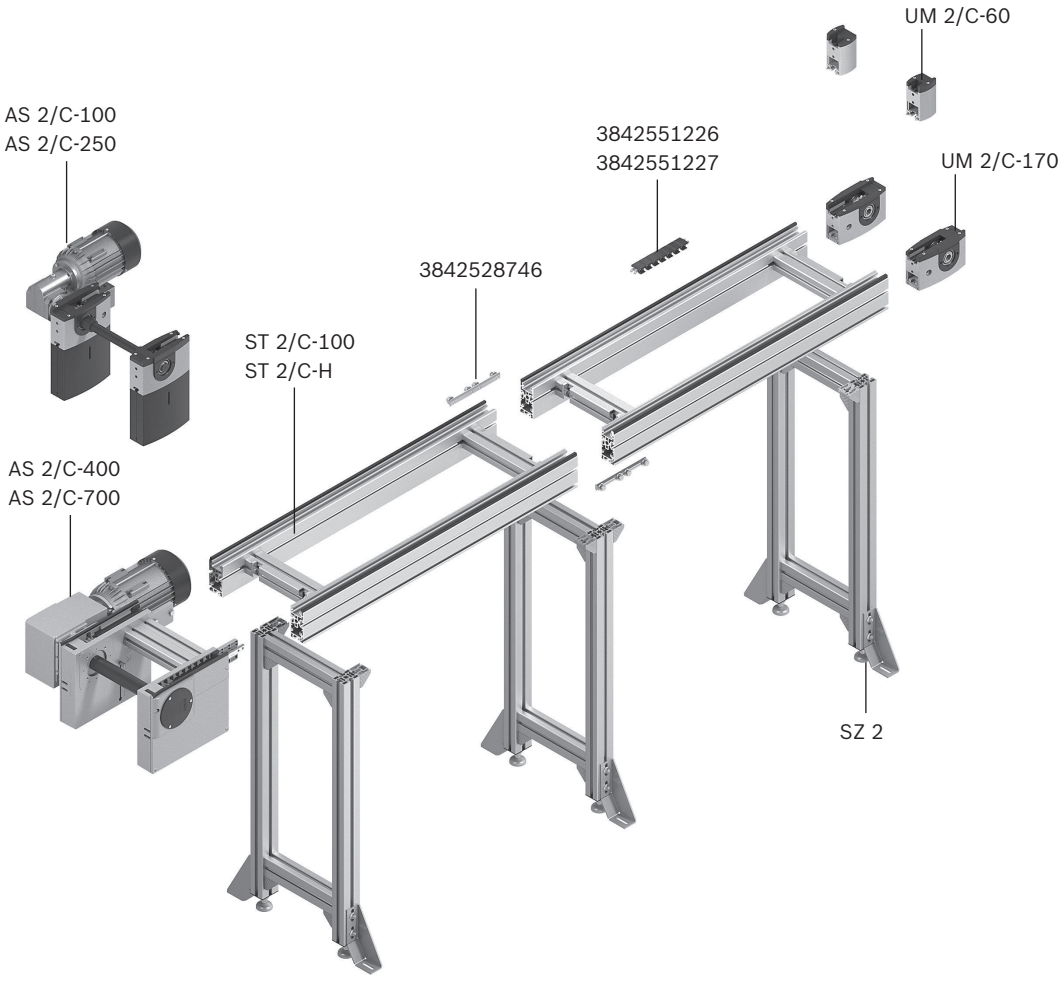
Technical data

Material number	3842528480	3842539096
Features		
ESD	Yes	Yes

Dimensions



Conveyor units
Parts for flat top chain conveyor medium

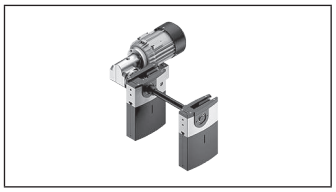


A conveyor unit is a complete unit used for linear conveying of workpiece pallets. It consists of:

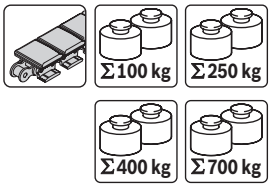
- AS 2/C drive module, see p. 3-68
- UM 2/C return unit, see p. 3-80
- ST 2/... section, see p. 3-86
- SZ 2/... leg sets, see p. 6-2
- QV 2 cross connector, see p. 3-108
- Flat top chain, see p. 3-116

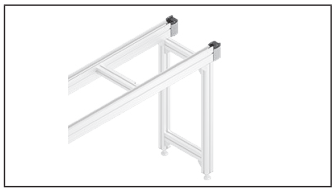
The UM 2/C and AS 2/C-... may be set up right next to each other, which allows for conveyor unit combinations.

Drive modules for loads up to m_G = 100 kg; 250 kg; 400 kg; or up to m_G = 700 kg per conveyor unit.



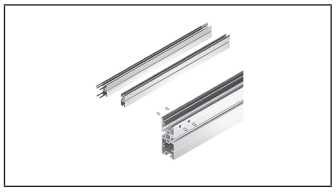
AS 2/C drive module **3-68**





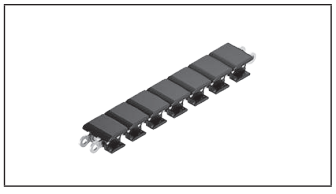
UM 2/C return unit **3-80**





ST 2/C section, components **3-86**





Flat top chain conveyor medium **3-116**



AS 2/C-100 drive module



- Drive for conveyor unit self-assembly
- Conveyor medium: flat top chain (with KA = A suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with medium accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The AS 2/C-... drive module drives the flat top chain conveyor medium in self-built conveyor section elements with section, return unit and flat top chain.

Accessories

Recommended accessories

- Connection kits, see page 3-236
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

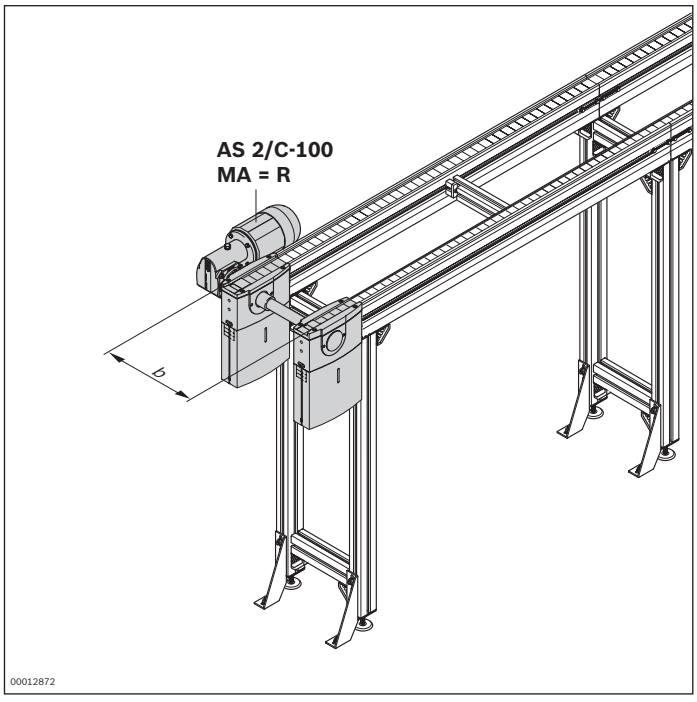
Scope of delivery

- Includes fastening material to mount on the ST 2 conveyor section, as well as to mount on an adjacent return unit.

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998053
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[3]

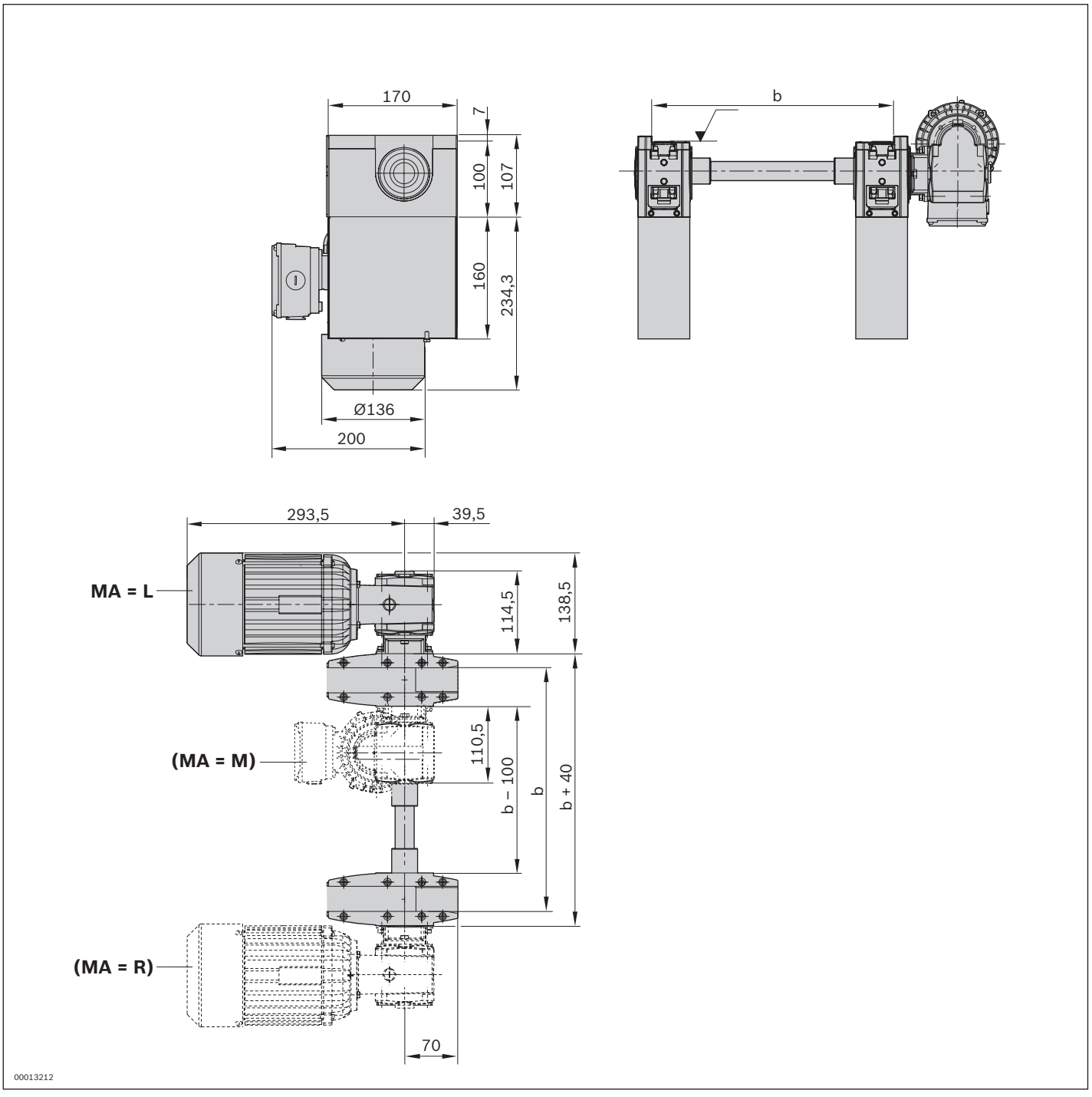
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] MA = M only when b ≥ 240 mm

Technical data

Material number			3842998053
Load			
Max. section load in accumulation operation		kg	100
Features			
ESD			yes, with KA = A*
Additional information			
Required conveyor media length**	l_{AS}	mm	475

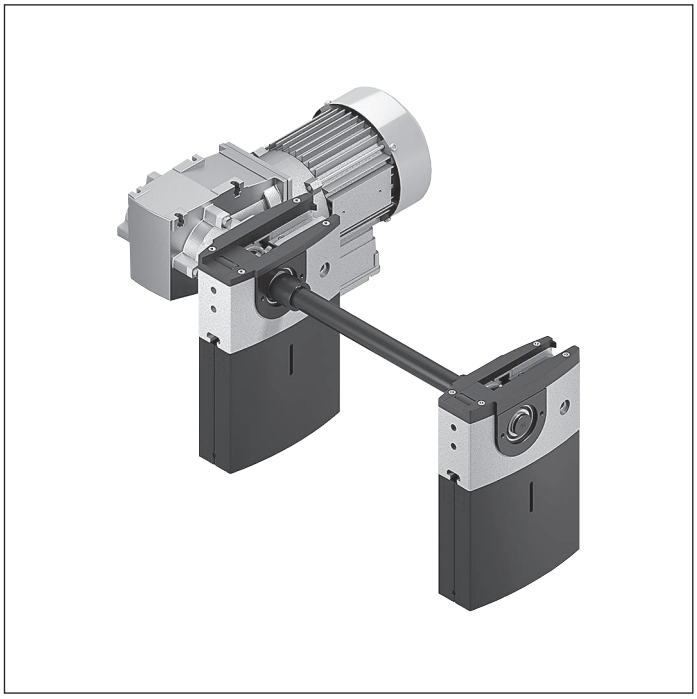
* Chain suitable for use in an EPA (KA = A)
** Formula for calculating the conveyor medium, see p. 3-117

Dimensions


170
7
100
107
160
234,3
Ø136
200
b
293,5
39,5
MA = L
114,5
138,5
(MA = M)
110,5
b – 100
b
b + 40
(MA = R)
70
00013212

AS 2/C-250 drive module





- Drive for conveyor unit self-assembly
- Conveyor medium: flat top chain (with KA = A suitable for use in an EPA)
- Motor mounting right or left
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with medium accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The AS 2/C-... drive module drives the flat top chain conveyor medium in self-built conveyor section elements with section, return unit and flat top chain.

Accessories

Recommended accessories

- Connection kits, see page 3-236
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

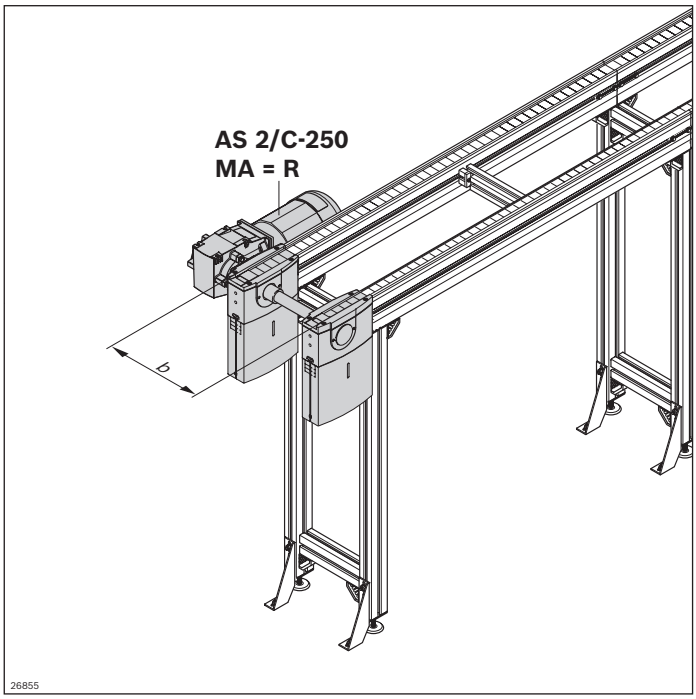
Scope of delivery

- Includes fastening material to mount on the ST 2 conveyor section, as well as to mount on an adjacent return unit.

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998087
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L

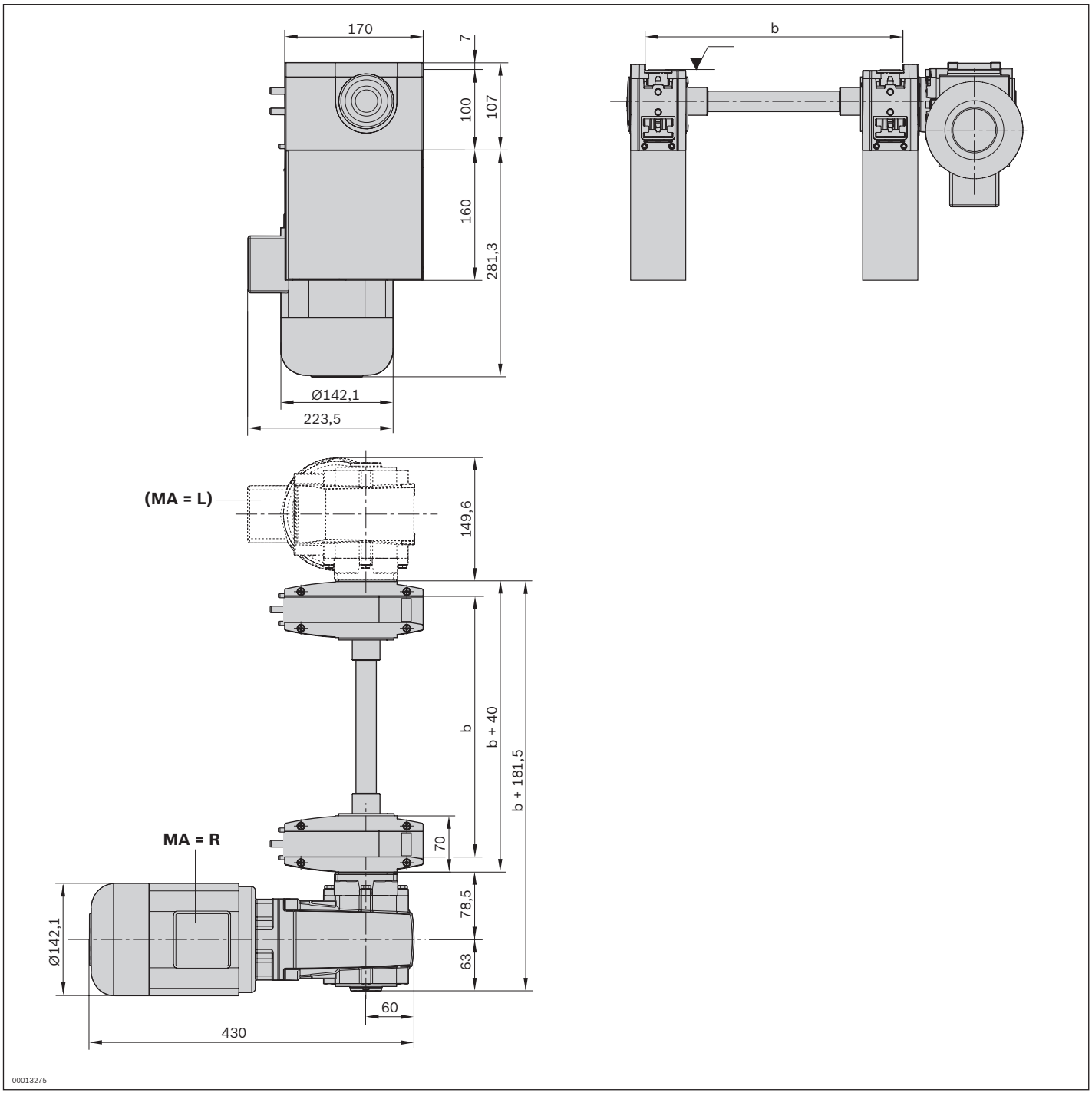
[1] Individual width variants available
[2] v_N = 0: without motor or gear

Technical data

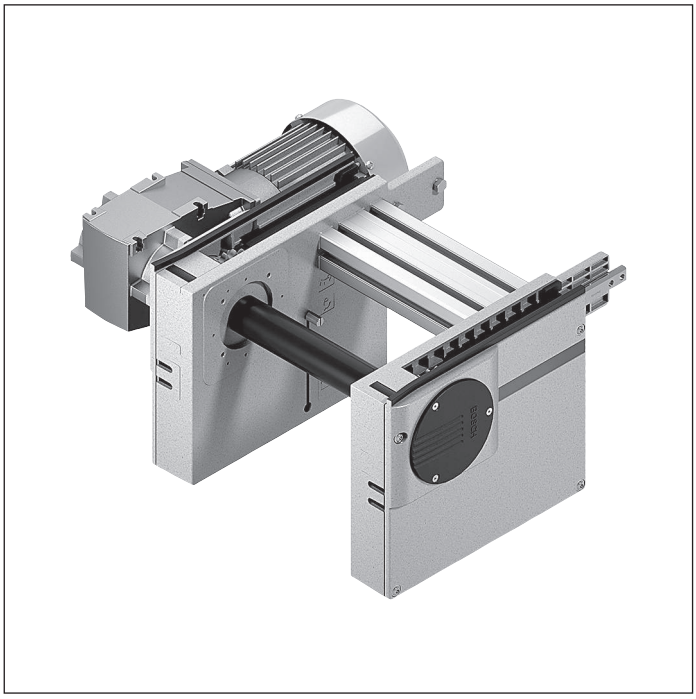
Material number			3842998087
Load			
Max. section load in accumulation operation		kg	250
Features			
ESD			yes, with KA = A*
Additional information			
Required conveyor media length**	l_{AS}	mm	475

* Chain suitable for use in an EPA (KA = A)
** Formula for calculating the conveyor medium, see p. 3-117

Dimensions


170
7
100
107
160
281,3
Ø142,1
223,5
b
(MA = L)
149,6
b
b + 40
b + 181,5
MA = R
70
78,5
63
Ø142,1
60
430
00013275

AS 2/C-400 drive module



- Drive for conveyor unit self-assembly
- Conveyor medium: flat top chain (with KA = A suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with medium accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The AS 2/C-... drive module drives the flat top chain conveyor medium in self-built conveyor section elements with section, return unit and flat top chain.

Accessories

Recommended accessories

- Connection kits, see page 3-236
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

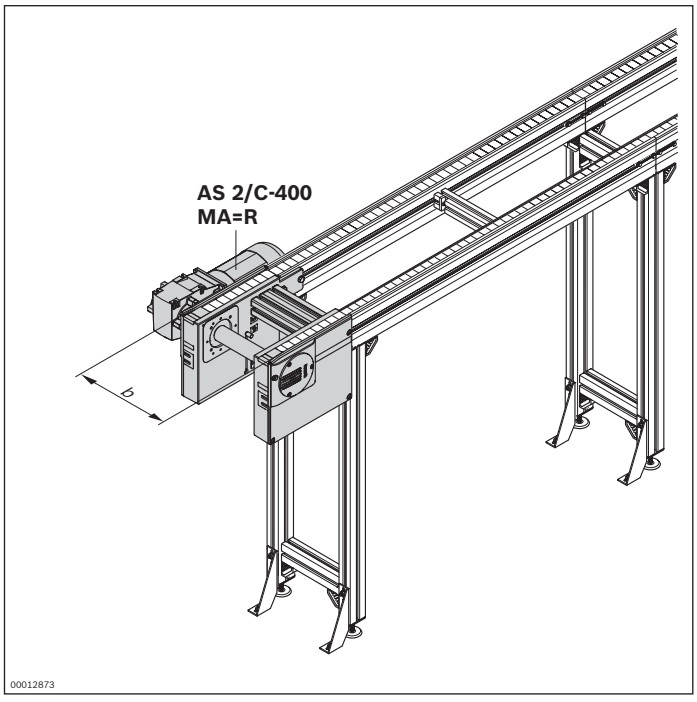
Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998038
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4]

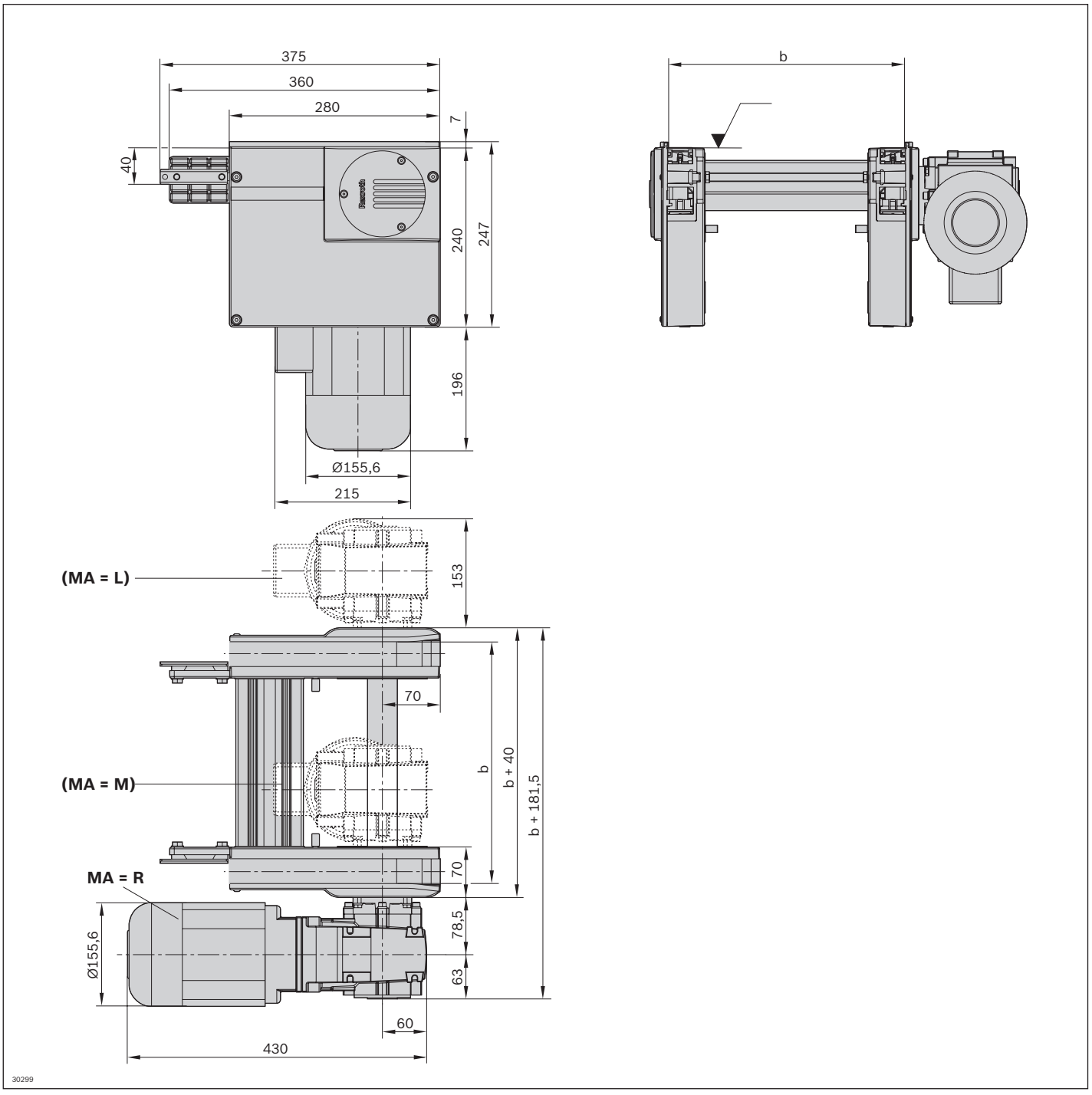
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Not possible if f = 60 Hz
[4] MA = M only when b ≥ 240 mm

Technical data

Material number			3842998038
Load			
Max. section load in accumulation operation		kg	400
Features			
ESD			yes, with KA = A*
Additional information			
Required conveyor medium length**	l_{AS}	mm	625

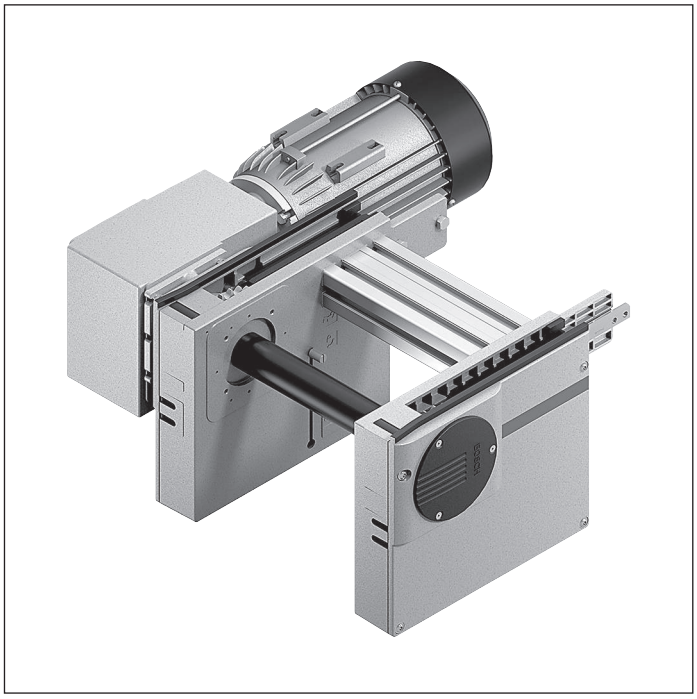
* Chain suitable for use in an EPA (KA = A)
** Formula for calculating the conveyor medium, see p. 3-117

Dimensions


375
360
280
7
40
240
247
196
Ø155,6
215
b
(MA = L)
153
70
(MA = M)
b
b + 40
b + 181,5
MA = R
70
78,5
63
Ø155,6
60
430
30299

AS 2/C-700 drive module





- Drive for conveyor unit self-assembly
- Conveyor medium: flat top chain (with KA = A suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request
- Reversible operation not permitted
- Use with high accumulation loads
- The LU 2 automatic lubrication unit is highly recommended

The AS 2/C-... drive module drives the flat top chain conveyor medium in self-built conveyor section elements with section, return unit and flat top chain.

Accessories

Recommended accessories

- Connection kits, see page 3-236
- LU 2 automatic lubrication unit, see p. 3-84

Delivery notes

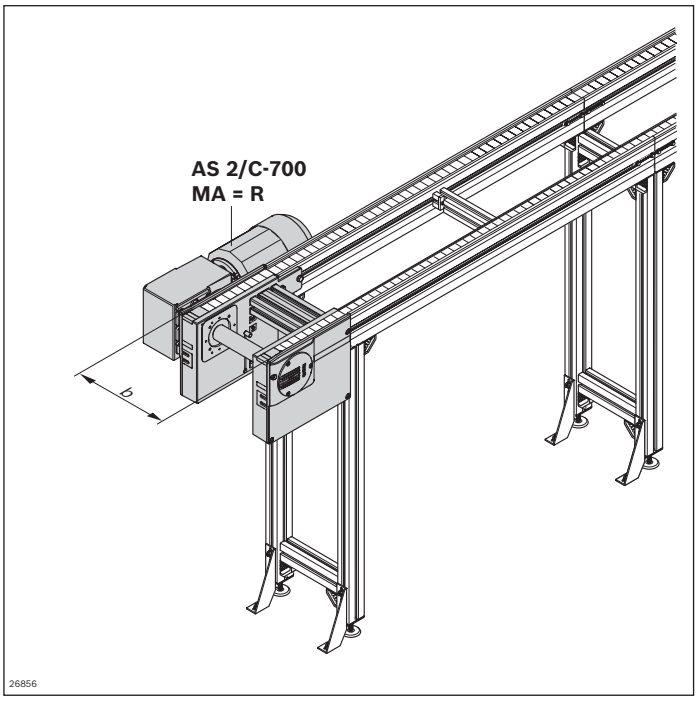
Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998039
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4]

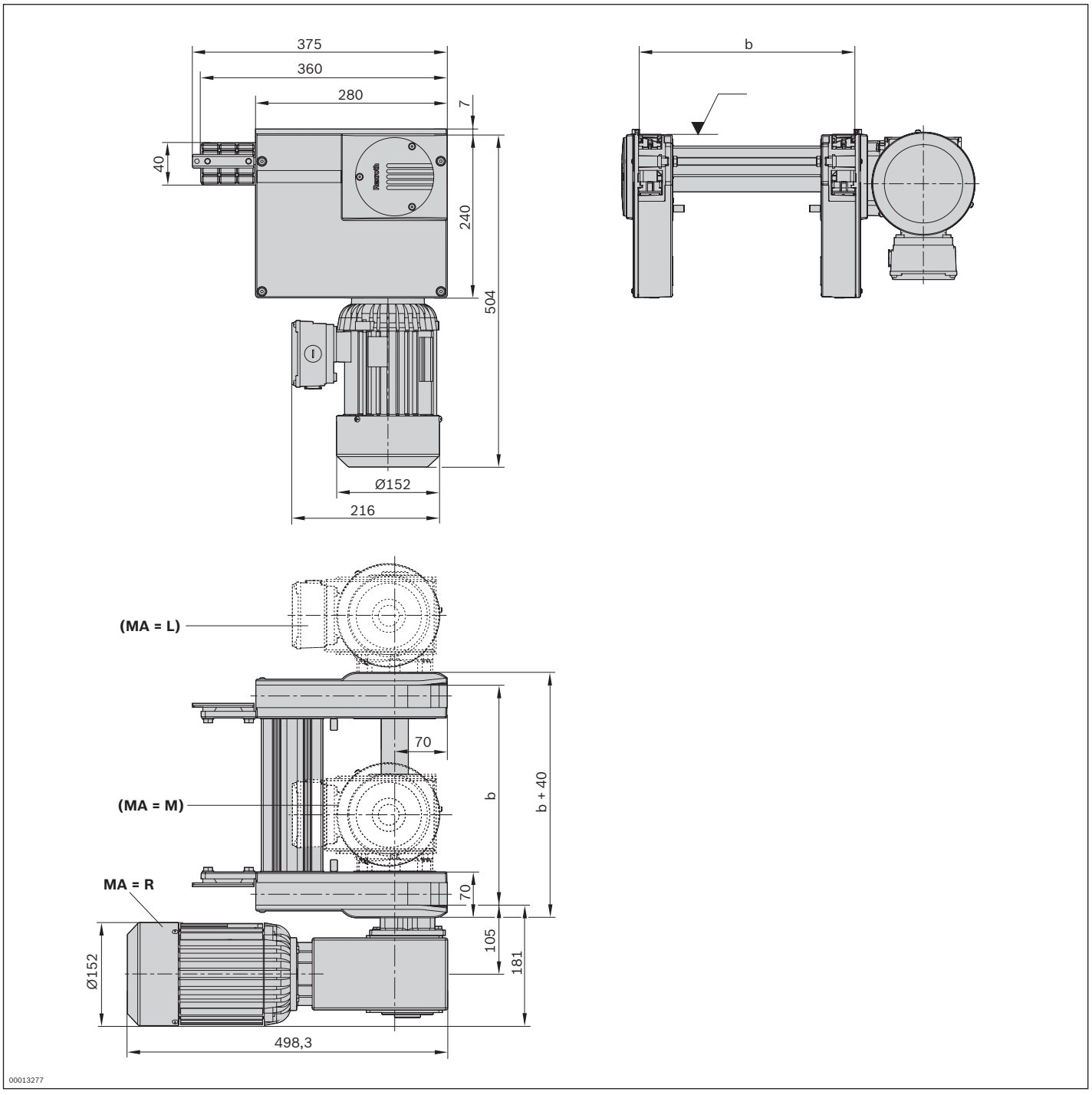
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Reduced load to 600 kg
[4] MA = M only when b ≥ 240 mm

Technical data

Material number			3842998039
Load			
Max. section load in accumulation operation		kg	700
Features			
ESD			yes, with KA = A*
Additional information			
Required conveyor medium length**	l_{AS}	mm	625

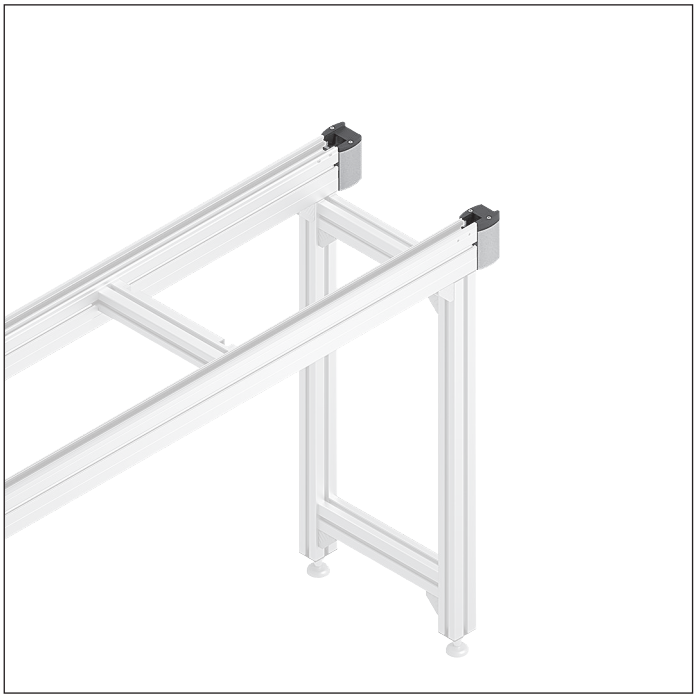
* Chain suitable for use in an EPA (KA = A)
** Formula for calculating the conveyor medium, see p. 3-117

Dimensions


375
360
280
7
40
240
504
Ø152
216
b
(MA = L)
70
(MA = M)
b
b + 40
MA = R
70
105
181
Ø152
498,3
00013277

UM 2/C-60 return unit





- Conveyor medium: flat top chain (suitable for use in an EPA)
- For use with all AS 2/C drive modules
- Version with sliding piece for return unit
- Recommended for sections up to l = 6000 mm

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Accessories

Required accessories

- Connection kits, see page 3-236

Delivery notes

Scope of delivery

- One pair of return heads
- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

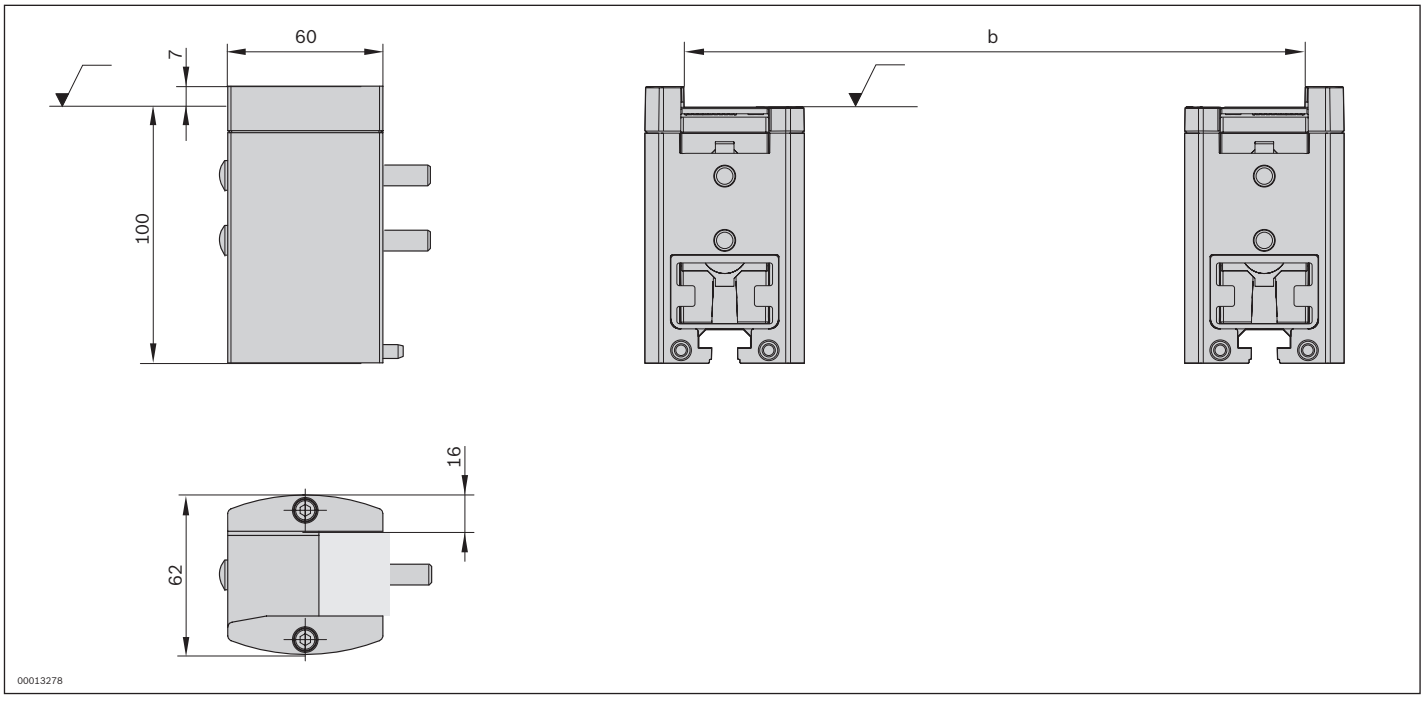
Product designation	Material number
UM 2/C-60 return unit	3842528802

Technical data

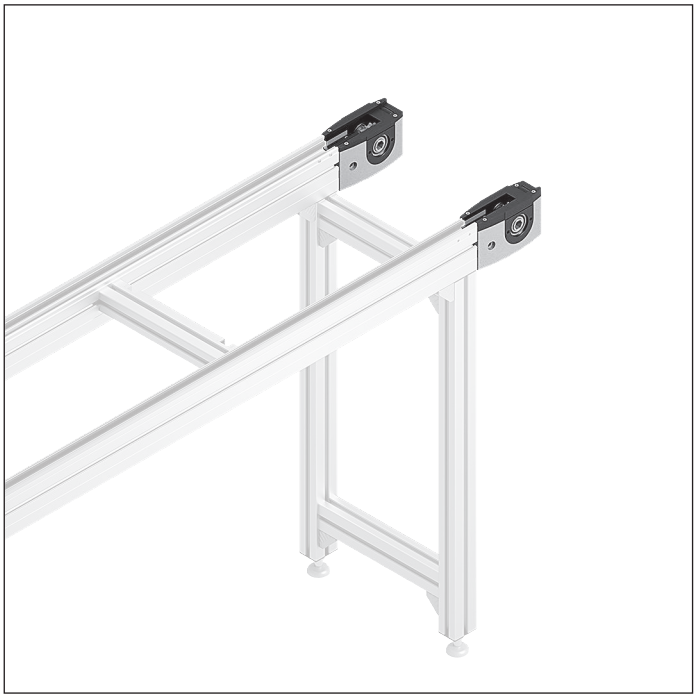
Material number			**3842528802**
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	150

* Formula for calculating the conveyor medium, see p. 3-117

Dimensions



UM 2/C-170 return unit



- Conveyor medium: flat top chain (suitable for use in an EPA)
- For use with all AS 2/C drive modules
- Version with pinion for return unit
- Recommended for sections of l > 6000 mm

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Accessories

Required accessories

- Connection kits, see page 3-236

Delivery notes

Scope of delivery

- One pair of return heads
- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

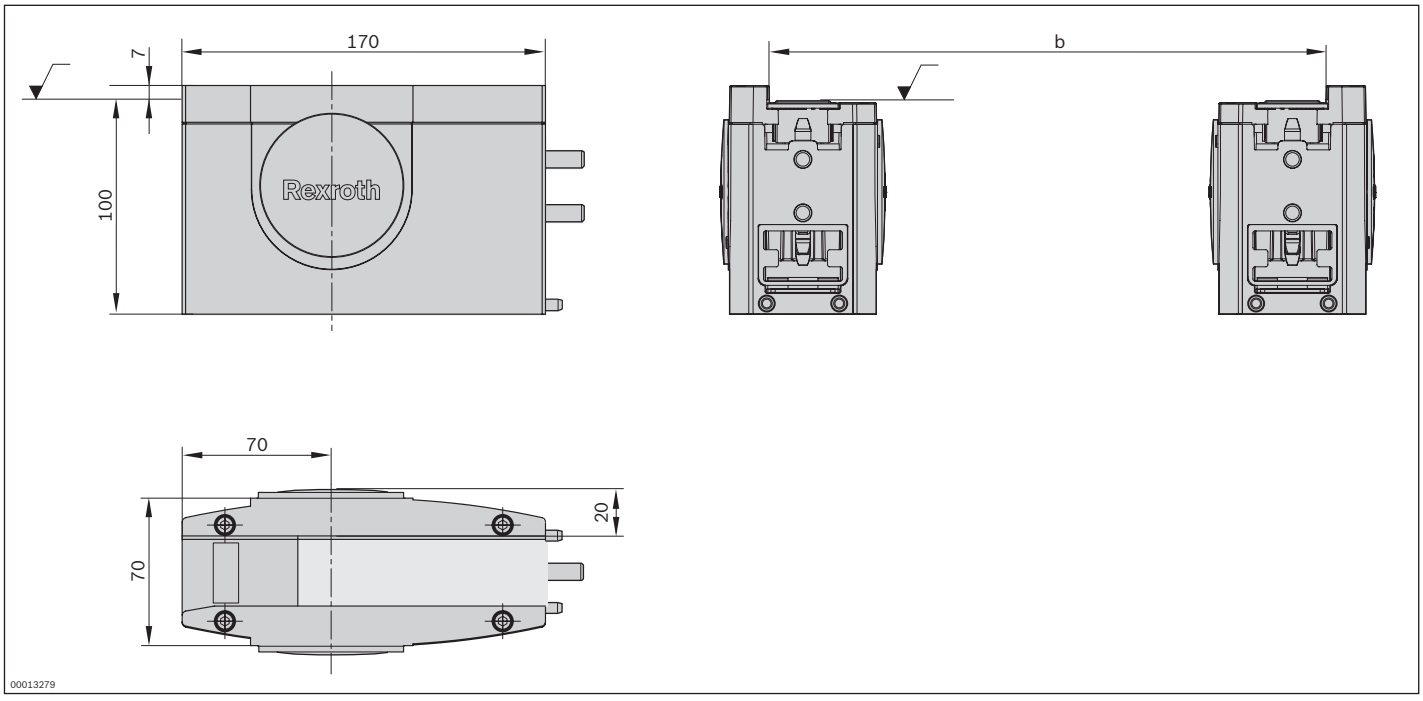
Product designation	Material number
UM 2/C-170 return unit	3842528806

Technical data

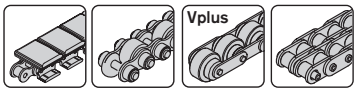
Material number			**3842528806**
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	310

* Formula for calculating the conveyor medium, see p. 3-117

Dimensions



LU 2 automatic lubrication unit





- Modular design consisting of LU 2 automatic lubrication unit, LC 2 oil container and adapter set
- LU 2 automatic lubrication unit with drive, compressed air connection to drive module and fastening material
- LC 2 lubricant container with Structovis GHD from Klüber; contains: 0.25 l (must be ordered separately)
- Specific adapter sets with compatible lubrication pins for different drive modules
- Adjustment of lubrication amount to be distributed per metering process on the LU 2 automatic lubrication unit. The metering process is actuated by an external PLC.
- Designed for lubricating one belt section or conveyor unit respectively
- Use of the LU 2 automatic lubrication unit is highly recommended for flat top chains

Increasing the system service life through continuous and maintenance-free lubrication of flat top chains, accumulation roller chains, and duplex chains during operation.
For preventing dry running.

Suitable for use with all belt sections and conveyor units; lubrication unit on the drive module.
Reduction of lubricant consumption thanks to exact metering and pinpoint application to the chain links.

Accessories

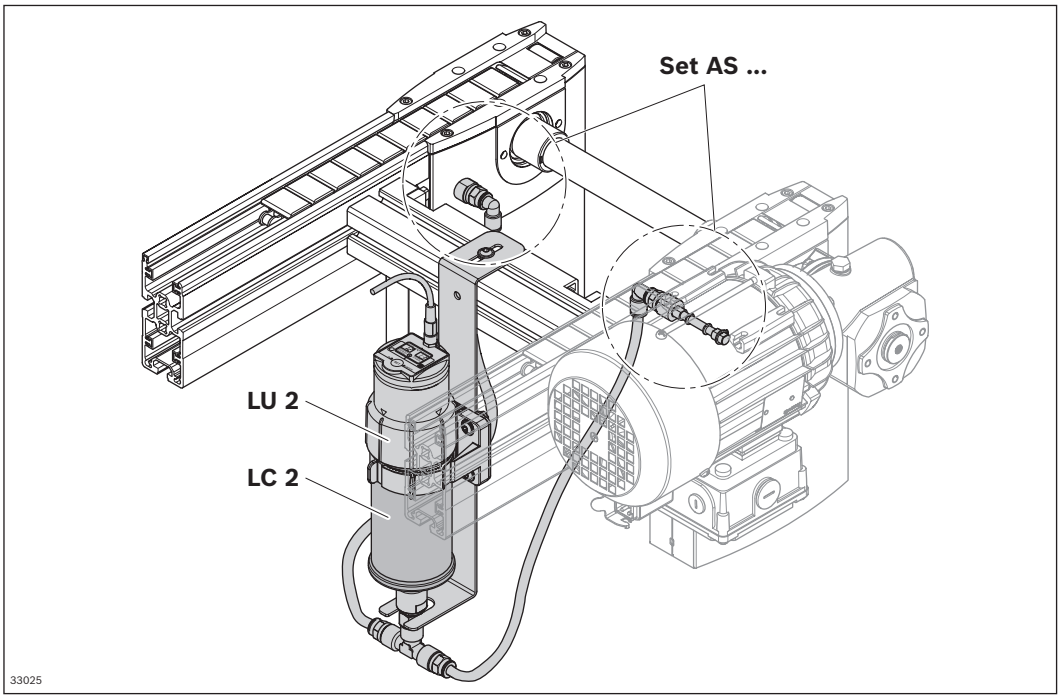
Required accessories

- LC 2 lubricant container, see p. 3-85
- Adapter set, see p. 3-85

Delivery notes

Condition on delivery

- Not assembled, fastening material enclosed
- LC 2 lubricant container and adapter set as ordered



Ordering information

Product designation	Packaging unit	Material number
LU 2 automatic lubrication unit	1	3842543482
LC 2 lubricant container	4	3842543469

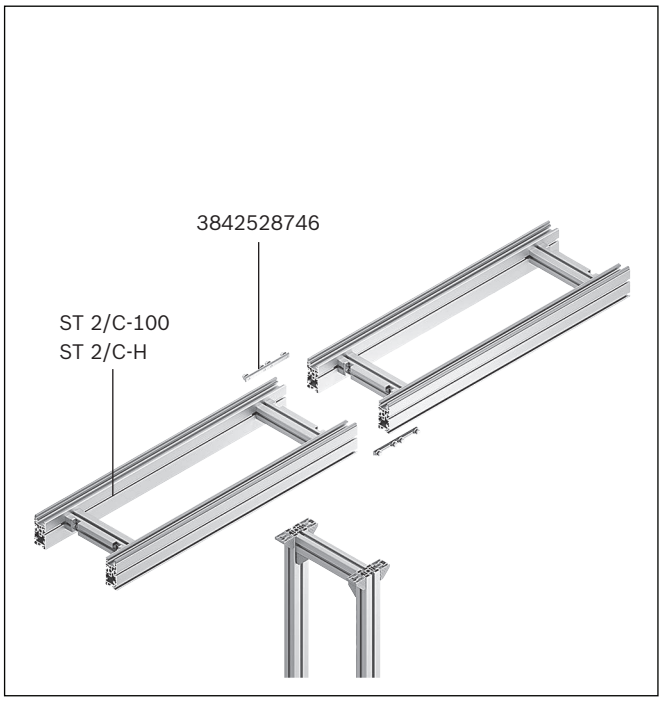
Product designation		Packaging unit	Material number
Adapter set for	AS 2/C-100 AS 2/C-250 BS 2/C	1	3842543483
Adapter set for	AS 2/C-400 (assembly on UM2/C-170 when b = 160 mm) AS 2/C-700 (assembly on UM2/C-170 when b = 160 mm) BS 2/C-H (assembly on UM2/C-170, UM 2/R-170 when b = 160 mm)	1	3842543484
Adapter set for	AS 2/R-300 AS 2/R-700 BS 2/R BS 2/R-H with RV = 1*	1	3842543485
Adapter set for	AS 2/R-1200 (assembly on UM2/R-170 when b = 160 mm) AS 2/R-2200 (assembly on UM2/R-170 when b = 160 mm) BS 2/R-H with RV = 0 (assembly on UM2/C-170, UM 2/R-170 when b = 160 mm)	1	3842543486
Adapter set for	AS 2/R-V-1200 (assembly on UM2/R-170 when b = 160 mm) AS 2/R-V-2200 (assembly on UM2/R-170 when b = 160 mm) BS 2/R-V-1200 (assembly on UM2/R-170 when b = 160 mm)	1	3842543487
Adapter set for	HQ 2/U-H	1	3842548578

* Assembly on UM return unit

Technical data

Material number			3842543482
Features			
ESD			Yes
Max. operating temperature	T	°C	+40

Section, section profiles



Sections can be individually configured for special requirements by selecting various section, glide, and guide profiles.

Depending on the load spectrum of the conveyor medium, stainless steel or plastic glide profiles can be inserted in the section profile. Use of steel glide profiles increases resistance to wear and temperature. This opens up new areas of application for the TS 2*plus*.

The proven SP 2/C-100 profiles are primarily suitable for medium loads in simple system layouts.

Especially suited for high strains and loads, the new, sturdy SP 2/C-H section profiles have been developed for flat top chains. In addition to a more robust profile cross section and improvements to details (integrated cable duct), the use of stainless steel in the guide profile enhances the system. An adapter plate not only enables visually attractive mounting of the SP 2/C-H section profiles on the drive modules in the TS 2*plus*, it also securely keeps the glide profiles (sliding guides) from shifting.

ST 2/C-100 section





- For conveyor unit self-assembly
- For use in conjunction with all AS 2/C drive modules and UM 2/C return units
- Conveyor medium: plastic flat top chain
- GP 2 plastic glide profile
- Pre-assembled unit for quick setup

The section is used to construct conveyor units with plastic flat top chains in connection with the AS 2/C drive modules and UM 2/C return units

Accessories

Required accessories

- Cross connector, see p. 3-108

Recommended accessories

- SZ 2 leg sets, see page 6-2
- Profile connector, see p. 3-107
- Cross connector, see p. 3-108

Delivery notes

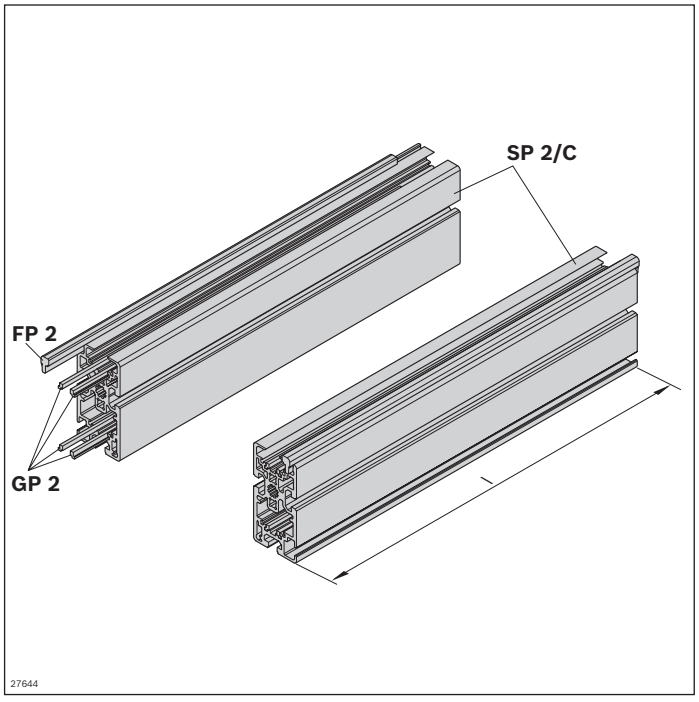
Scope of delivery

- 2x SP 2/C section profiles with assembled FP 2 and GP 2 guide profiles and glide profiles
- 8x blocking bolts

Condition on delivery

- Fully assembled

Ordering information

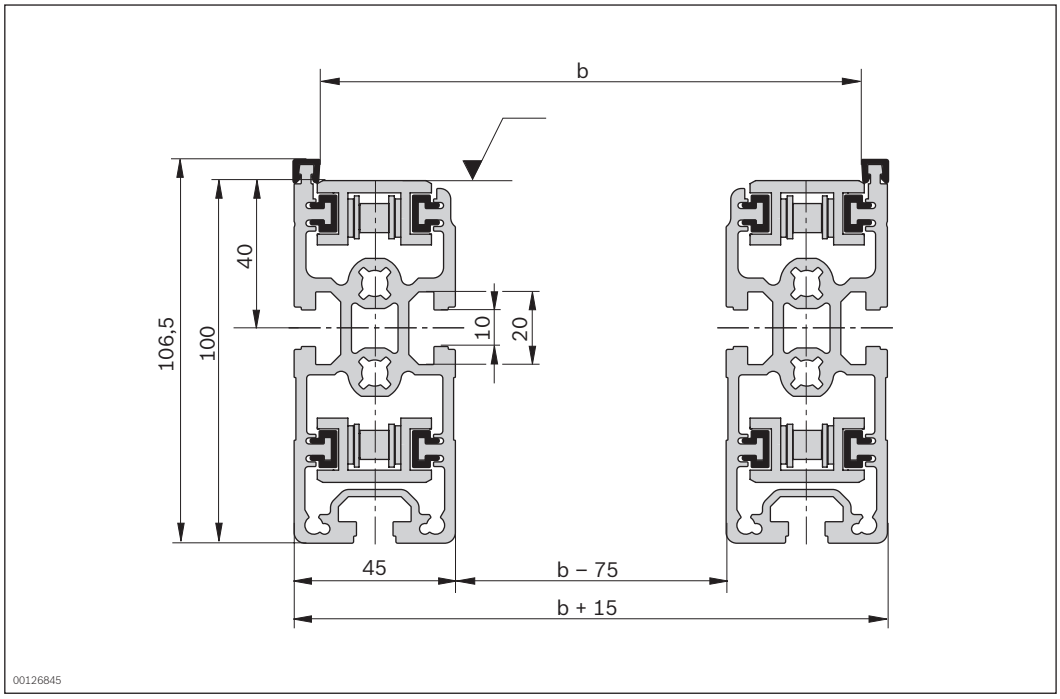


Material number		**3842994890**
l (mm)	Length	60 ... 6000

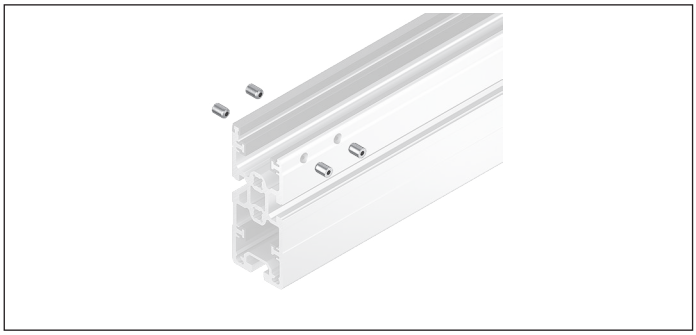
Technical data

Material number			**3842994890**
Features			
Material specification			Section profile: Aluminum; anodized FP 2 guide profile: polyamide GP 2 glide profile: polyamide
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	60 ... 6000

Dimensions



Blocking bolts



Blocking bolts prevent the plastic glide profiles from moving in a longitudinal direction.

- To prevent the plastic glide profiles from moving in a longitudinal direction
- Installation at the beginning of the section in the conveying direction
- Included in delivery of all ST 2/C sections

Note: Not required for all ST 2/C-H sections.

Accessories

Recommended accessories

- Drilling template (3842538972, see p.) 3-118

Delivery notes

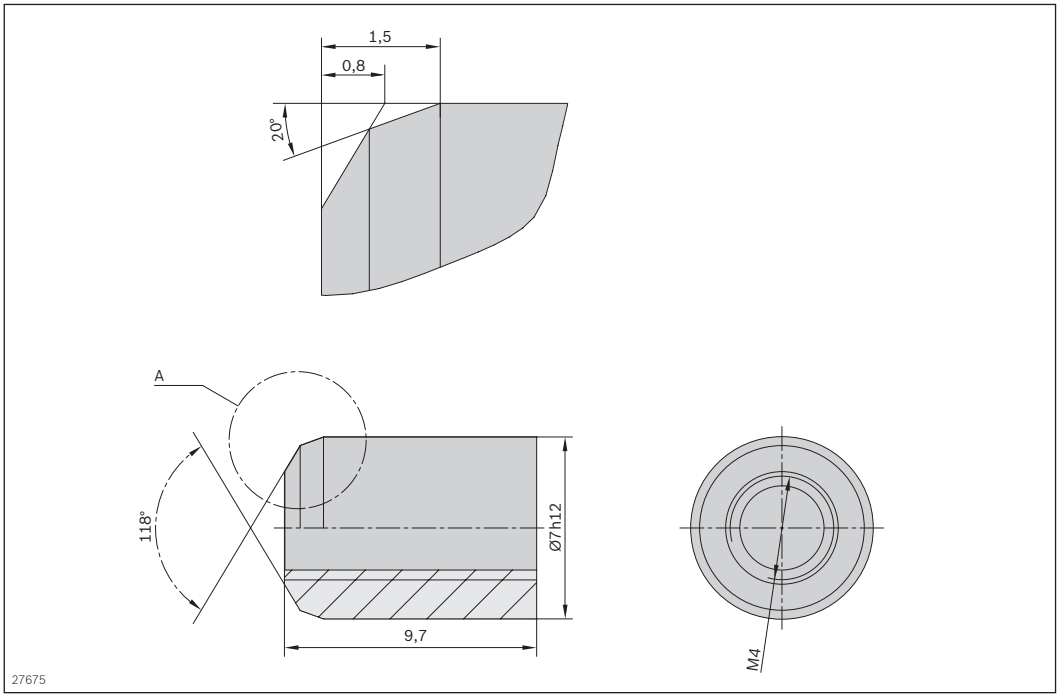
Scope of delivery

- Set consisting of 8x blocking bolts

Ordering information

Product designation	Packaging unit	Material number
Blocking bolts	Set	3842537353

Dimensions



ST 2/C-H section





- For conveyor unit self-assembly
- For use with all AS 2/C drive modules and UM 2/C return units
- Section profile (50 mm wide) in especially sturdy design for section loads of up to 30% higher
- Conveyor medium: plastic flat top chain
- Optional steel or plastic GP 2 glide profiles

The section is used to construct heavy-duty conveyor units with plastic flat top chains in connection with the AS 2/C drive modules and UM 2/C return units

Accessories

Required accessories

- ST 2/C-H adapter plate kit, see p. 3-102
- If GP = 0, then adapter plates are to be fitted between each section joint.

Recommended accessories

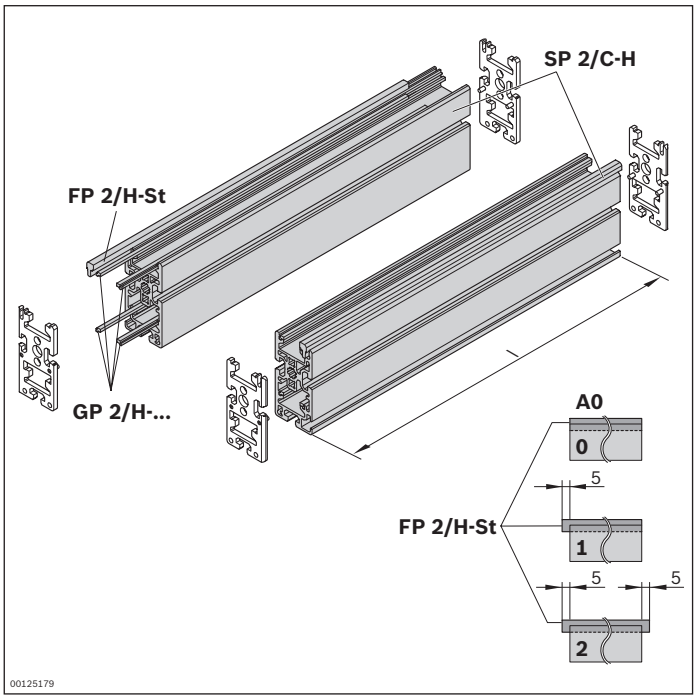
- SZ 2/... leg sets, see page 6-2
- Profile connector, see p. 3-107
- Cross connector, see p. 3-108
- Cover rail for cable duct, see p. 3-94

Delivery notes

Scope of delivery

- 2x SP 2/C-H section profiles with assembled FP 2/H-St and GP 2/H guide profiles and glide profiles

Ordering information

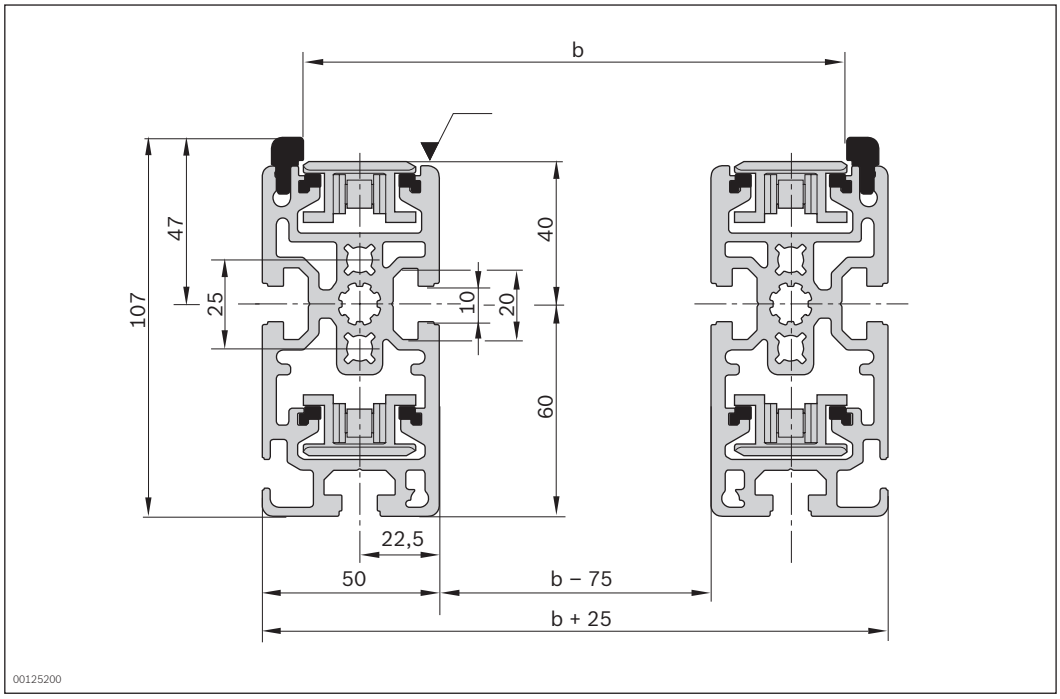


Material number		3842994973
l (mm)	Length	200 ... 6000
AO	Installation location Plastic glide profile AO = 2 Steel glide profile AO = 0; 1; 2	0; 1; 2
GP	Glide profile Corrosion-resistant steel (GP = 1) Plastic (GP = 0)	0; 1

Technical data

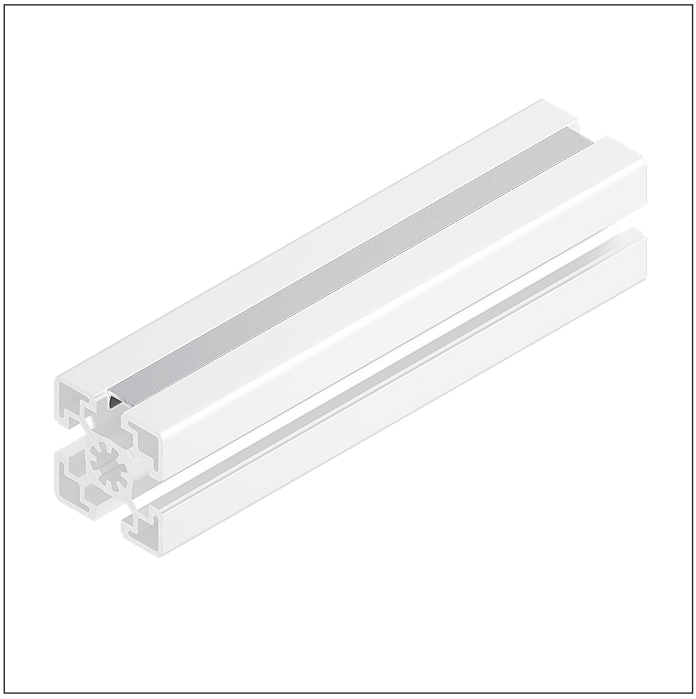
Material number			3842994973
Features			
Material specification			Section profile: Aluminum; anodized Guide profile: Steel; corrosion-resistant Glide profile: Plastic or steel; corrosion-resistant
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	200 ... 6000

Dimensions



Cover rail for cable duct

10



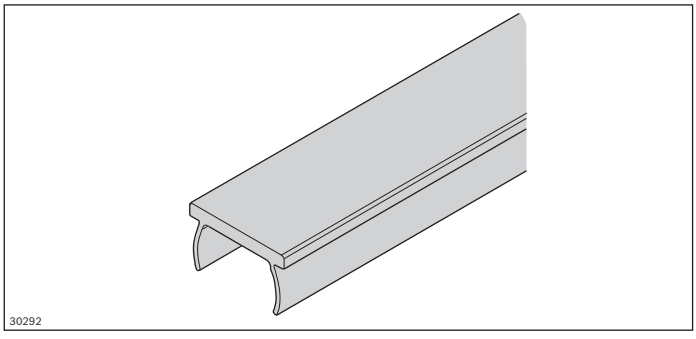
- To prevent dirt from entering the profile slot
- For fixing cables in position
- Flush with profile

Ordering information

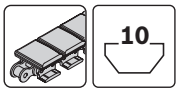
Product designation	Packaging unit	Material number
Cover rail for cable duct	10	3842523258

Technical data

Material number			**3842523258**
Features			
Material specification			Aluminum, natural; anodized
Dimensions			
Length	l	mm	2000



SP 2/C-100 section profile





- For conveyor unit self-assembly for profile construction heights of 100 mm
- For use in conjunction with all AS 2/C drive modules, UM 2/C return units, FP 2 guide profiles and GP 2 glide profiles
- Longitudinal grooves for easy mounting
- For conveyor units with a height to conveying level of 100 mm

The section profile is used to set up conveyor units with the flat top chain conveyor medium. Additional blocking bolts prevent the glide profiles from moving in a longitudinal direction.

Accessories

Required accessories

- GP 2 glide profile, see p. 3-97
- FP 2 guide profile, see p. 3-97
- Blocking bolts, see p. 3-90

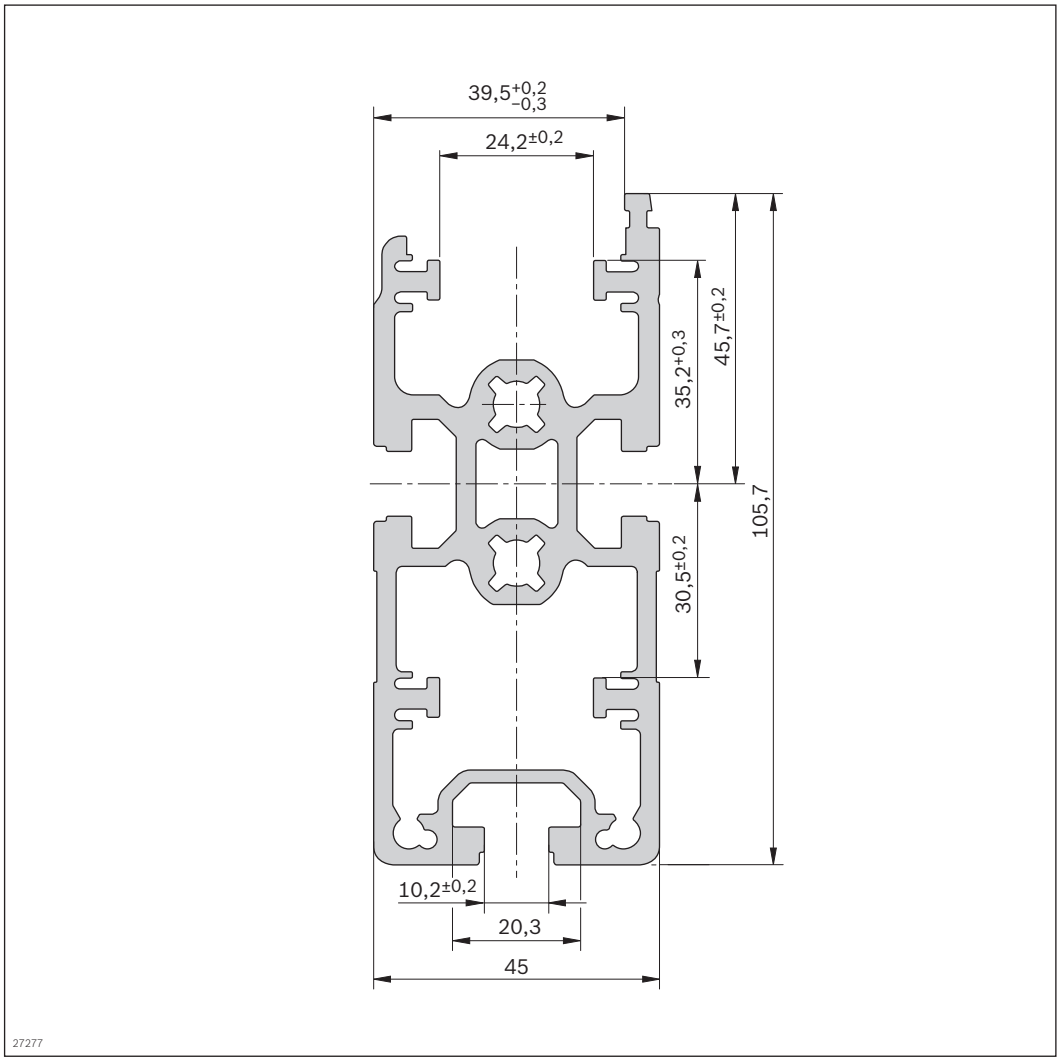
Ordering information

Product designation	l (mm)	Delivery unit	Material number
SP 2/C-100 16 x 6070 mm section profile	6070	16	3842532609

Technical data

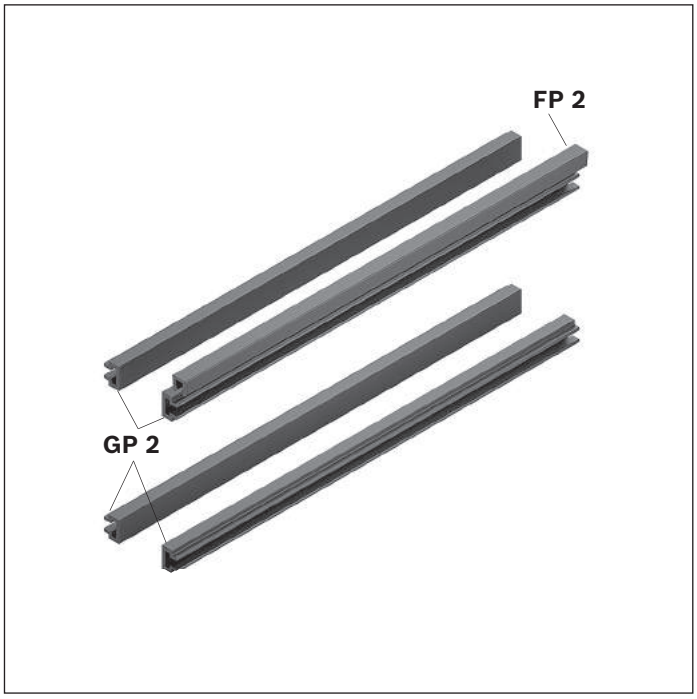
Material number			**3842532609**
Load			
Moment of inertia	I_x	cm^4	128.0
	I_y	cm^4	37.0
Moment of resistance	W_x	cm^3	24.6
	W_y	cm^3	16.4
Features			
Material specification			Aluminum; anodized
Mass	m	kg/m	4.0
Dimensions			
Length	l	mm	6070
Profile surface	A	cm^2	15.0

Dimensions



FP 2 guide profile set, GP 2 glide profile





- For conveyor unit self-assembly
- Used in conjunction with ST 2/C section profiles, AS 2/C drive modules and UM 2 /C return units
- FP 2 guide profile for laterally guiding the workpiece pallet; slid onto the SP 2/C-100 section profile
- GP 2 glide profile for guiding the top flat chain; slid onto the SP 2/C-100 section profile

The guide profile is used for lateral guidance of the workpiece pallet. The glide profile is used to guide the flat top chain. Both profiles are pushed onto the section profile.

Additional blocking bolts prevent the glide profiles from moving in a longitudinal direction.

Accessories

Required accessories

- Blocking bolts, see p. 3-90

Delivery notes

Scope of delivery

- 16x FP 2 guide profile (L = 6000 mm)
- 64x GP 2 glide profiles (L = 6000 mm)

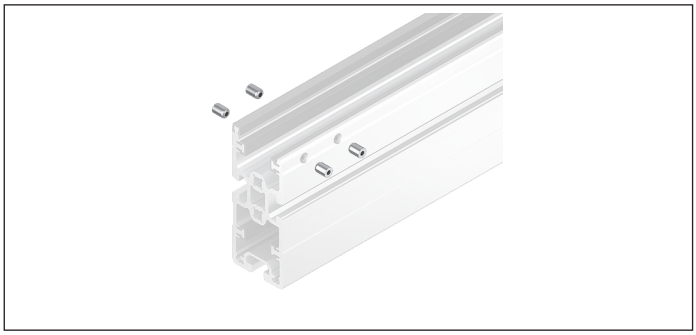
Ordering information

Product designation	l (mm)	Material number
FP 2 guide profile set, GP 2 glide profile	6000	3842529933

Technical data

Material number			3842529933
Features			
ESD			Yes
Material specification			Guide profile: Plastic; PA (suitable for use in an EPA) Glide profile: Plastic; PA (suitable for use in an EPA)
Max. operating temperature	T	°C	+40
Dimensions			
FP 2 length	l	mm	6000
GP 2 length	l	mm	6000

Blocking bolts



Blocking bolts prevent the plastic glide profiles from moving in a longitudinal direction.

- To prevent the plastic glide profiles from moving in a longitudinal direction
- Installation at the beginning of the section in the conveying direction
- Included in delivery of all ST 2/C-100 sections

Note: Not required for all ST 2/C-H sections.

Accessories

Recommended accessories

- Drilling template (3842538972, see p.) 3-118

Delivery notes

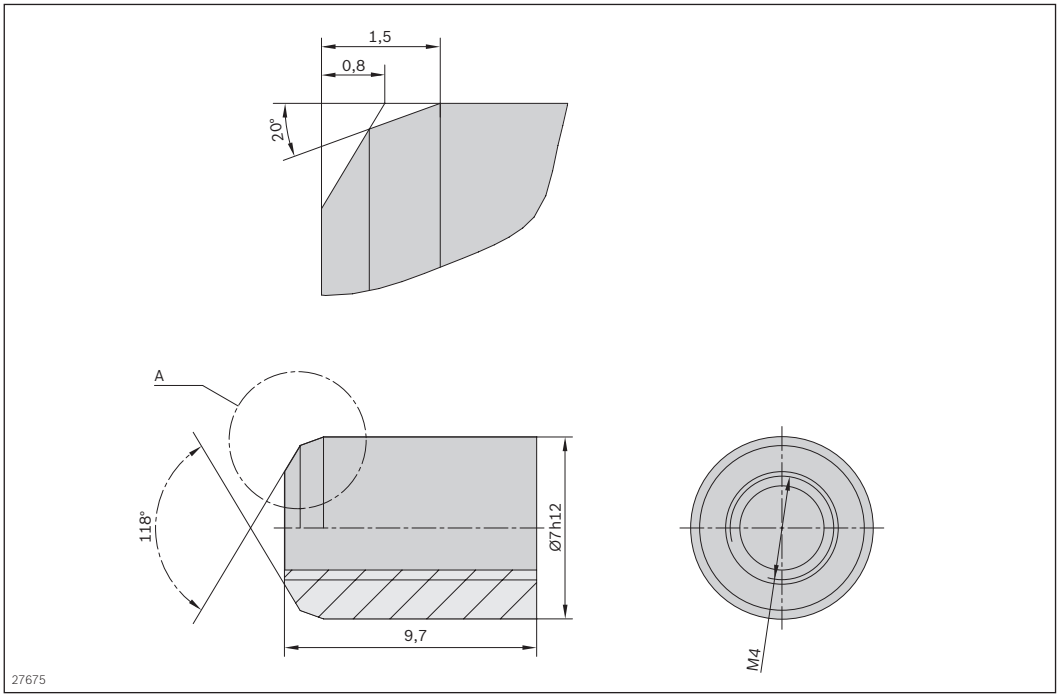
Scope of delivery

- Set consisting of 8x blocking bolts

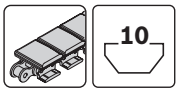
Ordering information

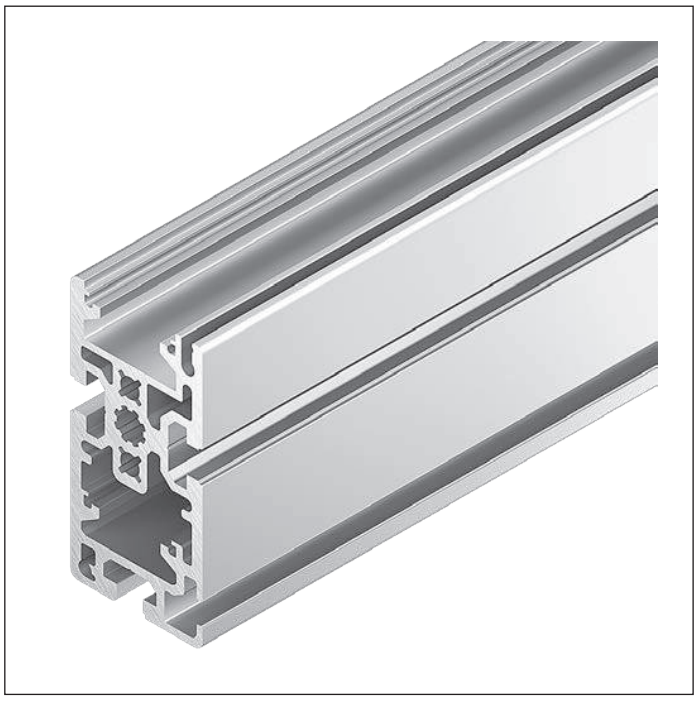
Product designation	Packaging unit	Material number
Blocking bolts	Set	3842537353

Dimensions



SP 2/C-H section profile





- For conveyor unit self-assembly
- In especially sturdy design for particularly heavy-duty sections
- For use with all AS 2/C drive modules, FP 2/H guide profiles and GP 2/H glide profiles
- Longitudinal grooves for easy mounting
- For conveyor units with a height to conveying level of 100 mm
- For heavy-duty conveyor unit assembly
- Profile width: 50 mm

The section profile is used to set up conveyor units with the flat top chain conveyor medium.

Accessories

Required accessories

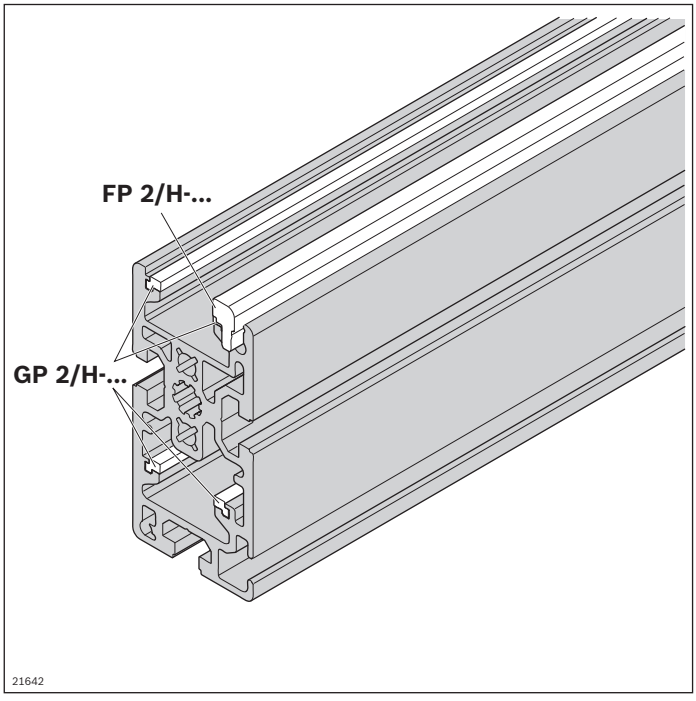
- FP 2/H-St guide profile, see p. 3-104
- GP 2/H-St glide profile, see p. 3-105
- GP 2/H-Kst glide profile, see p. 3-106
- ST 2/C-H adapter plate kit, see p. 3-102
- Cover rail for cable duct, see p. 3-164

Ordering information

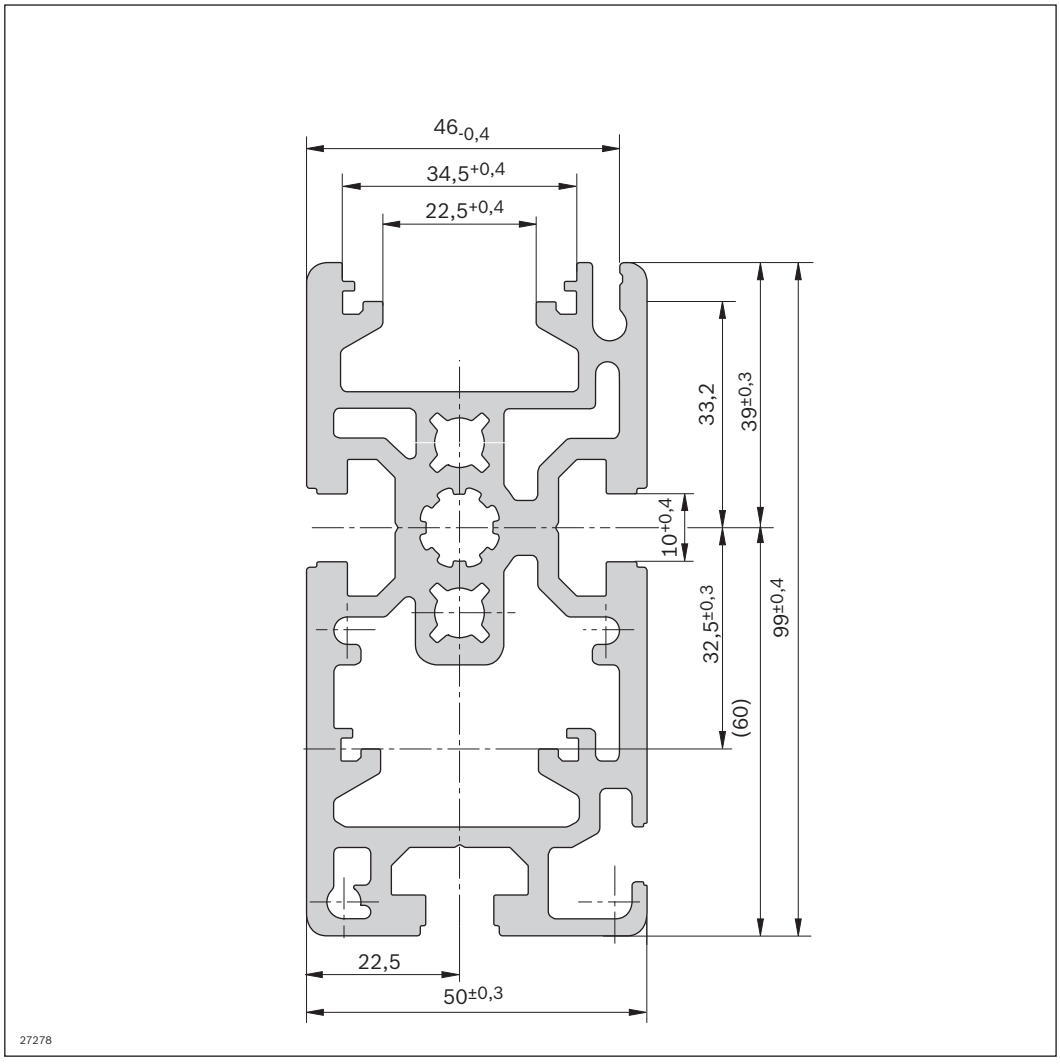
Product designation	l (mm)	Material number
SP 2/C-H 12 x 6000 mm section profile	6070	3842536793

Technical data

Material number			**3842536793**
Load			
Moment of inertia	I_x	cm^4	156.8
	I_y	cm^4	54.9
Moment of resistance	W_x	cm^3	31.9
	W_y	cm^3	21.4
Features			
Material specification			Aluminum; anodized
Mass	m	kg/m	5.3
Dimensions			
Length	l	mm	6070
Profile surface	A	cm^2	19.3

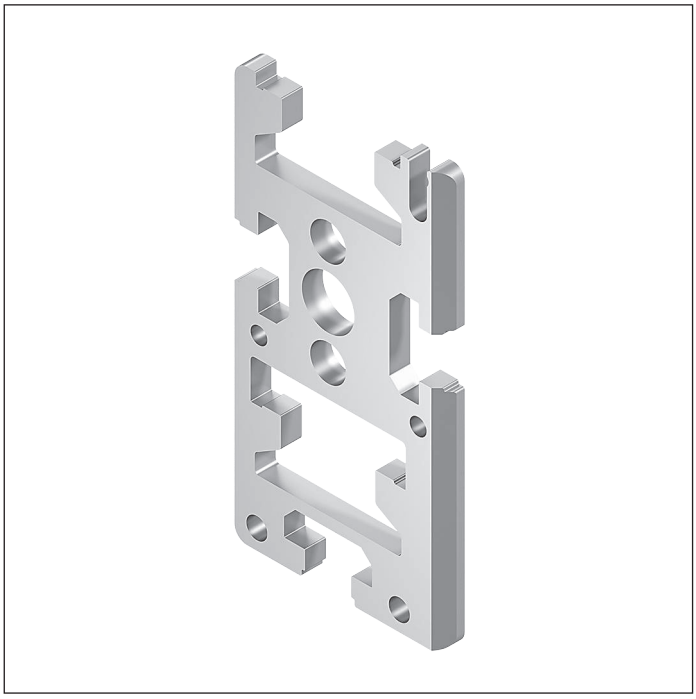


Dimensions



ST 2/C-H adapter plate kit





- Front end plate
- For connecting SP 2/C-H section profiles and AS 2/C drive modules;
  for connecting SP 2/C-H profiles and UM 2/C return units;
  and between section profiles if GP 2 plastic glide profiles are used

The adapter plates are used as front covers and for connecting section profiles and drive modules, or between section profiles and return units.

The adapter plates are also suitable for use between section profiles where GP 2 plastic glide profiles are used.

Delivery notes

Scope of delivery

- 2x left adapter plate
- 2x right adapter plate

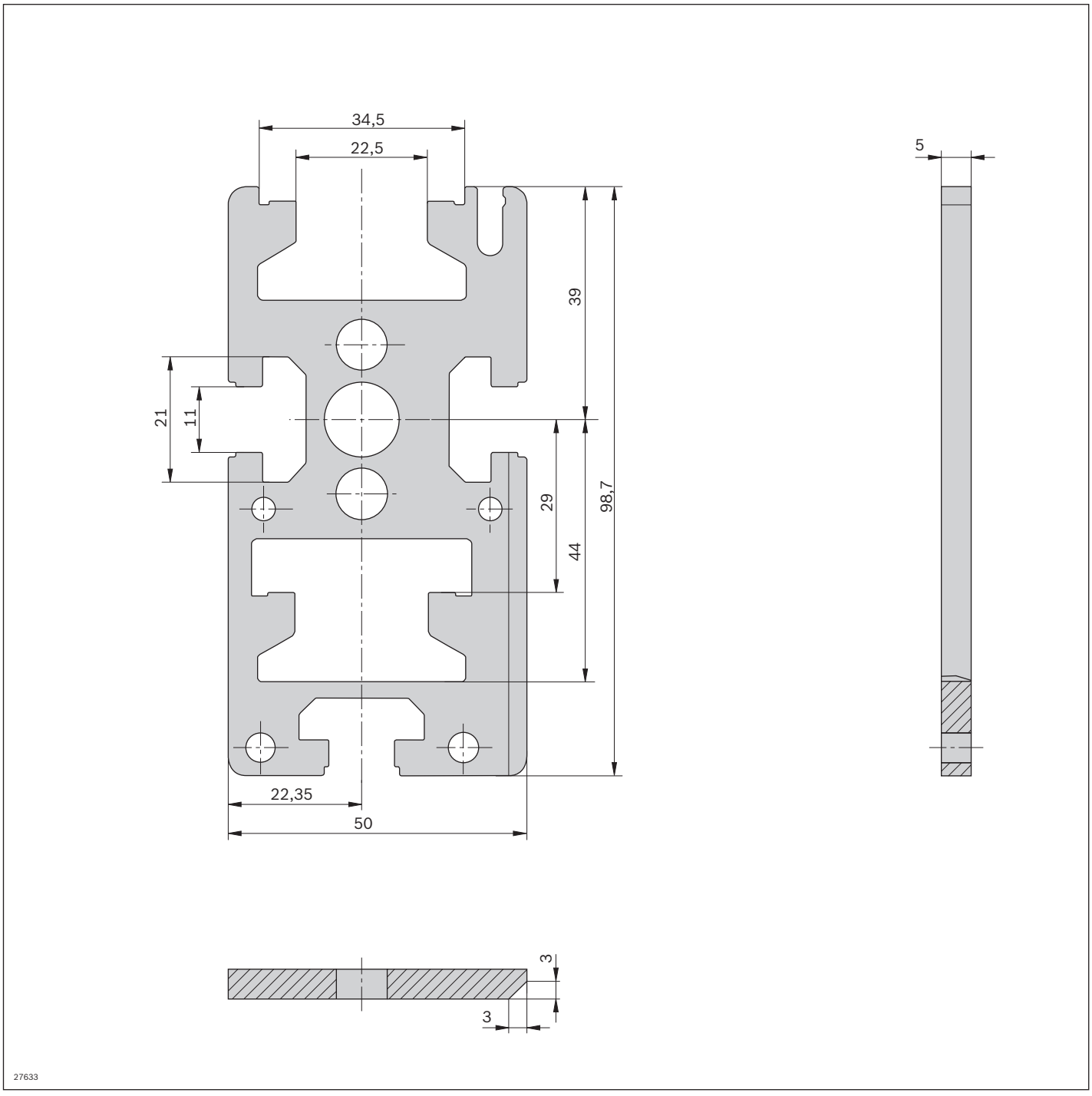
Ordering information

Product designation	Packaging unit	Material number
ST 2/C-H adapter plate kit	4	3842536801

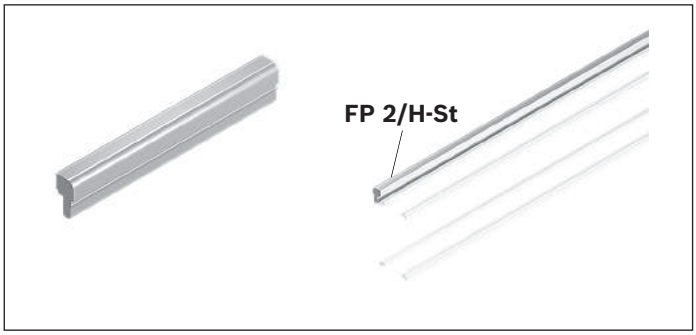
Technical data

Material number	3842536801
Features	
Material specification	Steel; corrosion-resistant

Dimensions



FP 2/H-St guide profile



- For lateral guidance of the workpiece pallet
- For conveyor unit self-assembly
- For sliding onto SP 2/C-H or SP 2/R-H section profiles
- Robust version in corrosion-resistant steel

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 24x rods (l = 3000 mm)

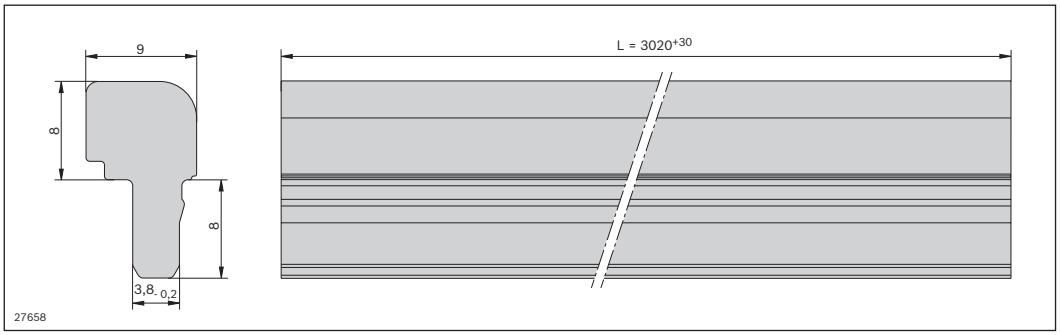
Ordering information

Product designation	l (mm)	Delivery unit	Material number
FP 2/H-St guide profile	3000	24	3842537890

Technical data

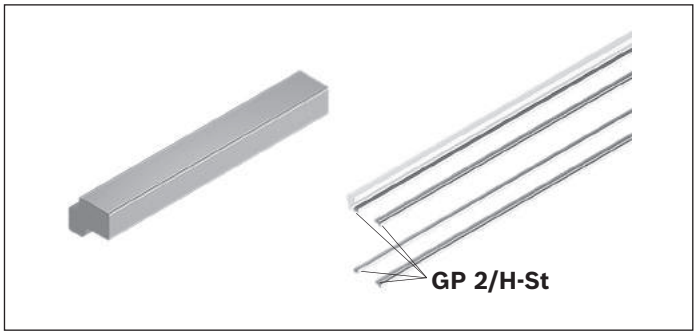
Material number			3842537890
Features			
ESD			Yes
Material specification			Steel; corrosion-resistant
Dimensions			
Length	l	mm	3000

Dimensions



GP 2/H-St glide profile





- For conveyor unit self-assembly
- For guiding the flat top chain or accumulation roller chain
- In especially sturdy design with corrosion-resistant steel for particularly heavy-duty sections
- For sliding onto SP 2/C-H or SP 2/R-H section profiles
- For use with all AS 2/C drive modules, UM 2/C return units and SP 2/C section profiles

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 48x rods (l = 3000 mm)

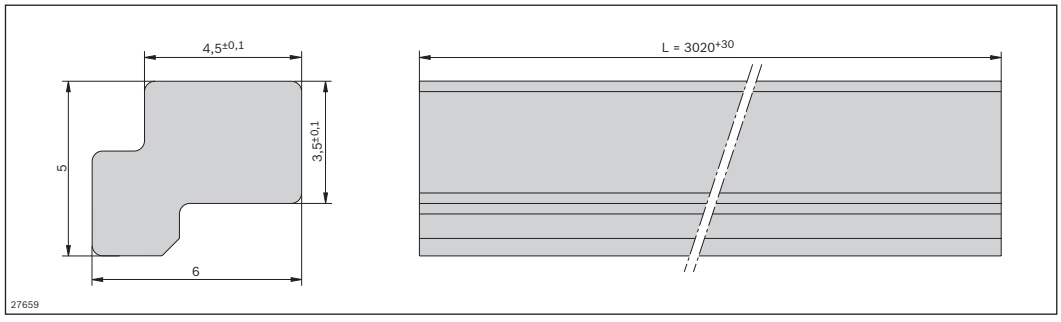
Ordering information

Product designation	l (mm)	Delivery unit	Material number
GP 2/H-St glide profile	3000	48	3842537888

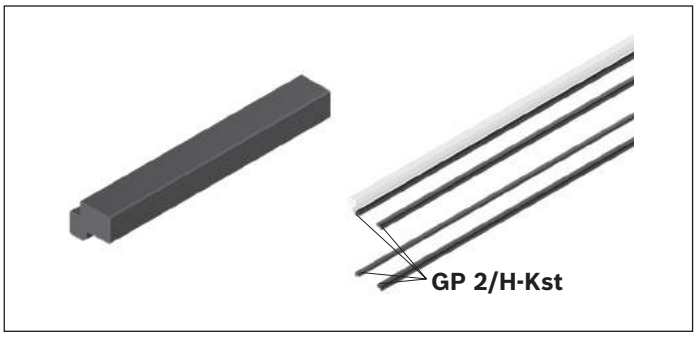
Technical data

Material number			3842537888
Features			
ESD			Yes
Material specification			Steel; corrosion-resistant
Dimensions			
Length	l	mm	3000

Dimensions



GP 2/H-Kst glide profile



- For conveyor unit self-assembly
- For guiding the flat top chain or the accumulation roller chain
- For sliding onto SP 2/C-H or SP 2/R-H section profiles
- For use with all AS 2/C drive modules, UM 2/C return units and SP 2/C section profiles

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 48x rods (l = 3000 mm)

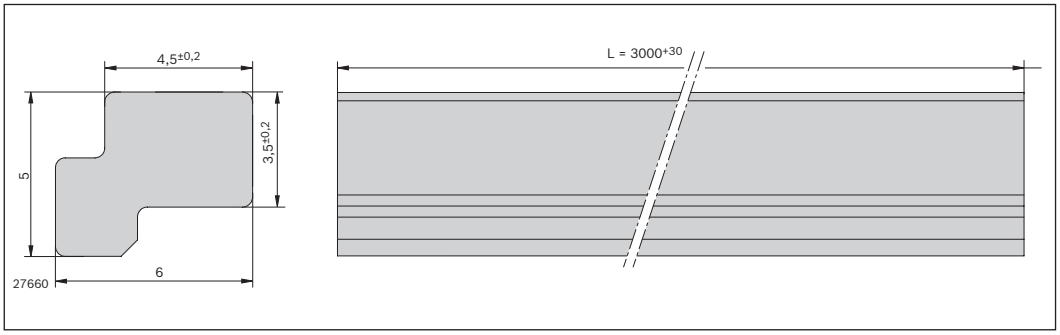
Ordering information

Product designation	l (mm)	Delivery unit	Material number
GP 2/H-Kst glide profile	3000	48	3842537889

Technical data

Material number			3842537889
Features			
ESD			Yes
Material specification			Plastic; PA (suitable for use in an EPA)
Dimensions			
Length	l	mm	3000

Dimensions



Profile connector



- For connecting two SP 2 profiles end to end
  Two profile connectors are recommended for each profile joint
- For conveyor unit self-assembly
- For use with all AS 2/C drive modules, UM 2/C return units and SP 2/C section profiles

Delivery notes

Scope of delivery

- Profile connector, screws

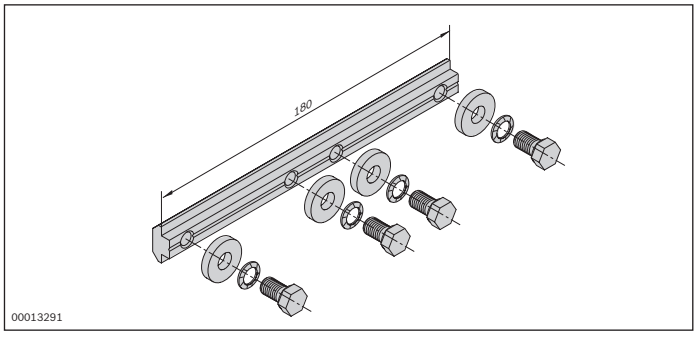
Ordering information

Product designation	Material number
Profile connector	3842528746

Technical data

Material number	3842528746
Features	
Material specification	Steel; galvanized

Dimensions



QV 2 cross connector



- For conveyor unit self-assembly
- For connecting section profiles and defining the track width
- Can be combined with all SP 2 section profiles.

Formula for calculating the number of cross connectors needed

A_{QV} = (l/2000 mm) + 1

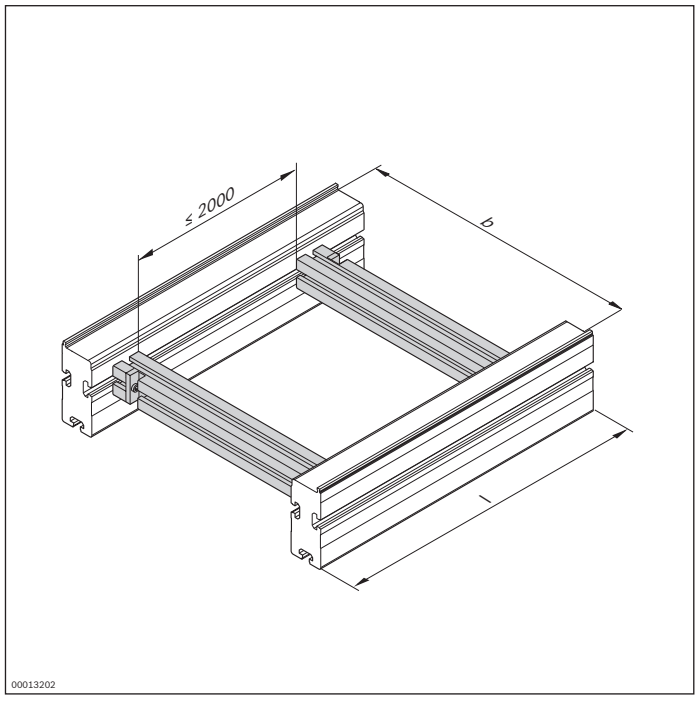
A_{QV} = number of cross connectors
l = section length

Delivery notes

Scope of delivery

- 45x60 strut profile, finished
- 2x fastening material to mount on an ST 2 section

Ordering information



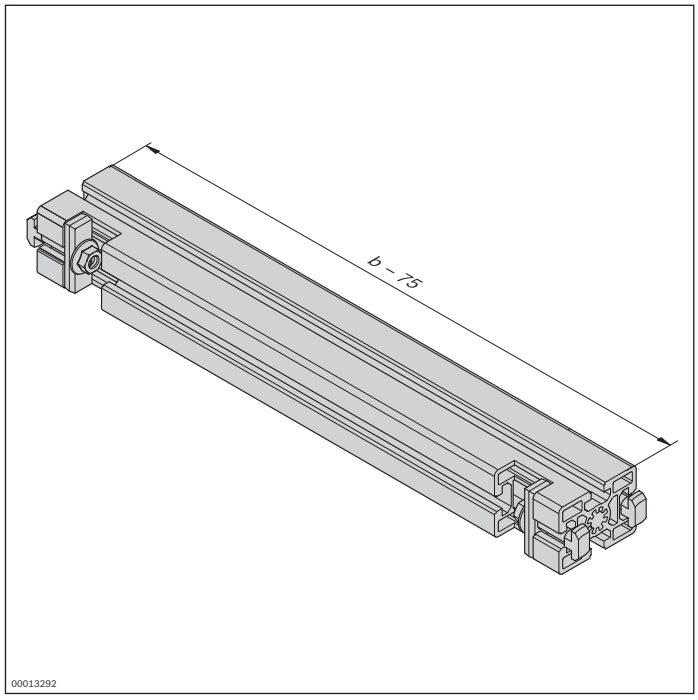
Material number		3842994635
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

Technical data

Material number	3842994635
Features	
Material specification	Aluminum, natural; anodized

Dimensions



QV 2-H cross connector



- For heavy-duty conveyor unit self-assembly
- For connecting section profiles and defining the track width
- Can be combined with all SP 2 section profiles

QV 2-H cross connectors are particularly suitable for connections between section profiles in heavy-duty systems.

Formula for calculating the number of cross connectors needed

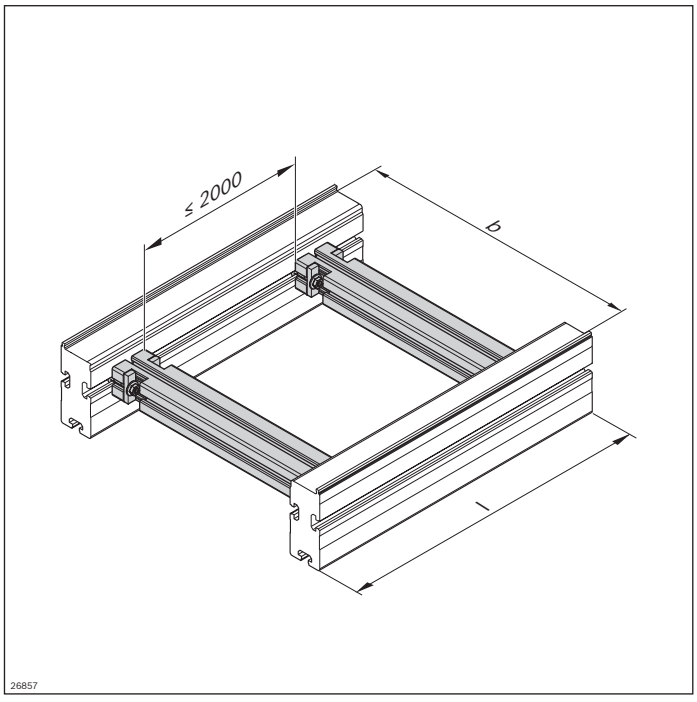
A_{QV} = (l/2000 mm) + 1

A_{QV} = number of cross connectors
l = section length

Delivery notes
Scope of delivery

- 45x60 strut profile, finished
- 4x fastening material to mount on an ST 2 section

Ordering information



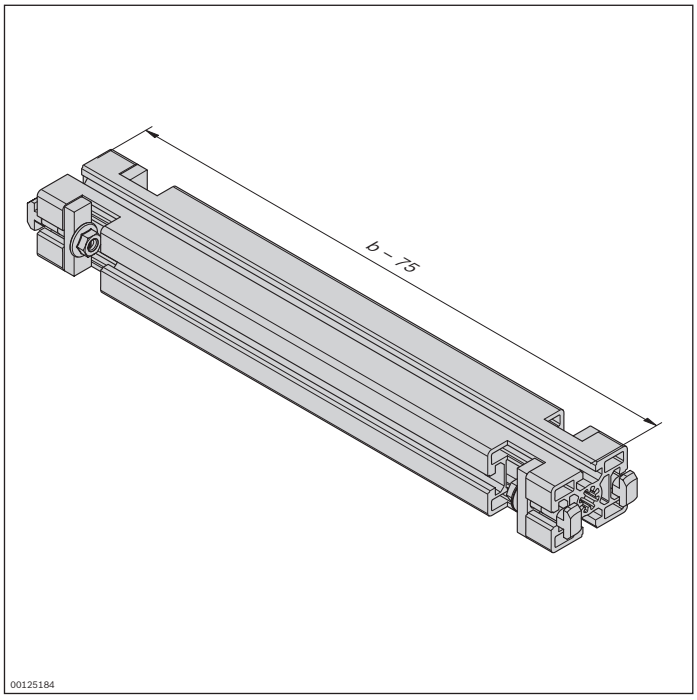
Material number		3842993052
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

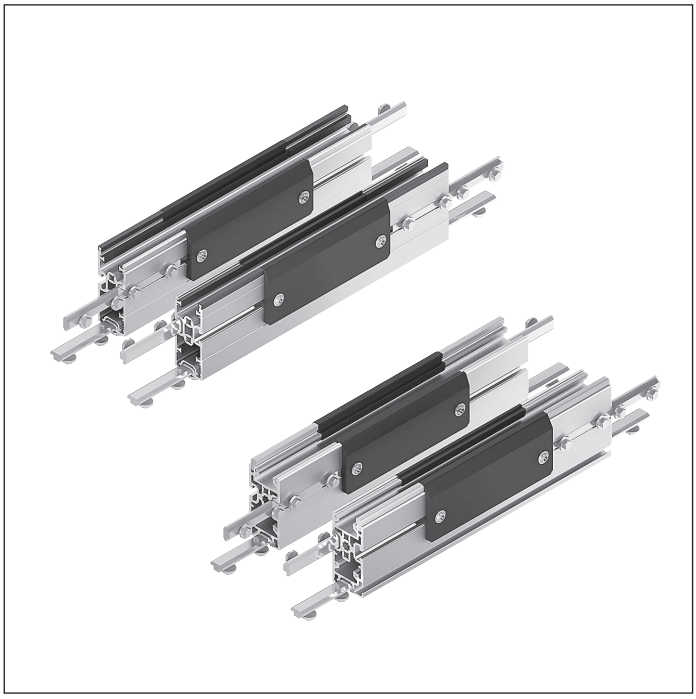
Technical data

Material number	3842993052
Features	
Material specification	Aluminum, natural; anodized

Dimensions



ST 2/...-W maintenance section



- For maintenance use (assembly, disassembly or lubrication)
- Two removable side covers each
- Suitable for flat top chains

The maintenance section is a section element with removable caps. It is used for maintenance (assembly, disassembly, lubrication) of the flat top chain conveyor medium.

Delivery notes

Scope of delivery

- 2x maintenance section elements, 400 mm long
- Incl. 8x profile connectors

Ordering information

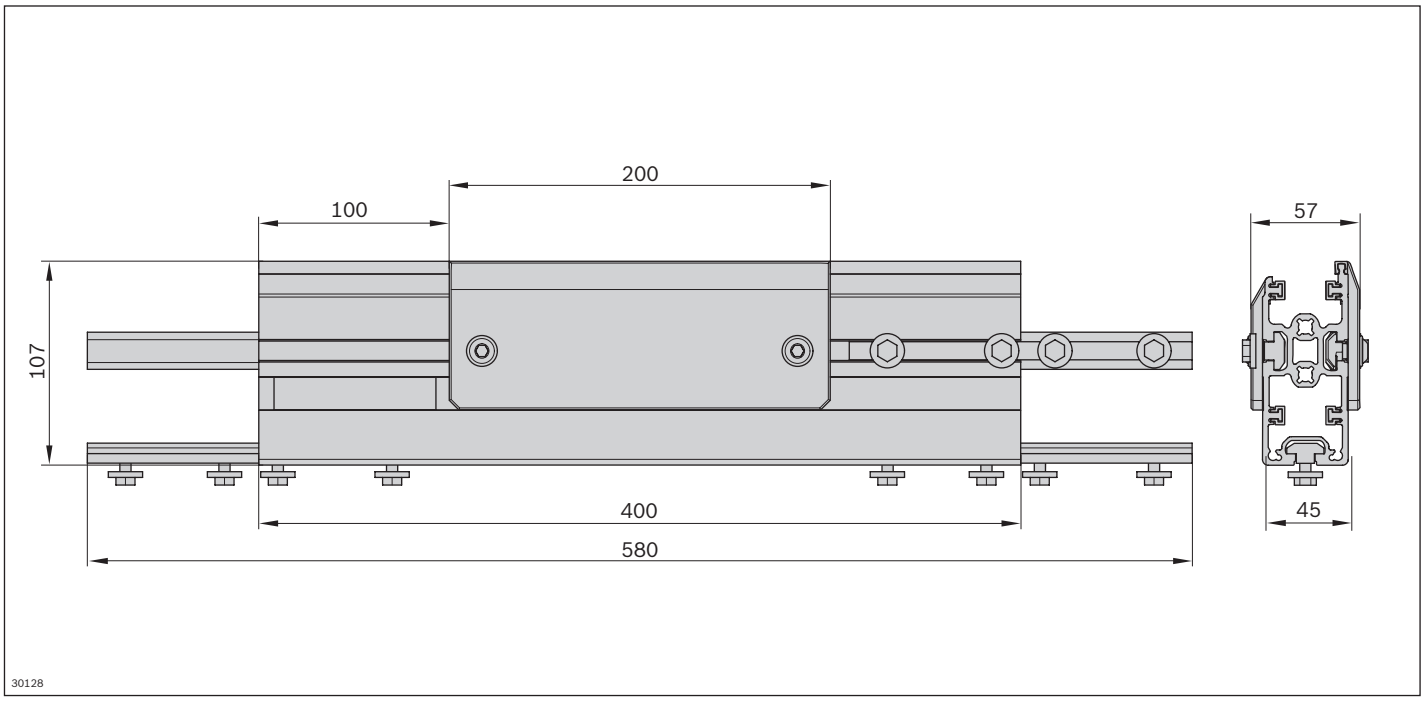
Product designation	Material number
ST 2/C-W maintenance section	3842532777
ST 2/C-H-W maintenance section	3842537310

Technical data

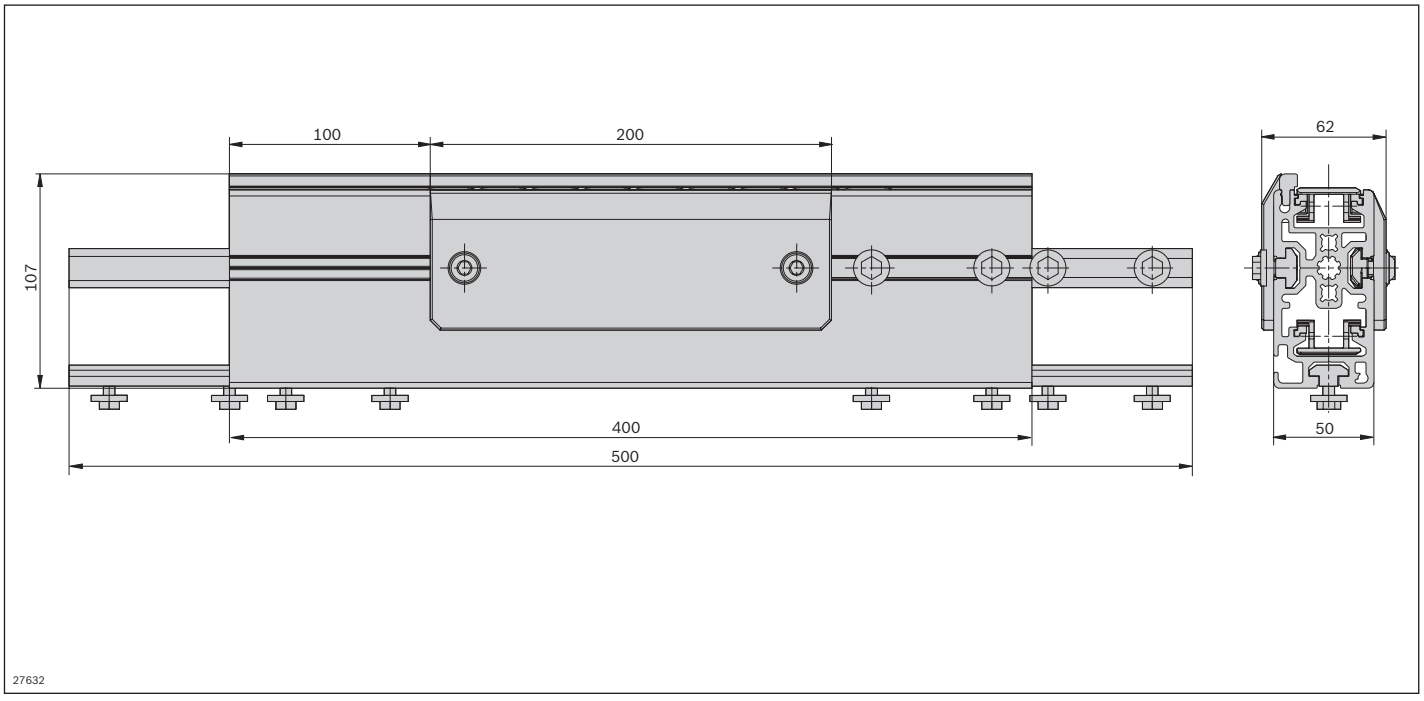
Material number			3842532777	3842537310
Features				
ESD			Yes	Yes
Material specification			Section profile: Aluminum, natural; anodized Side cover: PE	Section profile: Aluminum, natural; anodized Side cover: PE
Dimensions				
Length	l	mm	400	400

Dimensions

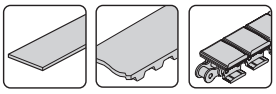
ST 2/C-W maintenance section

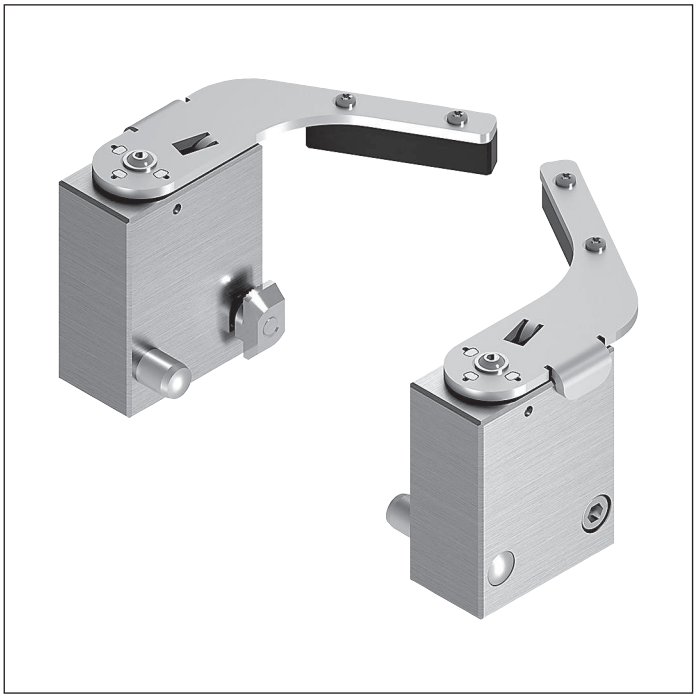


ST 2/C-H-W maintenance section



Scraper





- To scrape small parts from the conveyor medium
- For use with workpiece pallets with a minimum weight of 3 kg
- Conveyor media: Belt, toothed belt and flat top chain
- May be mounted on the right side (R) or left side (L)
- Reversible operation is not possible on sections with scrapers

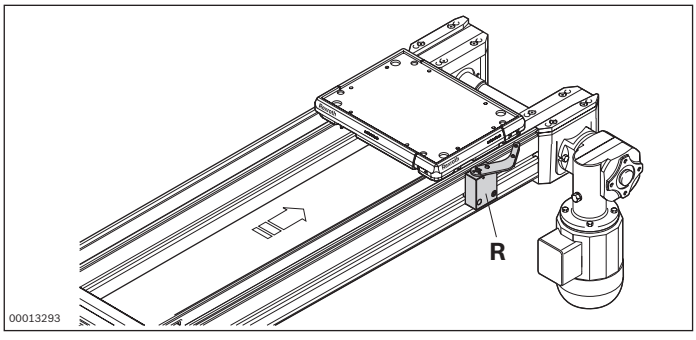
Delivery notes

Scope of delivery

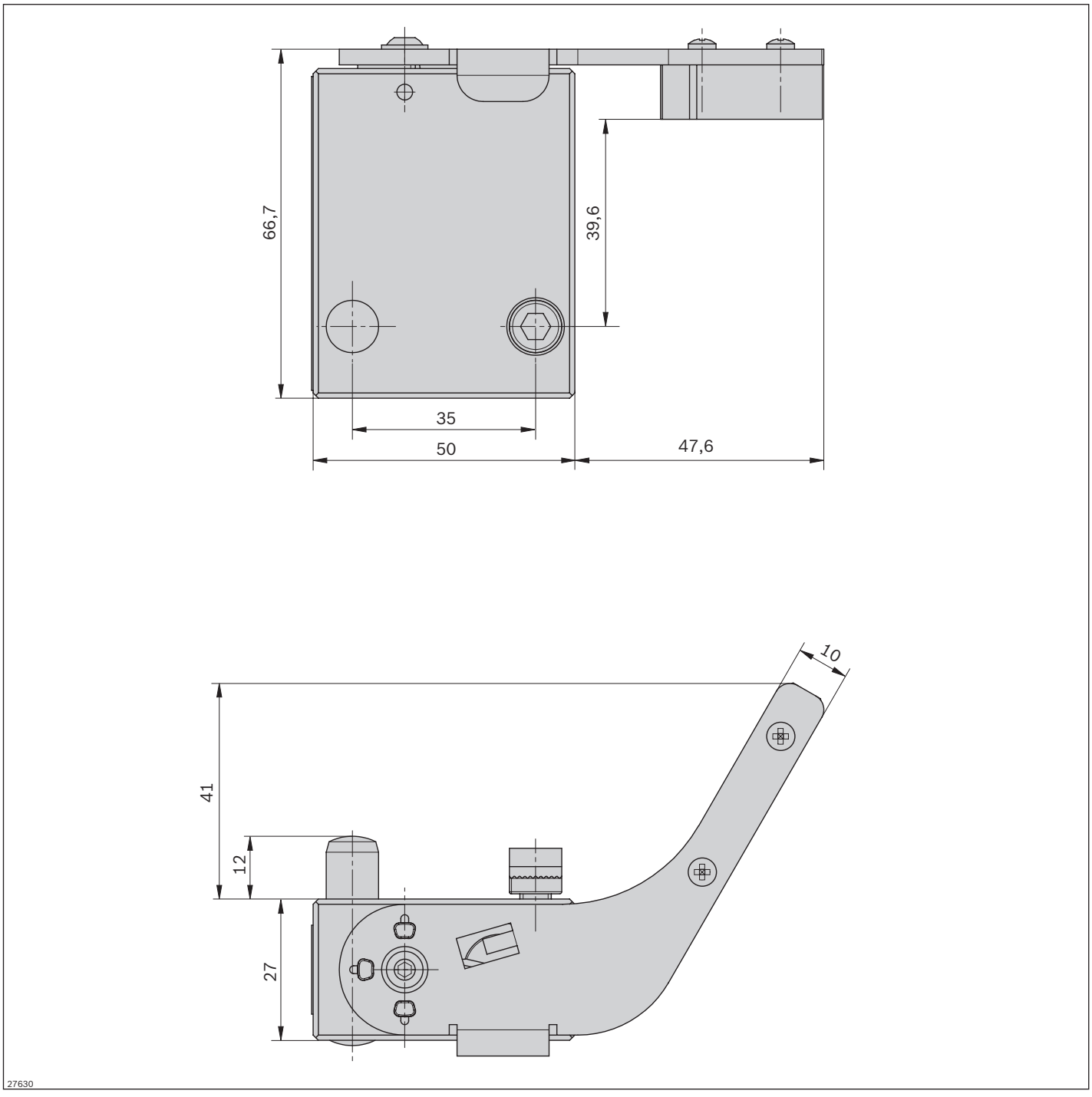
- 1x scraper, right or left, including fastening material

Ordering information

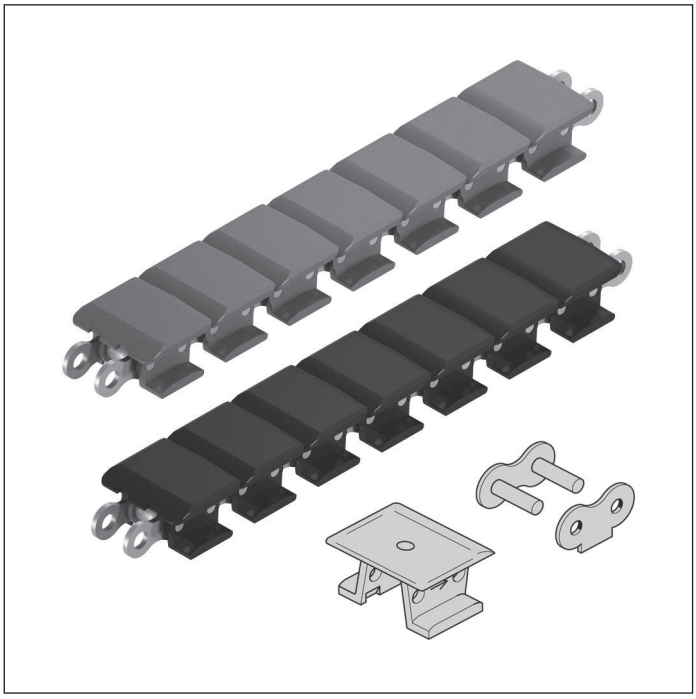
Product designation	Material number
Scraper, right	3842532679
Scraper, left	3842532680



Dimensions



Plastic flat top chain
Master link



Conveyor medium for the workpiece pallets in the TS 2*plus* system in conjunction with ST 2/C and ST 2/C-H conveyor sections.

- Conveyor medium for use with conveyor unit self-assembly
- For use with ST 2/C sections and ST 2/C-H sections
- Delivered in units of up to 12000 mm. Lengths of l > 12000 mm can be produced by connecting several flat top chains using a master link
- Nickel-plated steel base chain version
- Steel chain with PA66 polyamide support caps

Note:

- The plastic flat top chain, which is also suitable for use in an EPA, cannot be used in curves and curve arcs
- Accumulation operation with workpiece pallets fitted with PE wear pads not recommended as this increases wear
- The plastic flat top chain is not permitted for use with steel GP glide profiles

Accessories

Recommended accessories

- Additional master link, 3842551234
- Tool for flat top chain, see p. 3-118

Delivery notes

Scope of delivery

- Plastic flat top chain (l = 12000 mm; black), incl. 1x master link
- ESD plastic flat top chain (l = 12000 mm; gray), incl. 1x master link
- Master link, incl. 1x ESD flat top (gray) with hole

Ordering information

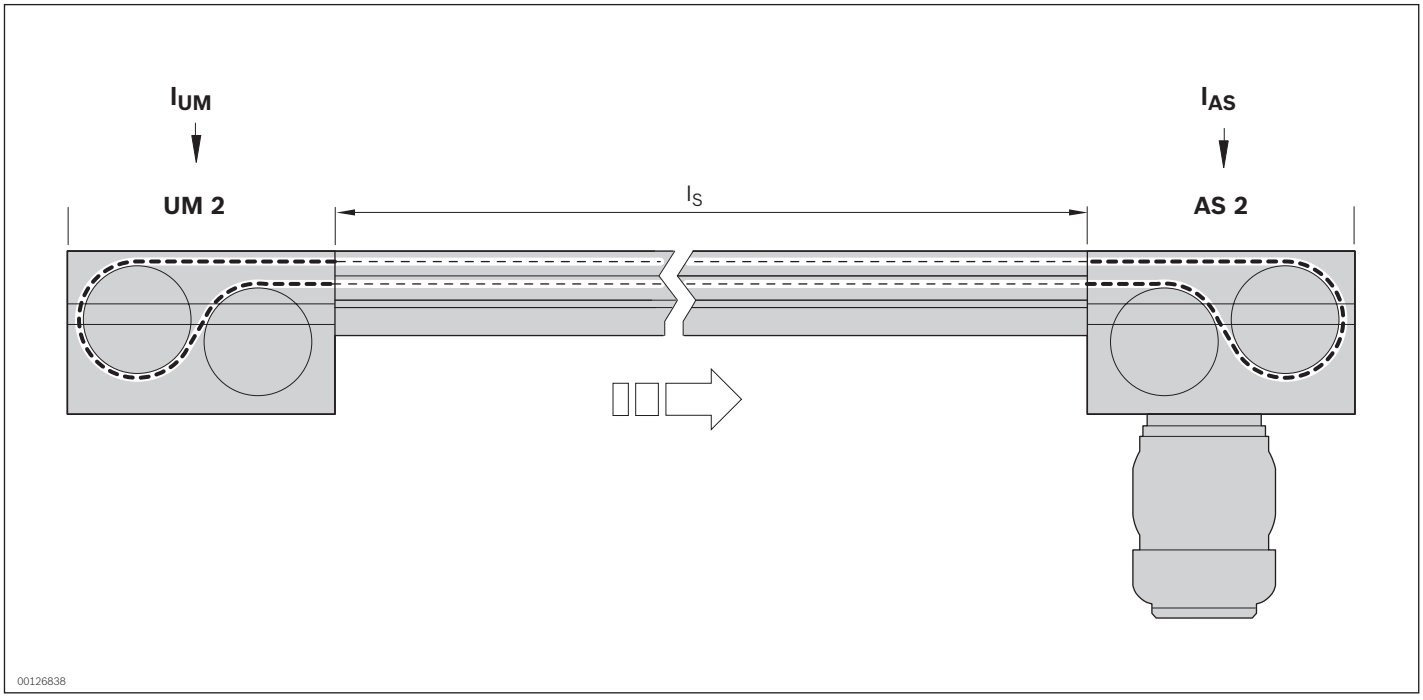
Product designation	Material number
Plastic flat top chain	3842551226
ESD plastic flat top chain	3842551227
Master link*	3842551234

* Can be used on both plastic flat top chains

Technical data

Material number			3842551226	3842551227	3842551234
Features					
ESD			No	Yes	Yes
Material specification			Base chain: Steel; nickel-plated Flat chain: PA66	Base chain: Steel; nickel-plated Flat chain: PA66 (suitable for use in an EPA)	Steel; nickel-plated
Dimensions					
Length	l	mm	12000	12000	

Dimensions



The required chain length is determined using the following formula.

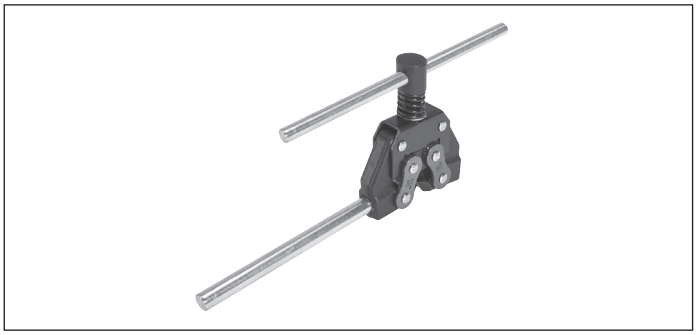
$$l_C = 2 \times l_S + l_{AS} + l_{UM}$$

l_C = length of flat top chain
l_S = length of the section profile
l_{AS} = length of the conveyor medium in the drive module
l_{UM} = length of the conveyor medium at the return unit

Length of the conveyor medium for flat top chain
$l_{UM\ 2/C\text{-}170}$ = 310 mm
$l_{UM\ 2/C\text{-}60}$ = 150 mm
l_{AS} = 625 mm

Chain breaker





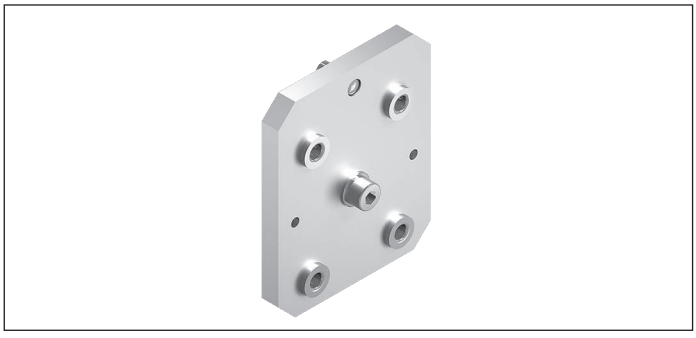
- For disassembling plastic flat top chains

Ordering information

Product designation	Material number
Chain breaker for plastic flat top chain	8981010510

Drilling template for blocking bolts

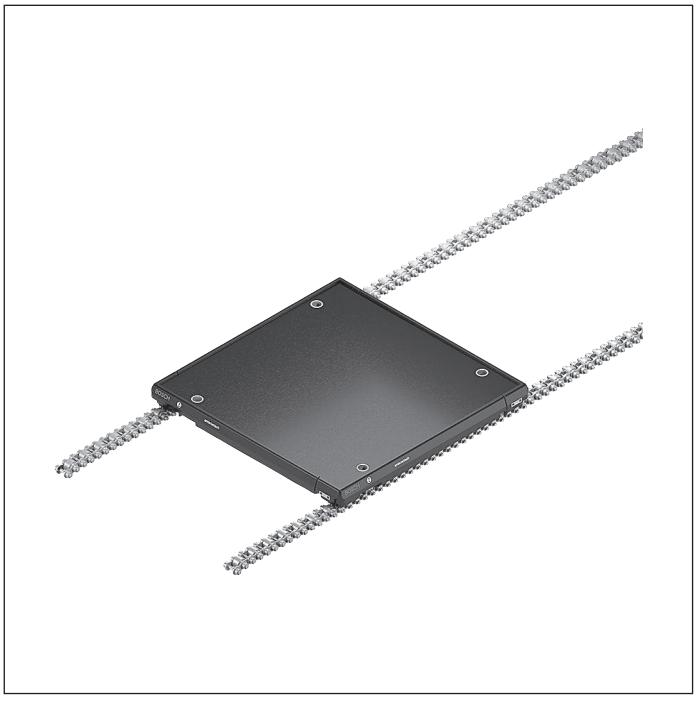




Ordering information

Product designation	Material number
Drilling template for blocking bolts	3842538972

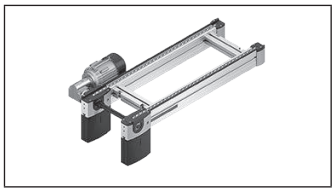
Accumulation roller chain conveyor medium



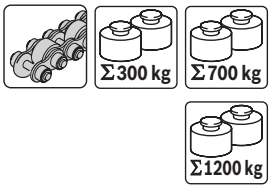
The accumulation roller chain is suitable for large, heavy workpiece pallets. Stress occurring due to media such as test oils or production emissions does not affect functional reliability. The accumulation rollers do not only reduce the accumulation pressure on stop gates, but also enable a quick return to the transport speed following work at a processing station.

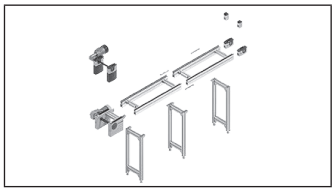
In conjunction with PE wear pads on the workpiece pallets, the standard design with plastic glide profiles in the section profile permits surface loads of up to 1.5 kg/cm, whereas the optionally available version with steel glide profiles and accumulation roller chain with steel rollers can tolerate surface loads up to 2 kg/cm.

The new HD profiles equipped with steel glide profiles and steel guide profile provide a particularly sturdy, low-maintenance combination.



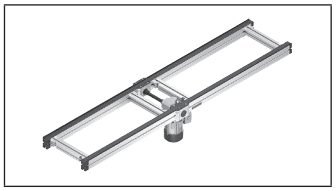
BS 2/R belt sections **3-122**





Parts for AS 2/..., UM 2/..., ST 2... conveyor units **3-134**

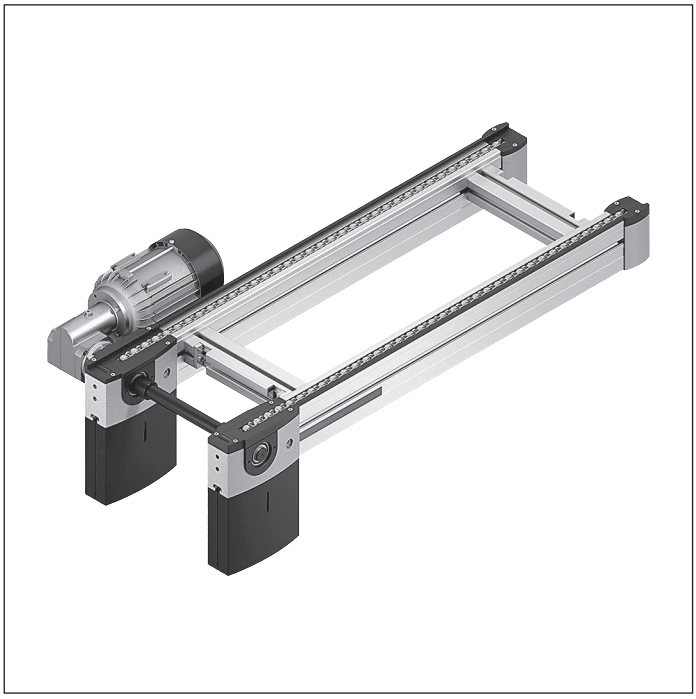




Connection kits **3-236**

BS 2/R-300 belt section





- Conveyor section ready to use
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Reversible operation possible for l ≤ 2000 mm and accumulation roller chains without small parts protection
- Chain tensioner for reversible operation contained in drive head
- Motor mounting right, left or central (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The belt section is a ready for operation conveyor section with own drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Note: With short, light workpiece pallets (l_{WT} = 160, 240), it may be necessary to ensure that conveyor trenches are traversable by installing the included acceleration element. When doing so, note the following:
Avoid accumulation above the acceleration element. Accumulation above the acceleration element causes severe roller wear and shortens the service life of the chain.

Accessories

Recommended accessories

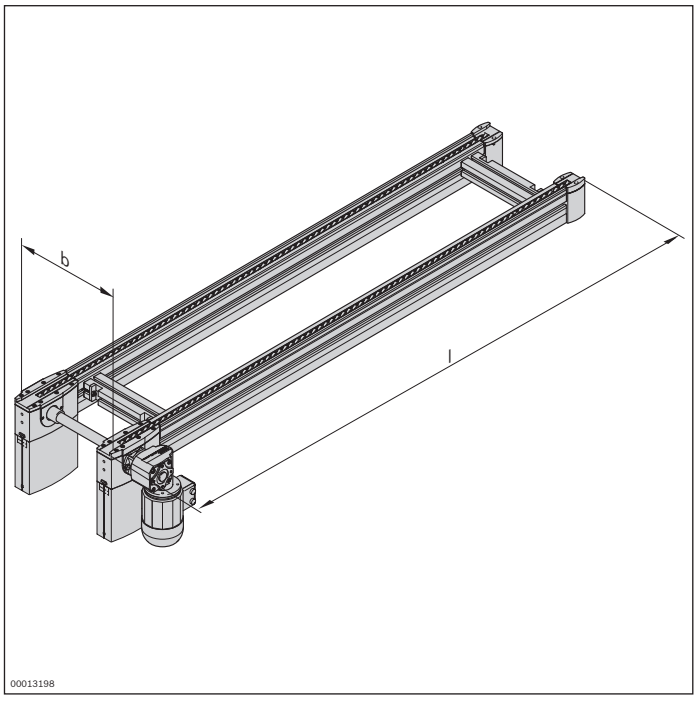
- Connection kits, see page 3-236
- SZ 2/... leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



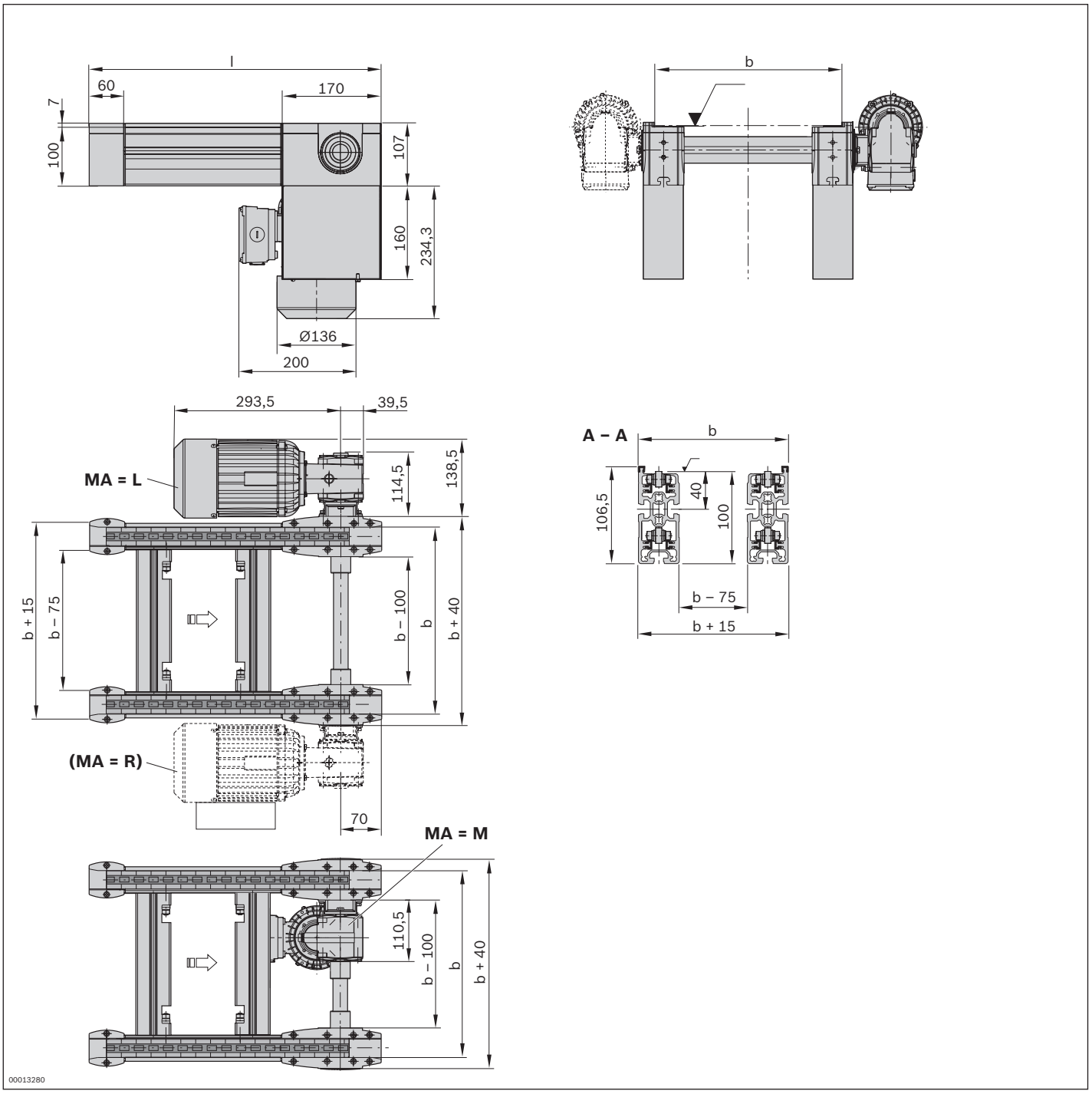
Material number		3842999904
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
l (mm)	Length	300 ... 6000
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[3]
RV	Reversible operation No reversible operation (RV = 0) Reversible operation (RV = 1)	0; 1
GP	Corrosion-resistant steel glide profile (GP = S) Plastic (GP = K)	K; S
KT	Chain type Accumulation roller chain with PA accumulation rollers (KT = 1) Accumulation roller chain with steel accumulation rollers (KT = 2) Accumulation roller chain with PA accumulation rollers and small parts protection (KT = 3) Accumulation roller chain with steel accumulation rollers and small parts protection (KT = 4)	1; 2; 3; 4

[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] MA = M only when b ≥ 240 mm

Technical data

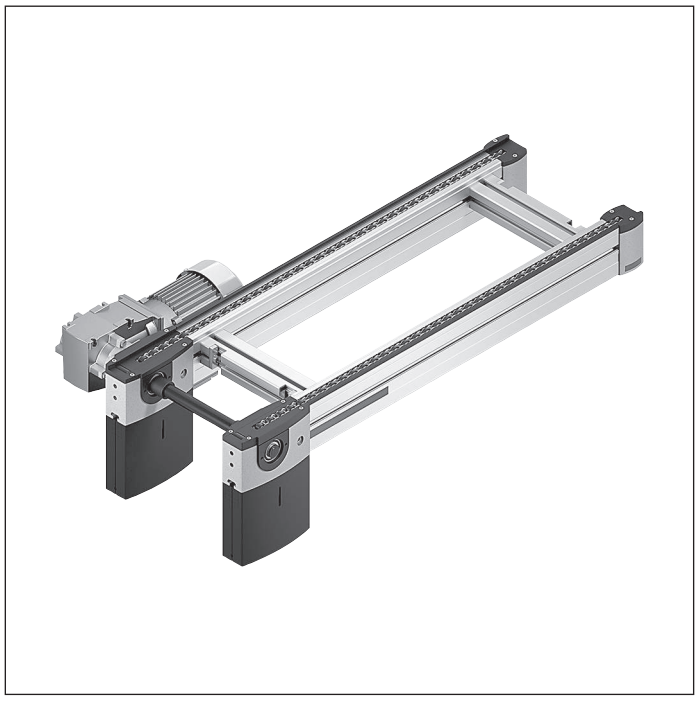
Material number			3842999904
Load			
Max. section load in accumulation operation		kg	300
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Glide profile Polyamide or steel; corrosion-resistant Chain: Polyamide or steel accumulation rollers Small parts protection: Polyamide
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	300 ... 6000

Dimensions


l
60
170
7
100
107
160
234,3
Ø136
200
b
293,5
39,5
MA = L
114,5
138,5
b + 15
b – 75
b – 100
b
b + 40
(MA = R)
70
MA = M
110,5
b – 100
b
b + 40
A – A
b
106,5
40
100
b – 75
b + 15
00013280

BS 2/R-700 belt section





- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Reversible operation not permitted
- Motor mounting right or left
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The belt section is a ready-to-use conveyor section with built-in drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Note: With short, light workpiece pallets (l_{WT} = 160, 240), it may be necessary to ensure that conveyor trenches are traversable by installing the included acceleration element. When doing so, note the following:
Avoid accumulation above the acceleration element. Accumulation above the acceleration element causes severe roller wear and shortens the service life of the chain.

Accessories

Recommended accessories

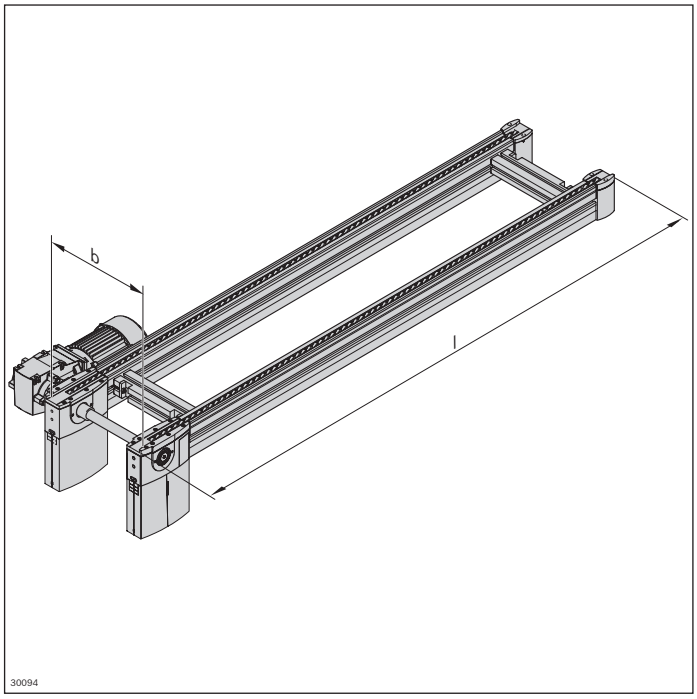
- Connection kits, see page 3-236
- SZ 2/... leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



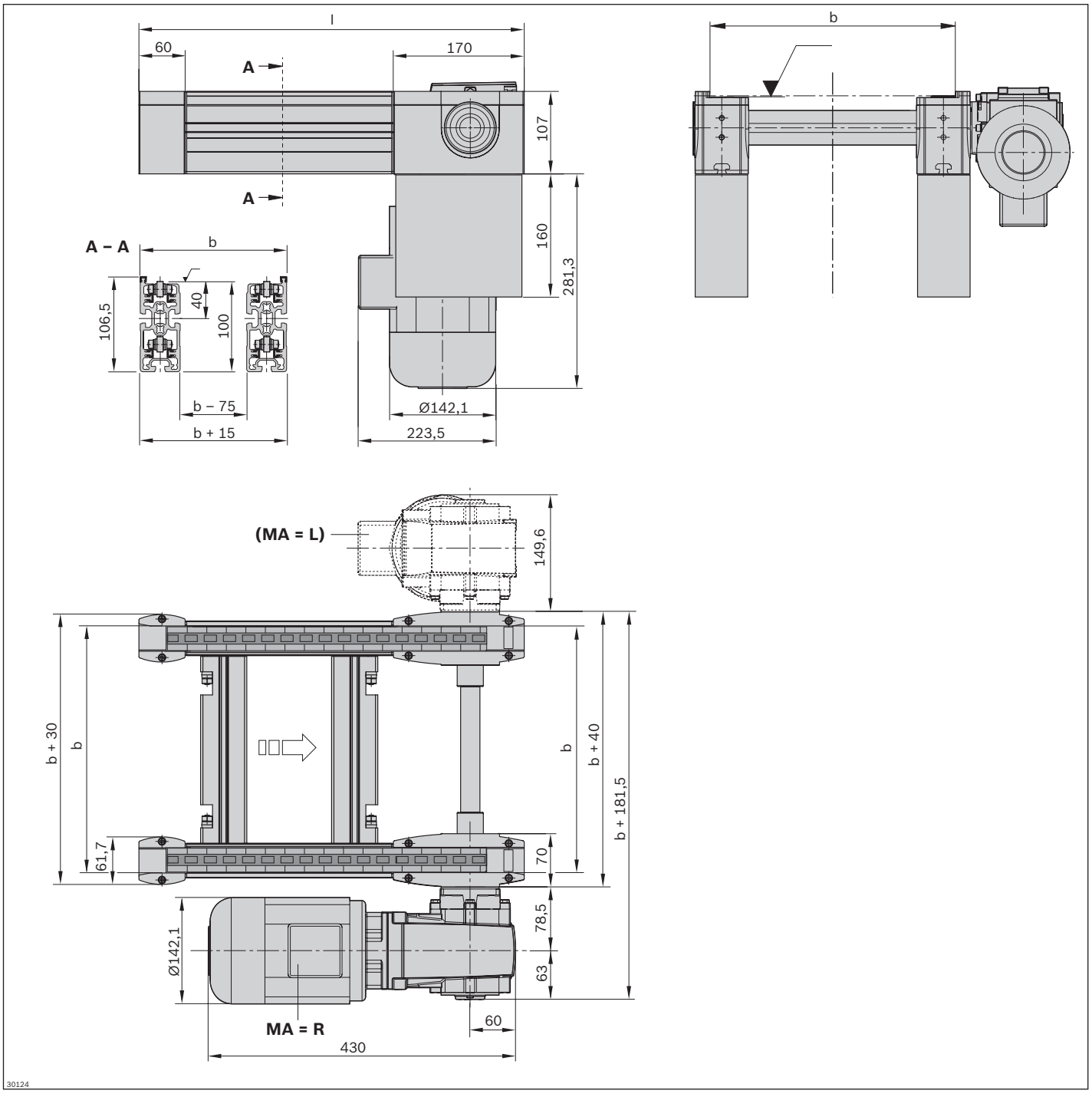
Material number		3842998096
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200; 160 ... 1200
l (mm)	Length	300 ... 6000
v_N (m/min)	Nominal speed	0[1)]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L
GP	Corrosion-resistant steel glide profile (GP = S) Plastic (GP = K)	K; S
KT	Chain type Accumulation roller chain with PA accumulation rollers (KT = 1) Accumulation roller chain with steel accumulation rollers (KT = 2) Accumulation roller chain with PA accumulation rollers and small parts protection (KT = 3) Accumulation roller chain with steel accumulation rollers and small parts protection (KT = 4)	1; 2; 3; 4

[1)] v_N = 0: without motor or gear

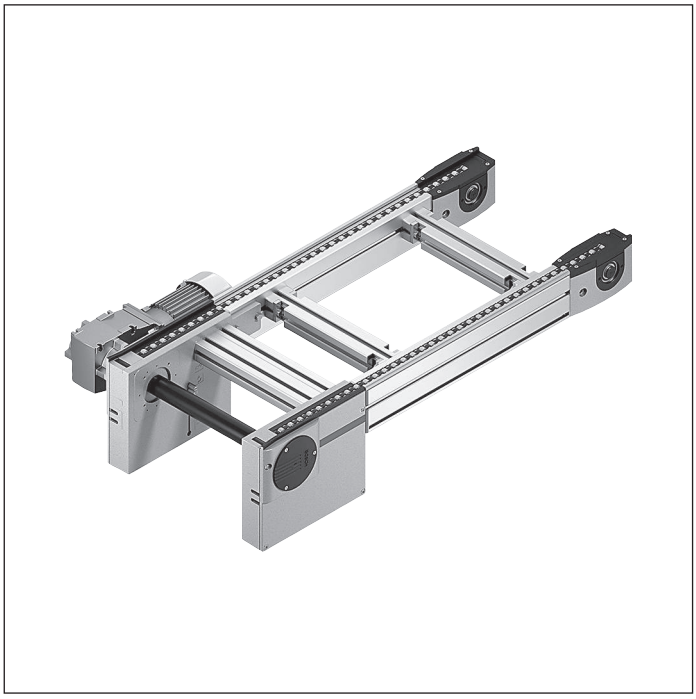
Technical data

Material number			3842998096
Load			
Max. section load in accumulation operation		kg	700
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Glide profile Polyamide or steel; corrosion-resistant Chain: Polyamide or steel accumulation rollers Small parts protection: Polyamide
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	300 ... 6000

Dimensions


l
60
170
A
A
107
160
281,3
A – A
b
106,5
40
100
b – 75
b + 15
Ø142,1
223,5
b
(MA = L)
149,6
b + 30
b
b
b + 40
b + 181,5
61,7
70
78,5
Ø142,1
63
MA = R
60
430
30124

BS 2/R-H belt section



- Conveyor section ready to use
- Sturdy design for especially heavy-duty systems
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Reversible operation possible for l ≤ 2000 mm and accumulation roller chains without small parts protection
- Chain tensioner for reversible operation is mounted on the return unit at RV = 1
- Motor mounting right, left or central
- Motor connection: optionally with cable/plug or terminal box
- Profile width: 50 mm
- Special models on request

The belt section is a ready-to-use conveyor section with built-in drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Accessories

Recommended accessories

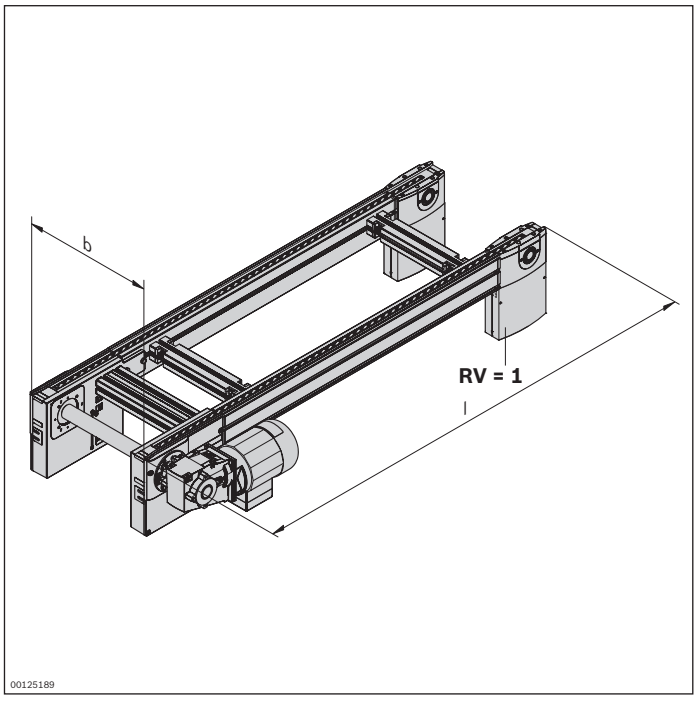
- Connection kits, see page 3-236
- SZ 2/... leg sets, see page 6-2
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



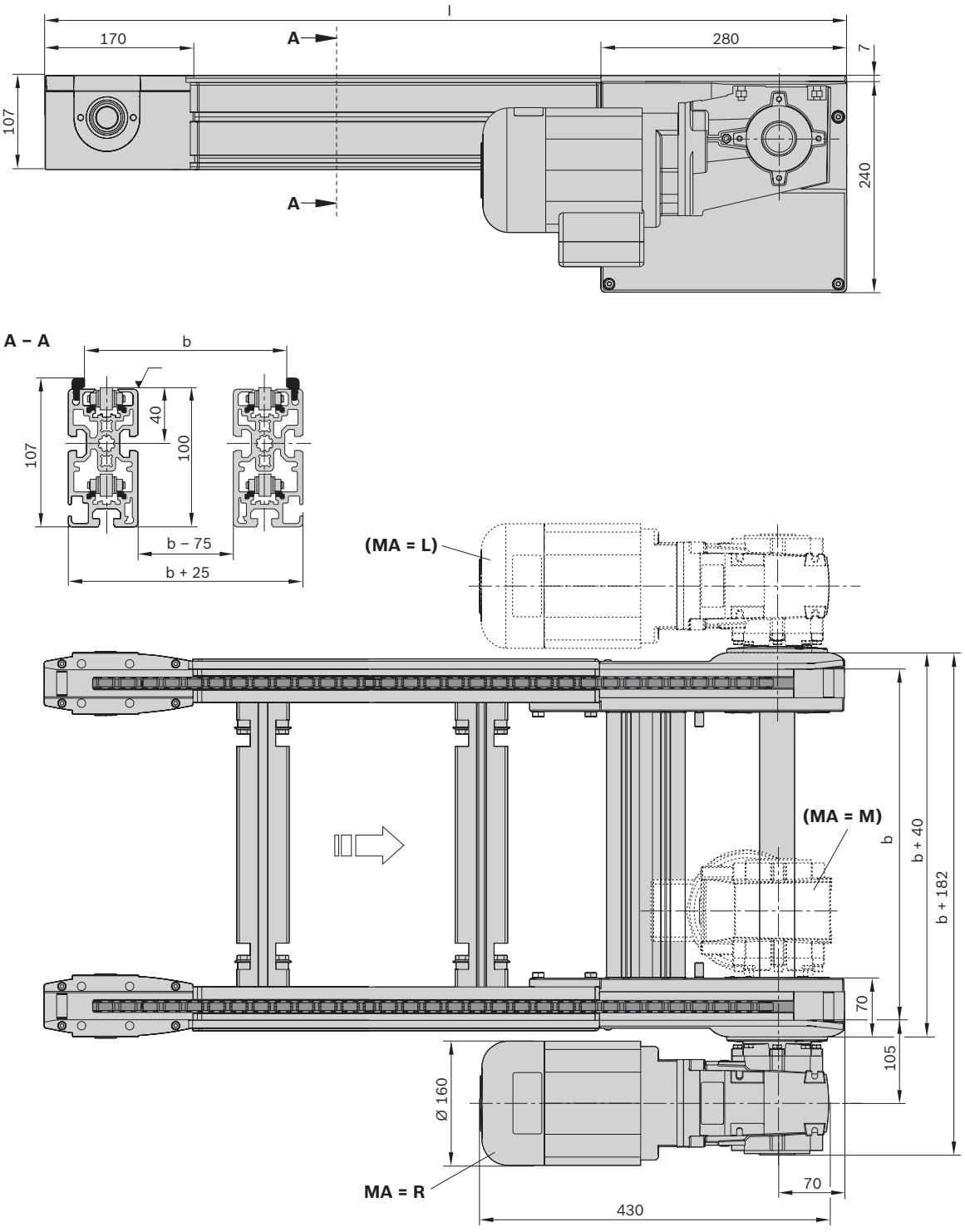
Material number		3842998238
b (mm)	Track width in direction of transport	400 ... 1200
l (mm)	Length	650 ... 6000
v_N (m/min)	Nominal speed	0[1]; 6; 9; 12; 15; 18[2]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M
RV	Reversible operation No reversible operation (RV = 0) Reversible operation (RV = 1)	0, 1[3]
GP	Corrosion-resistant steel glide profile (GP = S) Plastic (GP = K)	0; 1
KT	Chain type Accumulation roller chain with PA accumulation rollers (KT = 1) Accumulation roller chain with steel accumulation rollers (KT = 2) Accumulation roller chain with PA accumulation rollers and small parts protection (KT = 3) Accumulation roller chain with steel accumulation rollers and small parts protection (KT = 4)	1; 2; 3; 4

[1] v_N = 0: without motor or gear
[2] Not possible if f = 60 Hz
[3] RV = 1 possible when l ≤ 2000 mm and section loads < 400 kg; no reversible operation for chains with small parts protection (KT = 3, 4)

Technical data

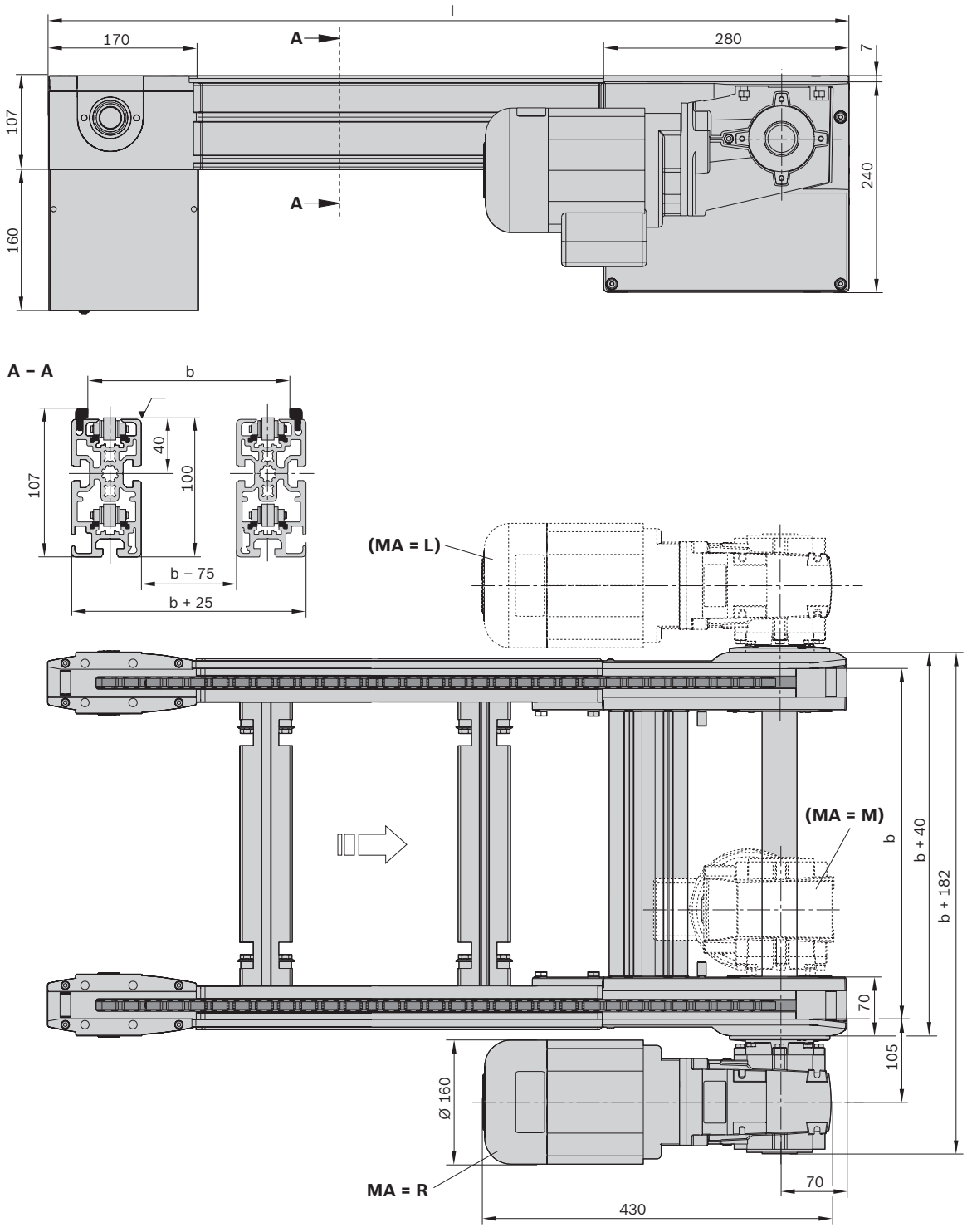
Material number			3842998238
Load			
Max. section load in accumulation operation		kg	1200
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Glide profile Polyamide or steel; corrosion-resistant Chain: Polyamide or steel accumulation rollers Small parts protection: Polyamide
Dimensions			
Length	l	mm	650 ... 6000

BS 2/R-H belt section dimensions



27276

BS 2/R-H belt section dimensions with chain tensioner



BS 2/C+R connection belt



- Conveyor medium: Toothed belt (suitable for use in an EPA)

The head-to-head connection of the drive and return heads results in short, non-driven sections. The connection belt is used to bridge these > 180 mm conveyor trenches by using short l_{WT} < 320 mm workpiece pallets.

Delivery notes

Condition on delivery

- Fully assembled

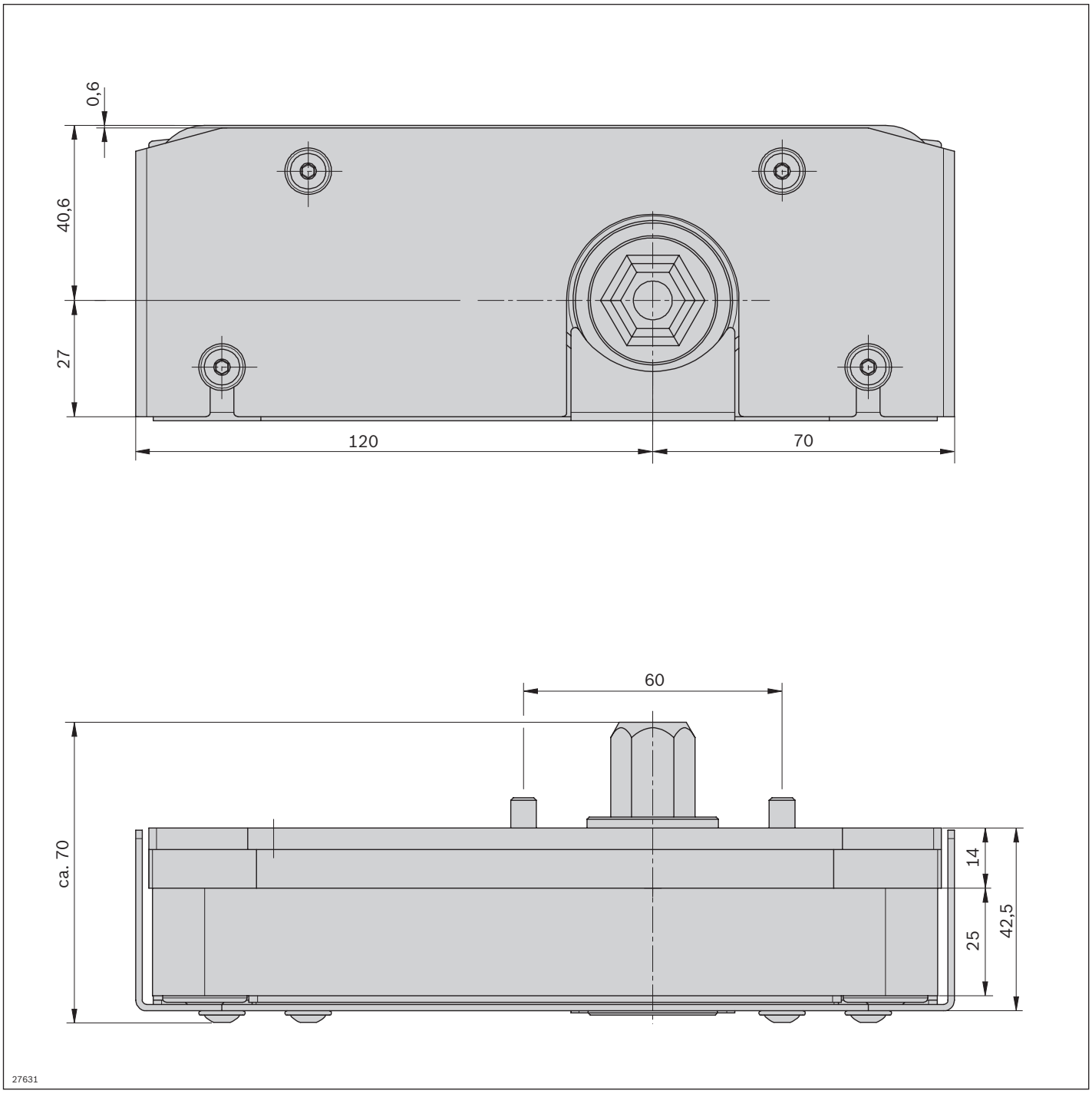
Ordering information

Product designation	Material number
Connection belt, left	3842528480
Connection belt, right	3842539096

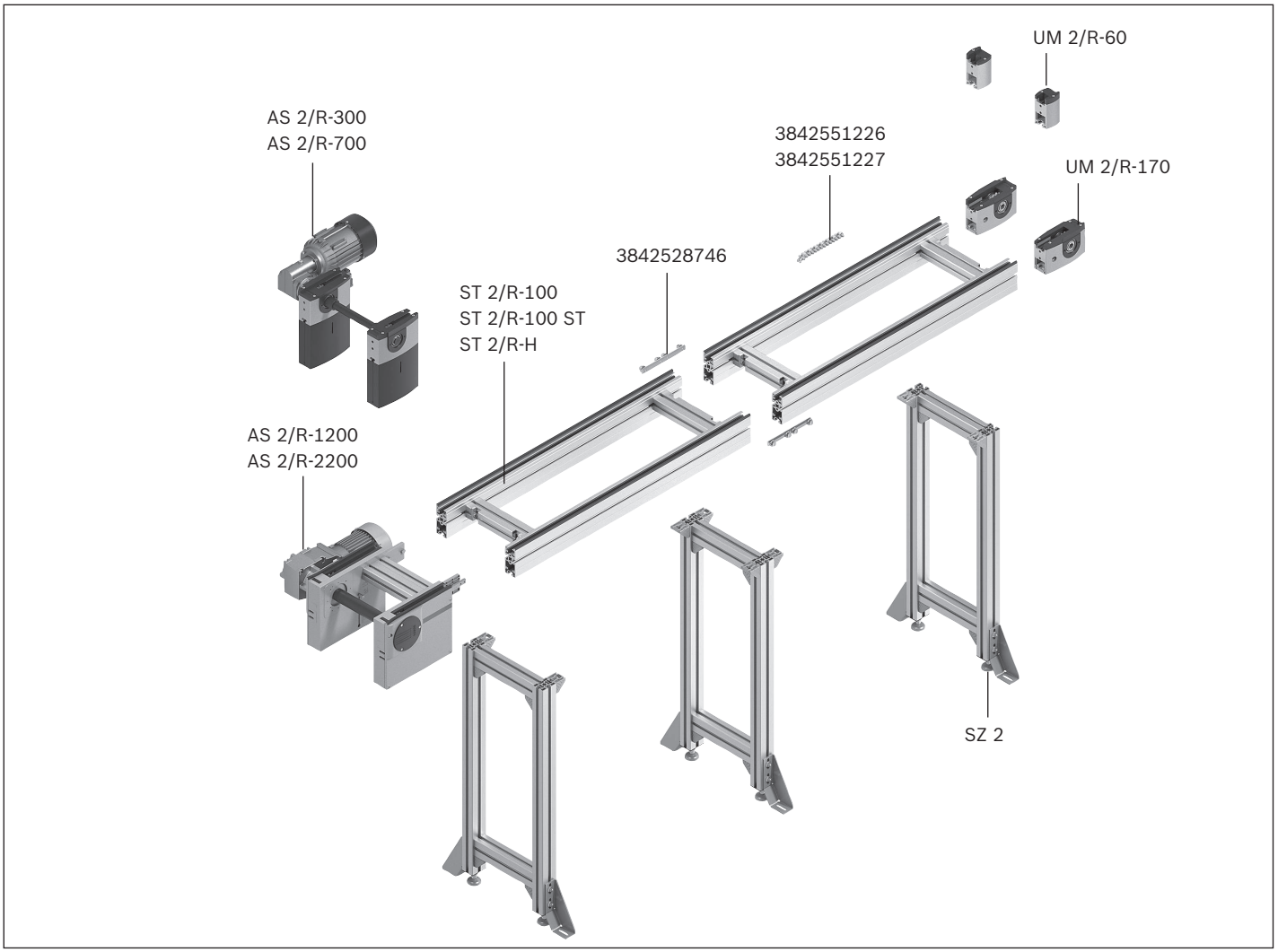
Technical data

Material number	3842528480	3842539096
Features		
ESD	Yes	Yes

Dimensions



Conveyor units
Accumulation roller chain conveyor medium

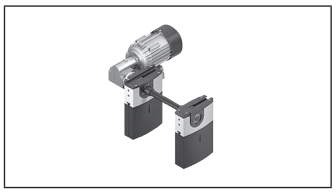


A conveyor unit is a complete unit used for linear conveying of workpiece pallets. It consists of:

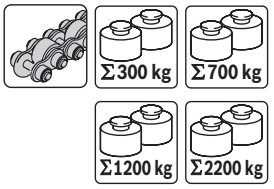
- AS 2/R drive module, see p. 3-136
- UM 2/R return unit, see p. 3-148
- ST 2/R... sections, see p. 3-154
- SZ 2/... leg sets, see p. 6-2

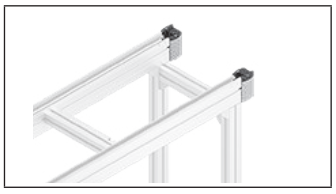
The UM 2/R and AS 2/R may be set up right next to each other, which allows for conveyor unit combinations.

Drive modules for loads up to m_G = 300 kg; 700 kg; 1200 kg, or up to m_G = 2200 kg per conveyor unit.



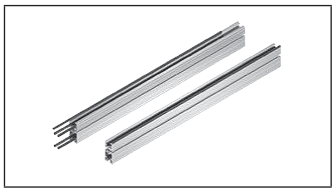
AS 2/R drive module **3-136**





UM 2/R return unit **3-148**





ST 2/R section, components **3-154**





Accumulation roller chain conveyor medium, accessories **3-183**



AS 2/R-300 drive module



- For conveyor unit self-assembly
- For use with UM 2 return units and ST 2 sections
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Reversible operation possible for l ≤ 2000 mm and accumulation roller chains without small parts protection
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R... drive module drives the accumulation roller chain conveyor medium in self-built conveyor section elements with section, return unit and accumulation roller chain.

Accessories

Recommended accessories

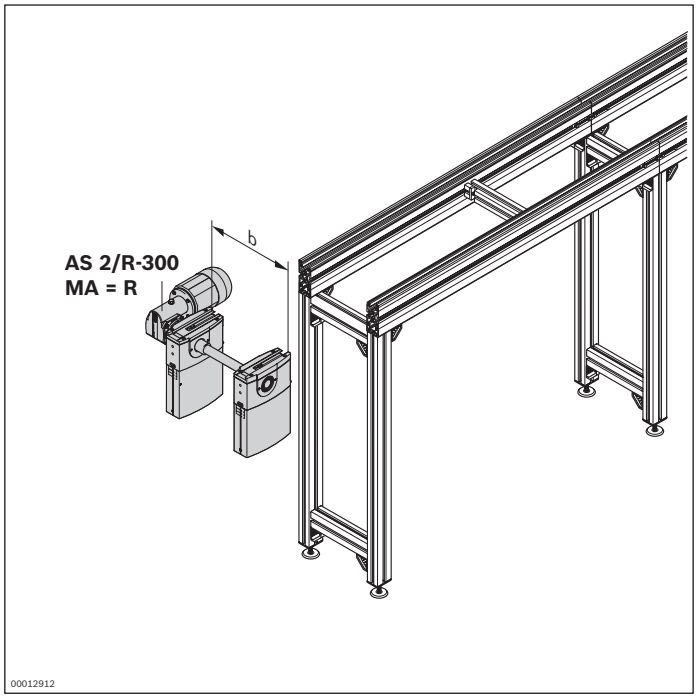
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998052
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[3]
RV	Reversible operation No reversible operation (RV = 0) Reversible operation (RV = 1)	0; 1[4]

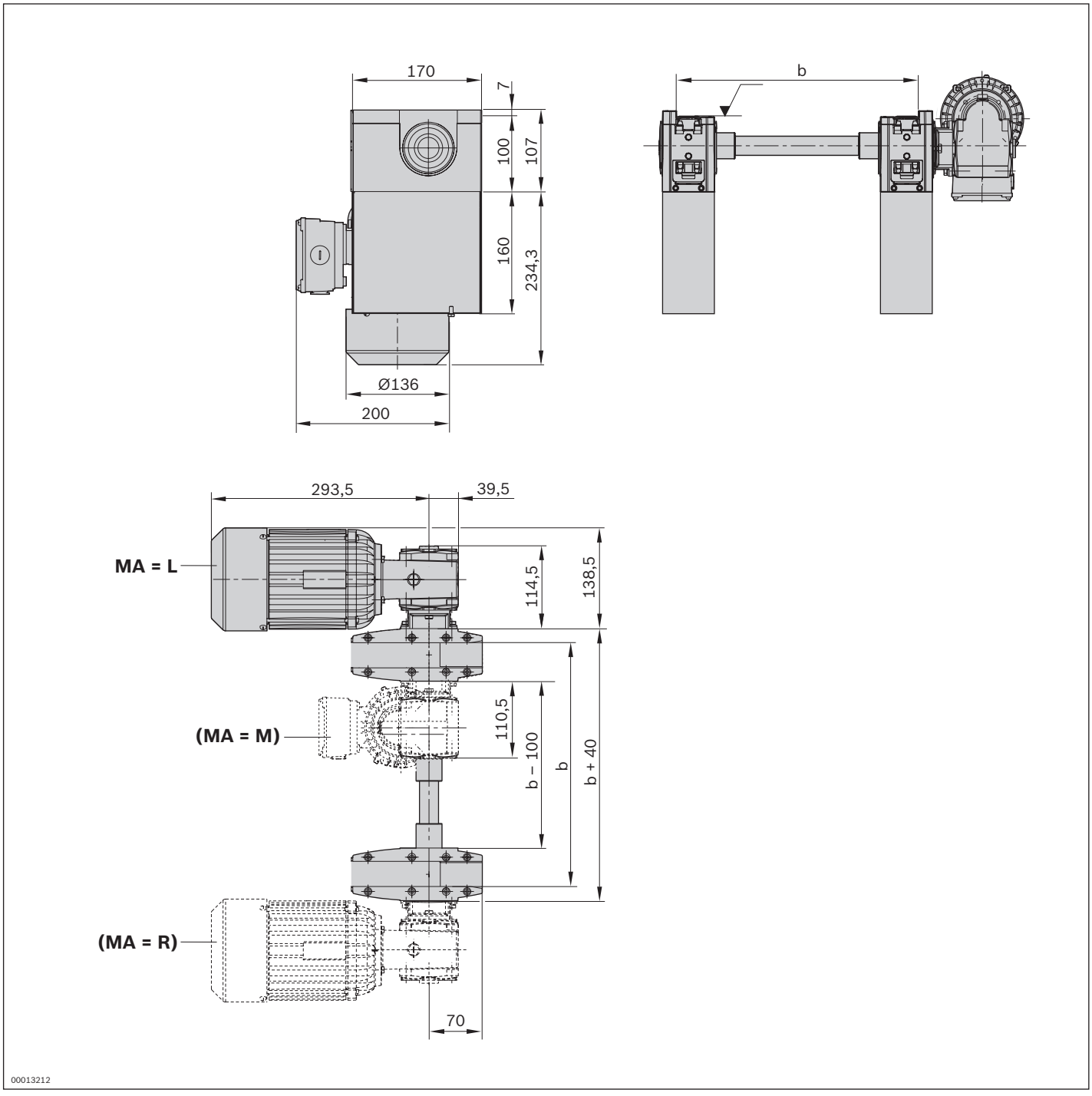
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] MA = M only when b ≥ 240 mm
[4] RV = 1 possible when l ≤ 2000 mm; no reversible operation for chains with small parts protection (KT = 3, 4)

Technical data

Material number			3842998052
Load			
Max. section load in accumulation operation		kg	300
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	475

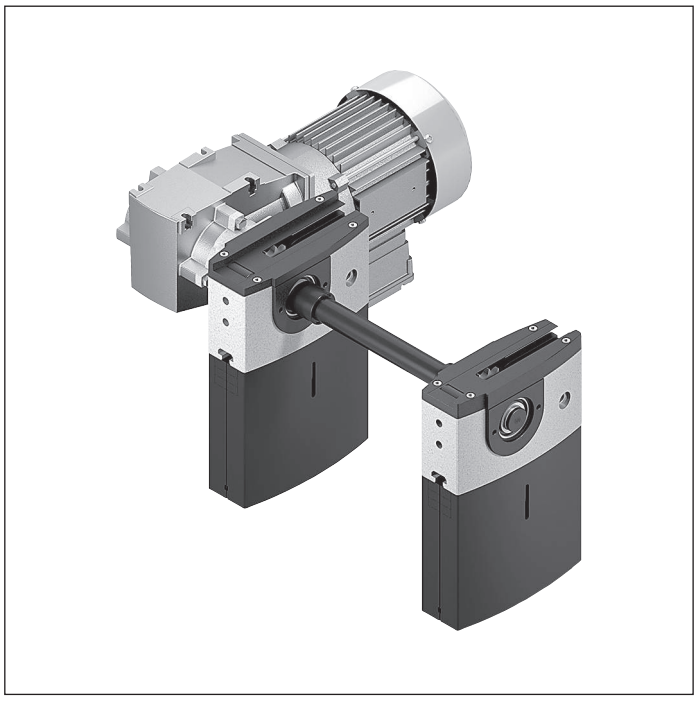
* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions


170
7
100
107
160
234,3
Ø136
200
b
293,5
39,5
MA = L
114,5
138,5
110,5
(MA = M)
b – 100
b
b + 40
(MA = R)
70
00013212

AS 2/R-700 drive module





- For conveyor unit self-assembly
- For use with UM 2 return units and ST 2 sections
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Motor mounting right or left
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R... drive module drives the accumulation roller chain conveyor medium in self-built conveyor section elements with section, return unit and accumulation roller chain.

Accessories

Recommended accessories

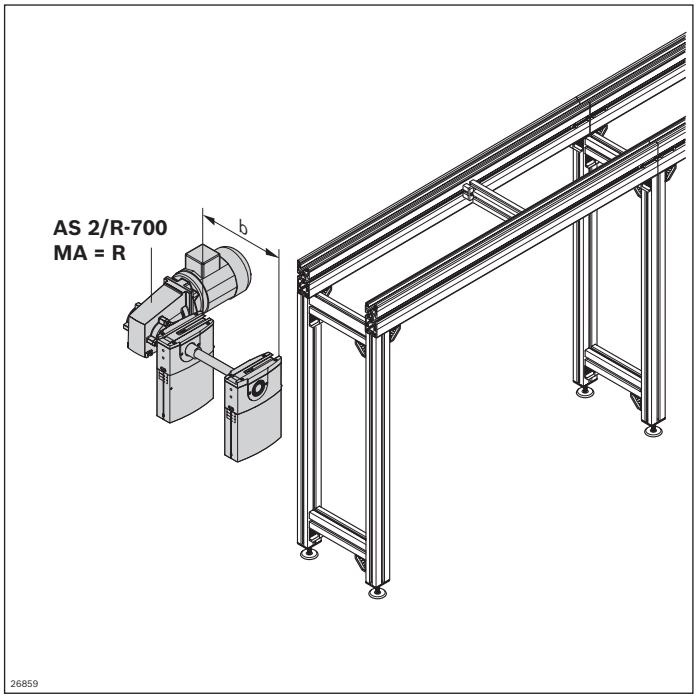
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998072
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L

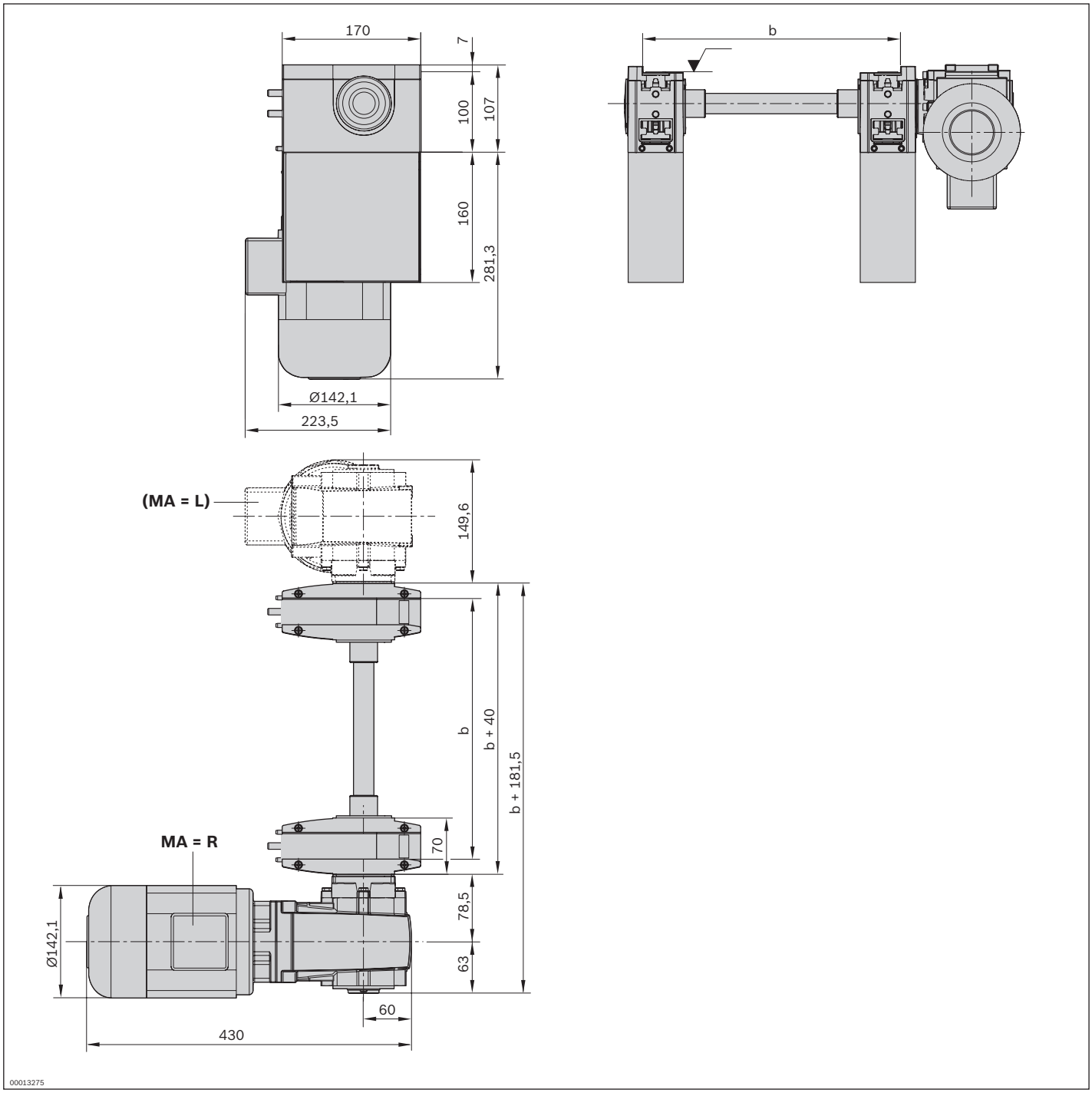
[1] Individual width variants available
[2] v_N = 0: without motor or gear

Technical data

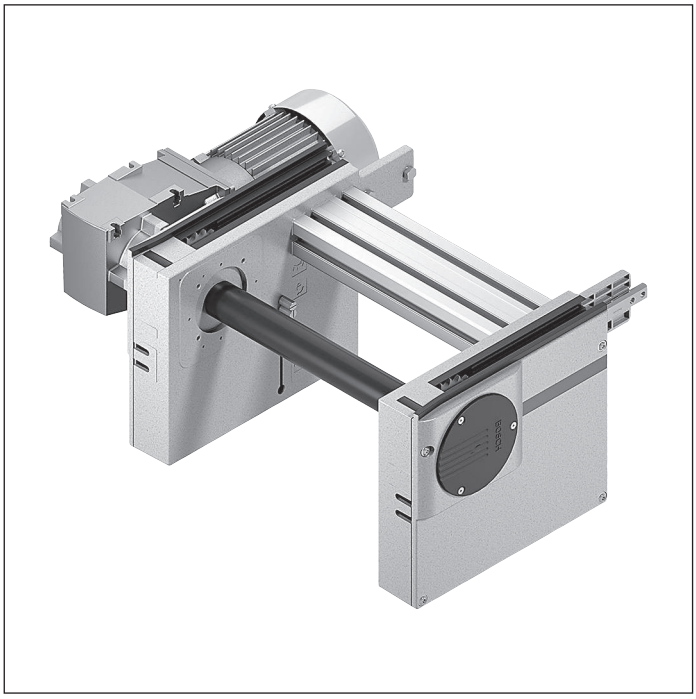
Material number			3842998072
Load			
Max. section load in accumulation operation		kg	700
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	475

* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions


170
7
100
107
160
281,3
Ø142,1
223,5
b
(MA = L)
149,6
b
b + 40
b + 181,5
MA = R
70
78,5
63
Ø142,1
60
430
00013275

AS 2/R-1200 drive module



- For conveyor unit self-assembly
- For use with UM 2 return units and ST 2 sections
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R... drive module drives the accumulation roller chain conveyor medium in self-built conveyor section elements with section, return unit and accumulation roller chain.

Accessories

Recommended accessories

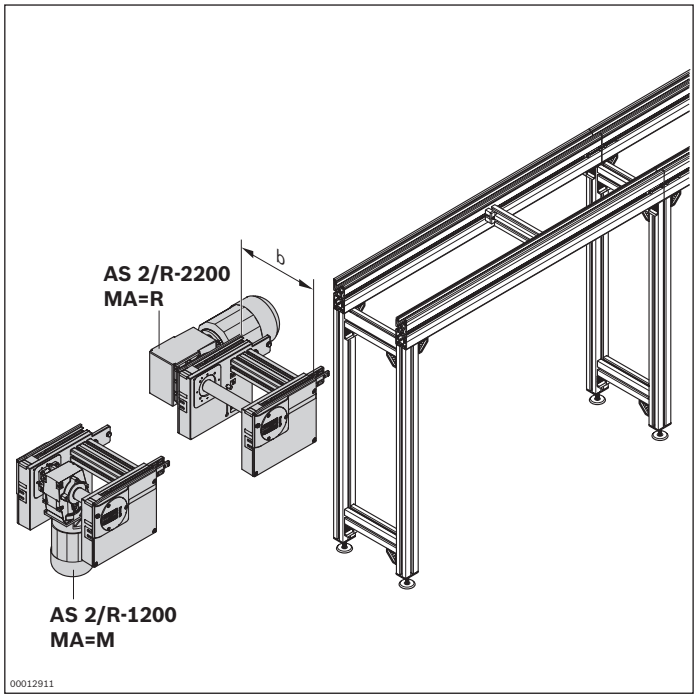
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998040
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4]

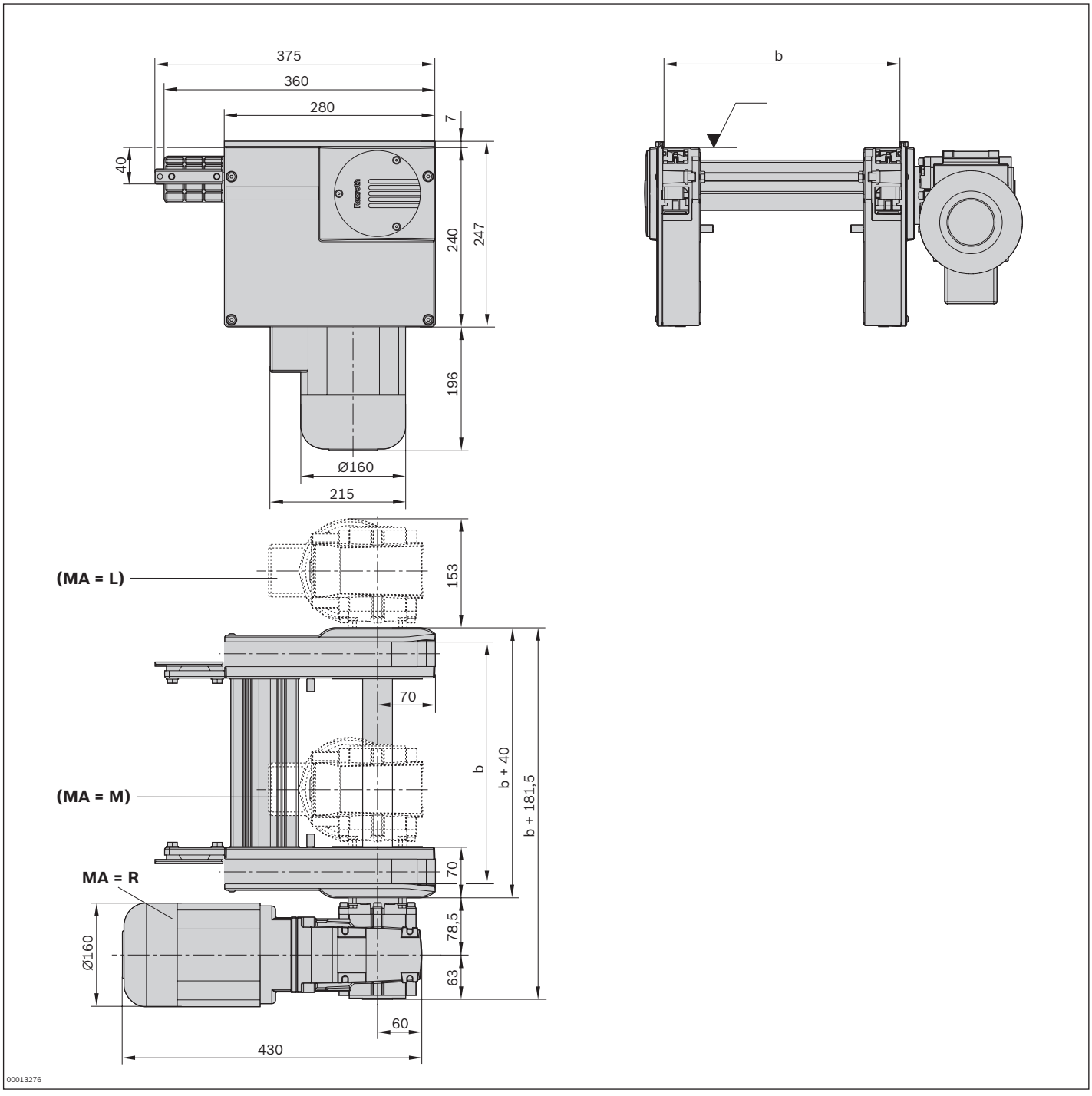
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Not possible if f = 60 Hz
[4] MA = M when b ≥ 240 mm

Technical data

Material number			3842998040
Load			
Max. section load in accumulation operation		kg	1200
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	625

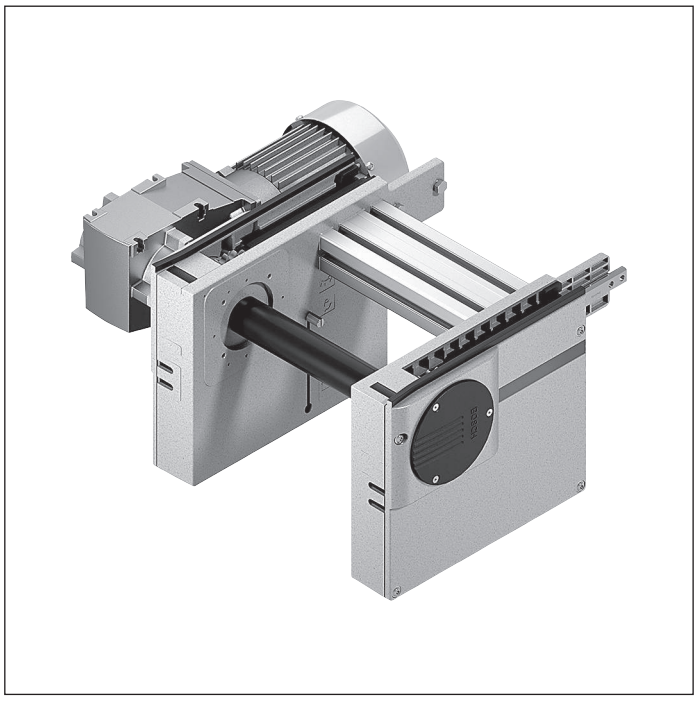
* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions


375
360
280
7
40
240
247
196
Ø160
215
b
(MA = L)
153
70
b
b + 40
b + 181,5
(MA = M)
MA = R
70
78,5
63
Ø160
60
430
00013276

AS 2/R-2200 drive module





- For conveyor unit self-assembly
- For use with UM 2 return units and ST 2 sections
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- Right, left or central motor mounting (central from track width of 240 mm)
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R... drive module drives the accumulation roller chain conveyor medium in self-built conveyor section elements with section, return unit and accumulation roller chain.

Accessories

Recommended accessories

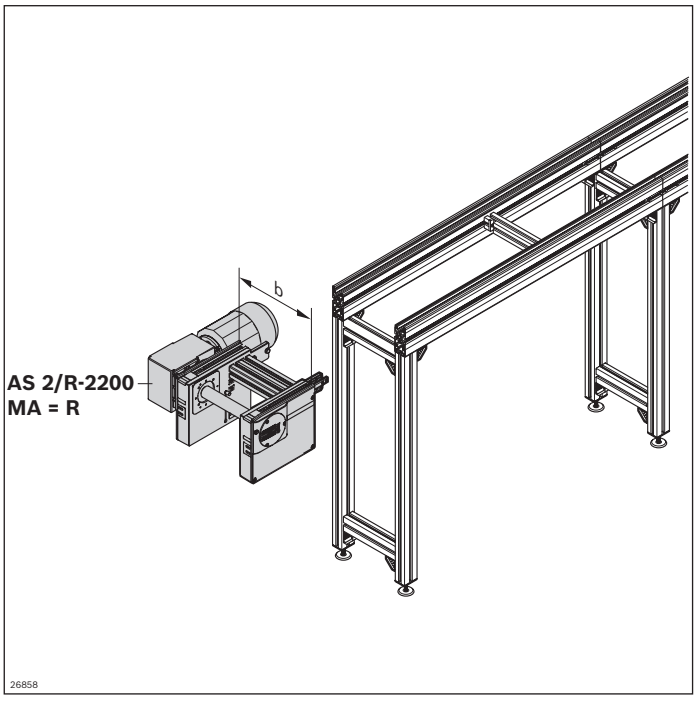
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842998041**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
		160 ... 1200[1]
v_N (m/min)	Nominal speed	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[4]

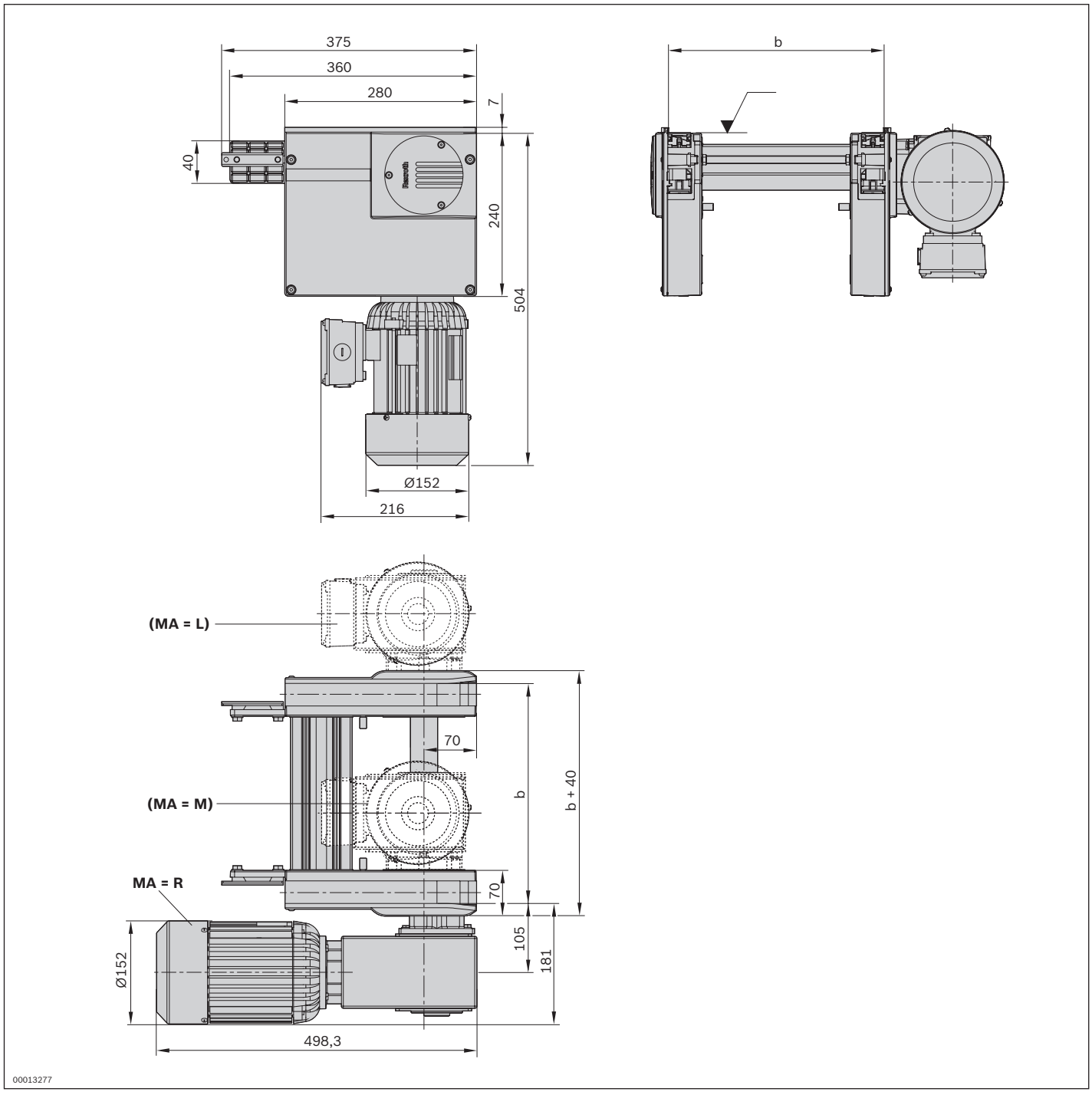
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Reduced load to 1800 kg
[4] MA = M only when b ≥ 240 mm

Technical data

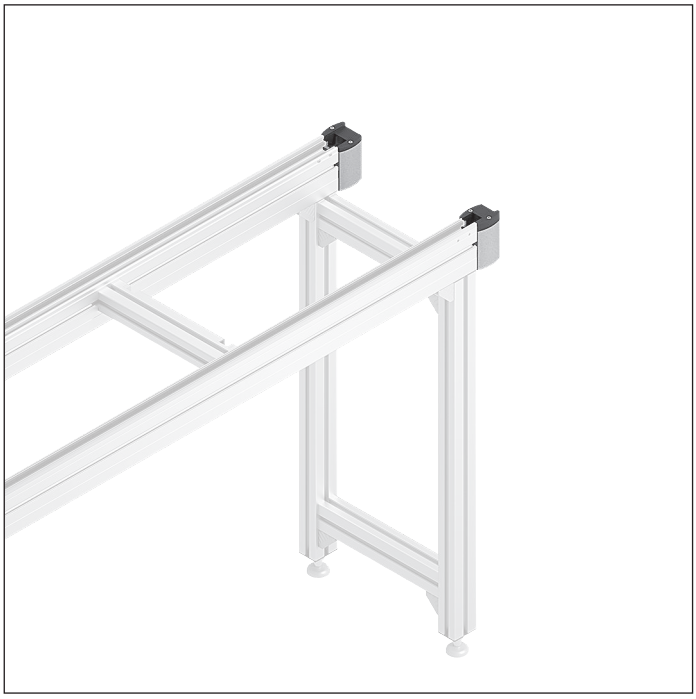
Material number			**3842998041**
Load			
Max. section load in accumulation operation		kg	2200
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	625

* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions


375
360
280
7
40
240
504
Ø152
216
b
(MA = L)
70
(MA = M)
b
b + 40
MA = R
70
105
181
Ø152
498,3
00013277

UM 2/R-60 return unit



- For conveyor unit self-assembly
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- For use in conjunction with all AS 2/R-... and ST 2/... sections
- Version with sliding piece for return
  Recommended for sections up to l = 6000 mm

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Delivery notes

Scope of delivery

- One pair of return heads
- Incl. all fastening material to mount on an ST 2/R conveyor section

Condition on delivery

- Fully assembled

Ordering information

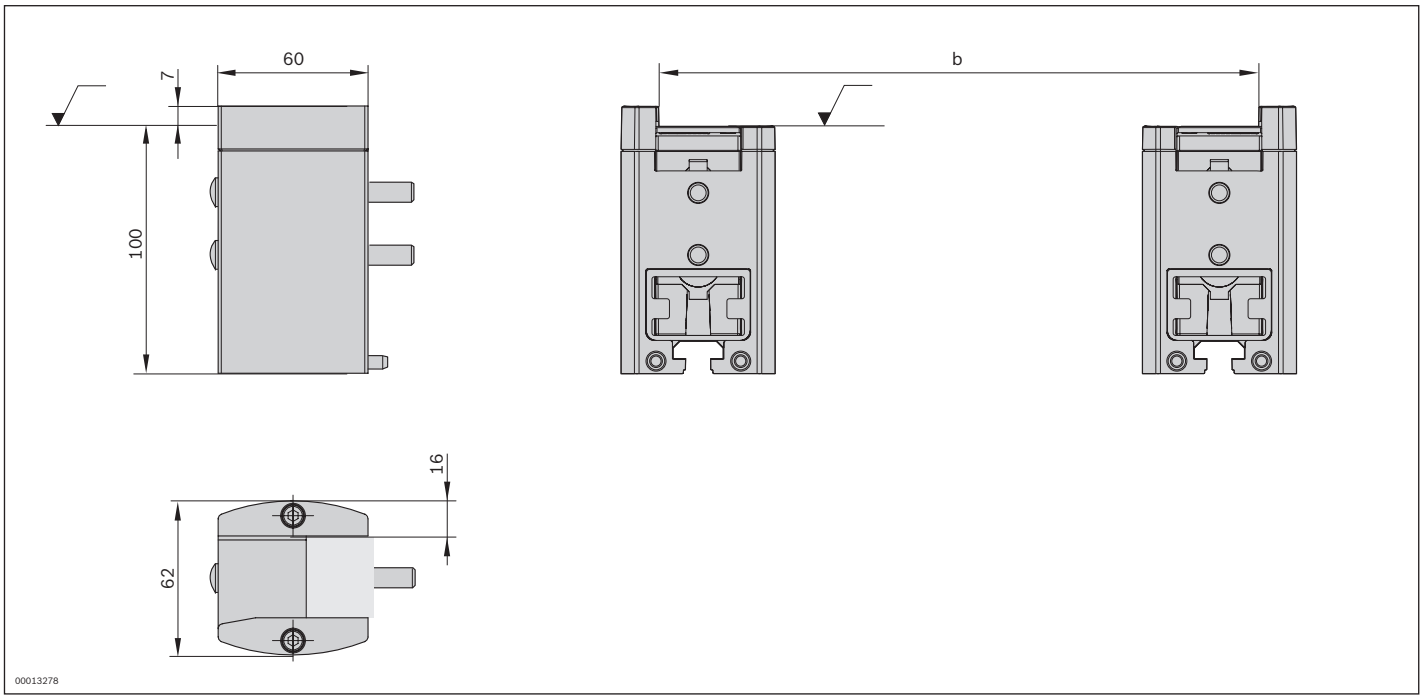
Product designation	Material number
UM 2/R-60 return unit	3842528803

Technical data

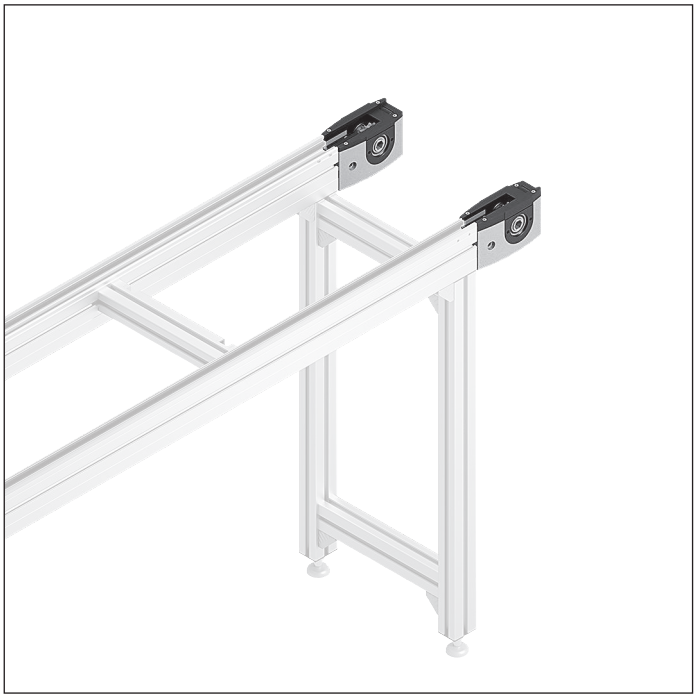
Material number			3842528803
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	150

* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions



UM 2/R-170 return unit



- For conveyor unit self-assembly
- Conveyor medium: Accumulation roller chain (suitable for use in an EPA)
- For use in conjunction with all AS 2/R-... and ST 2/... sections
- Version with pinion for return unit recommended for sections of l ≥ 6000 mm or for sections of any length for reversible operation

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Delivery notes

Scope of delivery

- One pair of return heads
- Incl. all fastening material to mount on an ST 2/R conveyor section

Condition on delivery

- Fully assembled

Ordering information

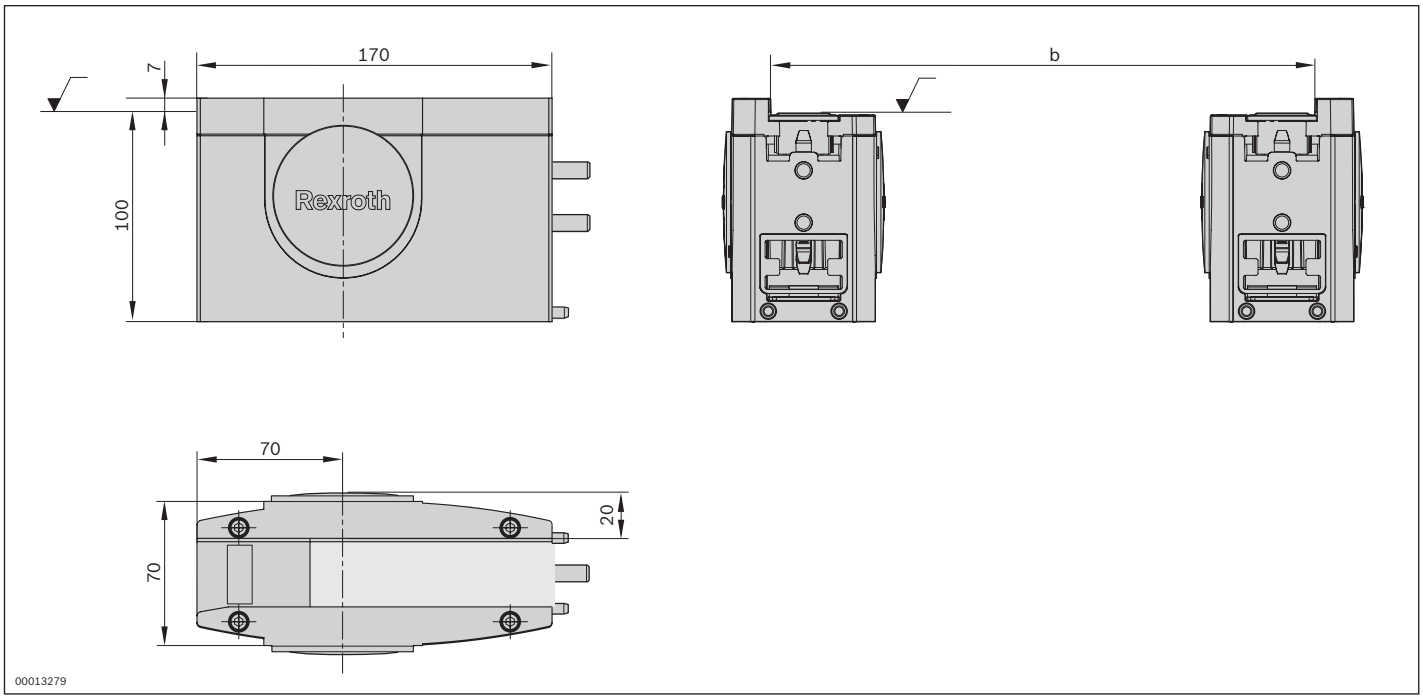
Product designation	Material number
UM 2/R-170 return unit	3842528807

Technical data

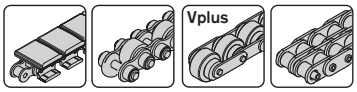
Material number			3842528807
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	310

* Formula for calculating the conveyor medium, see p. 3-184/3-186

Dimensions



LU 2 automatic lubrication unit





- Modular design consisting of LU 2 automatic lubrication unit, LC 2 oil container and adapter set
- LU 2 automatic lubrication unit with drive, compressed air connection to drive module and fastening material
- LC 2 lubricant container with Structovis GHD from Klüber; contains: 0.25 l (must be ordered separately)
- Specific adapter sets with compatible lubrication pins for different drive modules
- Adjustment of lubrication amount to be distributed per metering process on the LU 2 automatic lubrication unit. The metering process is actuated by an external PLC.
- Designed for lubricating one belt section or conveyor unit respectively
- Use of the LU 2 automatic lubrication unit is highly recommended for flat top chains

Increasing the system service life through continuous and maintenance-free lubrication of flat top chains, accumulation roller chains, and duplex chains during operation.
For preventing dry running.

Suitable for use with all belt sections and conveyor units; lubrication unit on the drive module.
Reduction of lubricant consumption thanks to exact metering and pinpoint application to the chain links.

Accessories

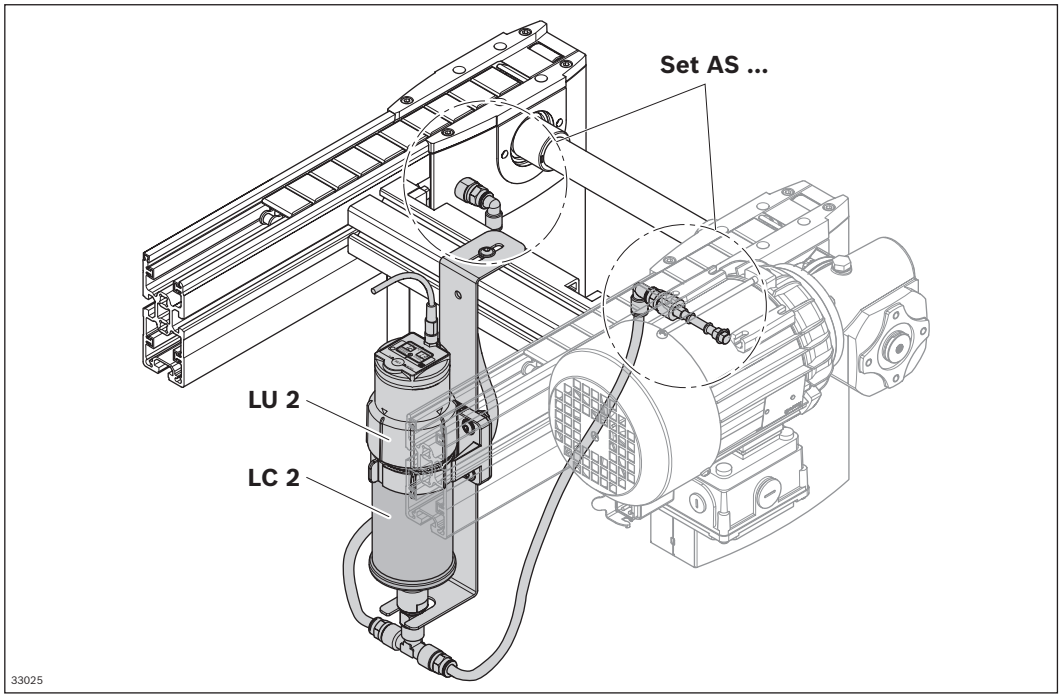
Required accessories

- LC 2 lubricant container, see p. 3-153
- Adapter set, see p. 3-153

Delivery notes

Condition on delivery

- Not assembled, fastening material enclosed
- LC 2 lubricant container and adapter set as ordered



Ordering information

Product designation	Packaging unit	Material number
LU 2 automatic lubrication unit	1	3842543482
LC 2 lubricant container	4	3842543469

Product designation		Packaging unit	Material number
Adapter set for	AS 2/C-100 AS 2/C-250 BS 2/C	1	3842543483
Adapter set for	AS 2/C-400 (assembly on UM2/C-170 when b = 160 mm) AS 2/C-700 (assembly on UM2/C-170 when b = 160 mm) BS 2/C-H (assembly on UM2/C-170, UM 2/R-170 when b = 160 mm)	1	3842543484
Adapter set for	AS 2/R-300 AS 2/R-700 BS 2/R BS 2/R-H with RV = 1*	1	3842543485
Adapter set for	AS 2/R-1200 (assembly on UM2/R-170 when b = 160 mm) AS 2/R-2200 (assembly on UM2/R-170 when b = 160 mm) BS 2/R-H with RV = 0 (assembly on UM2/C-170, UM 2/R-170 when b = 160 mm)	1	3842543486
Adapter set for	AS 2/R-V-1200 (assembly on UM2/R-170 when b = 160 mm) AS 2/R-V-2200 (assembly on UM2/R-170 when b = 160 mm) BS 2/R-V-1200 (assembly on UM2/R-170 when b = 160 mm)	1	3842543487
Adapter set for	HQ 2/U-H	1	3842548578

* Assembly on UM return unit

Technical data

Material number			3842543482
Features			
ESD			Yes
Max. operating temperature	T	°C	+40

Section, section profiles



Sections can be individually configured for special requirements by selecting various section, glide, and guide profiles.

Depending on the load spectrum of the conveyor medium, stainless steel or plastic glide profiles can be inserted in the section profile. Use of steel glide profiles increases resistance to wear and temperature. This opens up new areas of application for the TS 2*plus*.

The proven SP 2/R-100 profiles are primarily suitable for medium to high loads in simple system layouts.

Especially suited for high strains and loads, the new, sturdy SP 2/R-H section profiles have been developed for accumulator roller chains. In addition to a more robust profile cross section and improvements to details (integrated cable duct), the use of stainless steel in the guide profile enhances the system. An adapter plate not only enables visually attractive mounting of the SP 2/R-H section profiles with drive modules in the TS 2*plus*, it also securely keeps the glide profiles (sliding guides) from shifting.

ST 2/R-100 section



- For conveyor unit self-assembly
- For use in conjunction with AS 2/R drive modules and UM 2/R return units
- GP 2 plastic glide profile
- Pre-assembled unit for quick setup

The section is used for the construction of conveyor units in conjunction with the AS 2/R drive modules and the UM 2/R return units.

Accessories

Recommended accessories

- SZ 2/... leg sets, see page 6-2
- Cross connector, see p. 3-216
- Profile connector, see p. 3-215

Delivery notes

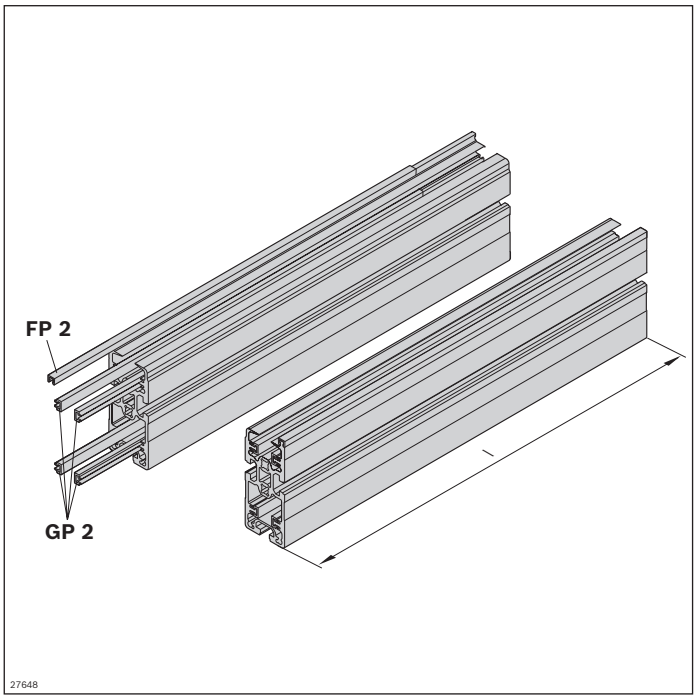
Scope of delivery

- 2x SP 2/R section profiles with assembled FP 2 and GP 2 guide profiles and glide profiles

Condition on delivery

- Fully assembled

Ordering information

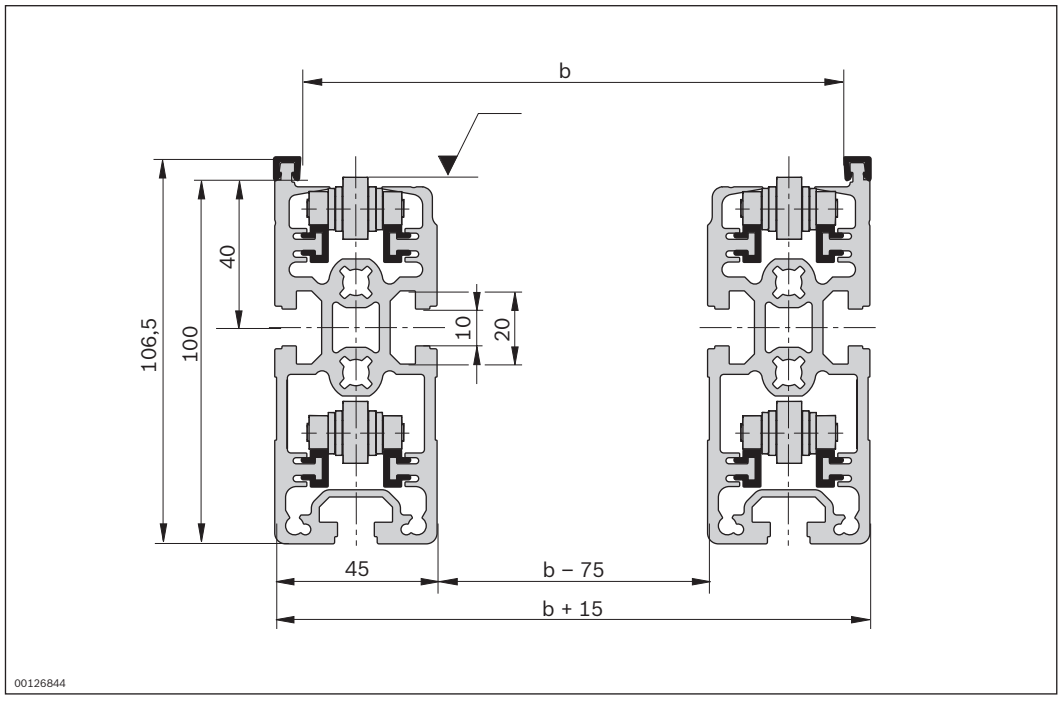


Material number		**3842994889**
l (mm)	Length	60 ... 6000

Technical data

Material number			**3842994889**
Features			
Material specification			Glide profile: Polyamide (PA) Guide profile: Polyamide Section profile: Aluminum, natural; anodized
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	60 ... 6000

Dimensions



ST 2/R-100 ST section



- For conveyor unit self-assembly for higher section loads
- For use in conjunction with AS 2/R drive modules and UM 2/R return units

The section is used for the construction of conveyor units in conjunction with the AS 2/R drive modules and the UM 2/R return units.

Accessories

Recommended accessories

- SZ 2/... leg sets, see page 6-2
- Cross connector, see p. 3-216
- Profile connector, see p. 3-215

Delivery notes

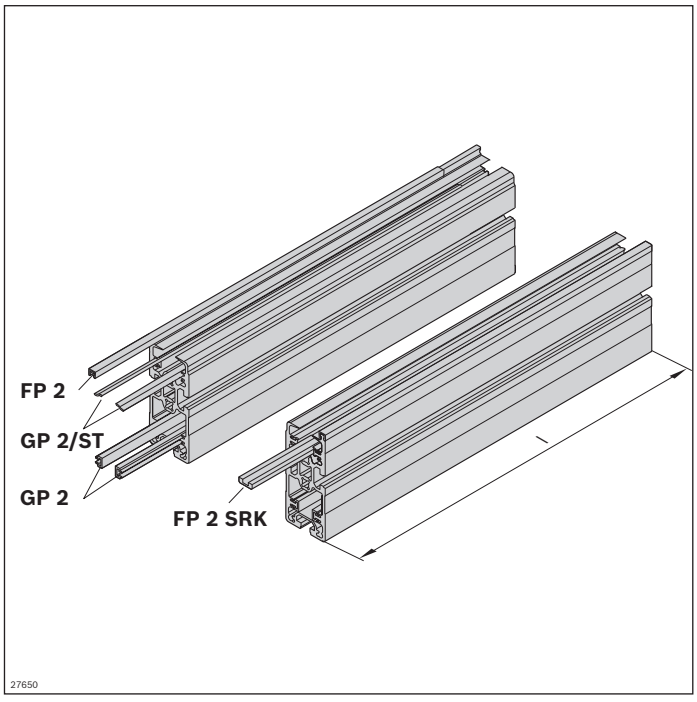
Scope of delivery

- 2x SP 2/R section profiles with assembled FP 2, FP 2 SRK and GP 2/ST guide profiles and glide profiles

Condition on delivery

- Fully assembled

Ordering information

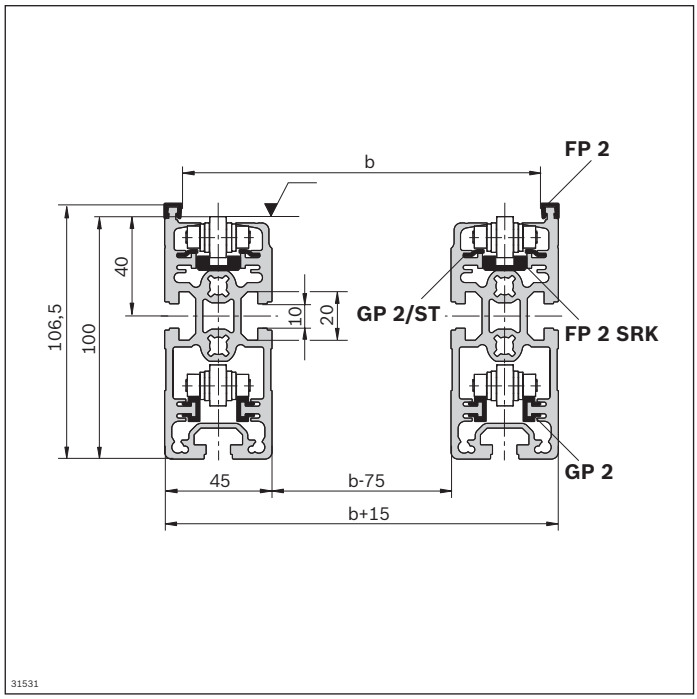


Material number		**3842994907**
l (mm)	Length	60 ... 6000

Technical data

Material number			**3842994907**
Features			
Material specification			GP 2/ST glide profile Steel GP 2 glide profile: PA 12 Guide profile FP 2: PA 12 Accumulation roller chain FP 2 chain guide profile: PE Section profile: Aluminum, natural; anodized
Max. operating temperature	T	°C	+40
Dimensions			
Length	l	mm	60 ... 6000

Dimensions



ST 2/R-H section



- For conveyor unit self-assembly
- For use in conjunction with AS 2/R drive modules and UM 2/R return units
- Section profile in especially sturdy design for section loads of up to 30% higher
- Optional steel or plastic GP 2 glide profiles

The section is used for the construction of heavy-duty conveyor units in conjunction with the AS 2/R drive modules and the UM 2/R return units.

Accessories

Required accessories

- ST 2/R-H adapter plate kit, see p. 3-171 If GP = 0, then adapter plates are to be fitted between each section joint

Recommended accessories

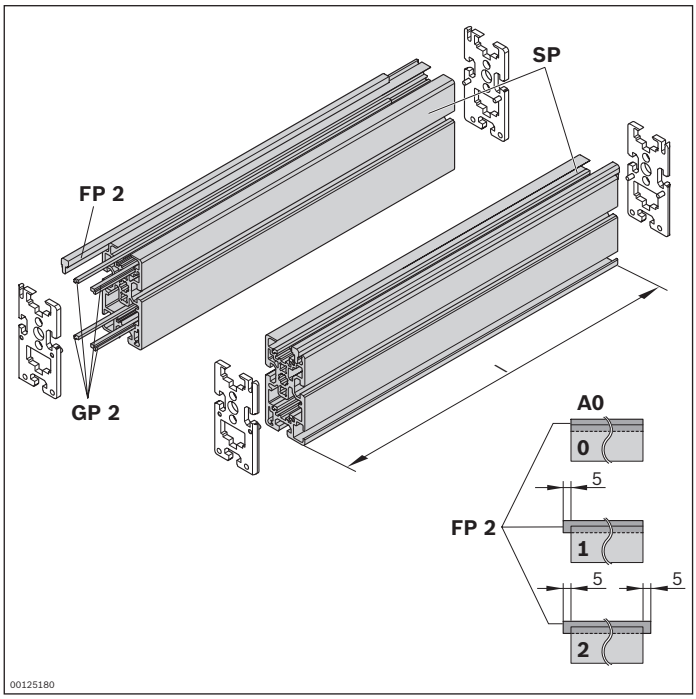
- SZ 2/...-H leg sets, see p. 6-2
- Cross connector, see p. 3-216
- Profile connector, see p. 3-215
- Cover rail for cable duct, see p. 3-213

Delivery notes

Scope of delivery

- 2x SP 2/R-H section profiles with assembled FP 2 and GP 2 guide profiles and glide profiles

Ordering information

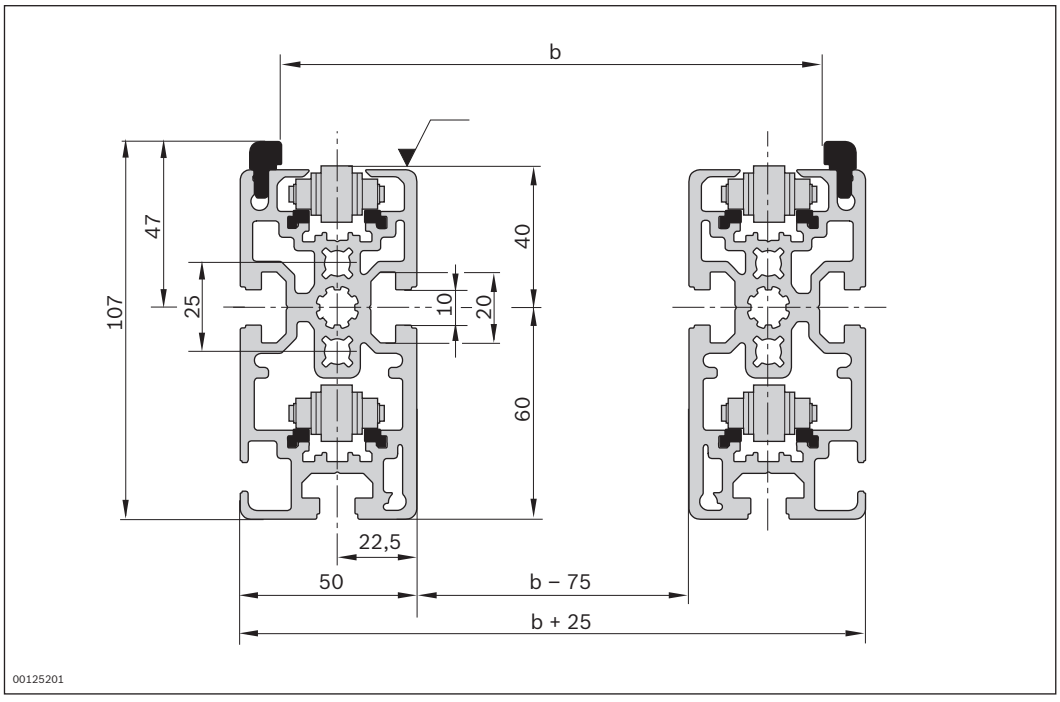


Material number		3842994972
l (mm)	Length	200 ... 6000
AO	Installation location Plastic glide profile AO = 2 Steel glide profile AO = 0; 1; 2	0; 1; 2
GP	Glide profile Corrosion-resistant steel (GP = 1) Plastic (GP = 0)	0; 1

Technical data

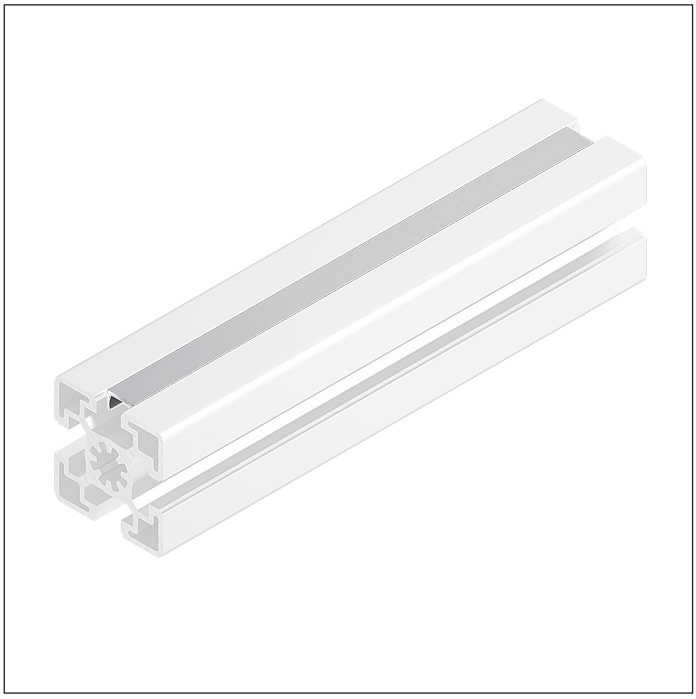
Material number			3842994972
Features			
Material specification			Section profile: Aluminum, natural; anodized Guide profile: Steel; corrosion-resistant Glide profile: Plastic or steel; corrosion-resistant
Dimensions			
Length	l	mm	200 ... 6000

Dimensions



Cover rail for cable duct

10



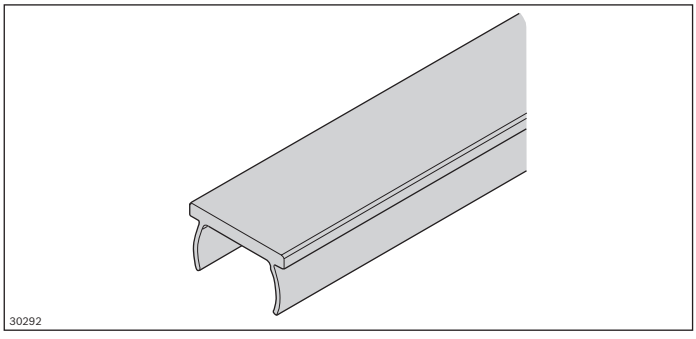
- To prevent dirt from entering the profile slot
- For fixing cables in position
- Flush with profile

Ordering information

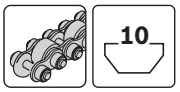
Product designation	Packaging unit	Material number
Cover rail for cable duct	10	3842523258

Technical data

Material number			**3842523258**
Features			
Material specification			Aluminum, natural; anodized
Dimensions			
Length	l	mm	2000



SP 2/R-100 section profile





- For conveyor unit self-assembly
- For use with all AS 2/R drive modules, UM 2/R return units, FP 2 guide profiles and GP 2 glide profiles
- Longitudinal grooves for easy mounting

The section profile is used to set up conveyor units with the accumulation roller chain conveyor medium.

Accessories

Required accessories

- FP 2 guide profile, see p. 3-167
- GP 2 glide profile, see p. 3-167

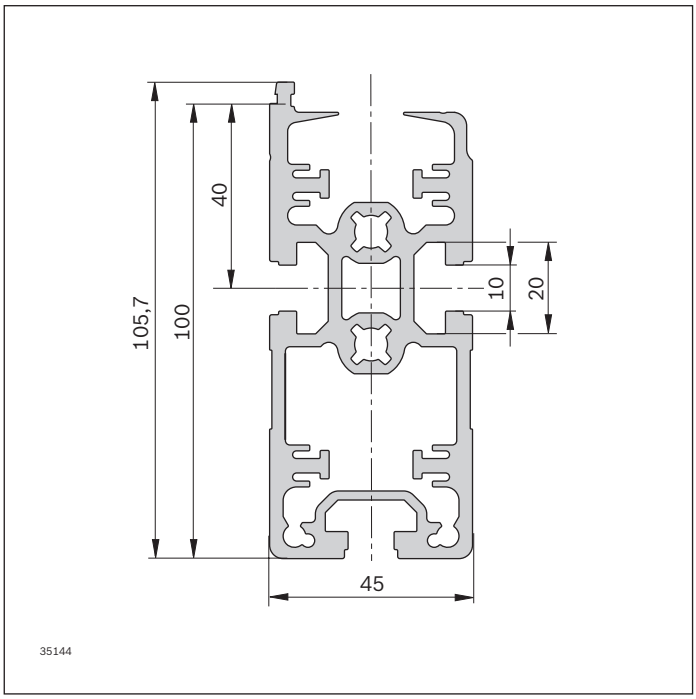
Ordering information

Product designation	l (mm)	Delivery unit	Material number
SP 2/R-100 16 x 6070 mm section profile	6070	16	3842529931

Technical data

Material number			**3842529931**
Load			
Moment of inertia	I_x	cm^4	144.0
	I_y	cm^4	40.1
Moment of resistance	W_x	cm^3	27.7
	W_y	cm^3	17.8
Features			
Material specification			Aluminum, natural; anodized
Mass	m	kg/m	4.4
Dimensions			
Length	l	mm	6070
Profile surface	A	cm^2	16.4

Dimensions



FP 2 guide profile/GP 2 glide profile set



- For conveyor unit self-assembly
- For use with ST 2/R section profiles, AS 2/R drive modules and UM 2 /R return units
- FP 2 guide profile for laterally guiding the workpiece pallet; slid onto SP 2/R-100 section profile
- GP 2 glide profile for guiding the top flat chain; slid onto SP2/R-100 section profile

The guide profile is used for lateral guidance of the workpiece pallet. The glide profile is used to guide the accumulation roller chain. Both profiles are pushed onto the section profile.

Delivery notes

Scope of delivery

- 16x FP 2 guide profile (L = 6000 mm)
- 64x GP 2 glide profiles (L = 6000 mm)

Ordering information

Product designation	l (mm)	Material number
FP 2 guide profile/GP 2 glide profile set	6000	3842529933

Technical data

Material number			**3842529933**
Features			
ESD			Yes
Material specification			Guide profile: Plastic; PA (suitable for use in an EPA) Glide profile: Plastic; PA (suitable for use in an EPA)
Max. operating temperature	T	°C	+40
Dimensions			
FP 2 length	l	mm	6000
GP 2 length	l	mm	6000

Accumulation roller chain FP guide profile/GP 2/ST glide profile set



- For conveyor unit self-assembly
- Used in conjunction with ST 2/R section profiles, AS 2/R drive modules and UM 2 /R return units
- GP 2/ST glide profile for supporting the accumulation roller chain; enables higher permissible loads in conjunction with an accumulation roller chain with steel rollers
- Accumulation roller chain guide profile for lateral guiding of the accumulation roller chain in conjunction with GP 2/ST glide profile

Accessories

Required accessories

- FP 2 guide profile, see p. 3-167
- GP 2 glide profile, see p. 3-167

Delivery notes

Scope of delivery

- 24x accumulation roller chain FP guide profile (l = 2000 mm)
- 32x GP 2/ST glide profile (l = 3000 mm)

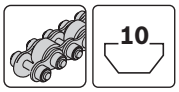
Ordering information

Product designation	l (mm)	Material number
Accumulation roller chain FP guide profile/GP 2/ST glide profile set	2000 3000	3842532676

Technical data

Material number			3842532676
Features			
ESD			Yes
Material specification			Accumulation roller chain guide profile PE Glide profile: Steel; corrosion-resistant
Dimensions			
Accumulation roller chain FP guide profile length	l	mm	2000
GP 2/ST length	l	mm	3000

SP 2/R-H section profile





- For conveyor unit self-assembly for higher section loads in the 100 mm construction height
- For use with all AS 2/R drive modules, UM 2/R return units, FP 2/H guide profiles, GP 2/H glide profiles and SP 2/R section profiles
- Longitudinal grooves for easy mounting
- Extruded aluminum profile with an especially sturdy design
- Integrated cable duct at the profile base

The section profile is used for constructing conveyor units with 100 mm construction height and with the accumulation roller chain and guide profile conveyor media.

Accessories

Required accessories

- Cover rail for cable duct, see p. 3-164
- FP 2/H-St guide profile, see p. 3-173
- GP 2/H-St and GP 2/H-Kst glide profiles, see p. 3-174/3-175
- ST 2/R-H adapter plate kit, see p. 3-171

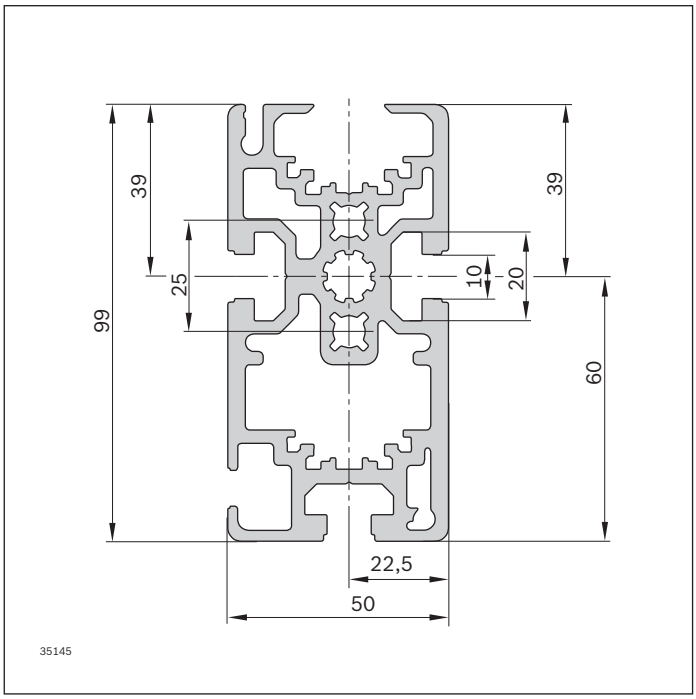
Ordering information

Product designation	l (mm)	Delivery unit	Material number
SP 2/R-H 12 x 6070 mm section profile	6070	12	3842536792

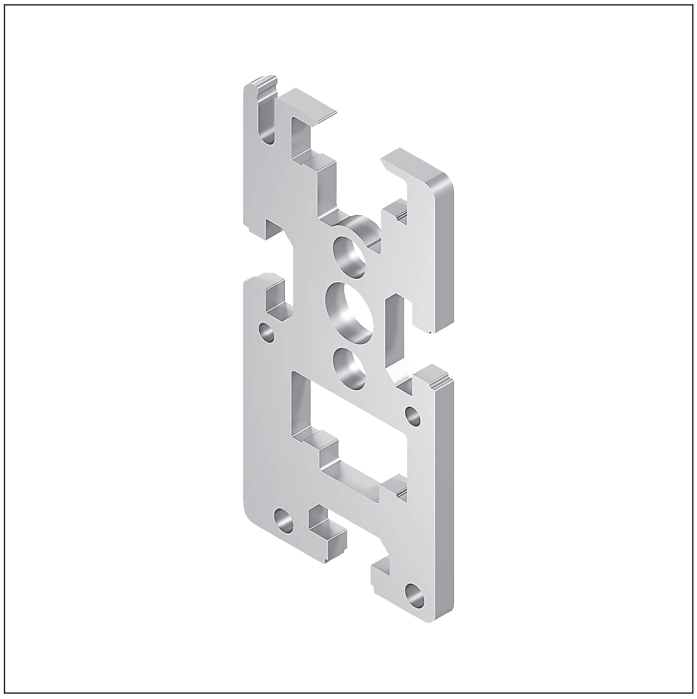
Technical data

Material number			**3842536792**
Load			
Moment of inertia	I_x	cm^4	155.6
	I_y	cm^4	51.3
Moment of resistance	W_x	cm^3	31.6
	W_y	cm^3	19.8
Features			
Material specification			Aluminum; anodized
Mass	m	kg/m	5.2
Dimensions			
Length	l	mm	6070
Profile surface	A	cm^2	19.0

Dimensions



ST 2/R-H adapter plate kit



- Front end plate
- For connecting SP 2/R-H section profiles and AS 2/R drive modules;
  for connecting SP 2/R-H profiles and UM 2/R return units;
  and between section profiles if GP 2 plastic glide profiles are used

The adapter plates are used as front covers and for connecting section profiles and drive modules, or between section profiles and return units.

The adapter plates are also suitable for use between section profiles where GP 2 plastic glide profiles are used.

Delivery notes

Scope of delivery

- 2x left adapter plate
- 2x right adapter plate

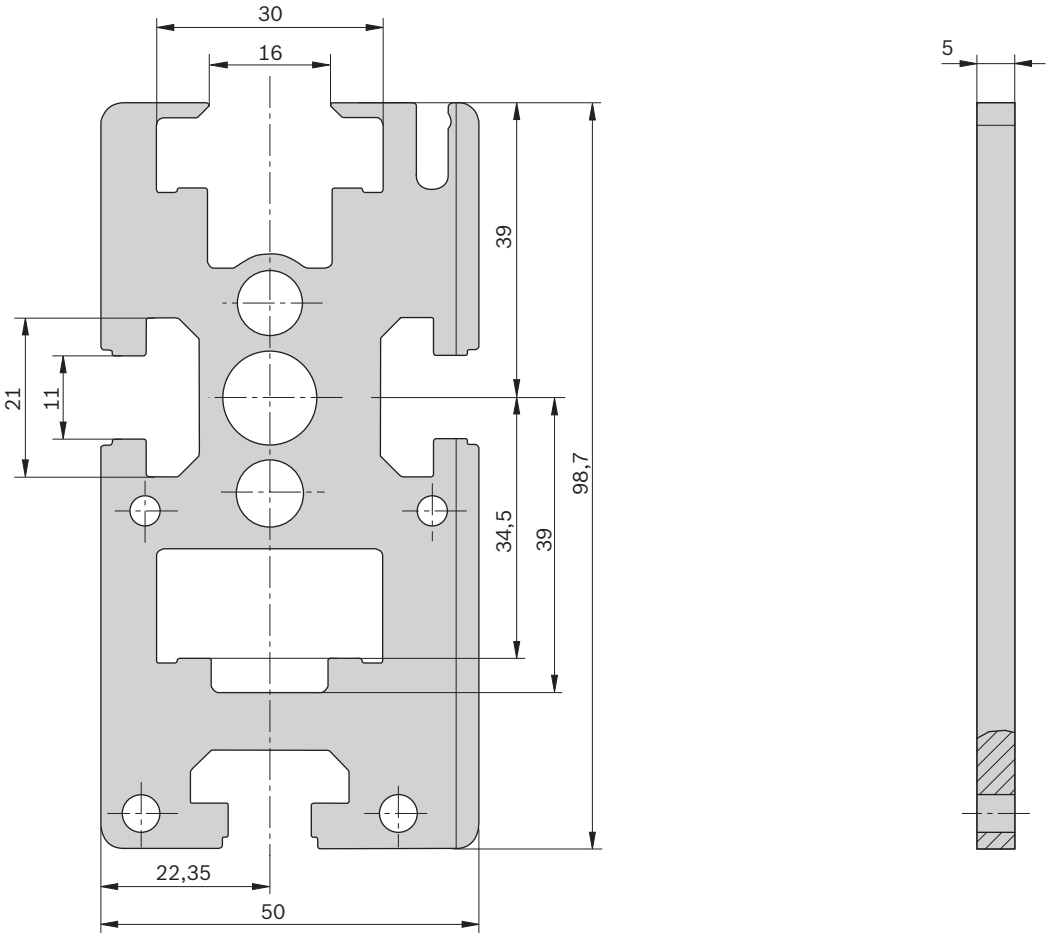
Ordering information

Product designation	Packaging unit	Material number
ST 2/R-H adapter plate kit	4	3842536800

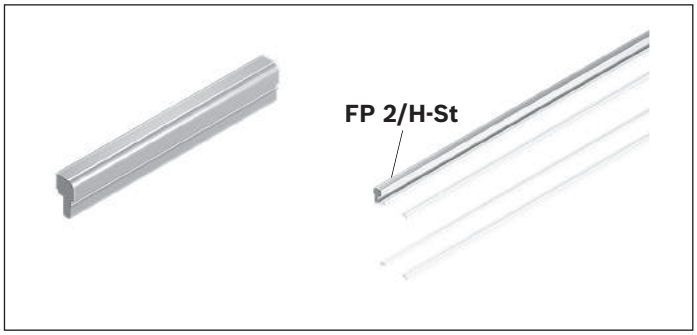
Technical data

Material number	3842536800
Features	
ESD	Yes
Material specification	Steel; corrosion-resistant

Dimensions



FP 2/H-St guide profile



- For lateral guidance of the workpiece pallet
- For conveyor unit self-assembly
- For press-fitting onto SP 2/C-H or SP 2/R-H section profiles
- Robust version in corrosion-resistant steel

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 24x rods (l = 3000 mm)

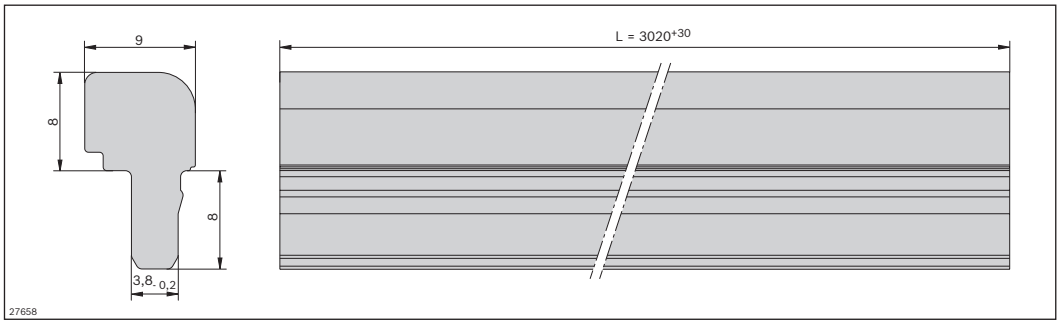
Ordering information

Product designation	l (mm)	Delivery unit	Material number
FP 2/H-St guide profile	3000	24	3842537890

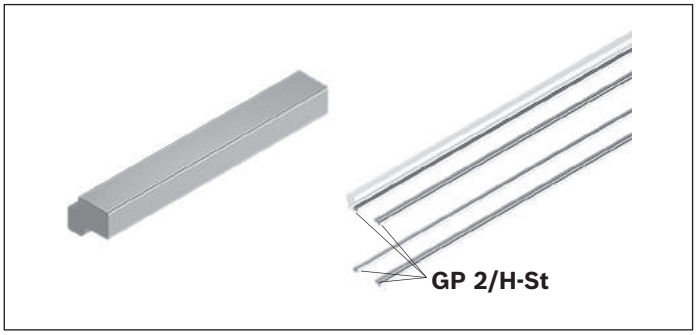
Technical data

Material number			3842537890
Features			
ESD			Yes
Material specification			Steel; corrosion-resistant
Dimensions			
Length	l	mm	3000

Dimensions



GP 2/H-St glide profile



- For conveyor unit self-assembly
- For guiding the flat top chain or accumulation roller chain
- In especially sturdy design with corrosion-resistant steel for particularly heavy-duty sections
- For sliding onto SP 2/C-H or SP 2/R-H section profiles
- For use with all AS 2/R drive modules, UM 2/R return units and SP 2/R section profiles

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 48x rods (l = 3000 mm)

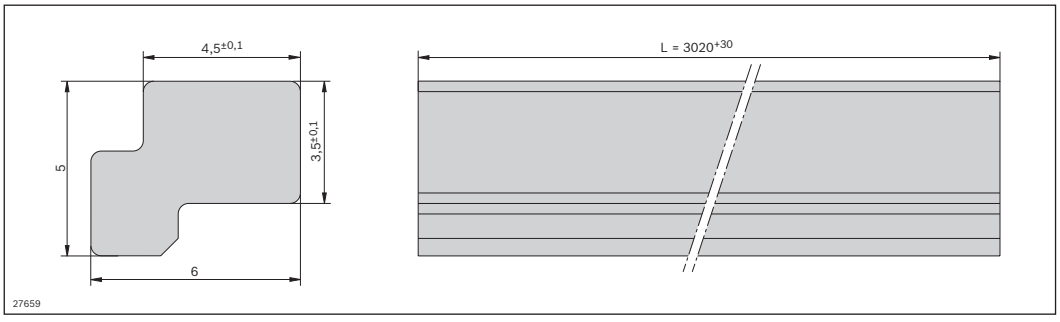
Ordering information

Product designation	l (mm)	Delivery unit	Material number
GP 2/H-St glide profile	3000	48	3842537888

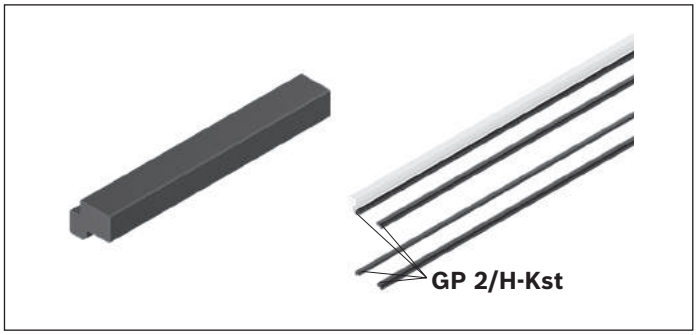
Technical data

Material number			**3842537888**
Features			
ESD			Yes
Material specification			Steel; corrosion-resistant
Dimensions			
Length	l	mm	3000

Dimensions



GP 2/H-Kst glide profile



- For conveyor unit self-assembly
- For guiding the flat top chain or the accumulation roller chain
- For sliding onto SP 2/C-H or SP 2/R-H section profiles
- Used with all AS 2/R drive modules, UM 2/R return units and SP 2/R section profiles

Accessories

Required accessories

- SP 2/C-H section profile, see p. 3-99, or SP 2/R-H, see p. 3-169

Delivery notes

Scope of delivery

- 48x rods (l = 3000 mm)

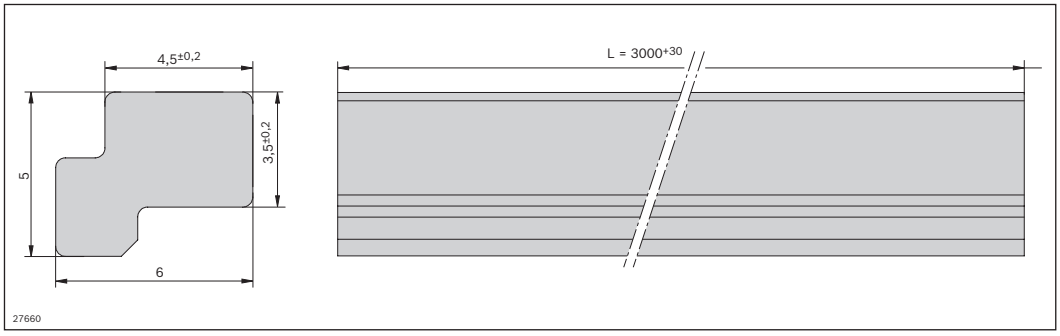
Ordering information

Product designation	l (mm)	Delivery unit	Material number
GP 2/H-Kst glide profile	3000	48	3842537889

Technical data

Material number			**3842537889**
Features			
ESD			Yes
Material specification			Plastic; PA (suitable for use in an EPA)
Dimensions			
Length	l	mm	3000

Dimensions



Profile connector



- For the end-to-end connecting of two profiles SP 2/... Two profile connectors are recommended for each profile joint
- For conveyor unit self-assembly
- For use with all AS 2/R drive modules, UM 2/R return units and SP 2/R section profiles

Delivery notes

Scope of delivery

- Profile connector, screws

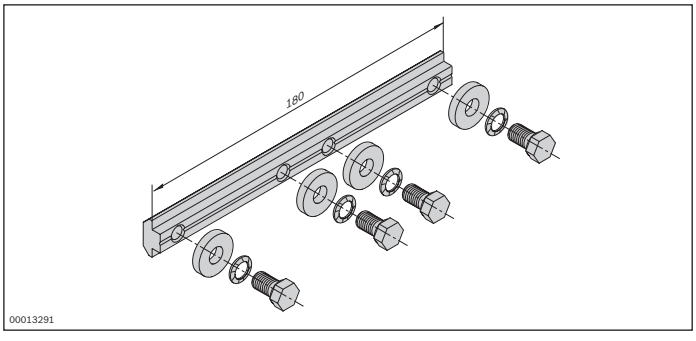
Ordering information

Product designation	Material number
Profile connector	3842528746

Technical data

Material number	3842528746
Features	
Material specification	Steel; galvanized

Dimensions



QV 2 cross connector



- For conveyor unit self-assembly
- For connecting section profiles and defining the track width
- Can be combined with all SP 2/... section profiles

The cross connectors serve to connect the conveyor section profiles.

Formula for calculating the number of cross connectors needed

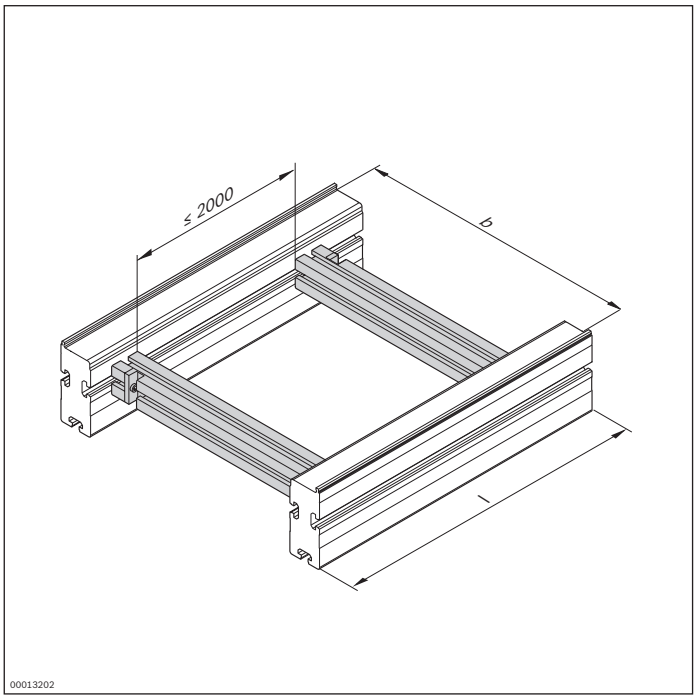
A_{QV} = (l/2000 mm) + 1

A_{QV} = number of cross connectors
l = section length

Delivery notes
Scope of delivery

- 45x60 strut profile, finished
- 2x fastening material to mount on an ST 2 section

Ordering information



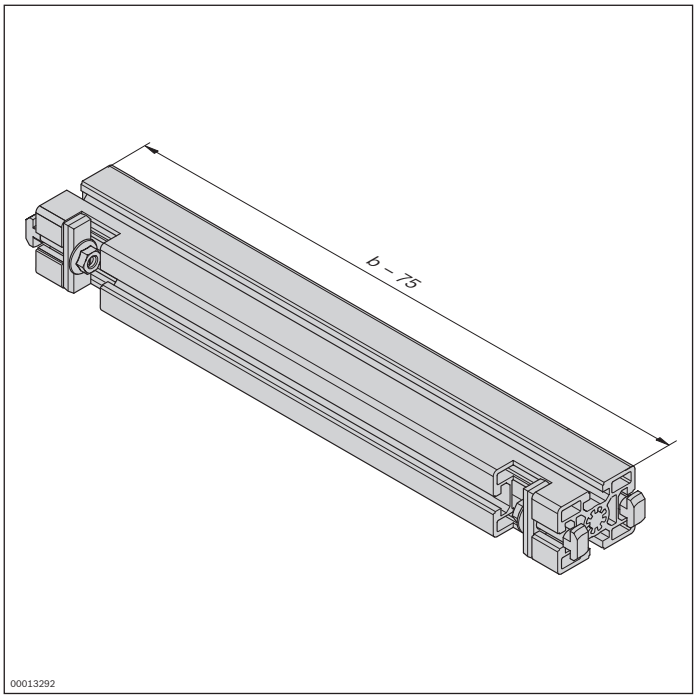
Material number		3842994635
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

Technical data

Material number	**3842994635**
Features	
Material specification	Aluminum, natural; anodized

Dimensions



QV 2-H cross connector



- For heavy-duty conveyor unit self-assembly
- For connecting section profiles and defining the track width
- Can be combined with all SP 2 section profiles

QV 2-H cross connectors are particularly suitable for connections between section profiles in heavy-duty systems.

Formula for calculating the number of cross connectors needed

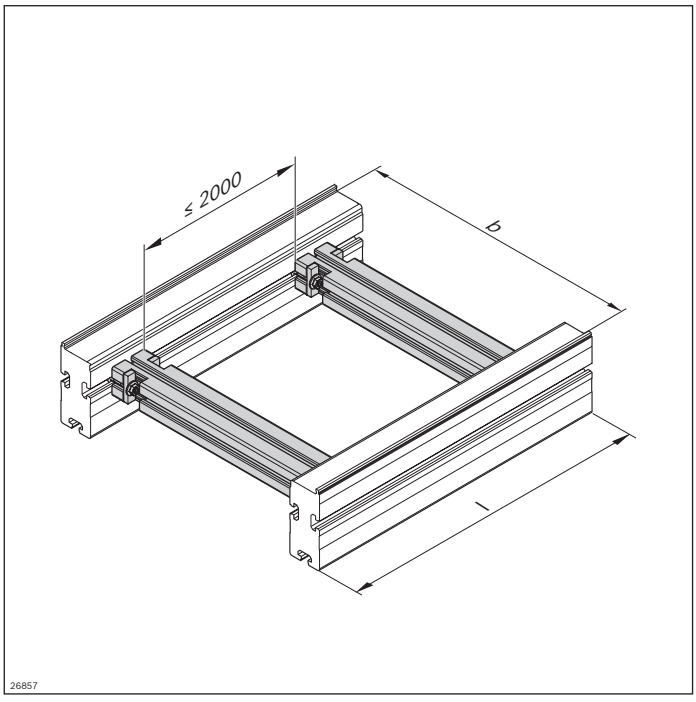
A_{QV} = (l/2000 mm) + 1

A_{QV} = number of cross connectors
l = section length

Delivery notes
Scope of delivery

- 45x60 strut profile, finished
- 4x fastening material to mount on an ST 2 section

Ordering information



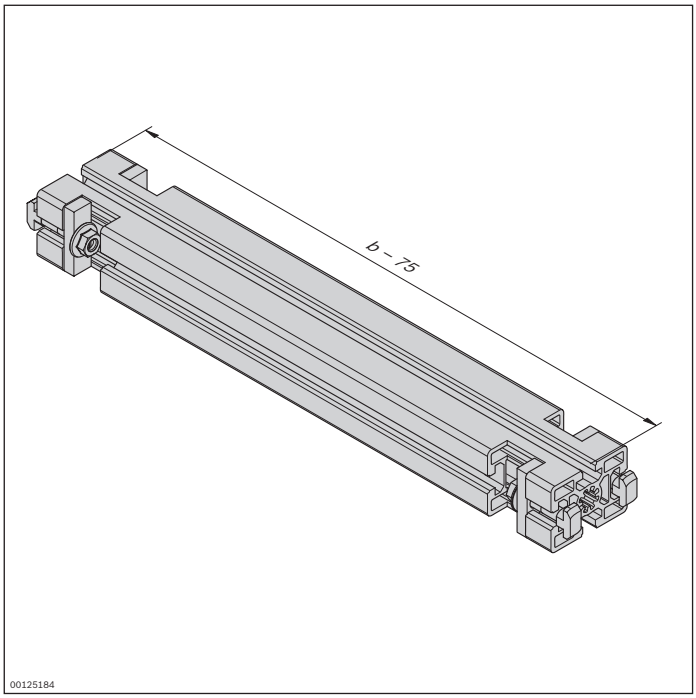
Material number		3842993052
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

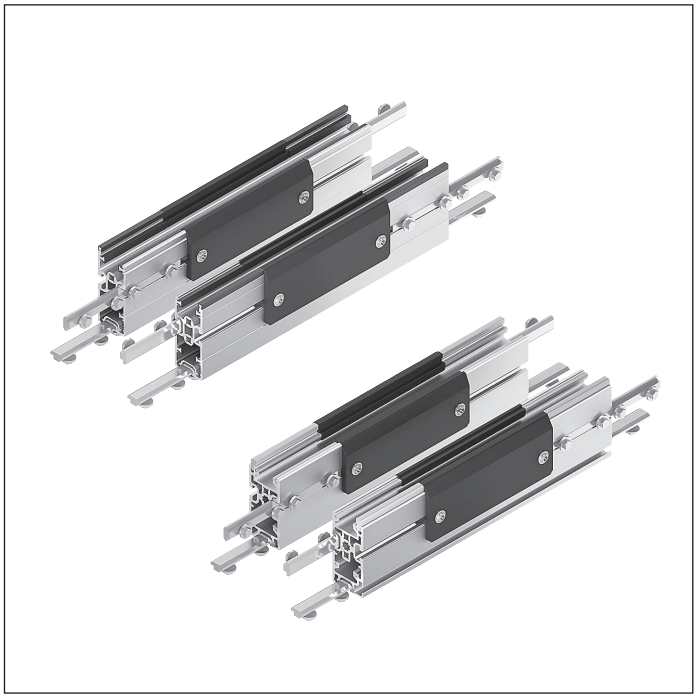
Technical data

Material number	3842993052
Features	
Material specification	Aluminum, natural; anodized

Dimensions



ST 2/R-...-W maintenance section



- For maintenance use (assembly, disassembly or lubrication)
- Two removable side covers each
- Suitable for accumulation roller chains
- ST 2/R-W suitable for ST 2/R section profiles
- ST 2/R-H-W suitable for ST 2/R-H section profiles

The maintenance section is a section element with removable caps. It is used for maintenance (assembly, disassembly, lubrication) of the accumulation roller chain conveyor medium.

Delivery notes

Scope of delivery

- 2x maintenance section elements consisting of ST 2/R-100 section profiles, FP 2/R guide profiles and GP 2/R glide profiles
- 4x side cover
- 8x profile connector
- Incl. fastening material

Ordering information

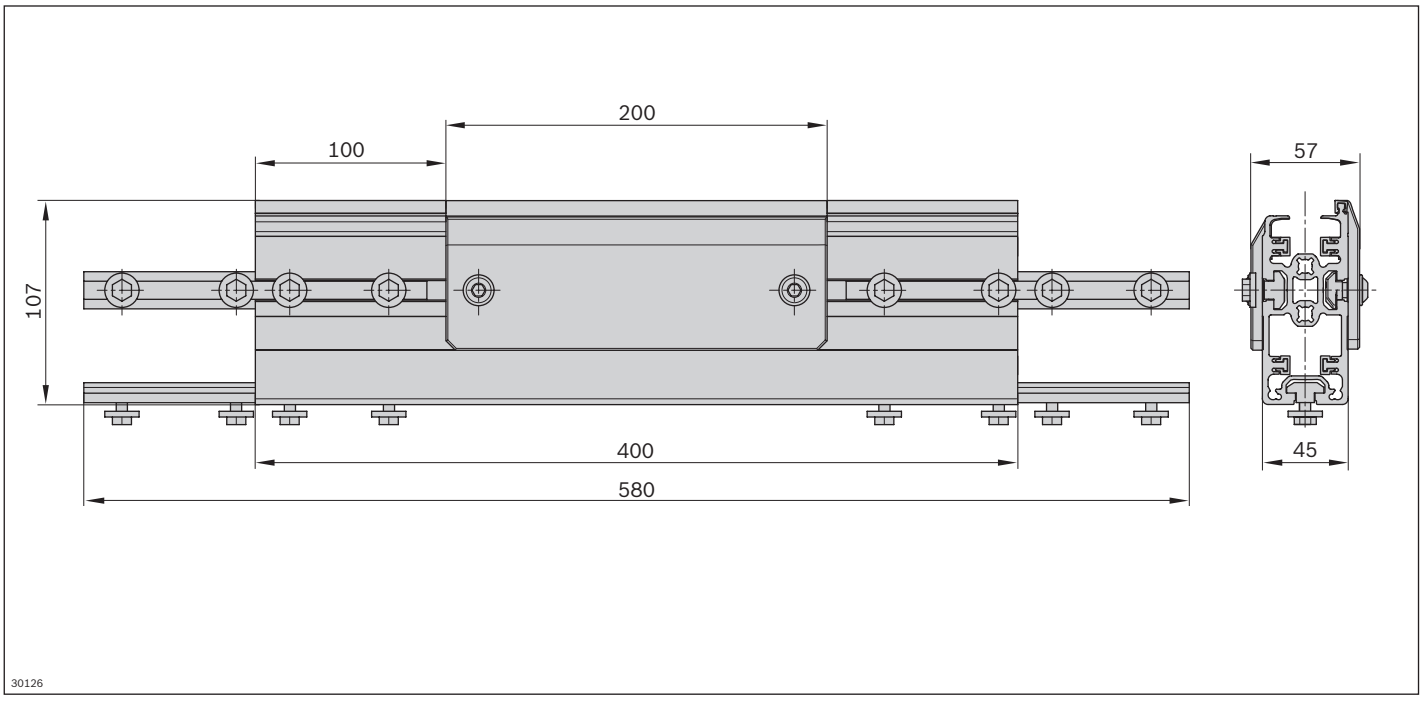
Product designation	Delivery unit	Material number
ST 2/R-W maintenance section	2	3842532778
ST 2/R-H-W maintenance section	2	3842537319

Technical data

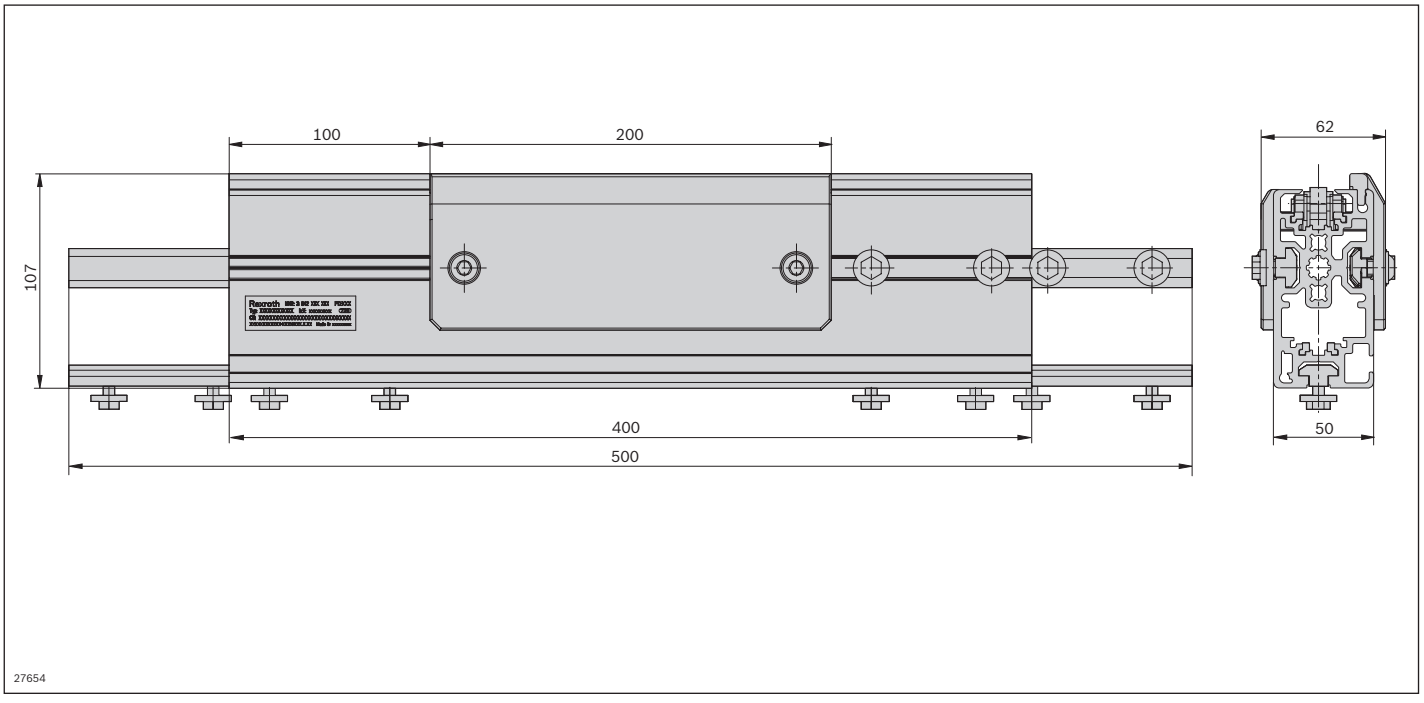
Material number			3842532778	3842537319
Features				
ESD			Yes	Yes
Material specification			Section profile: Aluminum, natural; anodized Side cover: Polyethylene	Section profile: Aluminum, natural; anodized Side cover: Polyethylene
Dimensions				
Length	l	mm	400	400

Dimensions

ST 2/R-W maintenance section



ST 2/R-H-W maintenance section



Accumulation roller chain with PA accumulation rollers





1 Accumulation roller chain with PA accumulation rollers
2 Accumulation roller chain with PA accumulation rollers and small parts protection

- Conveyor medium for the workpiece pallets
- For conveyor unit self-assembly
- For use in conjunction with ST 2/R and ST 2/R-H conveyor units
- Delivered in units of 12000 mm. Lengths of l > 12000 mm can be produced by connecting several accumulation roller chains using master links.
- Chains are available with small parts protection (= filler pieces in the accumulation roller chain prevent small parts from pinching)

Note: Reversible operation is not possible in conjunction with small parts protection.

Delivery notes

Scope of delivery

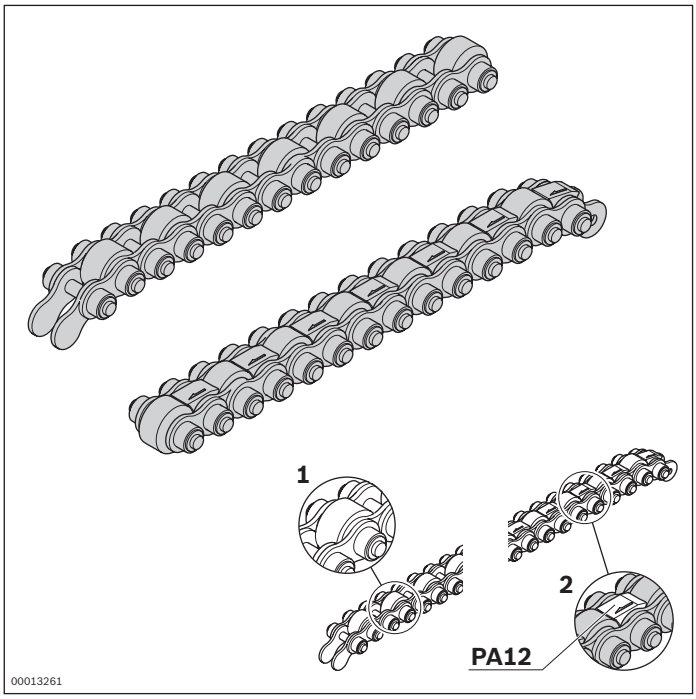
- Units up to 12000 mm, incl. 1x master link

Ordering information

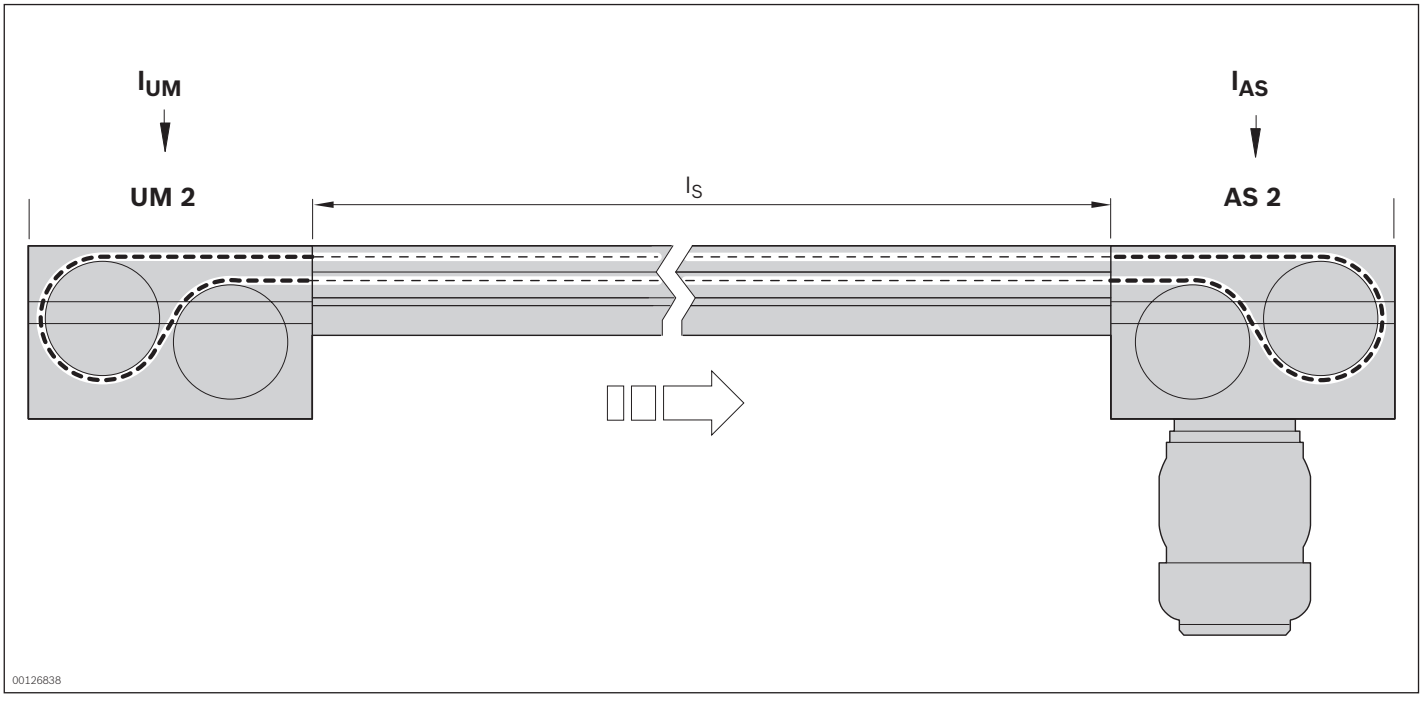
Product designation	Material number
Accumulation roller chain with PA accumulation rollers	3842523918
Accumulation roller chain with PA accumulation rollers and small parts protection	3842536268

Technical data

Material number			3842523918	3842536268
Features				
ESD			Yes	Yes
Material specification			Accumulation roller chains: PA 12	Accumulation roller chains: PA 12 Small parts protection: PA 12
Dimensions				
Length	l	mm	12000	12000



Dimensions



The required chain length is determined using the following formula.

$$l_R = 2 \times l_S + l_{AS} + l_{UM}$$

l_R= length of accumulation roller chain
l_S = length of the section profile
l_{AS} = length of the conveyor medium in the drive module
l_{UM} = length of the conveyor medium at the return unit

Length of the conveyor medium for accumulation roller chain

$l_{UM\ 2/C\text{-}170}$ = 310 mm
$l_{UM\ 2/C\text{-}60}$ = 150 mm
l_{AS} = 625 mm

Accumulation roller chain with steel accumulation rollers





1 Accumulation roller chain with steel accumulation rollers
2 Accumulation roller chain with steel accumulation rollers and small parts protection

- Conveyor medium for the workpiece pallets
- For conveyor unit self-assembly
- For use in conjunction with ST 2/R and ST 2/R-H conveyor units
- Delivered in units of 12000 mm. Lengths of l > 12,000 mm can be produced by connecting several accumulation roller chains using master links.
- Chains are available with small parts protection (= filler pieces in the accumulation roller chain prevent small parts from pinching)

Note: Reversible operation is not possible in conjunction with small parts protection.

Delivery notes

Scope of delivery

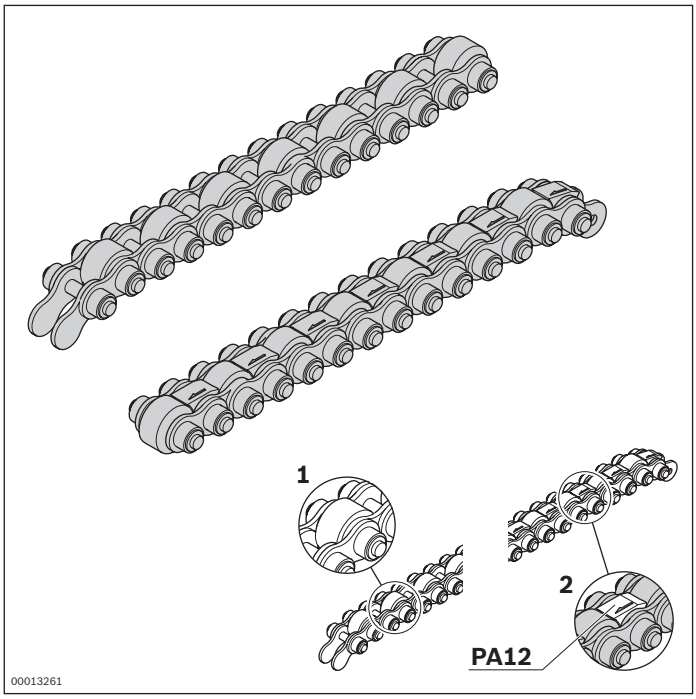
- Units up to 12000 mm, incl. 1x master link

Ordering information

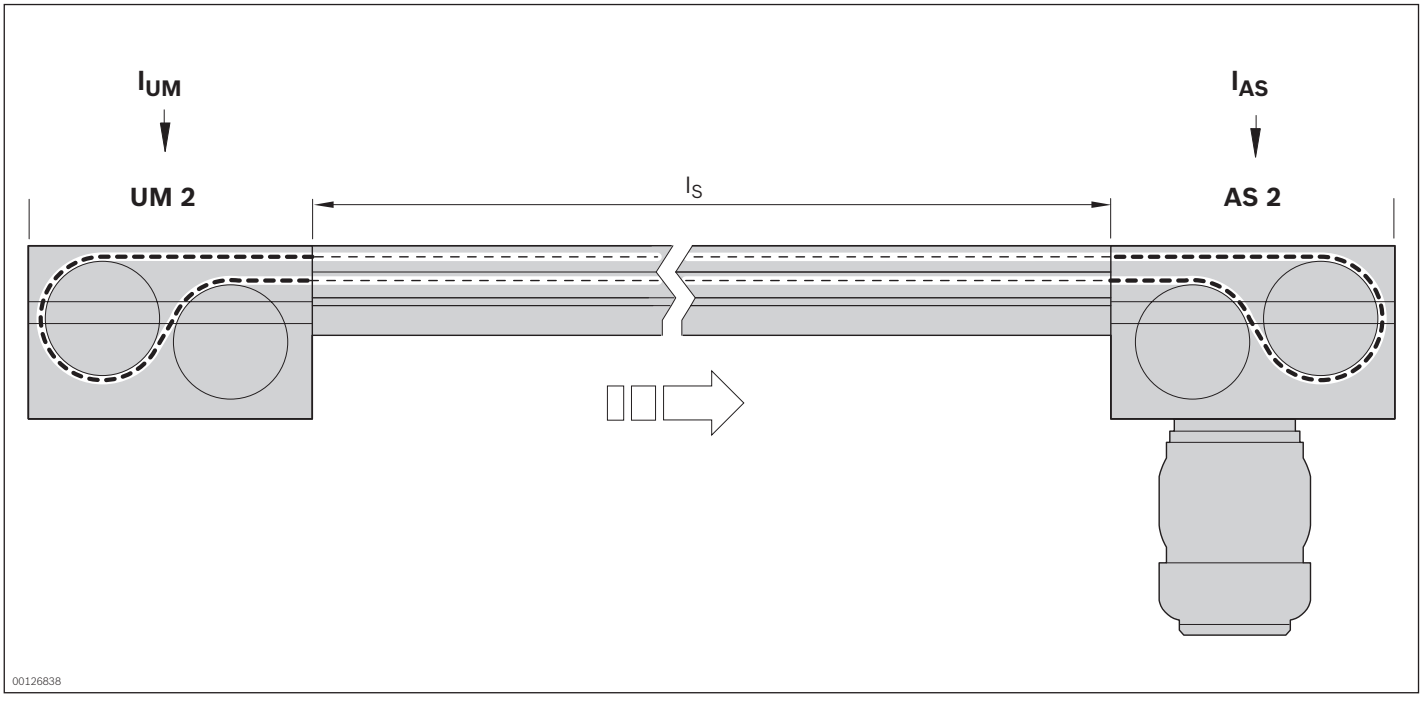
Product designation	Material number
Accumulation roller chain with steel accumulation rollers	3842530864
Accumulation roller chain with steel accumulation rollers and small parts protection	3842536270

Technical data

Material number			3842530864	3842536270
Features				
ESD			Yes	Yes
Material specification			Accumulation roller chains: Steel	Accumulation roller chains: Steel Small parts protection: PA 12 (suitable for use in an EPA)
Dimensions				
Length	l	mm	12000	12000



Dimensions



The required chain length is determined using the following formula.

$$l_R = 2 \times l_S + l_{AS} + l_{UM}$$

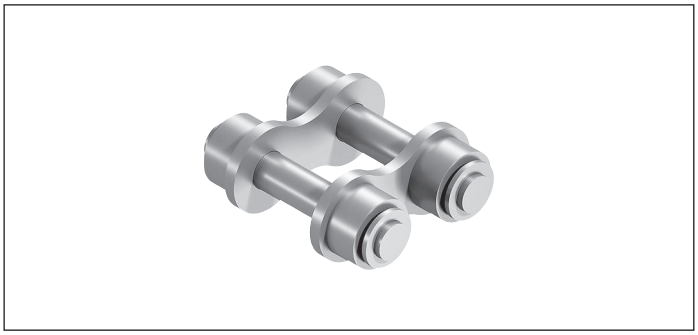
l_R= length of accumulation roller chain
l_S = length of the section profile
l_{AS} = length of the conveyor medium in the drive module
l_{UM} = length of the conveyor medium at the return unit

Length of the conveyor medium for accumulation roller chain

$l_{UM\ 2/C\text{-}170}$ = 310 mm
$l_{UM\ 2/C\text{-}60}$ = 150 mm
l_{AS} = 625 mm

Master link for accumulation roller chain





- For locking the accumulation roller chain after insertion in conveyor section element
- Suitable for all accumulation roller chains except the V*plus* accumulation roller chain

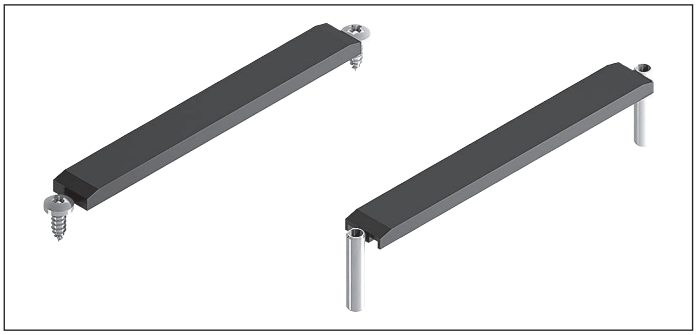
Ordering information

Product designation	Material number
Master link for accumulation roller chain	3842530417

Technical data

Material number	3842530417
Features	
ESD	Yes
Material specification	Accumulation roller chains: Steel Small parts protection: PA 12 (suitable for use in an EPA)

Acceleration element



- For accelerated transport of a workpiece pallet to a stop gate
- The acceleration element is used in conjunction with the accumulation roller chain conveyor medium with steel rollers.
- Accumulation operation not permitted
- Installation in sections after the stop gate
- Suitable for retrofitting

The support wheels of the chain elements are lifted and roll frictionally engaged between the acceleration element and the workpiece pallet with a peripheral speed of $v_U = 2 \times v_N$. This may be limited in oily environments.

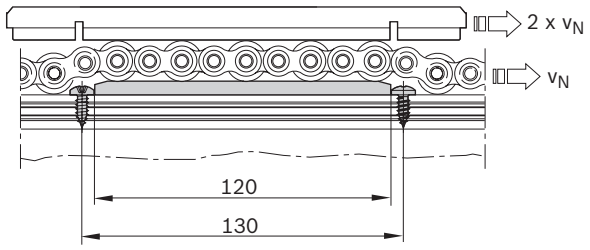
Delivery notes

Condition on delivery

- Not assembled

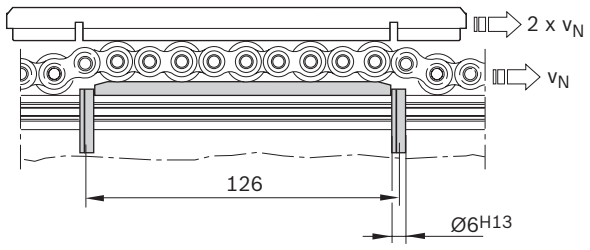
Ordering information

SP 2/R



Product designation	Packaging unit	Material number
SP 2/R acceleration element	2	3842536382

SP 2/R-H



00125215

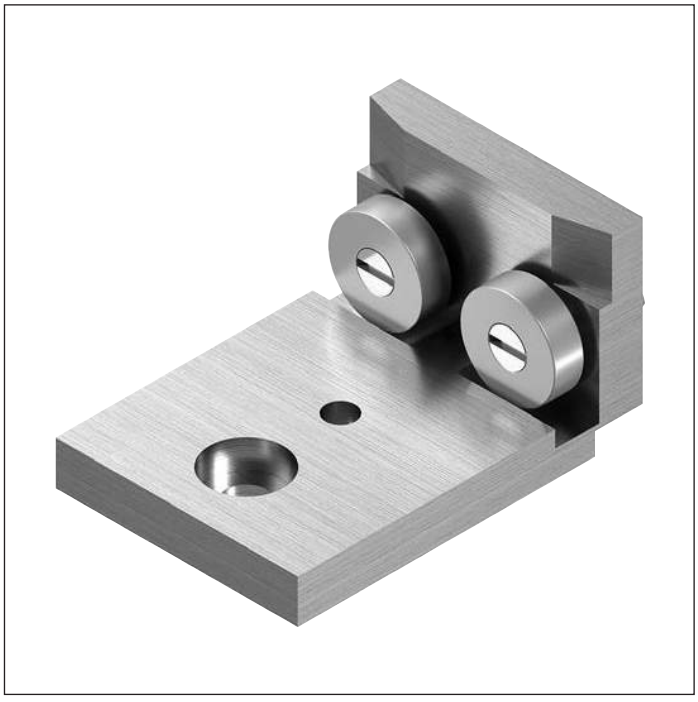
Product designation	Packaging unit	Material number
SP 2/R-H acceleration element	2	3842537615[1]

[1] Use with WT 2/F on request

Technical data

Material number	3842536382	3842537615
Features		
ESD	Yes	Yes
Material specification	PE; abrasion-resistant	PE; abrasion-resistant

RB 2/UM roller track set



- Mounted roller section for mounting on AS 2/B or UM 2/B for transverse conveying
- Additional workpiece pallet support on the front transition from AS 2/B to UM 2/B or from AS 2/B or UM 2/B to a lift transverse unit
- One set is required for each AS 2/B or UM 2/B
- Required for workpiece pallet lengths of 160 mm; recommended for longer lengths
- Without drive
- Reversible operation possible
- Can be combined with WT 2/E, WT 2, WT 2/F

Delivery notes

Scope of delivery

- Set (containing 2x roller track, 2x guide profile, 2x fastening kit)

Condition on delivery

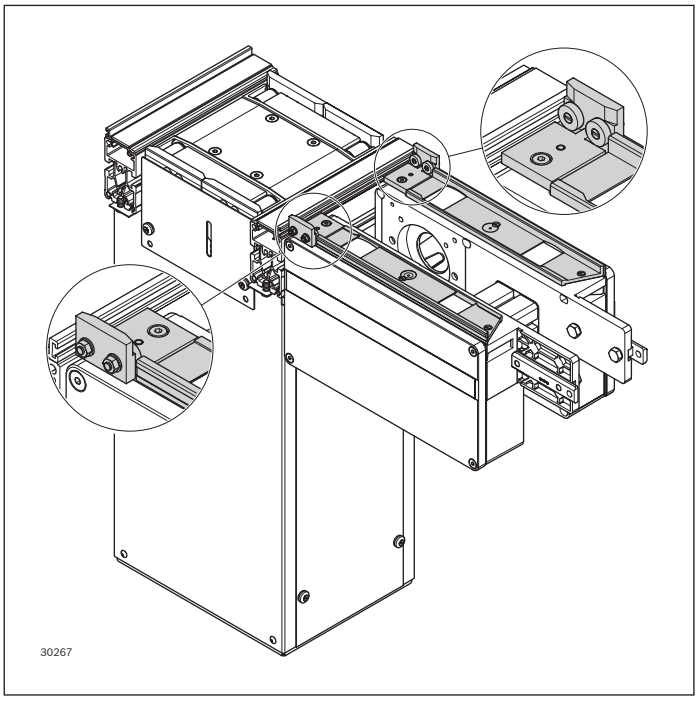
- Fully assembled

Ordering information

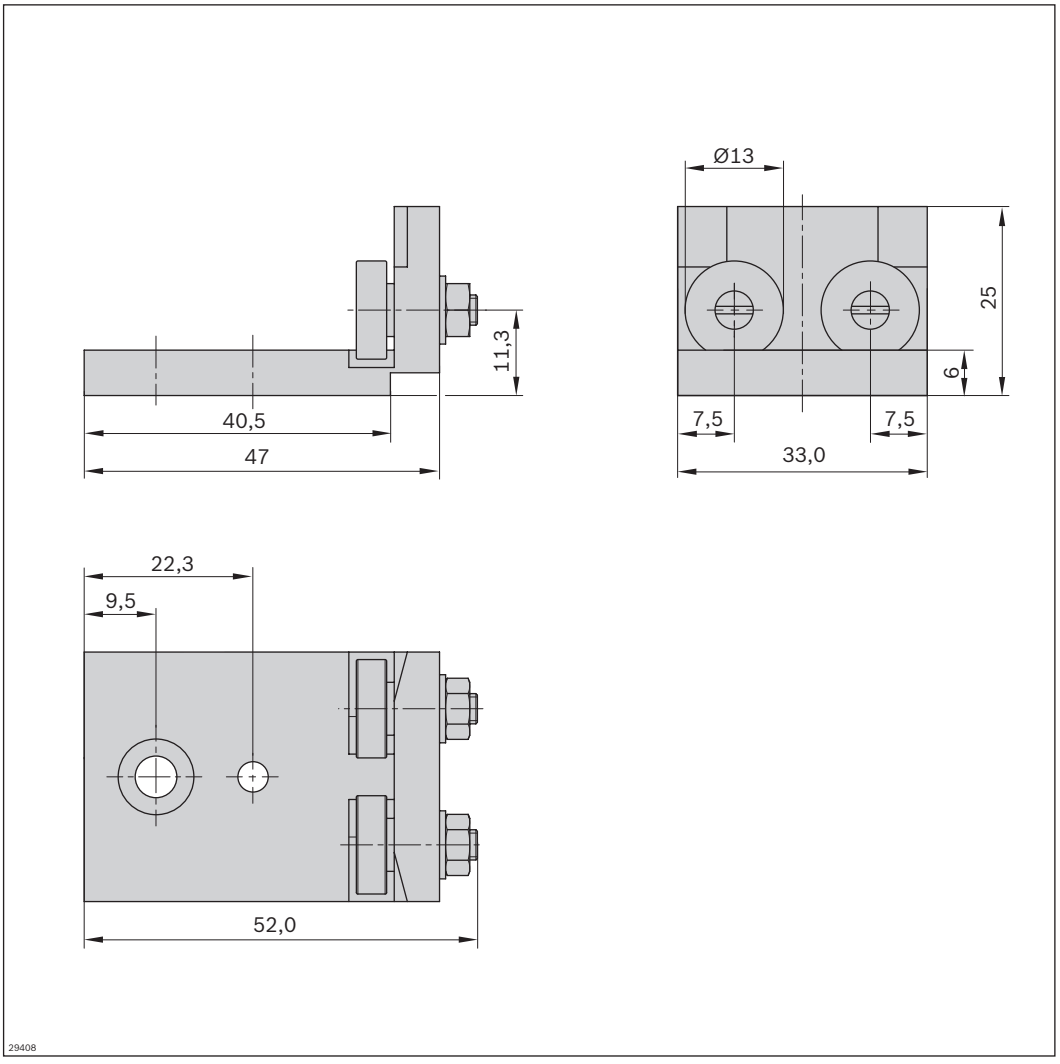
Product designation	Packaging unit	Material number
RB 2/UM 2 roller track set	Set	3842558657

Technical data

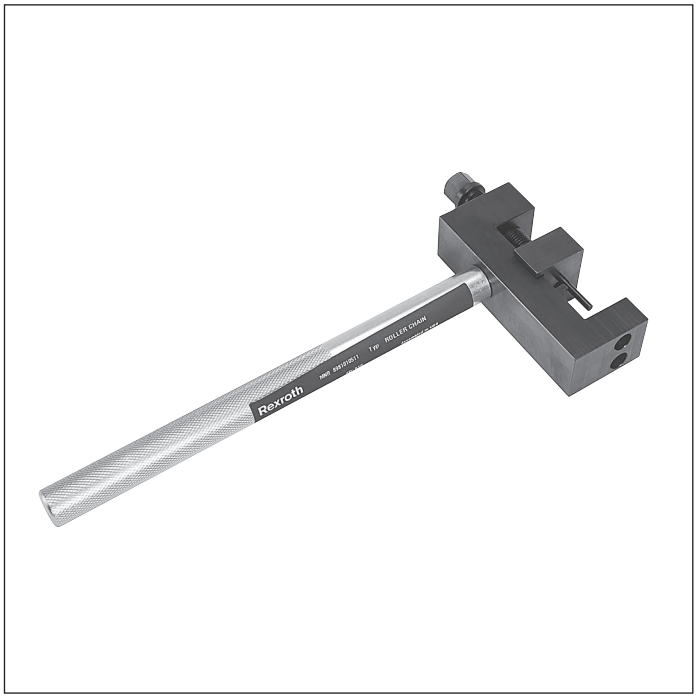
Material number	3842558657
Features	
Material specification	Track: Aluminum Rollers: Steel



Dimensions



Chain breaker for accumulation roller chain



- Makes it easier to open and disassemble the accumulation roller chain
- Turning the thread pin pushes out a chain bolt and the chain can be removed

The thread pin has a hexagonal fixture acting as a lever arm for a size 13 hexagonal wrench Grooves are provided for the exact positioning of the chain links.

Delivery notes

Condition on delivery

- Fully assembled

Ordering information

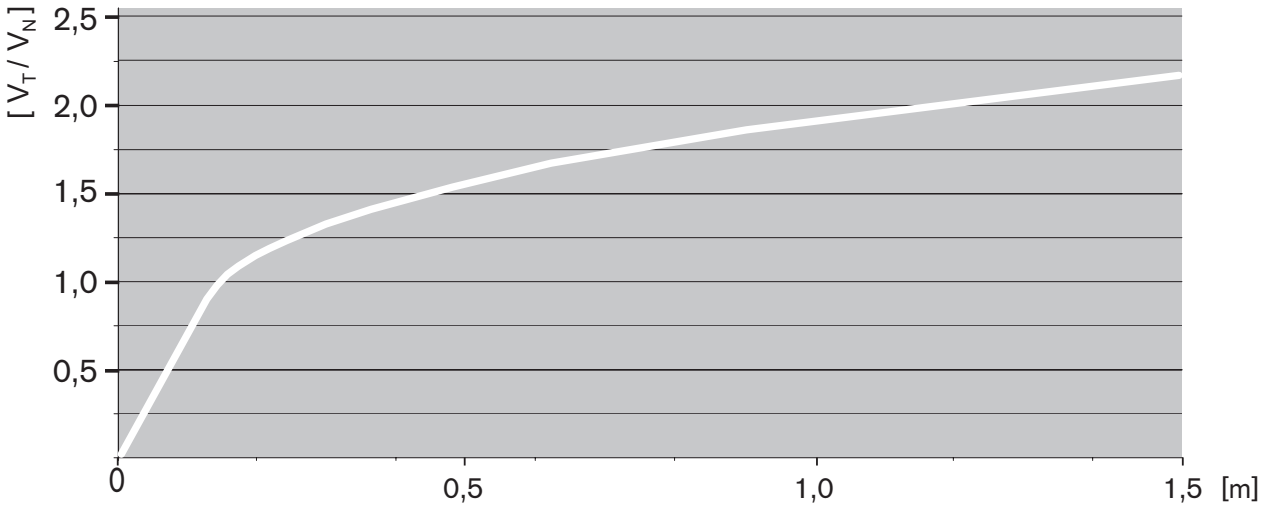
Product designation	Material number
Chain breaker for accumulation roller chain	8981010511

Technical data

Material number	8981010511
Features	
Material specification	Steel; hardened

V*plus* accumulation roller chain

V*plus* accumulation roller chain – transportation speed over distance



Beschl-V*plus*.eps

v_N Nominal speed
v_T Max. transportation speed

With the V*plus* accumulation roller chain, the workpiece pallet attains conveying speeds to the factor of 2.5 higher than the nominal chain speed.

Smoother running and less wear can thus be achieved by using drives with lower chain speeds with the V*plus* accumulation roller chain.

Another benefit of the V*plus* accumulation roller chain is the acceleration effect: after each processing station, the conveying speed is picked up quickly without requiring any additional internal elements.

As a rule, dampened stop gates and dampers are recommended.

If conveying speeds over 18 m/min are to be attained with the V*plus* chain, the resulting higher dynamic loads on the entire system must be taken into account.
Please contact your Rexroth specialist if in any doubt.

Workpiece pallets with PE wear pads must be used on the V*plus* accumulation roller chain. The maximum permissible section load is 1.5 kg/cm.

V*plus* planning advice 3-193

V*plus* planning advice



The V*plus* accumulation roller chain can mathematically reach a transportation speed that is 2.5 times the nominal speed of the conveyor medium.

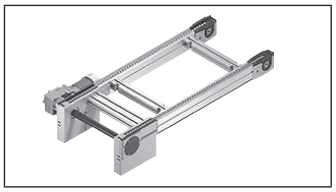
In practice:

- The weight of the workpiece pallet
- The lubrication and wear of the chain
- The length of the acceleration section

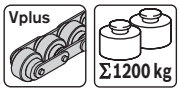
Can cause transportation speeds that are typically up to 2.5 times the nominal speed of the conveyor medium.

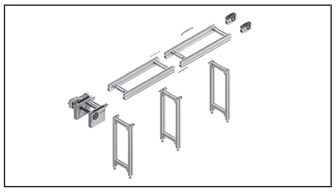
The system must be adjusted to the significantly higher kinetic energy of the workpiece pallet:

- Dampers and dampened stop gates must be designed for the mathematical transportation speed.
- Before entering a curve, ensure that the transportation speed is max. 18 m/min.



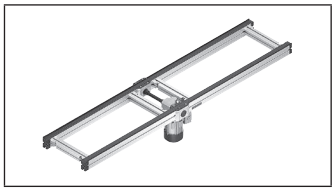
BS 2/R-V belt sections **3-196**





Parts for AS 2/..., UM 2/..., ST 2...
conveyor units **3-200**





Connection kits **3-236**

BS 2/R-V-1200 belt section



- Functional operation conveyor complete with drive for high workpiece pallet speeds
- Sturdy design for especially heavy-duty systems
- Conveyor medium: V*plus* accumulation roller chain (suitable for use in an EPA)
- Reversible operation possible for l ≤ 2000 mm and accumulation roller chains without small parts protection
- Motor mounting right, left or central
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The belt section is a ready-to-use conveyor section with built-in drive for the transportation of workpiece pallets in the longitudinal direction or for the transverse conveying of the workpiece pallet between parallel conveyor sections in connection with two HQ 2 lift transverse units.

Note: On the V*plus* chain, the workpiece pallet attains a speed up to the factor of 2.5 higher than that of the chain. Special requirements must therefore be observed for chain speeds > 9 m/min!

Accessories

Recommended accessories

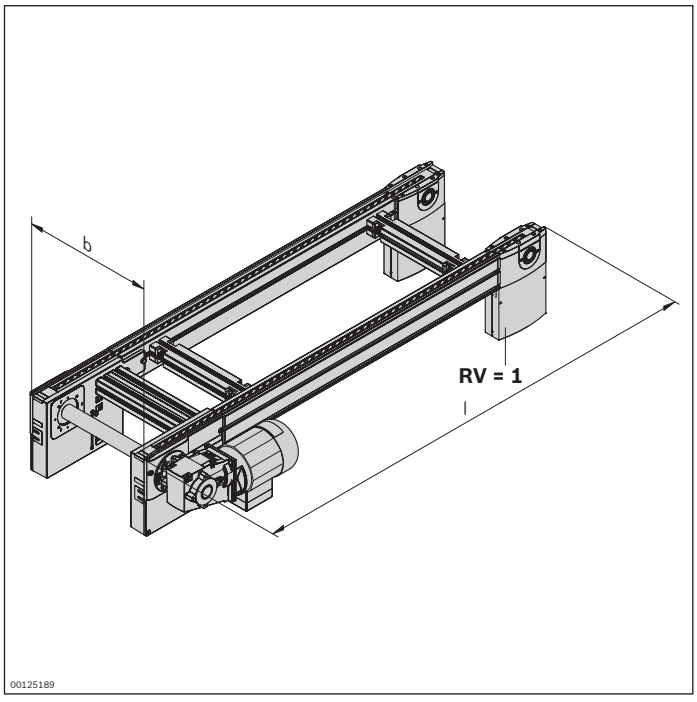
- Connection kits, see page 3-236
- SZ 2/...-H leg sets, see p. 6-2
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



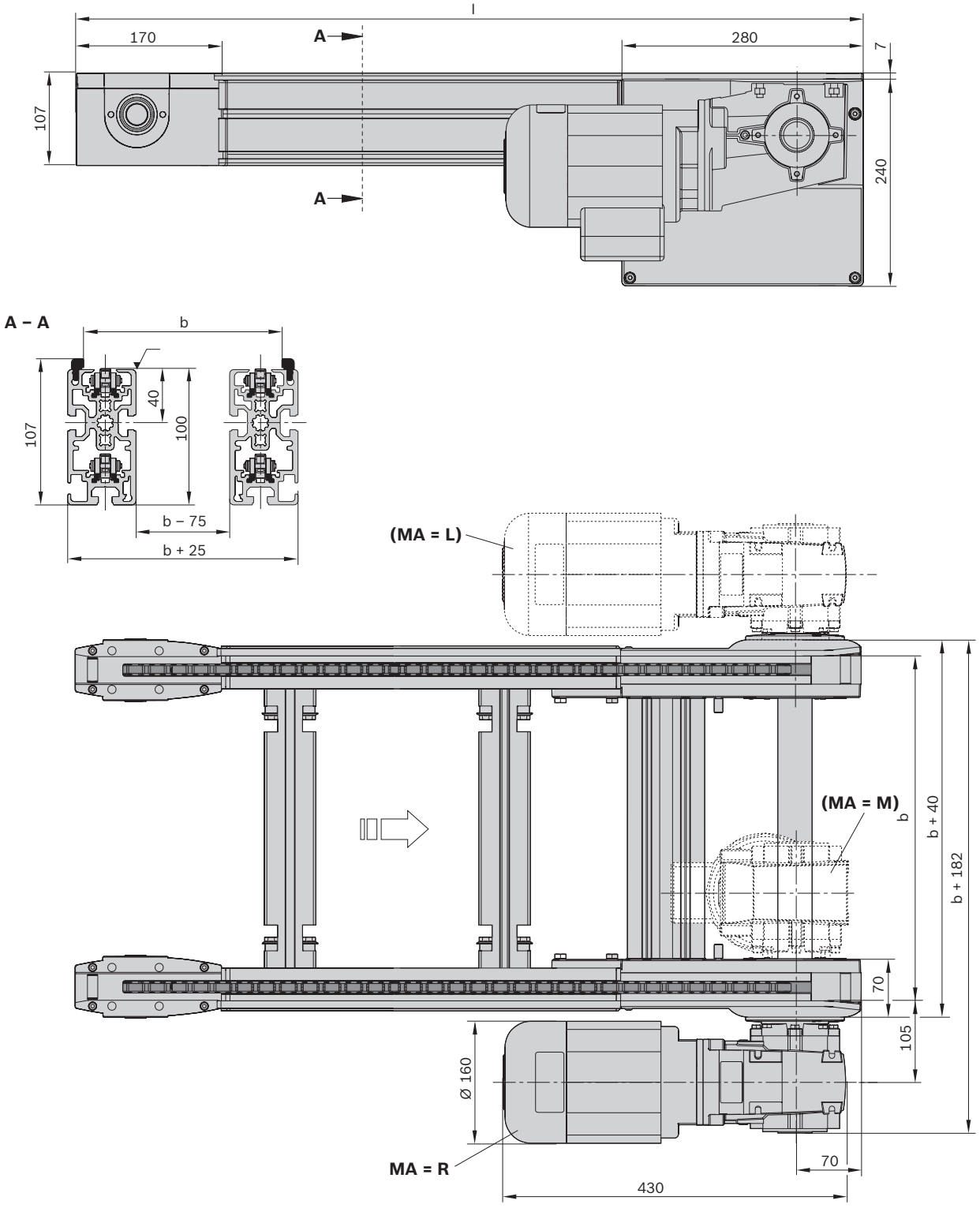
Material number		3842998492
b (mm)	Track width in direction of transport	400 ... 1200
l (mm)	Length	650 ... 6000
v_N (m/min)	Nominal speed of the chain	0[1]; 6; 9; 12; 15; 18[2]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M
RV	Reversible operation No reversible operation (RV = 0) Reversible operation (RV = 1)	0; 1
KT	Chain type Accumulation roller chain with steel accumulation rollers (KT = 2) Accumulation roller chain with steel accumulation rollers and small parts protection (KT = 4)	2; 4

[1] v_N = 0: without motor or gear
[2] Not possible if f = 60 Hz

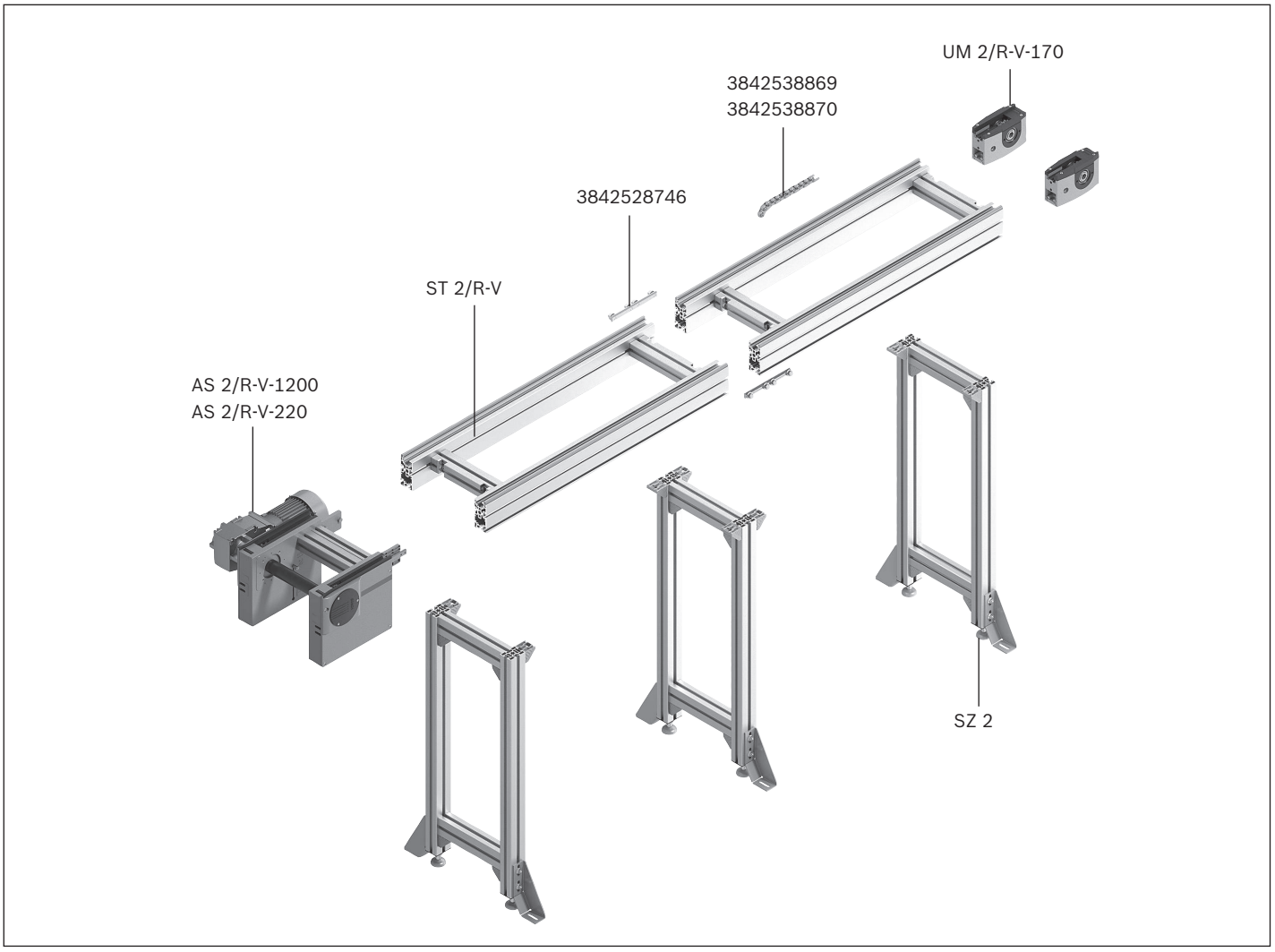
Technical data

Material number			3842998492
Load			
Max. section load in accumulation operation		kg	1200
Features			
ESD			Yes
Material specification			Glide profile: Steel; corrosion-resistant Small parts protection: Steel
Dimensions			
Length	l	mm	650 ... 6000

Dimensions


l
170
A
280
7
107
240
A
A – A
b
40
100
107
b – 75
b + 25
(MA = L)
(MA = M)
b
b + 40
b + 182
70
105
Ø 160
MA = R
70
430
30127

Conveyor units V*plus* accumulation roller chain conveyor medium

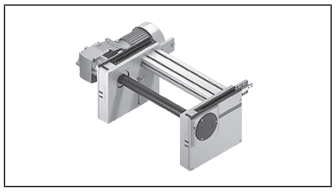


A conveyor unit is a complete unit used for linear conveying of workpiece pallets. It consists of:

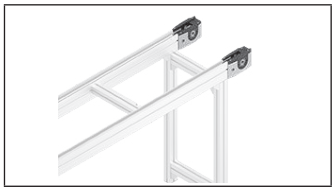
- AS 2/R-V drive module, see p. 3-202
- UM 2/R-V return unit, see p. 3-208
- ST 2/R-V... sections, see p. 3-210
- SZ 2/... leg sets, see p. 6-2
- QV 2... cross connector, see p. 3-216
- V*plus* accumulation roller chain, see p. 3-192

The UM 2/R-V and AS 2/R-V may be set up right next to each other, which allows for conveyor unit combinations.

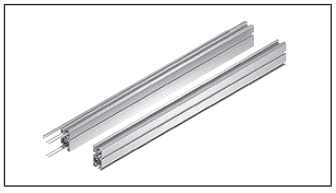
The drive modules are designed for section loads up to m_G = 2200 kg per conveyor unit.



AS 2/R-V drive module  **3-202**



UM 2/R-V-170 return unit  **3-208**

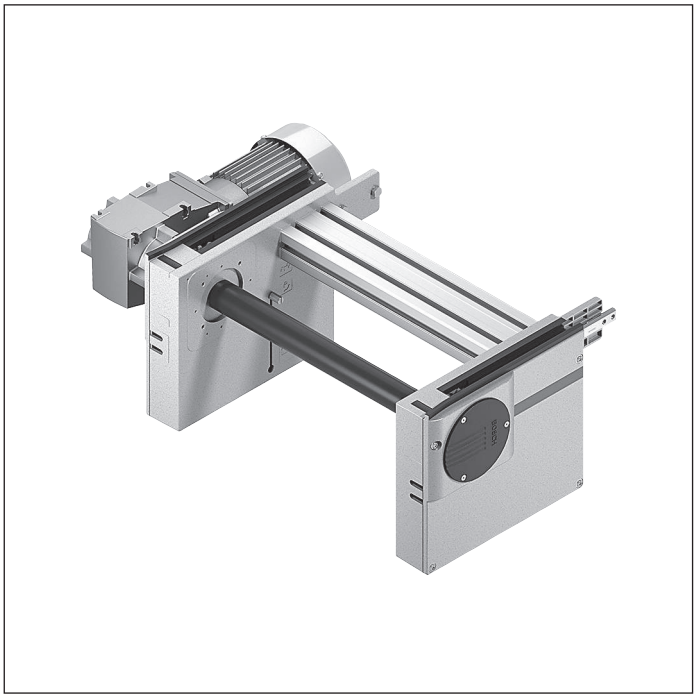


ST 2/R-V section, components  **3-210**



Accumulation roller chain conveyor medium, accessories  **3-222**

AS 2/R-V-1200 drive module



- For conveyor unit self-assembly
- For use in conjunction with ST 2/R-V sections and ST 2/R-V-170 return units
- Conveyor medium: V*plus* accumulation roller chain (suitable for use in an EPA)
- Motor mounting right, left or central
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R-V-1200 drive module drives the conveyor medium V*plus* accumulation roller chain in self-built conveyor sections with sections, return units and V*plus* accumulation roller chains.

Note: On the V*plus* chain, the workpiece pallet attains a speed up to the factor of 2.5 higher than that of the chain. Special requirements must therefore be observed for chain speeds > 9 m/min!

Accessories

Recommended accessories

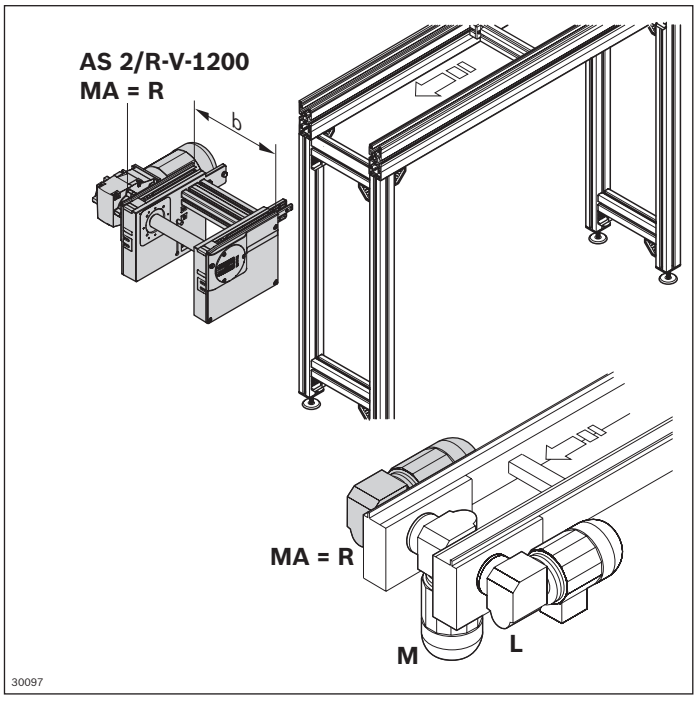
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998233
b (mm)	Track width in direction of transport	400; 480; 640; 800; 1040; 1200
		400 ... 1200[1]
v_N (m/min)	Nominal speed of the chain	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M

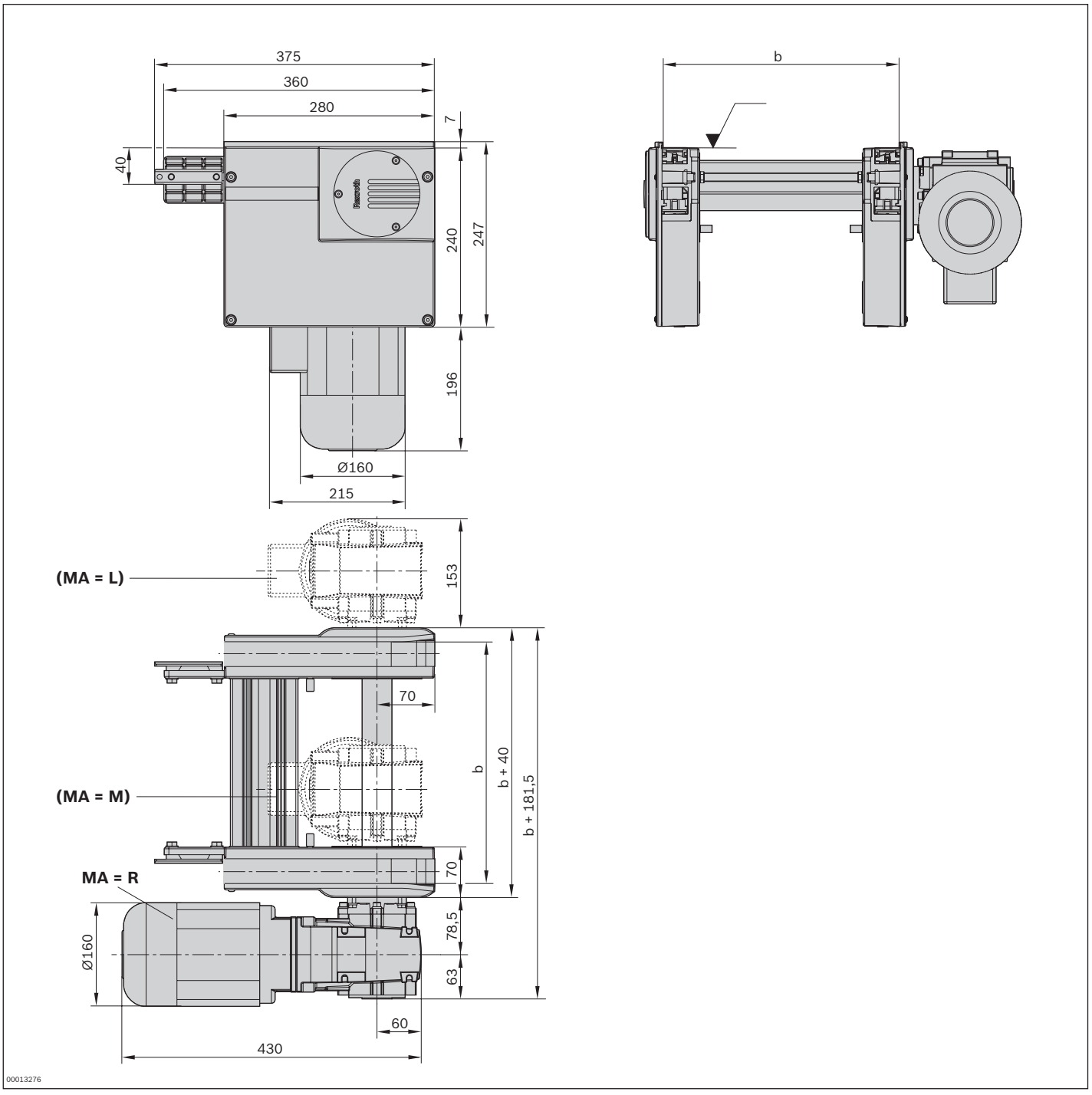
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Not possible if f = 60 Hz

Technical data

Material number			3842998233
Load			
Max. section load in accumulation operation		kg	1200
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	625

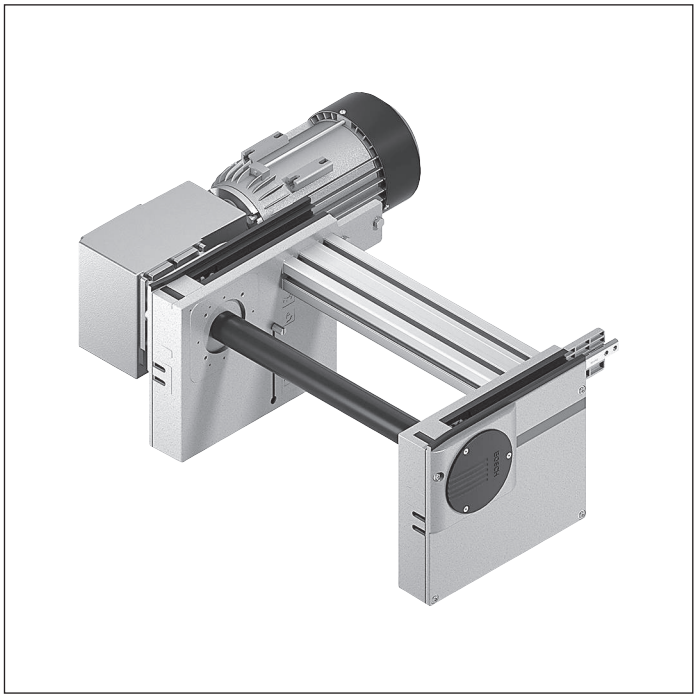
* Formula for calculating the conveyor medium, see p. 3-223

Dimensions


375
360
280
7
40
240
247
196
Ø160
215
b
(MA = L)
153
70
b
b + 40
b + 181,5
(MA = M)
MA = R
70
78,5
63
Ø160
60
430
00013276

AS 2/R-V-2200 drive module





- Conveyor medium: V*plus* accumulation roller chain (suitable for use in an EPA)
- Motor mounting right, left or central
- Motor connection: optionally with cable/plug or terminal box
- Special models on request

The AS 2/R-V-2200 drive module drives the conveyor medium V*plus* accumulation roller chain in self-built conveyor sections with section, return unit and V*plus* accumulation roller chain.

Note: On the V*plus* chain, the workpiece pallet attains a speed up to the factor of 2.5 higher than that of the chain. Special requirements must therefore be observed for chain speeds > 9 m/min!

Accessories

Recommended accessories

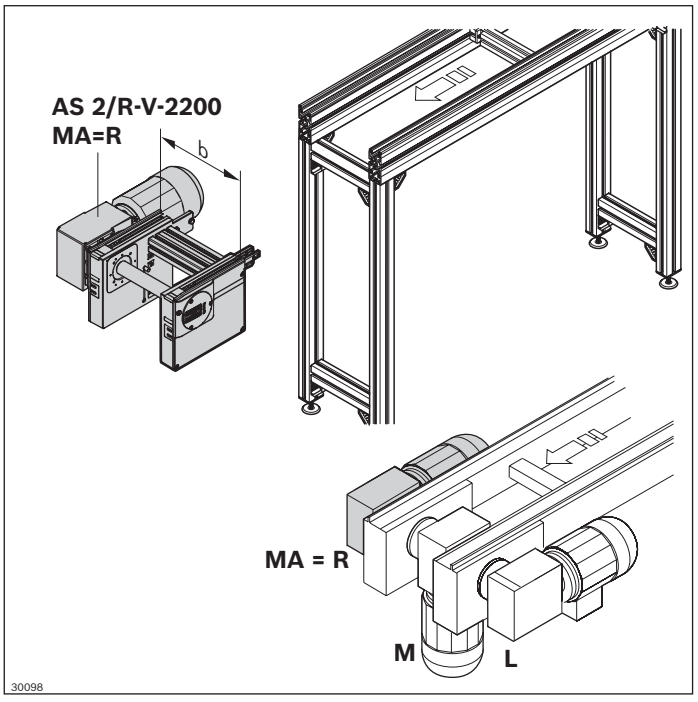
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



Material number		3842998234
b (mm)	Track width in direction of transport	400; 480; 640; 800; 1040; 1200
		400 ... 1200[1]
v_N (m/min)	Nominal speed of the chain	0[2]; 6; 9; 12; 15; 18[3]
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M

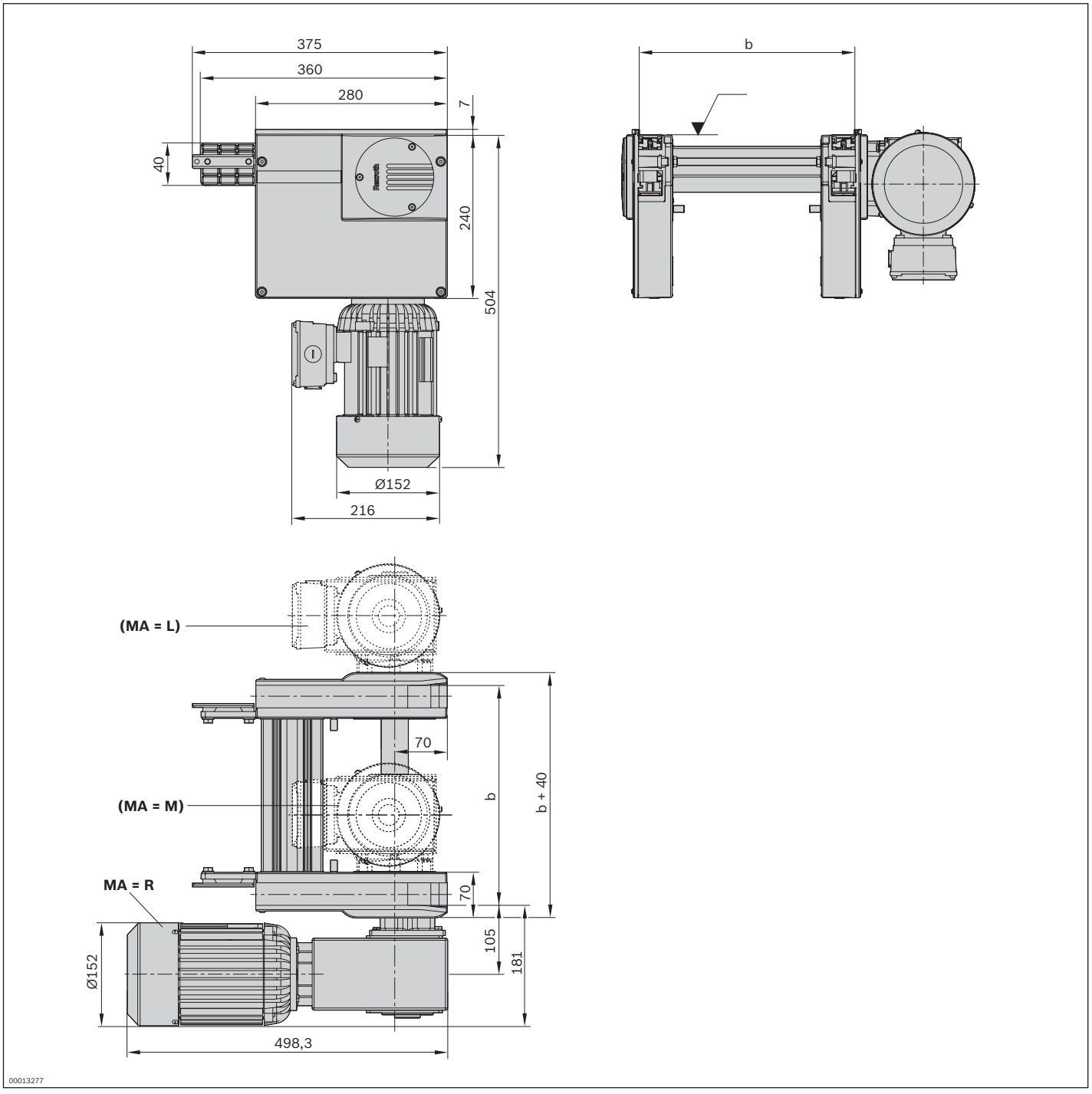
[1] Individual width variants available
[2] v_N = 0: without motor or gear
[3] Reduced load to 1800 kg

Technical data

Material number			3842998234
Load			
Max. section load in accumulation operation		kg	2200
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{AS}	mm	625

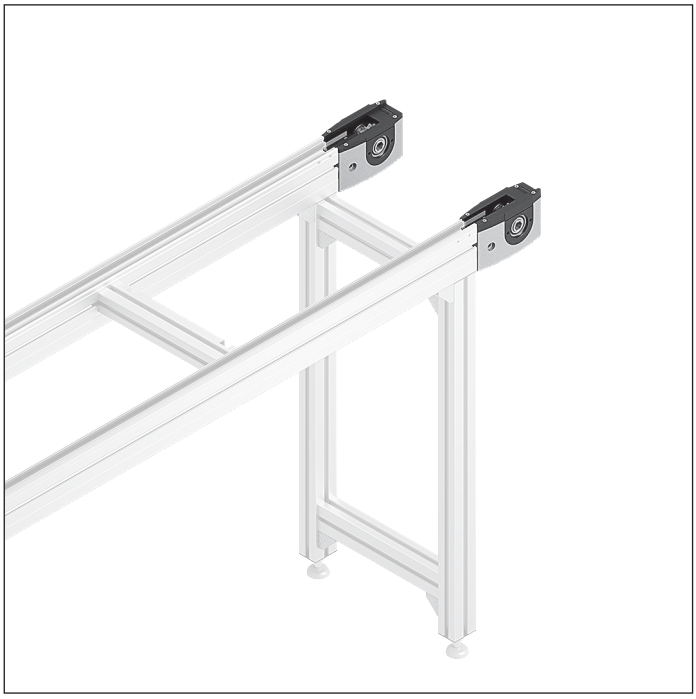
* Formula for calculating the conveyor medium, see p. 3-223

Dimensions


375
360
280
7
40
240
504
Ø152
216
b
(MA = L)
70
(MA = M)
b
b + 40
MA = R
70
105
181
Ø152
498,3
00013277

UM 2/R-V-170 return unit





- Conveyor medium: V*plus* accumulation roller chain (suitable for use in an EPA)
- For use with all AS 2/R-V drive modules
- Version with pinion for return unit
- Reversible operation possible

The return unit is used for constructing conveyor units. It guides the conveyor medium at the end of the conveyor unit back to the drive module.

Note: On the V*plus* chain, the workpiece pallet attains a speed up to the factor of 2.5 higher than that of the chain. Special requirements must therefore be observed for chain speeds > 9 m/min!

Delivery notes

Scope of delivery

- One pair of return heads
- Incl. all fastening material to mount on the ST 2 section

Condition on delivery

- Fully assembled

Ordering information

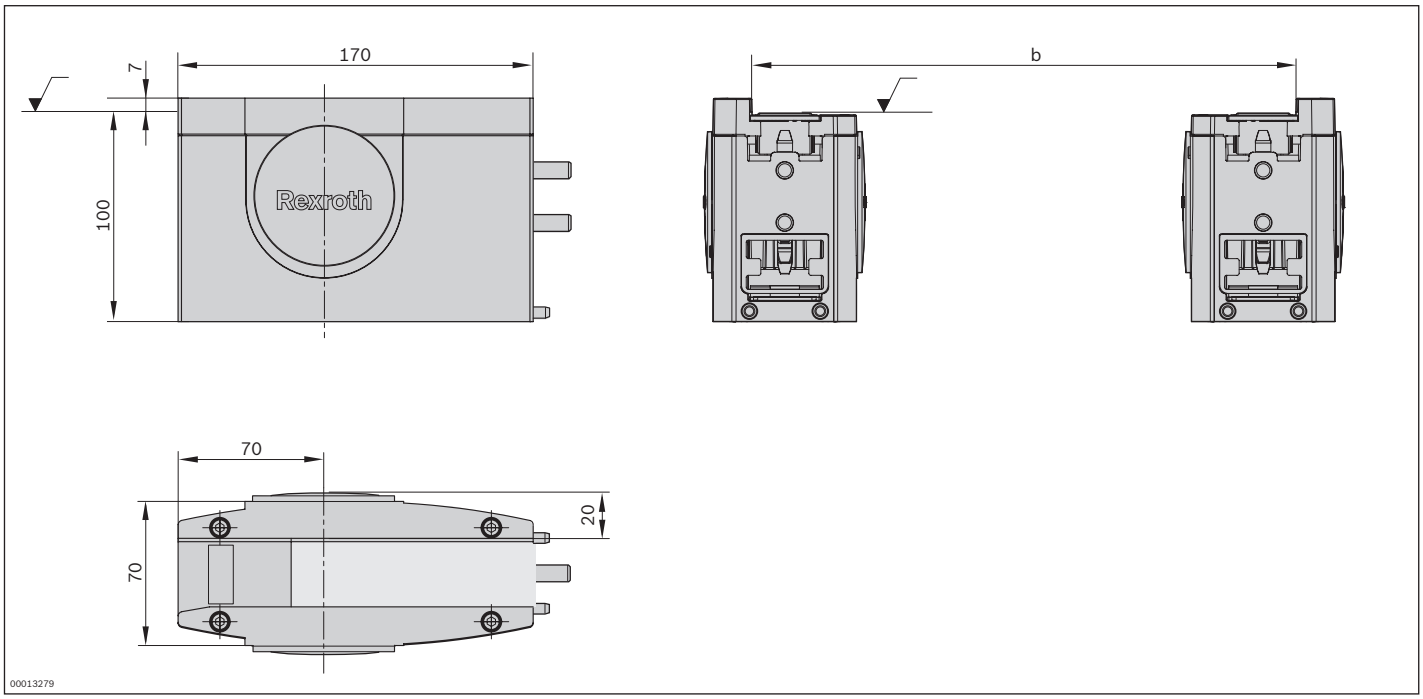
Product designation	Material number
UM 2/R-V-170 return unit	3842536803

Technical data

Material number			3842536803
Features			
ESD			Yes
Additional information			
Required conveyor medium length*	l_{UM}	mm	310

* Formula for calculating the conveyor medium, see p. 3-223

Dimensions



ST 2/R-V section





- Section profile in especially sturdy design for section loads of up to 30% higher

The section is used for the construction of conveyor units in conjunction with the V*plus* accumulation roller chain with the AS 2/R-V drive module and the UM 2/R-V return unit

Accessories

Required accessories

- Adapter plate kit, see p. 3-214

Recommended accessories

- SZ 2/...-H leg sets, see p. 6-2
- Cross connector, see p. 3-216
- Profile connector, see p. 3-215

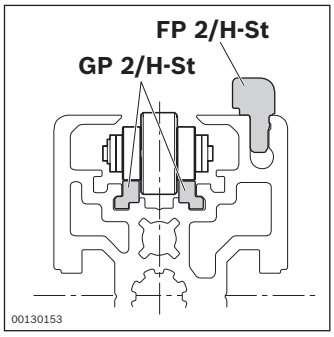
Delivery notes

Scope of delivery

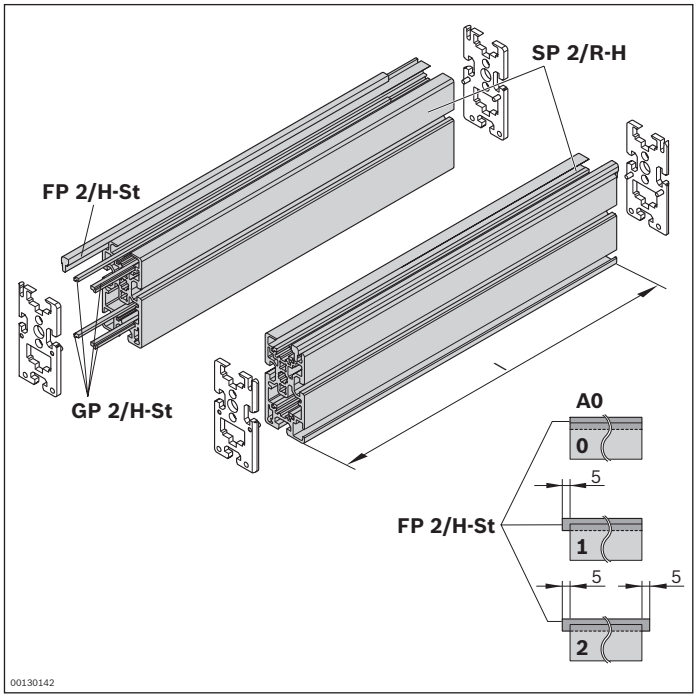
- 2x SP 2/R-H section profile
- 2x FP 2/H-St guide profile
- 4x GP 2/H-St glide profile (in a different mounting position)

Condition on delivery

- Fully assembled



Ordering information

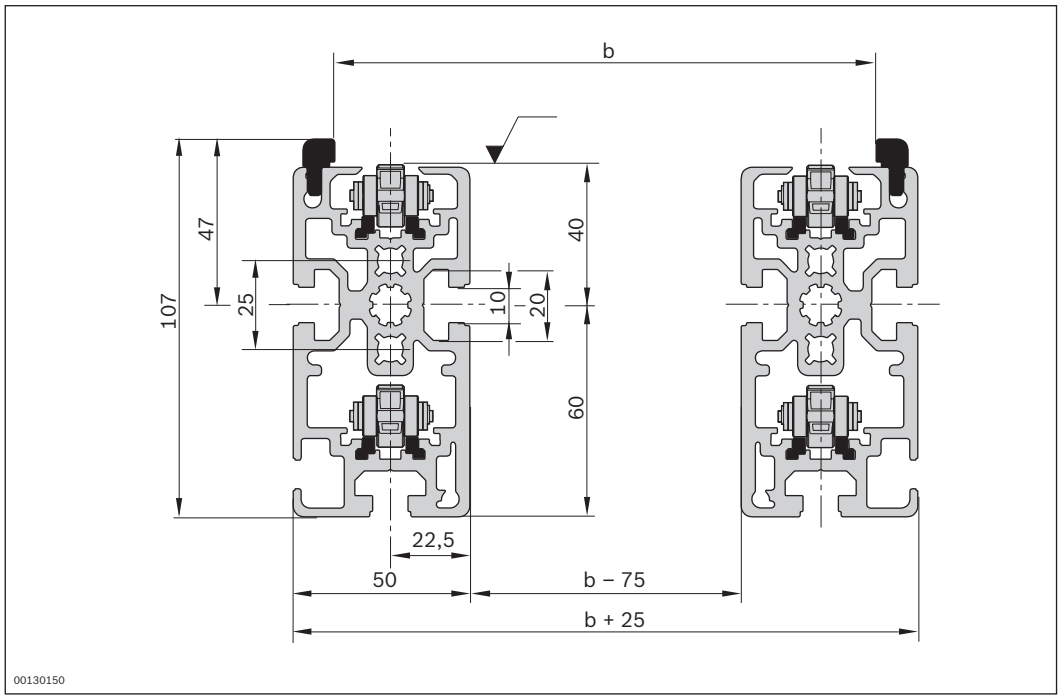


Material number		**3842995000**
l (mm)	Length	200 ... 6000
AO	Installation location Steel glide profile AO = 0; 1; 2	0; 1; 2
GP	Glide profile corro-sion-resistant steel (GP = 1)	1

Technical data

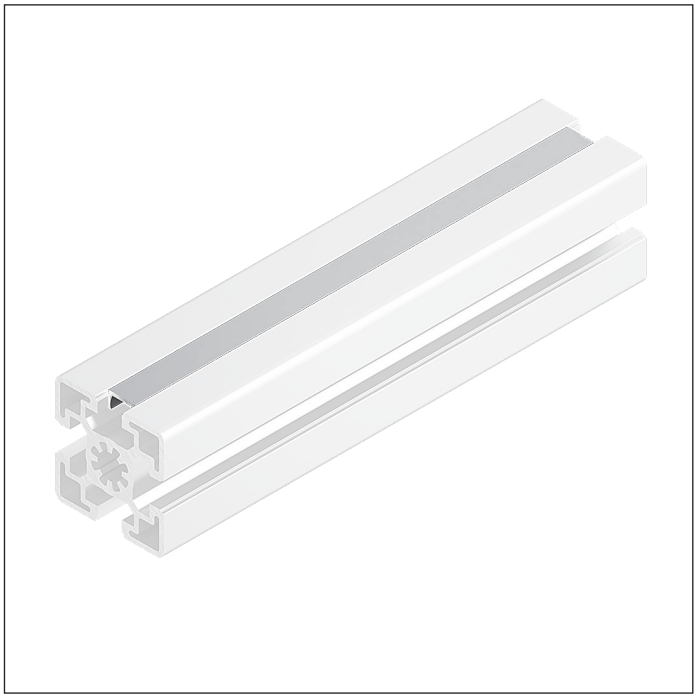
Material number			**3842995000**
Features			
ESD			Yes
Material specification			Section profile: Aluminum; anodized Guide profile: Steel; corrosion-resistant Glide profile: Steel; corrosion-resistant
Dimensions			
Length	l	mm	200 ... 6000

Dimensions



Cover rail for cable duct

10



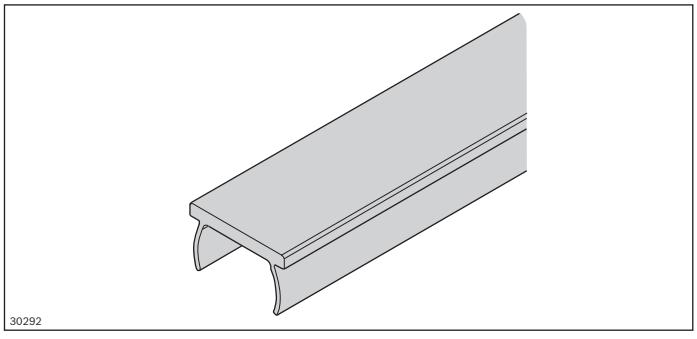
- To prevent dirt from entering the profile slot
- For fixing cables in position
- Flush with profile

Ordering information

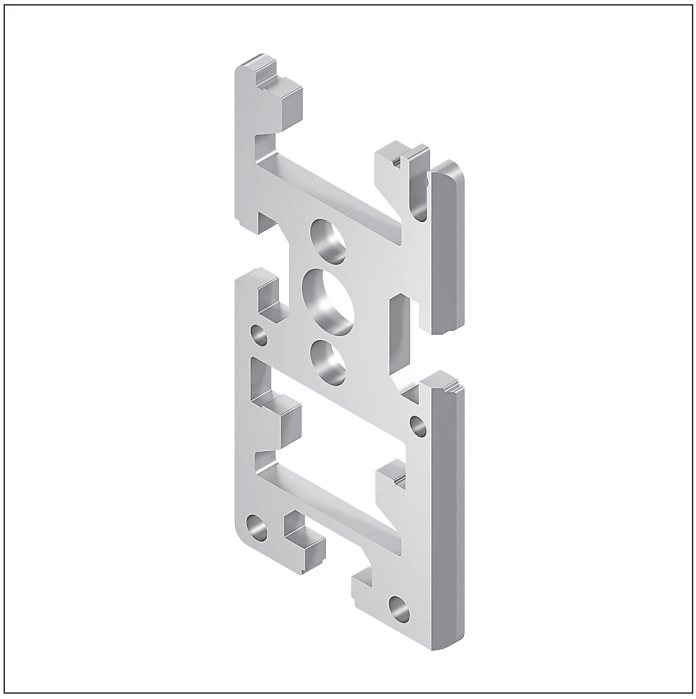
Product designation	Packaging unit	Material number
Cover rail for cable duct	10	3842523258

Technical data

Material number			**3842523258**
Features			
Material specification			Aluminum, natural; anodized
Dimensions			
Length	l	mm	2000



ST 2/R-V adapter plate kit



- Front end plate
- For connecting SP 2/R-H section profiles and AS 2/R-V drive modules, for connecting SP 2/R-H section profiles and UM 2/R-V-170 return units;
  and between section profiles if GP 2 plastic glide profiles are used

The adapter plates are used as front covers and for connecting section profiles and drive modules, or between section profiles and return units.

The adapter plates are also suitable for use between section profiles where GP 2 plastic glide profiles are used.

Delivery notes

Scope of delivery

- 2x left adapter plate
- 2x right adapter plate

Ordering information

Product designation	Packaging unit	Material number
ST 2/R-V adapter plate kit	4	3842536802

Technical data

Material number	3842536802
Features	
ESD	Yes
Material specification	Steel; corrosion-resistant

Profile connector



- For the end-to-end connecting of two profiles SP 2/... Two profile connectors are recommended for each profile joint
- For conveyor unit self-assembly
- For use with all AS 2/R-V drive modules, UM 2/R-V return units and SP 2/R-H section profiles

Delivery notes

Scope of delivery

- Profile connector, screws

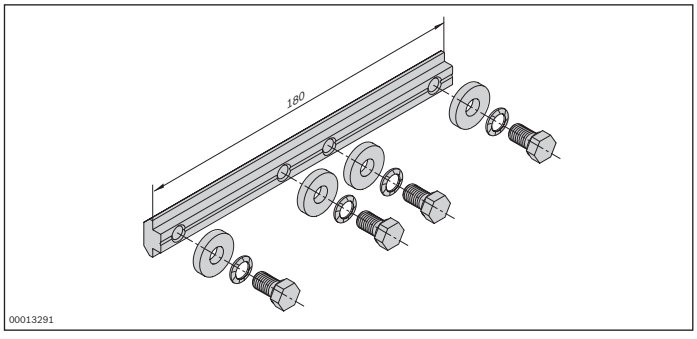
Ordering information

Product designation	Material number
Profile connector	3842528746

Technical data

Material number	3842528746
Features	
Material specification	Steel; galvanized

Dimensions



QV 2 cross connector



- For conveyor unit self-assembly
- For connecting section profiles and defining the track width
- For use with all AS 2/R-V drive modules, UM 2/R-V return units and SP 2/R-H section profiles

The cross connectors serve to connect the conveyor section profiles.

Formula for calculating the number of cross connectors needed

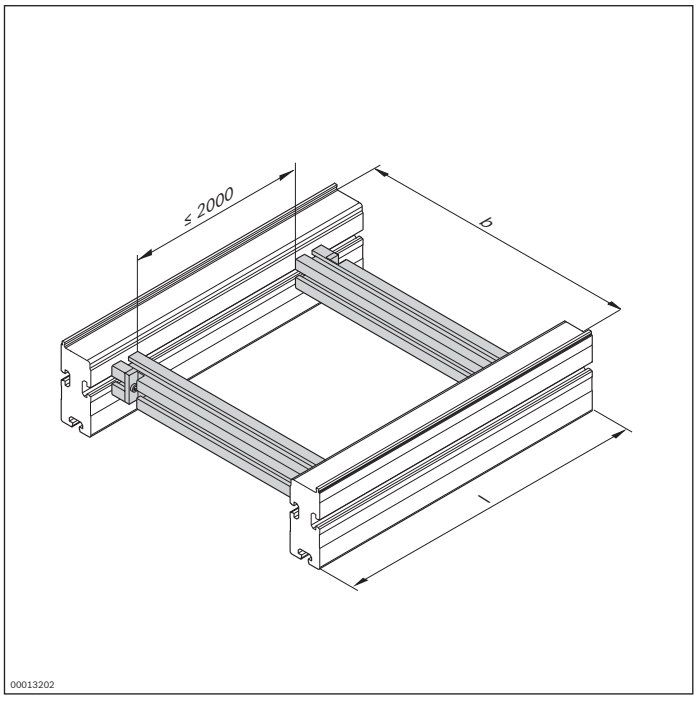
A_{QV} = (l/2000 mm) + 1

A_{QV} = number of cross connectors
l = section length

Delivery notes
Scope of delivery

- 45x60 strut profile, finished
- 2x fastening material to mount on an ST 2 section

Ordering information



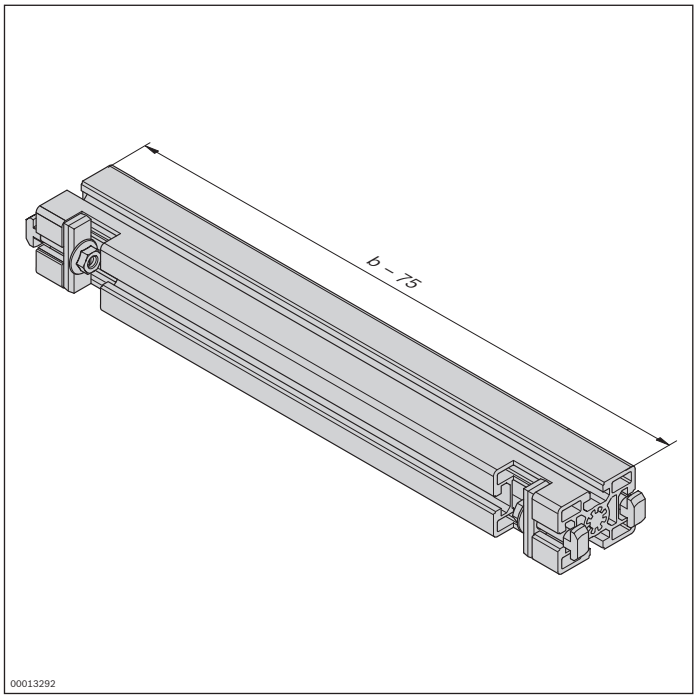
Material number		3842994635
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

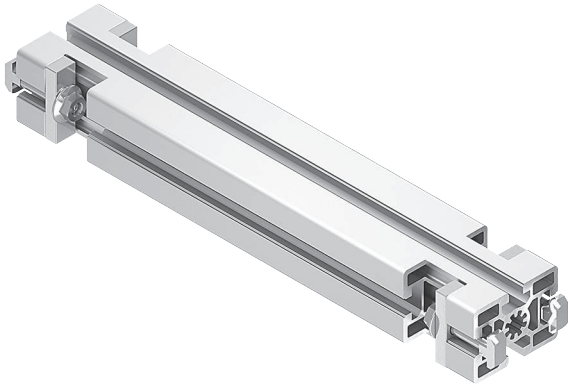
Technical data

Material number	3842994635
Features	
Material specification	Aluminum, natural; anodized

Dimensions



QV 2-H cross connector



- For heavy-duty conveyor unit self-assembly
- For connecting section profiles and defining the track width
- For use with all AS 2/R-V drive modules, UM 2/R-V return units and SP 2/R-H section profiles

QV 2-H cross connectors are particularly suitable for connections between section profiles in heavy-duty systems.

Formula for calculating the number of cross connectors needed

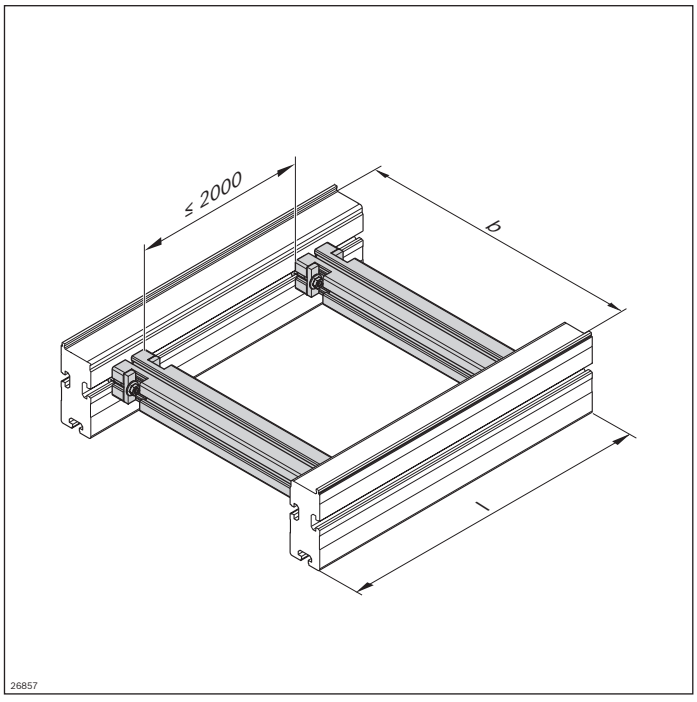
A_{QV} = (l/2000 mm) + 1

A_{QV} = number of cross connectors
l = section length

Delivery notes
Scope of delivery

- 45x60 strut profile, finished
- 4x fastening material to mount on an ST 2 section

Ordering information



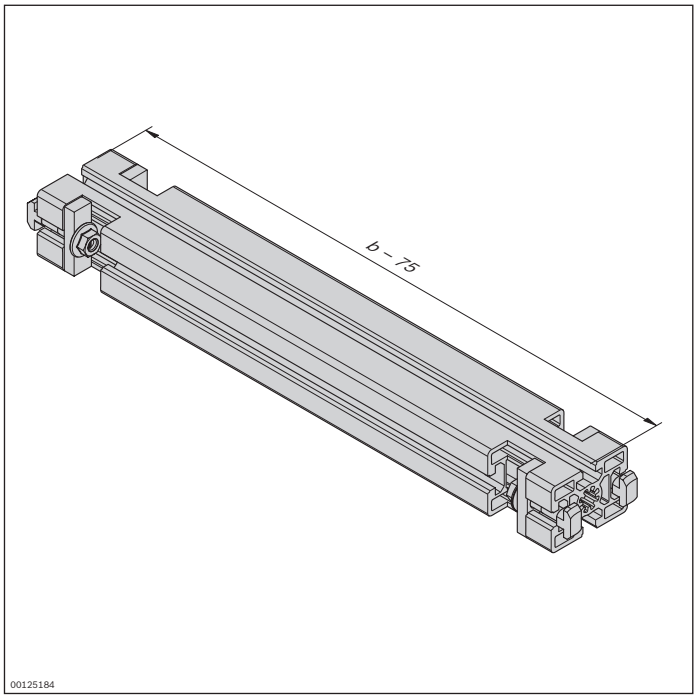
Material number		3842993052
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480: 640; 800; 1040; 1200
		160 ... 1200[1]

[1] Individual width variants available

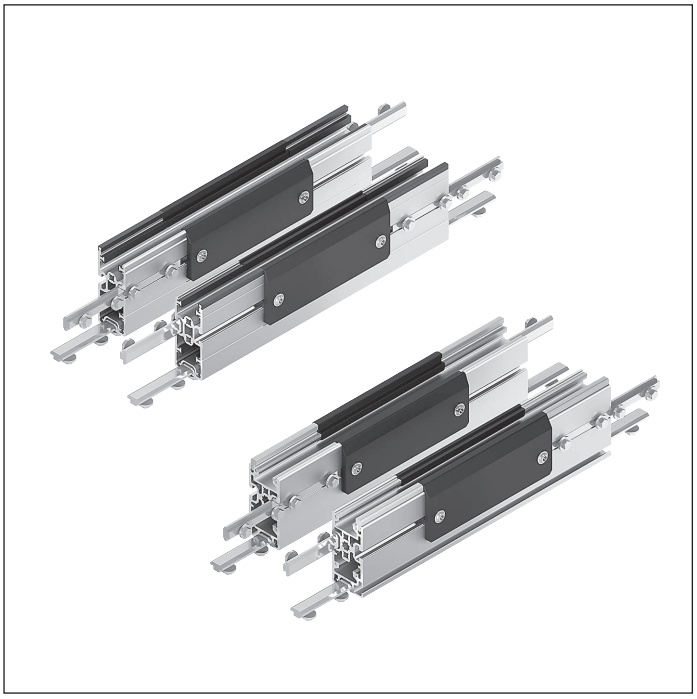
Technical data

Material number	3842993052
Features	
Material specification	Aluminum, natural; anodized

Dimensions



ST 2/R-V-W maintenance section



- For maintenance use (assembly, disassembly or lubrication)
- Two removable side covers each
- Suitable for V*plus* accumulation roller chains
- Suitable for SP 2/R-H section profiles

The maintenance section is a section element with removable caps. It is used for maintenance (assembly, disassembly, lubrication) of the V*plus* accumulation roller chain.

Delivery notes

Scope of delivery

- 2x maintenance section element consisting of ST 2/R-H section profile, FP 2/H-ST guide profile and GP 2/H-Kst glide profile
- 4x side cover
- 8x profile connector
- Fastening material

Ordering information

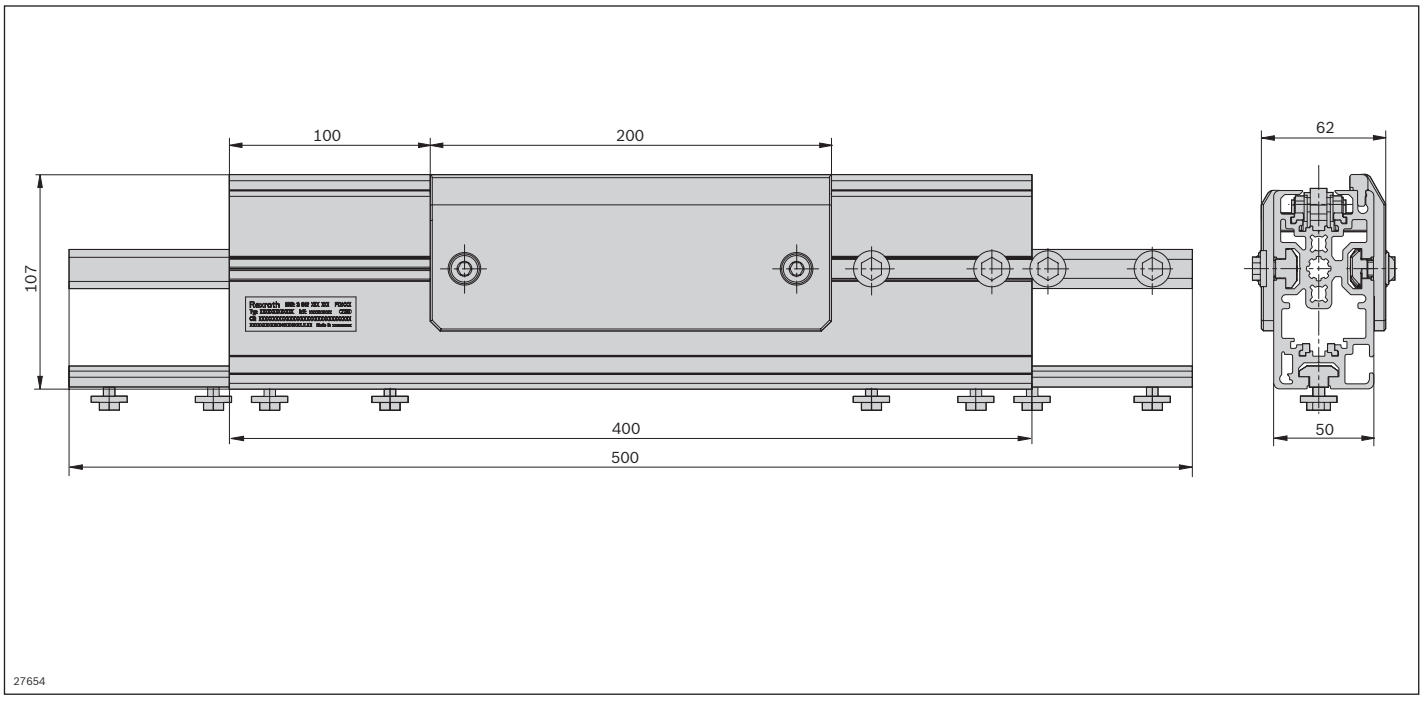
Product designation	Material number
ST 2/R-V-W maintenance section	3842537320

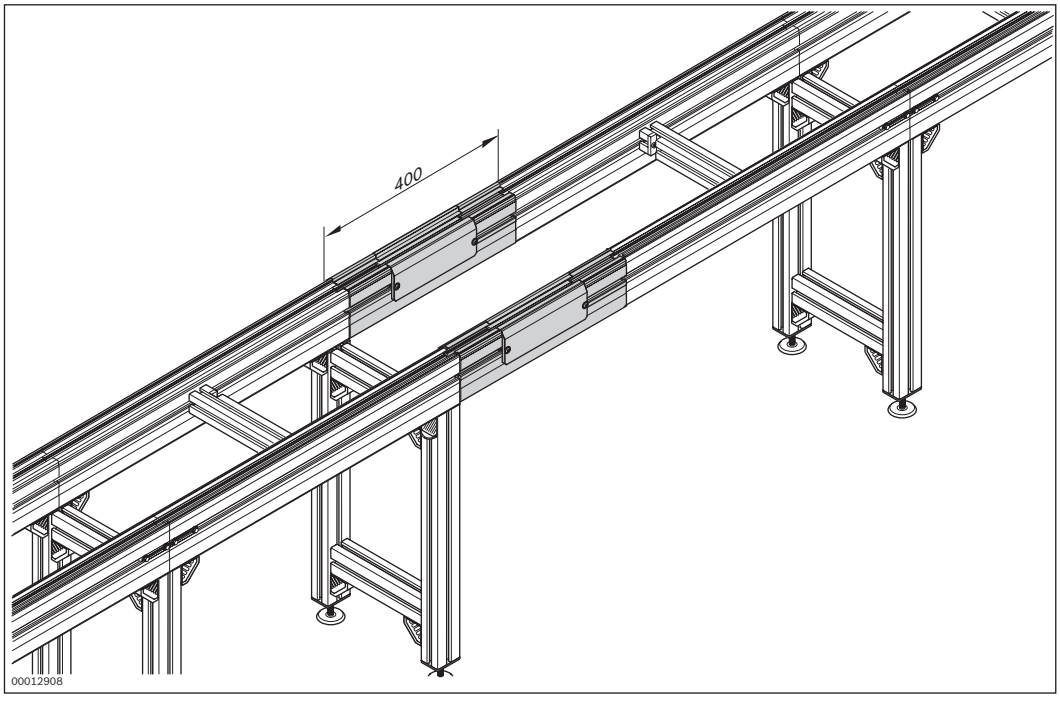
Technical data

Material number			3842537320
Features			
ESD			Yes
Material specification			Section profile: Aluminum, natural; anodized Side cover: Polyethylene
Dimensions			
Length	l	mm	400

Dimensions

ST 2/R-V-W maintenance section





V*plus* accumulation roller chain





1 Accumulation roller chain with steel accumulation rollers
2 Accumulation roller chain with steel accumulation rollers and small parts protection

- Conveyor medium for the workpiece pallets in the TS 2*plus* system
- For conveyor unit self-assembly
- Can be combined with ST 2/R-V and ST 2/R-H conveyor units
- Delivered in units of 12000 mm. Lengths of l > 12000 mm can be produced by connecting several accumulation roller chains using master links.
- Chains are available with small parts protection (= filler pieces in the V*plus* accumulation roller chain prevent small parts from pinching)

Note: Reversible operation is not possible in conjunction with small parts protection.

Note: On the V*plus* accumulation roller chain, the workpiece pallet can attain a speed up to a factor of 2.5 higher than that of the chain. Special requirements must therefore be observed for chain speeds > 9 m/min!

Delivery notes

Scope of delivery

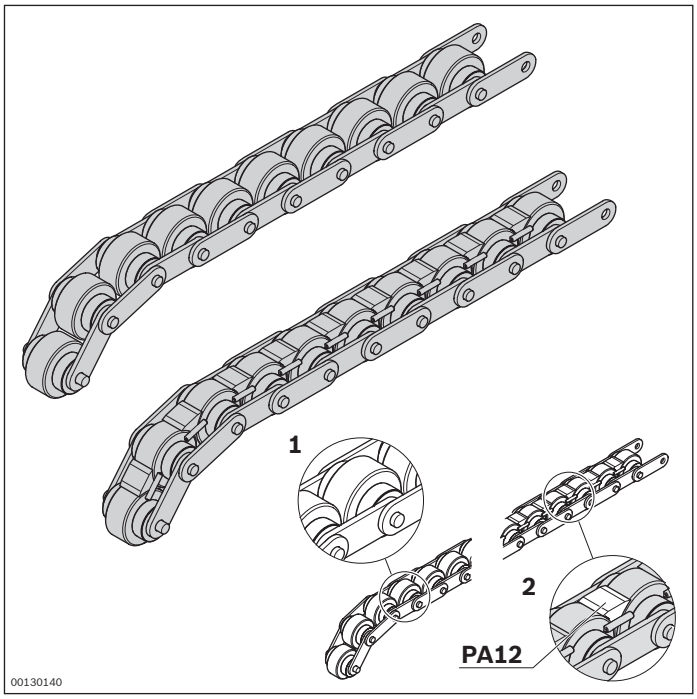
- Units up to 12000 mm, incl. 1x master link

Ordering information

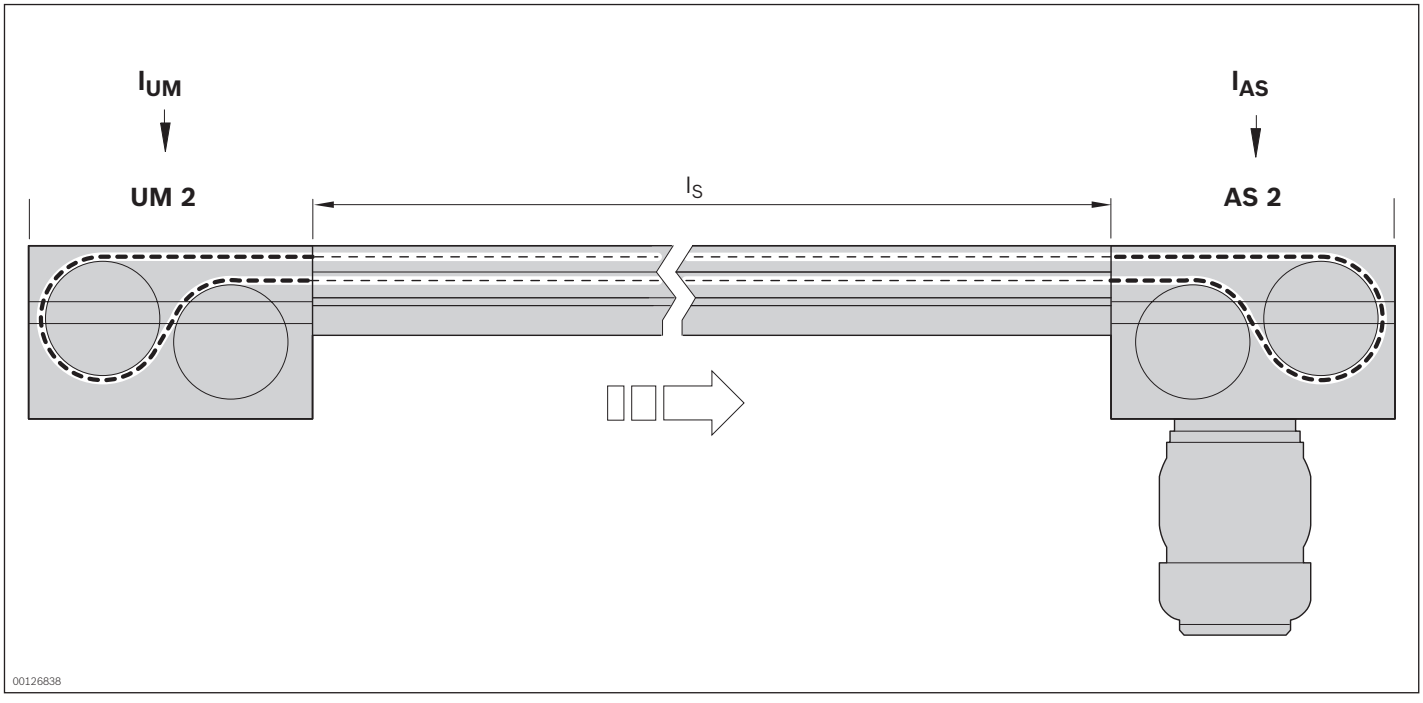
Product designation	Material number
V*plus* accumulation roller chain with steel accumulation rollers	3842538869
V*plus* accumulation roller chains with steel accumulation rollers and small parts protection	3842538870

Technical data

Material number			3842538869	3842538870
Features				
ESD			Yes	Yes
Material specification			Rollers: Steel	Rollers: Steel Small parts protection: PA 12 (suitable for use in an EPA)
Dimensions				
Length	l	mm	12000	12000



Dimensions



The required chain length is determined using the following formula.

$$l_R = 2 \times l_S + l_{AS} + l_{UM}$$

l_R= length of accumulation roller chain
l_S = length of the section profile
l_{AS} = length of the conveyor medium in the drive module
l_{UM} = length of the conveyor medium at the return unit

Length of the conveyor medium for accumulation roller chain

$l_{UM\ 2/C\text{-}170}$ = 310 mm
$l_{UM\ 2/C\text{-}60}$ = 150 mm
l_{AS} = 625 mm

Master link for V*plus* accumulation roller chain





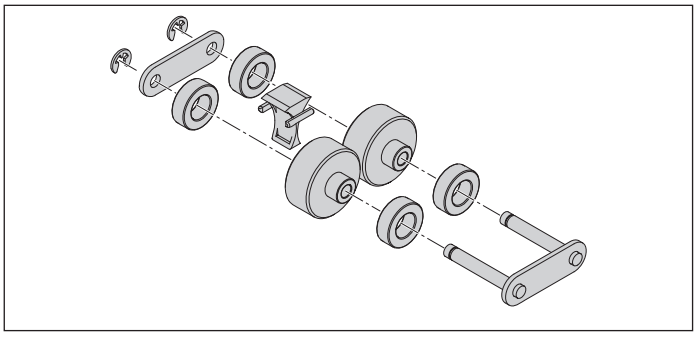
- To close the V*plus* accumulation roller chain after insertion in conveyor section element
- Only suitable for V*plus* accumulation roller chains

Ordering information

Product designation	Material number
Master link for V*plus* accumulation roller chain	3842538872

Technical data

Material number	3842538872
Features	
ESD	Yes



Chain breaker for V*plus* accumulation roller chain





- For disassembly of V*plus* accumulation roller chains
- Makes it easier to open and disassemble the V*plus* accumulation roller chain.
- Turning the thread pin pushes out a chain bolt and the chain can be removed

Delivery notes

Condition on delivery

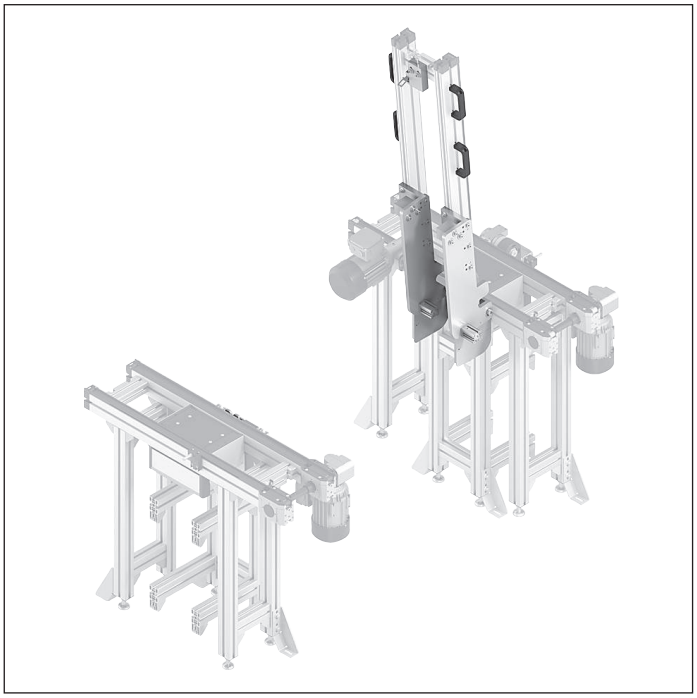
- Fully assembled

Ordering information

Product designation	Material number
Chain breaker for V*plus* accumulation roller chain	3842539357

LG 2/H lift gate





- Can be used for BS 2, BS 2/C-100, BS 2/R-300 belt sections and for combinations of section ST 2/C-H (ST 2/R-H), drive AS 2/C-100 (AS 2/R-300) and return unit UM 2/C-60 (UM 2/R-60)
- From width b = 240 mm up to b = 1200 mm
- For passage width (A) 600 ... 1800 mm
- In open position (85°), locked
- Mechanical unlocking, optionally with pneumatic unlocking (PN kit)
- Safety switch in off position
- Can be used as transverse section

Note:

- The length of the belt section (l_{BS}) is the passage width plus 500 mm
- The total required space of the LG 2/H is the passage width plus 535 mm

Accessories

Required accessories

- 1x BS 2 belt section, see p. 3-6, or conveyor unit
- 2x SZ 2 leg set, see p. 6-6
- 2x 4 45x60 strut profile, see p. 3-232
- 16x 45x45 bracket, see p. 3-232
- 2x foundation bracket, see p. 3-231 and 6-28

Recommended accessories

- PN kit, see p. 3-232

Delivery notes

Scope of delivery

- Mounting kit with gas pressure springs, attachment kit, locking and safety switch

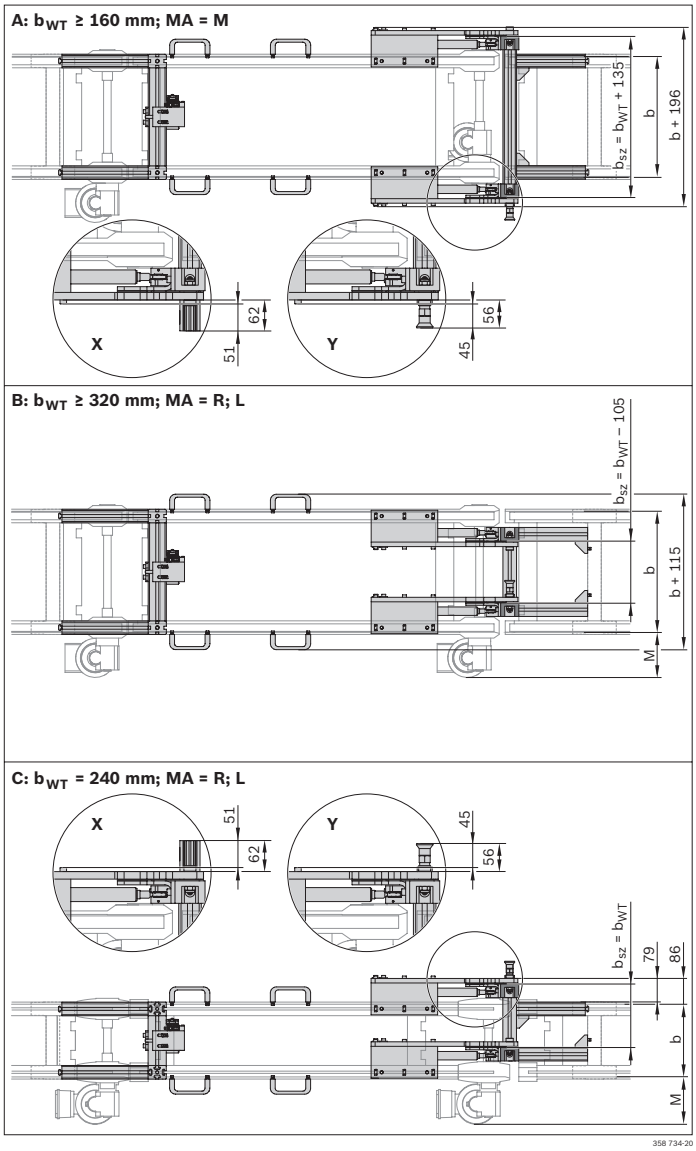
Condition on delivery

- Not assembled

The LG 2/H lift gate provides access or passage to the inner spaces of a belt section (BS). Manually tilting the belt section can open it from 0° to 85° or close it from 85° to 0°. The effort required to do this is reduced with the aid of a gas pressure spring.

Overall width of the different lift gate assembly variants

Lift gate interfering contours



The following applies to the BS 2: When MA = M and b = 160 mm, the max. section load is only 30 kg

The total width results from the belt section width (b), the motor width (M) and other interfering contours (e.g., locking bolts for unlocking, etc.).
The requirements for other interfering contours are specified in the dimension drawings on the left.
In addition, the workpiece pallet width need not be taken into account.

Overall width/obtruding parts

	Belt section	M (mm)
B	BS 2	154.0
	BS 2/C-100	158.5
	BS 2/R-300	158.5
	ST 2/C-H	158.5
	ST 2/R-H	158.5
C	BS 2	154.0
	BS 2/C-100	158.5
	BS 2/R-300	158.5
	ST 2/C-H	158.5
	ST 2/R-H	158.5

Passage width A
If both plates are mounted outside of the belt section, the minimum width of the workpiece pallet is b_{WT} = 240 mm.

Passage width B
If both plates are mounted in the center of the belt section, the minimum width of the workpiece pallet is b_{WT} = 320 mm.
For mounting a locking bolt (not included) or mounting the PN locking mechanism b_{WT} = 320 mm.

Passage width C
If one plate is mounted in outside or inside of the belt section, the minimum width of the workpiece pallet is b_{WT} = 240 mm.

Selection of the LG 2/H mounting kit for the belt section type

- 1. Select the appropriate table for your belt section type.
- 2. Determine the LG 2/H mounting kit reference number, which can be worked out from the workpiece pallet width b_{WT} and the feed width (A = l_{BS} – 500)
- 3. Use this reference number from the "LG 2/H mounting kit" table to identify the correct mounting kit (see p. 4)

Note:

- The length of the belt section (l_{BS}) is the passage width plus 500 mm
- The total required space of the LG 2/H is the passage width plus 535 mm

BS 2

Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	1	1	1	1	1	1	1	1	1
700	1	1	1	1	1	1	1	1	1
800	1	1	1	1	1	1	1	1	1
900	1	1	1	1	1	1	1	1	1
1000	1	1	1	1	1	1	2	2	2
1100	1	1	1	1	1	2	2	2	2
1200	1	1	1	2	2	2	2	2	2
1300	2	2	2	2	2	2	2	2	2
1400	2	2	2	2	2	2	2	2	2
1500	2	2	2	2	2	2	2	2	2
1600	2	2	2	2	2	2	2	3	3
1700	2	2	2	2	2	3	3	3	3
1800	2	2	2	3	3	3	3	3	3

BS 2 C-100

Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	x*	1	1	2	2	2	2	2	2
700	x*	2	2	2	2	2	2	2	2
800	x*	2	2	2	2	2	2	2	2
900	x*	2	2	2	2	2	3	3	3
1000	x*	2	2	2	3	3	3	3	3
1100	x*	3	3	3	3	3	3	3	3
1200	x*	3	3	3	3	3	3	3	3
1300	x*	3	3	3	3	3	4	4	4
1400	x*	3	3	3	4	4	4	5	5
1500	x*	4	4	4	4	5	5	5	5
1600	x*	4	4	4	5	5	5	5	5
1700	x*	5	5	5	5	5	5	5	5
1800	x*	5	5	5	5	5	6	6	6

x* Mounting not possible

BS 2 R-300 ks

Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	x*	2	2	2	2	2	2	3	3
700	x*	2	2	2	2	2	3	3	3
800	x*	2	2	2	2	3	3	3	3
900	x*	2	2	2	3	3	3	3	3
1000	x*	3	3	3	3	3	3	4	4
1100	x*	3	3	3	3	3	4	4	4
1200	x*	3	3	3	3	4	4	5	5
1300	x*	4	4	4	4	4	5	5	5
1400	x*	4	4	4	4	5	5	5	5
1500	x*	4	4	5	5	5	5	5	5
1600	x*	5	5	5	5	5	5	6	6
1700	x*	5	5	5	5	6	6	6	6
1800	x*	5	6	6	6	6	6	6	6

x* Mounting not possible

BS 2 R-300 st

Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	x*	2	2	2	2	2	3	3	3
700	x*	2	2	2	2	3	3	3	3
800	x*	3	3	3	3	3	3	3	3
900	x*	3	3	3	3	3	3	4	4
1000	x*	3	3	3	3	3	4	4	4
1100	x*	3	3	3	4	4	4	5	5
1200	x*	4	4	4	4	4	5	5	5
1300	x*	4	4	4	5	5	5	5	5
1400	x*	5	5	5	5	5	5	5	5
1500	x*	5	5	5	5	5	5	6	6
1600	x*	5	5	5	5	5	6	6	6
1700	x*	5	6	6	6	6	6	6	6
1800	x*	6	6	6	6	6	6	6	6

x* Mounting not possible

Conveyor unit
ST 2/C-H + AS 2/C-100 + UM 2/C-60

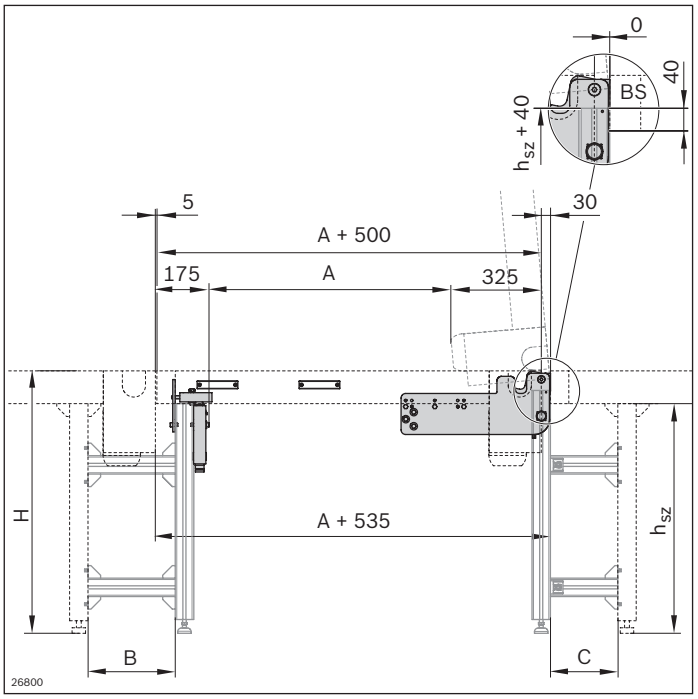
Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	x*	2	2	3	3	3	3	3	3
700	x*	3	3	3	3	3	3	3	4
800	x*	3	3	3	3	3	4	4	4
900	x*	3	3	3	4	4	4	4	4
1000	x*	4	4	4	4	4	5	5	5
1100	x*	4	4	5	5	5	5	5	5
1200	x*	5	5	5	5	5	5	5	5
1300	x*	5	5	5	5	5	5	5	6
1400	x*	5	5	5	5	6	6	6	6
1500	x*	5	6	6	6	6	6	6	6
1600	x*	6	6	6	6	6	6	6	7
1700	x*	6	6	6	6	7	7	7	7
1800	x*	6	6	6	6	7	7	7	7

x* Mounting not possible

Conveyor unit
ST 2/R-H + AS 2/R-300 + UM 2/R-60 (st)

Passage width A	Width of workpiece pallet b_{WT}								
	160	240	320	400	480	640	800	1040	1200
600	x*	2	3	3	3	3	3	3	3
700	x*	3	3	3	3	3	3	4	4
800	x*	3	3	3	3	4	4	4	4
900	x*	3	3	4	4	4	4	4	4
1000	x*	4	4	4	4	5	5	5	5
1100	x*	4	5	5	5	5	5	5	5
1200	x*	5	5	5	5	5	5	5	5
1300	x*	5	5	5	5	5	5	6	6
1400	x*	5	5	5	6	6	6	6	6
1500	x*	6	6	6	6	6	6	6	6
1600	x*	6	6	6	6	6	6	7	7
1700	x*	6	6	6	7	7	7	7	7
1800	x*	6	6	6	7	7	7	7	7

x* Mounting not possible



LG 2/H mounting kit

- Determine the LG 2/H mounting kit reference number using the tables and the description “Selection of the LG 2/H mounting kit for the belt section type” on page 3-228f.
  The reference number is also the mounting kit number. For example, if the reference number is 2, the mounting kit number is also 2.

Minimum length of the leg connection:

Minimum length B/C (mm)	Connection
145*)	BS 2 return unit
175*)	UM 2/C-60, UM 2/R-60
245	BS 2 drive
285	AS 2/C-100, AS 2/C-250, AS 2/R-300, AS 2/R-700, UM 2/C-170, UM 2/R-170
395	AS 2/C-400, AS 2/C-700, AS 2/R-1200, AS 2/R-220

*) Optimal leg connection for ideal support: 220 mm

Required accessories:

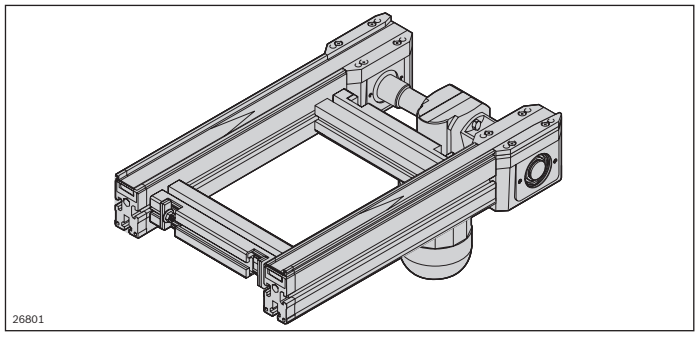
- 1x BS 2 belt section, see p. 3-6, or conveyor unit
- 2x SZ 2 leg set, see p. 6-6
- 2x 4 45x60 strut profile, see p. 3-232
- 16x 45x45 bracket, see p. 3-232
- 2x foundation bracket, see p. 3-231

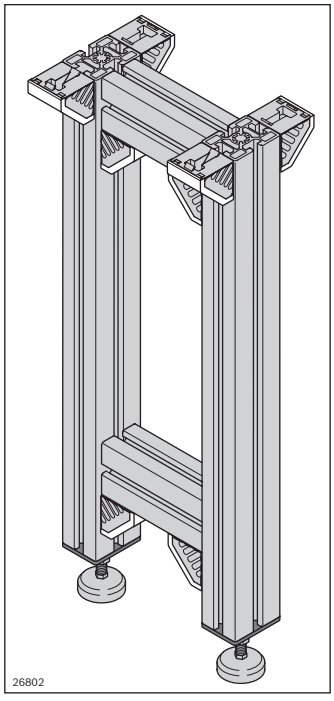
Recommended accessories:

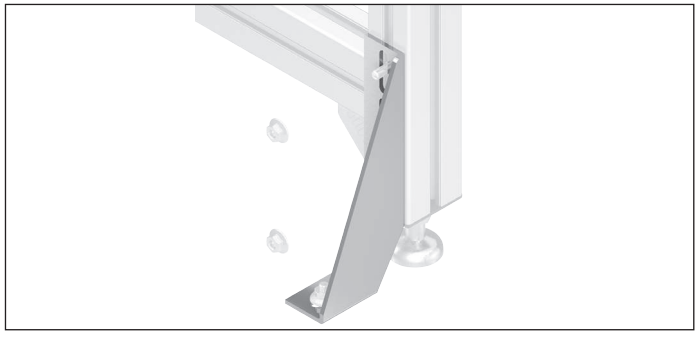
- PN kit for unlocking in the top end position, see p. 3-232

Ordering information

LG 2/H mounting kit	Packaging unit	Material number
1	1	**3842549511**
2	1	**3842549512**
3	1	**3842549513**
4	1	**3842549514**
5	1	**3842549515**
6	1	**3842549516**
7	1	**3842549517**







Belt section of l = A + 500

Select the length (l) of the belt section (BS).

l = A + 500 mm, according to the ambient system:

- BS 2, see p 3-6
- BS 2/C-100, see p. 3-55
- BS 2/R-300 plastic chain and steel chain, see p. 3-122
- Conveyor unit: ST 2/R-H (see p. 3-161), AS 2/R-300 (see p. 3-136), UM 2/R-60 (see p. 3-148)
- Conveyor unit: ST 2/C-H (see p. 3-91), AS 2/C-100 (see p. 3-68), UM 2/C-60 (see p. 3-80)

To construct a lift gate, you need:

- One SZ 2 leg set (3842996320) with AO = profile height of a BS 2
- One SZ 2 leg set with parameters, see table below: AO = 60 mm and leg set width b_{SZ}

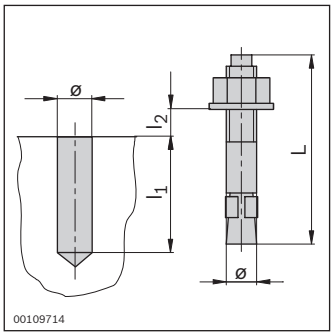
BS 2	SZ 2[1] leg sets	Material number
A b ≥ 160, MA = M	b_{SZ}[3] = b[4] + 120, AO[2] = 60 mm	**3842996320**
B b ≥ 320, MA = L; R	b_{SZ}[3] = b[4] – 120, AO[2] = 60 mm	**3842996320**
C b = 240 MA = L; R	b = b[4] AO[2] = 60 mm	**3842996320**

[1] See also p. 6-7
[2] AO = installation location
[3] b_{SZ} = width b for leg
[4] b = width of belt section
See also p. 3-227:
For **A**: If both plates are mounted outside of the belt section
For **B**: If both plates are mounted in the middle of the belt section
For **C**: If one plate is mounted outside or inside the belt section

Ordering information

Product designation	Packaging unit	Material number
Foundation bracket	20	3842146848

See also p. 6-28



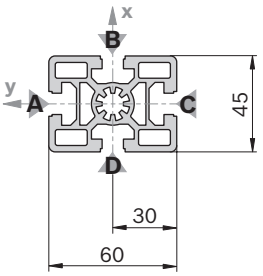
Ordering information

Product designation	Packaging unit	Material number
Floor dowel	100	3842526560

See also p. 6-30

45x60

A = 11,0 cm²
I_x = 37,2 cm⁴
I_y = 22,7 cm⁴
W_x = 12,4 cm³
W_y = 10,1 cm³
m = 3,0 kg/m





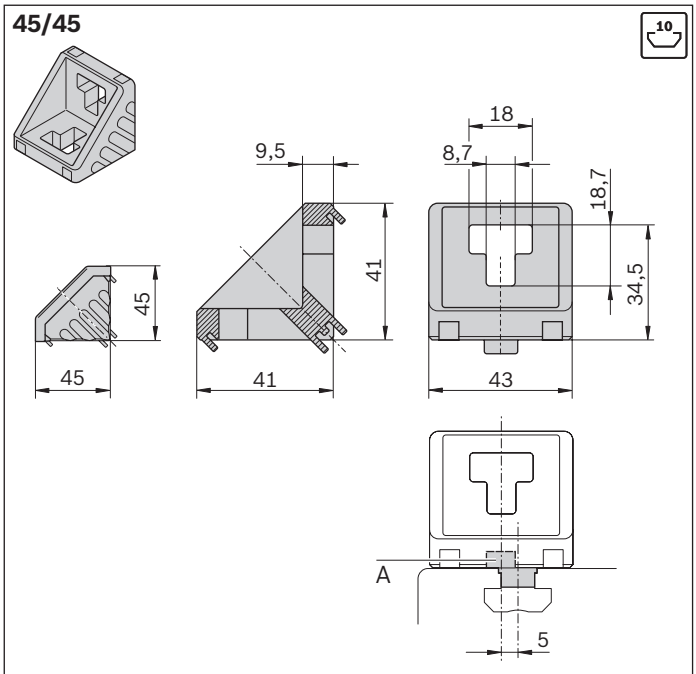
19433

Ordering information

Material number	3842990570
l (mm)	15 ... 5600
Packaging unit	1

Note: Determine the required length/number of strut profiles up to the next leg set according to your needs.

45/45



00109431

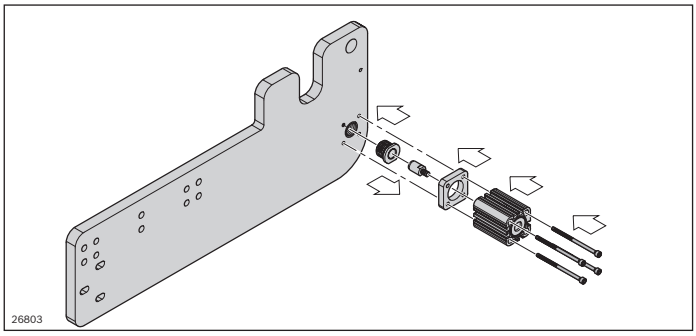
Ordering information

Product designation	Packaging unit	Material number
45/45 bracket set	1	3842523561

Scope of delivery: Incl. fastening material

Technical data

Material number	3842523561
Features	
ESD	Yes
Dimensions	
Groove	10/10



26803

Ordering information

Product designation	Packaging unit	Material number
PN kit	1	3842549509

Safety switch

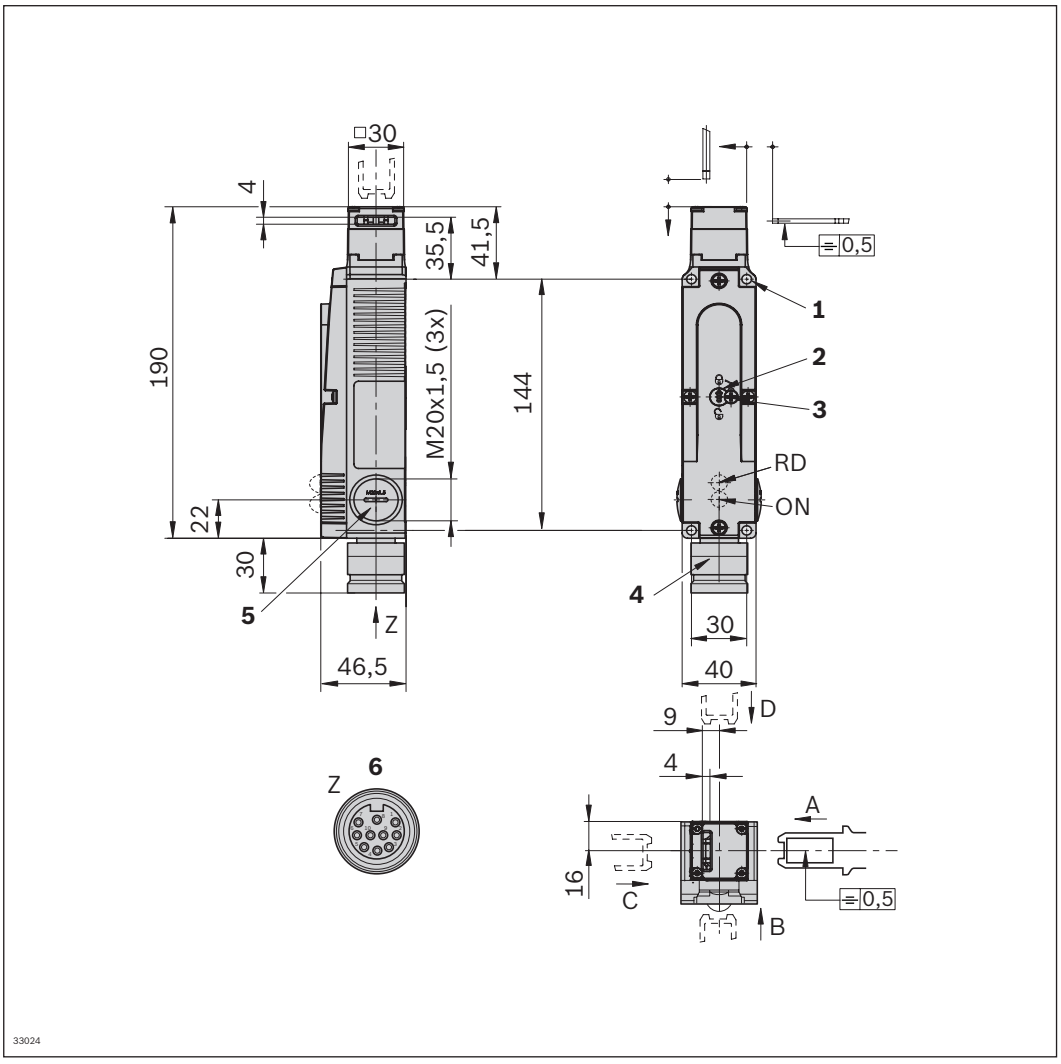
- Connection of safety switch: 10-pin socket, cable with plug not included
- Activator locking type: inserted

Technical data

Features			
Safety switch			STA3A-2131A024L024BHA10C2090
IP rating			IP 65
Material specification			Housing: Die-cast aluminum alloy
Additional information			
Actuation/extraction/retention force		N	35; 30; 20
Max. closing force		N	3000
Closing force Fzh as per testing principle GS-ET-19		N	2300
Actuation frequency		1/h	1200
Switching functions*			1 Mechanically locked. 2 Unlocked by applying a voltage. 3 Opened when the activator is pulled.
Additional information			
Solenoid operating voltage	10%	AC/DC V	24
Operating time	ED	%	100
Connection power		W	8
Connection type			BHA10 integrated plug (9-pin + PE)
Approvals			CE, UL, CCC

* See also “Switching function” on page 3-235

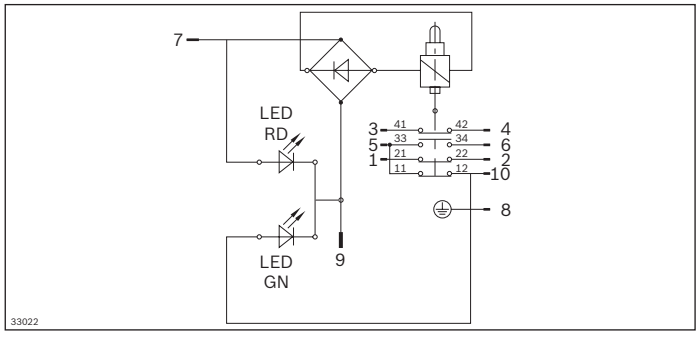
Dimensions



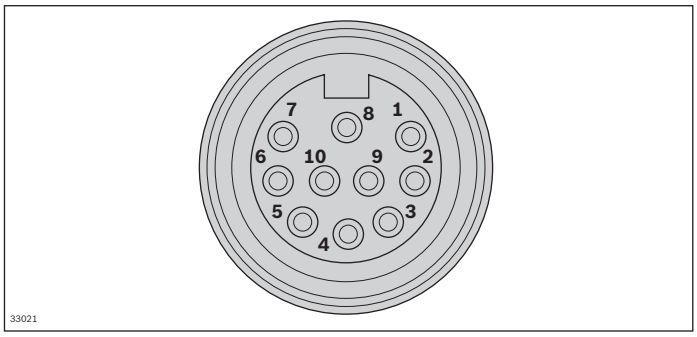
Note on direction of actuation:
After undoing the fastening screws, you can switch the fastening knob to the desired direction of approach.

1 d = 5.3 (4x) for M5x35 mm ISO 1207/100 47
2 Auxiliary release
3 Locking screw
4 Integrated plug
5 M20x1.5 screw plug (2x)
6 BHA10 integrated plug, not aligned

Circuit diagrams

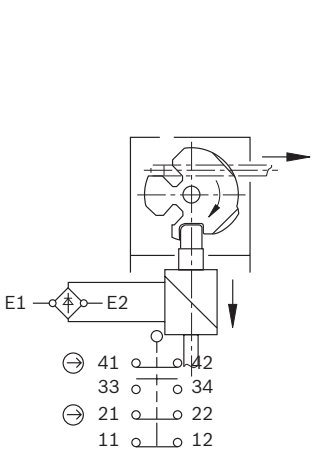
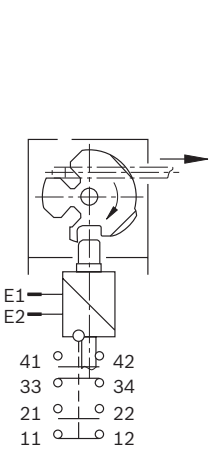
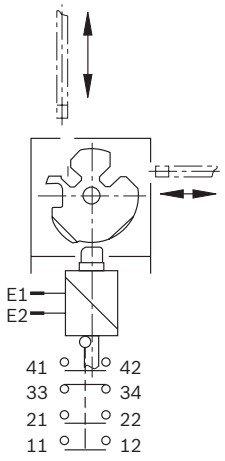


Plug assignment; MR10 socket plug, 10-pin



1 OG	6 OG/BK
2 BU	7 RD
3 WH/BK	8 GN/YE
4 RD/BK	9 BK
5 GN/BL	10 WH

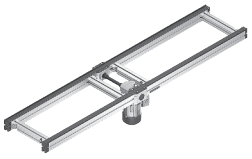
Switching function

Activator	**Inserted**	**Inserted**	**Pulled**
Switch position	**Locked**	**Unlocked**	**Open**
762	1	2	3
Contact element 3NC* + 1NO			

* 2x positively driven NC contacts + 1x delayed NC contact as a door monitoring contact

Connection kits for longitudinal conveyors

Use: For connecting the TS 2*plus* modules on a longitudinal conveyor at the ends (end-to-end)

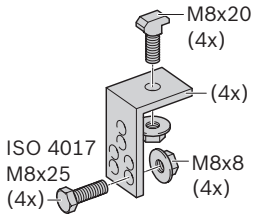
	Return unit (return side)						
	**UM 2/B**	**UM 2/C-60** **UM 2/C-170** **UM 2/R-60** **UM 2/R-170**	**BS 2**	**BS 2/C** **BS 2/C-H** **BS 2/R** **BS 2/R-H**	**KE 2**	**KU 2**	**CU 2**
Drive (drive side)							
AS 2/B-150, **AS 2/-250**	3842179574[1]	3842530871	3842518828	3842530871	3842518828	3842530871	3842518828
AS 2/C-100, **AS 2/C-250,** **KU 2/90,** **KU 2/180**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
AS 2/C-400, **AS 2/C-700**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
AS 2/R-300, **AS 2/R-700**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
AS 2/R-1200, **AS 2/R-2200**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
BS 2	3842518828	3842525110	3842525110	3842525110	3842525110[3]	3842525110	3842525110
BS 2/C **BS 2/R**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
BS 2/C-H **BS 2/R-H**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
KE 2/90 **KE 2/180**	3842518828	–[2]	3842525110	–[2]	3842525110[3]	–[2]	3842525110

[1] Included with UM 2/B

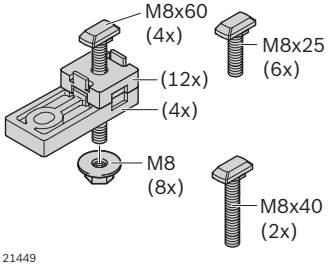
[2] Connection not permitted

[3] Included with KE 2

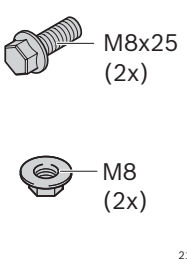
3842518828



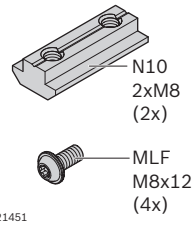
3842525110



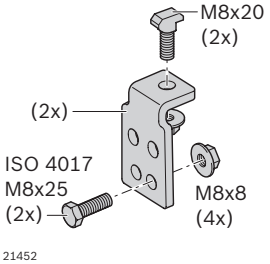
3842179574



3842529881

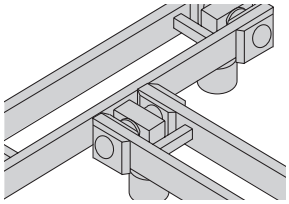


3842530871

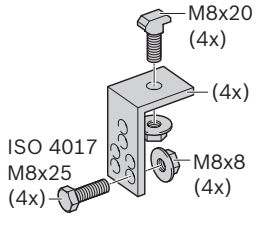


Connection kits for transverse conveyors

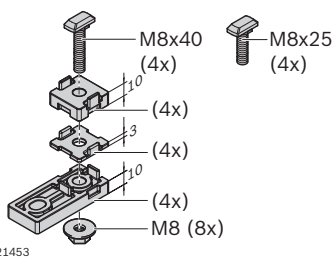
Use: For connecting the TS 2*plus* module on a transverse conveyor laterally (end-to-section), the following are additionally required: Lift transverse unit

	Longitudinal conveyor	
	**ST 2/B** **SP 2/B** **ST 2/B-100** **ST 2/C-100** **ST 2/R-100**	**ST 2/C-H** **ST 2/R-H** **ST 2/R-V**
Transverse conveyor		
AS 2/B-150, **AS 2/B-250**	3842518828	–
AS 2/C-100, **AS 2/C-250**	3842528192	3842528192
AS 2/C-400, **AS 2/C-700**	3842518828	3842518828
AS 2/R-300, **AS 2/R-700**	3842528 192	3842528192
AS 2/R-1200, **AS 2/R-2200**	3842518828	3842518828
UM 2/B	3842518828	–
UM 2/C-60, UM 2/C-170, **UM 2/R-60, UM 2/R-170,**	3842528192	3842528192
BS 2	3842525110	–
BS 2/C (drive side and return side) **BS 2/R (drive side and return side)**	3842528192	3842528192
BS 2/C-H (drive side) **BS 2/R-H (drive side)**	3842518828	3842518828
BS 2/C-H (return side) **BS 2/R-H (return side)**	3842528192	3842528192
KU 2 (drive side and return side)	3842528192	3842528192

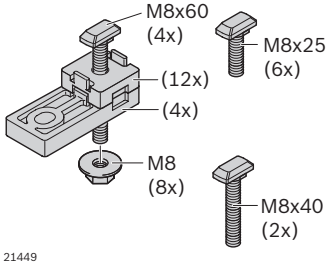
3842518828

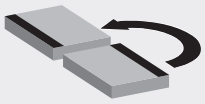


3842528192



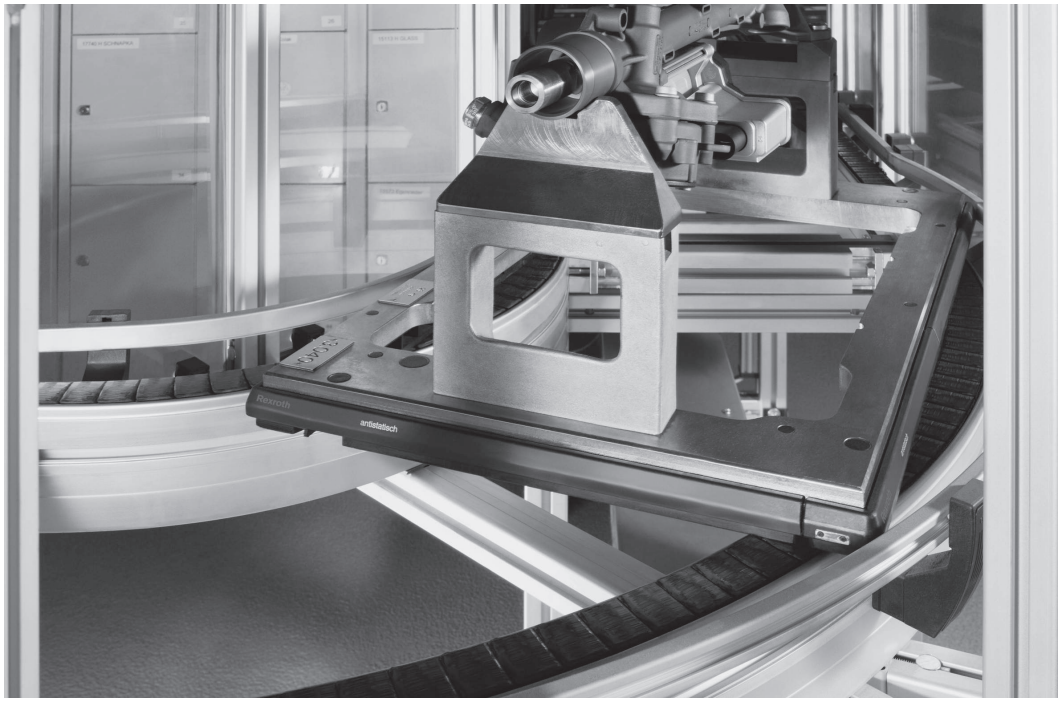
3842525110





Curves

Selection of curves **4-2**



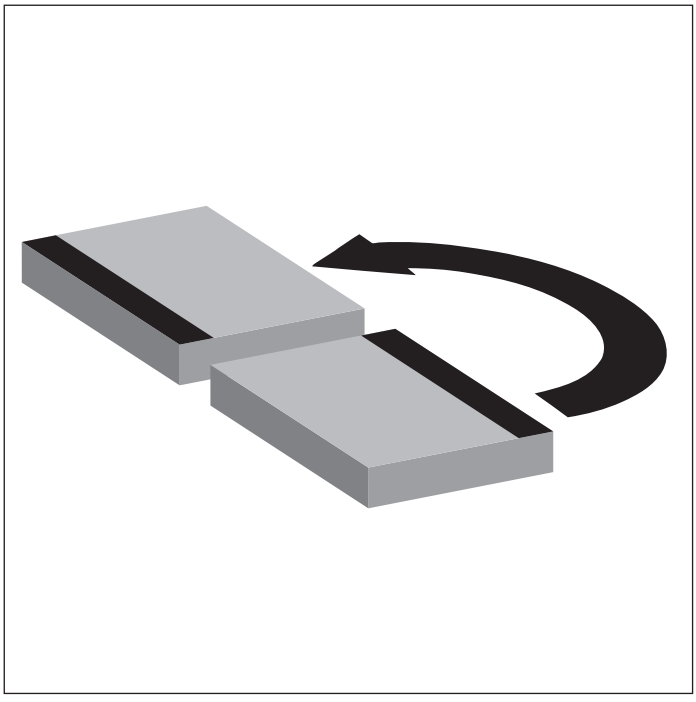




Selection of curves

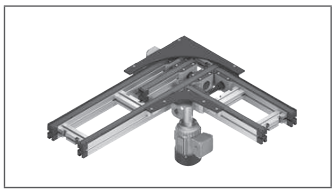
Curves

Curves are used to change the direction of a workpiece pallet and to keep the orientation of the parts traveling (the front is always the front). The pneumatic and electrical installation and control effort for these modular units is minimal.

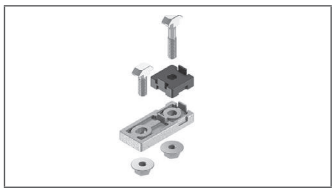


Connection kits

They are used for connecting curves and curve arcs.



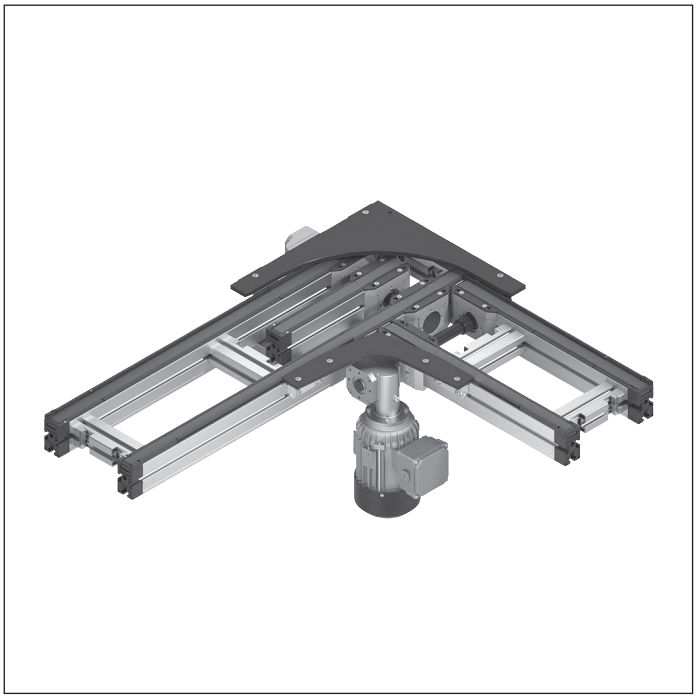
Curves **4-4**



Connection kits for longitudinal conveyor **4-40**

Curves

The following products are available for configuration for the curves:



CU 2/90 curve

Used with the toothed belt conveyor medium (suitable for use in an EPA) without additional drive.

KE curves

Used with the round belt conveyor medium in KE 2/90 and KE 2/180 versions with and without a built-in drive.
Can be used for combining the longitudinal section with belts or toothed belts.

KU curves

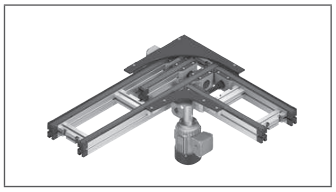
Used with the flat top chain conveyor medium in KU 2/90 and KU 2/180 versions with and without a built-in drive and conveyor medium.

KU curve arc

The construction principle of KU 2/O--90 and KU 2/0-180 curves with the flat top chain conveyor medium allows smooth integration into longer conveyor units driven by a single drive.

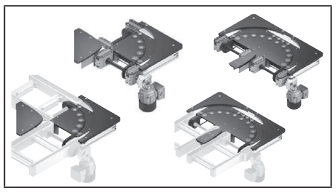
Note:

- For higher drive loads with integration of sections and curves, please consider the layout design
- The use of an automatic lubrication unit for curves with flat top chains is highly recommended

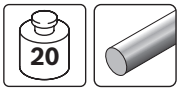


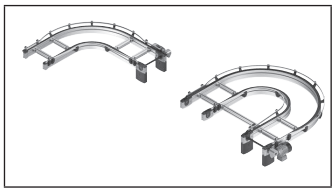
CU 2/90 curve **4-6**





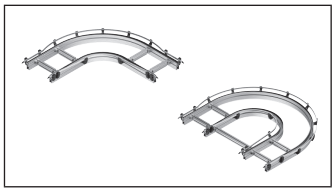
KE 2/..., KE 2/O-... curves **4-9**





KU 2/... curves **4-24**

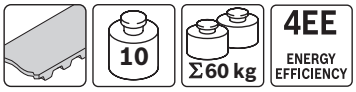


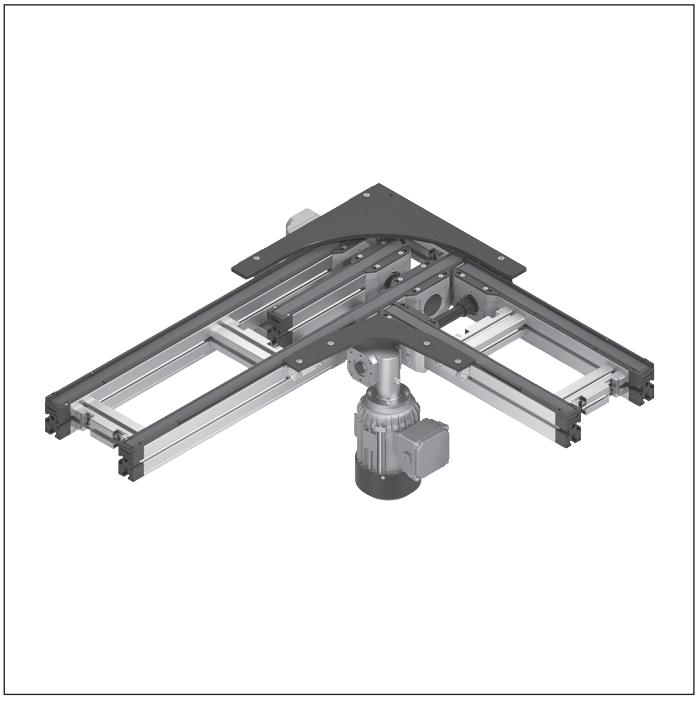


KU 2/O-...curve arcs **4-32**



CU 2/90 curve





- 90° curve conveying of the workpiece pallet
- With no additional drive for the curve function
- Max. total workpiece pallet weight = 10 kg
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Curve in anti-static version
- Can be combined with WT 2 and WT 2/F

Note: Accumulation operation not permitted in the curve.

The drive for CU 2/90 curves with the toothed belt conveyor medium is provided by the belt section.

Accessories

Recommended accessories

- SZ 2 leg sets/..., see p. 6-2
- Accumulation pressure control, e.g., with WI/M rocker, see p. 8-133

Delivery notes

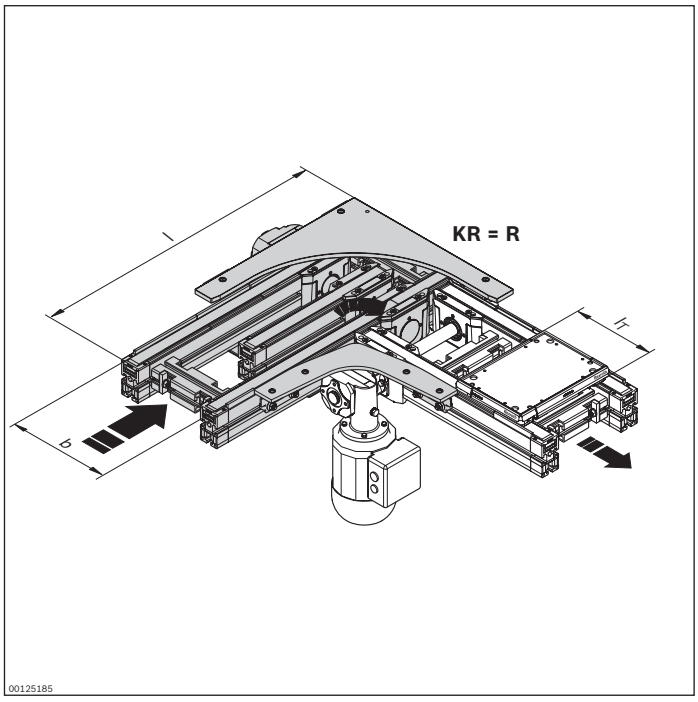
Scope of delivery

- Belt section
- Inner guide
- Outer guide
- Fastening material
- Connection kit 3842538259

Condition on delivery

- Partially assembled

Ordering information

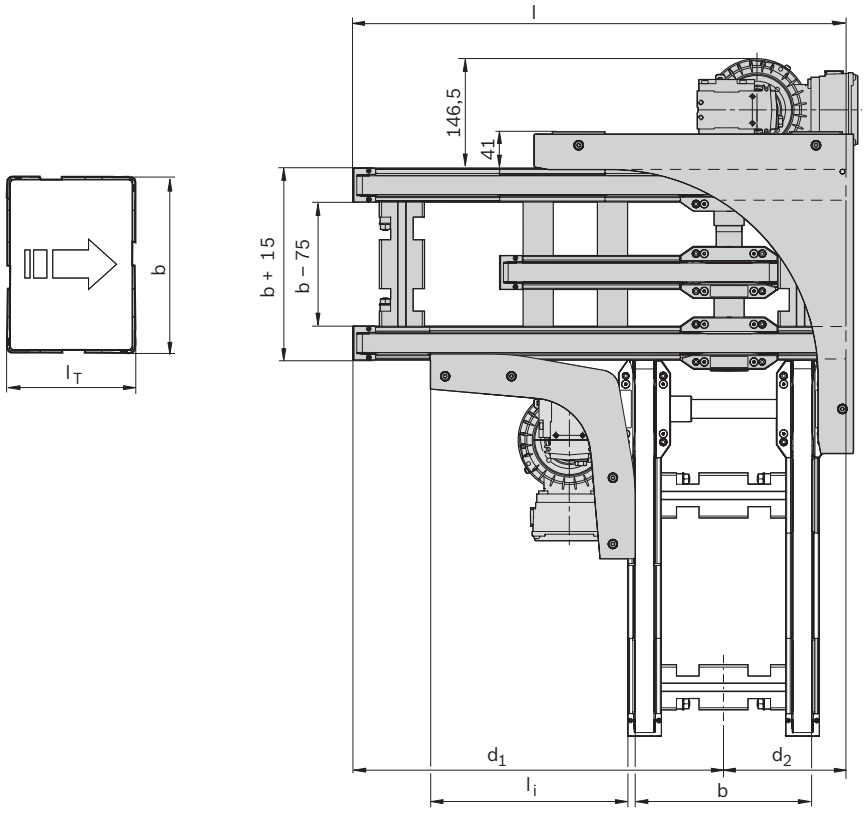


Material number		**3842998288**
b (mm)	Track width in direction of transport	240; 320
l_T (mm)	Length in direction of transport	240; 320; 400
l (mm)	Length	721 ... 6000
w x l_d x l (mm x mm x mm)	Combination options	240 x 240 x 721 ... 6000 240 x 320 x 801 ... 6000 320 x 320 x 881 ... 6000 320 x 400 x 961 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
KR	Curve direction R = right L = left	R; L

Technical data

Material number			**3842998288**
Load			
Max. section load in accumulation operation before the curve		kg	60
Max. total workpiece pallet weight	m_G	kg	10
Features			
ESD			Yes

Dimensions



00125187

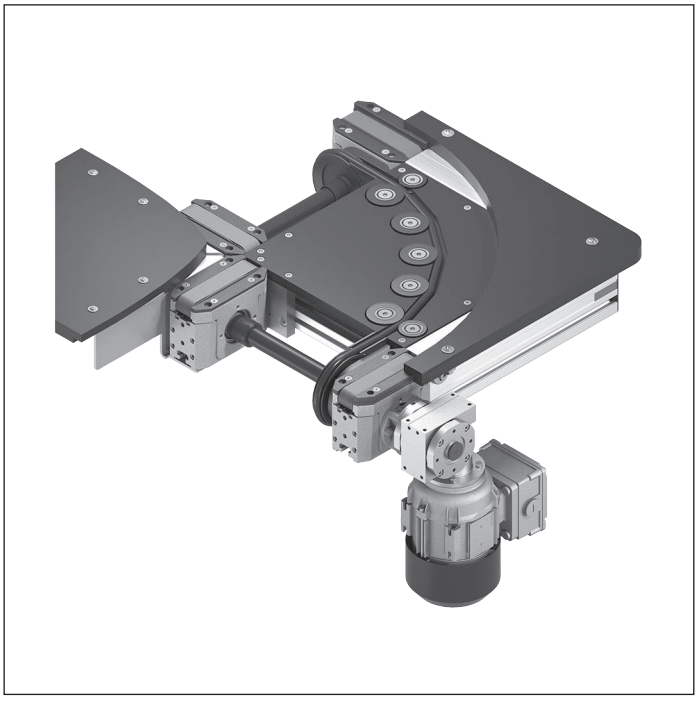
$d_2 = (b_T - 75) / 2 + 85$
$d_1 = L - d_2$
$L = d_1 + d_2 = d_1 + (b_T - 75) / 2 + 85$

b Track width in direction of transport
l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Length l (mm)	Dimension d_1 (mm)	Dimension d_2 (mm)	Dimension l_i (mm)
240	240	721 ... 6000	553.5 ... 5832.5	167.5	270.5
240	320	801 ... 6000	633.5 ... 5832.5	167.5	285.5
320	320	881 ... 6000	673.5 ... 5792.5	207.5	285.5
320	400	961 ... 6000	753.5 ... 5792.5	207.5	350.5

KE 2/90 curve





- 90° curve conveying of the workpiece pallet
- Max. total workpiece pallet weight = 20 kg
- Conveyor medium: Round belt (suitable for use in an EPA)
- Intended for grease-free and oil-free environments
- Can be combined with WT 2 and WT 2/F

Note: Accumulation operation not permitted.

The KE 2 curves with round belt conveyor medium have a built-in drive at the curve end. They can be used to combine the longitudinal section with belts or toothed belts.

Accessories

Recommended accessories

- Connection kits, see p. 4-40
- SZ 2 leg sets/..., see p. 6-2

Delivery notes

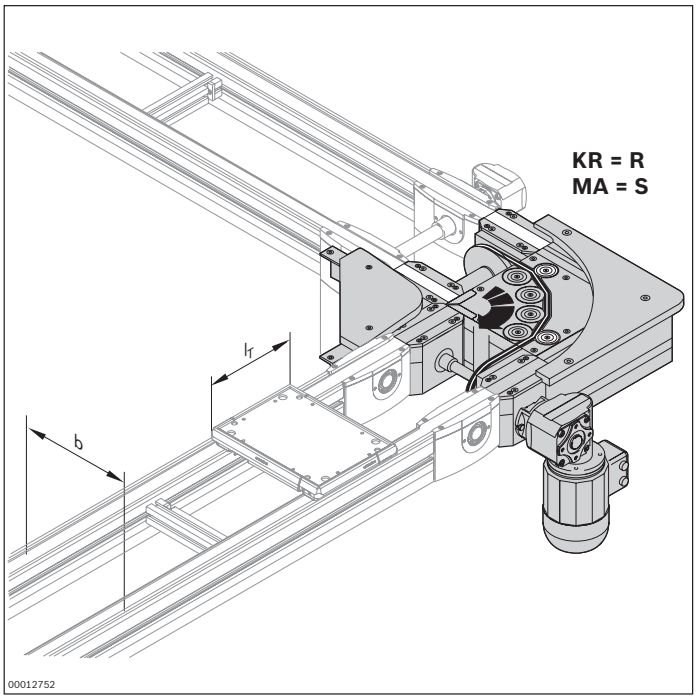
Scope of delivery

- Curve; complete with drive motor

Condition on delivery

- Partially assembled
- Inner guide and motor included

Ordering information



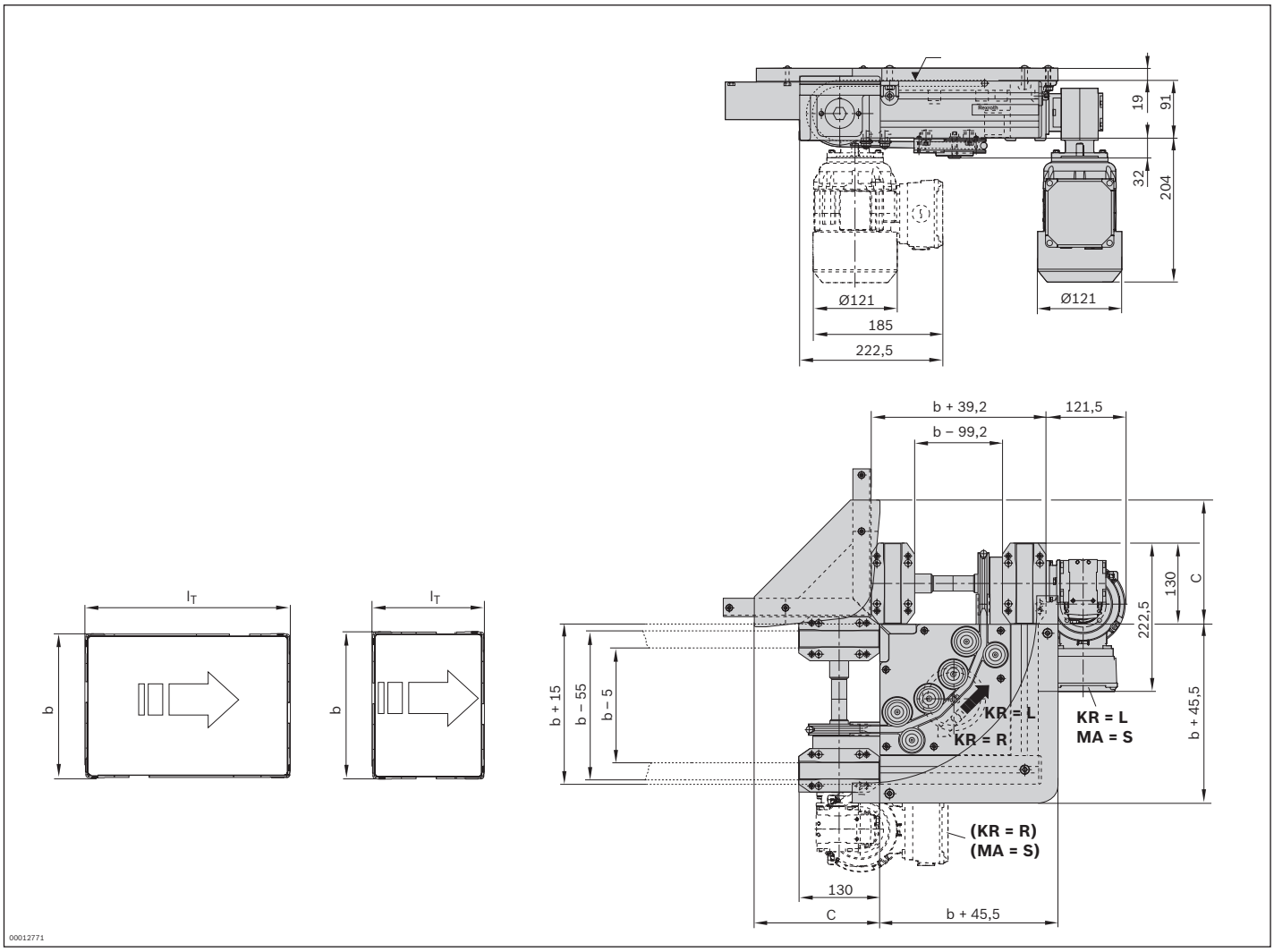
Material number		3842999727
b (mm)	Track width in direction of transport	160; 240; 320; 400
l_T (mm)	Length in direction of transport	160; 240; 320; 400
w x l_T (mm x mm)	Combination options	160 x 160; 240 240 x 160; 240; 320 320 x 240; 320; 400 400 x 320; 400
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting M = center[1] S = side	M; S
KR	Curve direction R = right L = left	R; L

[1)] MA = M only when b ≥ 320 mm

Technical data

Material number			3842999727
Load			
Max. total workpiece pallet weight	m_G	kg	20
Features			
ESD			Yes

Dimensions

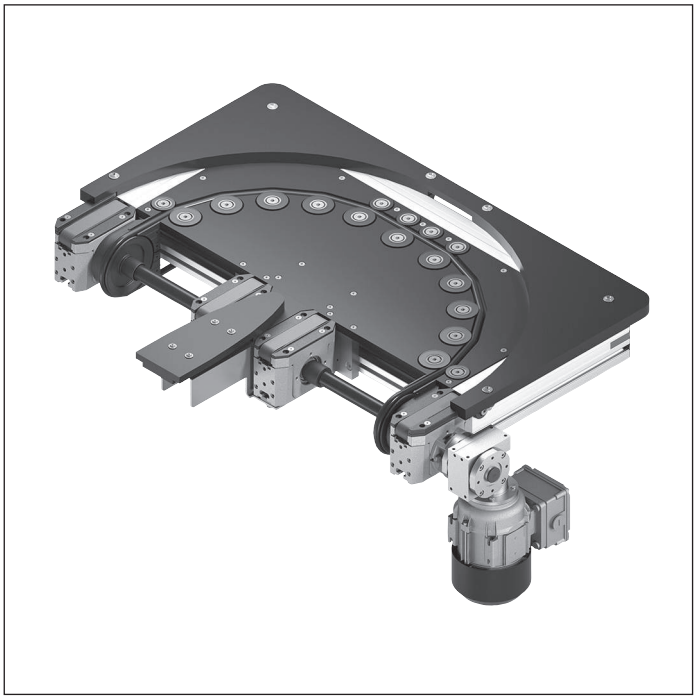


b Track width in direction of transport

l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Dimension C (mm)
160	160	170
160	240	225
240	160	200
240	240	200
240	320	200
320	240	290
320	320	290
320	400	290
400	320	355
400	400	355

KE 2/180 curve



- 180° curve conveying of the workpiece pallet
- Curve module with built-in drive
- Max. total workpiece pallet weight = 20 kg
- Conveyor medium: Round belt (suitable for use in an EPA)
- Intended for grease-free and oil-free environments
- Can be combined with WT 2 and WT 2/F

Note: Accumulation operation not permitted.

The KE 2 curves with round belt conveyor medium have a built-in drive at the curve end. They can be used to combine the longitudinal section with belts or toothed belts.

Accessories

Recommended accessories

- Connection kits, see p. 4-40
- SZ 2 leg sets/..., see p. 6-2

Delivery notes

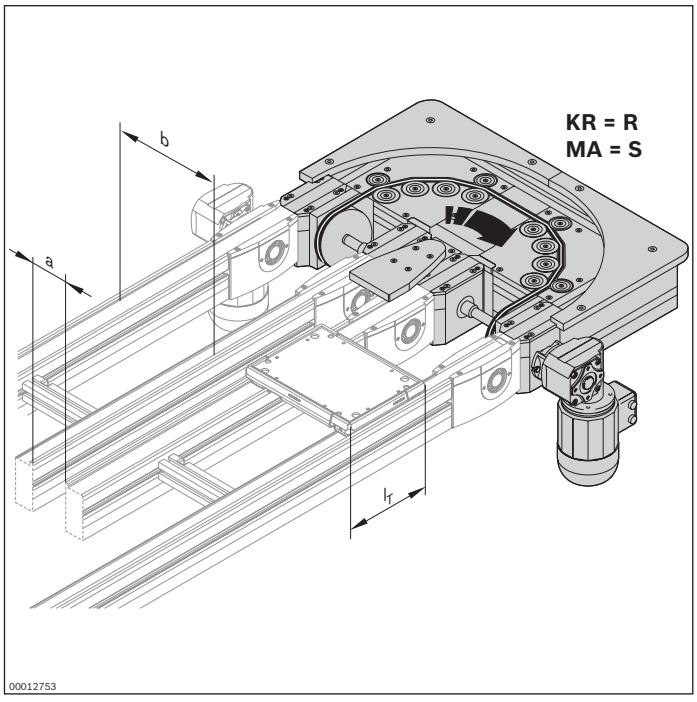
Scope of delivery

- Curve; complete with drive motor

Condition on delivery

- Partially assembled
- Inner guide and motor included

Ordering information



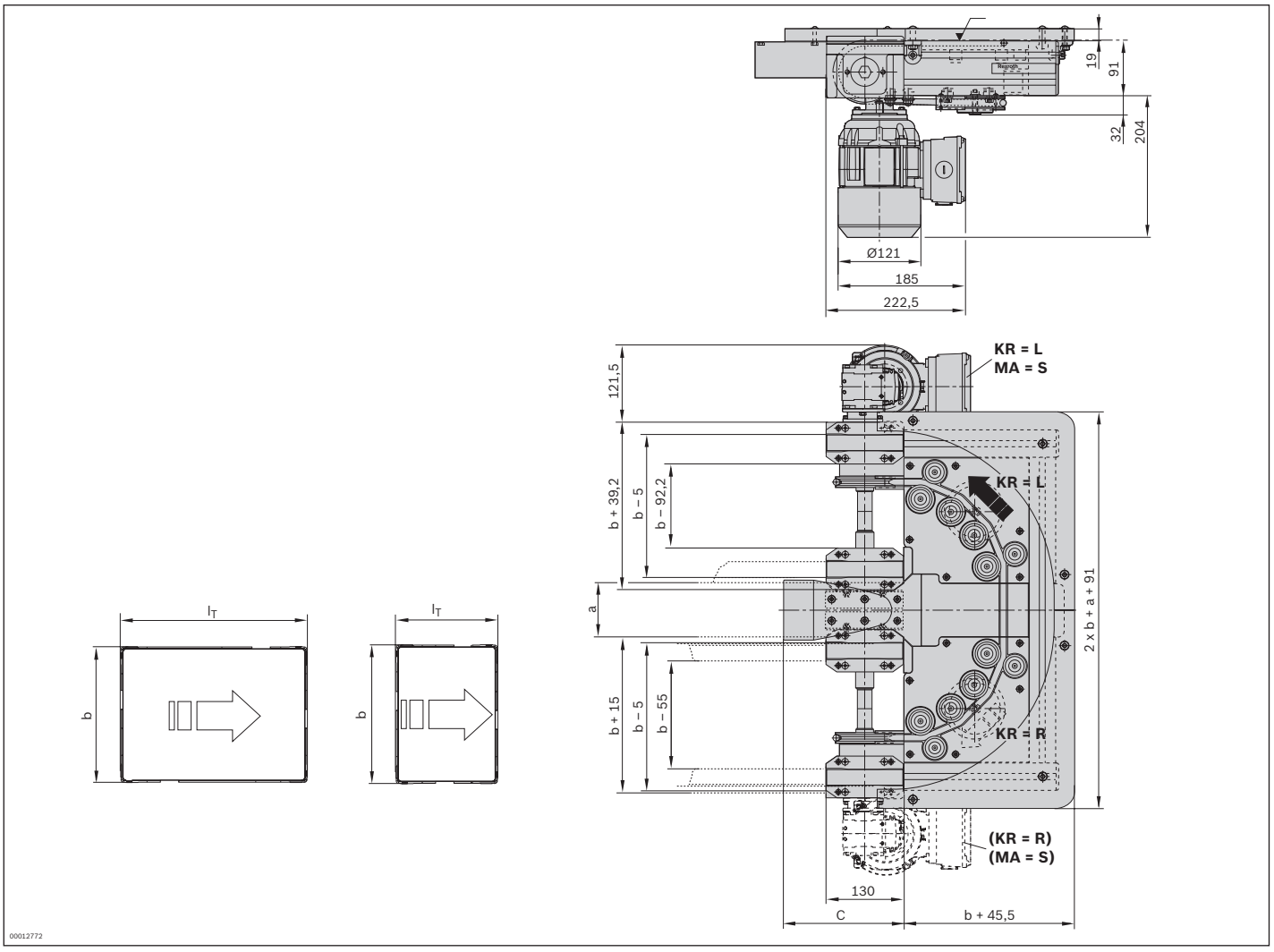
Material number		3842999728
b (mm)	Track width in direction of transport	160; 240; 320; 400
l_T (mm)	Length in direction of transport	160; 240; 320; 400
a (mm)	Distance between conveyors[1]	90; 135
w x l_d (mm x mm)	Combination options	b x l_T 160 x 160; 240 240 x 160; 240; 320 320 x 240; 320; 400 400 x 320; 400
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting M = center[2)] S = on the outside, on the side	M; S
KR	Curve direction R = right L = left	R; L

[1)] w x l_d is possible in all combinations
[2)] MA = M only when b ≥ 320 mm

Technical data

Material number			3842999728
Load			
Max. total workpiece pallet weight	m_G	kg	20
Features			
ESD			Yes

Dimensions



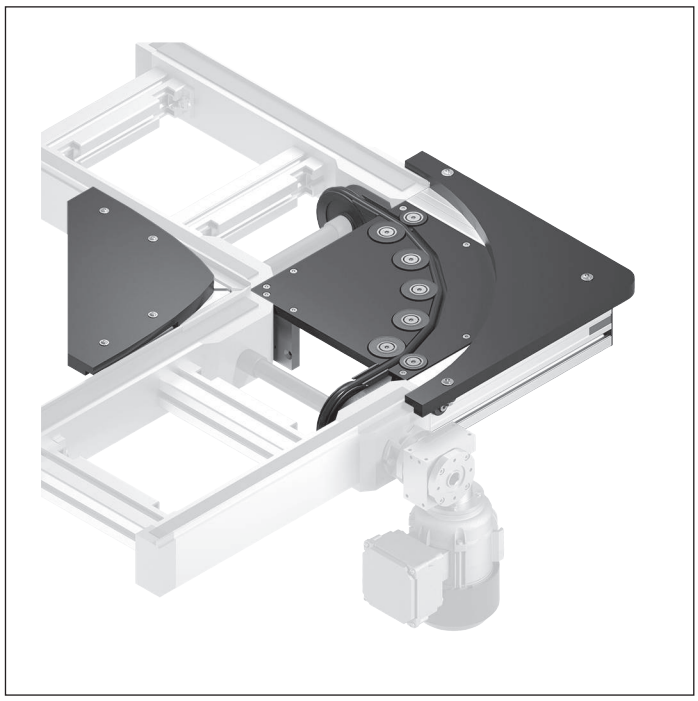
b Track width in direction of transport

l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Dimension C (mm)	Distance between conveyors a (mm)
160	160	170	90; 135
160	240	170	90; 135
240	160	200	90; 135
240	240	200	90; 135
240	320	200	90; 135
320	240	290	90; 135
320	320	290	90; 135
320	400	290	90; 135
400	320	355	90; 135
400	400	355	90; 135

KE 2/O-90 curve





- 90° curve conveying of the workpiece pallet
- Suitable for combination with BS 2/K
- Curve without built-in drive
- Max. total workpiece pallet weight = 20 kg
- Conveyor medium: Round belt (suitable for use in an EPA)
- Can be combined with WT 2 and WT 2/F

Note:

- Accumulation operation not permitted
- Drive by subsequent BS 2/K belt section (pulling operation)

In the KE 2/O curves with round belt conveyor medium, the drive is effected by the BS 2/K belt section in the infeed and outfeed sections.

Accessories

Required accessories

- 2x BS 2/K belt section, see p. 4-21

Recommended accessories

- SZ 2 leg sets/..., see p. 6-2

Delivery notes

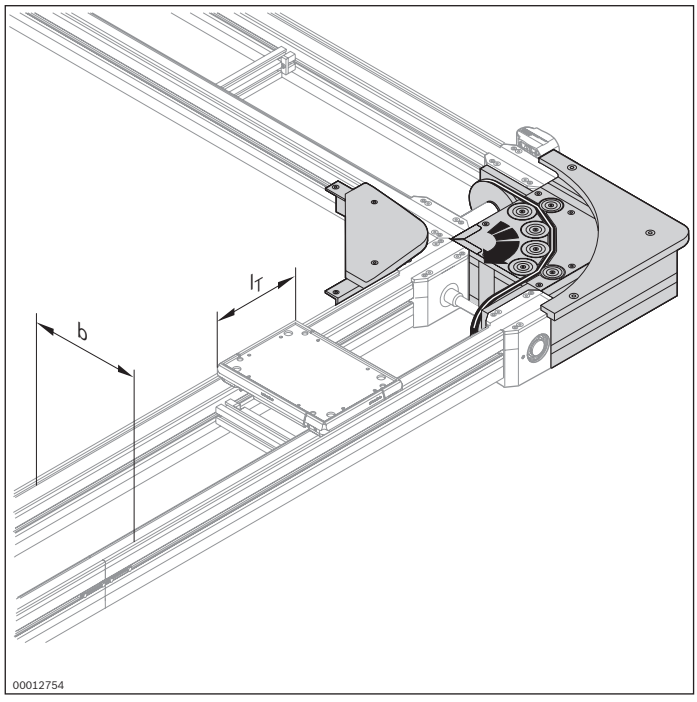
Scope of delivery

- Curve, complete with mounting hardware

Condition on delivery

- Partially assembled
- Inner guide included

Ordering information

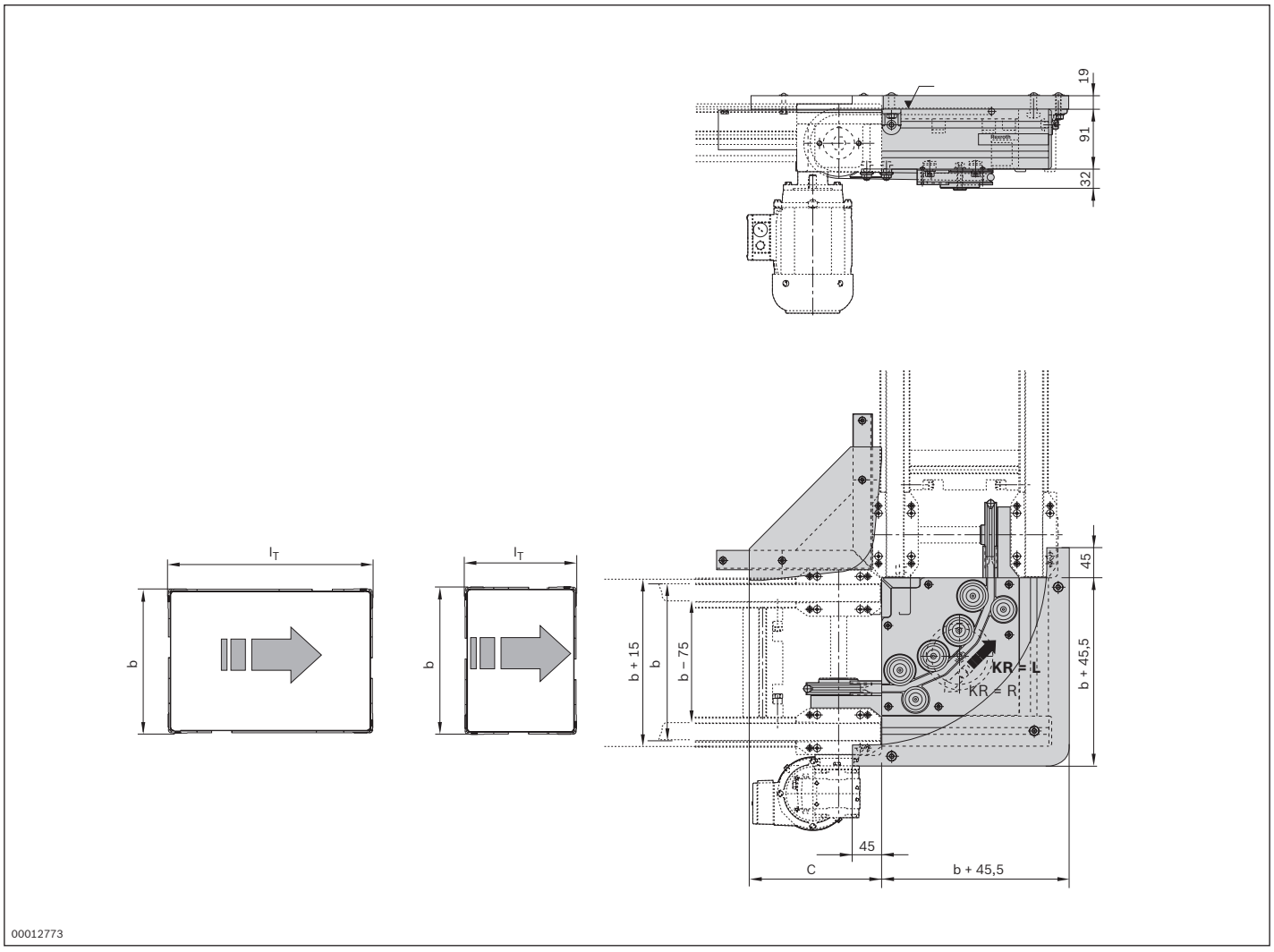


Material number		**3842999725**
b (mm)	Track width in direction of transport	160; 240; 320; 400
l_T (mm)	Length in direction of transport	160; 240; 320; 400
w x l_T (mm x mm)	Combination options	160 x 160; 240 240 x 160; 240; 320 320 x 240; 320; 400 400 x 320; 400

Technical data

Material number			**3842999725**
Load			
Max. total workpiece pallet weight	m_G	kg	20
Features			
ESD			Yes

Dimensions



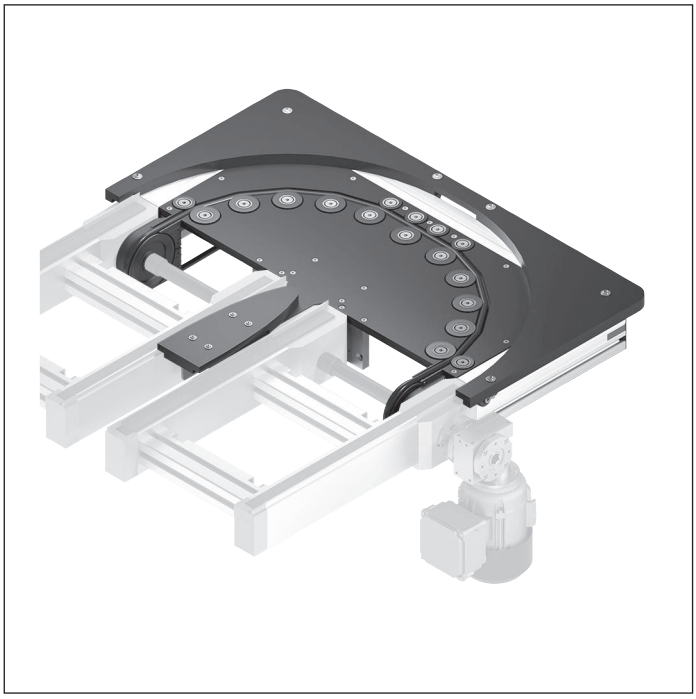
b Track width in direction of transport

l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Dimension C (mm)
160	160	170
160	240	225
240	160	200
240	240	200
240	320	200
320	240	290
320	320	290
320	400	290
400	320	355
400	400	355

KE 2/O-180 curve





- 180° curve conveying of the workpiece pallet
- Suitable for combination with BS 2/K
- Curve module without built-in drive
- Max. total workpiece pallet weight = 20 kg
- Conveyor medium: Round belt (suitable for use in an EPA)
- Can be combined with WT 2 and WT 2/F

Note:

- Accumulation operation not permitted
- Drive by subsequent BS 2/K belt section (pulling operation)

In the KE 2/O curves with round belt conveyor medium, the drive is effected by the BS 2/K belt section in the infeed and outfeed sections.

Accessories

Required accessories

- 2x BS 2/K belt section, see p. 4-21

Recommended accessories

- SZ 2 leg sets/..., see p. 6-2

Delivery notes

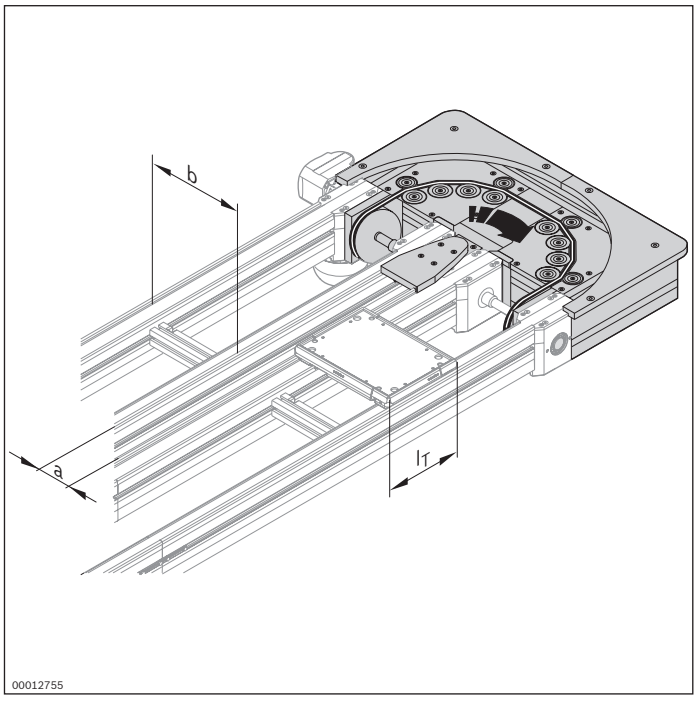
Scope of delivery

- Curve, complete with mounting hardware

Condition on delivery

- Partially assembled
- Inner guide included

Ordering information



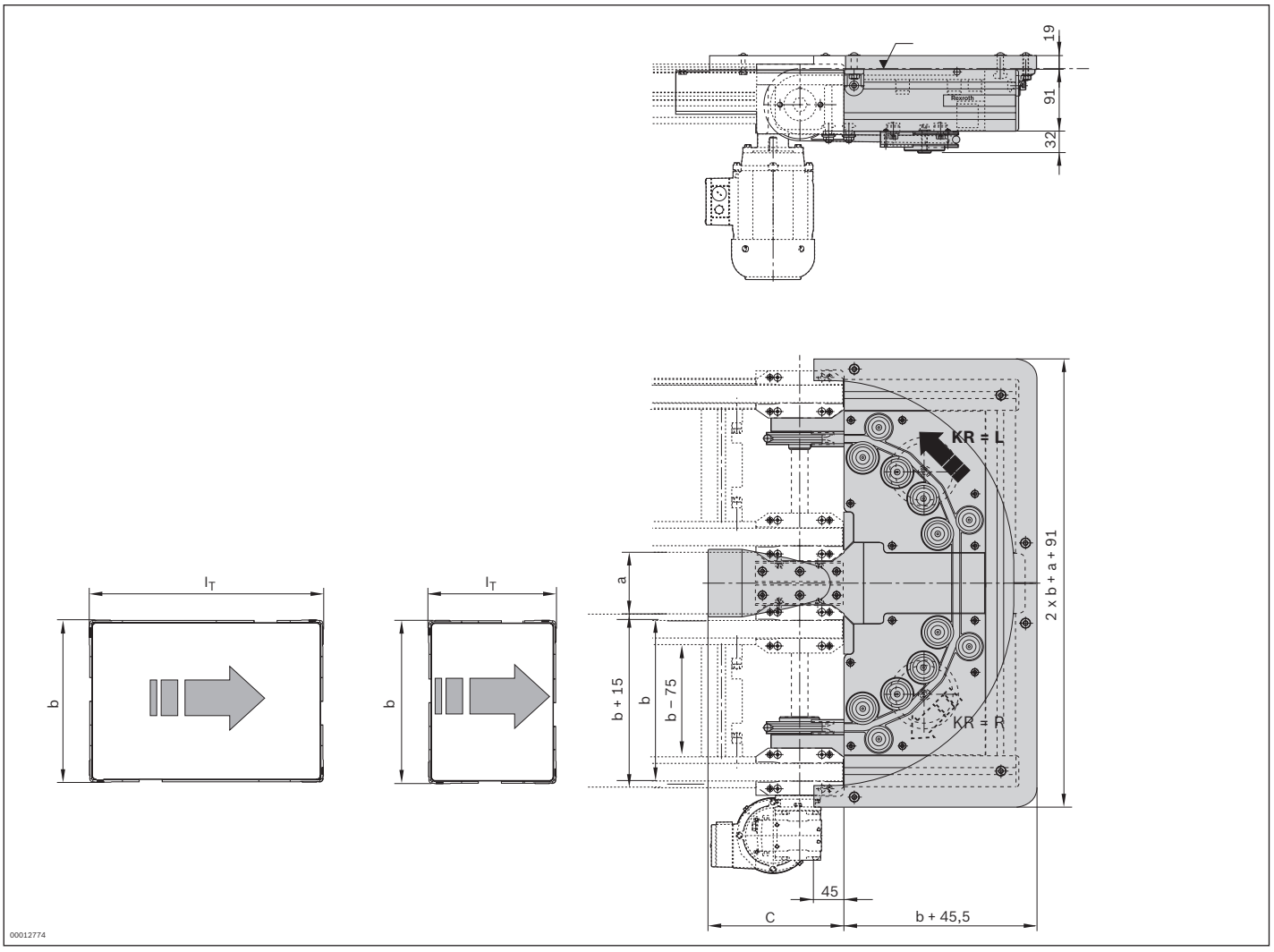
Material number		**3842999726**
b (mm)	Track width in direction of transport	160; 240; 320; 400
l_T (mm)	Length in direction of transport	160; 240; 320; 400
a (mm)	Distance between conveyors[1]	90; 135
w x l_d (mm x mm)	Combination options	b x l_T 160 x 160; 240 240 x 160; 240; 320 320 x 240; 320; 400 400 x 320; 400

[1)] w x l_d is possible in all combinations

Technical data

Material number			**3842999726**
Load			
Max. total workpiece pallet weight	m_G	kg	20
Features			
ESD			Yes

Dimensions



b Track width in direction of transport

l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Dimension C (mm)	Distance between conveyors a (mm)
160	160	170	90; 135
160	240	170	90; 135
240	160	200	90; 135
240	240	200	90; 135
240	320	200	90; 135
320	240	290	90; 135
320	320	290	90; 135
320	400	290	90; 135
400	320	355	90; 135
400	400	355	90; 135

BS 2/K belt section





- To drive a KE 2/O curve
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Max. permissible section load up to 60 kg in accumulation operation (incl. the driven curve section)
- Can be combined with WT 2 and WT 2/F

Note: Drive by subsequent BS 2/K belt section (pulling operation).

The BS 2/K belt section is a conveyor section that is ready for operation with the toothed belt conveyor medium and a built-in drive. It is used to drive the KE 2/O curves and to longitudinally convey workpiece pallets in the infeed and outfeed sections.

Delivery notes

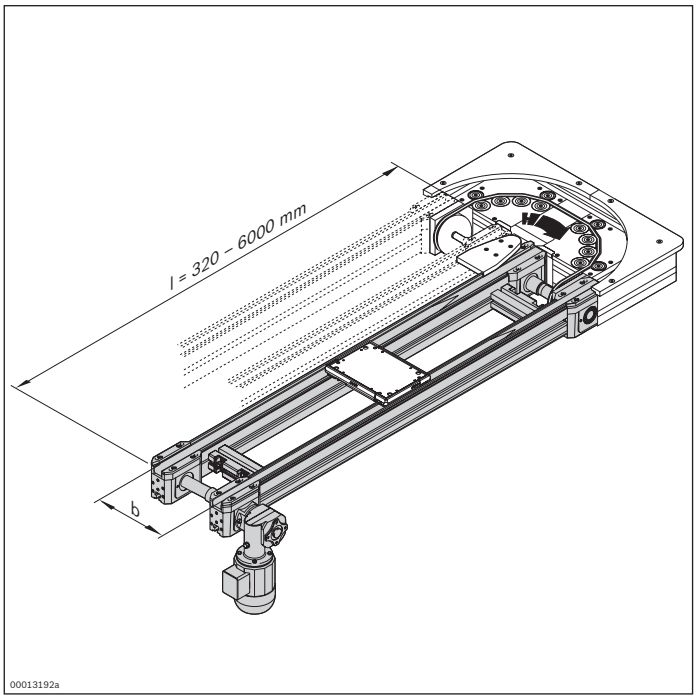
Scope of delivery

- Belt section, complete with drive motor

Condition on delivery

- Partially assembled
- Motor included

Ordering information



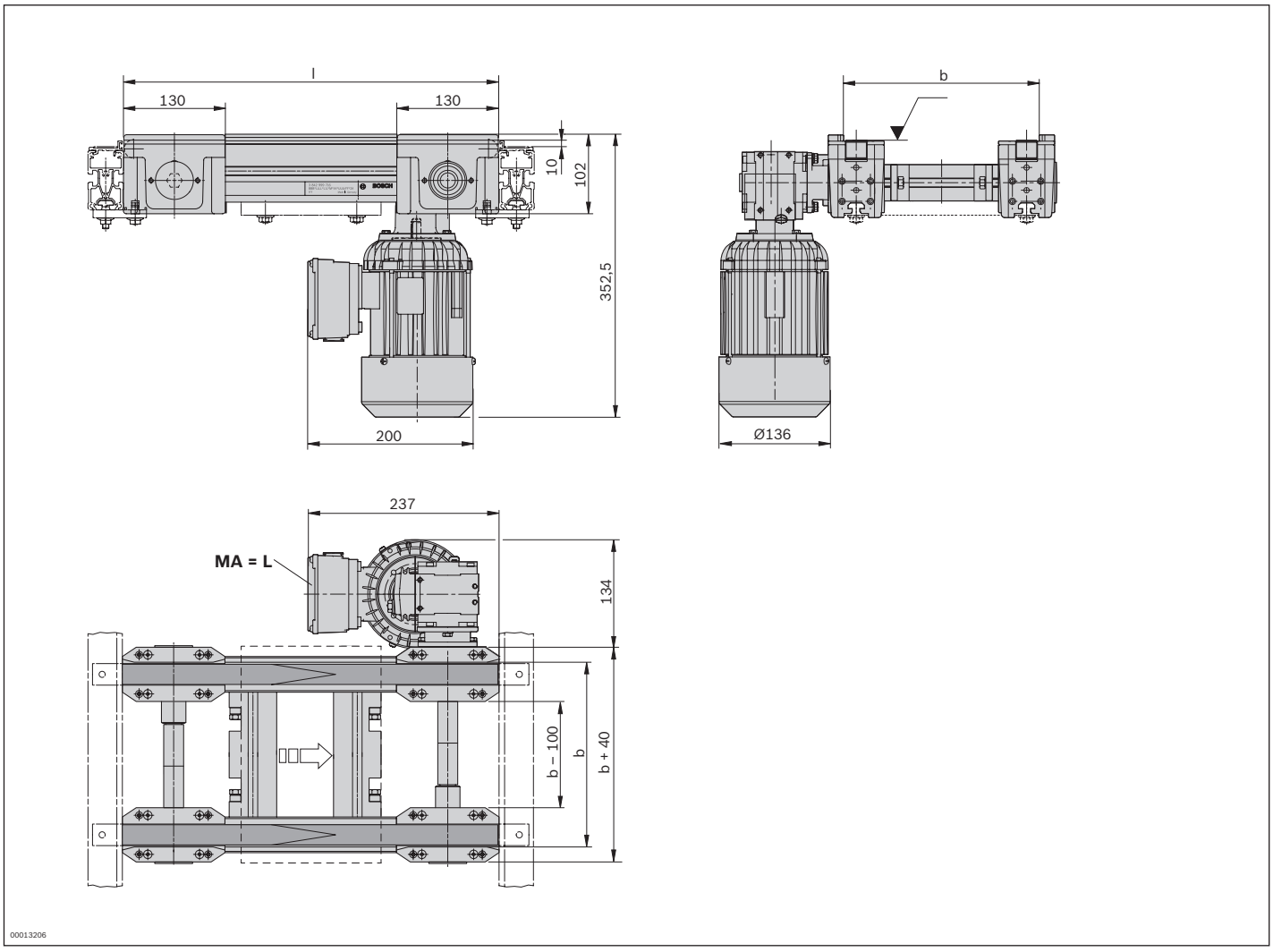
Material number		**3842999715**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480
l (mm)	Length	320 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center[1)]	R; L; M

[1)] MA = M only when b ≥ 320 mm

Technical data

Material number		**3842999715**
Load		
Max. section load in accumulation operation	kg	60
Features		
ESD		Yes

Dimensions



b Track width in direction of transport

l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length l (mm)
160	320 ... 6000
240	320 ... 6000
320	320 ... 6000
400	320 ... 6000
480	320 ... 6000

KU 2/90 curve



The KU 2 curves with flat top chain conveyor medium have a built-in drive. They are suitable for use with high section loads in accumulation operation.

- 90° curve conveying of the workpiece pallet
- Curve with built-in drive
- Section loads up to 90 kg in accumulation operation
- Conveyor medium: Flat top chain
- Accumulation operation possible
- Plastic chain guides
- Automatic chain tensioning system
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:

- Flat top chain in ESD version is not permitted
- The LU 2 automatic lubrication unit is highly recommended for flat top chains:

Accessories

Recommended accessories

- SZ 2 leg sets/..., see p. 6-2
- Accumulation pressure control, e.g., with WI/M rocker, see p. 8-133
- Connection kits, see p. 4-40
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

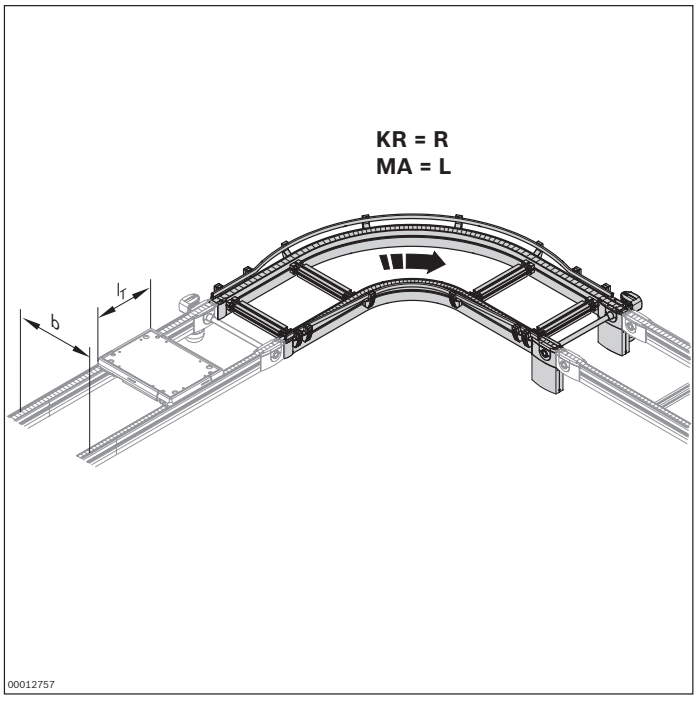
Scope of delivery

- Curve, complete

Condition on delivery

- Fully assembled

Ordering information



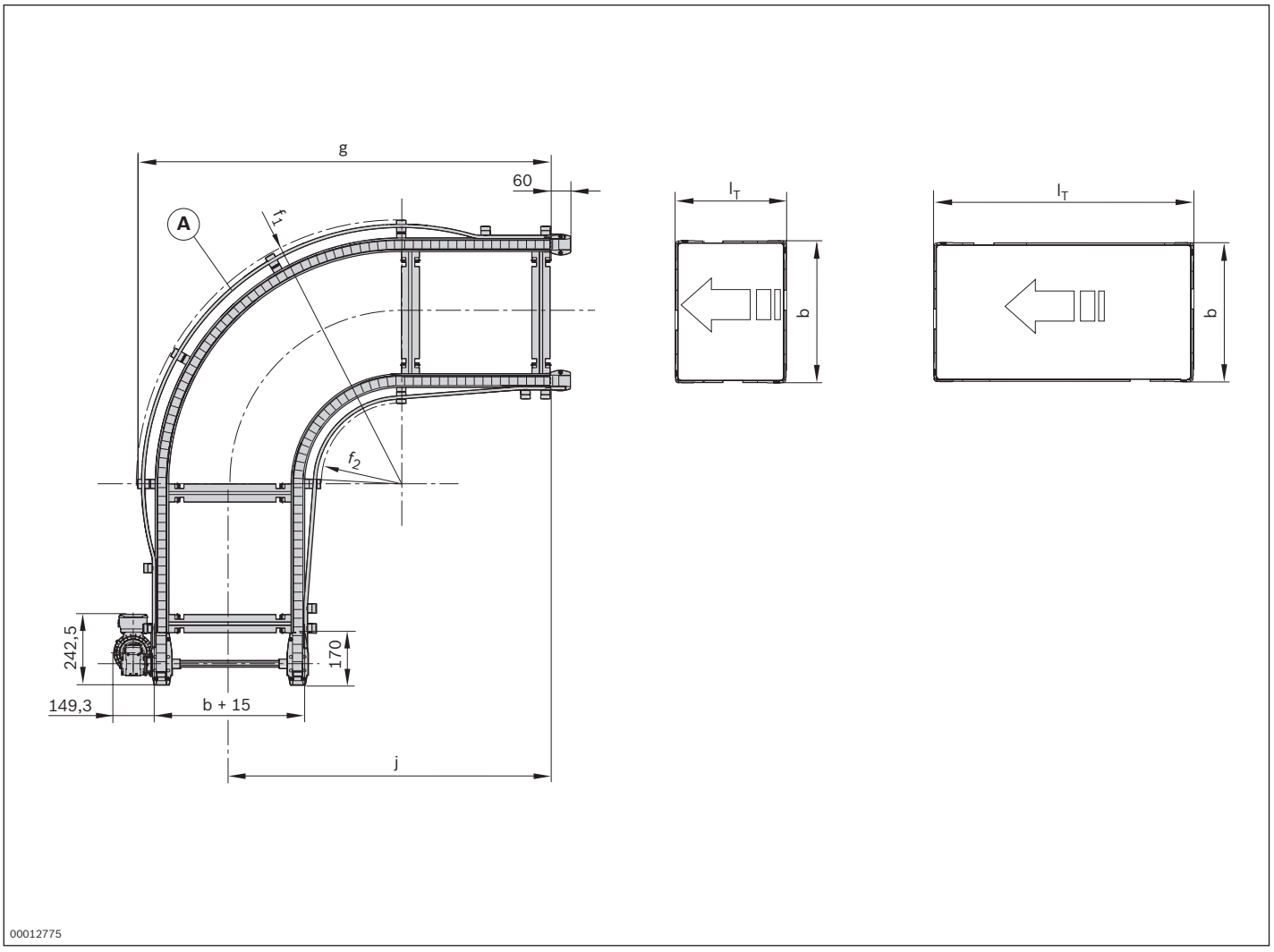
Material number		3842998098
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l_T (mm)	Length in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040
w x l_T (mm x mm)	Combination options	160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400; 480 400 x 240; 320; 400; 480; 640 480 x 320; 400; 480; 640; 800 640 x 400; 480; 640; 800; 1040 800 x 480; 640; 800; 1040
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center[1]	R; L; M
KR	Curve direction R = right L = left	R; L

[1] MA = M only when b ≥ 240 mm

Technical data

Material number			3842998098
Load			
Max. section load in accumulation operation		kg	90
Features			
Max. operating temperature	T	°C	+40 °C

Dimensions

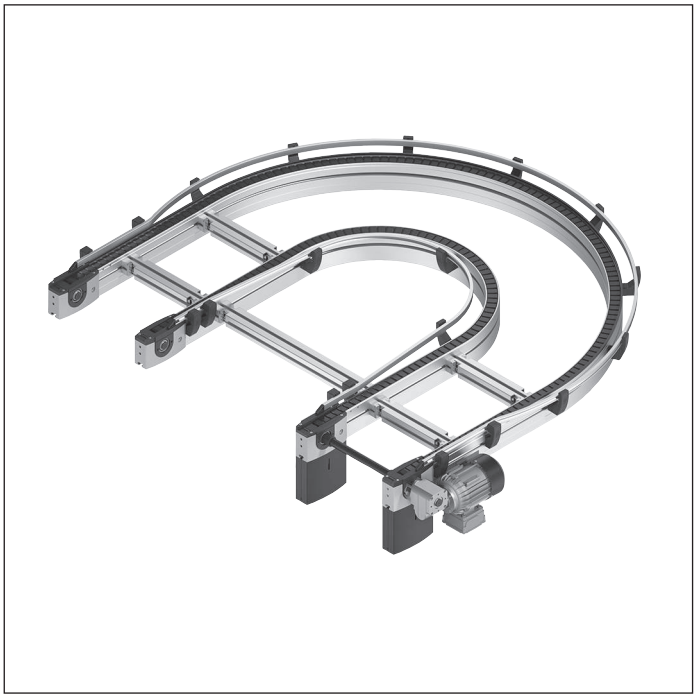


Ⓐ Workpiece pallet outer guide from l_T = 640 mm
b Track width in direction of transport
l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Curve radius f_1[1] (mm)	Curve radius f_2[1] (mm)	Dimension g (mm)	Dimension j (mm)
160	160	493	286	755	667
160	240	493	287	835	747
160	320	493	266	915	827
240	160	573	287	835	707
240	240	573	280	915	787
240	320	573	270	995	867
240	400	573	256	1075	947
240	480	573	240	1155	1027
320	160	653	288	915	747
320	240	653	282	995	827
320	320	653	273	1075	907
320	400	653	261	1155	987
320	480	653	247	1235	1067
400	240	733	283	1075	867
400	320	733	275	1155	947
400	400	733	265	1235	1027
400	480	733	252	1315	1107
400	640	770	260	1299	1032
480	320	813	277	1235	987
480	400	813	268	1315	1067
480	480	813	256	1395	1147
480	640	850	267	1366	1060
480	800	930	319	1695	1289
640	400	973	272	1475	1147
640	480	973	263	1555	1227
640	640	1010	278	1503	1117
640	800	1090	333	1733	1347
640	1040	1090	277	1973	1587
800	480	1133	267	1715	1307
800	640	1170	285	1642	1176
800	800	1250	344	1872	1406
800	1040	1250	296	2112	1646

[1] f_1, f_2 = guideline value

KU 2/180 curve



The KU 2 curves with flat top chain conveyor medium have a built-in drive. They are suitable for use with high section loads in accumulation operation.

- 180° curve conveying of the workpiece pallet
- Curve with built-in drive
- Section loads up to 70 kg in accumulation operation
- Conveyor medium: Flat top chain
- Automatic chain tensioning system
- Plastic chain guides
- Accumulation operation possible
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:

- Flat top chain in ESD version is not permitted
- The LU 2 automatic lubrication unit is highly recommended for flat top chains:

Accessories

Recommended accessories

- SZ 2 leg sets/..., see p. 6-2
- Accumulation pressure control, e.g., with WI/M rocker, see p. 8-133
- Connection kits, see p. 4-40
- LU 2 automatic lubrication unit, see p. 3-152

Delivery notes

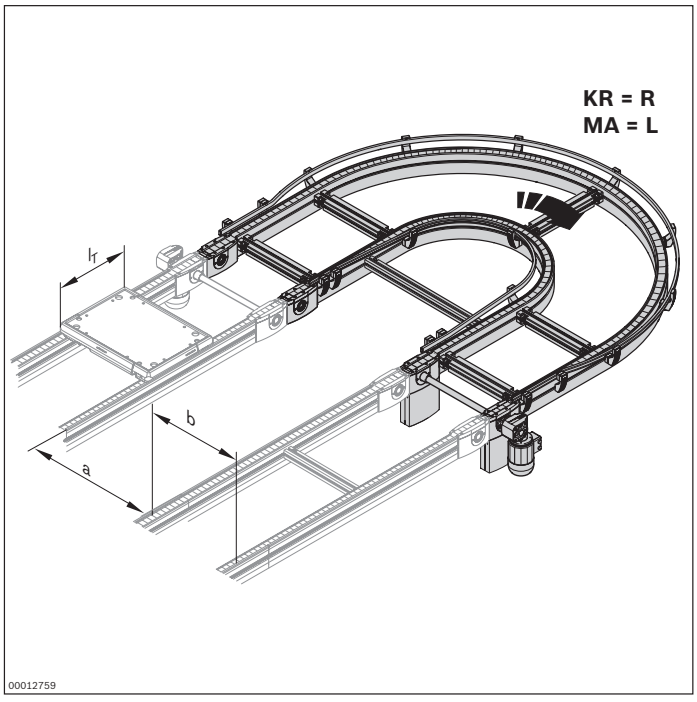
Scope of delivery

- Curve, complete

Condition on delivery

- Fully assembled

Ordering information



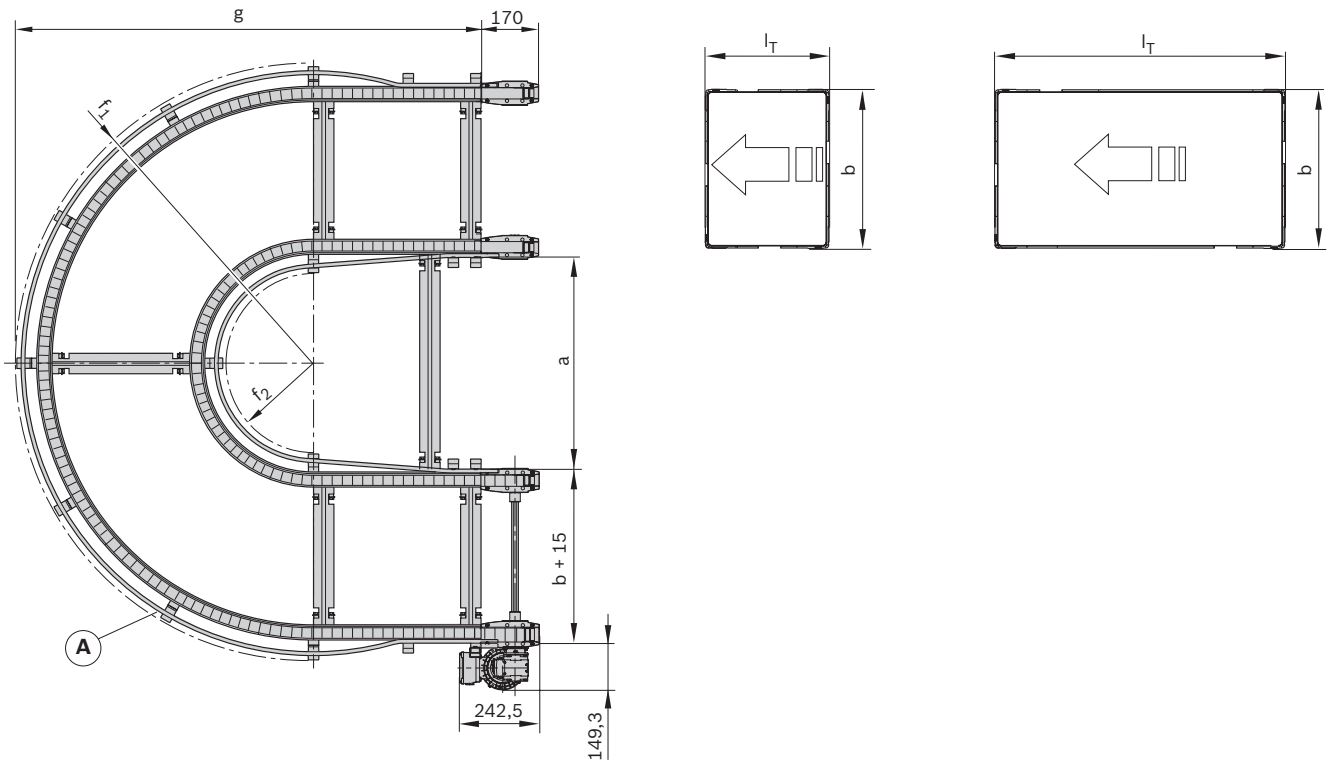
Material number		3842998099
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l_T (mm)	Length in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040
w x l_T (mm x mm)	Combination options a = 640 mm	b x l_T
		160 x 160; 240; 320
		240 x 160; 240; 320; 400
		320 x 160; 240; 320; 400; 480
		400 x 240; 320; 400; 480; 640
		480 x 320; 400; 480; 640
		640 x 400; 480; 640
		800 x 480; 640
	a = 800 mm	480 x 800
		640 x 800; 1040
		800 x 800; 1040
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center[1]	R; L; M
KR	Curve direction R = right L = left	R; L

[1] MA = M only when b ≥ 240 mm

Technical data

Material number			3842998099
Load			
Max. section load in accumulation operation		kg	70
Features			
Max. operating temperature	T	°C	+40 °C

Dimensions

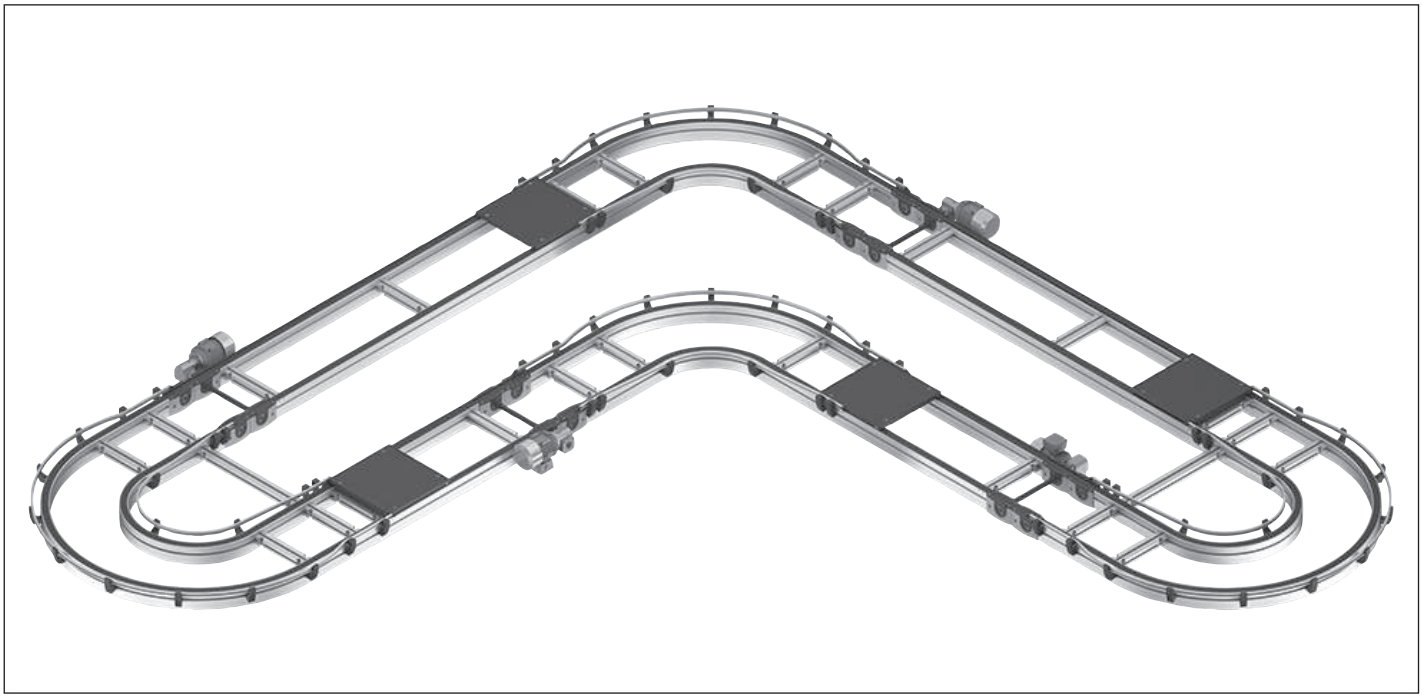


Ⓐ Workpiece pallet outer guide from l_T = 640 mm
b Track width in direction of transport
l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Curve radius f_1[1] (mm)	Curve radius f_2[1] (mm)	Dimension g (mm)	Distance between conveyors a (mm)
160	160	493	286	755	640
160	240	493	287	835	640
160	320	493	266	915	640
240	160	573	287	835	640
240	240	573	280	915	640
240	320	573	270	995	640
240	400	573	256	1075	640
240	480	573	240	1155	640
320	160	653	288	915	640
320	240	653	282	995	640
320	320	653	273	1075	640
320	400	653	261	1155	640
320	480	653	247	1235	640
400	240	733	283	1075	640
400	320	733	275	1155	640
400	400	733	265	1235	640
400	480	733	252	1315	640
400	640	770	260	1299	640
480	320	813	277	1235	640
480	400	813	268	1315	640
480	480	813	256	1395	640
480	640	850	267	1366	640
480	800	930	319	1595	800
640	400	973	272	1475	640
640	480	973	263	1555	640
640	640	1010	278	1503	640
640	800	1090	333	1733	800
640	1040	1090	277	1973	800
800	480	1133	267	1715	640
800	640	1170	285	1642	640
800	800	1250	344	1872	800
800	1040	1250	296	2112	800

[1] f_1, f_2 = guideline value

KU 2/O-... curve arcs



The construction principle of KU 2/O curves with the flat top chain conveyor medium allows smooth integration into longer conveyor units driven by a single drive.

In order to mount such units, the KU 2/O curve arcs are offered without the conveyor medium, and drive and return heads. The following guidelines must be taken into account when designing sections with integrated curves.

The AS 2/...-C and UM 2/...-C on the conveyor units can be used for driving and returning purposes.
The overall length of the flat top chain results from the sum of the required length of the conveyor belt for each component.

Drive layout

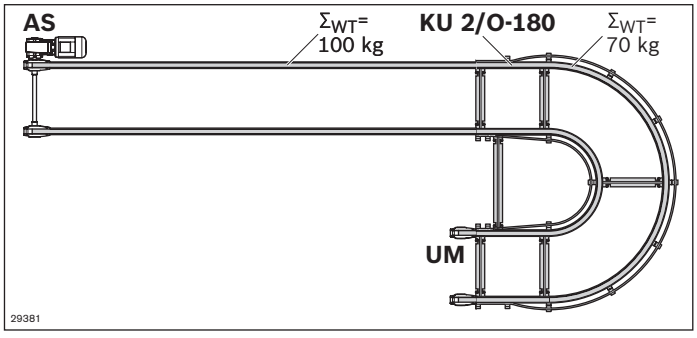
Each change in the direction of the conveyor medium on the transport level, such as with KU 2 curves, results in a loss through friction which must be offset by the drive. This increase in stress on the drive is taken into account by the curve factor. Multiplying the workpiece pallet load that arises before the curve with the curve factor results in the necessary load carrying capacity of the drive. The curve factor is 1.5 for every 90° curve angle.

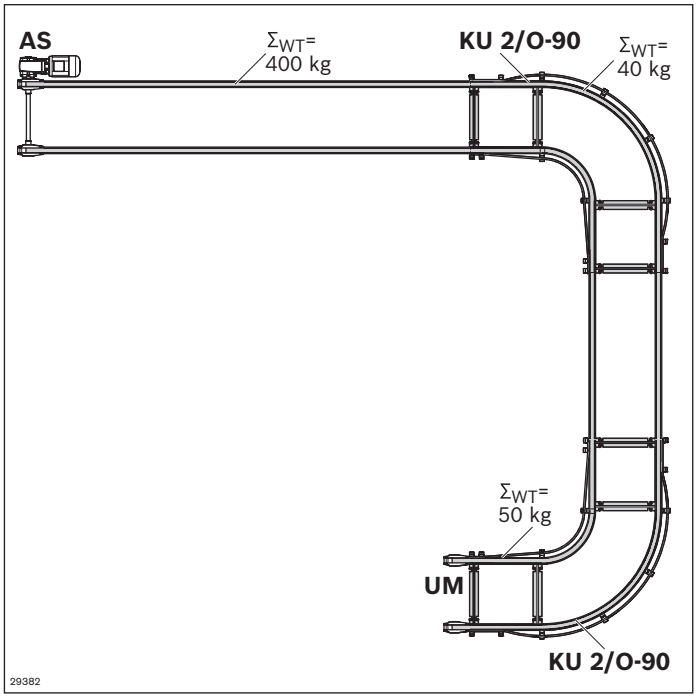
The following applies as a general guideline:

- For each AS 2/C drive module, max. 2x curve arc of 90° or max. 1x curve arc of 180°
- Mount curve arc directly on a UM 2/C-170 return unit
- For permitted total workpiece pallet weights in a 90° curve arc: 90 kg
  180° curve arc: 70 kg

- The workpiece pallet loads before and in a 180° curve is 70 kg and an additional 100 kg after the curve. From this arises the minimum required load capacity of (70 kg * 1.5 * 1.5) + 100 kg = 257.5 kg. The AS 2/C-400 drive module must be selected for this section.

- The workpiece pallet loads before and in the first 90°curve are 50 kg before and in the second 90°curve, another 40 kg before and in the second curve, and another 40 kg after the second curve. From this arises the minimum required load capacity of (50 kg * 1.5 * 1.5) + (40 kg * 1.5) + 400 kg = 572.5 kg. The AS 2/C-700 drive module must be selected for this section.





KU 2/O-90 curve arc



- Curve arc without built-in drive
- Accumulation operation possible
- Plastic chain guides
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:

- Flat top chain in ESD version is not permitted
- The LU 2 automatic lubrication unit is highly recommended for flat top chains:

The arcs KU 2/O curve arcs without drive are used for setting up sections with integrated curves to transport the workpiece pallets in accumulation operation.

Accessories

Required accessories

- Plastic flat top chain conveyor medium 3842551226
- AS 2/C drive module, see p. 3-68
- UM 2/C return unit, see p. 3-80

Recommended accessories

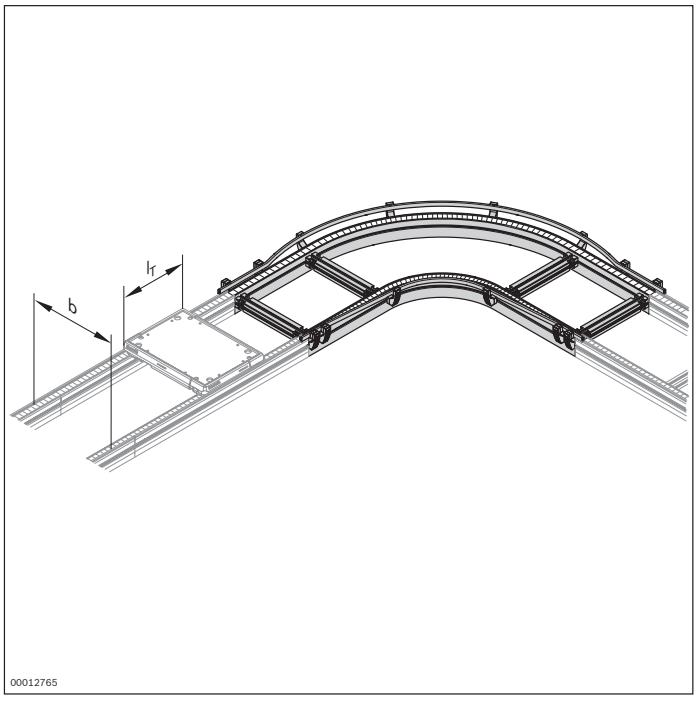
- SZ 2 leg sets/..., see p. 6-2
- ST 2/C-100 section, see p. 3-231
- Profile connector, see p. 3-40

Delivery notes

Condition on delivery

- Fully assembled

Ordering information

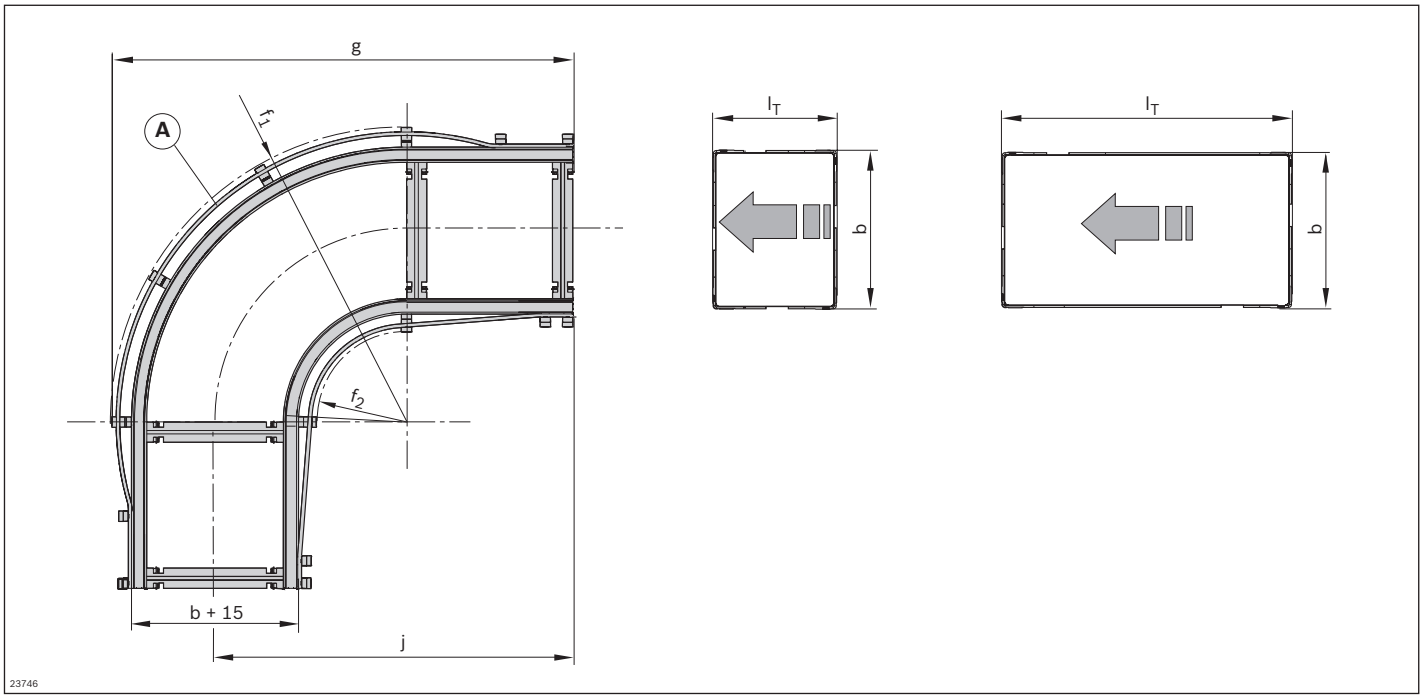


Material number		**3842999994**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l_T (mm)	Length in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040
w x l_T (mm x mm)	Combination options	160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400; 480 400 x 240; 320; 400; 480; 640 480 x 320; 400; 480; 640; 800 640 x 400; 480; 640; 800; 1040 800 x 480; 640; 800; 1040

Technical data

Material number			**3842999994**
Features			
Max. operating temperature	T	°C	+40 °C

Dimensions

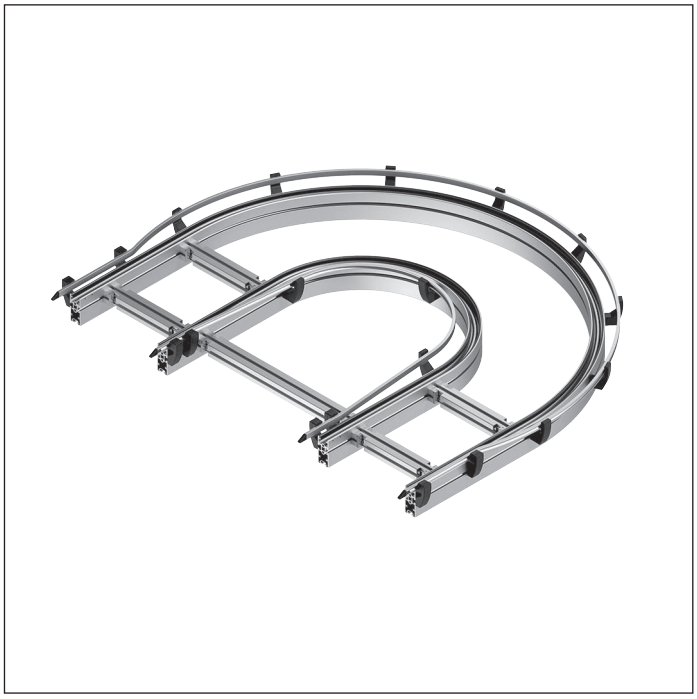


Ⓐ Workpiece pallet outer guide from l_T = 640 mm
b Track width in direction of transport
l_T Length in conveyor direction

Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Curve radius f_1[1] (mm)	Curve radius f_2[1] (mm)	Dimension g (mm)	Dimension j (mm)	Required conveyor medium length l_k (mm)
160	160	493	286	755	667	4640
160	240	493	287	835	747	5280
160	320	493	266	915	827	5920
240	160	573	287	835	707	4892
240	240	573	280	915	787	5532
240	320	573	270	995	867	6172
240	400	573	256	1075	947	6812
240	480	573	240	1155	1027	7452
320	160	653	288	915	747	5143
320	240	653	282	995	827	5783
320	320	653	273	1075	907	6423
320	400	653	261	1155	987	7063
320	480	653	247	1235	1067	7703
400	240	733	283	1075	867	6034
400	320	733	275	1155	947	6674
400	400	733	265	1235	1027	7314
400	480	733	252	1315	1107	7954
400	640	770	260	1299	1032	7355
480	320	813	277	1235	987	6926
480	400	813	268	1315	1067	7566
480	480	813	256	1395	1147	8206
480	640	850	267	1366	1060	7508
480	800	930	319	1695	1289	9197
640	400	973	272	1475	1147	8068
640	480	973	263	1555	1227	8708
640	640	1010	278	1503	1117	7827
640	800	1090	333	1733	1347	9524
640	1040	1090	277	1973	1587	11444
800	480	1133	267	1715	1307	9211
800	640	1170	285	1642	1176	8161
800	800	1250	344	1872	1406	9864
800	1040	1250	296	2112	1646	11784

[1] f_1, f_2 = guideline value

KU 2/O-180 curve arc



- Curve arc without built-in drive
- Accumulation operation possible
- Plastic chain guides
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:
- Flat top chain in ESD version is not permitted
- The LU 2 automatic lubrication unit is highly recommended for flat top chains:

The arcs KU 2/O curve arcs without drive are used for setting up sections with integrated curves to transport the workpiece pallets in accumulation operation.

Accessories

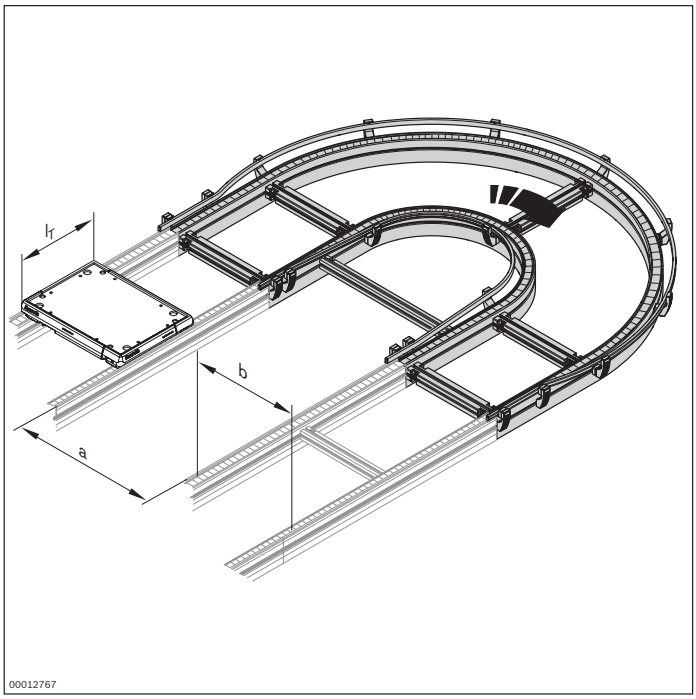
Required accessories
- Plastic flat top chain conveyor medium 3842551226
- AS 2/C drive module, see p. 3-68
- UM 2/C return unit, see p. 3-80

Recommended accessories
- SZ 2 leg sets/..., see p. 6-2
- ST 2/C-100 section, see p. 3-231
- Profile connector, see p. 3-40

Delivery notes

Condition on delivery
- Fully assembled

Ordering information

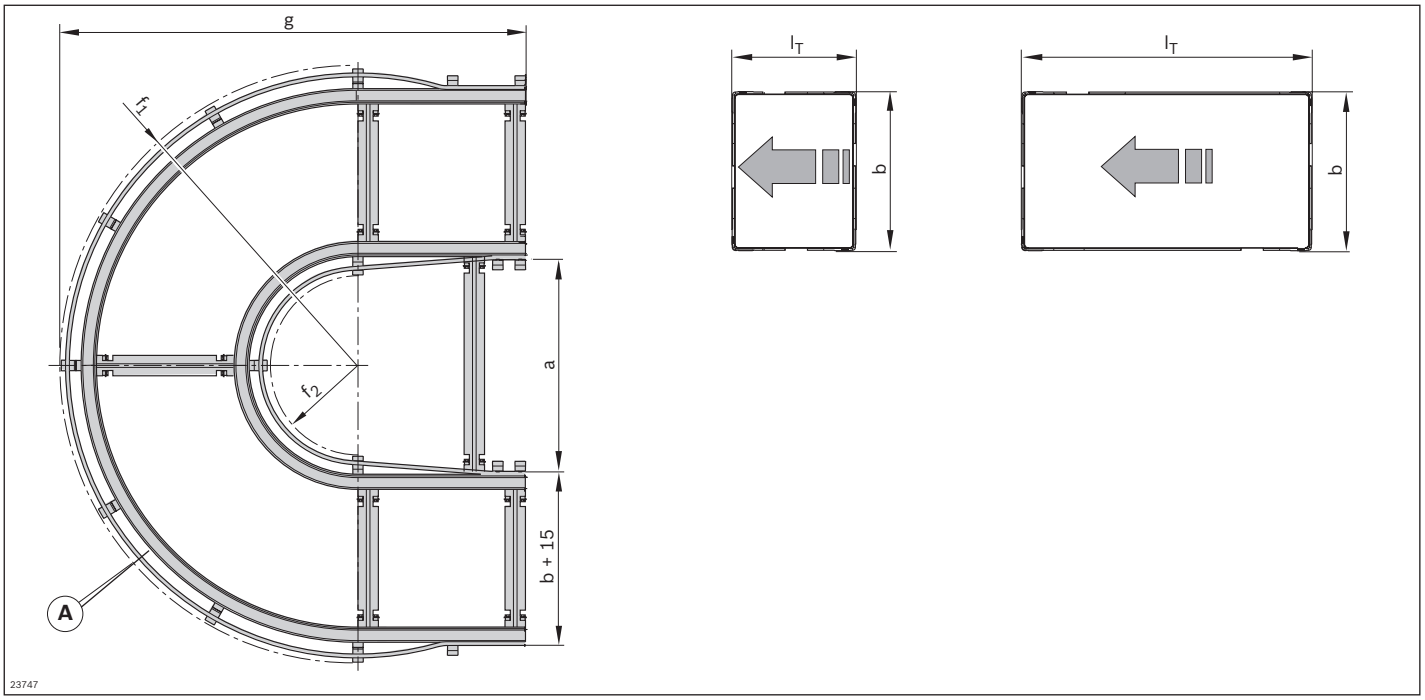


Material number		**3842999995**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l_T (mm)	Length in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040
w x l_T (mm x mm)	Combination options a = 640 mm	b x l_T
		160 x 160; 240; 320
		240 x 160; 240; 320; 400
		320 x 160; 240; 320; 400; 480
		400 x 240; 320; 400; 480; 640
		480 x 320; 400; 480; 640
		640 x 400; 480; 640
		800 x 480; 640
	a = 800 mm	480 x 800
		640 x 800; 1040
		800 x 800; 1040

Technical data

Material number			**3842999995**
Features			
Max. operating temperature	T	°C	+40 °C

Dimensions



Ⓐ Workpiece pallet outer guide from l_T = 640 mm
b Track width in direction of transport
l_T Length in conveyor direction

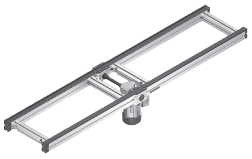
Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Curve radius f_1[1] (mm)	Curve radius f_2[1] (mm)	Dimension g (mm)	Distance between conveyors a (mm)	Required conveyor medium length l_k (mm)
160	160	493	286	755	640	7201
160	240	493	287	835	640	7841
160	320	493	266	915	640	8481
240	160	573	287	835	640	7704
240	240	573	280	915	640	8344
240	320	573	270	995	640	8984
240	400	573	256	1075	640	9624
240	480	573	240	1155	640	10264
320	160	653	288	915	640	8206
320	240	653	282	995	640	8846
320	320	653	273	1075	640	9486
320	400	653	261	1155	640	10126
320	480	653	247	1235	640	10766
400	240	733	283	1075	640	9349
400	320	733	275	1155	640	9989
400	400	733	265	1235	640	10629
400	480	733	252	1315	640	11269
400	640	770	260	1299	640	10669
480	320	813	277	1235	640	10491
480	400	813	268	1315	640	11131
480	480	813	256	1395	640	11771
480	640	850	267	1366	640	11074
480	800	930	319	1595	800	13265
640	400	973	272	1475	640	12137
640	480	973	263	1555	640	12777
640	640	1010	278	1503	640	11896
640	800	1090	333	1733	800	14095
640	1040	1090	277	1973	800	16015
800	480	1133	267	1715	640	13782
800	640	1170	285	1642	640	12732
800	800	1250	344	1872	800	14938
800	1040	1250	296	2112	800	16858

[1] f_1, f_2 = guideline value

Connection kits for longitudinal conveyors

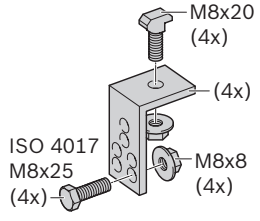
Clean Room

Use: For connecting the TS 2*plus* modules on a longitudinal conveyor at the ends (end-to-end)

	Return unit (return side)						
	**UM 2/B**	**UM 2/C-60** **UM 2/C-170** **UM 2/R-60** **UM 2/R-170**	**BS 2**	**BS 2/C** **BS 2/C-H** **BS 2/R** **BS 2/R-H**	**KE 2**	**KU 2**	**CU 2**
Drive (drive side)							
AS 2/B-150, **AS 2/-250**	3842179574[1]	3842530871	3842518828	3842530871	3842518828	3842530871	3842518828
AS 2/C-100, **AS 2/C-250,** **KU 2/90,** **KU 2/180**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
AS 2/C-400, **AS 2/C-700**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
AS 2/R-300, **AS 2/R-700**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
AS 2/R-1200, **AS 2/R-2200**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
BS 2	3842518828	3842525110	3842525110	3842525110	3842525110[3]	3842525110	3842525110
BS 2/C **BS 2/R**	3842530871	3842529881	3842525110	3842179574 -or- 3842529881	–[2]	3842179574 -or- 3842529881	3842525110
BS 2/C-H **BS 2/R-H**	3842179574[1]	3842530871	3842518828	3842530871	–[2]	3842530871	3842518828
KE 2/90 **KE 2/180**	3842518828	–[2]	3842525110	–[2]	3842525110[3]	–[2]	3842525110

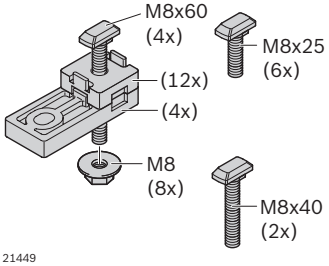
[1] Included with the UM 2/B
[2] Connection not permitted
[3] Included with the KE 2

3842518828



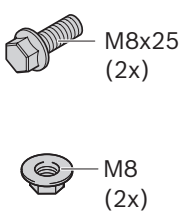
21448

3842525110



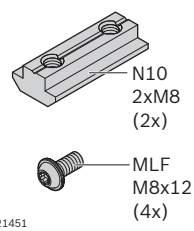
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3842179574



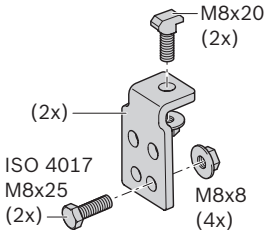
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3842529881

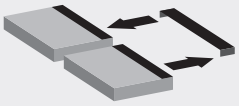


21451

3842530871



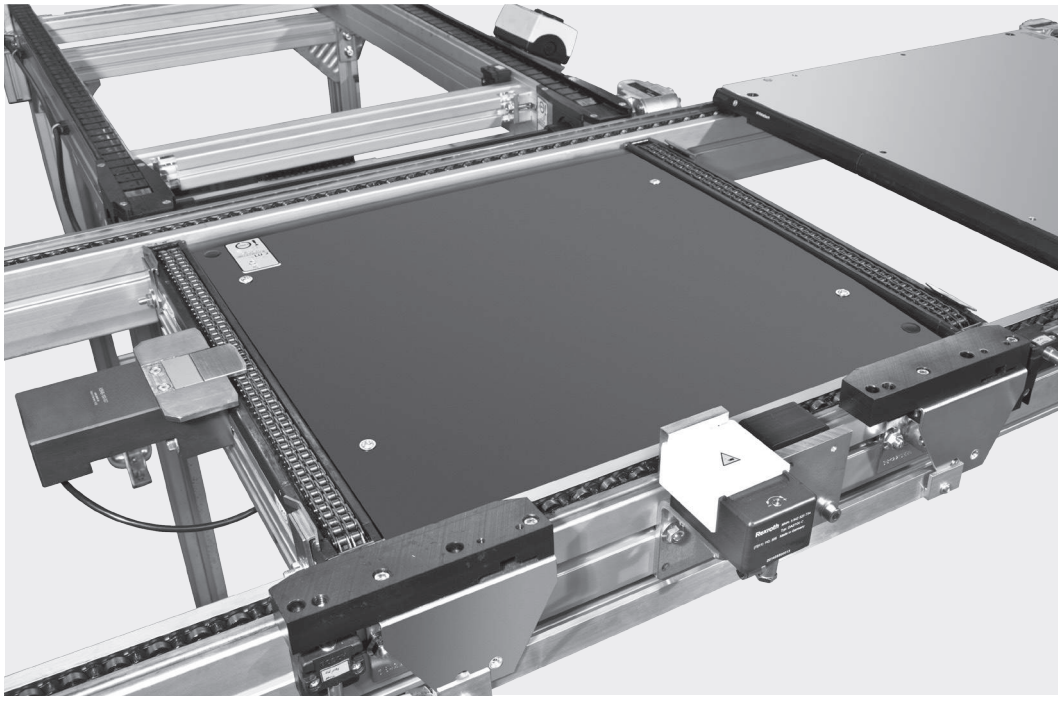
21452

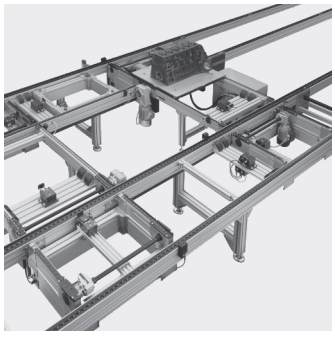


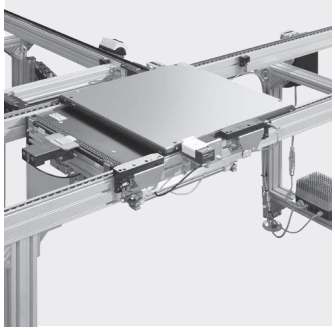
Transverse conveyor

5

Selection of transverse conveyors **5-2**

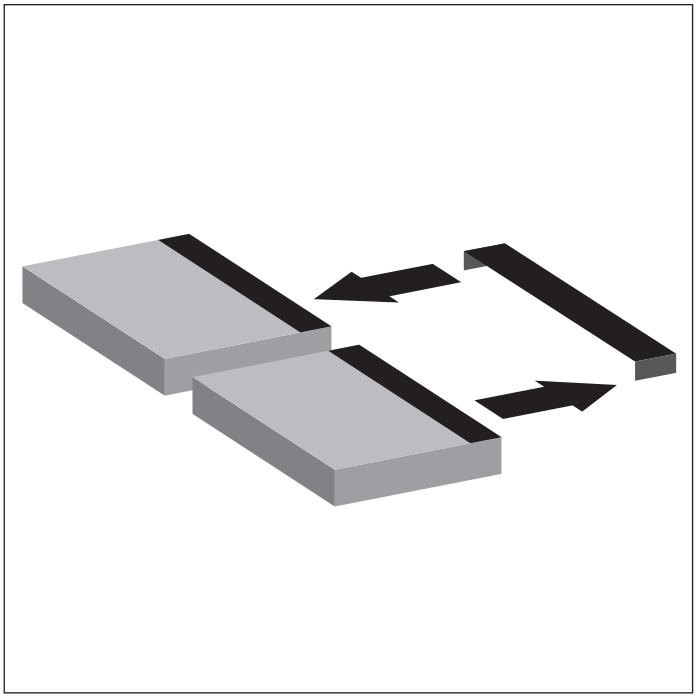






Selection of transverse conveyors

Transverse conveyors are used to change the workpiece pallet direction of transport. They are used to create a branch in the workpiece pallet paths to the individual processing stations. The orientation of the workpiece pallet relative to its conveying direction changes when it is moved from longitudinal conveying to transverse conveying and vice versa.



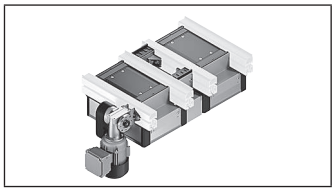
Transverse conveyors can be implemented in the TS 2*plus* transfer system in two different ways:

- **EQ 2 electric transverse conveyors** (see p. 5-4) (e.g., EQ 2/TR version with roller section), or
- **HQ 2 lift transverse units** (see p. 5-26) in combination with BS 2 belt sections or conveyor units

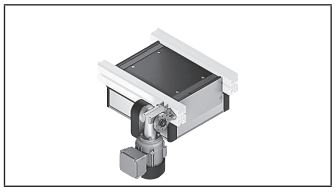
The EQ 2 electric transverse conveyors are complete macro modules. They consist of one or two HQ 2s and additional transverse conveyor sections (BS 2/RS 2).

The transverse transport level is 10 mm above the transport level of the longitudinal section.

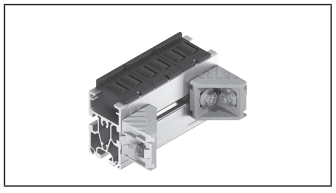
Note: The lift transverse units lift the workpiece pallet out of the longitudinal section and transport it transversely into the transverse section, which is situated 10 mm higher.



EQ 2 electric transverse conveyors **5-4**



HQ 2 lift transverse units **5-26**

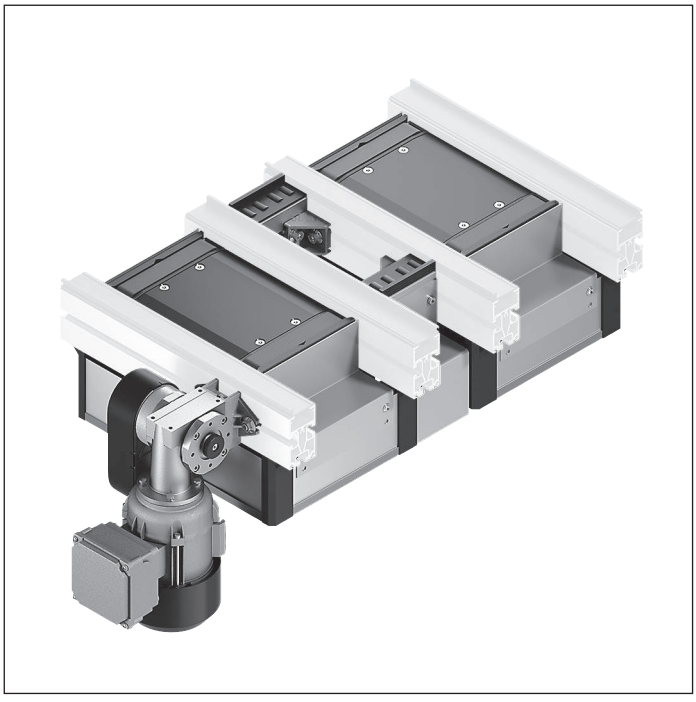


RS 2 roller sections **5-80**

EQ 2 electric transverse conveyors

EQ 2 electric transverse conveyors are used to move workpiece pallets from a longitudinal conveyor section onto a second, parallel longitudinal section. EQ 2s are complete macro modules which consist of one or two HQ 2 lift transverse units and one transverse conveyor section (BS 2/RS 2).

All the transport belts are driven by a motor.
For the TS 2*plus* transfer systems, electric transverse conveyors are available with the following transport function:



EQ 2/TR

Moving workpiece pallets from one longitudinal section to a second one, which runs parallel a small distance away, across a roller section.

EQ 2/T

Moving workpiece pallets from one longitudinal section to a second one, which runs parallel a large distance away, across a transverse belt section.

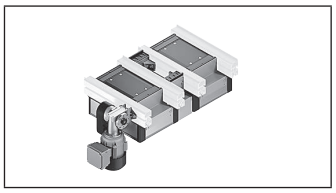
EQ 2/TE

Moving pallets from a longitudinal section to a transverse belt section and vice versa.

Note: Accumulation on the HQ 2 is not permitted.

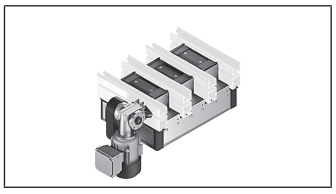
All EQ 2 designs are delivered with pneumatic connections, optionally for the center and top lift position, or for the bottom, center and top lift position. Pneumatic valves are not included in the delivery.

The pneumatic valves are designed so that the rest position acts as an exhaust position, moving the lift transverse units to the center position in case of a pressure drop. In the center position, the workpiece pallets are stopped by the lift transverse unit. This function provides increased safety and ensures easier commissioning.



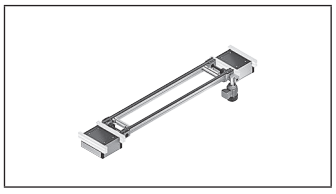
EQ 2/TR electric transverse conveyors **5-6**
160 x 160 ... 800 x 480





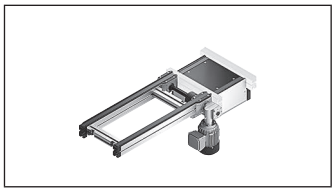
EQ 2/TR-90 electric transverse conveyors **5-11**
160 x 160; 240 x 160





EQ 2/T electric transverse conveyors **5-15**
160 x 160 ... 800 x 480

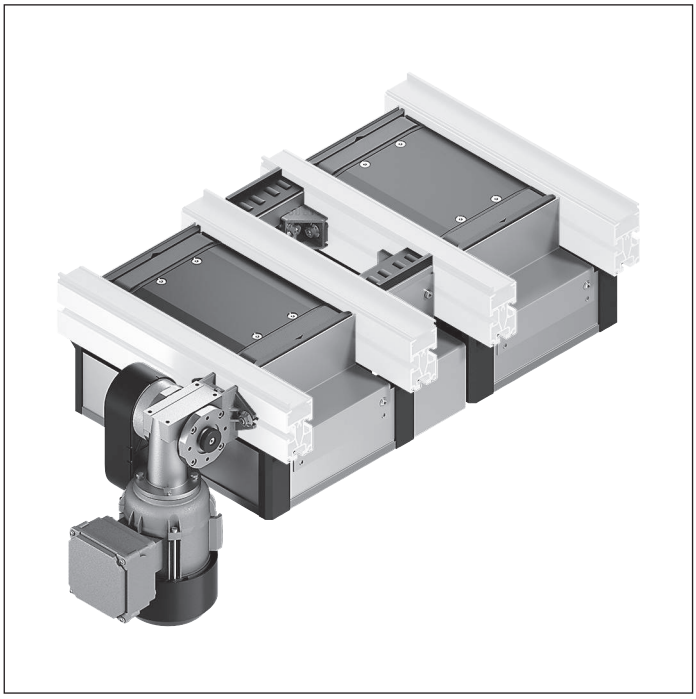




EQ 2/TE electric transverse conveyors **5-20**
160 x 160 ... 800 x 480



EQ 2/TR electric transverse conveyor



- Complete macro module for connecting two parallel longitudinal sections at a short distance from each other
- In tandem design with RS 2 roller section at a distance of a = 45 ... 135 mm
- Size 2 with two lifting cylinders from ≥ 480 x 480 mm
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Suspended motor mounting only. Other motor mounting variants available on request
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note:

- Reversible operation possible
- Accumulation operation not permitted

Accessories

Required accessories

- 1x M12x1 sensor with rated sensing range S_N = 4 mm for each (top/bottom) position sensing location, see p. 8-106

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at v_N > 9 m/min
- WI 2 rockers (see p. 8-139ff), WI/M (see p. 8-133), DA 2/60 (see p. 8-62), DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

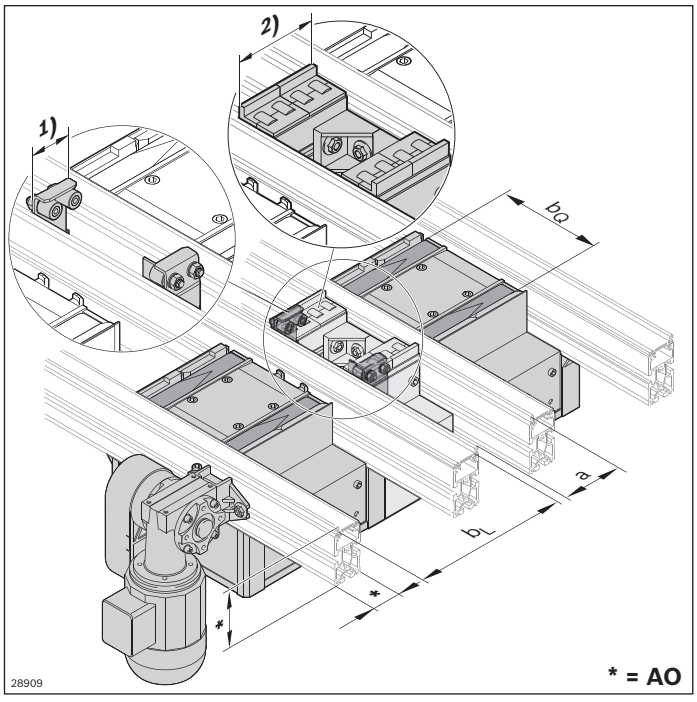
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electrical position inquiry (2x sensors)
- Housing element

Condition on delivery

- HQ 2/O and HQ 2/T lift transverse unit assembled
- Connection kit
- Motor mounting kit, drive motor enclosed
- Roller section with roller elements
- Housing elements: not assembled

Ordering information



1 = intermediate section with roller:
Applies when a = 45
Applies when a = 90 and b_L = 240 mm
2 = roller section:
Applies when a = 90 and b_L > 240 mm
Applies when a = 135 and b_L ≥ 320 mm

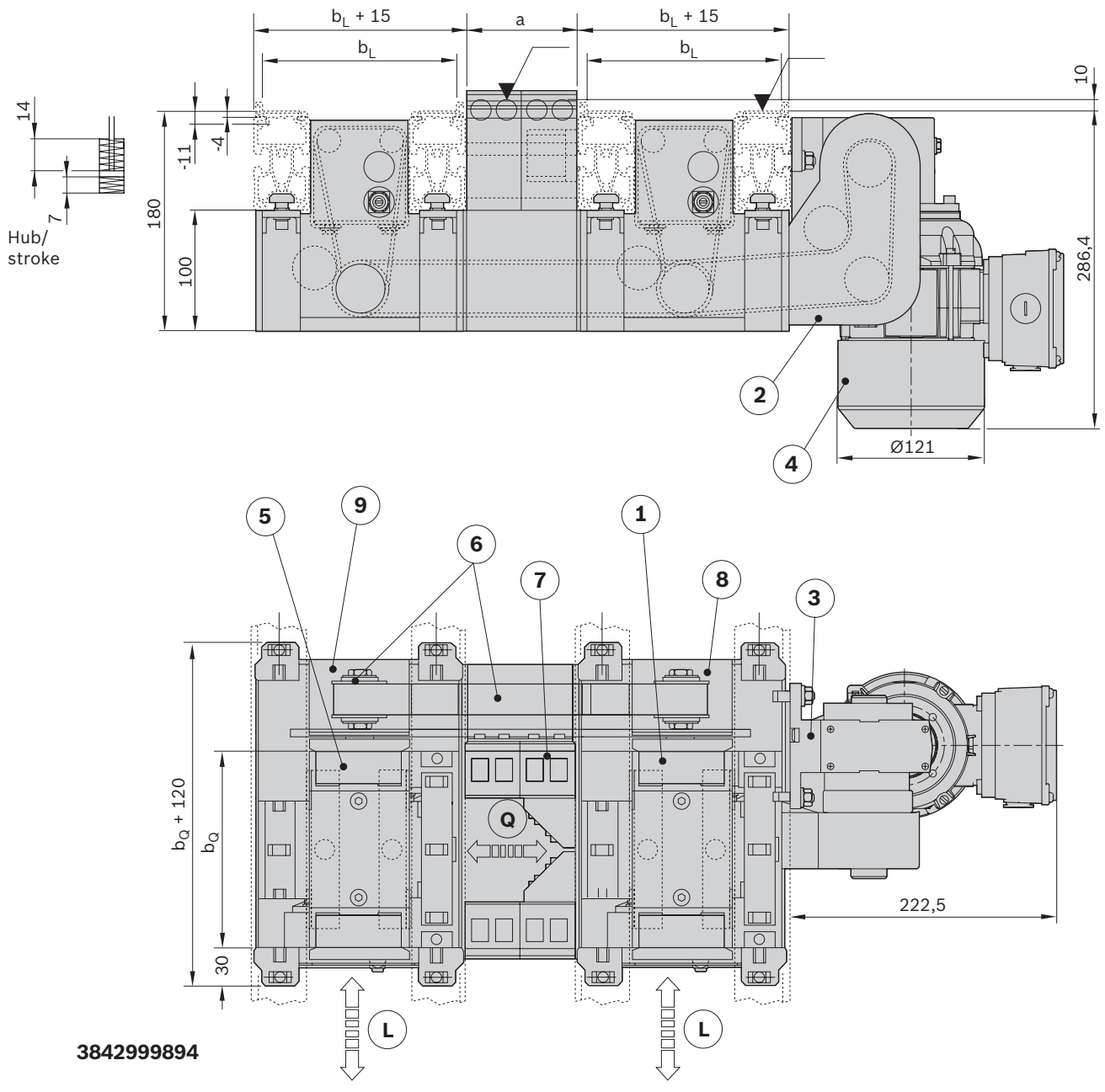
Material number		**3842999894**
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160: 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400; 480 480 x 320; 400 BG 2: 480 x 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1]; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
a (mm)	Distance between conveyors	45; 90[3]; 135[3]

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position
[3] a = 90 mm only when b_L ≥ 240 mm; a = 135 mm only when b_L ≥ 320 mm

Technical data

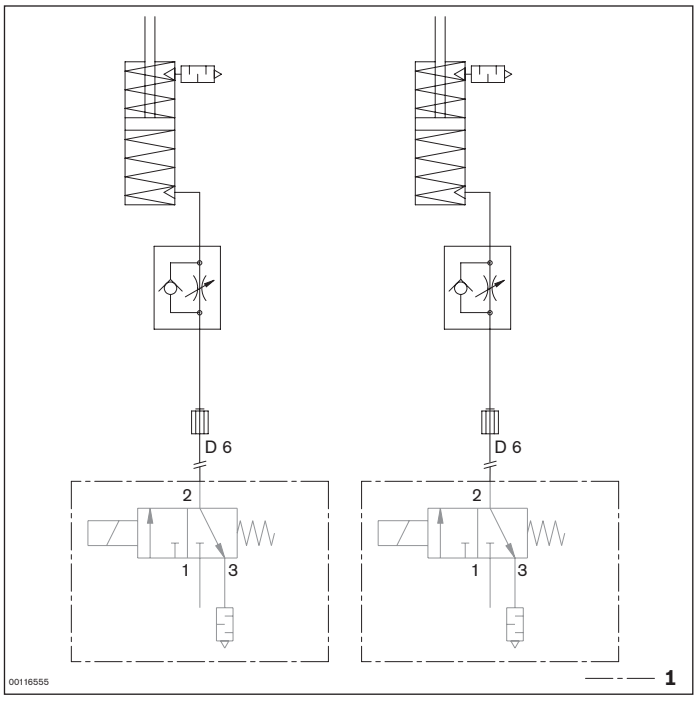
Material number			**3842999894**
Load			
Max. total weight of workpiece pallet	m_G	kg	30
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



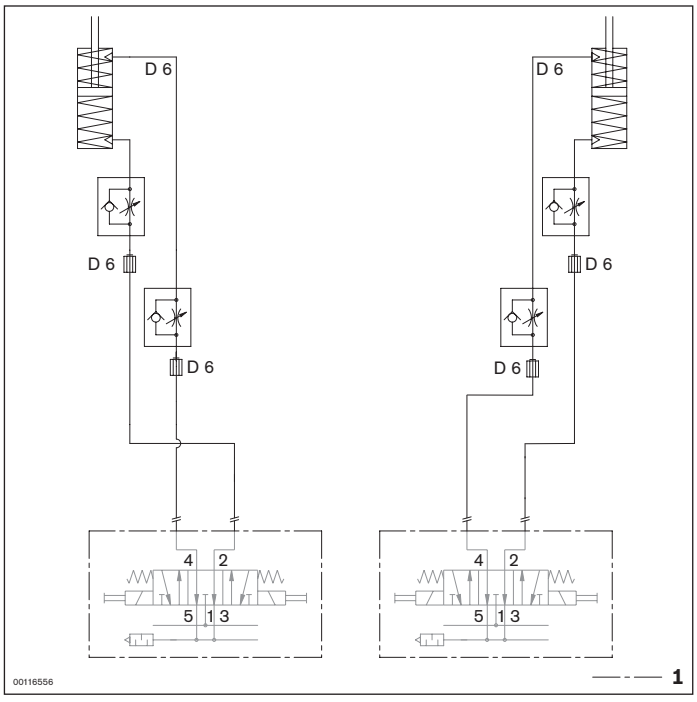
L Longitudinal conveyor transport direction
Q Transport direction of transverse conveyor
1 HQ 2/O lift transverse unit
2 Connecting kit
3 Motor mounting kit
4 Drive motor
5 HQ 2/T lift transverse unit
6 Drive kit
7 Intermediate section with roller elements and housing
8 Housing element for HQ 2/O lift transverse unit combined with HQ 2/T
9 Housing element for HQ 2/T lift transverse unit

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



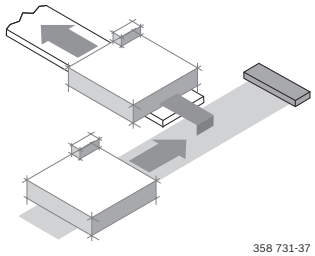
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

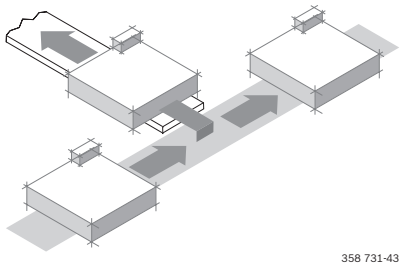


1 Not included in delivery

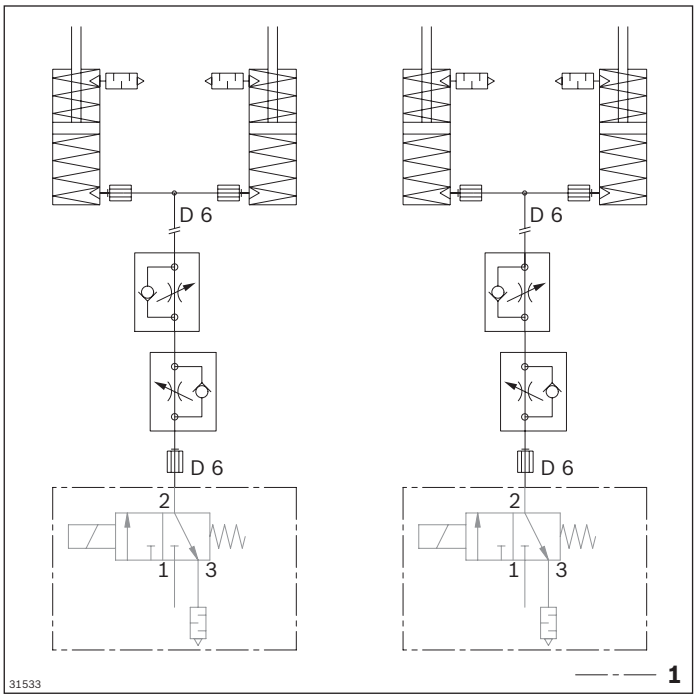
PN = 2



PN = 3

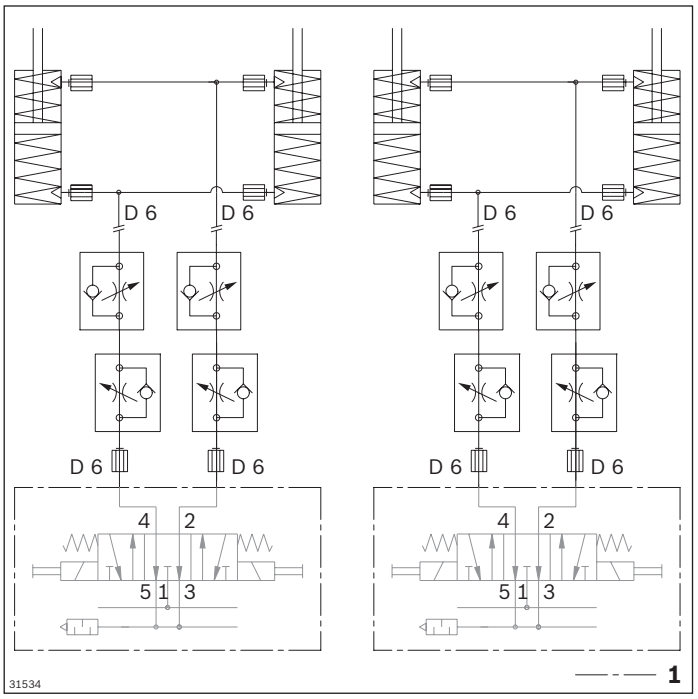


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



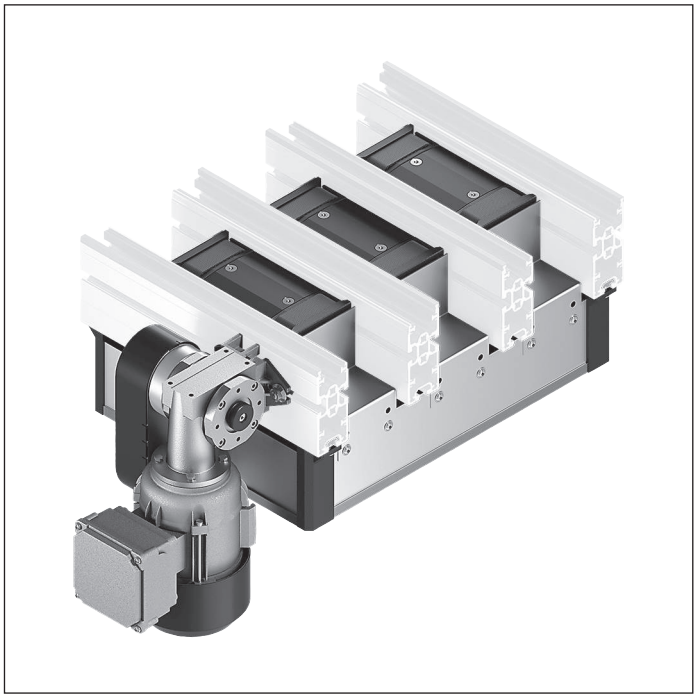
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 3



1 Not included in delivery

EQ 2/TR-90 electric transverse conveyor



- Complete macro module for connecting two parallel longitudinal sections at a distance of 90 mm from each other
- With driven intermediate sections
- Modular unit with three lifting cylinders
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/E

Note:
- Reversible operation possible
- Accumulation operation not permitted

Accessories

Required accessories

- 1x M12x1 sensor with rated sensing range S_N = 4 mm for each (top/bottom) position sensing location, see p. 8-106

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding WT 2 and WT 2/E workpiece pallets at v_N > 9 m/min
- WI 2 rocker (see p. 8-131) WI/M rocker (see p. 8-133) and DA 2/60-C damper (see p. 8-62) for infeeding WT 2 and WT 2/F workpiece pallets

Delivery notes

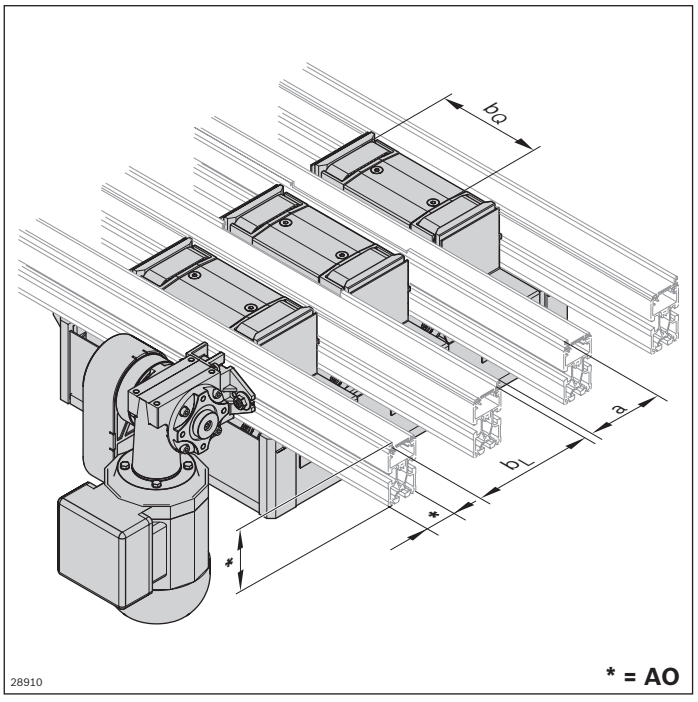
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electrical position inquiry (2x sensors)
- Connection kit
- Housing element

Condition on delivery

- HQ 2/O and HQ 2/T lift transverse unit assembled
- Drive kit, assembled
- Motor mounting kit, drive motor enclosed
- Connection kit included
- Protective housing, not assembled

Ordering information



Material number		3842998289
b_Q (mm)	Track width in the transverse conveyor	160; 240
b_L (mm)	Track width in the longitudinal conveyor	160
b_Q x b_L (mm x mm)	Combination options	160 x 160 240 x 160
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1] ; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

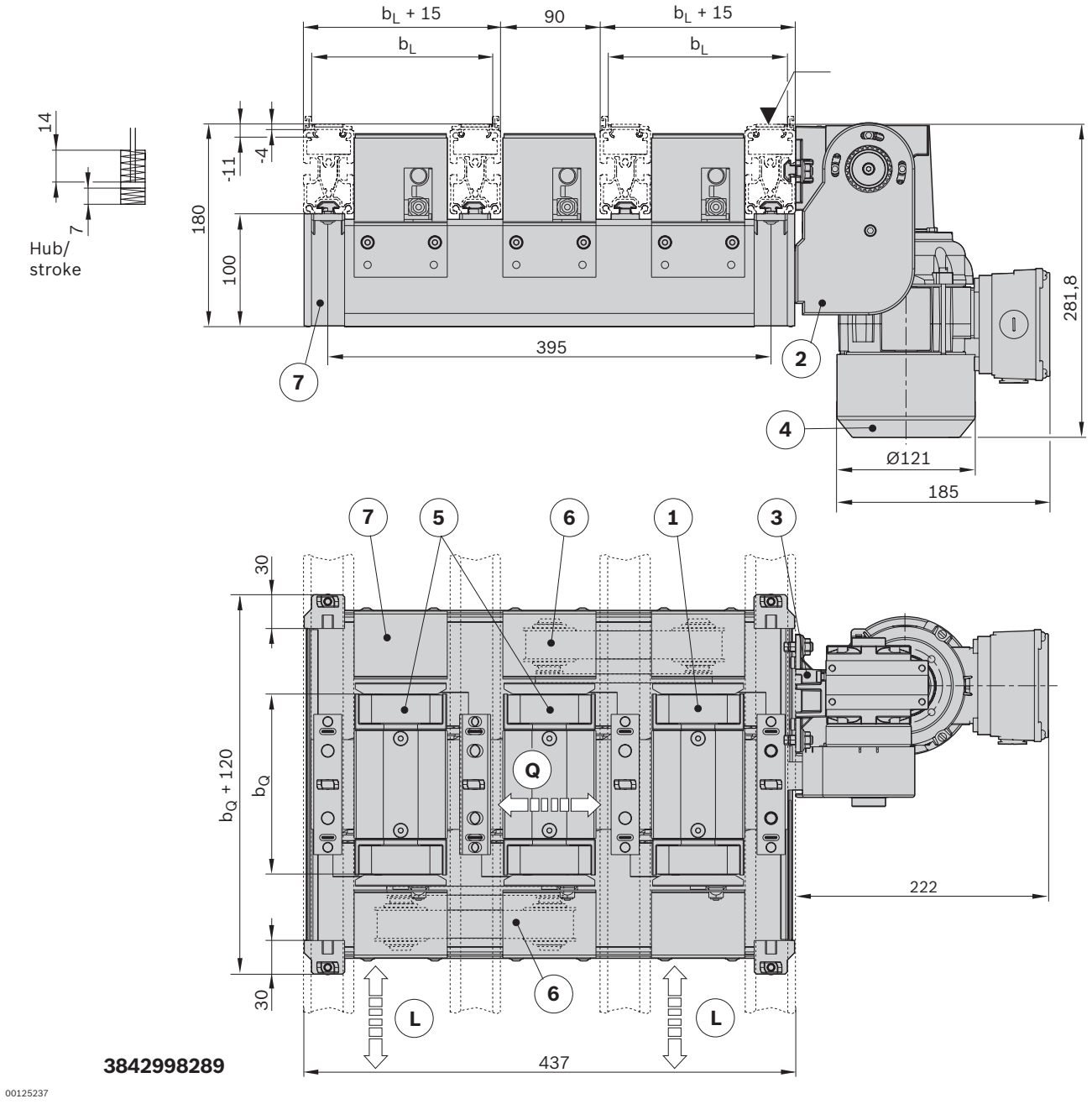
[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

Technical data

Material number			3842998289
Load			
Max. total weight of workpiece pallet	m_G	kg	30
Features			
ESD			Yes
Dimensions			
Distance between conveyors	a	mm	90
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

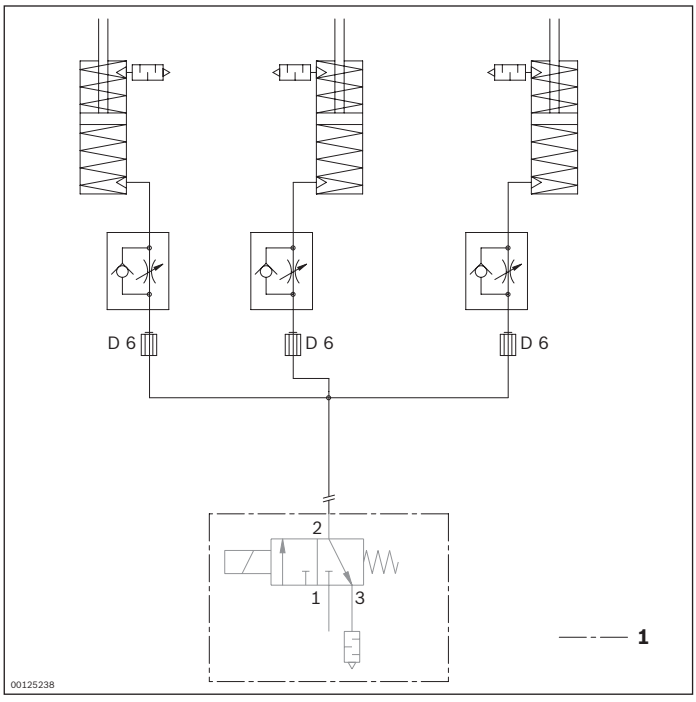
Dimensions

AO = 0 referenced



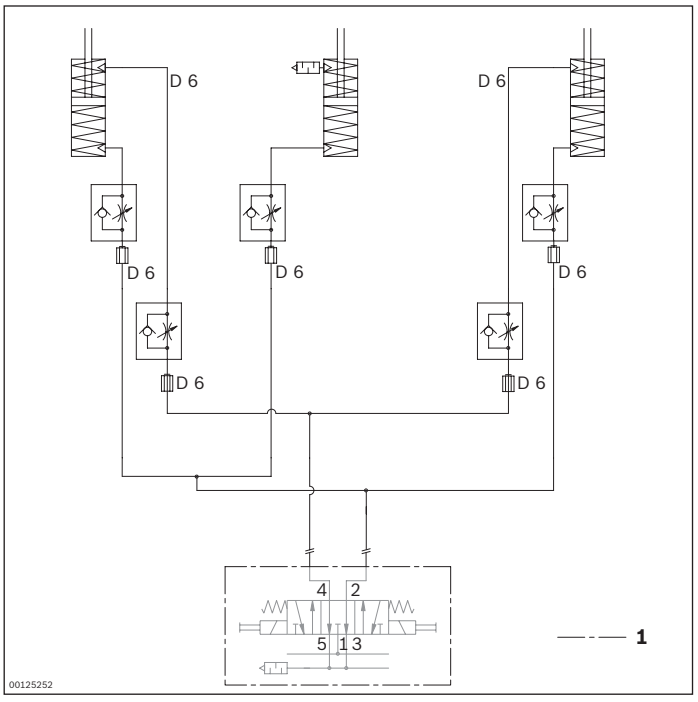
L Longitudinal conveyor transport direction
Q Transport direction of transverse conveyor
1 HQ 2/O lift transverse unit
2 Connecting kit
3 Motor mounting kit
4 Drive motor
5 HQ 2/T lift transverse unit
6 Drive kit
7 Housing element

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2)



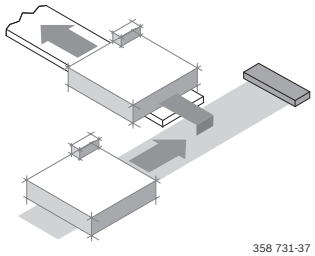
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3)

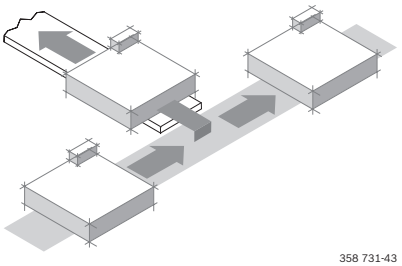


1 Not included in delivery

PN = 2



PN = 3



EQ 2/T electric transverse conveyor





- Pre-assembled module for connecting two parallel longitudinal sections
- Tandem design with driven belt section for greater distances from 320 mm
- Size 2 from ≥ 480 x 480 mm with two lifting cylinders per lift transverse unit
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2, WT 2/E and WT 2/F

Note:

- Reversible operation possible
- Accumulation operation not permitted on the lift transverse units.

Accessories

Required accessories

- 1x M12x1 sensor with rated sensing range S_N = 4 mm for each (top/bottom) position sensing location, see p. 8-108/8-110

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at v_N > 9 m/min
- WI/2 (see p. 8-131ff) or WI/M (see p. 8-133) rocker, DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

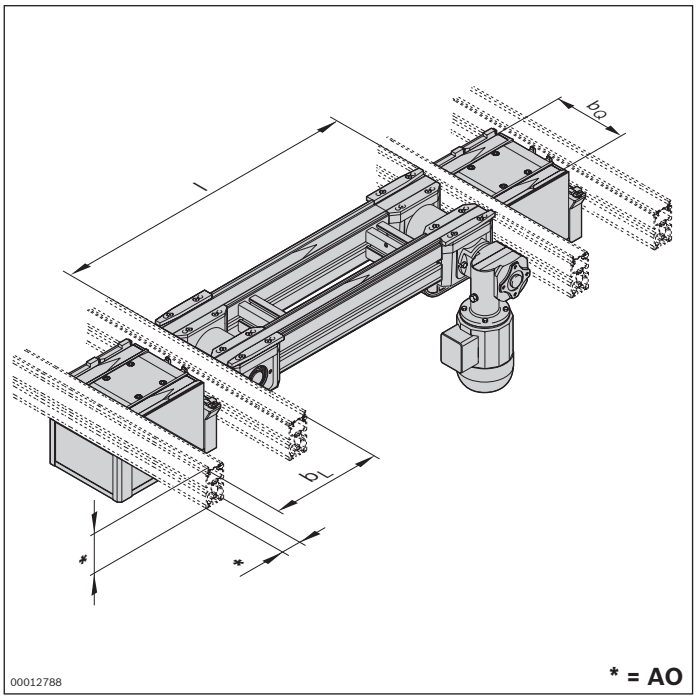
Scope of delivery

- Incl. fastening material
- 2x HQ 2/O
- 1x BS 2/T tandem belt section
- 2x connection kit
- 2x SK 2/B housing element
- Pneumatic equipment for two or three positions
- Kit for electric position sensing

Condition on delivery

- Pre-assembled in modular units

Ordering information



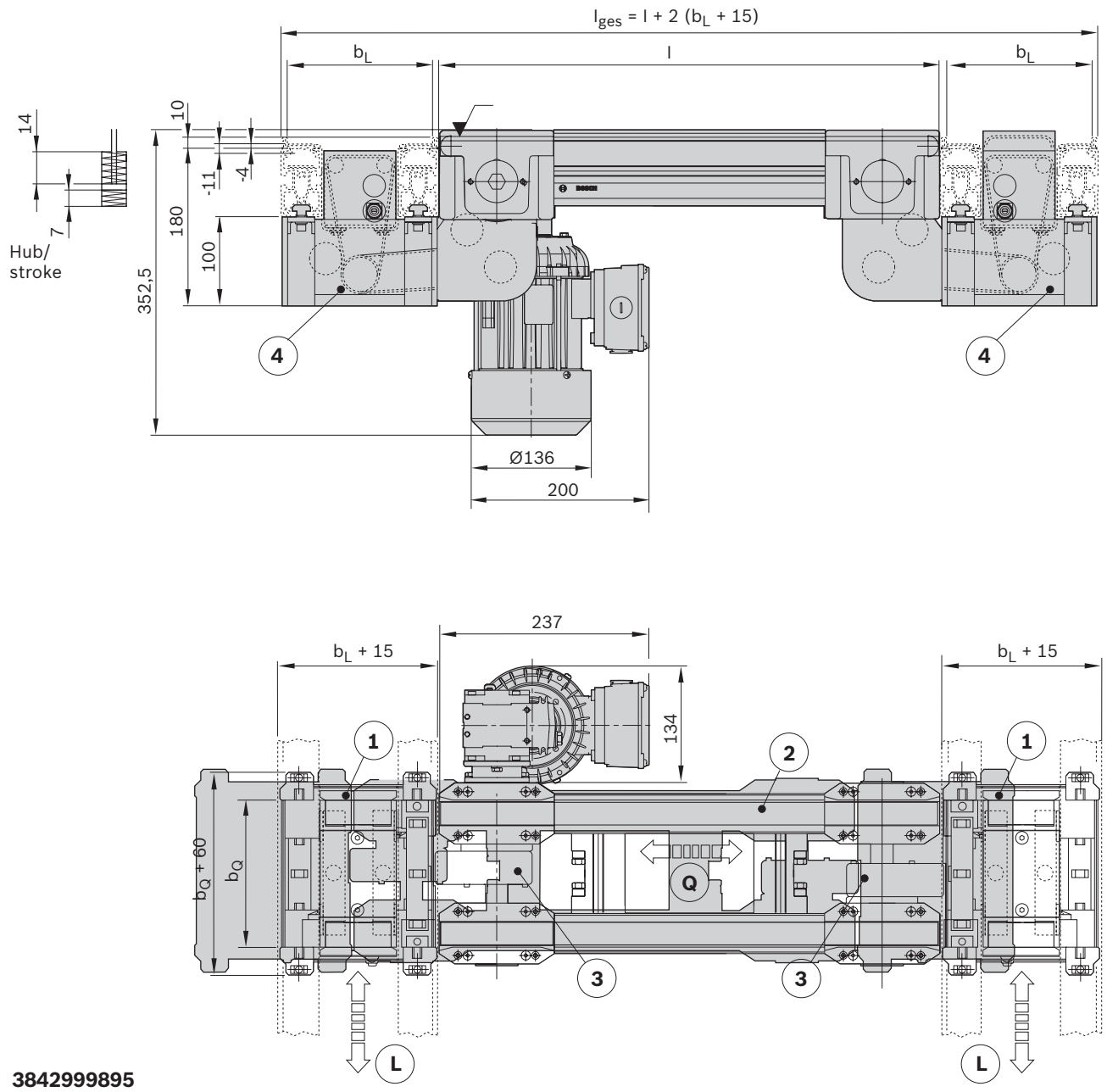
Material number		3842999895
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400; 480 480 x 320; 400 BG 2: 480 x 480 640 x 400; 480 800 x 400; 480
l (mm)	Length	320 ... 6000
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1]; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[3]

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position
[3] MA = M when $b_Q \geqq 320$ mm

Technical data

Material number			3842999895
Load			
Max. section load in accumulation operation		kg	60
Max. total weight of workpiece pallet	m_G	kg	BG 1: 30 BG 2: 50
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions

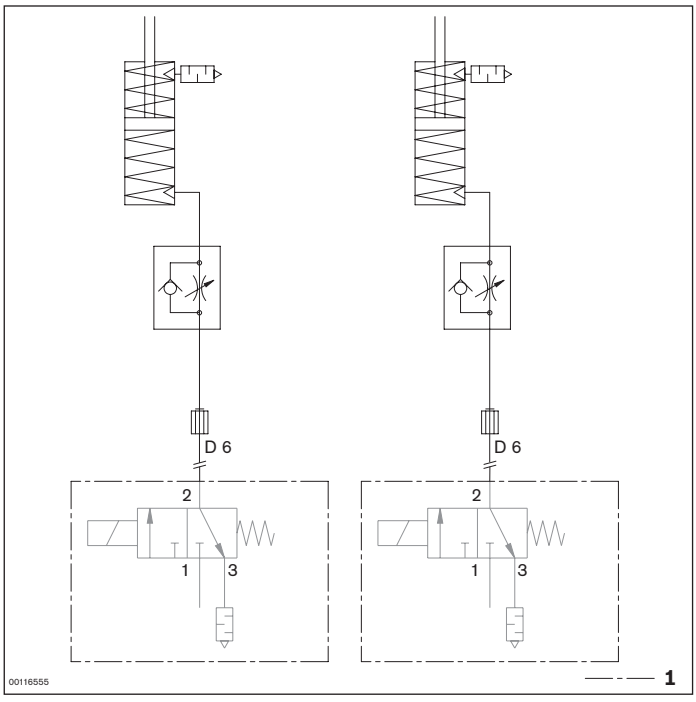


3842999895

00116078

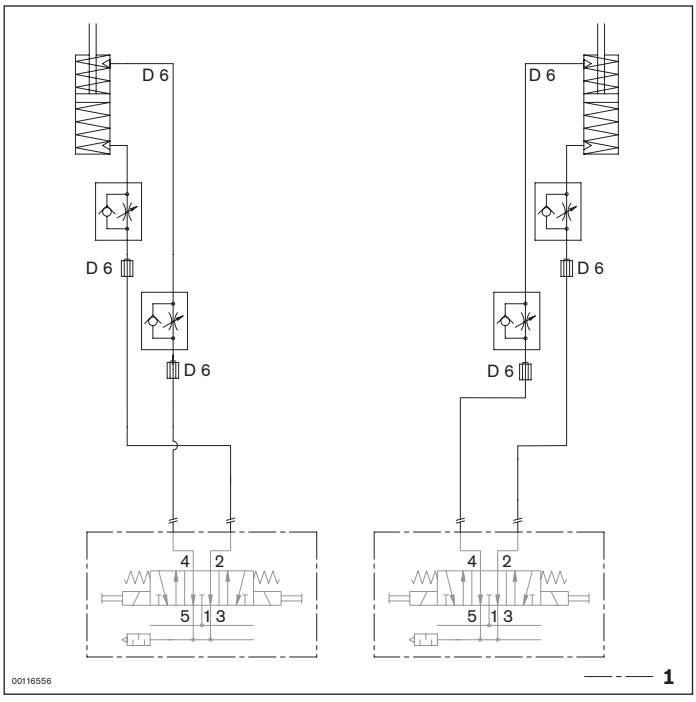
L Longitudinal conveyor transport direction
Q Transport direction of transverse conveyor
1 HQ 2/O lift transverse unit
2 BS 2/T tandem belt section
3 Connecting kit
4 Housing element

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



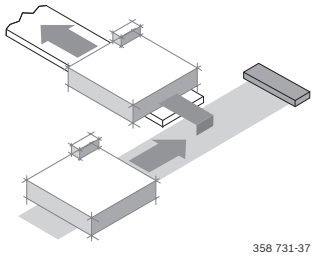
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

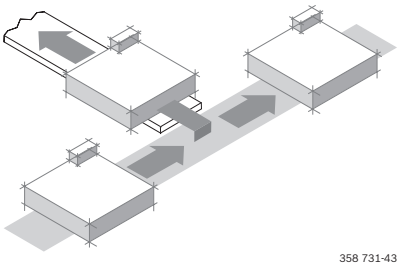


1 Not included in delivery

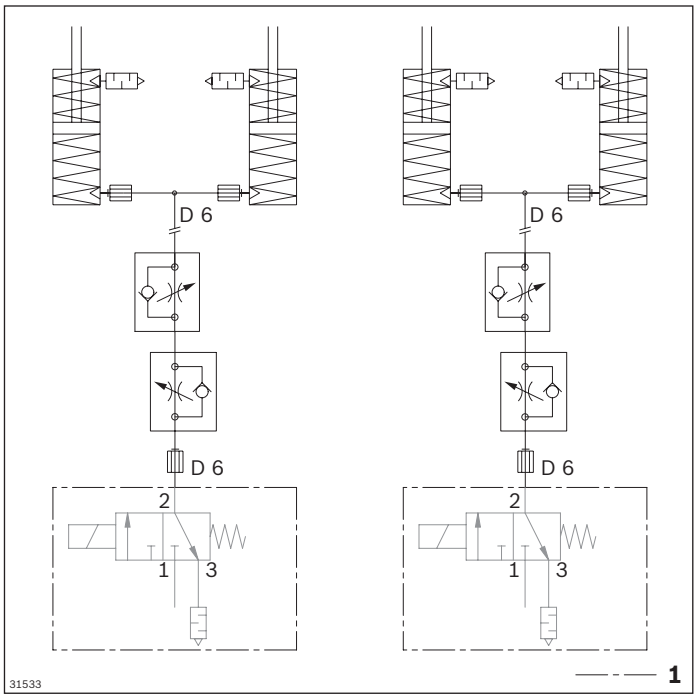
PN = 2



PN = 3

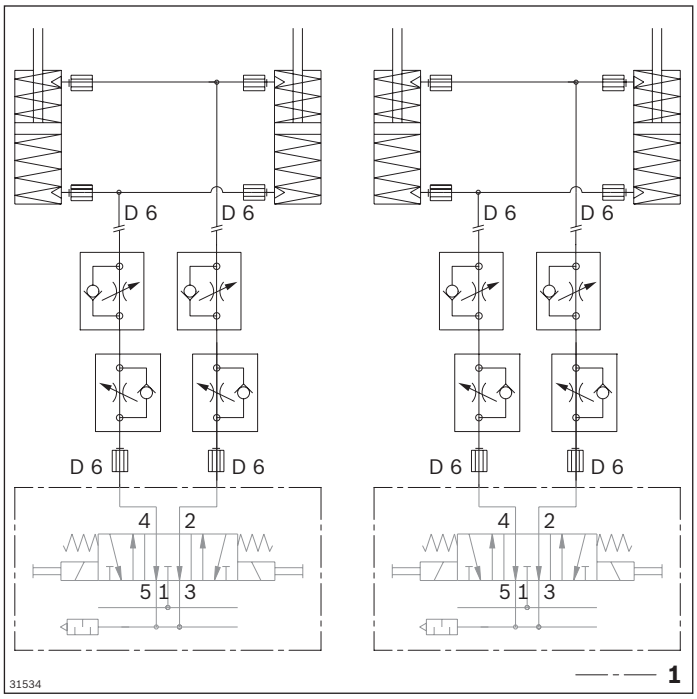


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



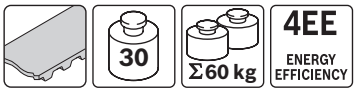
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 3



1 Not included in delivery

EQ 2/TE electric transverse conveyor





- Pre-assembled assembly for branching off into a transverse section in which the second end does not lead to a further transverse section (dead end)
- Size 2 from ≥ 480 x 480 mm with two lifting cylinders per lift transverse unit
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note:

- Reversible operation possible
- Accumulation operation on the lift transverse unit is not permitted

Accessories

Required accessories

- 1x M12x1 sensor with rated sensing range S_N = 4 mm for each (top/bottom) position sensing location, see p. 8-108/8-110

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets at v_N > 9 m/min
- WI 2 (see p. 8-131ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-62) for infeeding workpiece pallets

Delivery notes

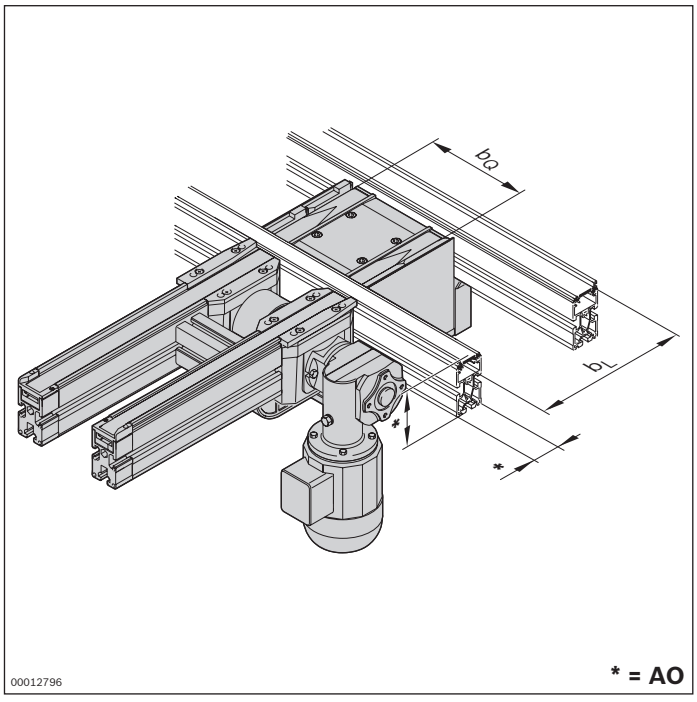
Scope of delivery

- 1x HQ 2/O lift transverse unit
- 1x BS 2/TE belt section
- 1x connection kit
- 1x SK 2/B housing element
- Pneumatic equipment for two or three positions
- Kit for electric position sensing

Condition on delivery

- HQ 2/O lift transverse unit, assembled
- BS 2/TE belt section, assembled
- Connection kit included
- Protective housing, not assembled

Ordering information



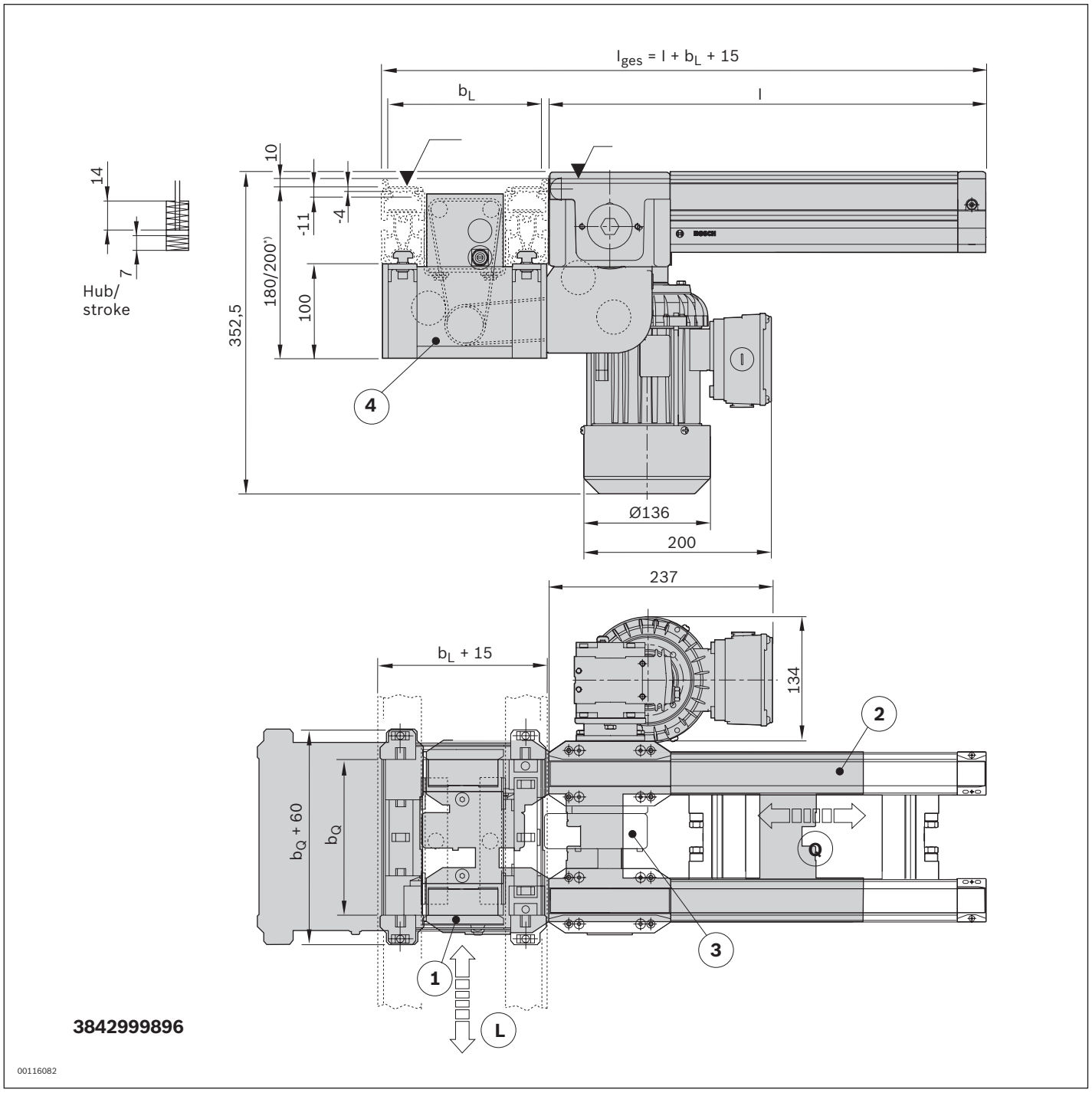
Material number		3842999896
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400; 480 480 x 320; 400 BG 2: 480 x 480 640 x 400; 480 800 x 400; 480
l (mm)	Length	240 ... 6000
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1]; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; M[3]; L

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position
[3] MA = M when $b_Q \geqq 320$ mm

Technical data

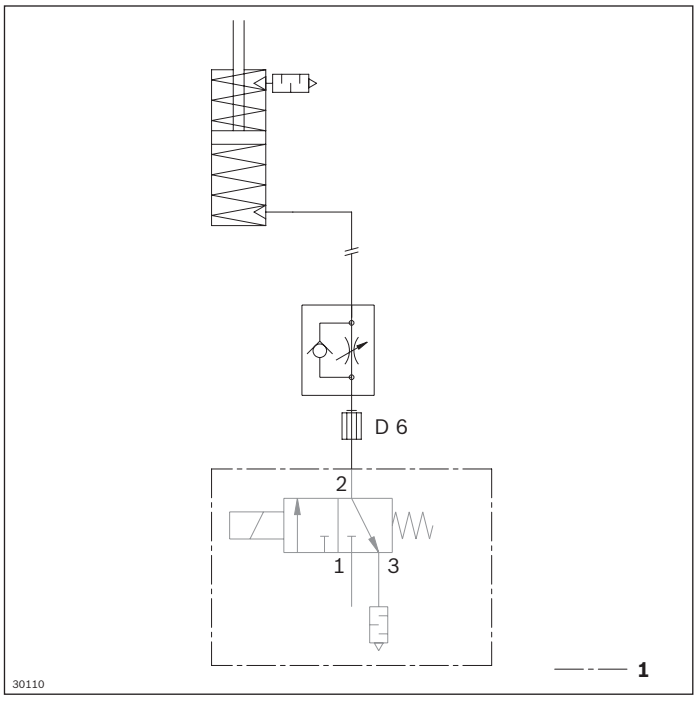
Material number			3842999896
Load			
Max. section load in accumulation operation		kg	60
Max. total weight of workpiece pallet	m_G	kg	30
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



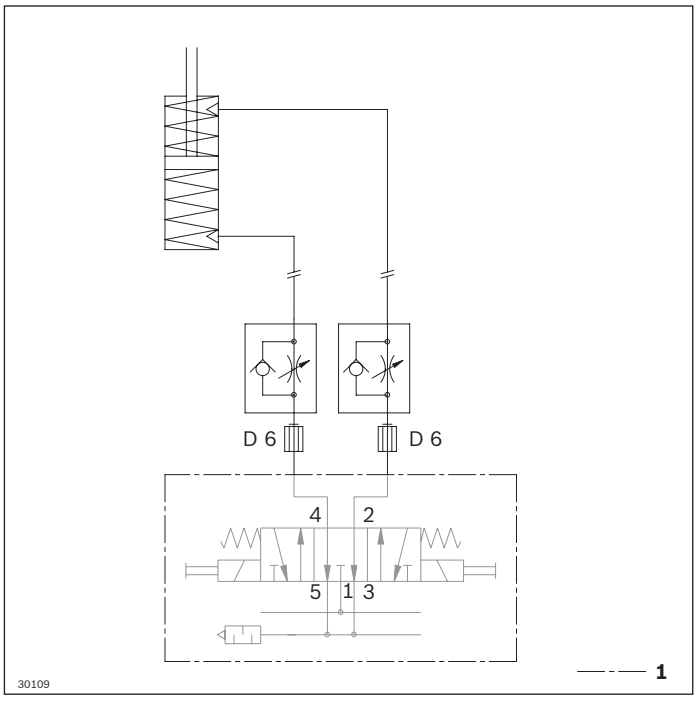
L Longitudinal conveyor transport direction
Q Transport direction of transverse conveyor
1 HQ 2/O lift transverse unit
2 BS 2/TE belt section
3 Connecting kit
4 Housing element
* 180 mm for 80 mm profile height, 200 mm for 100 mm profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



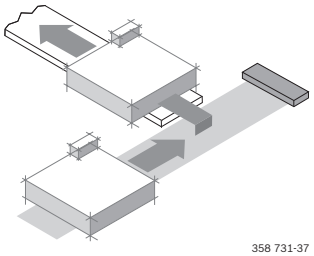
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

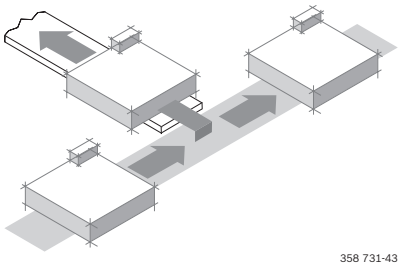


1 Not included in delivery

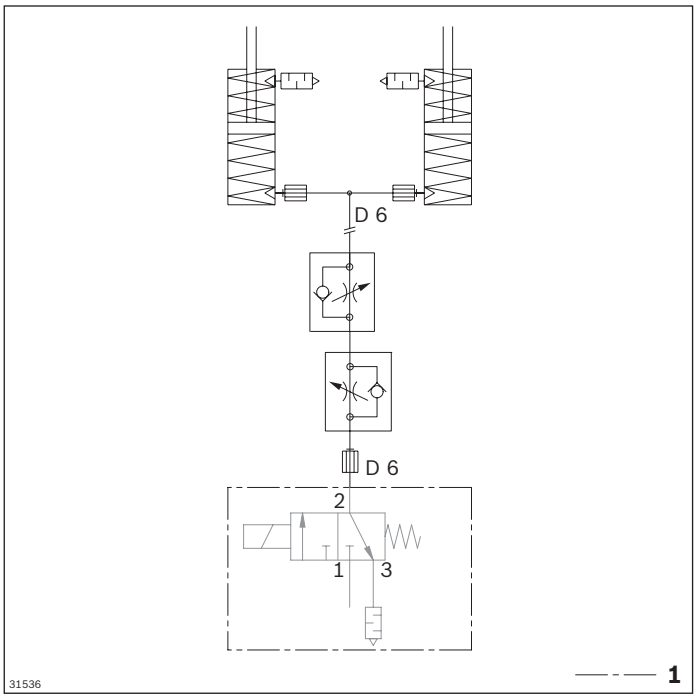
PN = 2



PN = 3

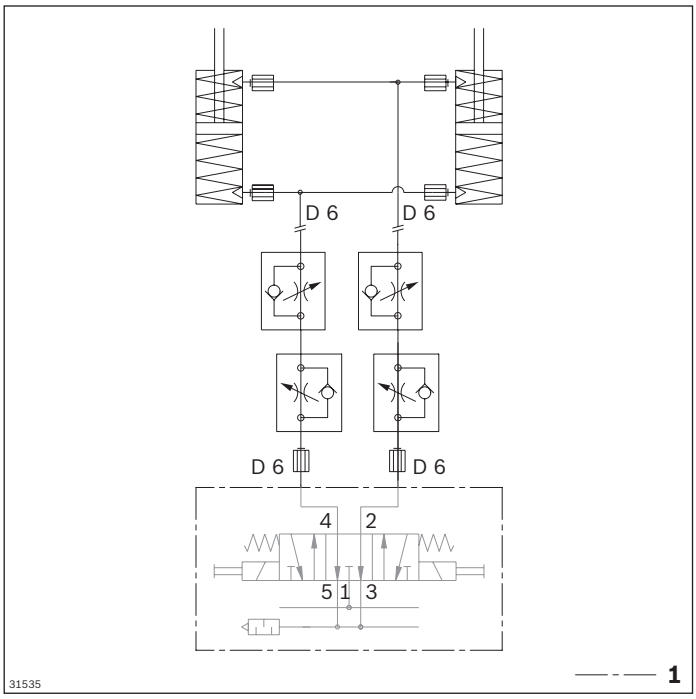


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

HQ 2 lift transverse units

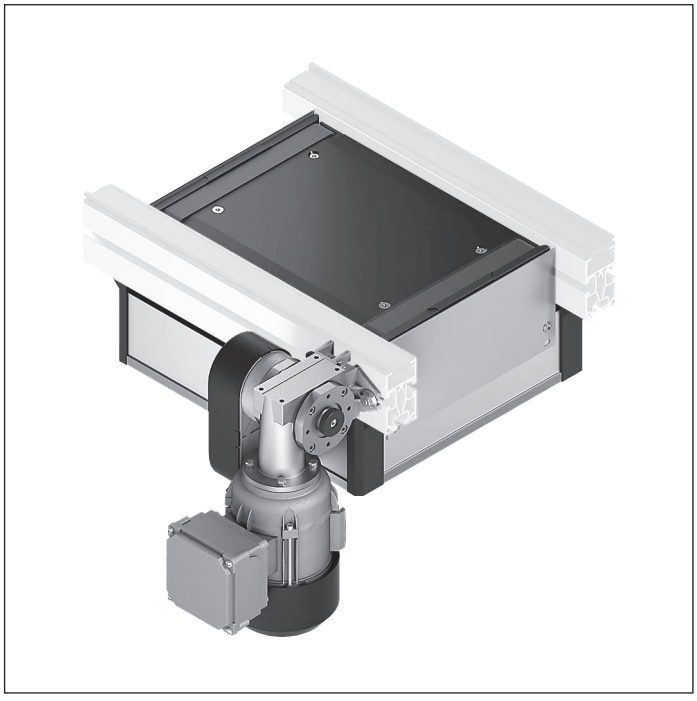
The lift transverse units have to:

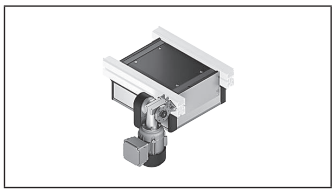
- Move the workpiece pallets from a longitudinal section to a transverse section
- Move the workpiece pallets from a transverse section onto a longitudinal section

Lift transverse units for overall workpiece pallet weights up to 240 kg are available for the TS 2*plus* transfer system.

All lift transverse units have one thing in common – vertical pneumatic movement and horizontal transportation action. Vertical movement can be set in three positions:

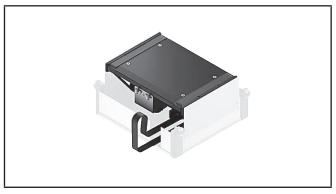
- Spring-centered middle position
  (basic position, 4 mm below transport level).
  It serves as the transport position when the lug cam is lowered and as the locked position when the lug cam is raised
- Transverse conveying position
  (10 mm above transport level of longitudinal conveyor)
- Lower transport position
  (11 mm below conveying level).
  In this low position a workpiece pallet is also released onto a longitudinal conveyor section when the lug cam is raised





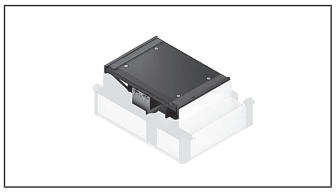
HQ 2/S lift transverse units **5-28**
160 x 160 ... 800 x 480





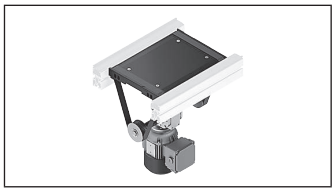
HQ 2/O lift transverse units **5-33**
160 x 160 ... 800 x 480





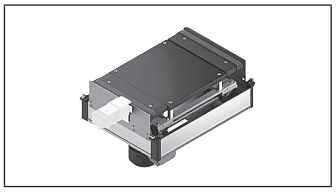
HQ 2/T lift transverse units **5-48**
160 x 160 ... 800 x 480



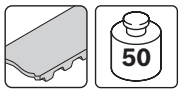


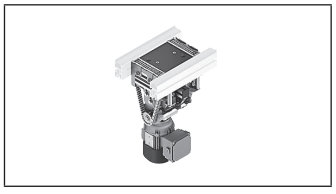
HQ 2/U lift transverse units **5-56**
160 x 160 ... 400 x 400; 480 x 320



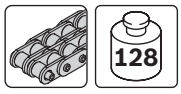


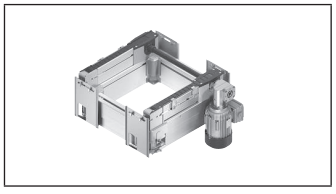
HQ 2/U2 lift transverse units **5-60**
400 x 400 ... 800 x 640



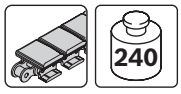


HQ 2/U-H lift transverse units **5-64**
240 x 240 ... 640 x 640

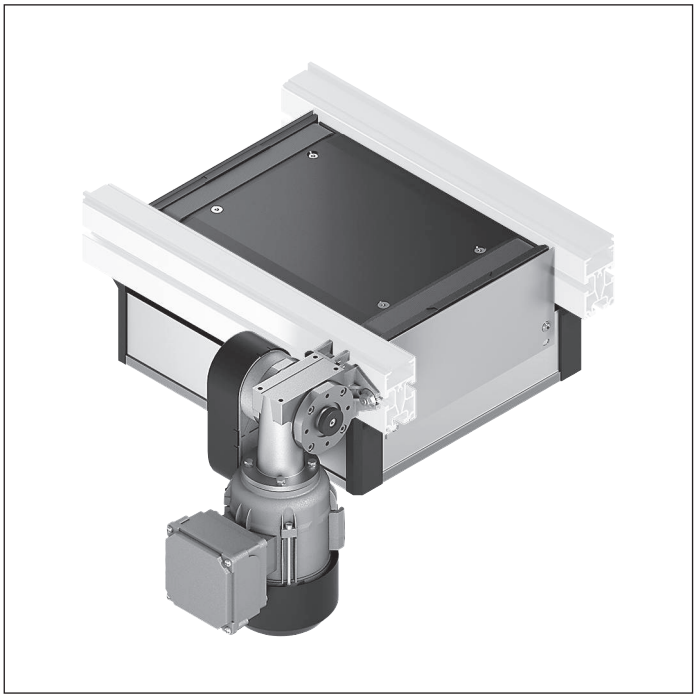




HQ 2/C-H lift transverse units **5-71**
480 x 640 ... 1200 x 1200



HQ 2/S lift transverse unit



- Lift transverse unit for feeding out from a longitudinal section into a transverse section and vice versa
- Low height with motor mounted on side. It is therefore suitable for the operation of double-deck conveyor sections
- In two sizes with one or two lifting cylinders
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Vertical movement is delivered by pneumatic cylinders. Two sizes are available:
Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.

Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

Accessories

Required accessories

- 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- SK 2. protective housing, see p. 5-40

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- WI 2/... rockers (see p. 8-139ff), WI/M (see p. 8-133) DA 2/60 (see p. 8-62), DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding the workpiece pallet

Delivery notes

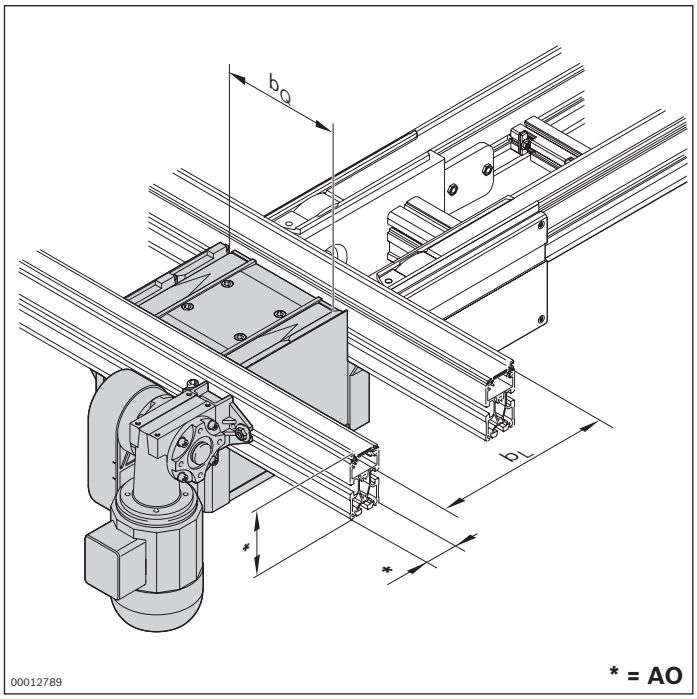
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing

Condition on delivery

- Pre-assembled in modular units
- Protective housing, not assembled

Ordering information



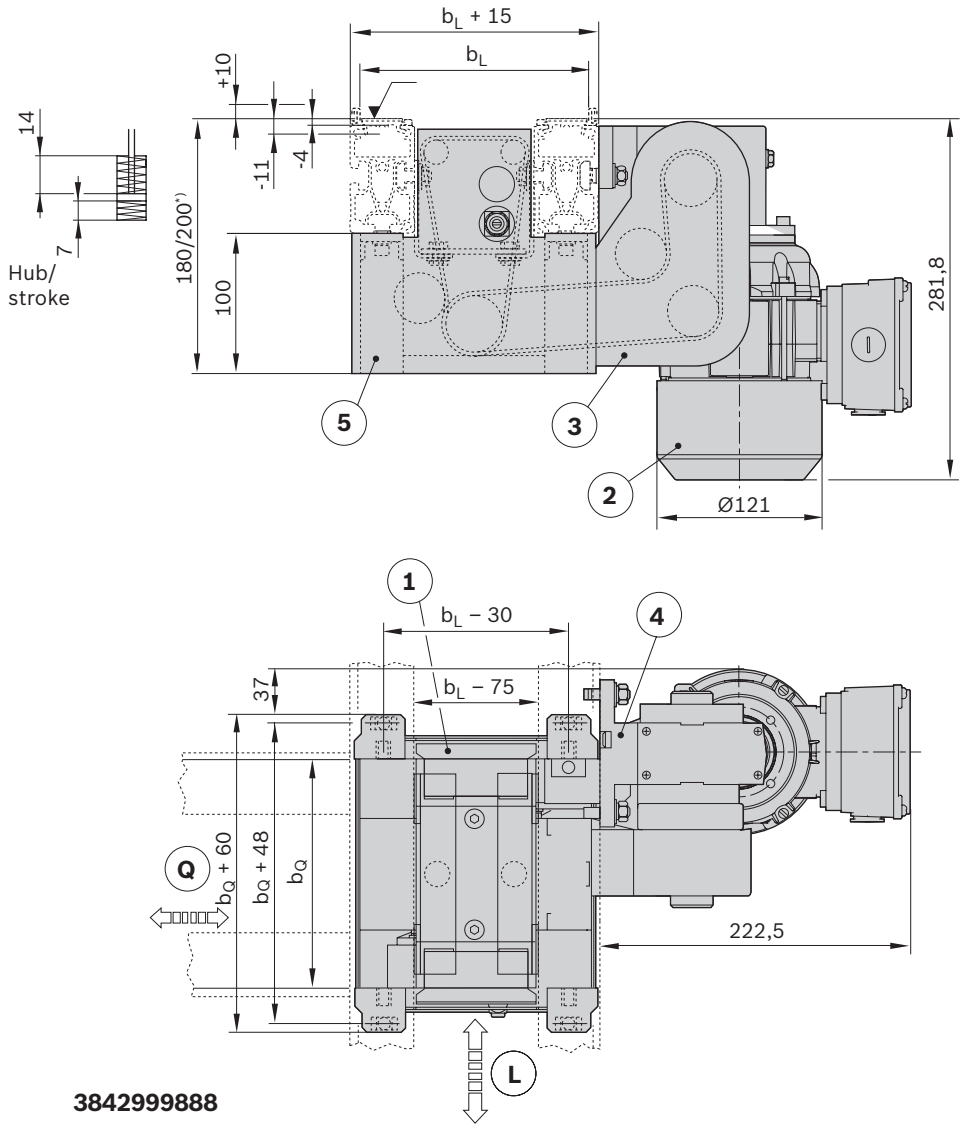
Material number		3842999888
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1] ; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

Technical data

Material number			3842999888
Load			
Max. total weight of workpiece pallet	m_G	kg	BG 1: 30 BG 2: 50
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

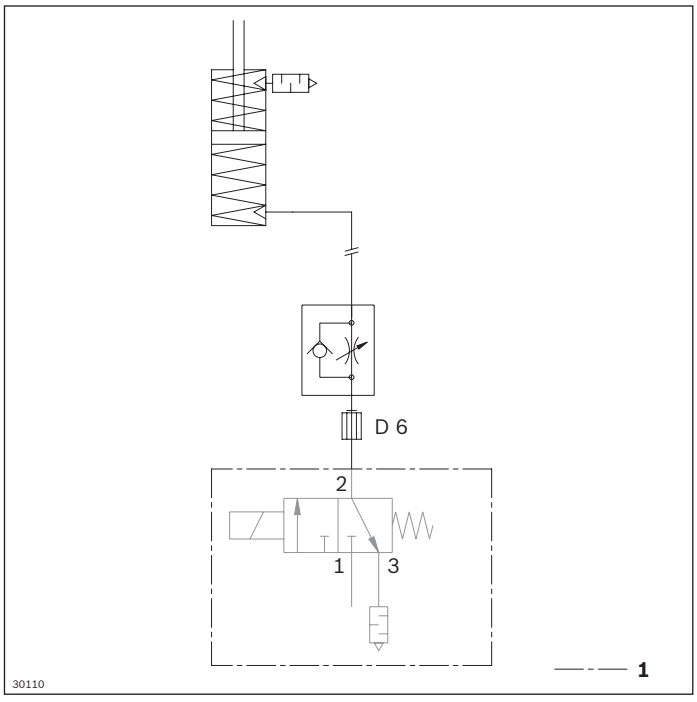
Dimensions



00116035

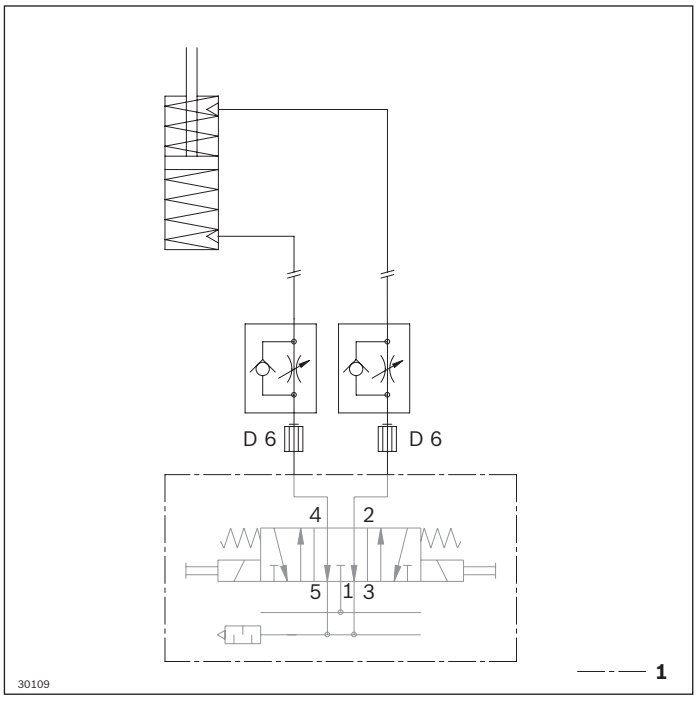
L Transport direction of longitudinal conveyor section
Q Transport direction of transverse conveyor section
1 HQ 2/S lift transverse unit
2 Drive motor
3 Connecting kit
4 Motor mounting kit
5 Housing element
* 180 mm for 80 mm profile height, 200 mm for 100 mm profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



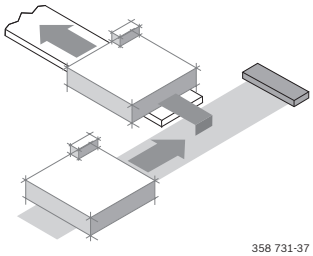
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

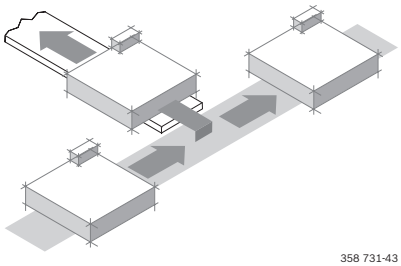


1 Not included in delivery

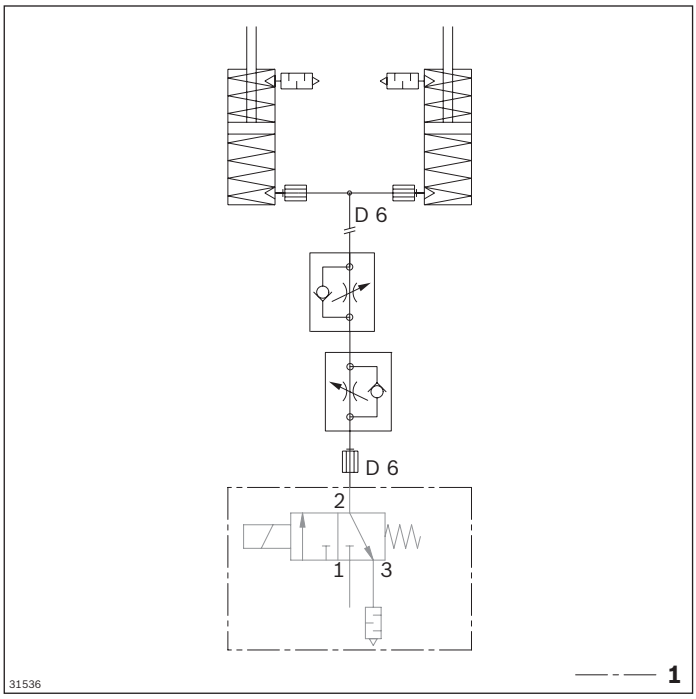
PN = 2



PN = 3

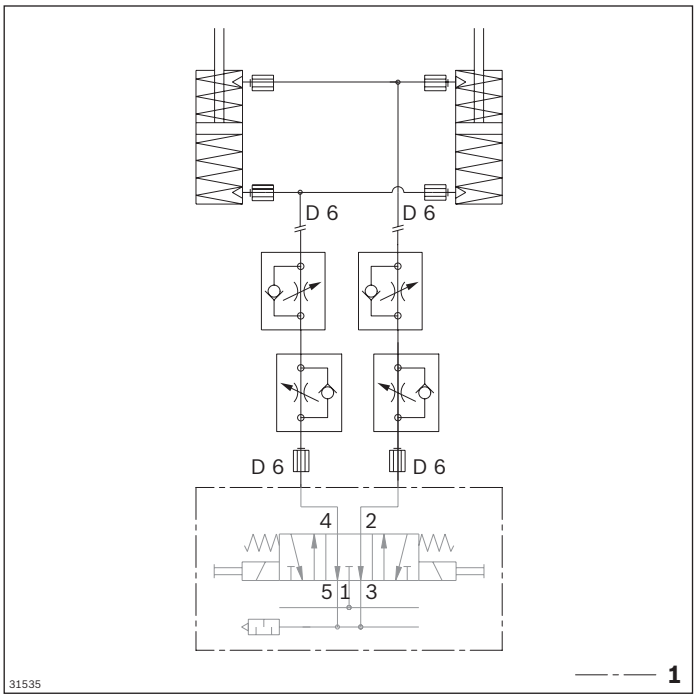


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



1 Not included in delivery

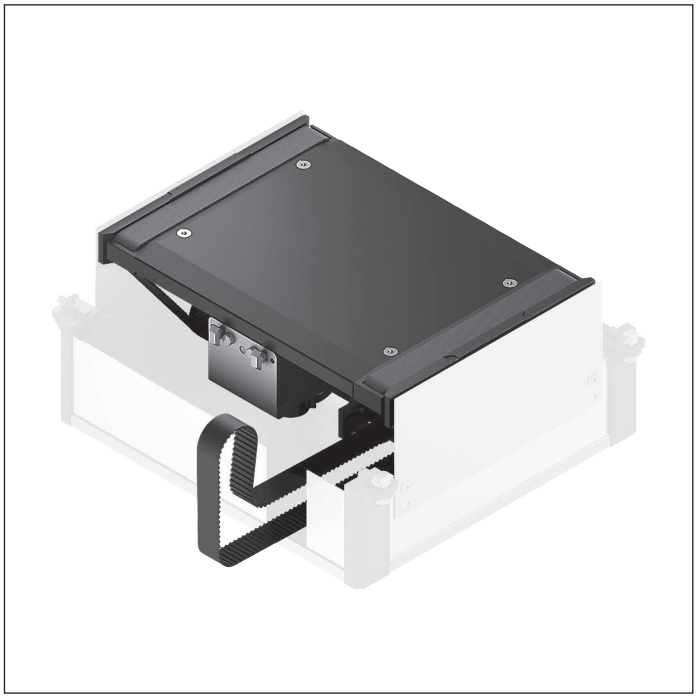
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

HQ 2/O lift transverse unit





- Lift transverse unit without built-in drive for outfeeding from a longitudinal section into a transverse section and vice versa
- Drive by toothed belt coupling
- The low height is suitable for the operation of double-deck conveyor sections
- Suitable for use in special designs
- In two sizes with one or two lifting cylinders
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/F

Note: Reversible operation possible

The HQ 2/O does not have a built-in drive. Driven by a toothed belt coupled with a BS 2/T, BS 2/TE belt section or by a separate drive motor. It is a part of all EQ 2 electric transverse conveyors and can also be used in special system designs. Vertical movement is delivered by pneumatic cylinders.

Two sizes are available:
Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.
Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

Accessories

Required accessories

- 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- BS 2/T belt section (see p. 5-42), BS 2/TE belt section (see p. 5-45) for driving
- HQ 2/T (see p. 5-48) in the tandem version
- Connection belt set for HQ 2/O drive (see p. 5-38) via a belt section
- SK 2/B protective housing, see p. 5-54

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- WI 2 (see p. 8-139ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

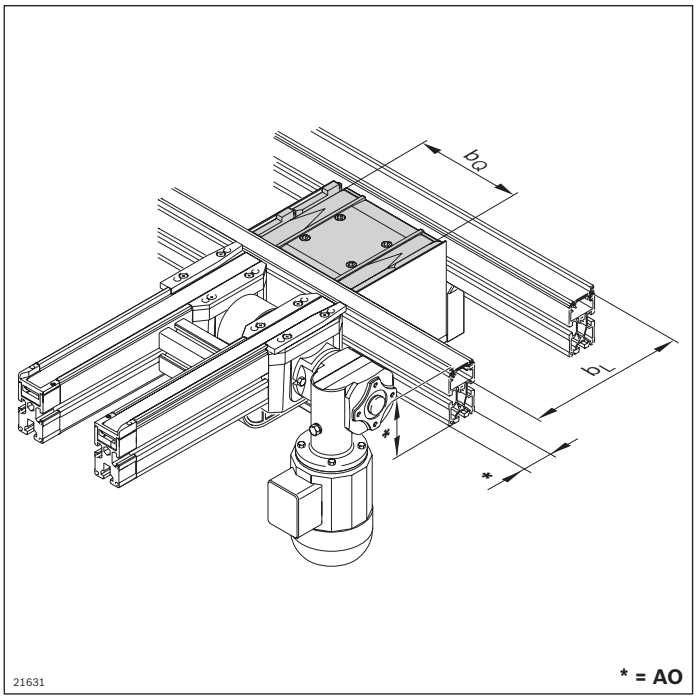
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing

Condition on delivery

- Fully assembled

Ordering information



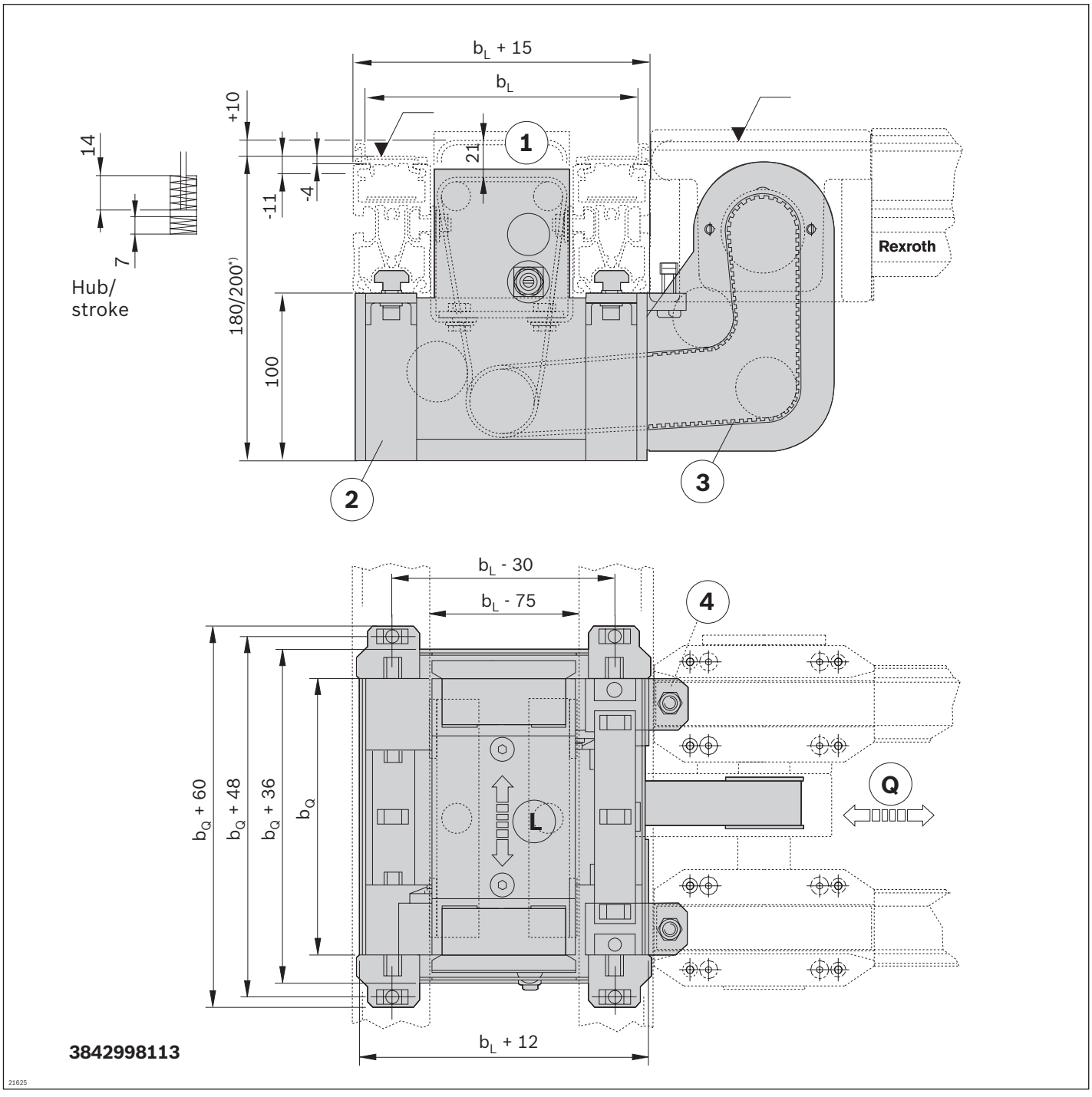
Material number		3842998113
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1] ; 3[2]

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

Technical data

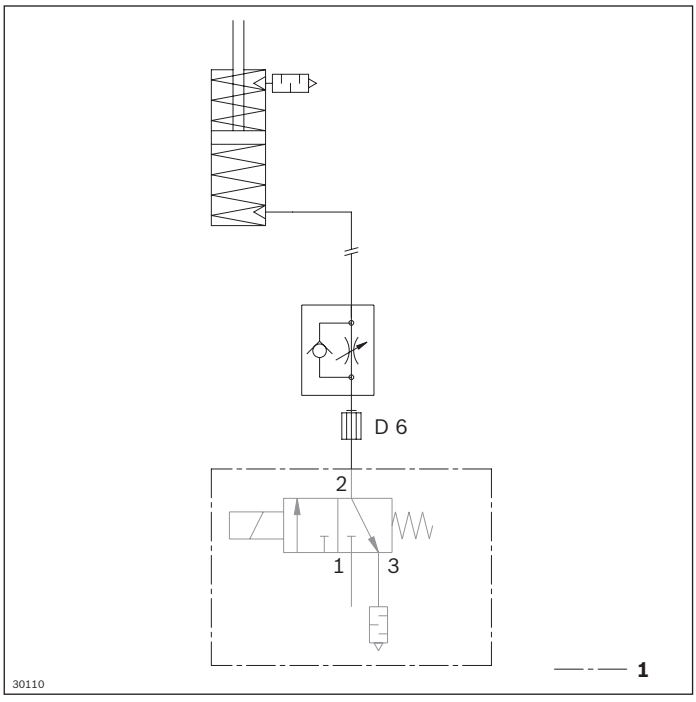
Material number			3842998113
Load			
Max. total weight of workpiece pallet	m_G	kg	BG 1: 30 BG 2: 50
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



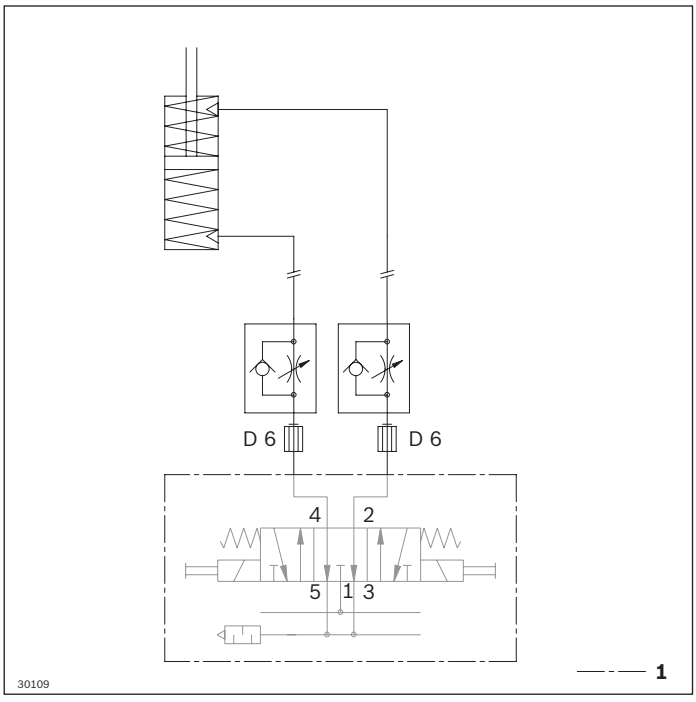
L Transport direction of longitudinal conveyor section
Q Transport direction of transverse conveyor section
1 Stroke
2 Housing element
3 Toothed belt for drive
4 Attachment for BS 2/T
* 180 mm for 80 mm profile height, 200 mm for 100 mm profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



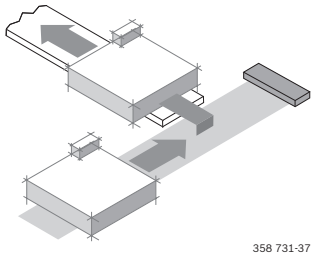
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

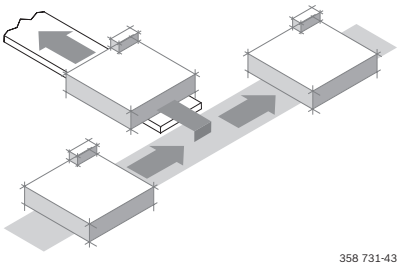


1 Not included in delivery

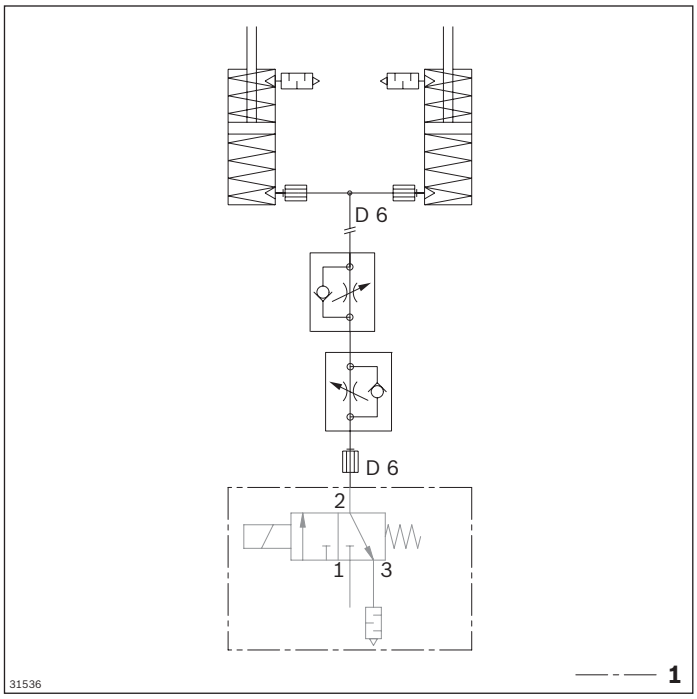
PN = 2



PN = 3

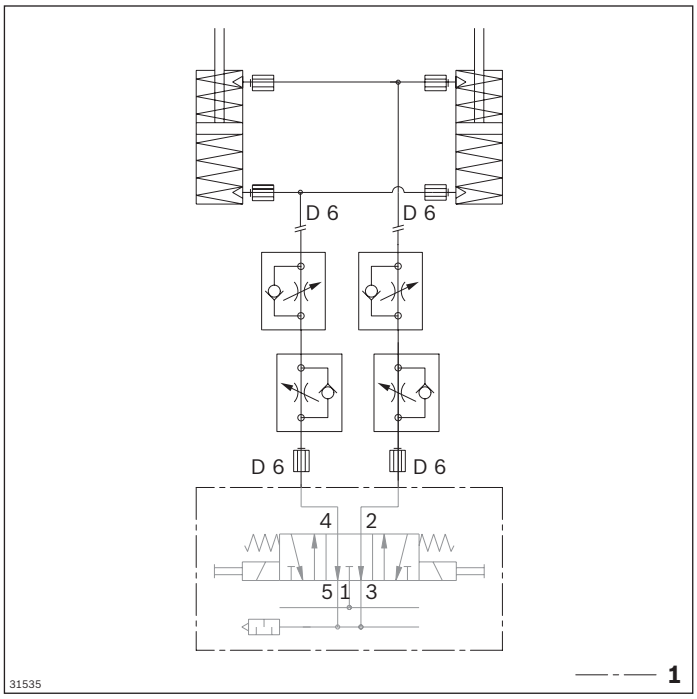


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

Connection belt for HQ 2/O



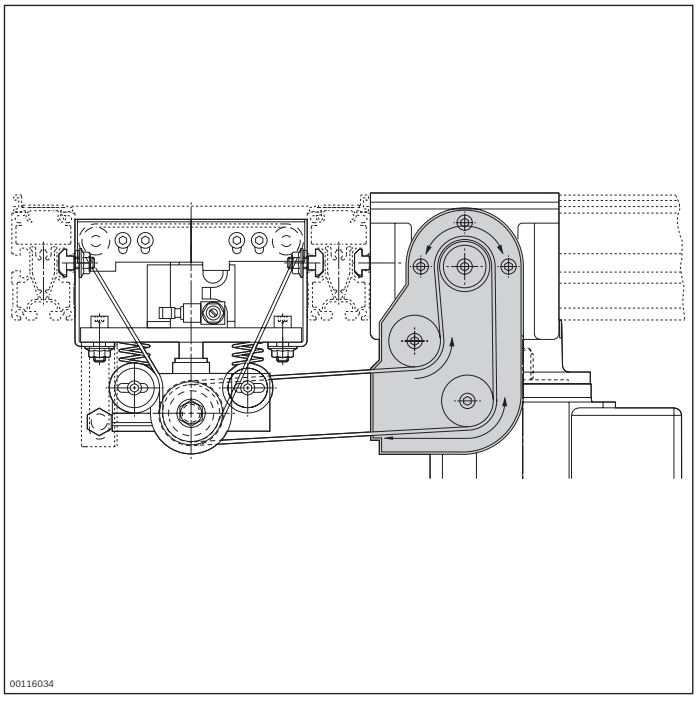
If the HQ 2/O lift transverse unit is driven via a belt section, a connection belt set is required.
The HQ 2/O (BG 1 or BG 2) can be combined with BS 2/TE or BS 2/T using the connection belt set. The b_Q and b_L parameters are decisive for selection of the connection belt set.

Ordering information

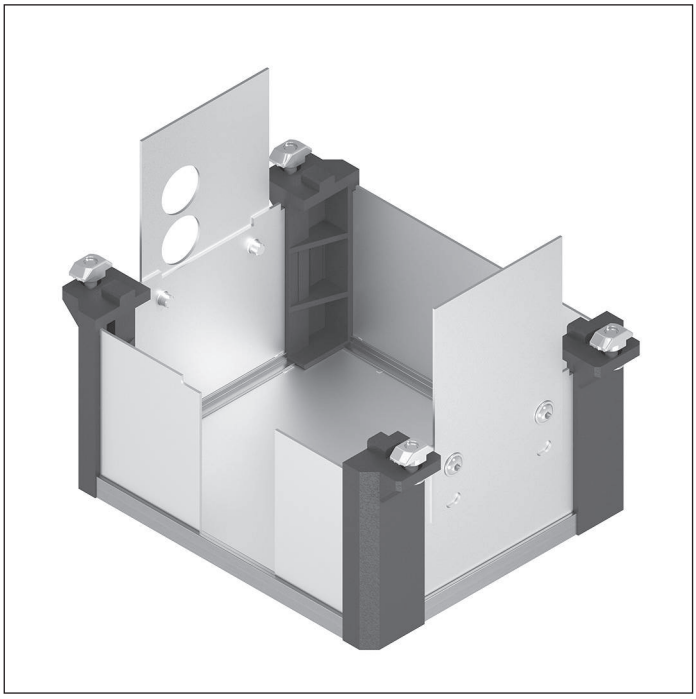
Material number		**3842328196**	**3842328197**
b_Q x b_L (mm x mm)	HQ 2/O combination possibilities	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320	BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480

Technical data

Material number		**3842328196**	**3842328197**
Design			
Size	BG	BG 1	BG 2


00116034

SK 2/B housing element



- Housing element for HQ 2/O and HQ 2/S

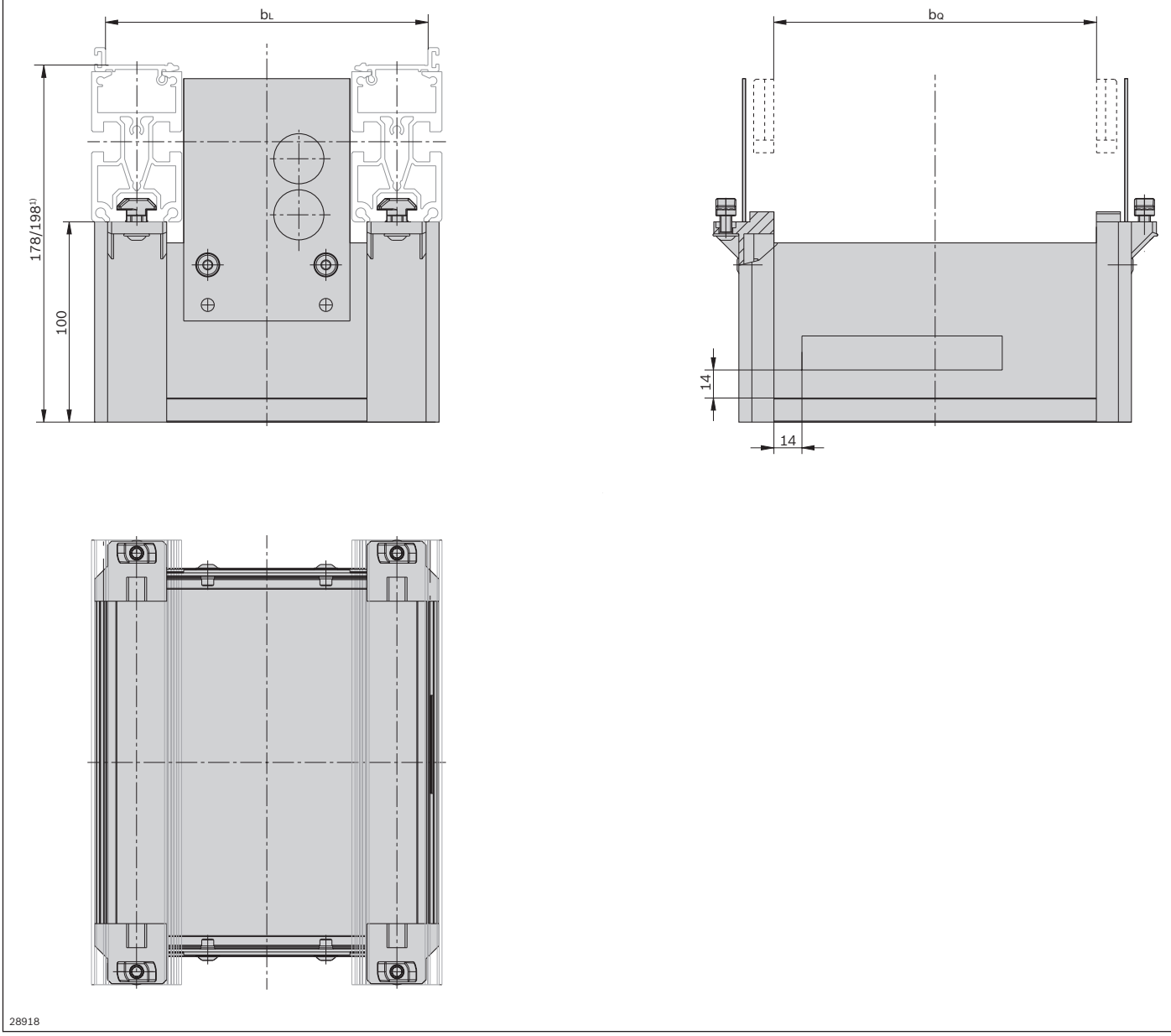
Ordering information

Product designation	b_Q x b_L (mm)	Material number
SK 2/B housing element	160 x 160	3842338750
SK 2/B housing element	160 x 240	3842338755
SK 2/B housing element	160 x 320	3842338760
SK 2/B housing element	240 x 160	3842338751
SK 2/B housing element	240 x 240	3842338756
SK 2/B housing element	240 x 320	3842338761
SK 2/B housing element	240 x 400	3842338766
SK 2/B housing element	320 x 160	3842338752
SK 2/B housing element	320 x 240	3842338757
SK 2/B housing element	320 x 320	3842338762
SK 2/B housing element	320 x 400	3842338767
SK 2/B housing element	400 x 240	3842338758
SK 2/B housing element	400 x 320	3842338763
SK 2/B housing element	400 x 400	3842338768
SK 2/B housing element	400 x 480	3842338776
SK 2/B housing element	480 x 320	3842338764
SK 2/B housing element	480 x 400	3842338771
SK 2/B housing element	480 x 480	3842338777
SK 2/B housing element	640 x 400	3842338773
SK 2/B housing element	640 x 480	3842338779
SK 2/B housing element	800 x 400	3842338775
SK 2/B housing element	800 x 480	3842338781

Technical data

Material number	**3842338750**	**3842338757**	**3842338763**	**3842338768**	**3842338776**
	3842338751	**3842338758**	**3842338764**	**3842338771**	**3842338777**
	3842338752	**3842338760**	**3842338766**	**3842338773**	**3842338779**
	3842338755	**3842338761**	**3842338767**	**3842338775**	**3842338781**
	3842338756	**3842338762**			
Features					
Material specification					Aluminum; anodized PA66; black

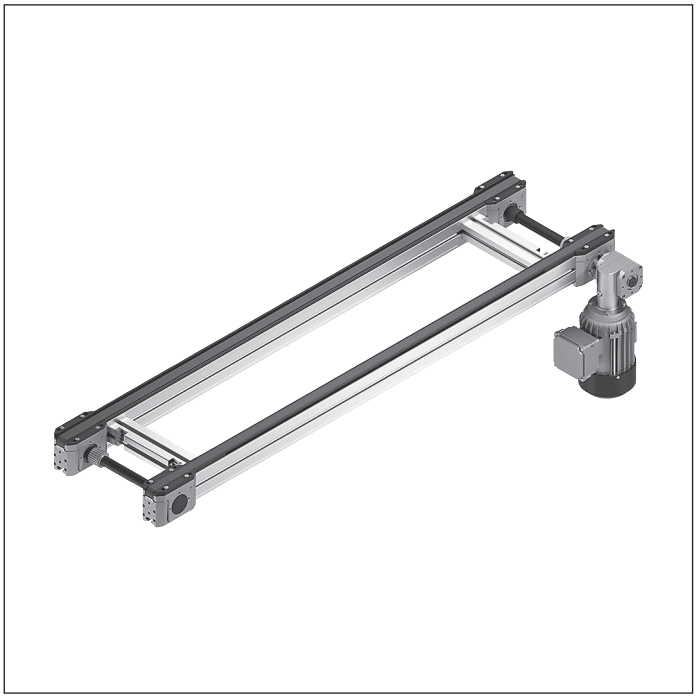
Dimensions



[1] 178 mm for 80 mm profile height, 198 mm for 100 mm profile height

BS 2/T belt section





- Ready-to-use conveyor section with drive for transverse conveyance between parallel conveyor sections
- Additional toothed gears to drive an HQ 2/Q lift transverse unit each on both ends
- Reversible operation possible
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Additional toothed gears to drive an HQ 2/Q lift transverse unit each on both ends.

Position of the gears depends on the size of the HQ 2/O.

Accessories

Recommended accessories

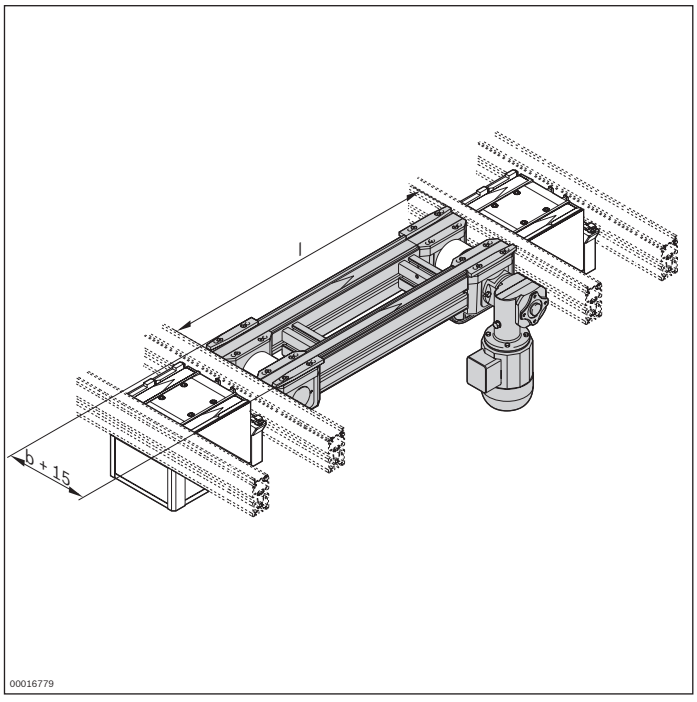
- Connection kit (3842525110, see p. 3-237) for installing the belt section between the ST 2 conveyor sections
- SZ 2 leg sets/..., see p. 6-2
- HQ 2/O lift transverse unit, see p. 5-33

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



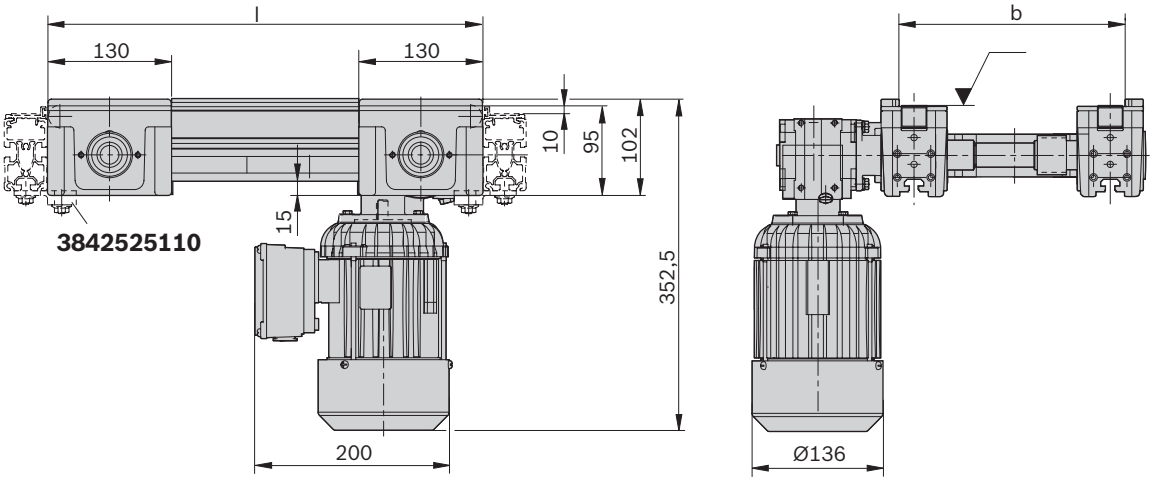
Material number		**3842999722**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l (mm)	Length	320 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[2]
UB[1]	Connection belt UB = 1 UB = 2	1; 2

[1] UB: Connection belt for Size BG 1 (b_Q x b_L ≤ 480 x 320 mm) or BG 2 HQ 2/O (b_Q x b_L ≥ 400 x 480 mm)
[2] MA = M when b_Q ≧ 320 mm

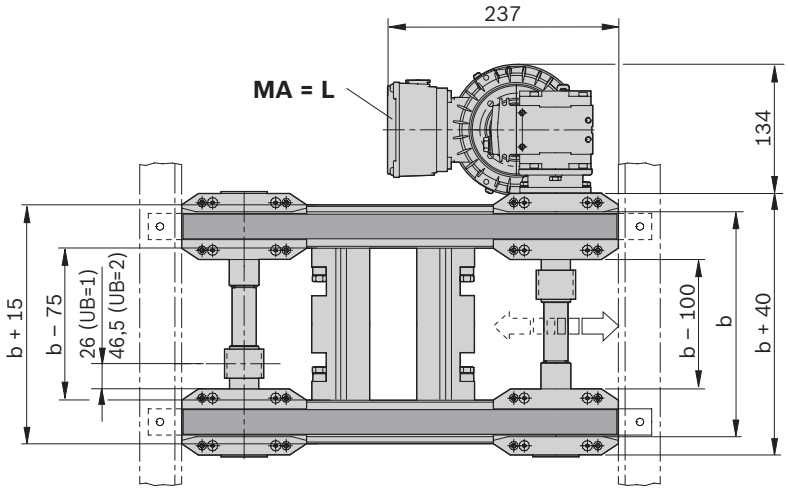
Technical data

Material number		**3842999722**
Load		
Max. section load in accumulation operation	kg	60
Features		
ESD		Yes

Dimensions



3842525110



3842999722

00116829

BS 2/TE belt section





- Ready-to-use conveyor section with drive for transverse conveyance into a dead end
- Additional toothed gear to drive an HQ 2/O lift transverse unit
- Reversible operation possible
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Accessories

Recommended accessories

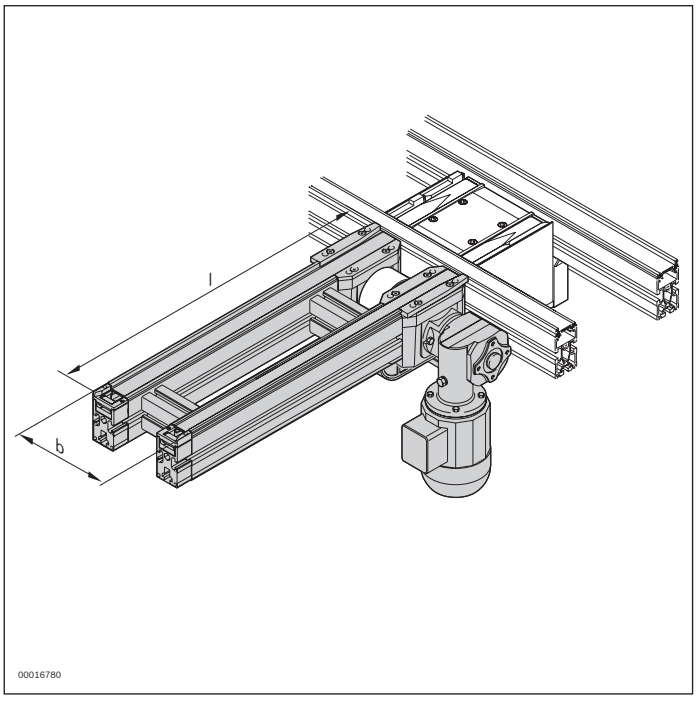
- Connection kit (3842525110, see p. 3-237) for installing the belt section between the ST 2 conveyor sections
- SZ 2 leg sets, see p. 6-2

Delivery notes

Condition on delivery

- Fully assembled

Ordering information



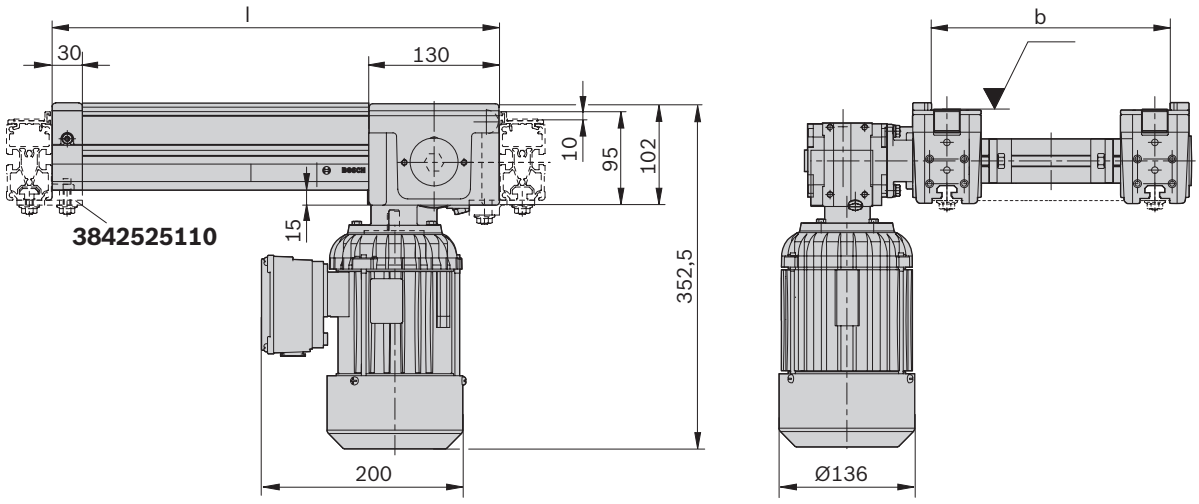
Material number		**3842999723**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800
l (mm)	Length	240 ... 6000
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M[2]
UB[1]	Connection belt UB = 1 UB = 2	1; 2

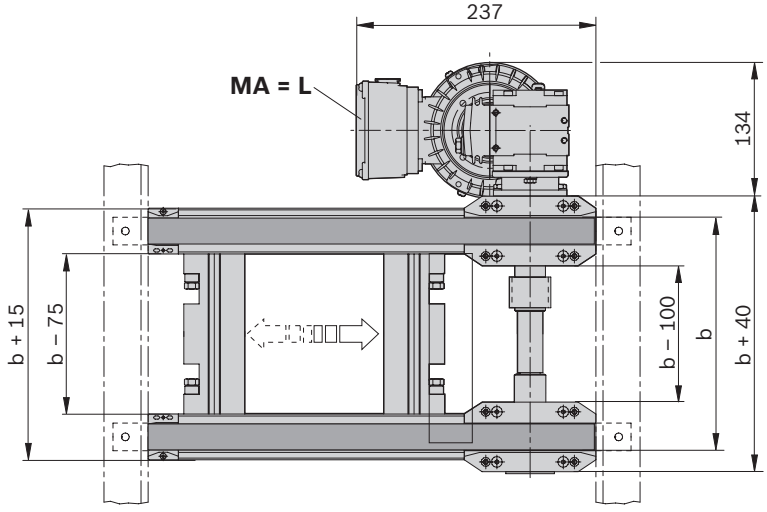
[1] UB: Connection belt for Size BG 1 (b_Q x b_L ≤ 480 x 320 mm) or BG 2 HQ 2/O (b_Q x b_L ≥ 400 x 480 mm)
[2] MA = M when b_Q ≧ 320 mm

Technical data

Material number		**3842999723**
Load		
Max. section load in accumulation operation	kg	60
Features		
ESD		Yes

Dimensions



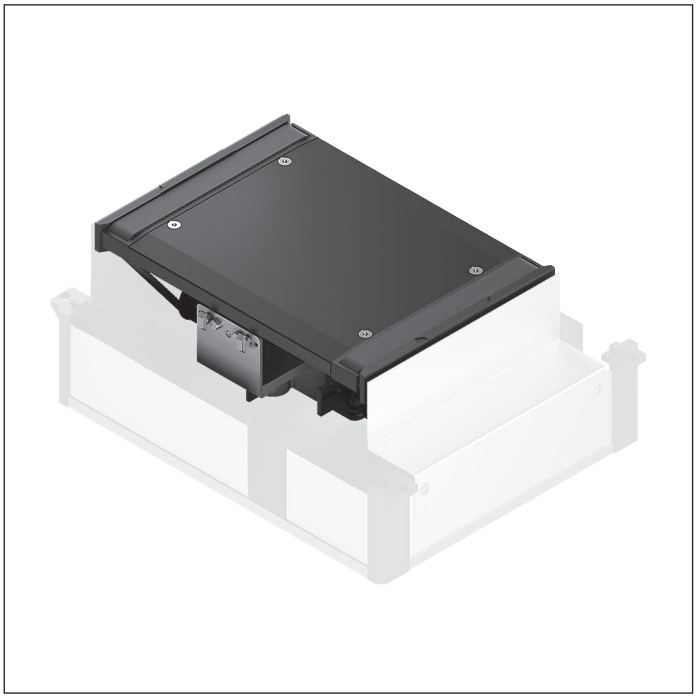


3842999723

00116828

HQ 2/T lift transverse unit





- Lift transverse unit without built-in drive for outfeeding from a longitudinal section into a transverse section with a roller section and vice versa
- Used in tandem with the HQ 2/O
- Drive by toothed belt coupling
- Suitable for use in special designs
- In two sizes with one or two lifting cylinders
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Vertical movement is delivered by pneumatic cylinders. Two sizes are available:
Size 1 (BG 1) for total weights (workpiece pallet + load) up to 30 kg by one lifting cylinder.

Size 2 (BG 2) for total weights (workpiece pallet + load) up to 50 kg by two lifting cylinder for workpiece pallet dimensions from 400 x 480 mm.

Accessories

Required accessories

- 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110
- SK 2 protective housing, see p. 5-54

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- WI 2 (see p. 8-131ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

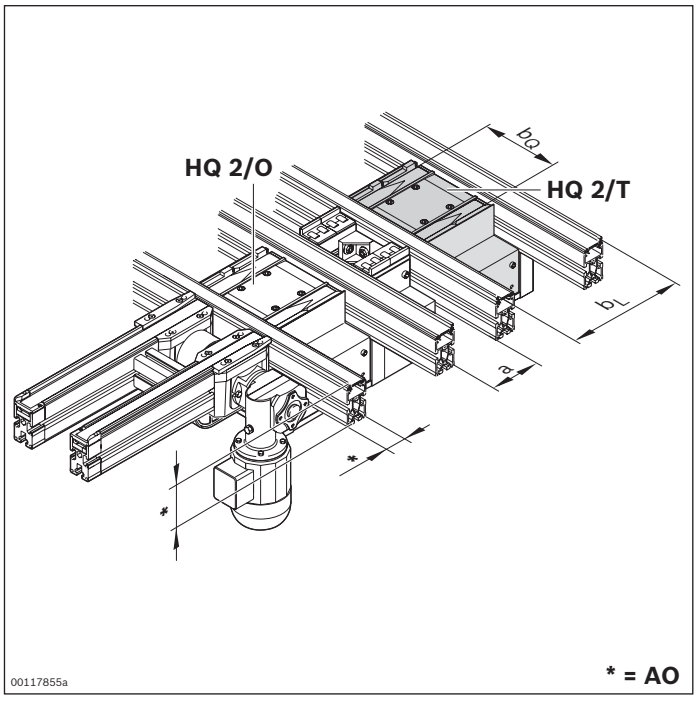
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing
- Incl. drive kit (required to drive an HQ 2/T)

Condition on delivery

- Fully assembled

Ordering information



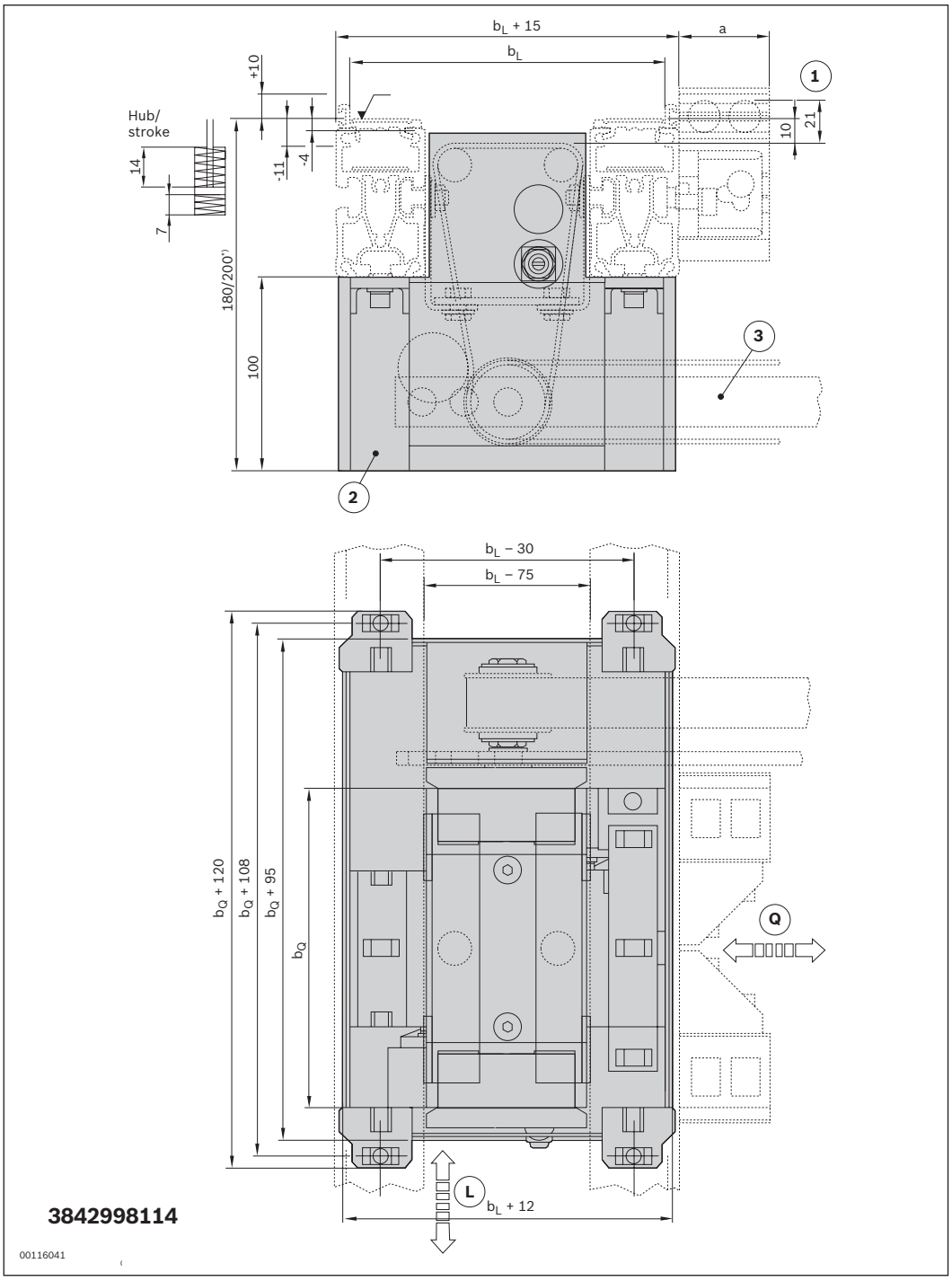
Material number		**3842998114**
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400; 480
b_Q x b_L (mm x mm)	Combination options	BG 1: 160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320 BG 2: 400 x 480 480 x 400; 480 640 x 400; 480 800 x 400; 480
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1]; 3[2]

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

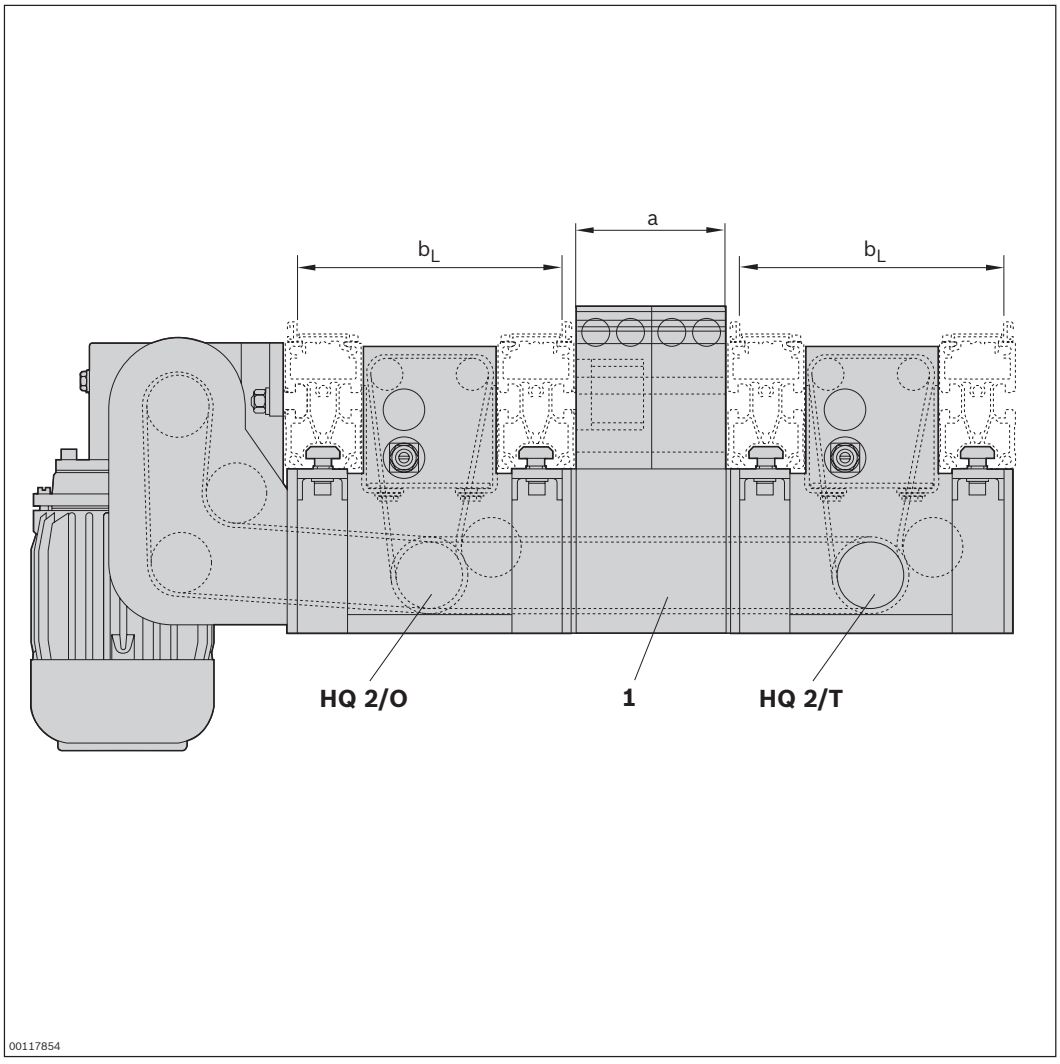
Technical data

Material number			**3842998114**
Load			
Max. total weight of workpiece pallet	m_G	kg	BG 1: 30 BG 2: 50
Features			
ESD			Yes
Design			
Size	BG		BG 1; BG 2
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions

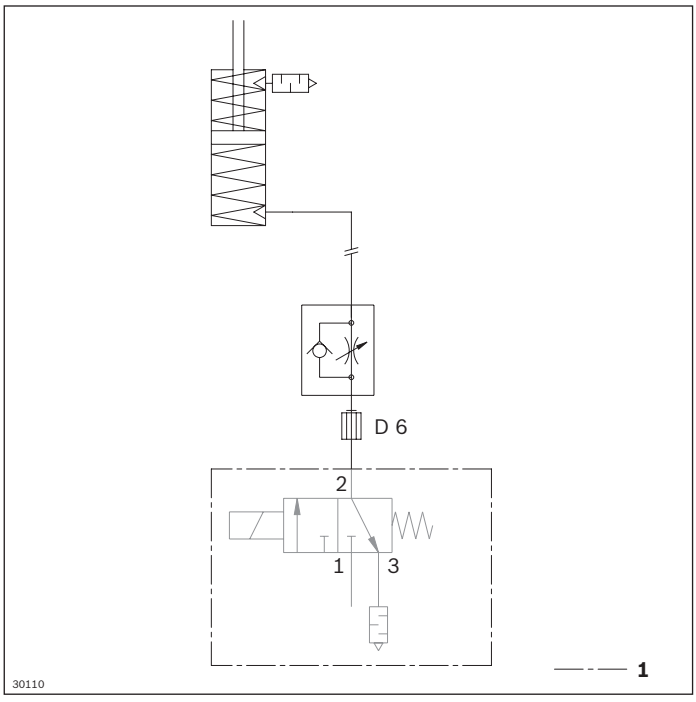


L Transport direction of longitudinal conveyor section
Q Transport direction of transverse conveyor section
1 Stroke
2 Housing element
3 Drive kit for HQ 2/O-HQ 2/T
* 180 mm for 80 mm profile height, 200 mm for 100 mm profile height



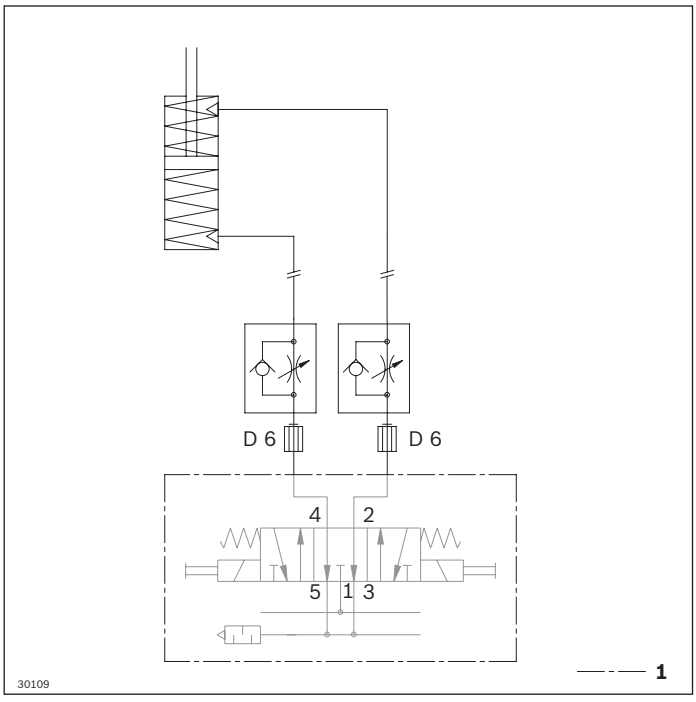
1 Drive kit

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1



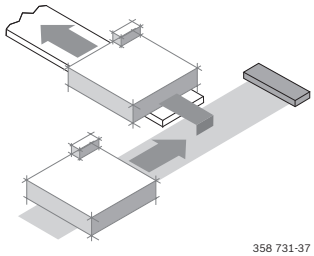
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1

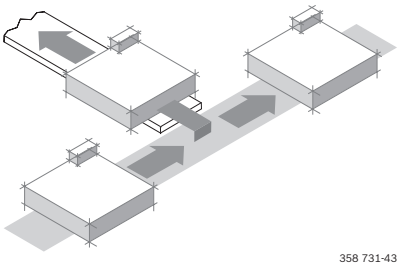


1 Not included in delivery

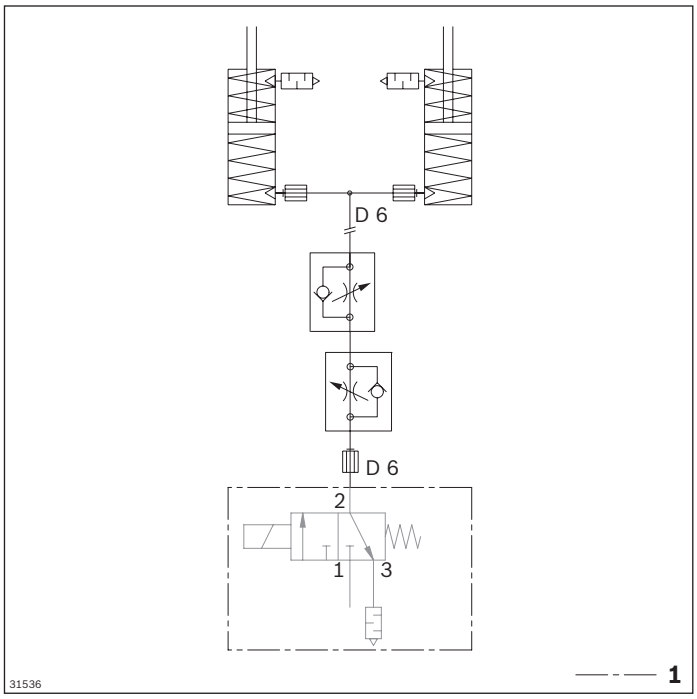
PN = 2



PN = 3

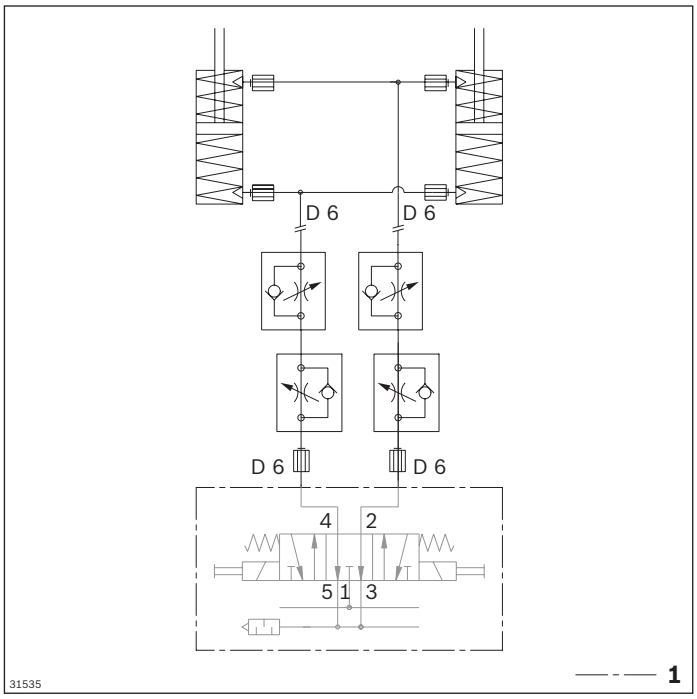


Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



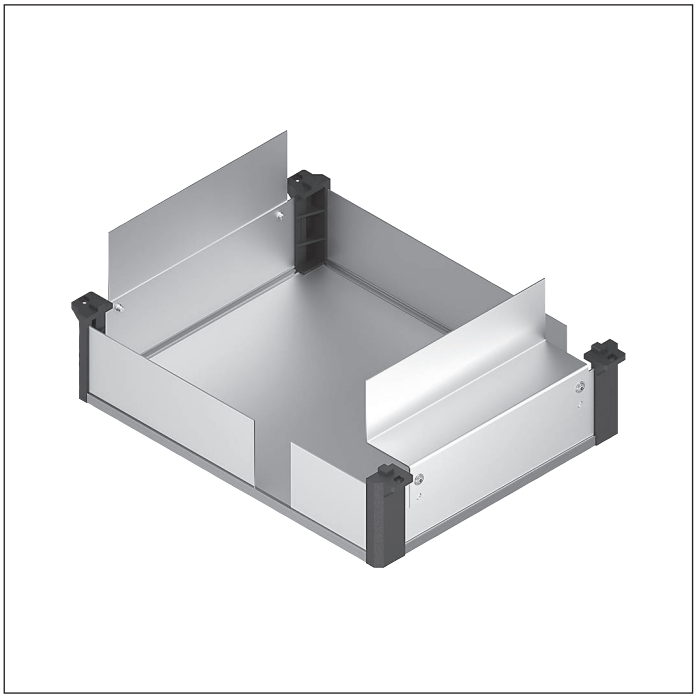
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

SK 2 housing element



- Housing element for HQ 2/T

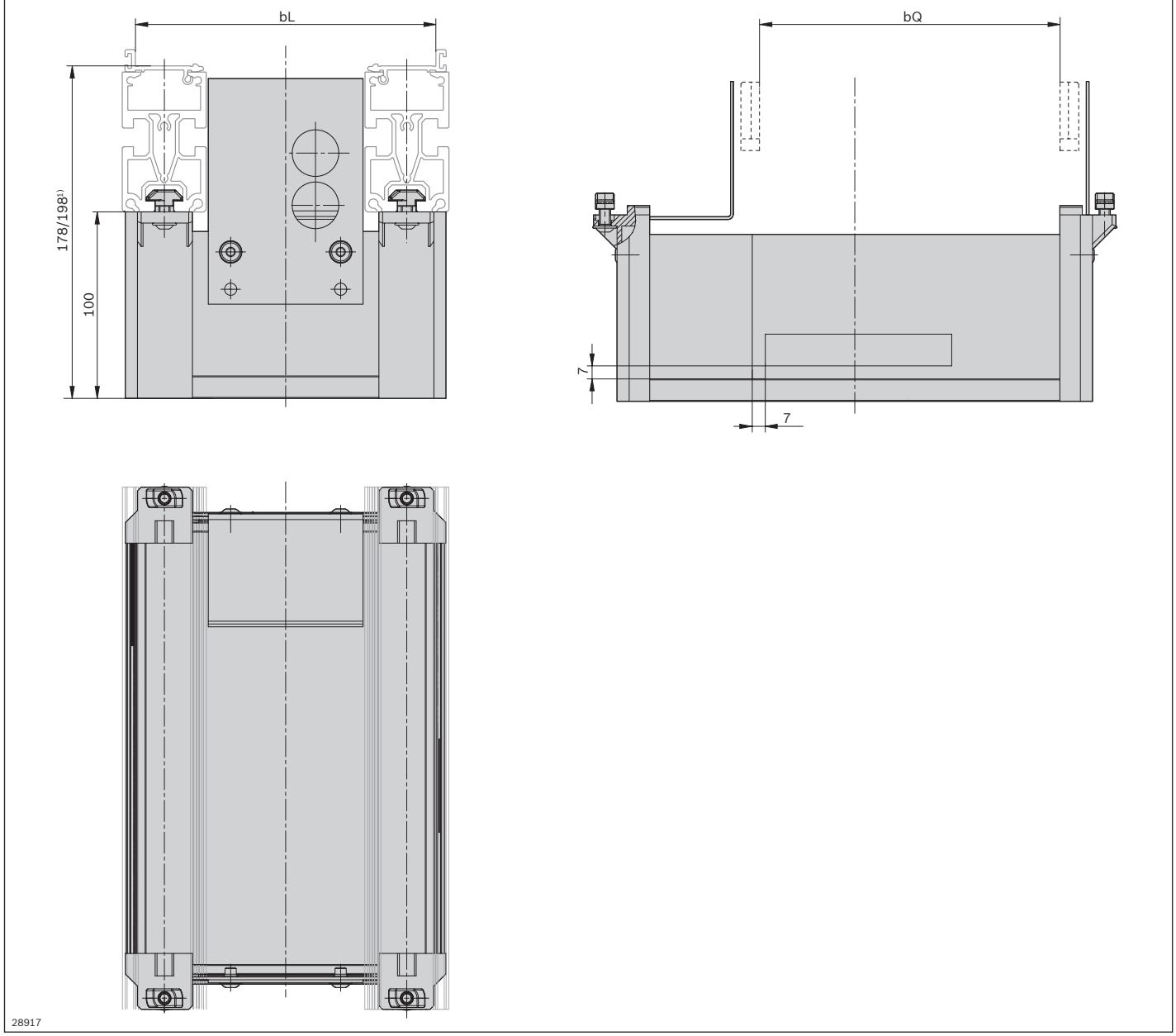
Ordering information

Product designation	b_Q x b_L (mm)	Material number
SK 2 housing element	160 x 160	3842345100
SK 2 housing element	160 x 240	3842345105
SK 2 housing element	160 x 320	3842345110
SK 2 housing element	240 x 160	3842345101
SK 2 housing element	240 x 240	3842345106
SK 2 housing element	240 x 320	3842345111
SK 2 housing element	240 x 400	3842345116
SK 2 housing element	320 x 160	3842345102
SK 2 housing element	320 x 240	3842345107
SK 2 housing element	320 x 320	3842345112
SK 2 housing element	320 x 400	3842345117
SK 2 housing element	400 x 240	3842345108
SK 2 housing element	400 x 320	3842345113
SK 2 housing element	400 x 400	3842345118
SK 2 housing element	400 x 480	3842345126
SK 2 housing element	480 x 320	3842345114
SK 2 housing element	480 x 400	3842345121
SK 2 housing element	480 x 480	3842345127
SK 2 housing element	640 x 400	3842345123
SK 2 housing element	640 x 480	3842345129
SK 2 housing element	800 x 400	3842345125
SK 2 housing element	800 x 480	3842345131

Technical data

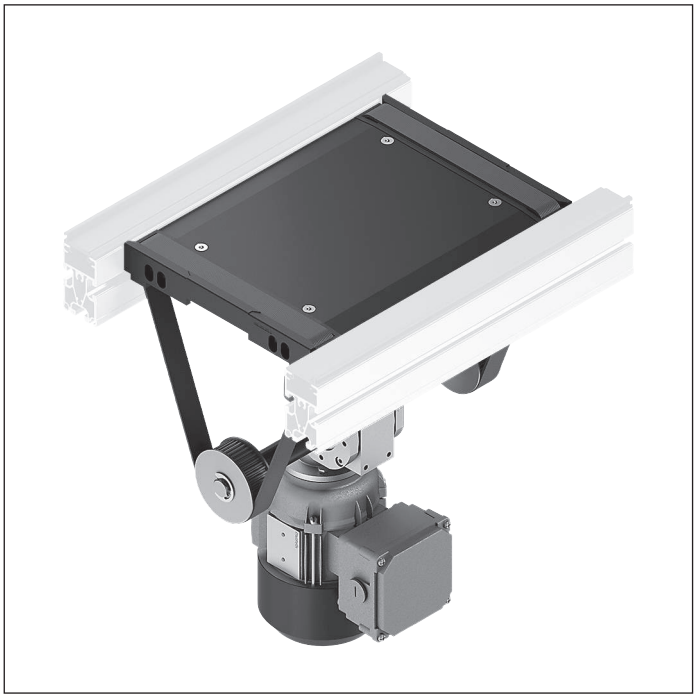
Material number	**3842345100**	**3842345107**	**3842345113**	**3842345118**	**3842345126**
	3842345101	**3842345108**	**3842345114**	**3842345121**	**3842345127**
	3842345102	**3842345110**	**3842345116**	**3842345123**	**3842345129**
	3842345105	**3842345111**	**3842345117**	**3842345125**	**3842345131**
	3842345106	**3842345112**			
Features					
Material specification					Aluminum; anodized PA 66; black

Dimensions



[1] 178 mm for 80 mm profile height, 198 mm for 100 mm profile height

HQ 2/U lift transverse unit



- Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- Use in tight spaces by means of suspended drive motor (outside dimensions must be no wider than the section)
- Drive by toothed belt coupling is not possible because of the compact design
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Reversible operation possible

Accessories

Required accessories

- 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110

Recommended accessories

- DA 2/60 damper (see p. 8-62) for outfeeding workpiece pallets at $v_N > 9$ m/min
- WI 2 (see p. 8-139ff) or WI/M (see p. 8-133) rocker and DA 2/60 (see p. 8-62) or DA 2/100-C dampers for BG 2 (see p. 8-71) for infeeding workpiece pallets

Delivery notes

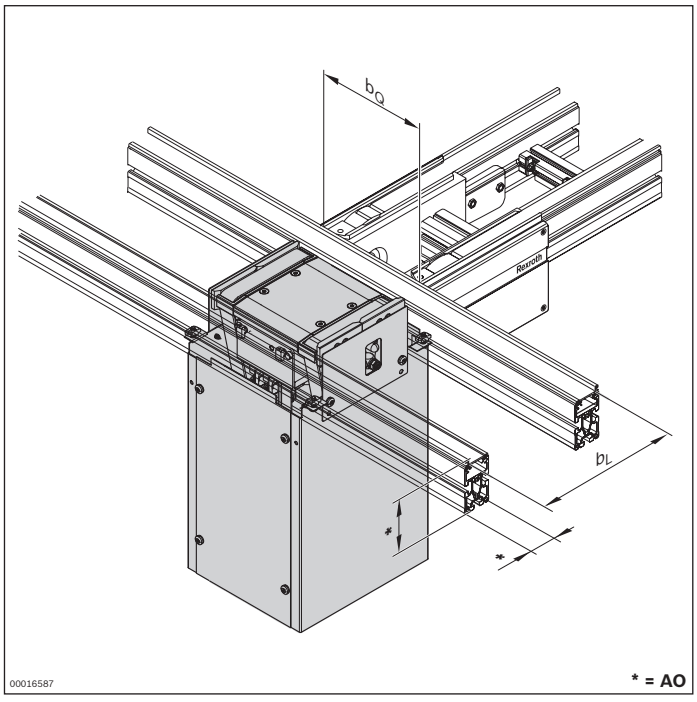
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing
- Housing element

Condition on delivery

- Fully assembled
- Kit for electric position sensing included

Ordering information



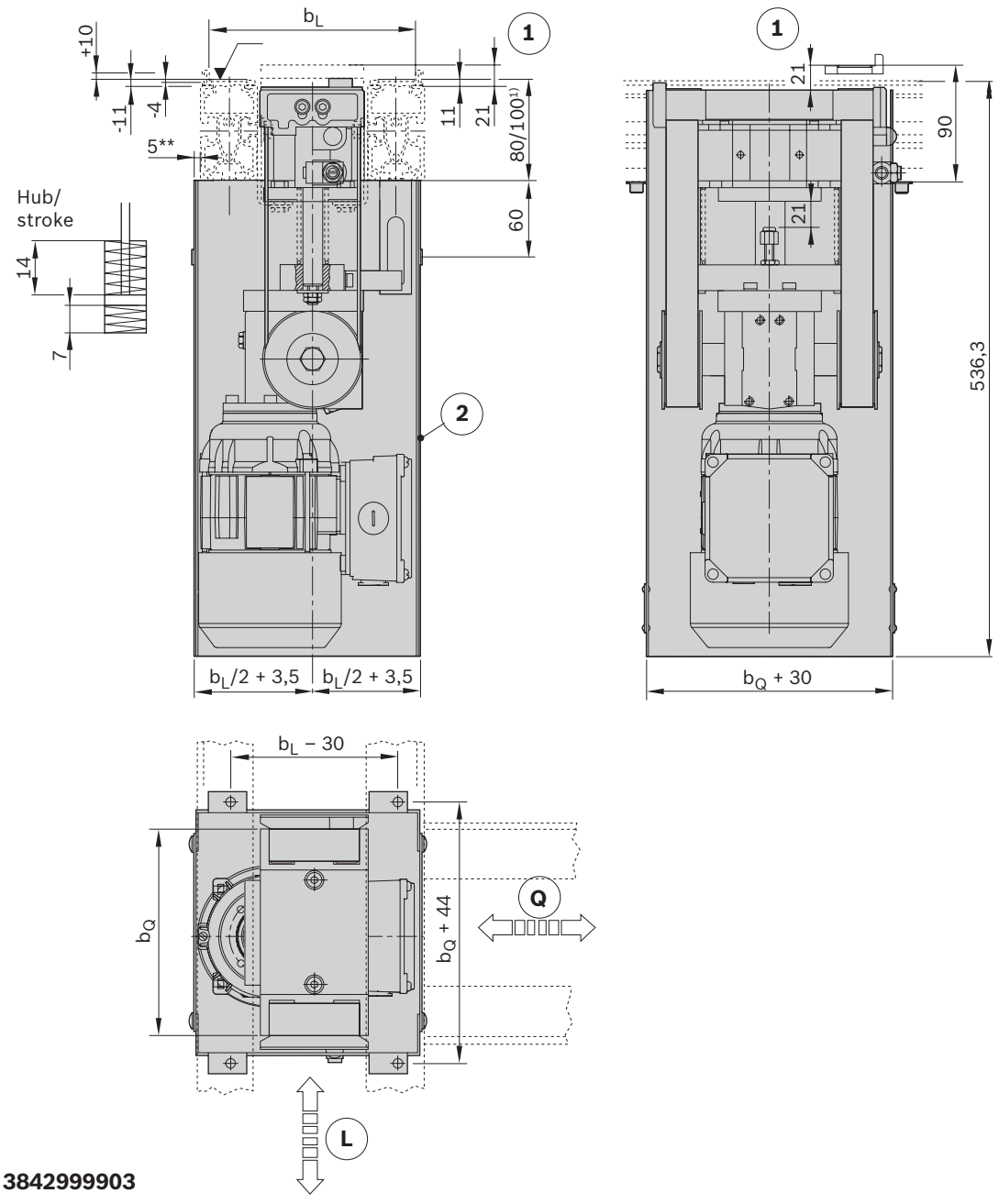
Material number		3842999903
b_Q (mm)	Track width in the transverse conveyor	160; 240; 320; 400; 480
b_L (mm)	Track width in the longitudinal conveyor	160; 240; 320; 400
b_Q x b_L (mm x mm)	Combination options	160 x 160; 240; 320 240 x 160; 240; 320; 400 320 x 160; 240; 320; 400 400 x 240; 320; 400 480 x 320
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1] ; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

Technical data

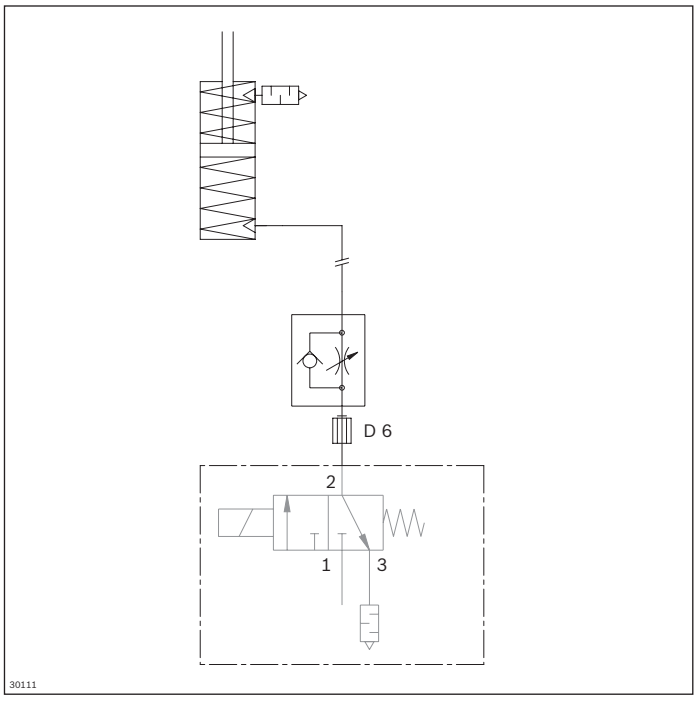
Material number			3842999903
Load			
Max. total weight of workpiece pallet	m_G	kg	30
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



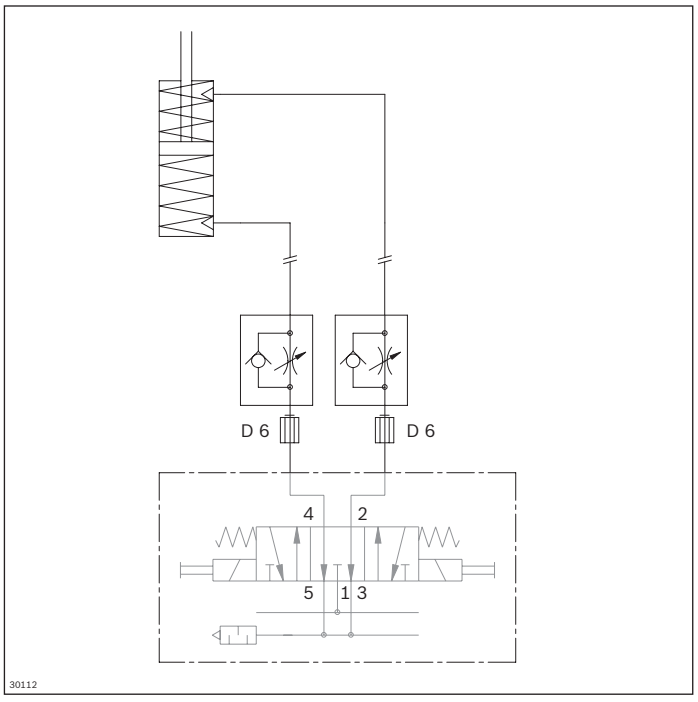
L Transport direction of longitudinal conveyor section
Q Transport direction of transverse conveyor section
1 Stroke
2 Housing element
** Only for b_L = 160 mm
[1] Profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2)



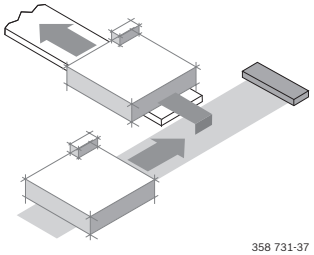
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3)

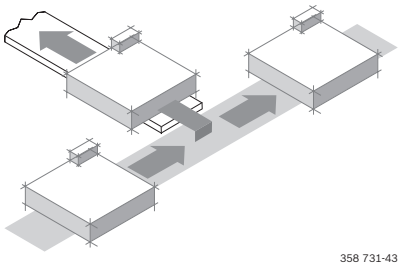


1 Not included in delivery

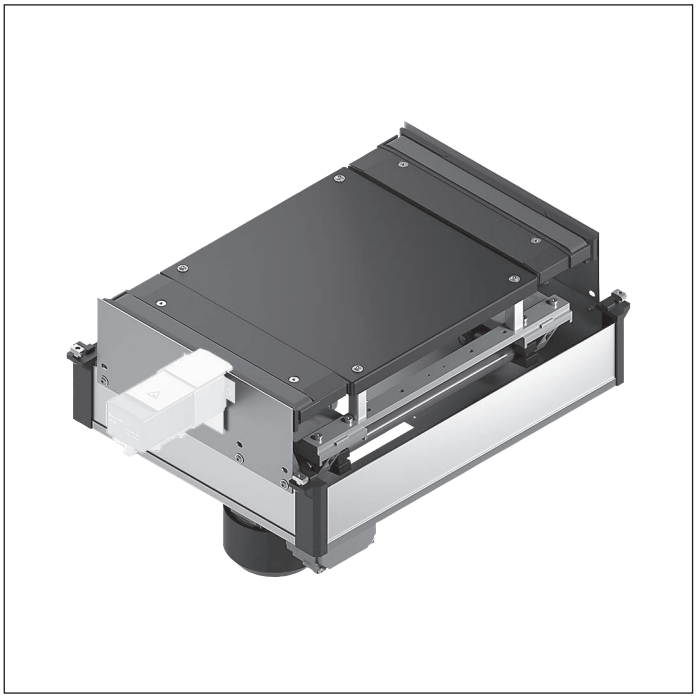
PN = 2



PN = 3



HQ 2/U2 lift transverse unit



- Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- Use in tight spaces by means of suspended drive motor (outside dimensions must be no wider than the section)
- Reinforced version of HQ 2/U with two lift cylinders for large workpiece pallet dimensions
- Drive by toothed belt coupling is not possible because of the compact design
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note: Reversible operation possible

Accessories

Required accessories

- 1x M12x1 sensor with $S_N \geq 4$ mm rated sensing range for each position sensing location, see p. 8-108/8-110

Recommended accessories

- DA 2/100-B (see p. 8-67) damper for outfeeding WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets, required when $v_N > 12$ m/min or total weight of the workpiece pallet ≥ 30 kg
- WI 2 (see p. 8-139) or WI/M (see p. 8-133) rocker and DA 2/100-C damper (see p. 8-71) for infeeding WT 2 and WT 2/F workpiece pallets

Delivery notes

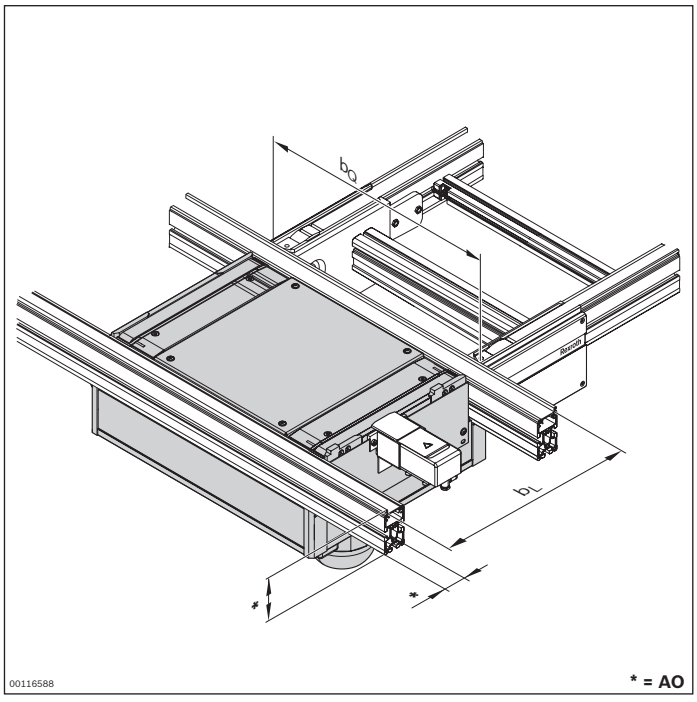
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing
- Housing element

Condition on delivery

- Fully assembled
- Kit for electric position sensing included
- Kit for housing element included

Ordering information



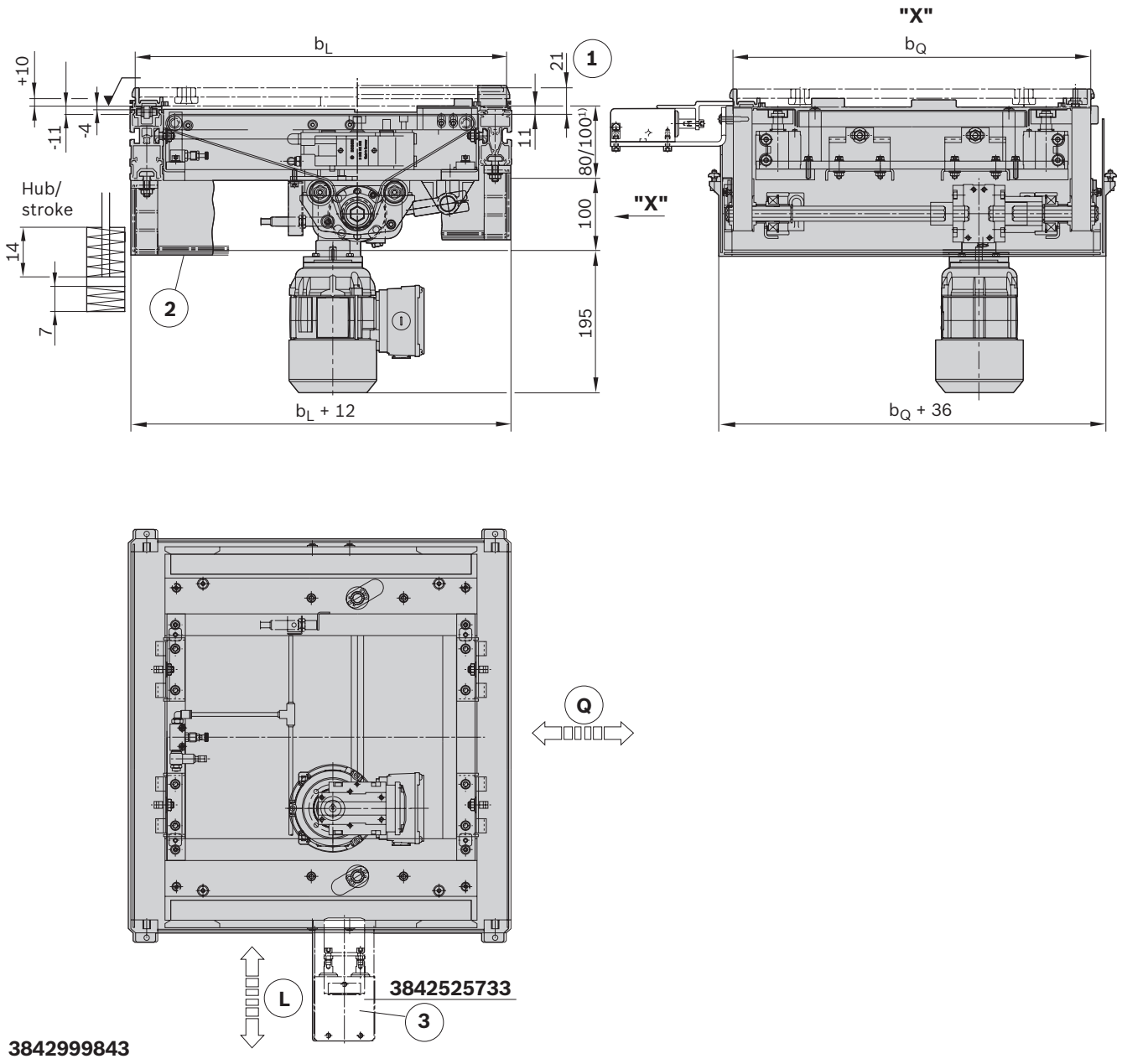
Material number		3842999843
b_Q (mm)	Track width in the transverse conveyor	400; 480; 640; 800
b_L (mm)	Track width in the longitudinal conveyor	400; 480; 640
b_Q x b_L (mm x mm)	Combination options	400 x 400; 480; 640 480 x 400; 480; 640 640 x 400; 480; 640 800 x 400; 480; 640
AO	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[1]; 3[2]
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

[1] PN = 2: Upper and middle lift position
[2] PN = 3: Upper, middle and lower lift position

Technical data

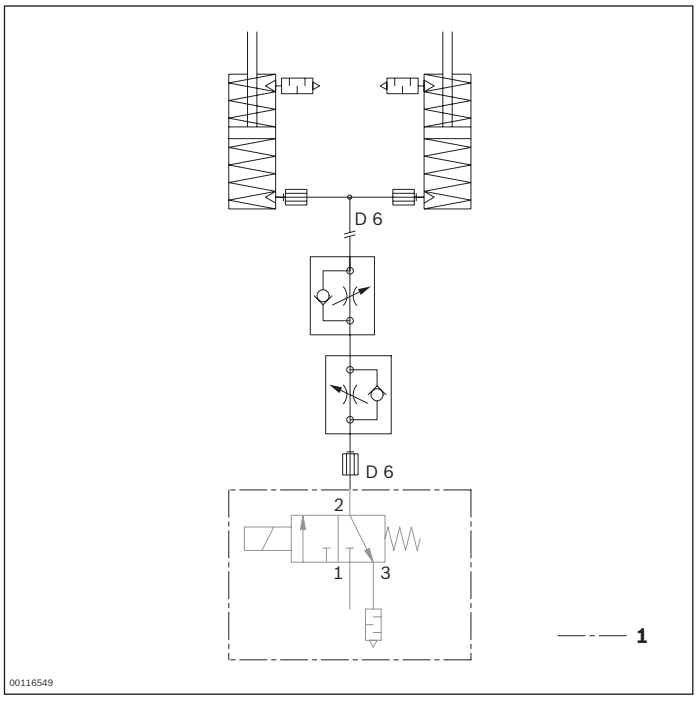
Material number			3842999843
Load			
Max. total weight of workpiece pallet	m_G	kg	50
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	6

Dimensions



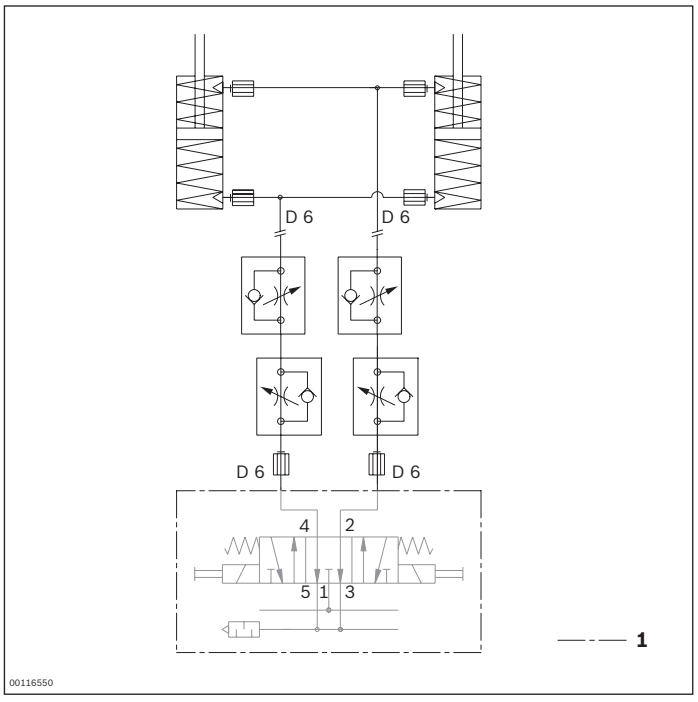
L Transport direction of longitudinal conveyor section
Q Transport direction of transverse conveyor section
1 Stroke
2 Housing element
3 Damped stop
[1] Profile height

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2)



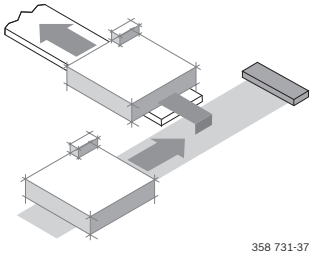
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3)

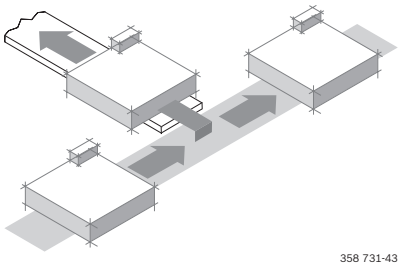


1 Not included in delivery

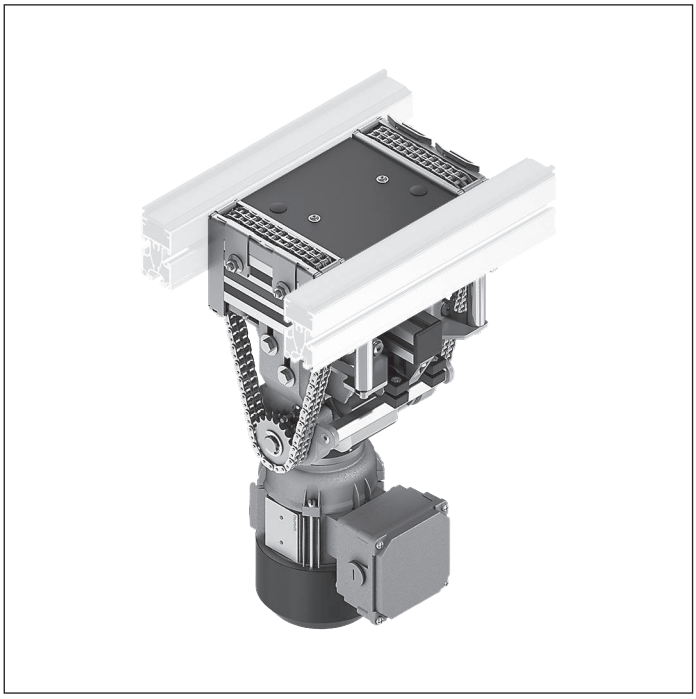
PN = 2



PN = 3



HQ 2/U-H lift transverse unit



In combination with HQ 2/U-H, only PE wear pads are recommended for use on the workpiece pallets.

- Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- Use for high total weights up to 2 kg/cm on the smallest side of the workpiece pallet
- Sensor mounting for speed control during infeeding possible
- Lifting movements through two to four block cylinders according to size
- Conveyor medium: Duplex chain (suitable for use in an EPA)
- Pneumatic equipment for 2 (top, center) or 3 (top, center, bottom) lift positions
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- The lateral guides can be mounted on either the left or the right depending on the conveying situation
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:

- Reversible operation possible
- Lateral guides of different heights allow for a fixed stop when outfeeding on the HQ

Accessories

Required accessories

- 1x M12x1 sensor with rated sensing range S_N = 4 mm for each (top/bottom) position sensing location, see p. 8-108/8-110
- Adapter plate (available on request) required to mount a VA 2/D-130 perpendicular to the main direction of transport

Recommended accessories

- DA 2/150-E (see p. 45 mm8-79)) or DA 2/100-E (see p. 8-75) damper for outfeeding WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets; required when v_N > 9 m/min or total weight of the workpiece pallet > 30 kg/cm
- WI 2/... (see p. 8-139ff) or WI/M (see p. 8-133) rockers and DA 2/100-C (see p. 8-71) damper for infeeding WT 2 and WT 2/F workpiece pallets

Delivery notes

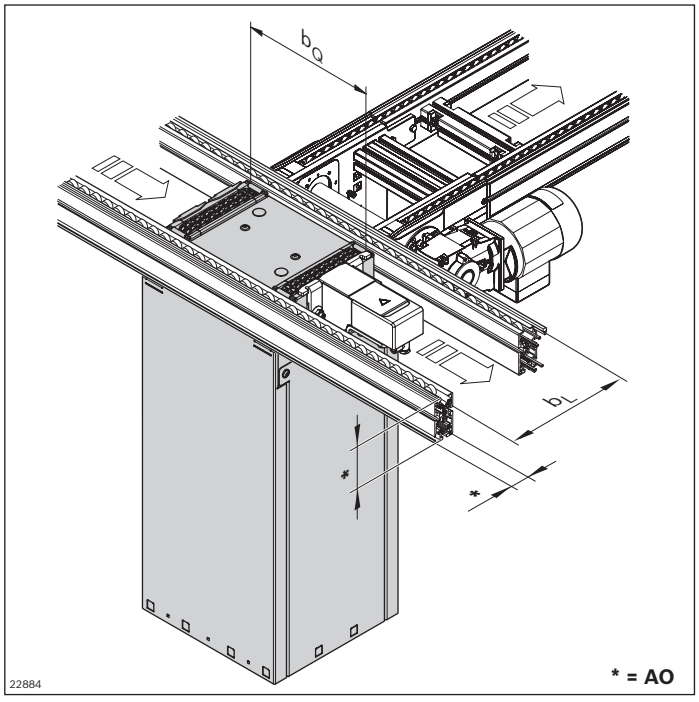
Scope of delivery

- Incl. fastening material
- Pneumatic equipment for two or three positions
- Kit for electric position sensing
- Housing element

Condition on delivery

- Pre-assembled incl. pneumatic equipment
- Protective housing, not assembled

Ordering information



Material number		3842998750
b_Q (mm)	Track width in the transverse conveyor	240; 320; 400; 480; 640
b_L (mm)	Track width in the longitudinal conveyor	240; 320; 400; 480; 640
b_Q x b_L (mm x mm)	Combination options	BG 1: 240 x 240; 320; 400 320 x 240; 320; 400; 480; 400 x 240 BG 2: 400 x 320; 400; 480; 640; 480 x 320; 400 640 x 400 BG 3: 480 x 480; 640 640 x 480; 640
AO[1]	Installation location, profile 0 = profile 45x80 1 = profile 45x100 2 = profile 50x100	0; 1; 2
PN	Pneumatic equipment	2[2] ; 3[3]
v_N (m/min)	Nominal speed	6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K

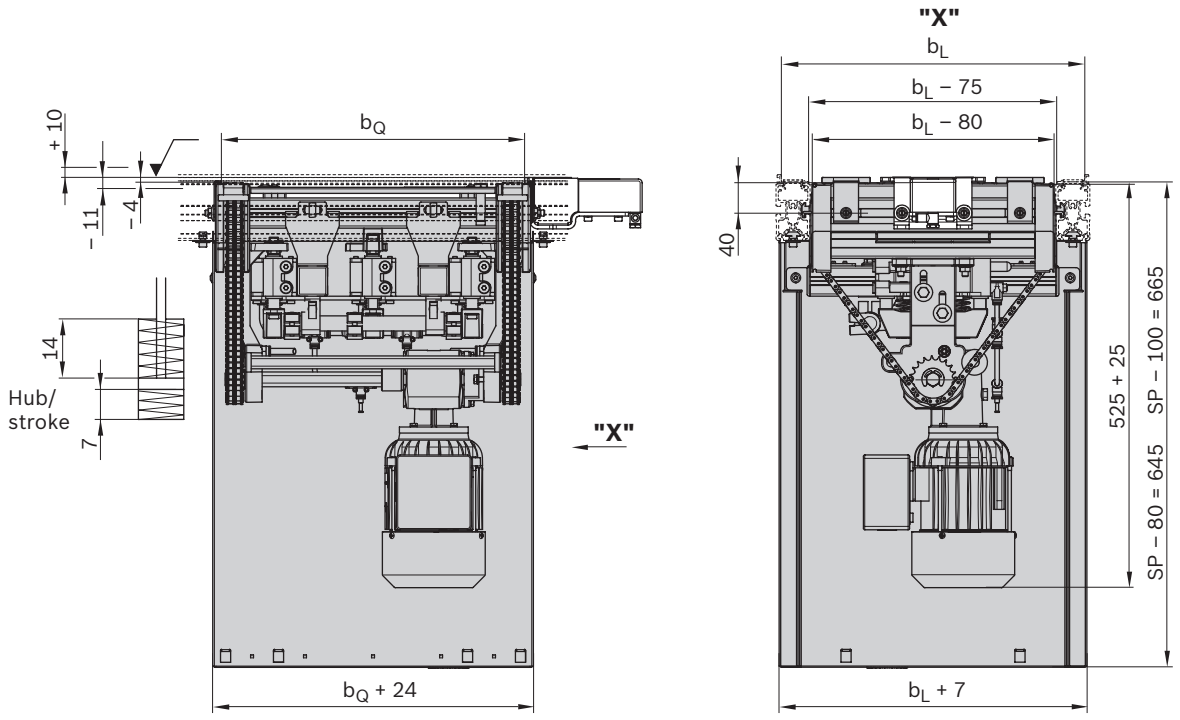
[1] Only required when b_Q = 240 mm
[2] PN = 2: Upper and middle lift position
[3] PN = 3: Upper, middle and lower lift position

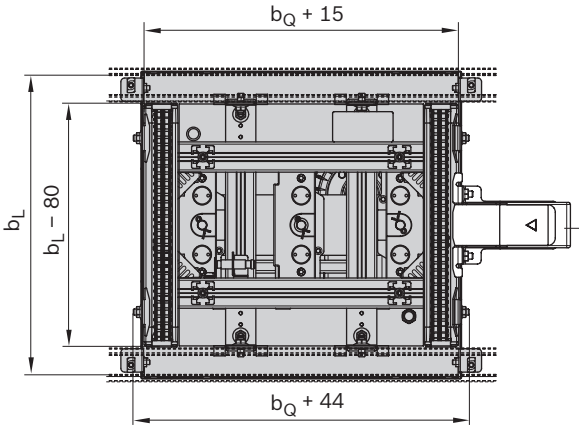
Technical data

Material number			3842998750
Load			
Max. total weight of workpiece pallet	m_G	kg	128
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	BG 1, 2, 3: 6
Number of lifting cylinders[1]			BG 1: 2 BG 2: 3 BG 3: 4

[1] See also p. 5-67
Note:
Adapter plate for mounting a VA 2/D-130 slide stop on the HQ 2/U-H perpendicular to the main direction of transport available on request.

Dimensions





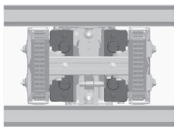
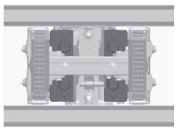
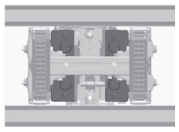
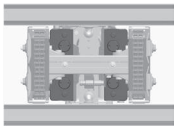
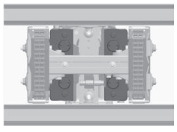
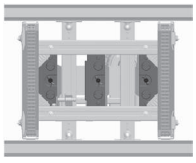
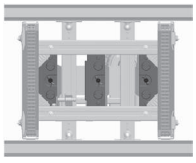
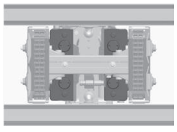
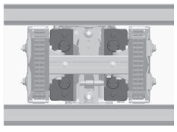
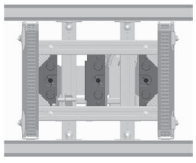
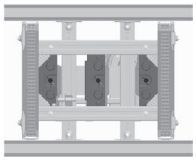
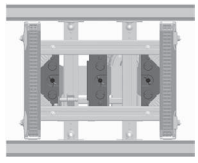
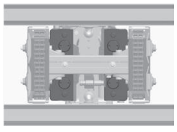
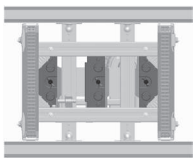
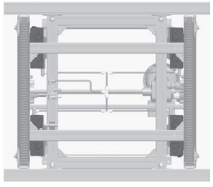
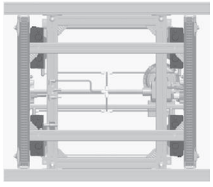
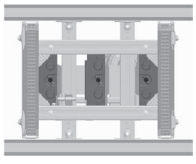
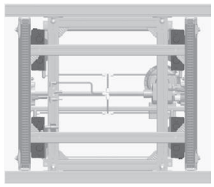
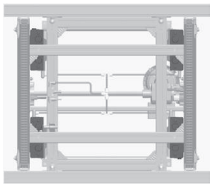
3842548585 DA 2/100-E
3842548644 DA 2/150-E

3842998750

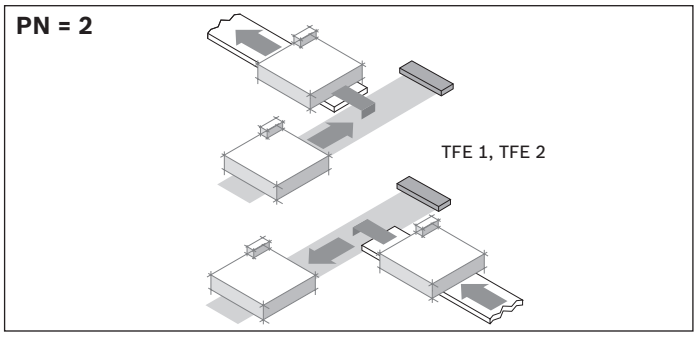
24000

Cylinder arrangement

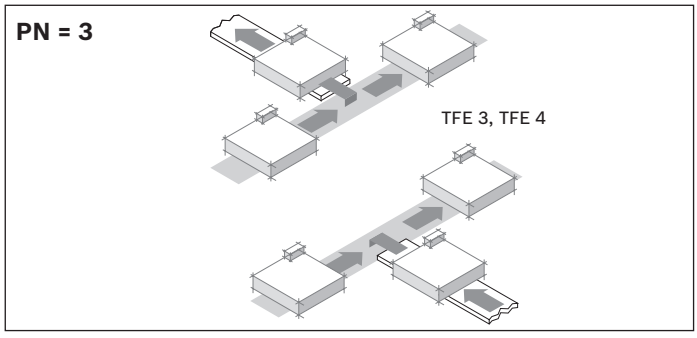
Schematic of the cylinder arrangement according to size

	b_Q 240	b_Q 320	b_Q 400	b_Q 480	b_Q 640
					
b_L 240	2 cylinders	2 cylinders	2 cylinders		
Load	48	48	48		
					
b_L 320	2 cylinders	2 cylinders	3 cylinders	3 cylinders	
Load	48	64	64	64	
					
b_L 400	2 cylinders	2 cylinders	3 cylinders	3 cylinders	3 cylinders
Load	48	64	80	96	96
					
b_L 480		2 cylinders	3 cylinders	4 cylinders	4 cylinders
Load		64	80	96	96
					
b_L 640			3 cylinders	4 cylinders	4 cylinders
Load			80	96	128

Pneumatic diagram



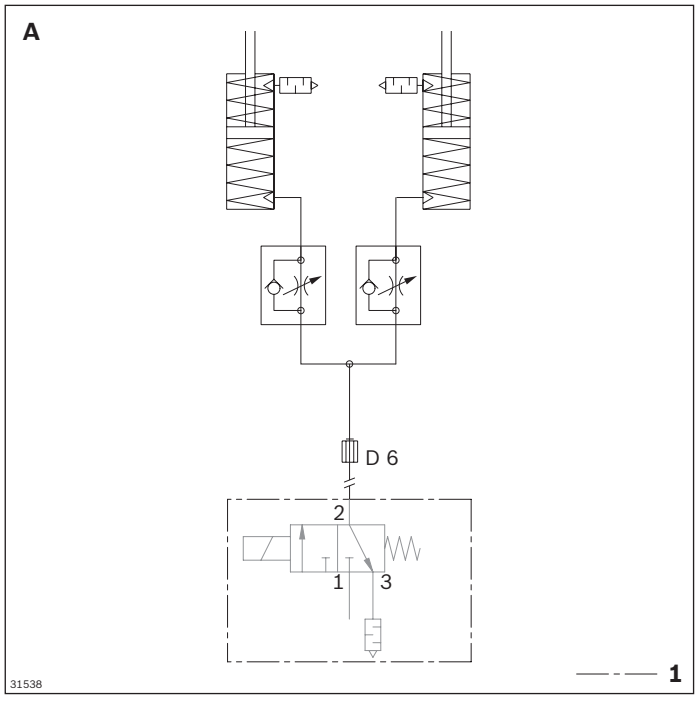
Use pneumatic diagram:
A (for pneumatic equipment PN = 2) if you want to transfer the WT from the longitudinal section to the transverse section (TFE 1) or from the transverse section to the longitudinal section (TFE 2).



B (for pneumatic equipment PN = 3), if you want to outfeed the WT from the longitudinal section to the transverse section (TFE 3) or infeed from the transverse section to the longitudinal section (TFE 4).

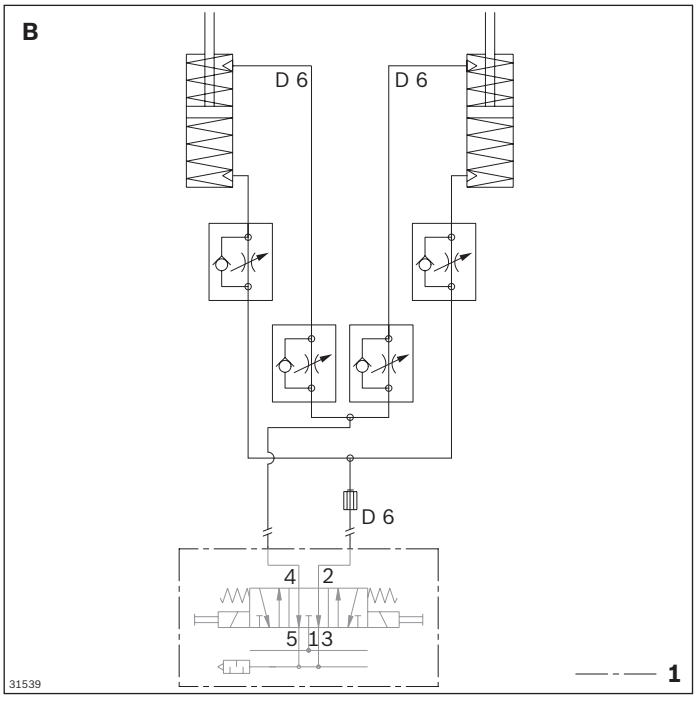
Pneumatic diagrams, BG 1, 2 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1, b_L < 320 mm



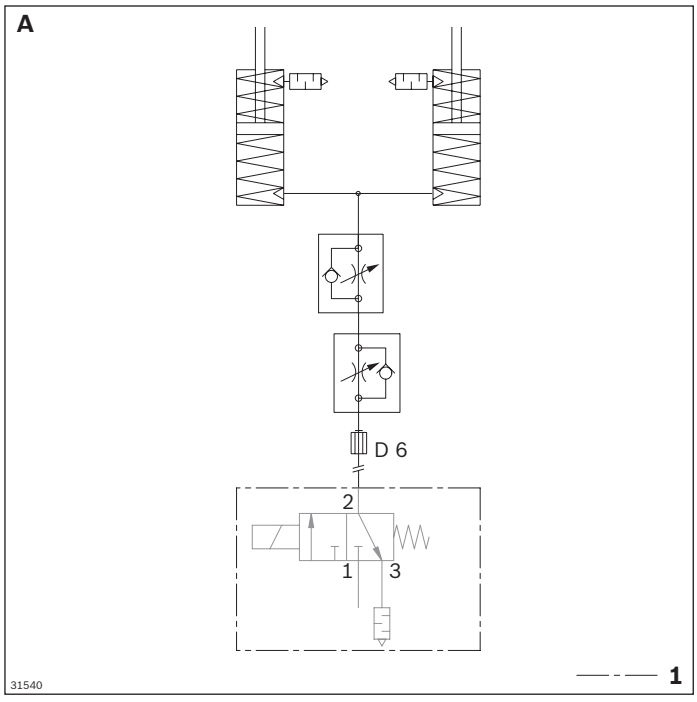
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1, b_L < 320 mm



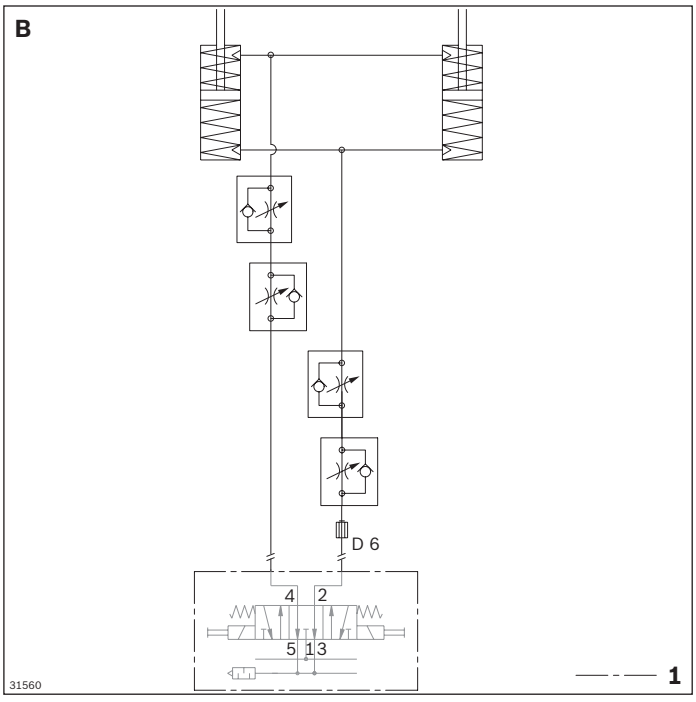
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 1, $b_L \geq 320$



1 Not included in delivery

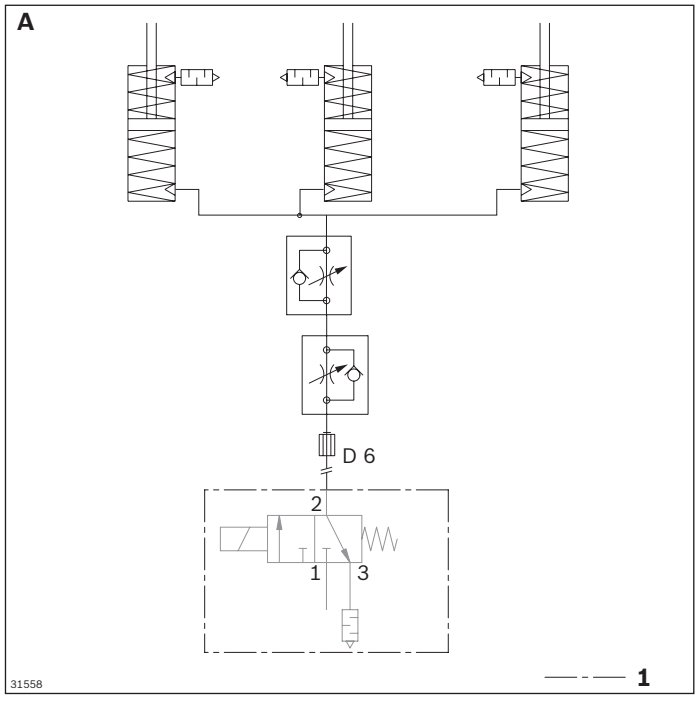
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 1, $b_L \geq 320$



1 Not included in delivery

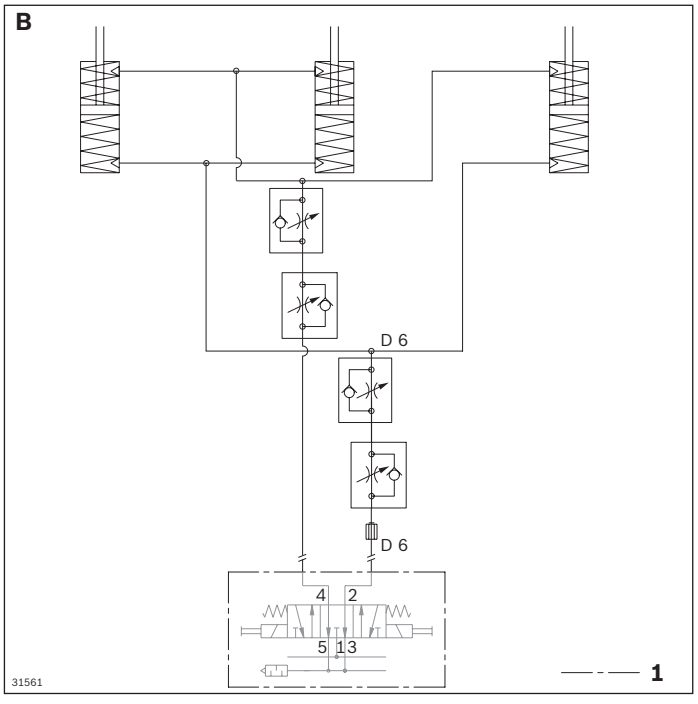
Pneumatic diagrams, BG 2, 3 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



1 Not included in delivery

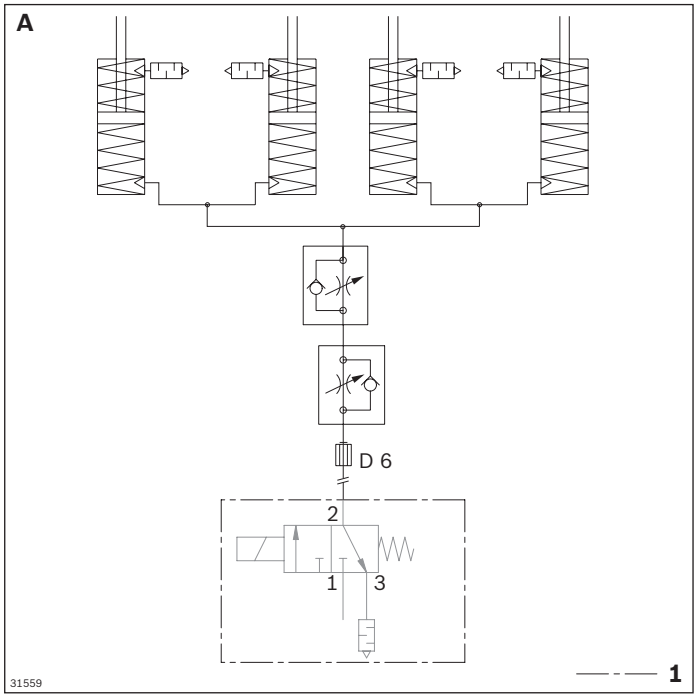
Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 2



1 Not included in delivery

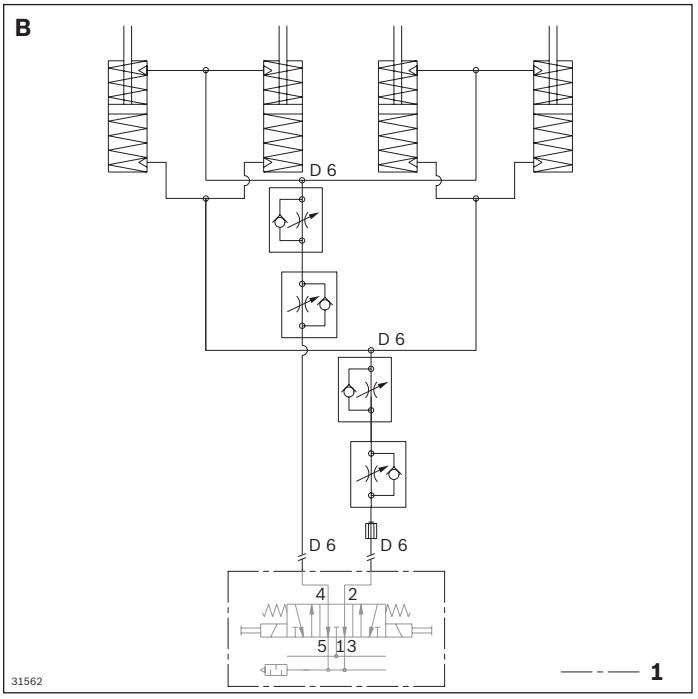
Pneumatic diagrams, BG 3, 4 cylinders

Circuit diagram for unit with pneumatic equipment for two positions (PN = 2), BG 2



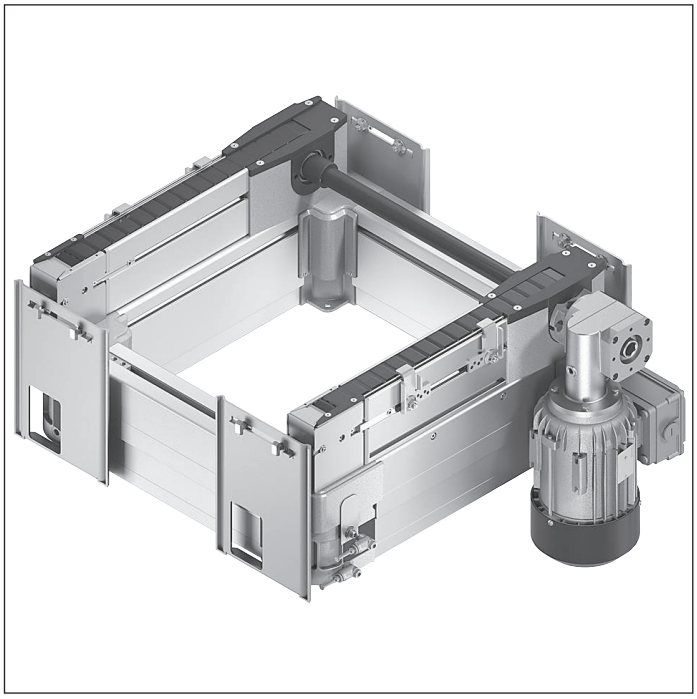
1 Not included in delivery

Circuit diagram for unit with pneumatic equipment for three positions (PN = 3), BG 3



1 Not included in delivery

HQ 2/C-H lift transverse unit



- Lift transverse unit for outfeeding from a longitudinal section into a transverse section and vice versa
- Use for high total weights up to 2 kg/cm on the smallest side of the workpiece pallet and up to 240 kg
- Flat design permits system layouts on several levels
- Synchronized lifting movement of the four block cylinders for uniform and parallel lifting movement
- Conveyor medium: Flat top chain
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Depending on the installation, height-adjustable lateral guides can be used as a fixed stop for exporting or as a lateral guide when changing workpiece pallets
- Fixed stops in the form of adjustable/movable lateral guides made of strip steel
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note:
- Reversible operation possible
- Accumulation operation not permitted

Accessories

Required accessories
- M12x1 sensor for position sensing, see p. 8-108/8-110
- Dampers for outfeeding and infeeding workpiece pallets, see p. 8-60

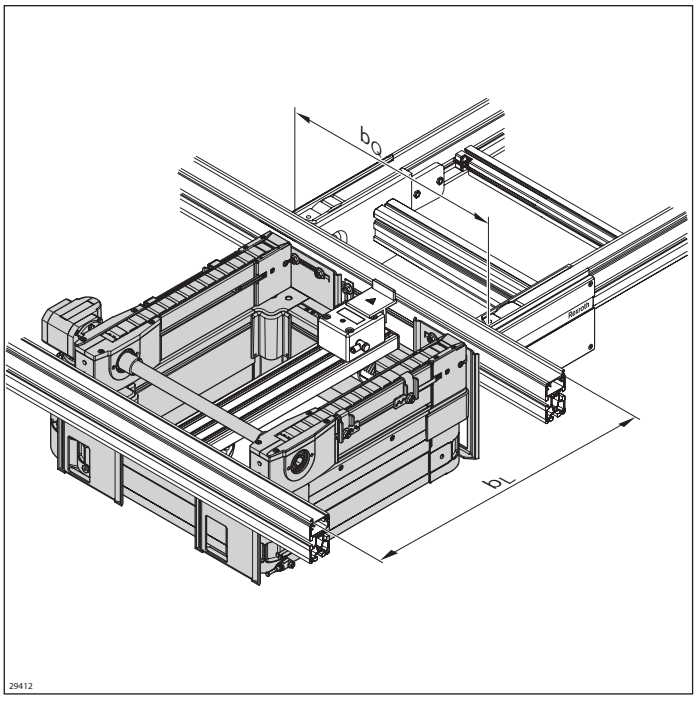
Recommended accessories
- DA 2/100-E (see p. 8-75) and DA 2/150-E (see p. 8-79) dampers or a fixed stop (included in delivery) can be used for outfeeding WT 2, WT 2/F, WT 2/H and WT 2/F-H workpiece pallets. The DA 2/100-C (see p. 8-71) damper can be used at the belt end for outfeeding a WT 2 or WT 2/F workpiece pallet.
- DA 2/100-H (see p. 8-82) or DA 2/250-H (see p. 8-85) damper for outfeeding a WT 2/H or WT 2/F-H workpiece pallet
- A fixed stop (included in delivery) or a DA 2/100-C damper can be used for infeeding WT 2 and WT 2/F workpiece pallets. This is also possible in combination with a WI 2 rocker (see p. 8-139), WI 2/X rocker (see p. 8-143), WI 2/D rocker (see p. 8-145) or a WI 2/M rocker (see p. 8-133).
- DA 2/100-H and DA 2/250-H dampers can be used for infeeding WT 2/H and WT 2/F-H workpiece pallets.

Delivery notes

Scope of delivery
- Incl. fastening material
- Switch holder for 12 mm sensor for position sensing
- Kit for electric position sensing
- Lateral guide kit for $b_l \leq 640$ mm (3842549567) or for $b_l > 640$ mm (3842549568)

Condition on delivery
- Fully assembled
- Kits for lateral guides included

Ordering information



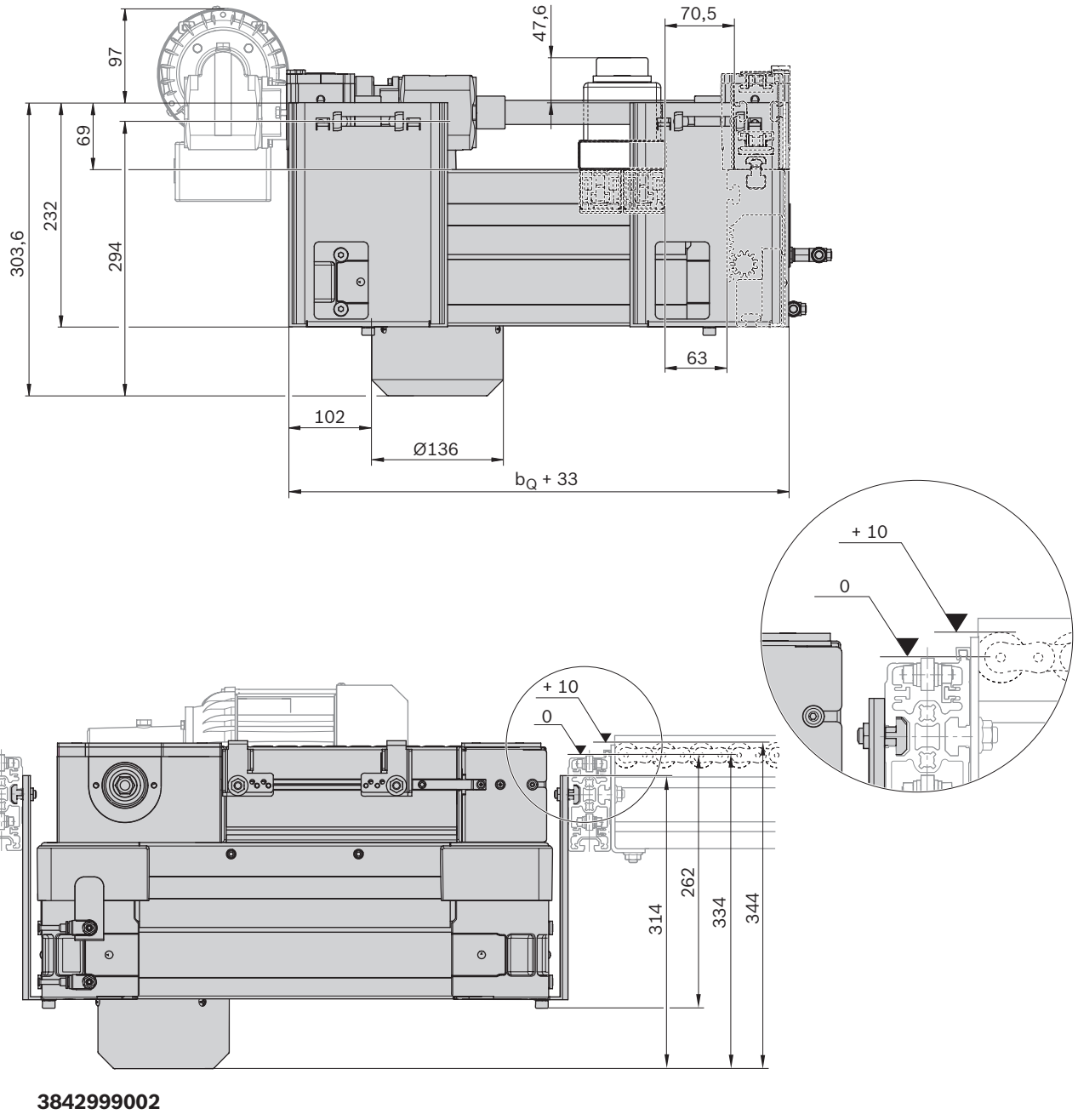
Material number		**3842999002**
b_Q (mm)	Track width in the transverse conveyor	480; 640; 800; 1040; 1200
		480 ... 1200[1)]
b_L (mm)	Track width in the longitudinal conveyor	640; 800; 1040; 1200
		640 ... 1200[1)]
b_Q x b_L (mm x mm)	Combination options	480 ... 1200 x 640 ... 1200
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left M = center	R; L; M

[1] Individual width variants available

Technical data

Material number			**3842999002**
Load			
Max. total weight of workpiece pallet	m_G	kg	240
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	8

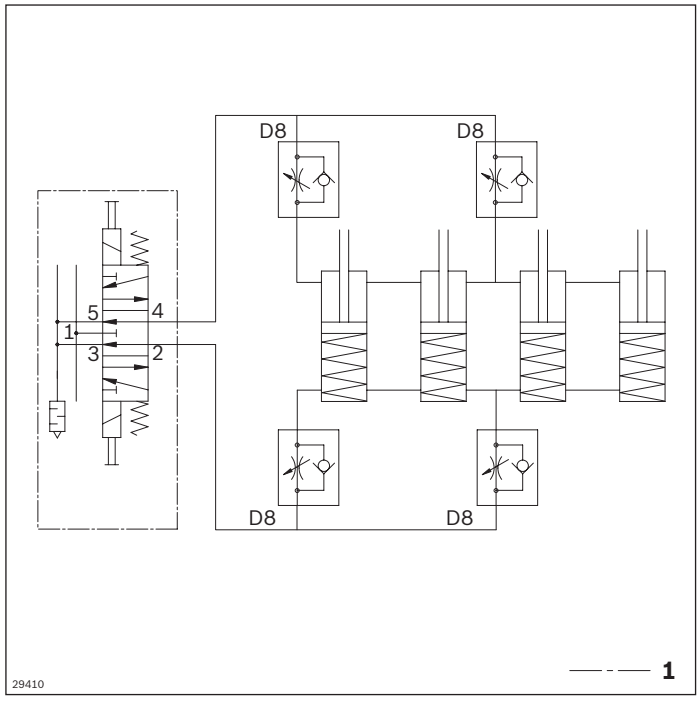
Dimensions



3842999002

33429

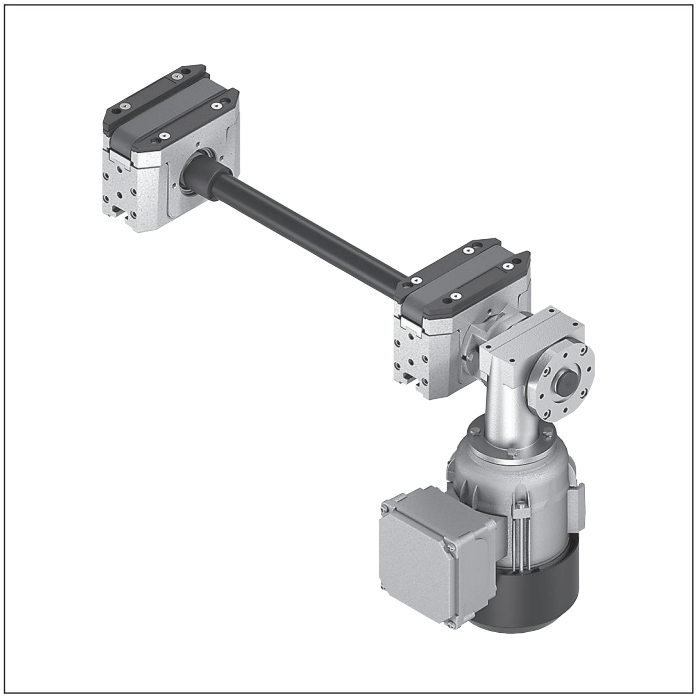
Circuit diagram



1 Not included in delivery

BS 2/130 belt section





- Fully mounted belt section for transverse workpiece pallet conveyance between parallel conveyor sections at a distance of a = 135 mm
- With built-in drive
- Use with two HQ 2 lift transverse units
- Conveyor medium: Toothed belt (suitable for use in an EPA)
- Reversible operation possible
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Accessories

Recommended accessories

- 2x HQ 2 for transverse conveyance, see p. 5-26

Delivery notes

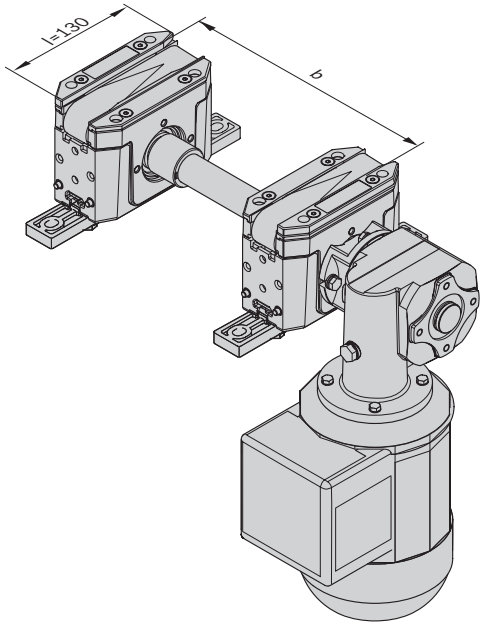
Scope of delivery

- Incl. fastening material

Condition on delivery

- Fully assembled

Ordering information



30133

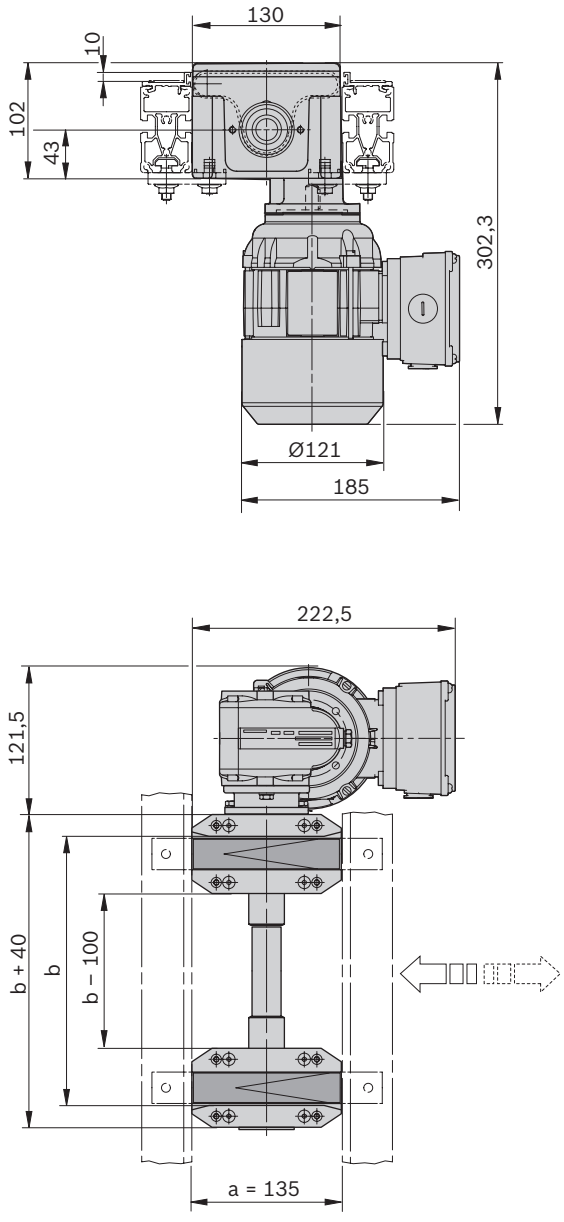
Material number		**3842999743**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480; 640; 800; 1040; 1200
b (mm)	Track width in direction of transport	160 ... 1200
v_N (m/min)	Nominal speed	0; 6; 9; 12; 15; 18
U (V)	Voltage	See motor data, p. 11-24ff
f (Hz)	Frequency	See motor data, p. 11-24ff
AT	Motor connection S = cable/plug K = terminal box	S; K
MA	Motor mounting R = right L = left	R; L

v_N = 0: without motor or gear

Technical data

Material number			**3842999743**
Load			
Max. section load in accumulation operation		kg	30
Features			
ESD			Yes
Dimensions			
Length	l	mm	130

Dimensions

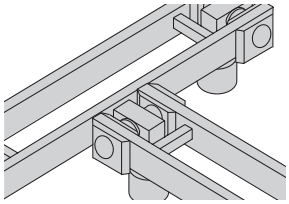


3842999743

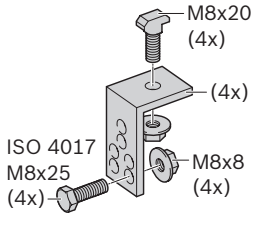
00117866

Connection kits for transverse conveyors

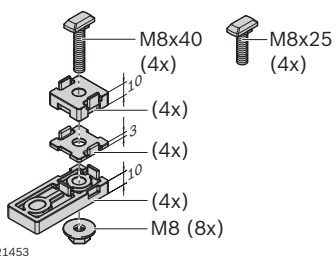
Use: To connect the TS 2*plus* module on a transverse conveyor laterally (end-to-section), the following are also required: Lift transverse unit

	**Longitudinal conveyor** **ST 2/B** **SP 2/B** **ST 2/B-100** **ST 2/C-100** **ST 2/R-100**	**ST 2/C-H** **ST 2/R-H** **ST 2/R-V**
Transverse conveyor		
AS 2/B-150, **AS 2/B-250**	3842518828	–
AS 2/C-100, **AS 2/C-250**	3842528192	3842528192
AS 2/C-400, **AS 2/C-700**	3842518828	3842518828
AS 2/R-300, **AS 2/R-700**	3842528 192	3842528192
AS 2/R-1200, **AS 2/R-2200**	3842518828	3842518828
UM 2/B	3842518828	–
UM 2/C-60, UM 2/C-170, **UM 2/R-60, UM 2/R-170,**	3842528192	3842528192
BS 2	3842525110	–
BS 2/C (drive side and return side) **BS 2/R (drive side and return side)**	3842528192	3842528192
BS 2/C-H (drive side) **BS 2/R-H (drive side)**	3842518828	3842518828
BS 2/C-H (return side) **BS 2/R-H (return side)**	3842528192	3842528192
KU 2 (drive side and return side)	3842528192	3842528192

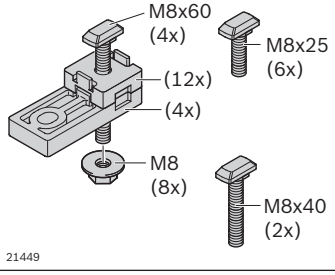
3842518828



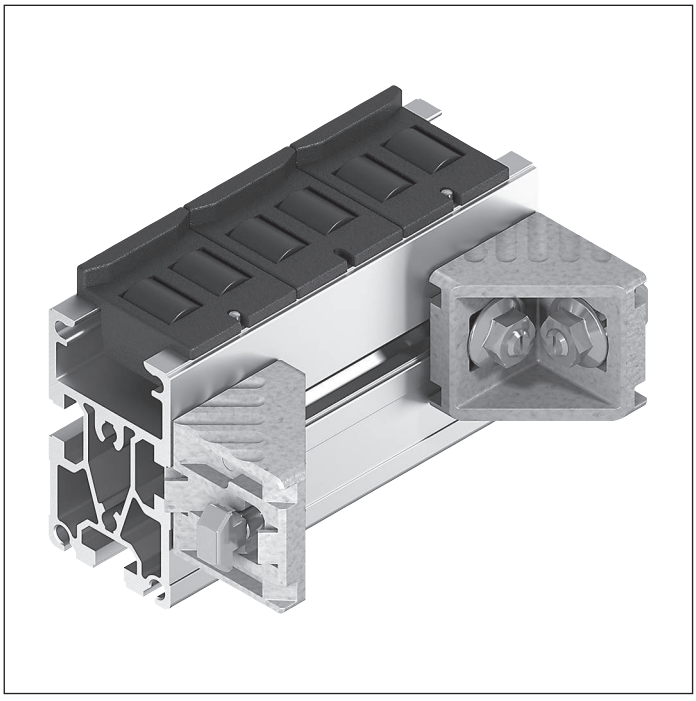
3842528192



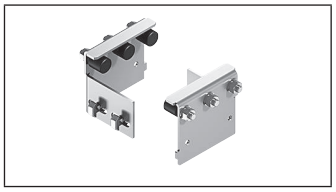
3842525110



Roller sections

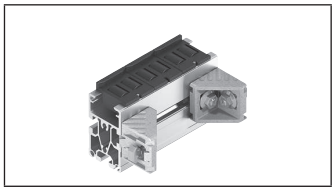


Roller sections in conjunction with two lift transverse units permit workpiece pallets to be conveyed between parallel conveyor sections.

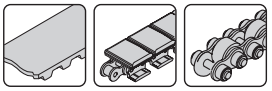


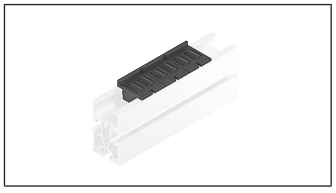
Intermediate section with roller **5-82**



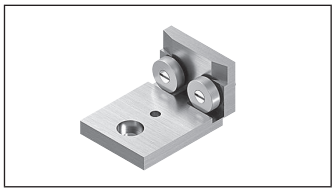


RS 2 roller section **5-84**

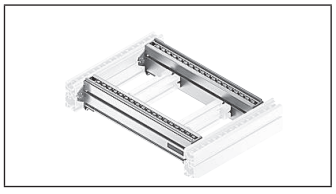




RE roller elements **5-86**



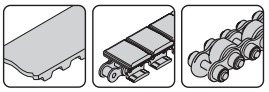
RB 2/UM 2 roller track set **5-88**

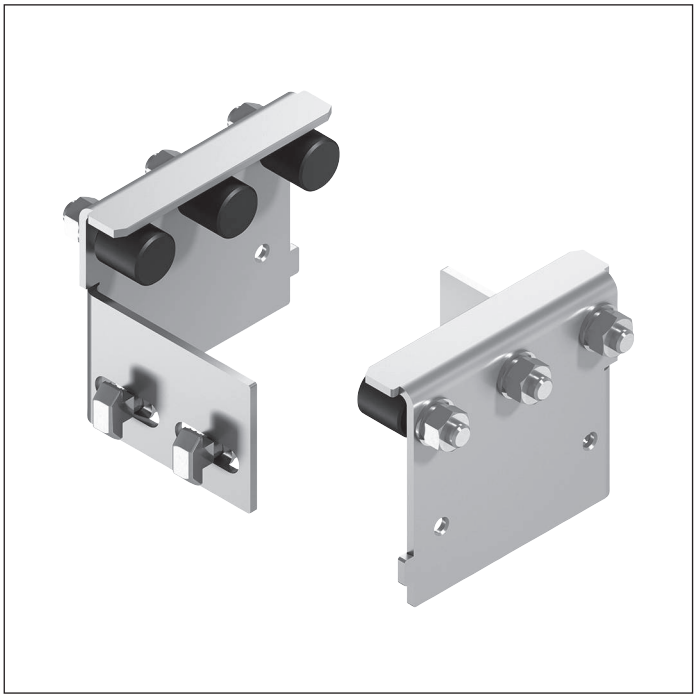


RS 2/H roller section **5-90**



Intermediate section with roller





- Unmounted roller section for transverse workpiece pallet conveyance between parallel conveyor sections at a distance of a = 45 to 135 mm
- Use with two HQ 2 lift transverse units
- Without built-in drive
- Conveyor medium: Rollers made of galvanized steel
- Reversible operation possible
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Installation between two ST 2 conveyor units or BS 2 belt sections.
Alternatively, use as an inclined passive conveyor section.

Delivery notes

Scope of delivery

- Incl. fastening material

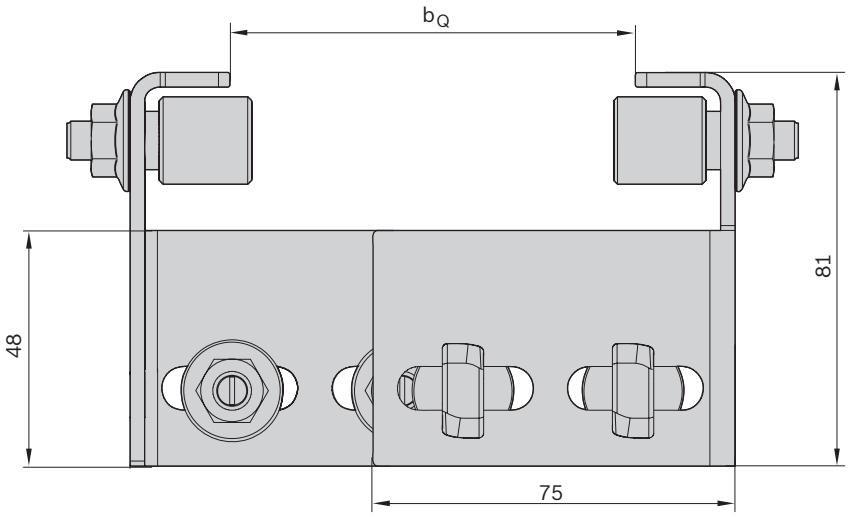
Condition on delivery

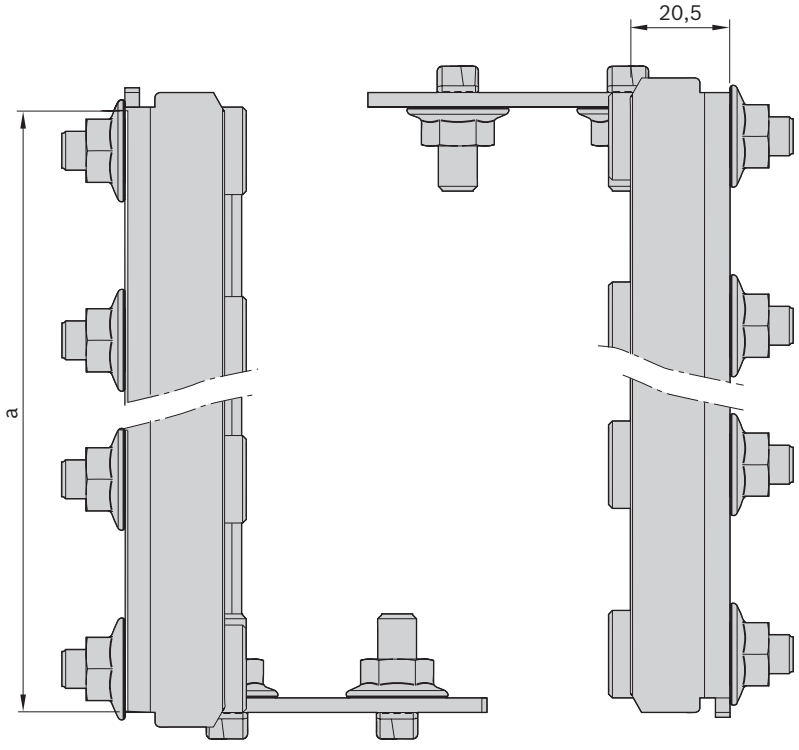
- Not assembled

Ordering information

Product designation	Material number
Intermediate section with roller a = 45	3842553814
Intermediate section with roller a = 90	3842554658
Intermediate section with roller a = 135	3842554659

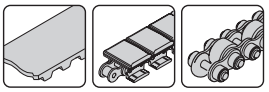
Dimensions

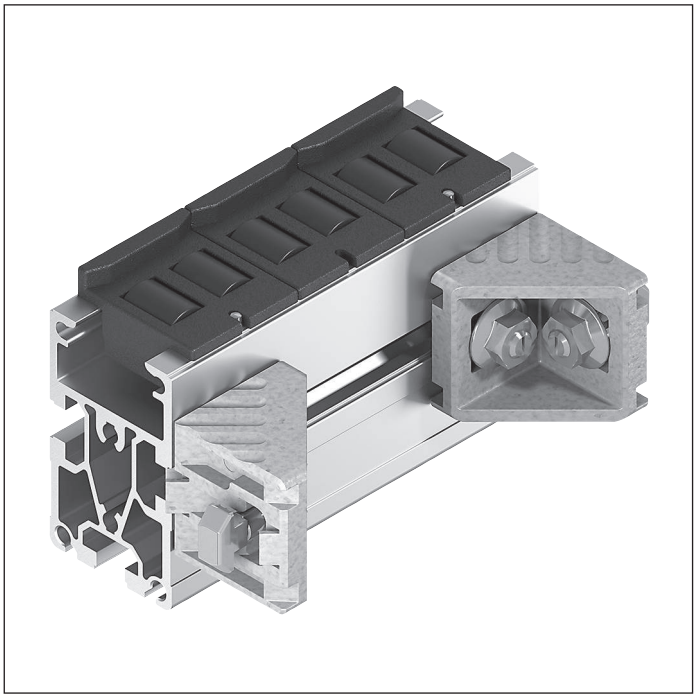




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RS 2 roller section





- Unmounted roller section for transverse workpiece pallet conveyance between parallel conveyor sections at a distance of a = 90 to 200 mm
- Use with two HQ 2 lift transverse units
- Use as an inclined passive conveyor section is possible
- Without built-in drive
- Conveyor medium: PA6 rollers
- Reversible operation possible
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Installation between two ST 2 conveyor units or BS 2 belt sections.
Alternatively, use as an inclined passive conveyor section.

Delivery notes

Scope of delivery

- Incl. fastening material

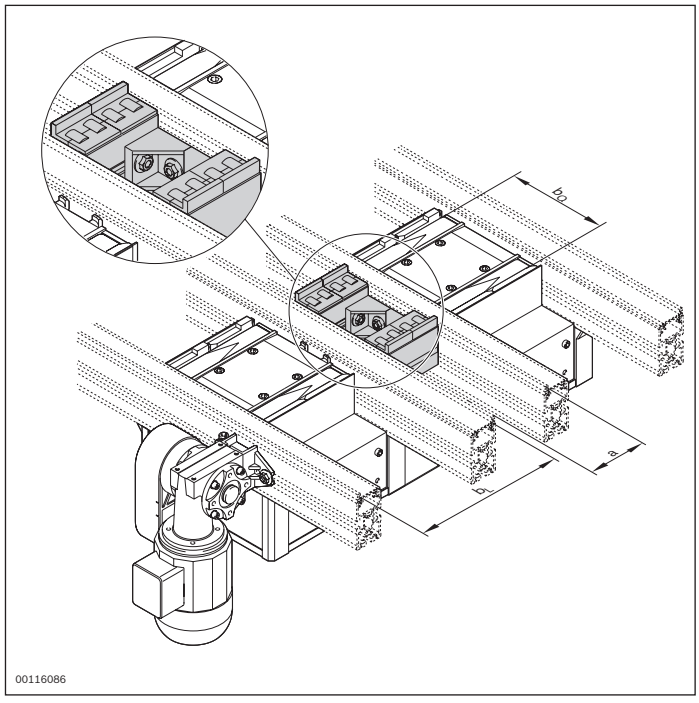
Condition on delivery

- Not assembled

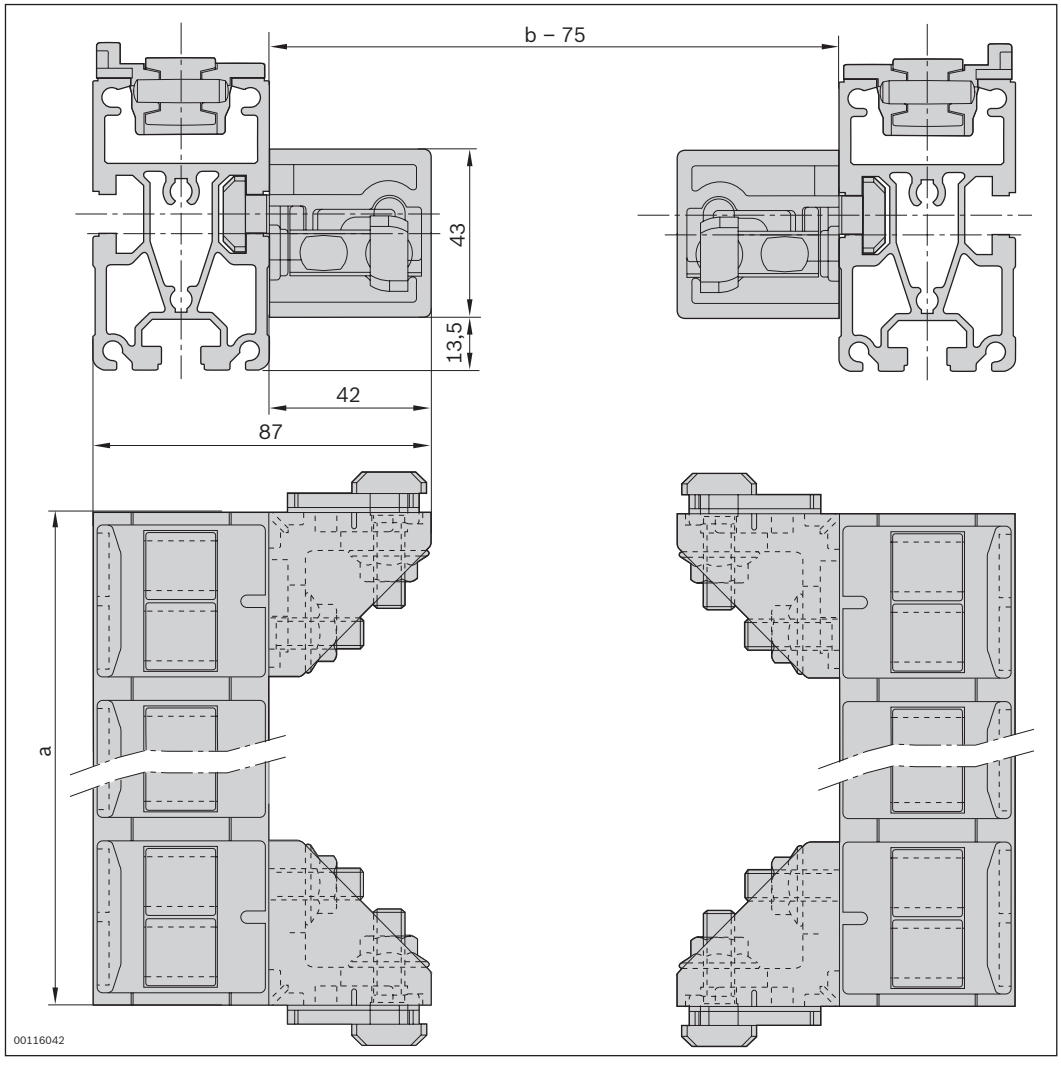
Ordering information

Product designation	Material number
RS 2 roller section a = 90	3842522140
RS 2 roller section a = 135	3842522141
RS 2 roller section a = 160	3842522142
RS 2 roller section a = 200	3842522143

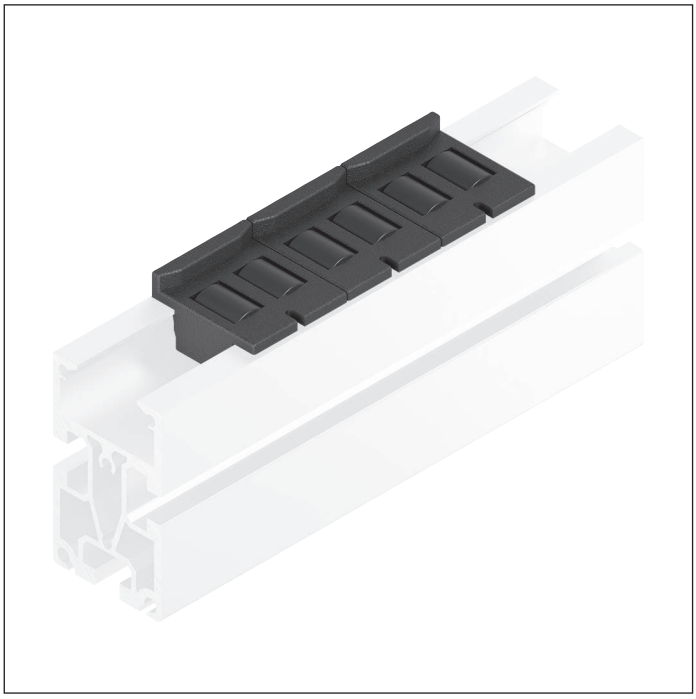
Technical data



Dimensions



RE roller element



- Assembled roller elements for the manual transportation of workpiece pallets
- Use as an inclined passive conveyor section is possible
- Without built-in drive
- Conveyor medium: PA66 rollers
- Reversible operation possible
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Roller elements can be clipped into SP 2/B section profiles instead of driven belts. Roller sections constructed in this way are an economical solution for moving workpiece pallets or other similar pallets manually on a transfer system.

The number of roller elements is calculated based on the section length. The remaining measurement < 45 mm has to be distributed by spacing the roller elements accordingly.

Accessories

Required accessories

- SP 2/B section profile, see p. 3-4

Delivery notes

Condition on delivery

- Fully assembled

Ordering information

Product designation	Packaging unit	Material number
RB 39 roller element	10	3842520000
ESD RE 39 roller element[1]	10	3842538245
RB 45 roller element	100	3842319501
ESD RE 45 roller element[1]	100	3842538064
RE 45 roller element	100	3842319500
ESD SK RE 45 roller element[1]	100	3842538065

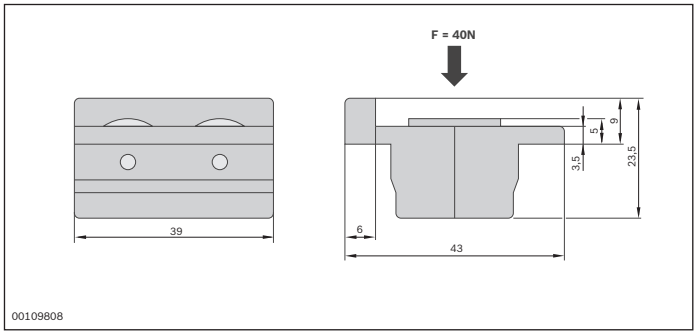
[1] Version with conductive material in accordance with DIN EN 61 340-5-1, suitable for ESD-sensitive areas.

Technical data

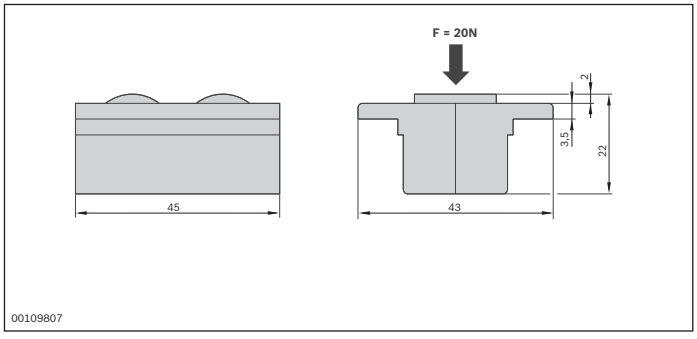
Material number	**RE 39**	**3842520000**	**3842538245**
	RE 45	**3842319501**	**3842538064**
	RE 45SK	**3842319500**	**3842538065**
Features			
ESD		No	Yes
Material specification		RE 39, RE 45, RE 45SK: Rollers: PA66 Housing: PA6 RE 39: Bearing: Steel bolt	RE 39, RE 45, RE 45SK: Rollers: PA66 Housing: PA6 RE 39: Bearing: Steel bolt

Dimensions

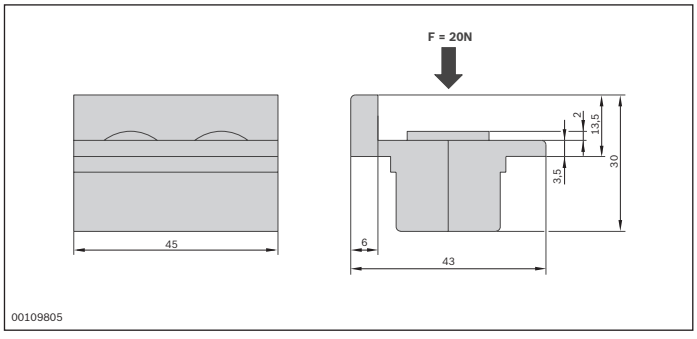
RE 39



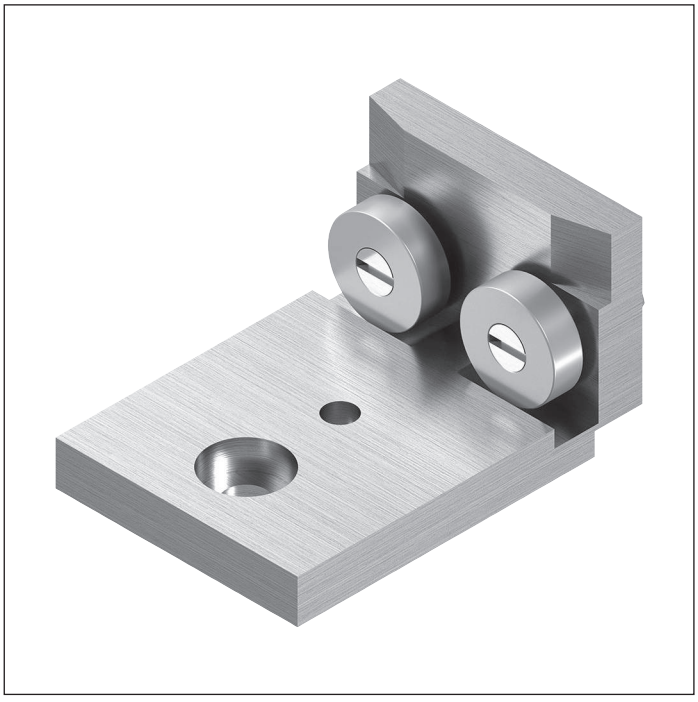
RE 45



RE 45 SK



RB 2/UM 2 roller track set



- Mounted roller section for mounting on AS 2/B or UM 2/B for transverse conveying
- Additional workpiece pallet support on the front transition from AS 2/B to UM 2/B or from AS 2/B or UM 2/B to a lift transverse unit
- One set is required for each AS 2/B or UM 2/B
- Required for workpiece pallet lengths of 160 mm; recommended for longer lengths
- Without drive
- Reversible operation possible
- Can be combined with WT 2/E, WT 2, WT 2/F

Delivery notes

Scope of delivery

- Set (containing 2x roller track, 2x guide profile, 2x fastening kit)

Condition on delivery

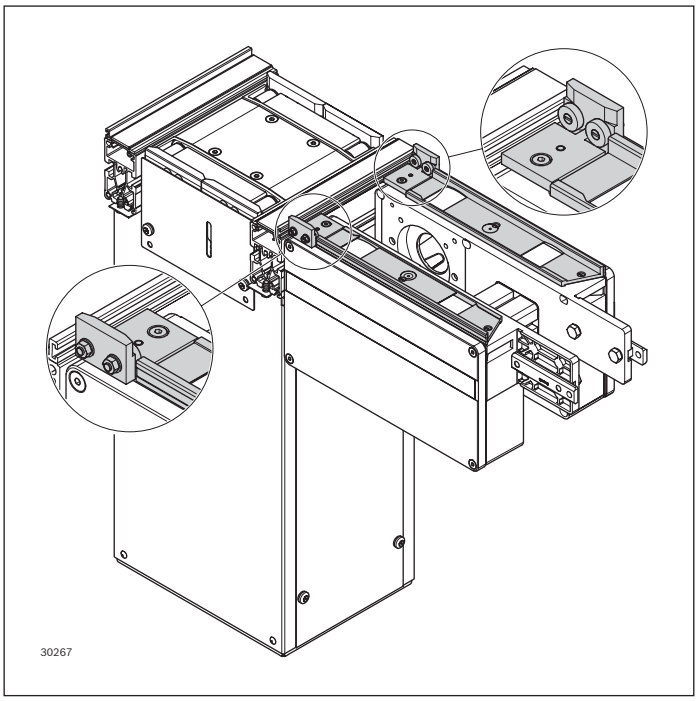
- Fully assembled

Ordering information

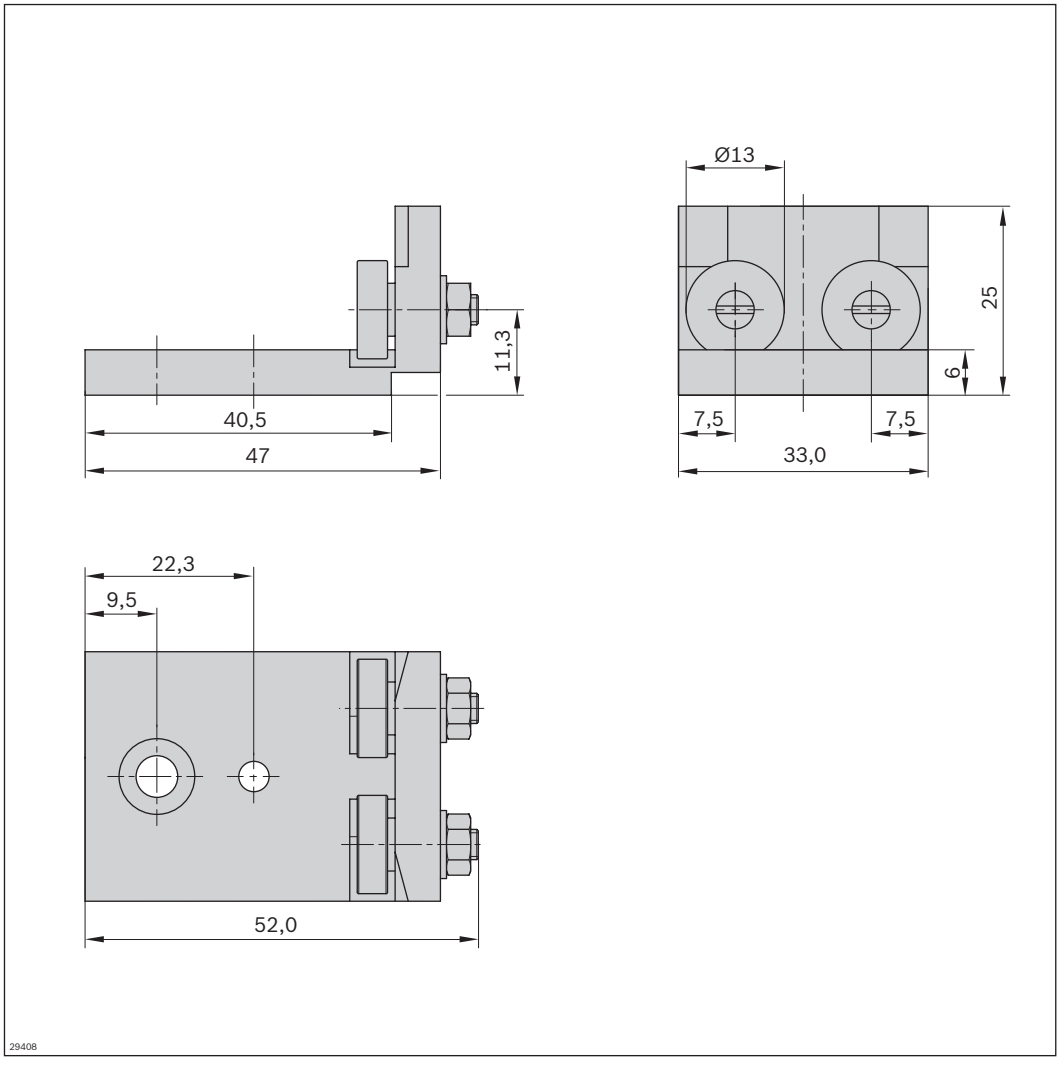
Product designation	Packaging unit	Material number
RB 2/UM 2 roller track set	Set	3842558657

Technical data

Material number	3842558657
Features	
Material specification	Track: Aluminum Rollers: Steel



Dimensions



RS 2/H roller section





- Mounted roller section for transverse workpiece pallet conveyance between parallel conveyor sections at a distance of a = 90 to 690 mm
- Use with two HQ 2 lift transverse units
- Without built-in drive
- Conveyor medium: Accumulation roller chain with steel accumulation rollers and small parts protection
- Suitable for mounting on an ST 2 section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Installation between two ST 2/...-H conveyor units or BS 2/...-H belt sections with HQ 2/U-H or HQ 2/C-H lift transverse unit. Alternatively, use as an inclined conveyor section is possible.

Accessories

Recommended accessories

- Note on QV cross connectors: When conveyor section distances a > 90 mm, we recommend stabilizing the RS 2/H roller section using QV cross connectors, see p. 5-92

Delivery notes

Scope of delivery

- Section, incl. accumulation roller chain with steel accumulation rollers and small parts protection
- Incl. fastening material

Condition on delivery

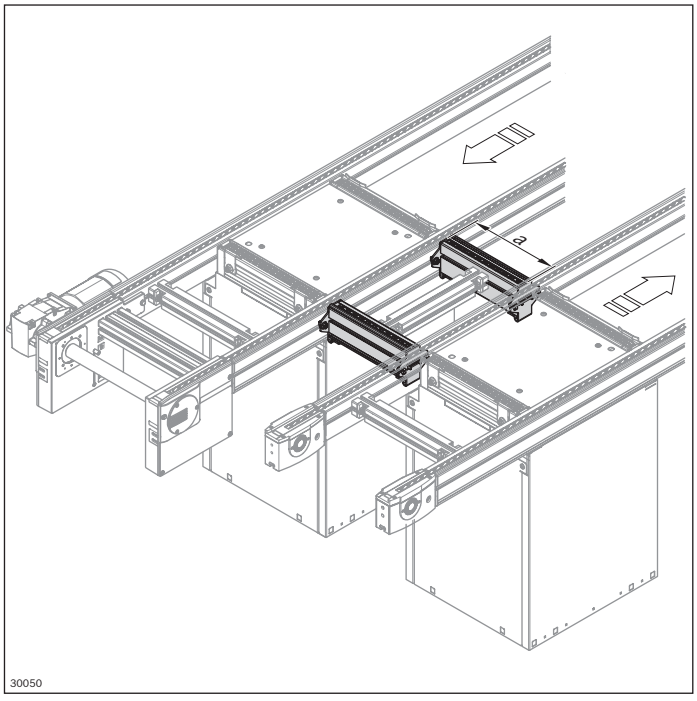
- Fully assembled

Ordering information

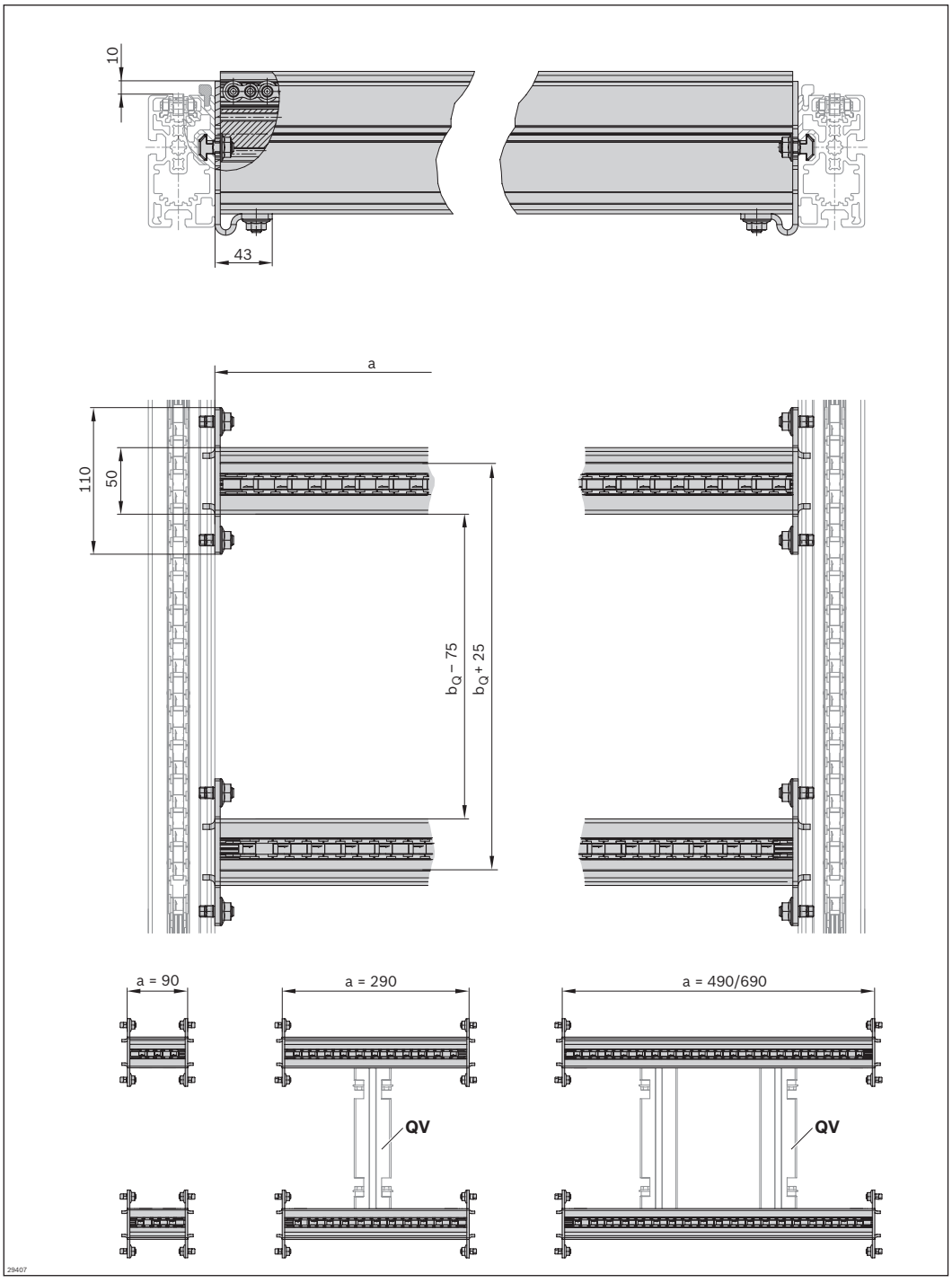
Product designation	a (mm)	b_l (mm)	Material number
RS 2/H roller section	90	480; 640; 800; 1040; 1200	3842998744
	290	640; 800; 1040; 1200	3842998744
	490	800; 1040; 1200	3842998744
	690	1040; 1200	3842998744

Technical data

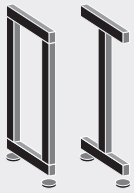
Material number		**3842998744**
Features		
Material specification		Section profile: Aluminum, natural; anodized Accumulation roller chain: Steel accumulation rollers and small parts protection
Dimensions		
a (mm)	Roller section length	90 ... 690



Dimensions

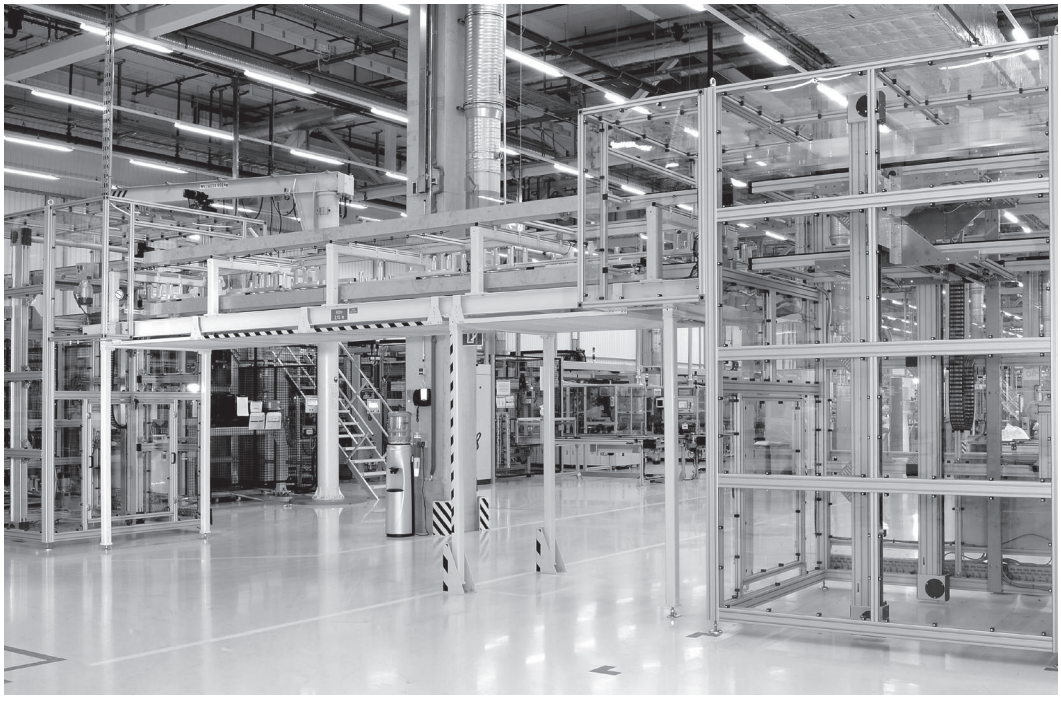


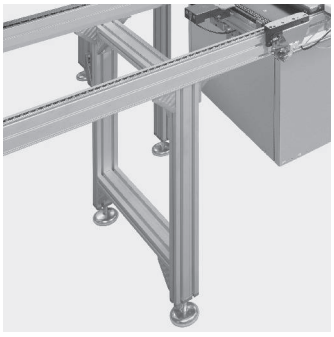
a (mm)	Number of QVs	QV material number
90	–	–
290	1	3842993052/b = b_Q
490	2	3842994635/b = b_Q
690	2	3842994635/b = b_Q



Leg sets

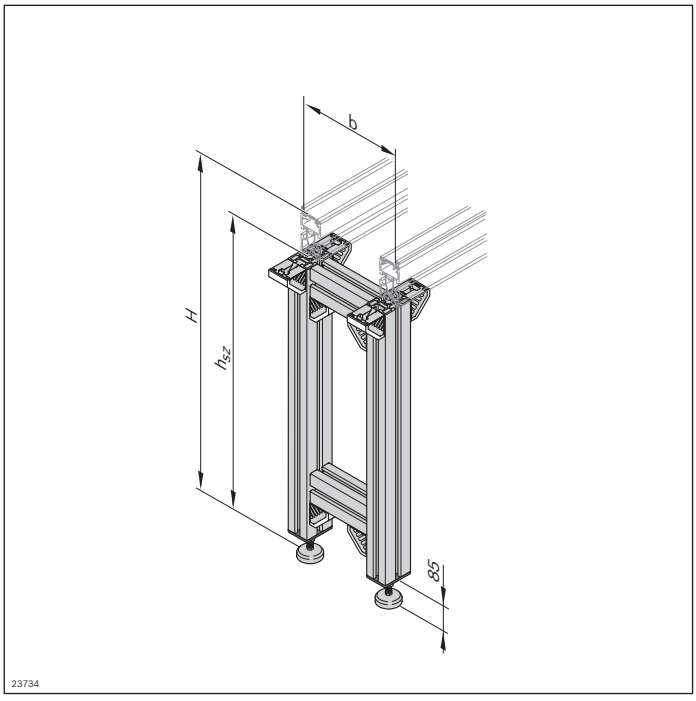
Selection of leg sets **6-2**

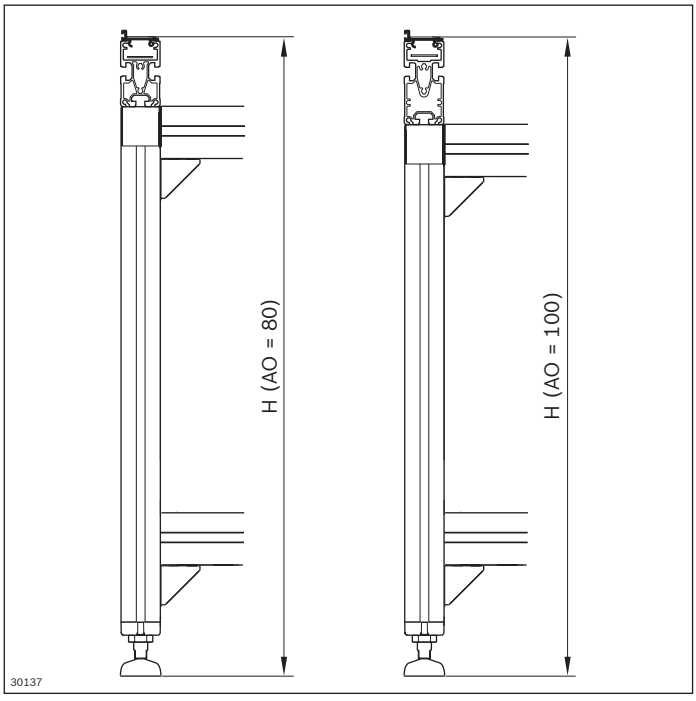






Selection of leg sets



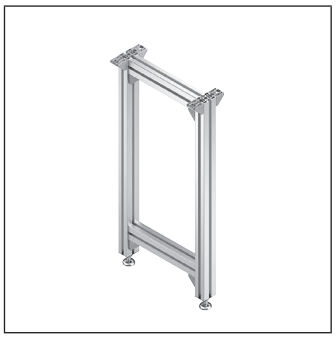


New leg set height H

Defines the height of the leg sets with the new parameter H, measured from floor to top of the conveyor medium (= conveying level).

In addition, the height of the section profile is specified as an additional order parameter (AO).

The height of the leg set to lower edge of section profile (= h_{SZ}) is calculated as follows: $h_{SZ} = H - AO$.



SZ 2 leg sets **6-4**

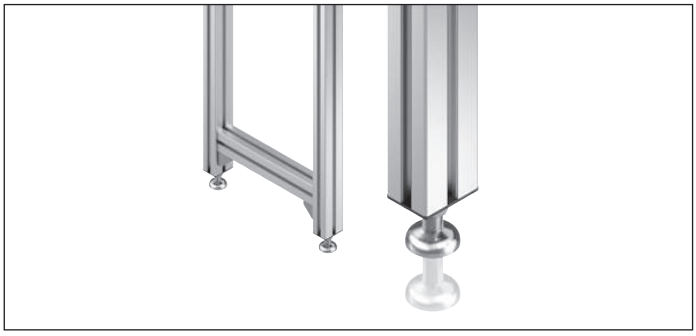


SZ 2–ST 2 reinforcement **6-26**

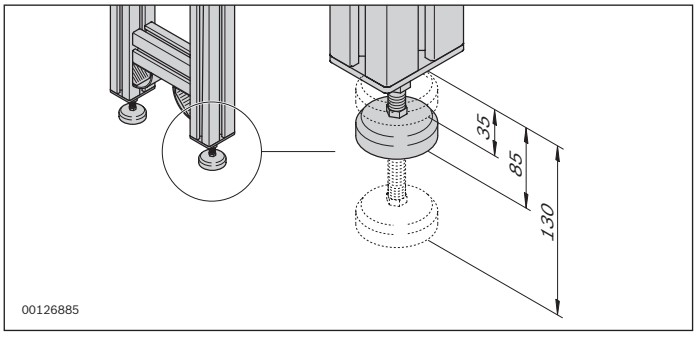


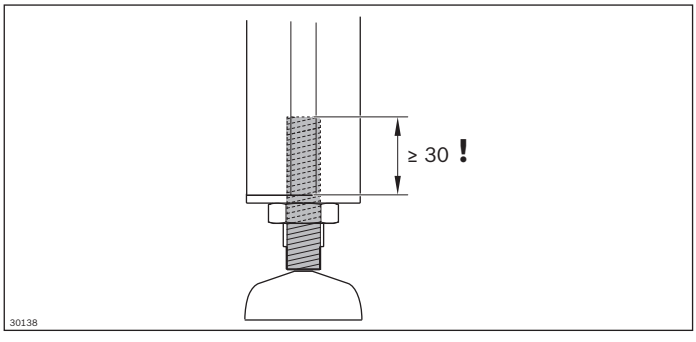
Foundation bracket, floor dowel, T-bolt, flange nut, bracket caps **6-28**

SZ 2/... leg sets









Leg sets

Leg sets support the conveyor section. They have to be mounted directly next to the drive and return units, and underneath section joints. Conveyor units have to be supported with extra leg sets at equal distances of max. 2000 mm.

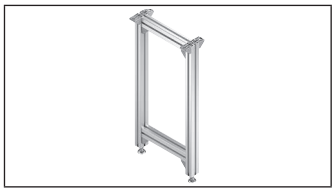
Fastening material

Leg sets must be anchored to the floor with foundation brackets (3842146848) and floor dowels (3842526560)..

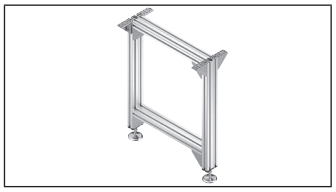
Bracket caps are not included in delivery for all leg sets.

Leveling feet

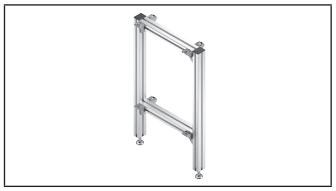
The height-adjustable leveling feet (incl. fastening material) are included in delivery. The engagement depth of the leveling feet must be at least 30 mm for all leg sets.



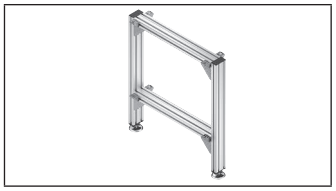
SZ 2 leg set **6-6**



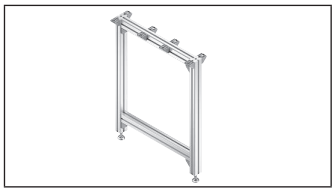
SZ 2/H leg set **6-8**



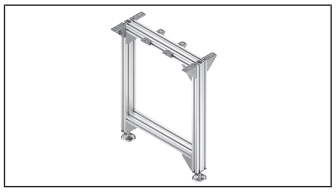
SZ 2/U leg set **6-10**



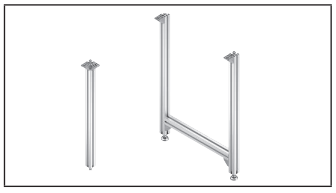
SZ 2/U-H leg set **6-13**



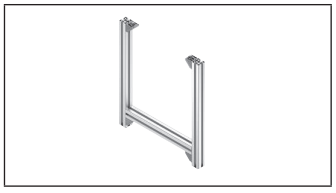
SZ 2/T leg set **6-16**



SZ 2/T-H leg set **6-18**

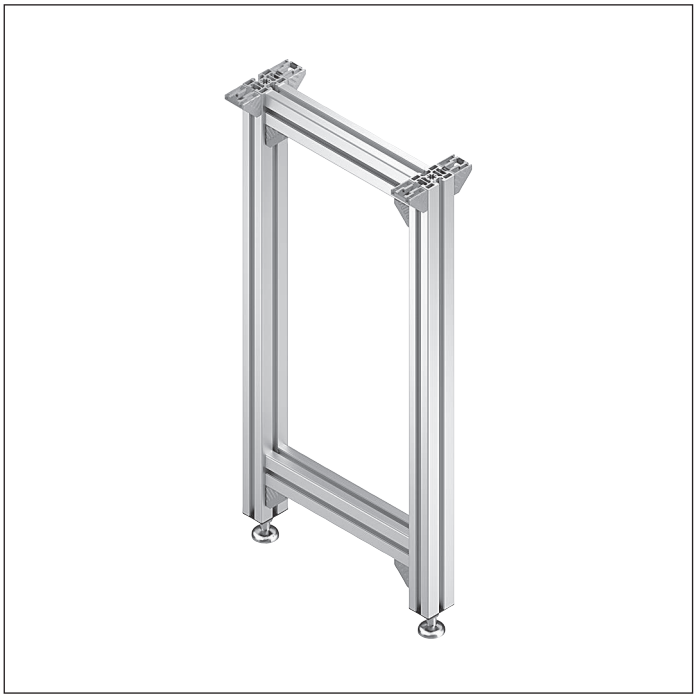


SZ 2/K-90, SZ 2/K-180 leg set **6-20**



HD 2/H leg set **6-24**

SZ 2 leg set



- Leg set for single-track conveyor sections on a single conveying level
- Standard version

The leg sets support one belt section or one conveyor unit.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

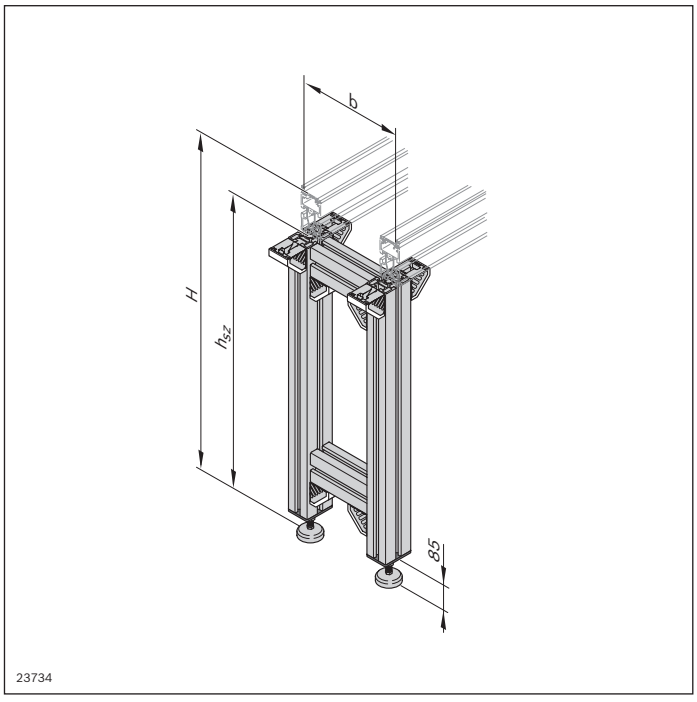
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



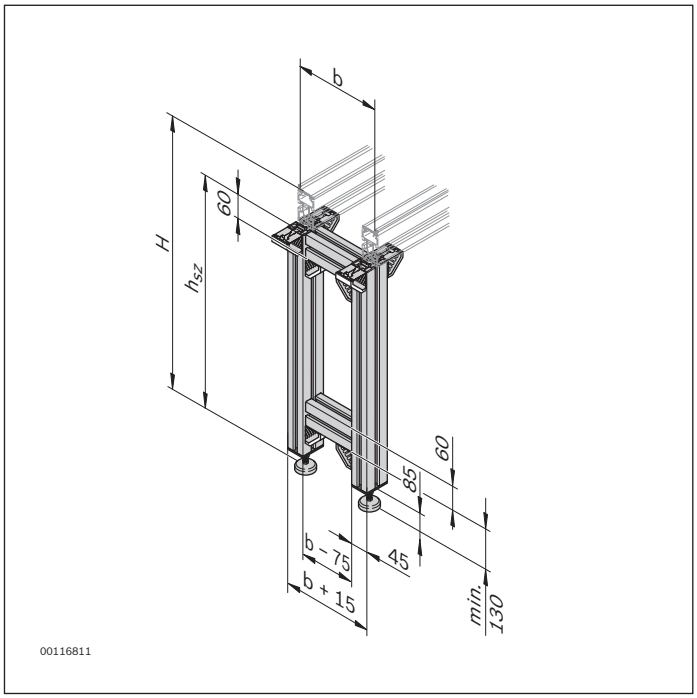
Material number		**3842996320**	
b (mm)	Track width in direction of transport	160 ... 1200	
H (mm)	Transportation height	ST 2/B-50:	350 ... 2000
H = h_{SZ}+ AO*		Lift gate:	355 ... 2000
		ST 2/B:	375 ... 2000
		ST 2/B-100:	395 ... 2000
AO	Installation location	55; 60; 80; 100	
	SP 2/B-50:	AO = 55	
	Lift gate:	AO = 60	
	ST 2/B; SP 2/BH		
	BS 2; BS 2/M:	AO = 80	
	ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H;		
	BS 2/R-V; CS/C:	AO = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	

*h_{SZ} = leg set height

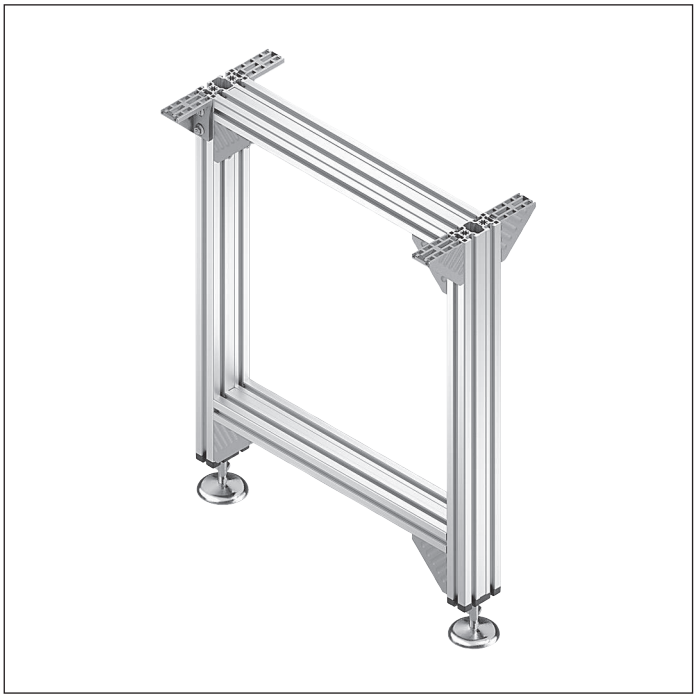
Technical data

Material number	**3842996320**
Features	
ESD	Yes

Dimensions



SZ 2/H leg set



- Leg set for heavy-duty single-track conveyor sections on one conveying level
- Standard version

The leg sets support one belt section or one conveyor unit with high loads. They are particularly suitable for BS 2/...-H belt sections and conveyor units with SP 2/...-H section profile.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

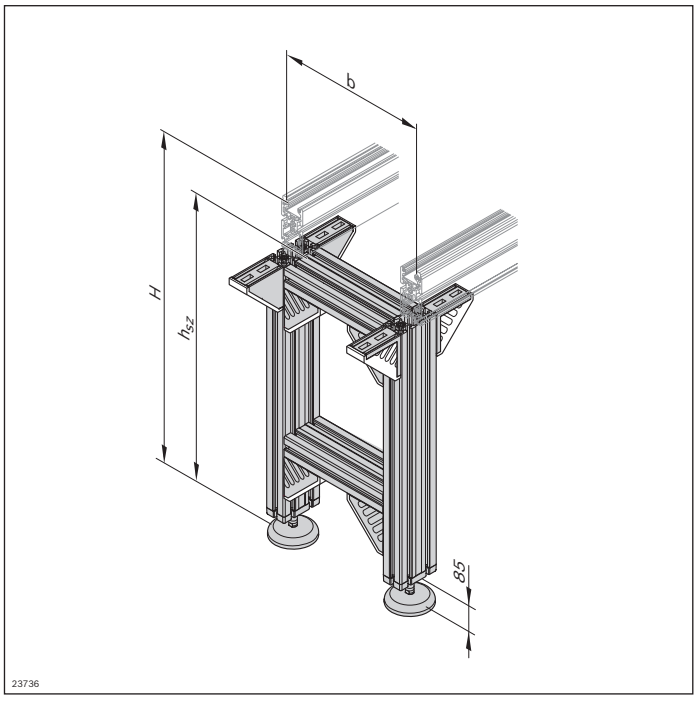
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



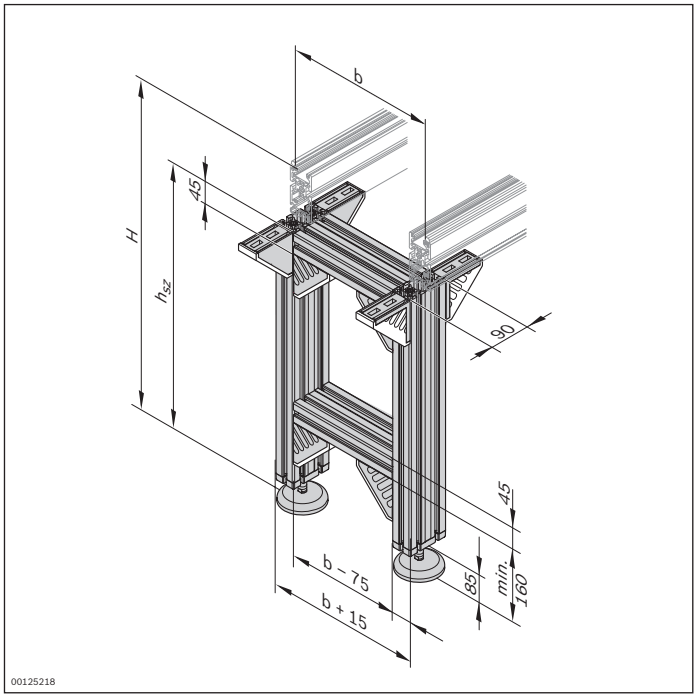
Material number		**3842996321**	
b (mm)	Track width in direction of transport	400 ... 1200	
H (mm) *H = h_{SZ}*+ AO*	Transportation height	ST 2/B-50: ST 2/B: ST 2/B-100:	410 ... 2000 435 ... 2000 455 ... 2000
AO	Installation location SP 2/B-50: ST 2/B; SP 2/BH; BS 2; BS 2/M: ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	55; 80; 100 AO = 55 AO = 80 AO = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	

*h_{SZ} = leg set height

Technical data

Material number	**3842996321**
Features	
ESD	Yes

Dimensions



SZ 2/U leg set



- Leg set for single-track conveyor sections on two conveying levels

The leg sets support two belt sections or two conveyor units side by side, e.g. for a workpiece return.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

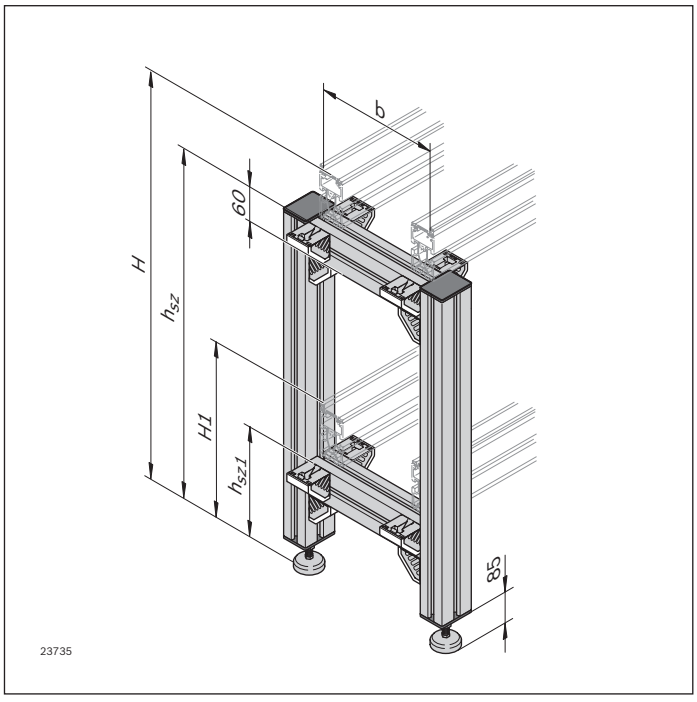
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



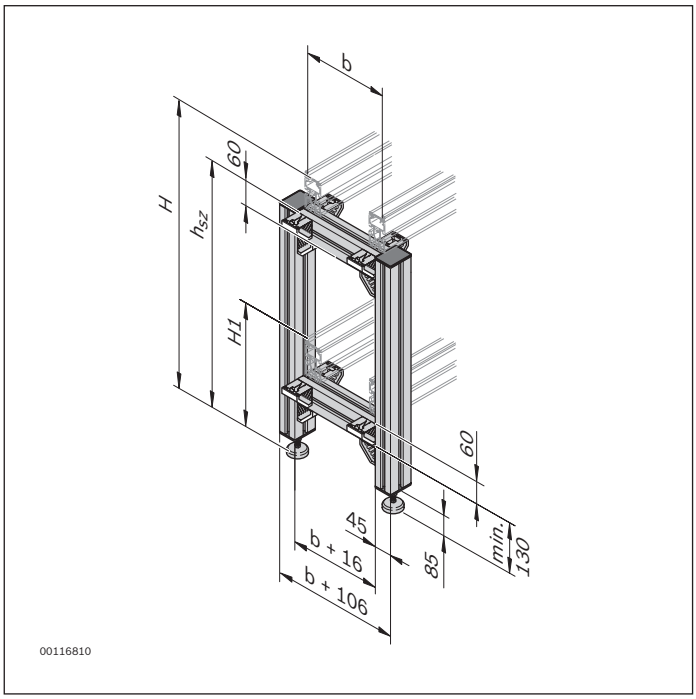
Material number		3842996322	
b (mm)	Track width in direction of transport	160 ... 1200	
H (mm)	Transportation height	ST 2/B-50:	475 ... 2000
H = h_{SZ}+ AO*[1)]		ST 2/B:	525 ... 2000
		ST 2/B-100:	565 ... 2000
H1 (mm)		ST 2/B-50:	245 ... 1770
*H1 = h_{SZ1}**+ AO1*[2)]		ST 2/B:	270 ... 1745
		ST 2/B-100:	290 ... 1725
AO[1)]	Installation location SP 2/B-50: ST 2/B; SP 2/BH; BS 2; BS 2/M: ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	55; 80; 100 AO = 55 AO = 80 AO = 100	
AO1[2]	Installation location SP 2/B-50: ST 2/B; SP 2/BH; BS 2; BS 2/M: ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	55; 80; 100 AO1 = 55 AO1 = 80 AO1 = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	

*h_{SZ} = leg set height at upper conveying level
** h_{SZ1} = leg set height at lower conveying level
[1] Upper conveying level
[2] Lower conveying level

Technical data

Material number	3842996322
Features	
ESD	Yes

Dimensions



SZ 2/U-H leg set



- Leg set for heavy-duty single-track conveyor sections on two conveying levels

The leg sets support two belt sections or two conveyor units side by side, e.g. for a workpiece return. They are particularly suitable for BS 2/...-H belt sections or conveyor units with SP 2/...-H section profile.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

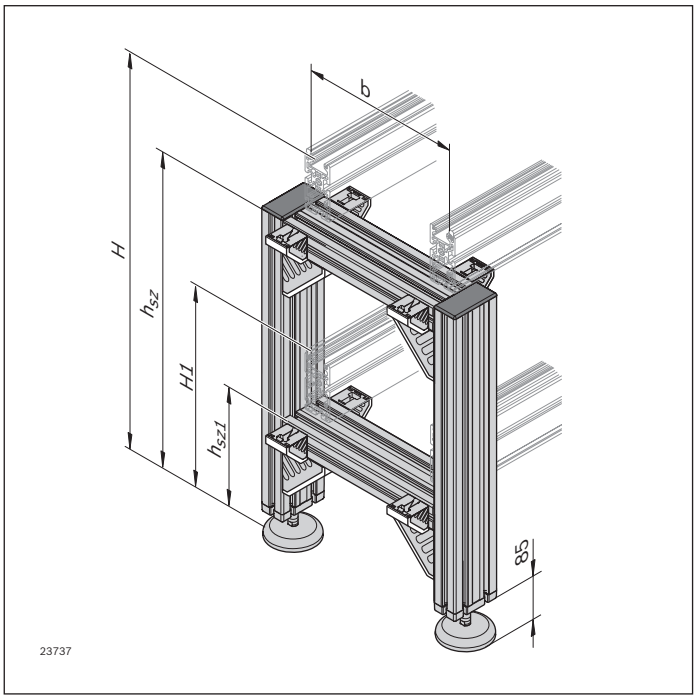
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



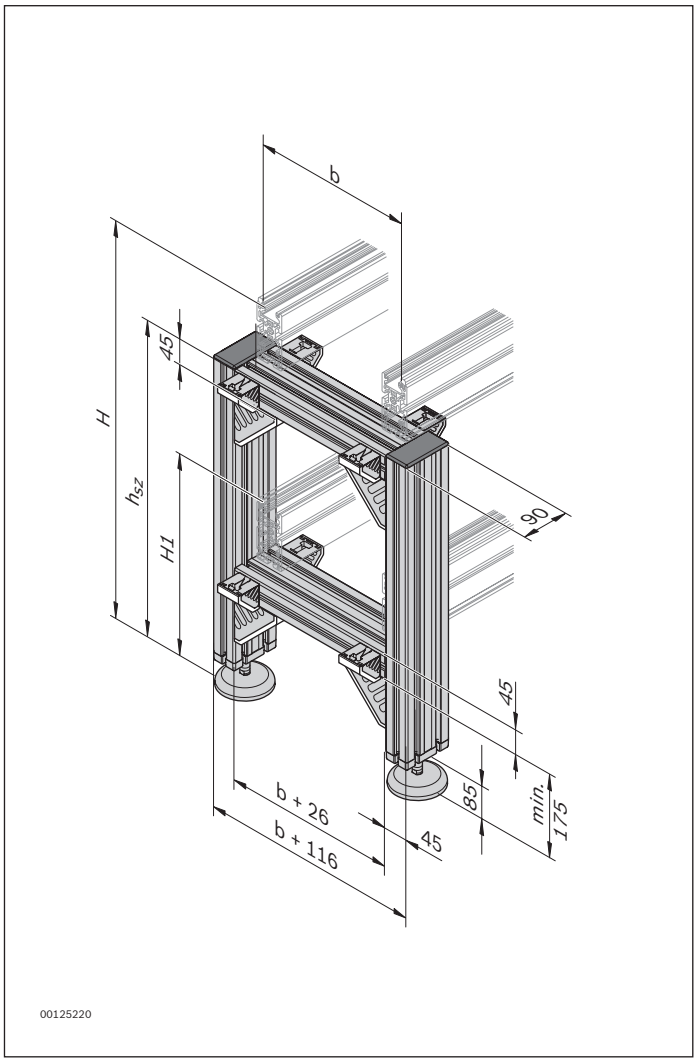
Material number		**3842996323**	
b (mm)	Track width in direction of transport	400 ... 1200	
H (mm)	Transportation height	ST 2/B-50:	535 ... 2000
$H = h_{SZ}$*+ AO^1		ST 2/B:	585 ... 2000
		ST 2/B-100:	625 ... 2000
H1 (mm)		ST 2/B-50:	275 ... 1740
$H1 = h_{SZ1}$**+ $AO1^2$		ST 2/B:	300 ... 1715
		ST 2/B-100:	320 ... 1695
AO^1	Installation location SP 2/B-50:	55; 80; 100 AO = 55	
	ST 2/B; SP 2/BH; BS 2; BS 2/M:	AO = 80	
	ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	AO = 100	
$AO1^2$	Installation location SP 2/B-50:	55; 80; 100 AO1 = 55	
	ST 2/B; SP 2/BH; BS 2; BS 2/M:	AO1 = 80	
	ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	AO1 = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	

*h_{SZ} = leg set height at upper conveying level
*h_{SZ1} = leg set height at lower conveying level
[1] Upper conveying level
[2] Lower conveying level

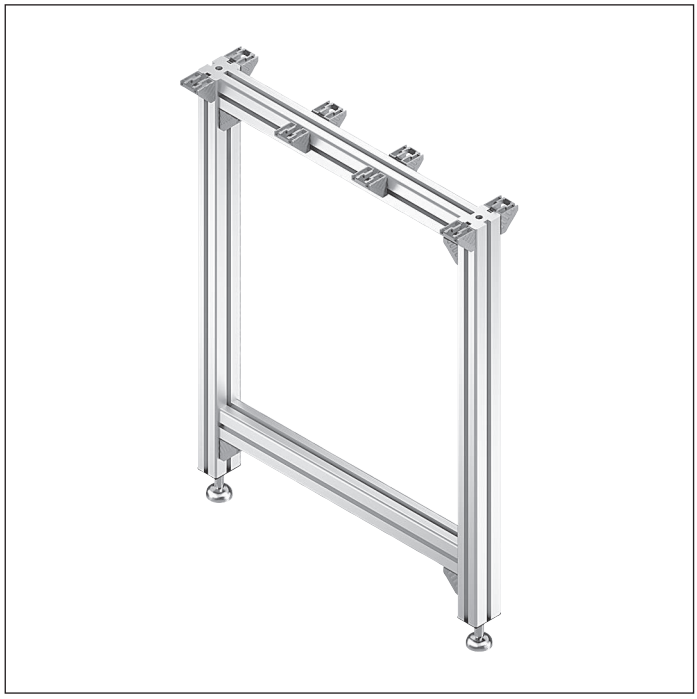
Technical data

Material number	**3842996323**
Features	
ESD	Yes

Dimensions



SZ 2/T leg set



- Leg set for double-track conveyor sections on one conveying level

The leg sets support two belt sections or two conveyor units side by side.

Accessories

Required accessories

- Foundation bracket (3842146848, see p. 6-28)
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

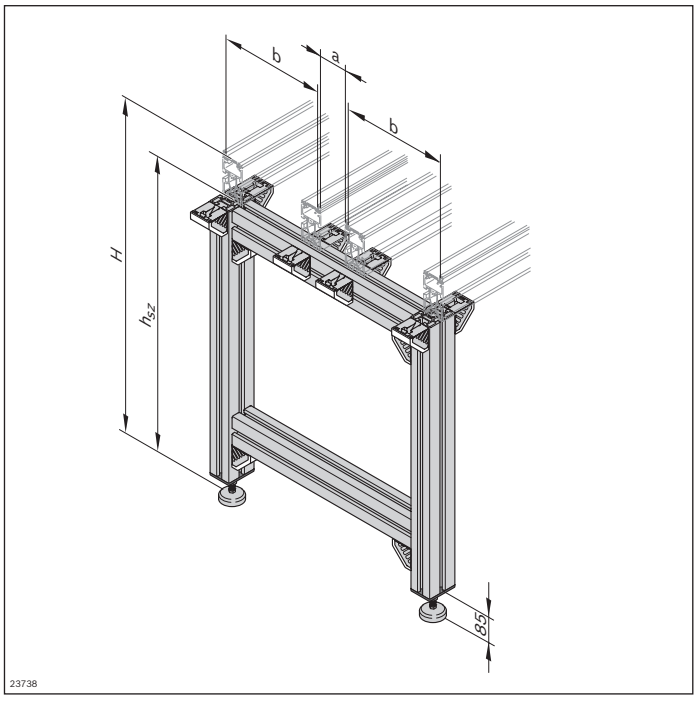
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



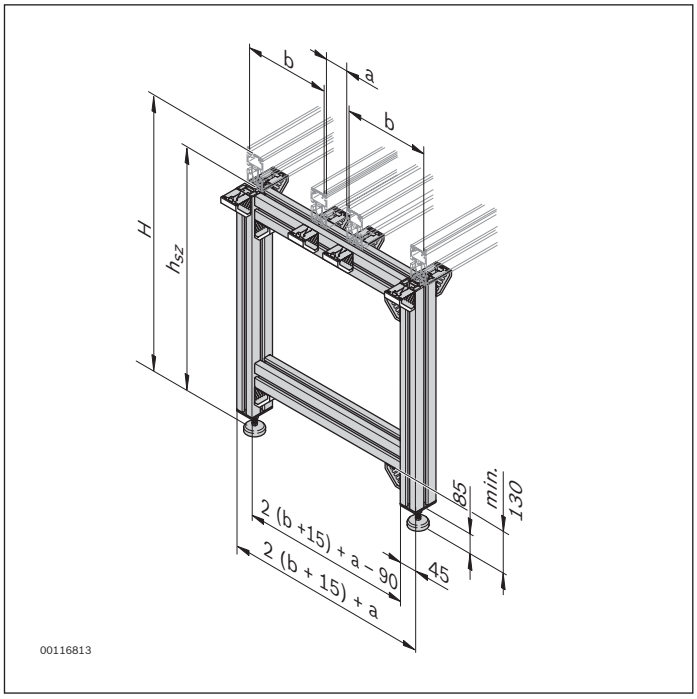
Material number		**3842996324**	
b (mm)	Track width in direction of transport	160 ... 480	
H (mm)	Transportation height	ST 2/B-50:	350 ... 2000
H = h_{SZ}+ AO*		ST 2/B:	375 ... 2000
		ST 2/B-100:	395 ... 2000
AO	Installation location SP 2/B-50: ST 2/B; SP 2/BH; BS 2; BS 2/M: ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	55; 80; 100 AO = 55 AO = 80 AO = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	
a (mm)	Distance between conveyors	45; 90; 135	

*h_{SZ} = leg set height

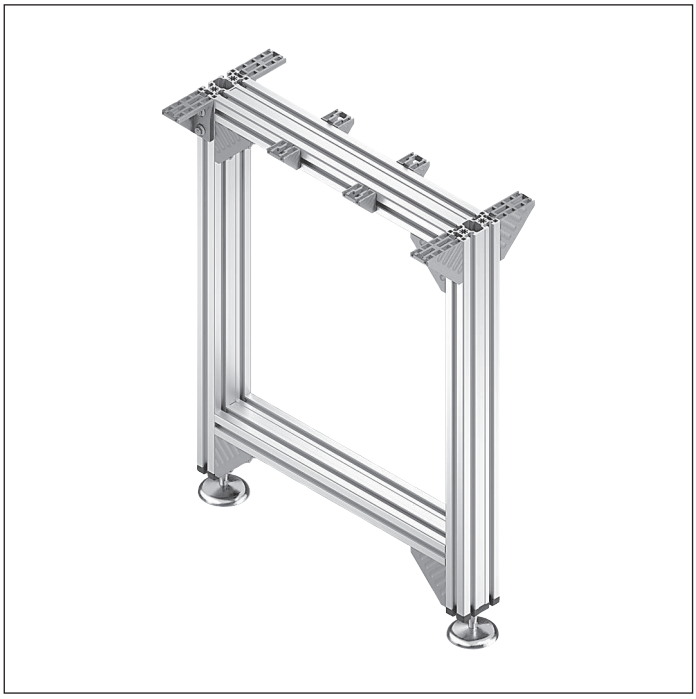
Technical data

Material number	**3842996324**
Features	
ESD	Yes

Dimensions



SZ 2/T-H leg set



- Leg set for heavy-duty double-track conveyor sections on one conveying level

The leg sets support two belt sections or two conveyor units side by side. They are particularly suitable for BS 2/...-H belt sections or conveyor units with SP 2/...-H section profile.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

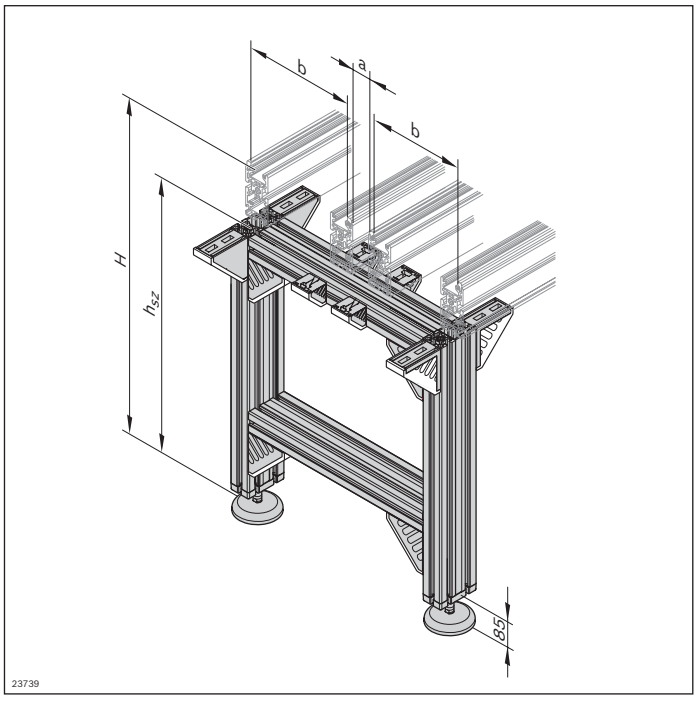
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material to mount on conveyor section, drive module or return unit

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



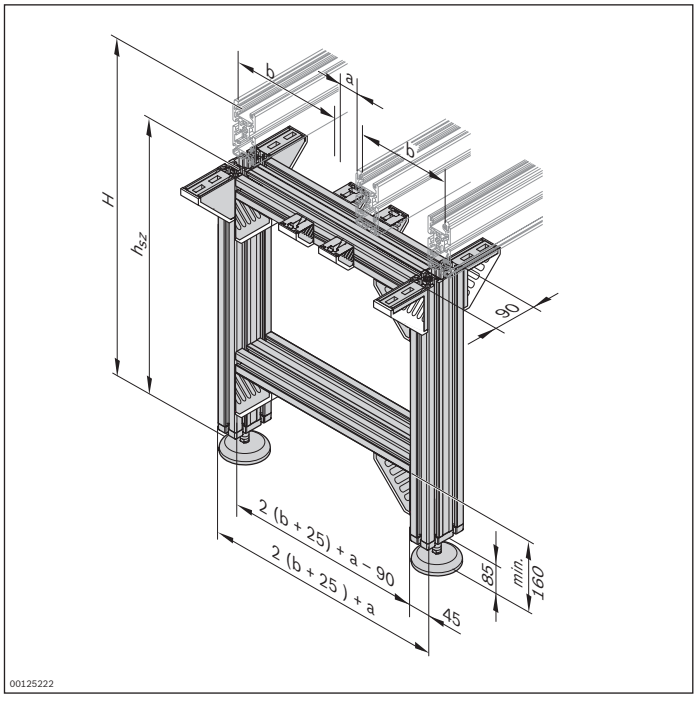
Material number		**3842996325**	
b (mm)	Track width in direction of transport	160 ... 480	
H (mm)	Transportation height	ST 2/B-50:	410 ... 2000
H = h_{SZ}+ AO*		ST 2/B:	435 ... 2000
		ST 2/B-100:	455 ... 2000
AO	Installation location SP 2/B-50: ST 2/B; SP 2/BH; BS 2; BS 2/M: ST 2/B-100; ST 2/C-100; ST 2/R-100; ST 2/C-H; ST 2/R-H; ST 2/R-V; BS 2/C; BS 2/C-H; BS 2/R; BS 2/R-H; BS 2/R-V; CS/C:	55; 80; 100 AO = 55 AO = 80 AO = 100	
MT	Kit 0 = not assembled 1 = assembled	0; 1	
a (mm)	Distance between conveyors	45; 90; 135	

*h_{SZ} = leg set height

Technical data

Material number	**3842996325**
Features	
ESD	Yes

Dimensions



SZ 2/K-90 leg set



- Leg set for K...-90 curves

The leg sets support a 90° curve.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

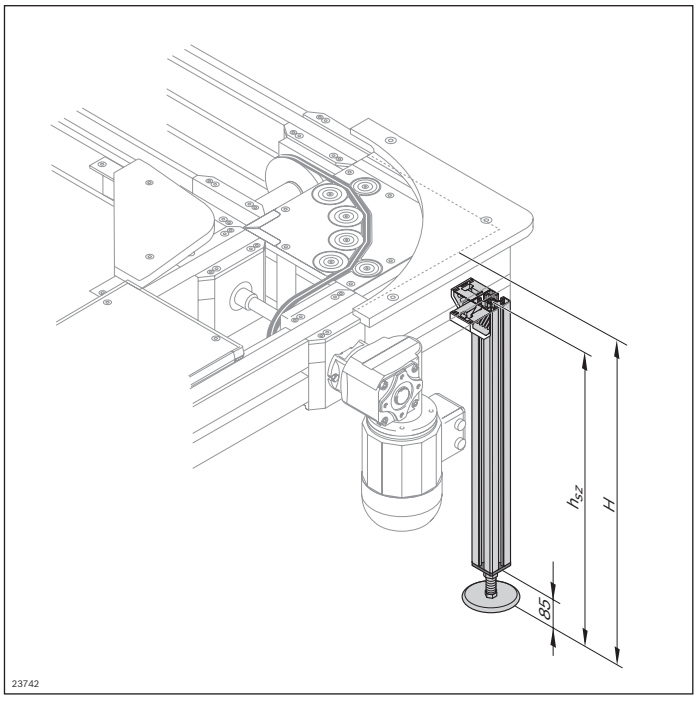
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material for mounting on the KE 2/90 curve

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



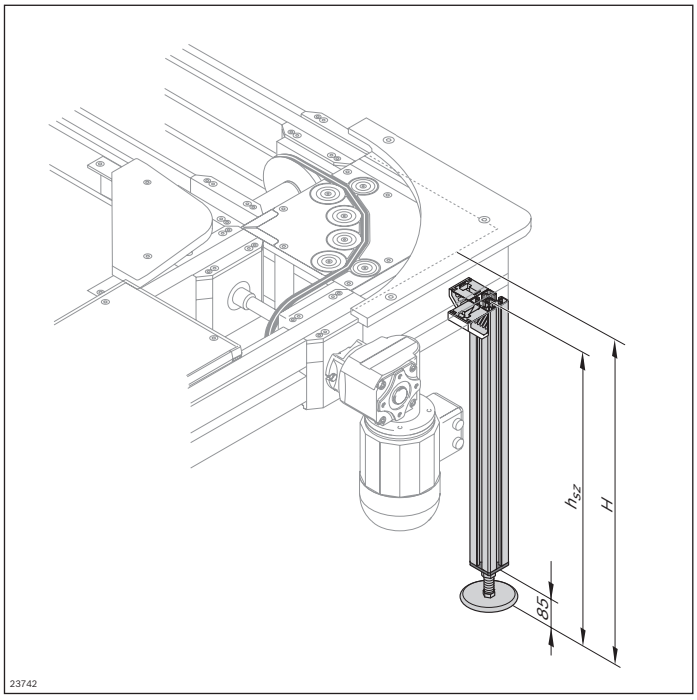
Material number		**3842996326**
H (mm) *H = h_{sz}*+ AO*	Transportation height	376 ... 2000
AO	Installation location	91
MT	Kit 0 = not assembled 1 = assembled	0; 1

*h_{sz} = leg set height

Technical data

Material number	**3842996326**
Features	
ESD	Yes

Dimensions



SZ 2/K-180 leg set



- Leg set for K...-180 curves

The leg sets support a 180° curve.

Accessories

Required accessories

- Foundation bracket (3842146848, see p.) 6-28
- Floor dowel (3842526560, see p.) 6-30

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

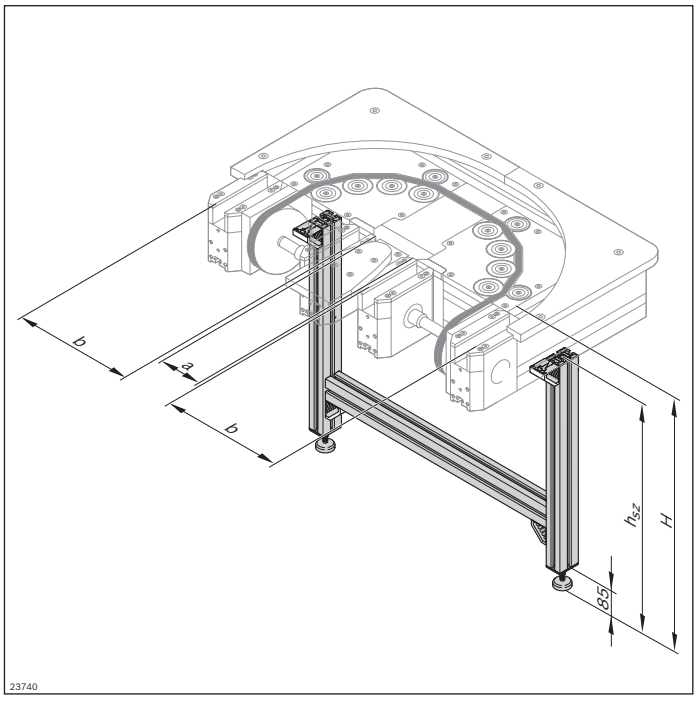
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. all fastening material for mounting on the KE 2/180 curve

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



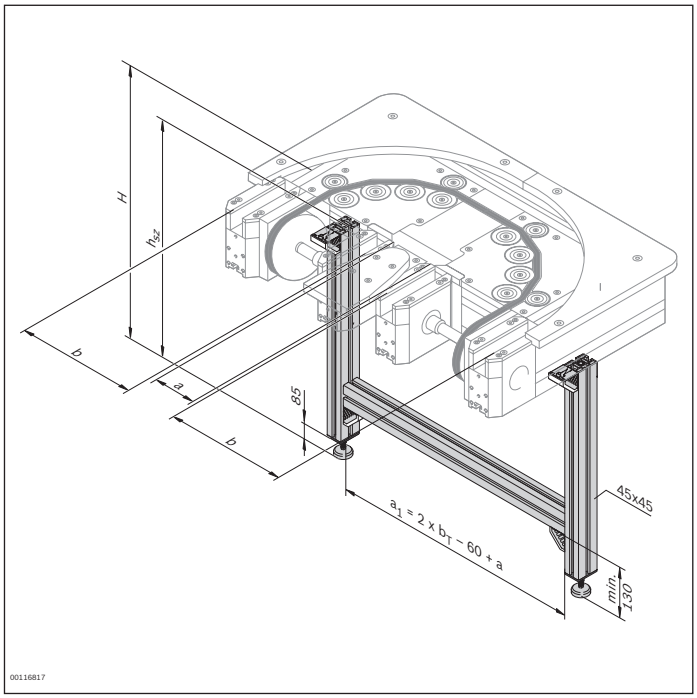
Material number		**3842996327**
b (mm)	Track width in direction of transport	160 ... 400
H (mm) *H = h_{SZ}*+ AO*	Transportation height	376 ... 2000
AO	Installation location	91
MT	Kit 0 = not assembled 1 = assembled	0; 1
a (mm)	Distance between conveyors	90; 135

*h_{SZ} = leg set height

Technical data

Material number	**3842996327**
Features	
ESD	Yes

Dimensions



HD 2/H leg set



- Leg sets for HD 2/H lift rotate unit
- For Size 2 over 50 kg (Size 2)
- For Size 3 generally (Size 3)

Accessories

Required accessories

- Foundation bracket (3842146848, see p. 6-28)
- Floor dowel (3842526560, see p. 6-30)

Recommended accessories

- Bracket caps, see p. 6-33

Delivery notes

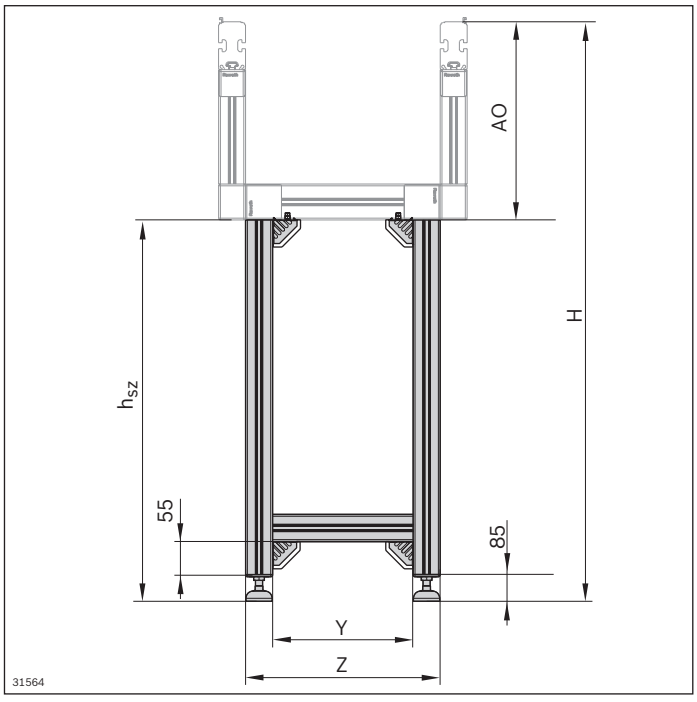
Scope of delivery

- Incl. height-adjustable leveling foot
- Incl. fastening material

Condition on delivery

- Assembled (MT = 1)
- Not assembled (MT = 0)

Ordering information



HD 2/H leg set, Size 2[1]

Material number		**3842993324**
H (mm) *H = h_{SZ}*+ AO*	Transportation height	595 ... 2000
DW (°)	Rotation angle	90; 180
MT	Kit 0 = not assembled 1 = assembled	0; 1

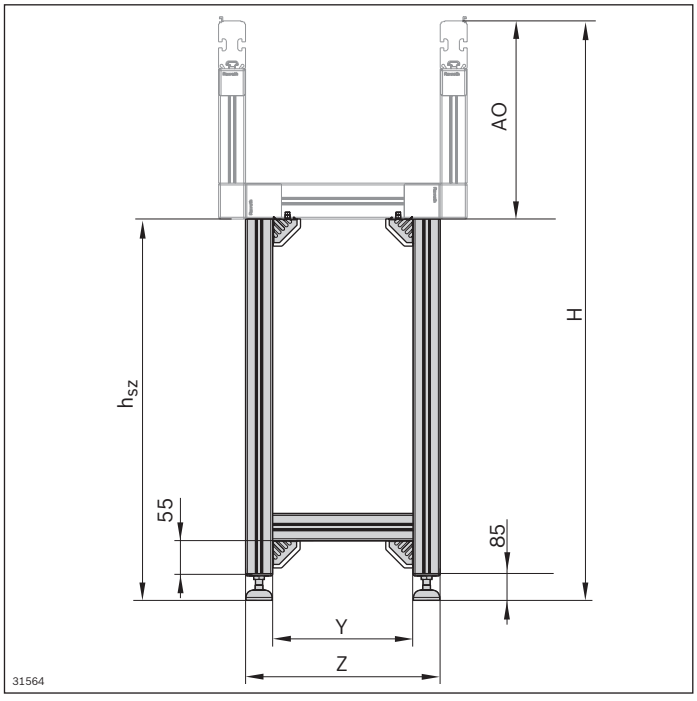
[1] For Size 2 over 50 kg
*h_{sz} = leg set height

HD 2/H leg set, Size 3[2]

Material number		**3842993325**
H (mm) *H = h_{SZ}*+ AO*	Transportation height	625 ... 2000
DW (°)	Rotation angle	90; 180
MT	Kit 0 = not assembled 1 = assembled	0; 1

[2] For Size 3 generally
*h_{sz} = leg set height

Dimensions



	Size 2, DW = 90°	**Size 2, DW = 180°**	**Size 3, DW = 90°**	**Size 3, DW = 180°**
AO	331	226	362	257
Y	235	235	480	480
Z	325	325	570	570

SZ 2–ST 2 reinforcement



For absorbing horizontal forces from the sections.
Installation at the end of the section

Delivery notes

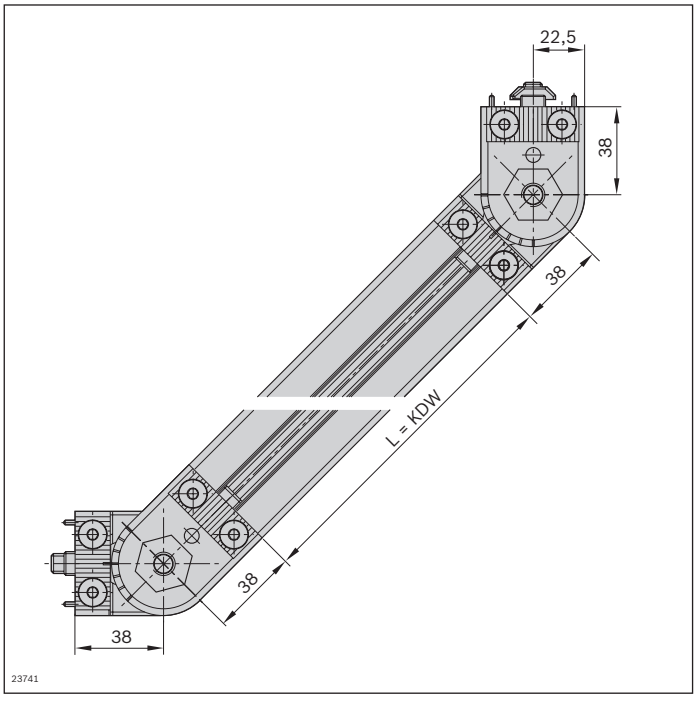
Scope of delivery

- Incl. fastening material

Condition on delivery

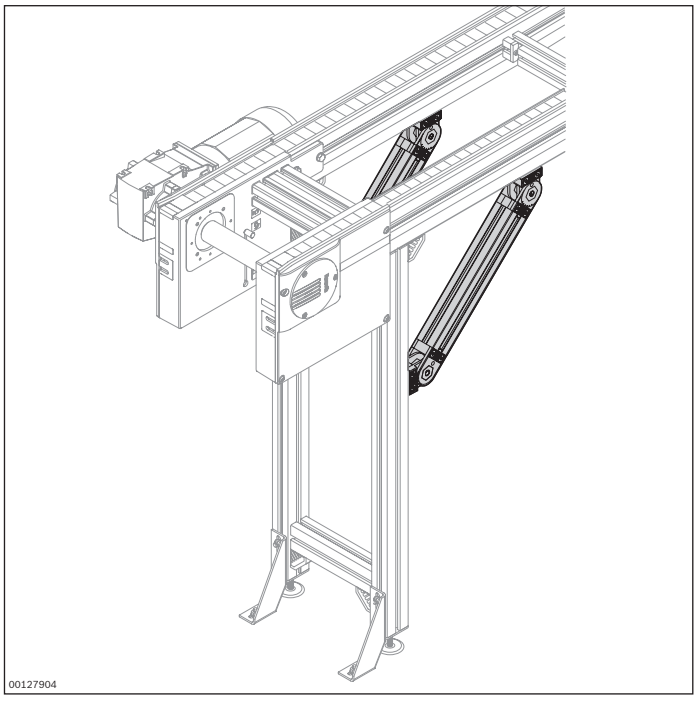
- Not assembled

Ordering information

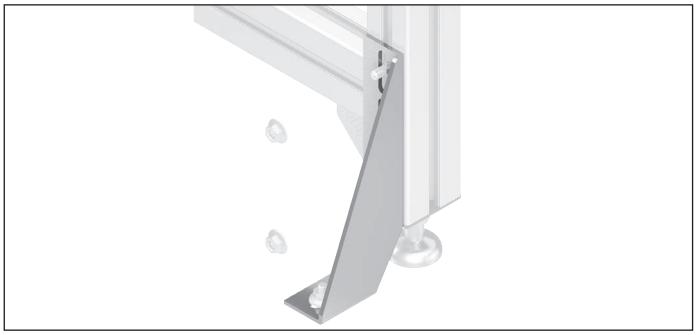


Material number		3842994910
l (mm)	Length	300 ... 2000

Technical data



210x90x42 foundation bracket



Foundation brackets are used for securing frames to the floor.

The hole for the floor dowel can be drilled out without removing the foundation bracket

Accessories

Required accessories

- Floor dowel (3842526560, see p.) 6-30
- M8x25 T-bolt (3842528718, see p.) 6-31
- M8 flange nut (3842345081, see p.) 6-32

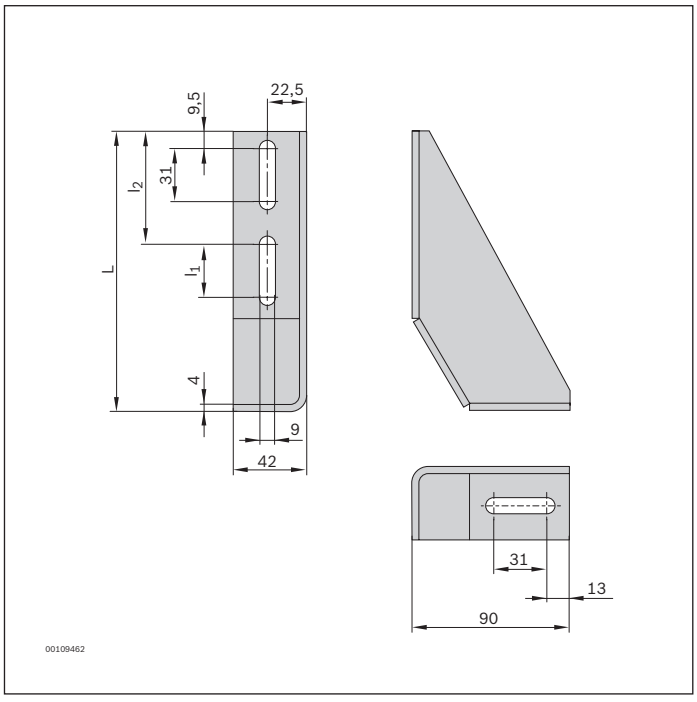
Ordering information

Product designation	Packaging unit	Material number
210x90x42 foundation bracket	20	3842146848

Technical data

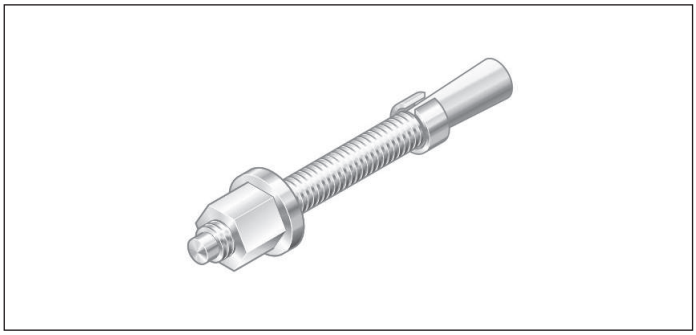
Material number	3842146848
Features	
Material specification	Plate steel; galvanized, transparent chromated

Dimensions



Length l_1 (mm)	Length l_2 (mm)	Dimension L (mm)
91	54.5	210

M8x80-15 floor dowel



- For anchoring foundation brackets to the floor

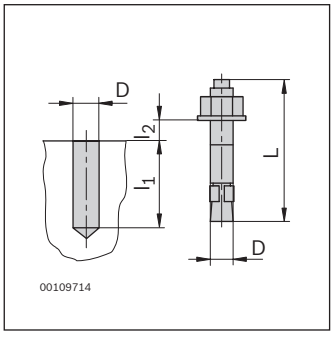
Ordering information

Product designation	Packaging unit	Material number
M8x80-15 floor dowel	100	3842526560

Technical data

Material number	**3842526560**
Features	
Material specification	Steel; galvanized

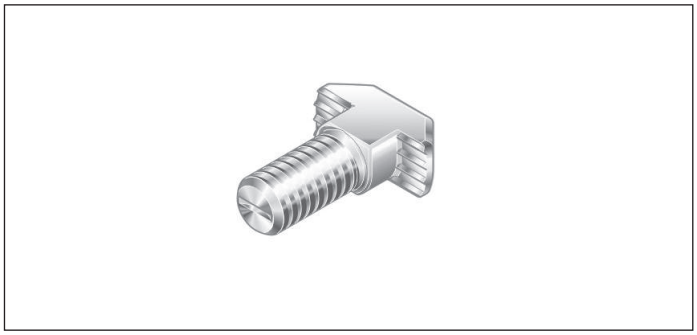
Dimensions



l_2 = maximum value

Length l_1 (mm)	Length l_2 (mm)	Dimension L (mm)	Dimension D
65	15	80	M8

HS10-M8x25 T-bolt



Accessories

Required accessories

- M8 flange nut (3842345081, see p. 6-32)

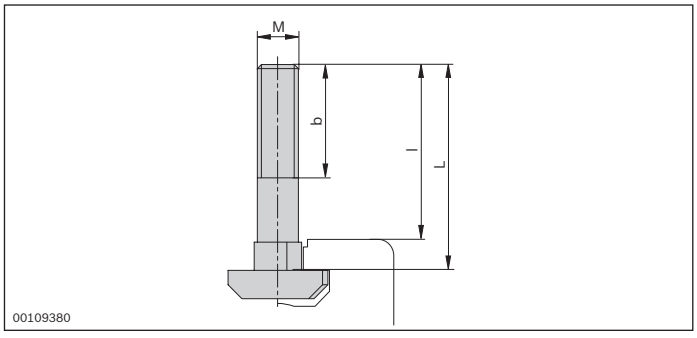
Ordering information

Product designation	Packaging unit	Material number
M8x25 T-bolt	100	3842528718

Technical data

Material number			**3842528718**
Features			
ESD			Yes
Material specification			Steel; galvanized
Thread size			M8x25
Dimensions			
Length	l	mm	19

Dimensions



Dimension b (mm)	Dimension l (mm)	Dimension L (mm)
19	19	25

M8 flange nut



Accessories

Required accessories

- M8x25 T-bolt (3842528718, see p. 6-31)

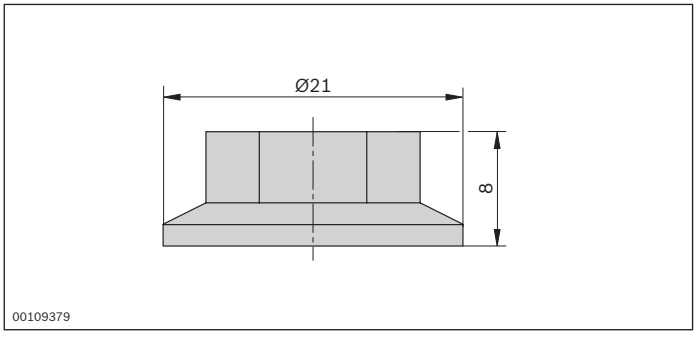
Ordering information

Product designation	Packaging unit	Material number
M8 flange nut	100	3842345081

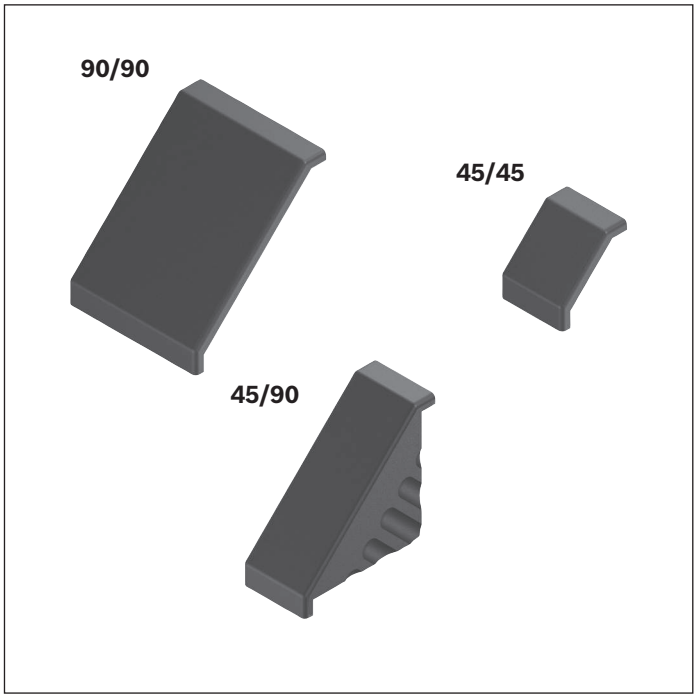
Technical data

Material number	3842345081
Features	
ESD	Yes
Material specification	Steel; galvanized
Thread size	M8

Dimensions



Bracket caps



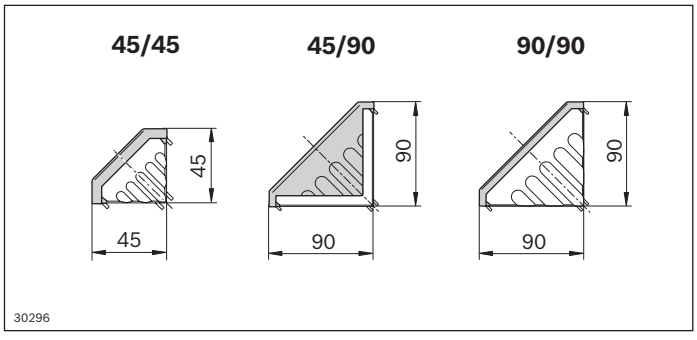
Ordering information

Product designation	Packaging unit	Material number
45x45 cap; signal gray	100	3842548862
45x45 cap; black	100	3842548863
45x90 cap; signal gray	100	3842548864
45x90 cap; black	100	3842548865
90x90 cap; signal gray	20	3842548868
90x90 cap; black	20	3842548869

Technical data

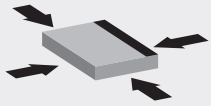
Material number	3842548862	3842548863	3842548864	3842548865	3842548868	3842548869
Features						
ESD	No	Yes	No	Yes	No	Yes
Material specification	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene

Dimensions



Leg set/bracket/cap combination matrix

		Bracket	Number of bracket caps (black or signal gray)					
			45x45 Black 3842548863	45x90 Black 3842548865	90x90 Black 3842548869	45x45 Signal gray 3842548862	45x90 Signal gray 3842548864	90x90 Signal gray 3842548868
Leg set	SZ 2 3842996320	45x45	8			8		
	SZ 2/H 3842996321	45x90		4			4	
		90x90			4			4
	SZ 2/U 3842996322	45x45	12			12		
	SZ 2/U-H 3842996323	45x45	8			8		
		90x90			4			4
	SZ 2/T 3842996324	45x45	12			12		
	SZ 2/T-H 3842996325	45x45	4			4		
		45x90		4			4	
		90x90			4			4
	SZ 2/K-90 3842996326	45x45	2			2		
	SZ 2/K-180 3842996327	45x45	4			4		
Leg set	HD 2/H Size 2 3842993324	45x45	4			4		
	HD 2/H Size 3 3842993325	45x45	4			4		

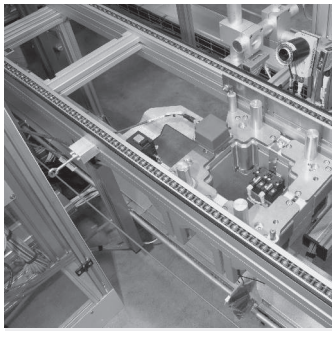


Positioning and orientation

Selection of positioning units **7-2**



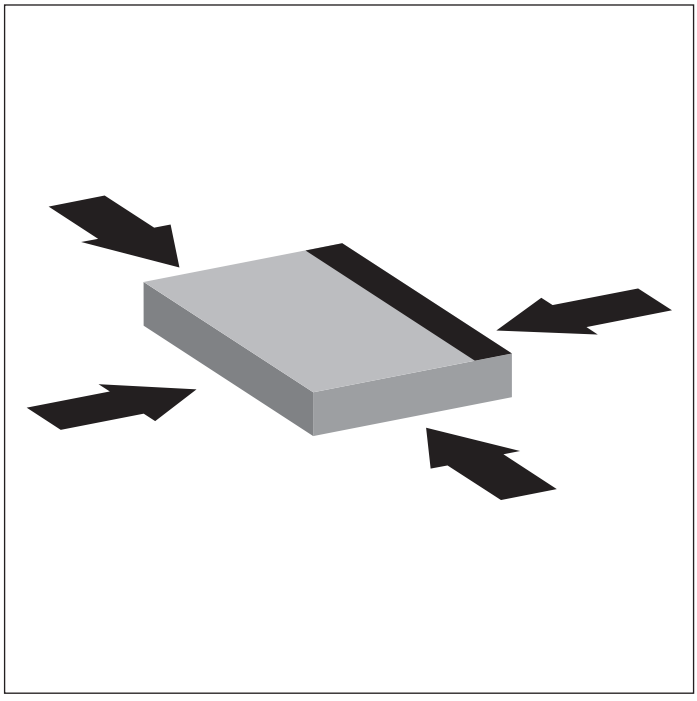




Selection of positioning units

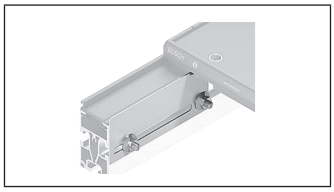
In order to process and maintain manufacturing tolerances, workpiece pallets must be stopped and positioned in the processing station.

Depending on the design, the positioning unit can move the workpiece pallets with an accuracy of ±0.05 mm.
Vertical process forces of up to 100 kN can be taken up.



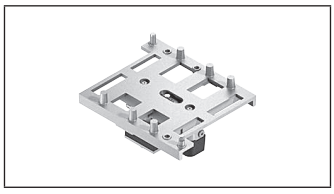
Intended use

- A VE 2 stop gate (see p. 8-6) is sufficient for use with a manual workplace that has low requirements for positioning accuracy and if no forces act upon the workpiece pallet
- Transverse positioning accuracy can be improved using a workpiece pallet inner guide (see p. 7-5)
- To lift the workpiece pallet from the conveyor medium: PE 2 (see p. 7-8) and PE 2/X (see p. 7-14)
- For larger lifting distances: HP 2 (see p. 7-27) and HP 2/L (see p. 7-18)
- For high forces, e.g., in presses or in riveting machines: PE 2/XP, see p. 7-36
- For process force decoupling: PE 2/XX, see p. 7-44
- To change the workpiece pallet orientation: HD 2 lift rotate unit (see p. 7-52) and HD 2/H lift rotate unit (see p. 7-60)



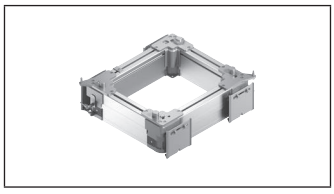
Workpiece pallet inner guide 7-5





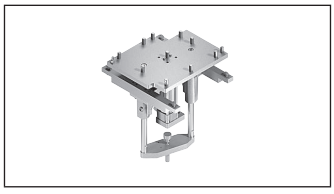
PE 2 positioning unit 7-8





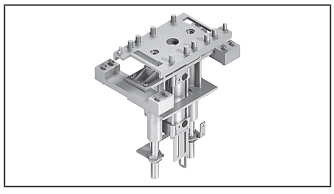
PE 2/X positioning unit 7-14





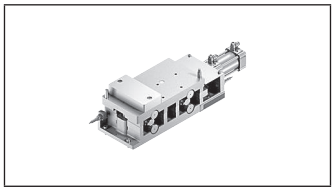
HP 2/L lift positioning unit 7-18





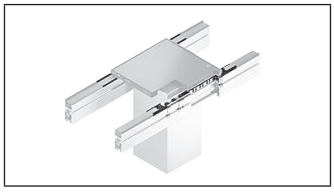
HP 2 lift positioning unit 7-27



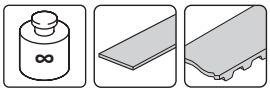


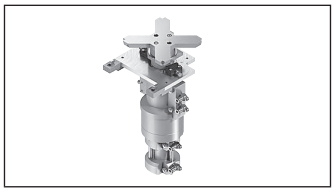
PE 2/XP positioning unit 7-36





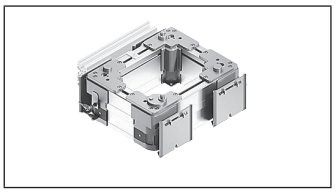
PE 2/XX process force decoupling 7-44





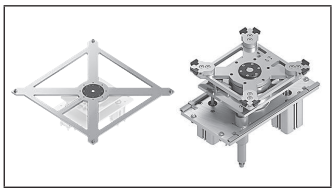
HD 2 lift rotate unit 7-52





PE 2/H positioning unit **7-56**



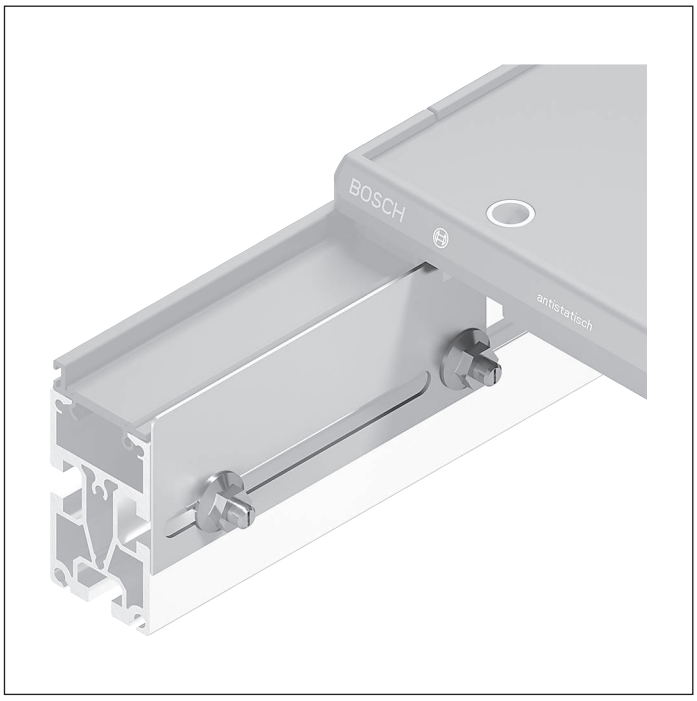


HD 2/H lift rotate unit **7-60**



Workpiece pallet inner guide





- Easy mounting on conveyor sections
- Positioning with the guide groove on the WT 2 workpiece pallet
- Can be combined with all WT 2, WT 2/F and WT 2/E workpiece pallets

Using a workpiece pallet inner guide and a VE 2 stop gate, a workpiece pallet with low requirements can be positioned at the repeat accuracy (±0.5 mm), i.e., for manual assembly processes.

Accessories

Required accessories

- VE 2/... stop gate, see p. 8-4

Delivery notes

Scope of delivery

- Including fastening material for installation on the ST 2 conveyor section or BS 2 belt section.

Condition on delivery

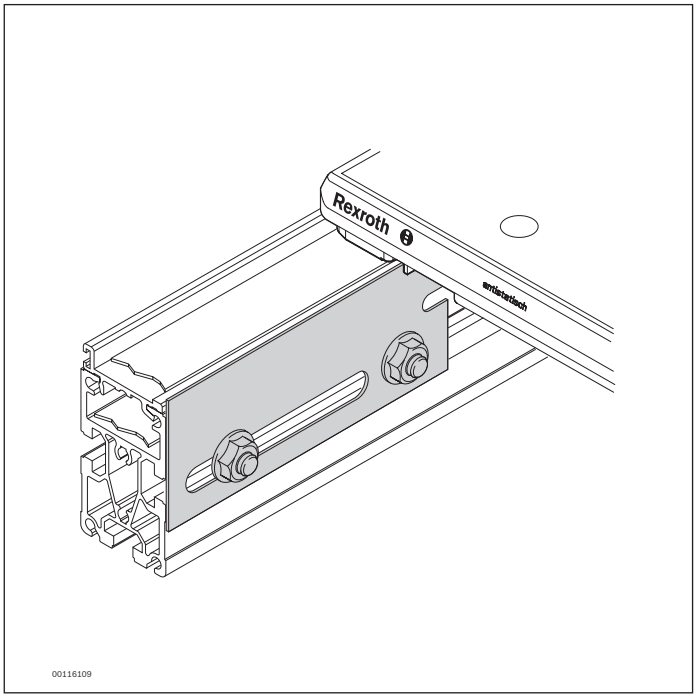
- Not assembled

Ordering information

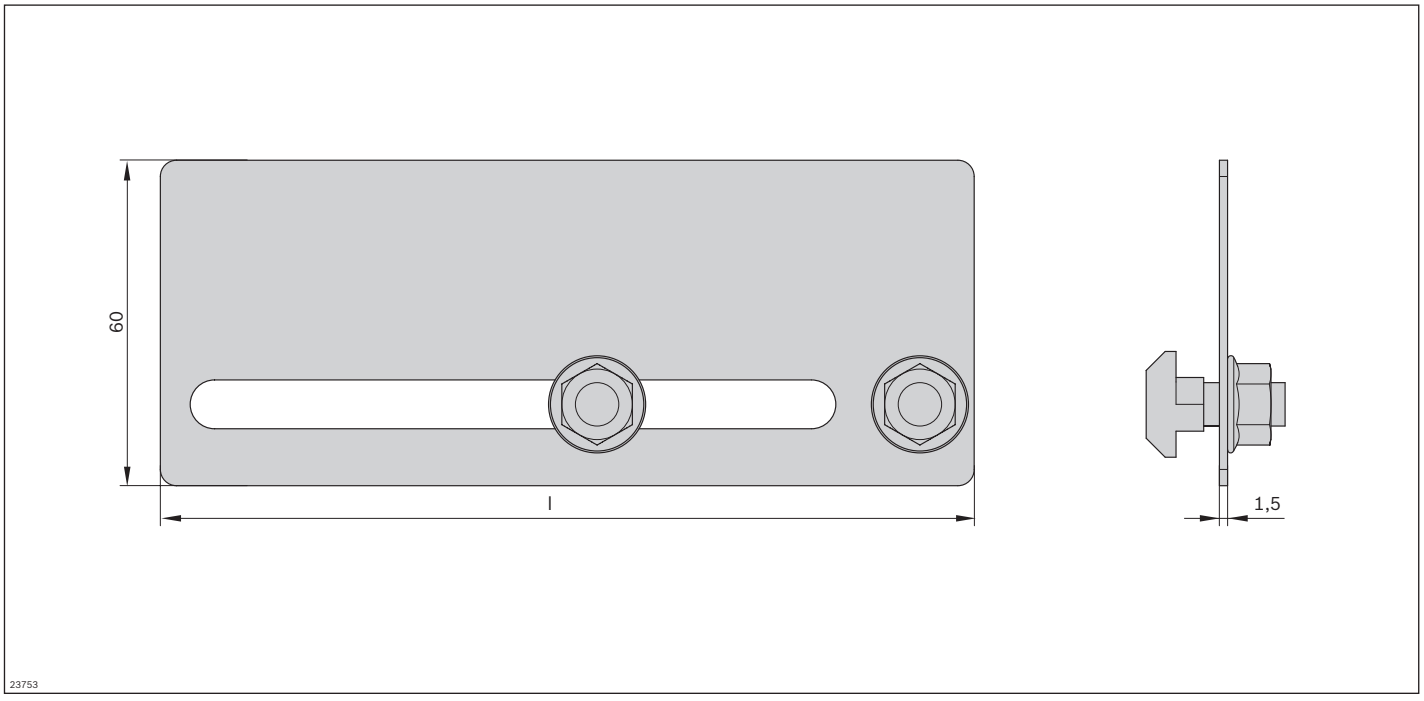
Product designation	Length l (mm)	Material number
Workpiece pallet inner guide	45	3842525634
Workpiece pallet inner guide	150	0842601001
Workpiece pallet inner guide	300	0842601003
Workpiece pallet inner guide	450	0842601004
Workpiece pallet inner guide	600	0842601006

Technical data

Material number			**0842601001**	**0842601003**	**0842601004**	**0842601006**	**3842525634**
Features							
ESD			Yes	Yes	Yes	Yes	Yes
Material specification			Steel; stainless	Steel; stainless	Steel; stainless	Steel; stainless	Steel; stainless
Dimensions							
Length	l	mm	150	300	450	600	45
Additional information							
Repeat accuracy		mm	±0.5	±0.5	±0.5	±0.5	±0.5

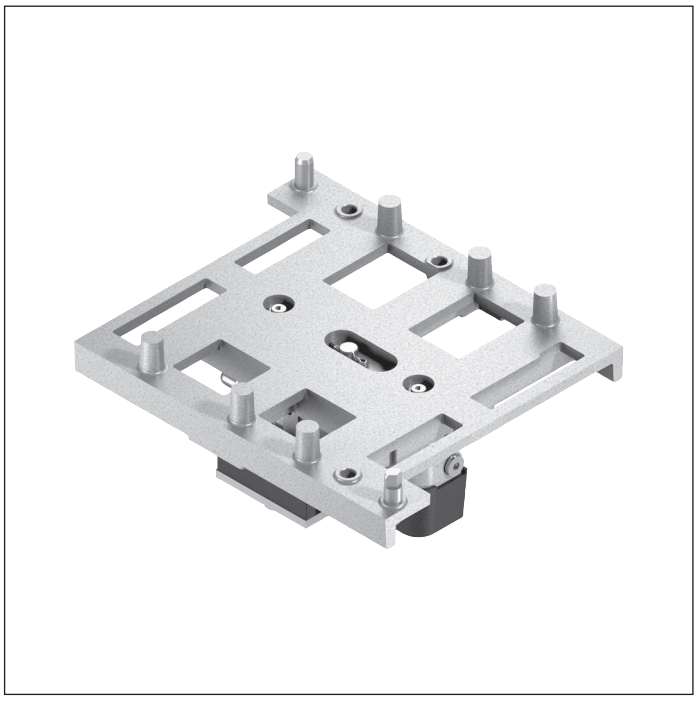


Dimensions



PE 2 positioning unit





- To position a workpiece pallet in a manual/automatic processing station
- For high positioning accuracy requirements up to ±0.1 mm
- Can be combined with all WT 2 and WT 2/F workpiece pallets up to 400 x 400 mm

Accessories

Required accessories

- VE 2/... stop gate, see p. 8-4
- Pneumatic equipment, connectors

Recommended accessories

- Position sensor kit for PE 2, see p. 7-12

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

- Fully assembled

Ordering information

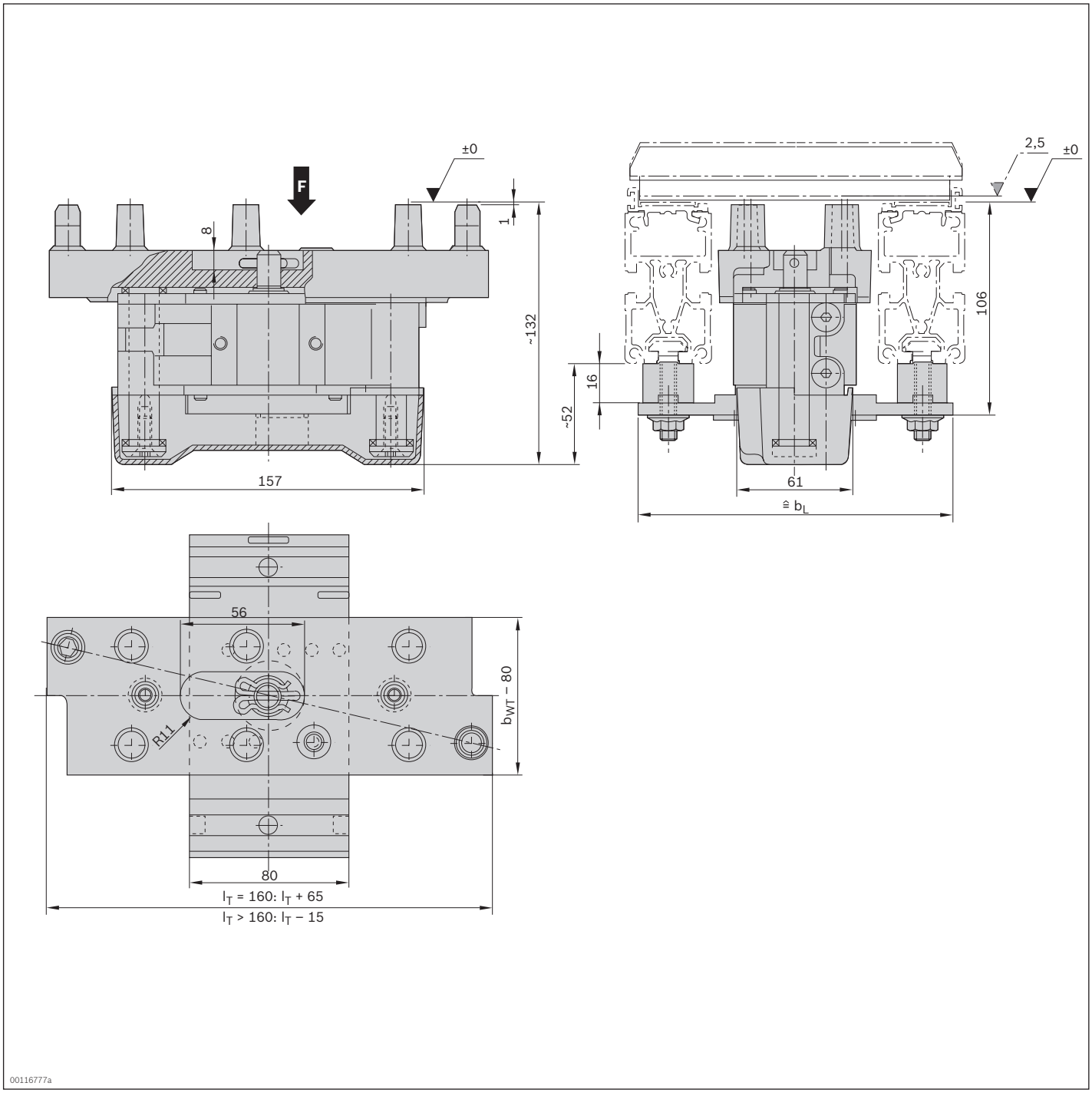
Product designation	Positioning unit w x l_d (mm)	Material number
PE 2 positioning unit	160 x 160	3842504706
PE 2 positioning unit	160 x 240	3842504707
PE 2 positioning unit	160 x 320	3842504708
PE 2 positioning unit	240 x 160	3842504710
PE 2 positioning unit	240 x 240	3842504711
PE 2 positioning unit	240 x 320	3842504712
PE 2 positioning unit	240 x 400	3842504713
PE 2 positioning unit	320 x 160	3842504714
PE 2 positioning unit	320 x 240	3842504715
PE 2 positioning unit	320 x 320	3842504716
PE 2 positioning unit	320 x 400	3842504717
PE 2 positioning unit	400 x 320	3842504718
PE 2 positioning unit	400 x 400	3842504719

Technical data

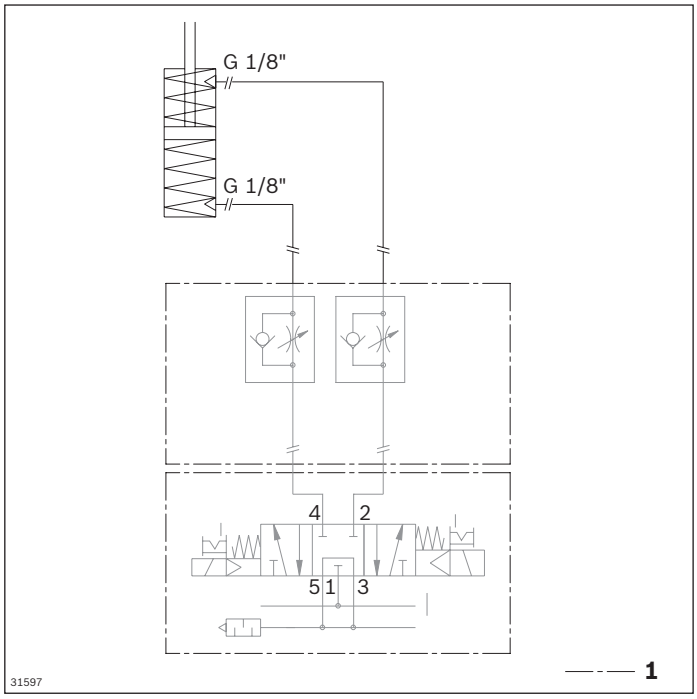
Material number			**3842504706 3842504712 3842504716 3842504707 3842504713 3842504717 3842504708 3842504714 3842504718 3842504710 3842504715 3842504719 3842504711**
Load			
Max. total workpiece pallet weight	m_G	kg	30
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector[1]	Ø	mm	G1/8"
WT lift above conveying level		mm	2.5
Repeat accuracy		mm	±0.1
Permissible vertical process forces[2]		N	300

[1] Connector for G1/8" thread must be attached by customer
[2] Incl. WT 2

Dimensions

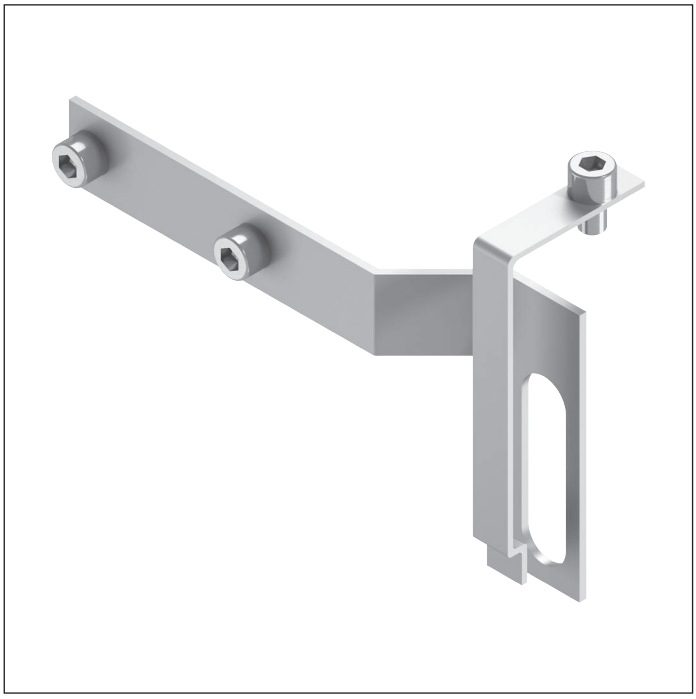

±0
F
8
1
~132
157
~52
16
2,5
±0
106
61
≙ b_L
56
R11
b_{WT} – 80
80
l_T = 160: l_T + 65
l_T > 160: l_T – 15
00116777a

Circuit diagram



1 Not included in delivery

Position sensor kit for PE 2



- For position sensor for PE 2 positioning unit

Accessories

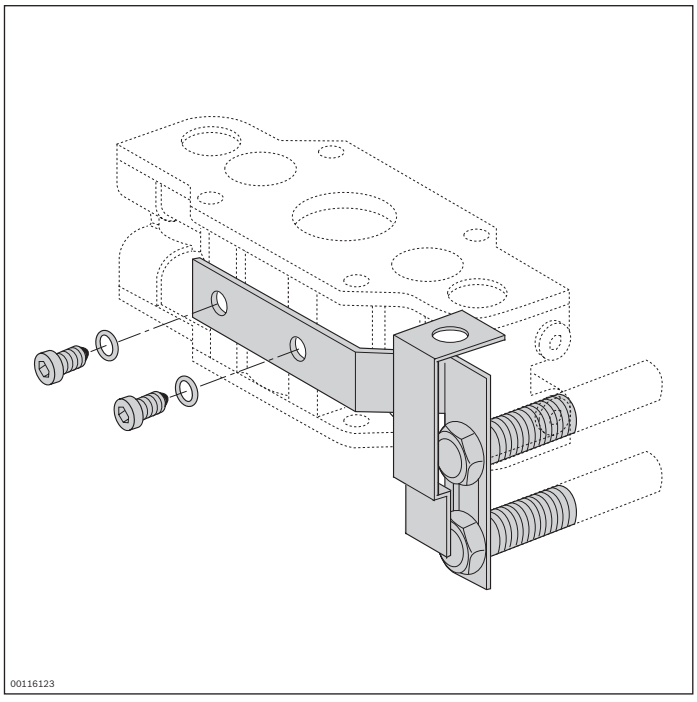
Required accessories

- PE 2 positioning unit, see p. 7-8
- M12x1 sensor with S_N= 4 mm rated sensing range, see p. 8-108

Ordering information

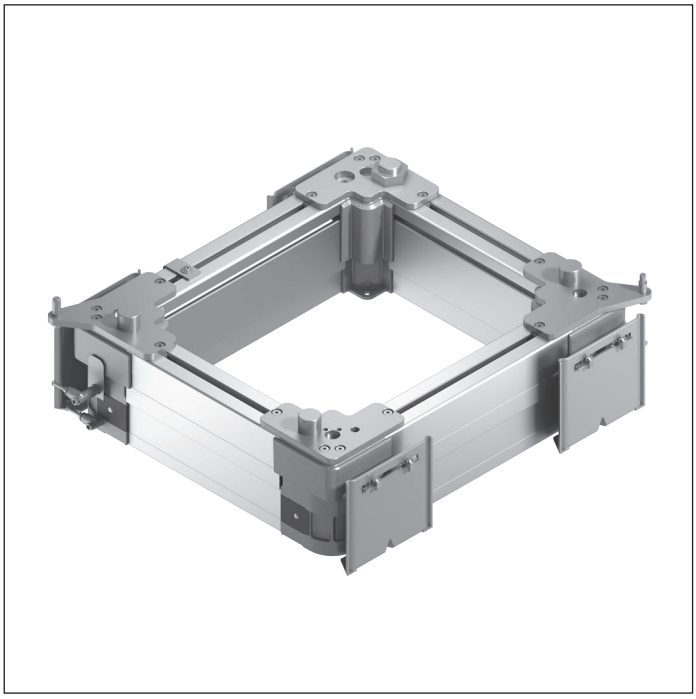
Product designation	Material number
Position sensor kit for PE 2	3842508933

Technical data



PE 2/X positioning unit





- To position a workpiece pallet in a manual/automatic processing station
- Positioning accuracy up to ±0.1 mm when assembled on a separate machine frame
- WT lift above transportation level, approx. 9 mm
- Positioning via the PE 2 positioning pins and the positioning bushings on the WT 2 workpiece pallet
- Mounting holes on lift frame as an optional fastening point for a separate machine frame
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/F workpiece pallets

Accessories

Required accessories

- VE 2/... stop gate, see p. 8-4

Delivery notes

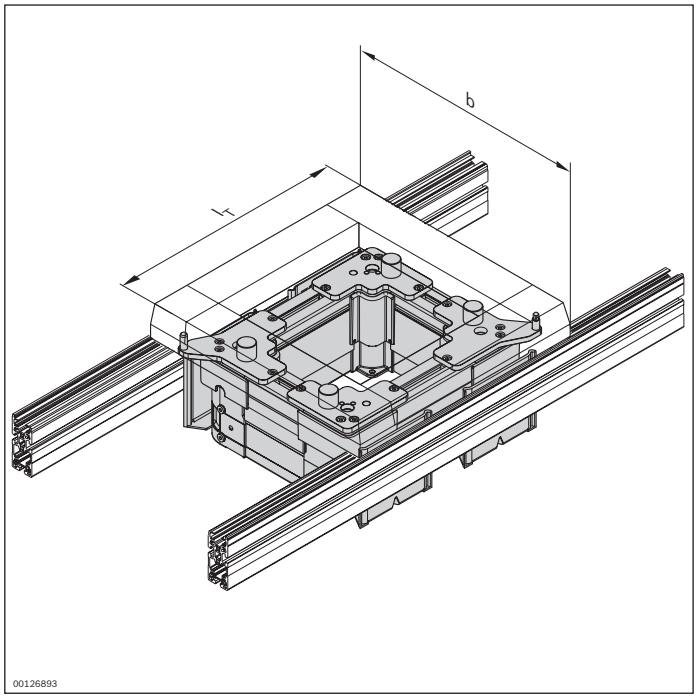
Scope of delivery

- Incl. fastening material
- Switch bracket for mounting M12 sensors for top position sensing

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842998324**
b (mm)	Track width in direction of transport	480; 640; 800; 1040; 1200
		480 ... 1200[1]
l_T (mm)	Length in direction of transport	480; 640; 800; 1040; 1200
		480 ... 1200[1]
w x l_d (mm x mm)	Combination options	480 x 480; 640; 800 640 x 480; 640; 800 800 x 480; 640; 800; 1040; 1200 1040 x 640; 800; 1040; 1200; 1200 x 800; 1040; 1200 480 ... 1200 x 480 ... 1200

[1)] Individual width variants available

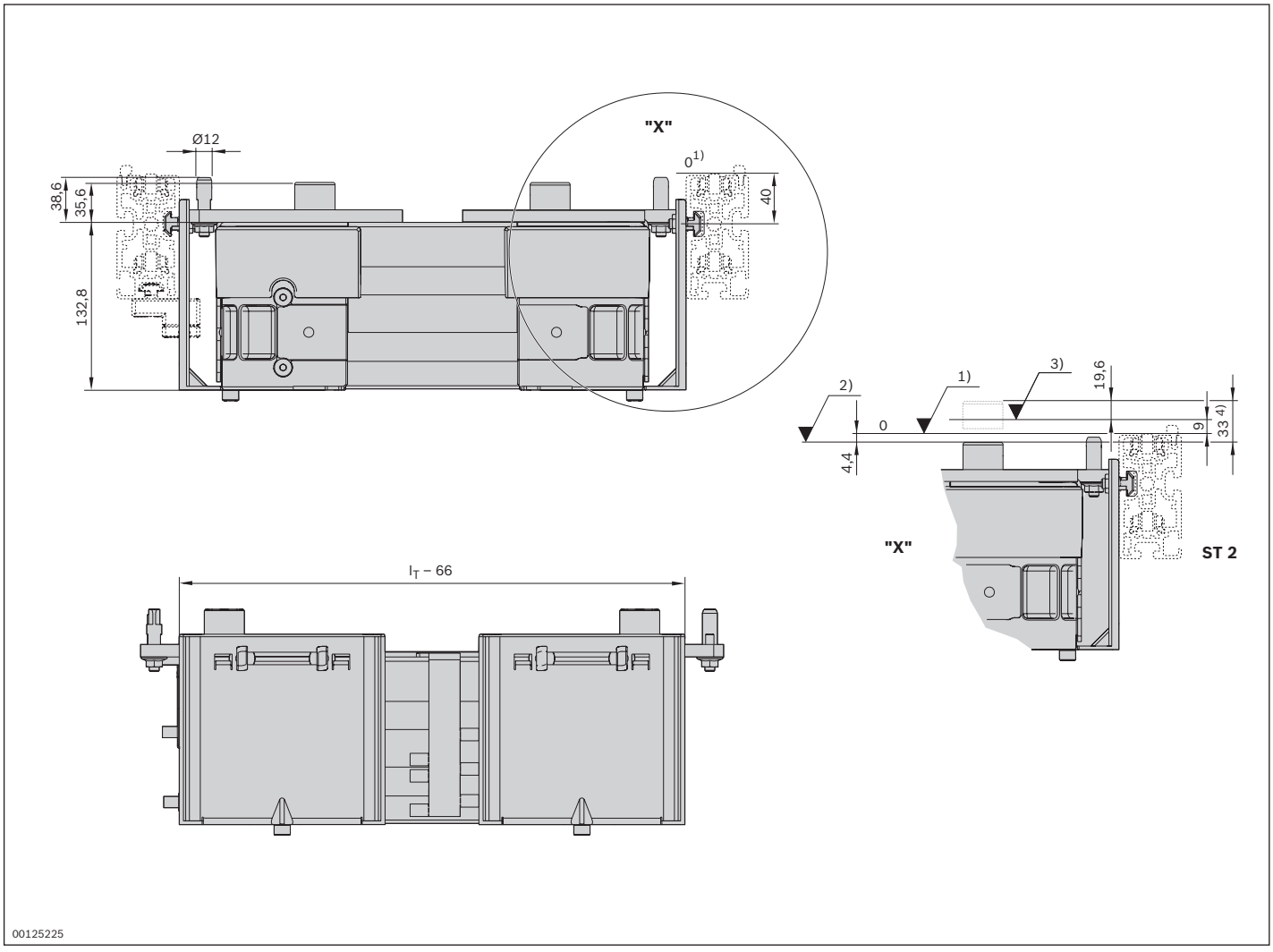
7

Technical data

Material number			**3842998324**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	8
WT lift above conveying level		mm	9
Repeat accuracy[1]		mm	±0.1
Permissible vertical process forces[2]		N	3500

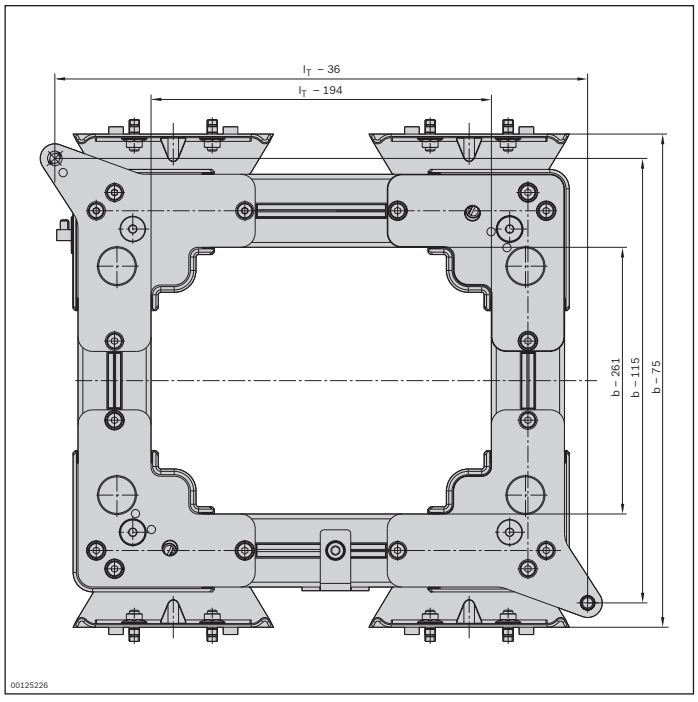
[1] When assembled on a separate machine frame
[2] Incl. WT 2

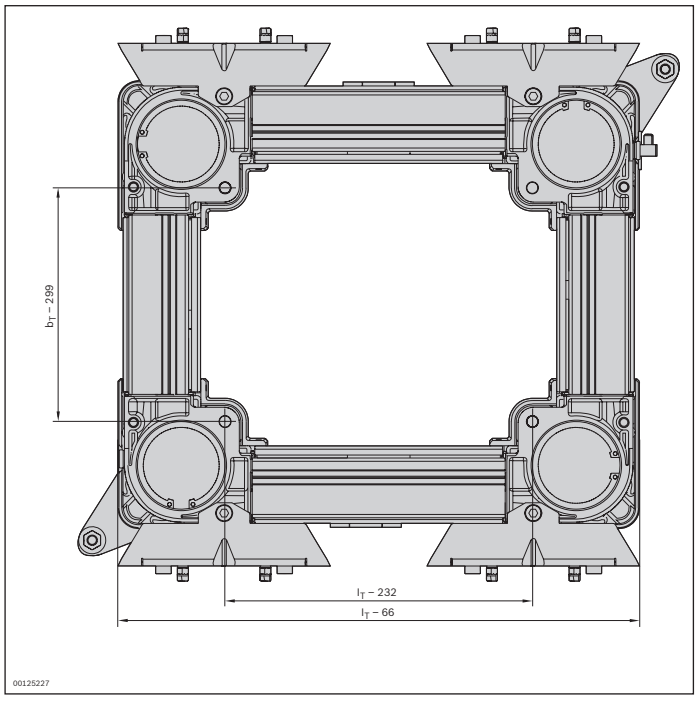
Dimensions



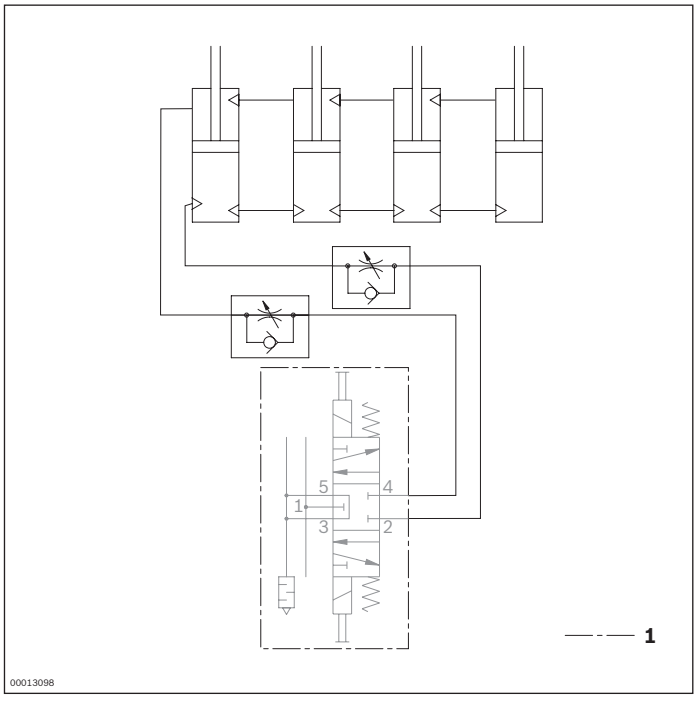
1) ST 2 conveyor level
2) PE 2/X, lower position: 4.4 mm below ST 2 conveyor level
3) PE 2/X, upper position: 9 mm above ST 2 conveyor level
4) Total stroke 33 mm

Dimensions



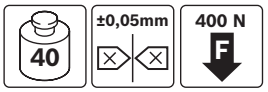


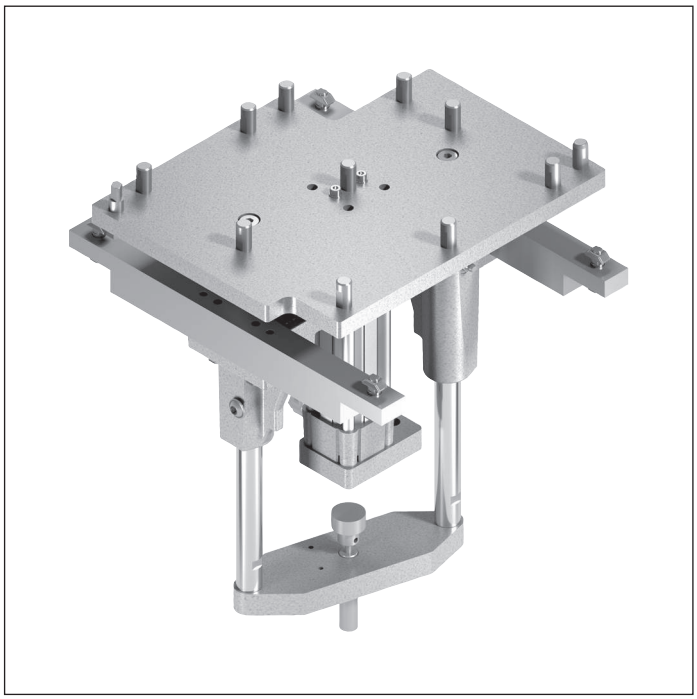
Circuit diagrams



1 Not included in delivery

HP 2/L lift positioning unit





- Positions a workpiece pallet in a processing station with high positioning accuracy requirements
- Positioning with exchangeable positioning pins in the HP 2/L and positioning bushings in the WT 2 workpiece pallet
- Lifting cylinder Ø 40 mm with damping for the lower and upper end position
- Exchange of lifting cylinder possible without disassembling the lift plate
- 5 lift ranges h_0 from 0 ... 240 mm, continuously adjustable central lift height within the lift range
- Optional lifting cylinder for b = 240 mm, center (HA = 0) or offset (HA = 1).
  Space-saving arrangement made possible by inner WT stop
- Adjustment time at H = 50 mm without load:
  Upward stroke = 0.5 s, downward stroke = 0.5 s
  (= lift range from 0 to 28 mm)
- Can be combined with workpiece pallets WT 2, WT 2/F, WT 2/E

Accessories

Required accessories

- Position sensor set for SA lifting cylinder, see p. 7-22
- Position sensor set with RA turret stop, see p. 7-26
- HP 2/L housing element, see p. 7-18

Delivery notes

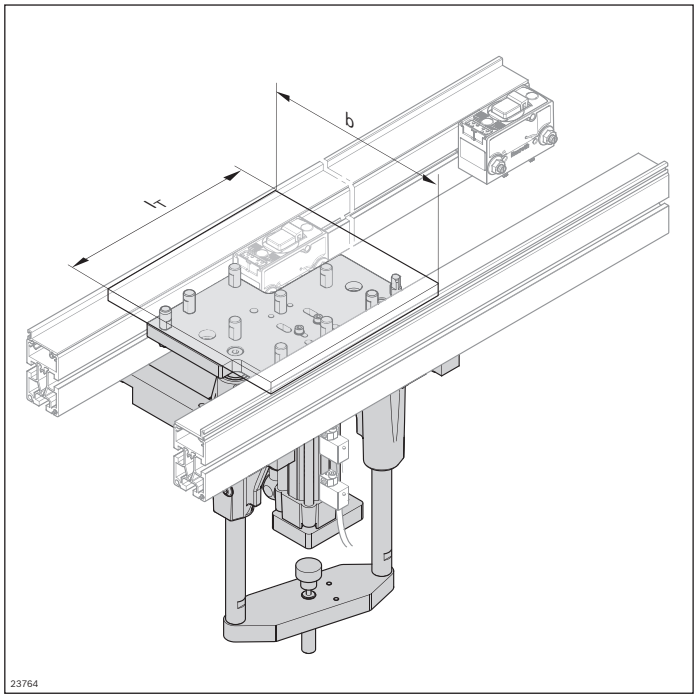
Scope of delivery

- Incl. fastening material
- Incl. throttle non-return valve

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842998952**
b (mm)	Track width in direction of transport	160; 240; 320
l_T (mm)	Length in direction of transport	160; 240; 320
w x l_d (mm x mm)	Combination options	160 x 160; 240; 320 240 x 160; 240; 320 320 x 160; 240; 320
h_N (mm)	Nominal stroke	50; 100; 160; 200; 250
AO	Installation location Under the conveyor section (AO = UB) On the machine table (AO = AT) For custom design (AO = O)	UB; AT; O
HA	Lift arrangement Centered (HA = 0) Eccentric (HA = 1)	0; 1[1]

[1] HA = 1 only when b = 240 mm

Technical data

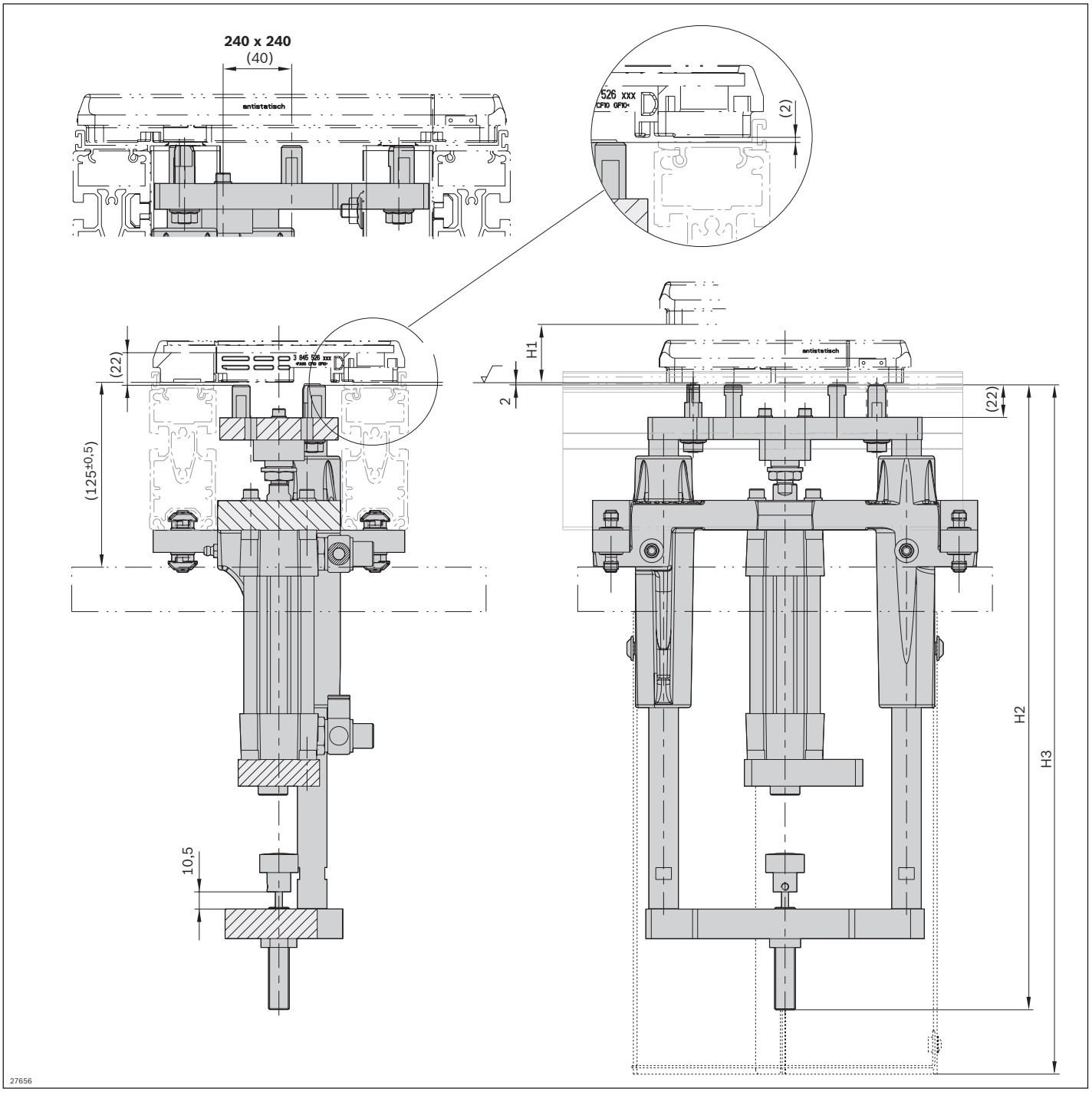
Material number			**3842998952**
Load			
Max. total workpiece pallet weight	m_G	kg	40
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	Ø	mm	8
Repeat accuracy[1]		mm	±0.05
Permissible vertical process forces[2]		N	400

[1] Applies only to strokes of up to 204 mm
[2] Incl. WT 2

Lift range

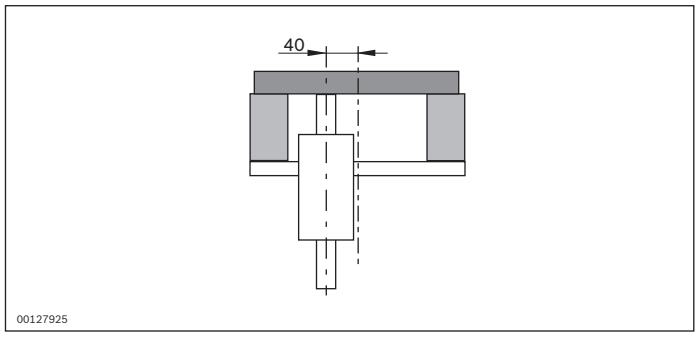
Nominal stroke h_N (mm)	**WT lift above conveying level h_0 (mm)**
50	0 ... 28
100	35 ... 78
160	95 ... 138
200	135 ... 178
250	185 ... 228

Dimensions

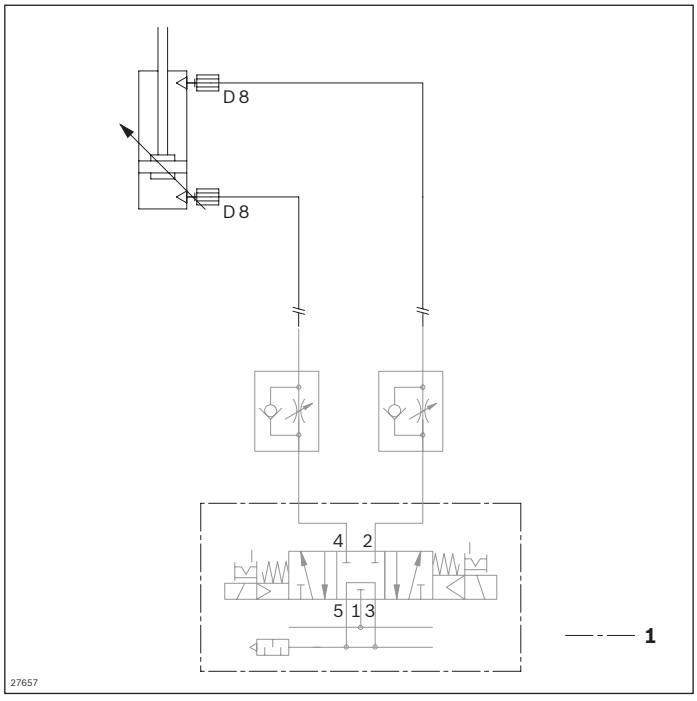


Compressed air (bar)	Lifting force (N)
4	350
5	450
6	550

Offset lifting cylinder (HA = 1)

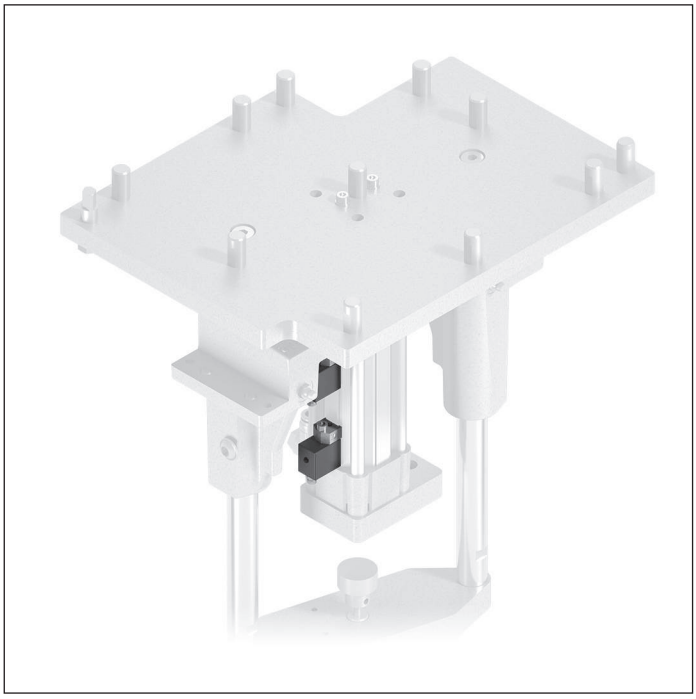


Circuit diagrams



1 Not included in delivery

SA cylinder position sensor



- Cylinder switch with clamping holder for lifting cylinder position sensing

Note: Position sensor can only be mounted on the side

Accessories

Required accessories

- Connection cable with plug

Delivery notes

Scope of delivery

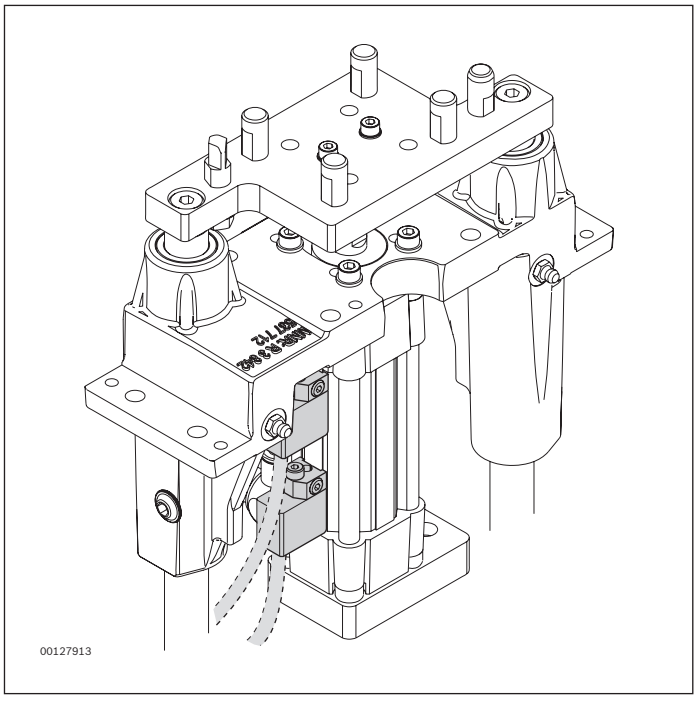
- 2x SN2 series cylinder switch (cube)
- 2x clamping holder for cylinder switch

Ordering information

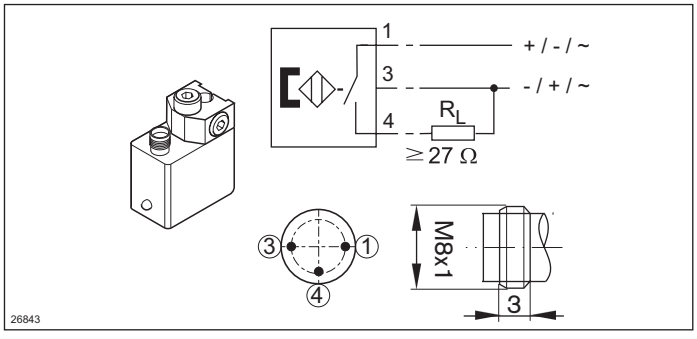
Product designation	Packaging unit	Material number
SA cylinder position sensor	2	3842536974

Technical data

Material number	**3842536974** SN2 series cylinder switch (cube)
Features	
Connector	M8x1, without cable
Function indicator	LED
Additional information	
Contact type	Reed, 3-conductor
Operating voltage	AC 12-30, DC 12-36 V



Circuit diagrams



HP 2/L housing element

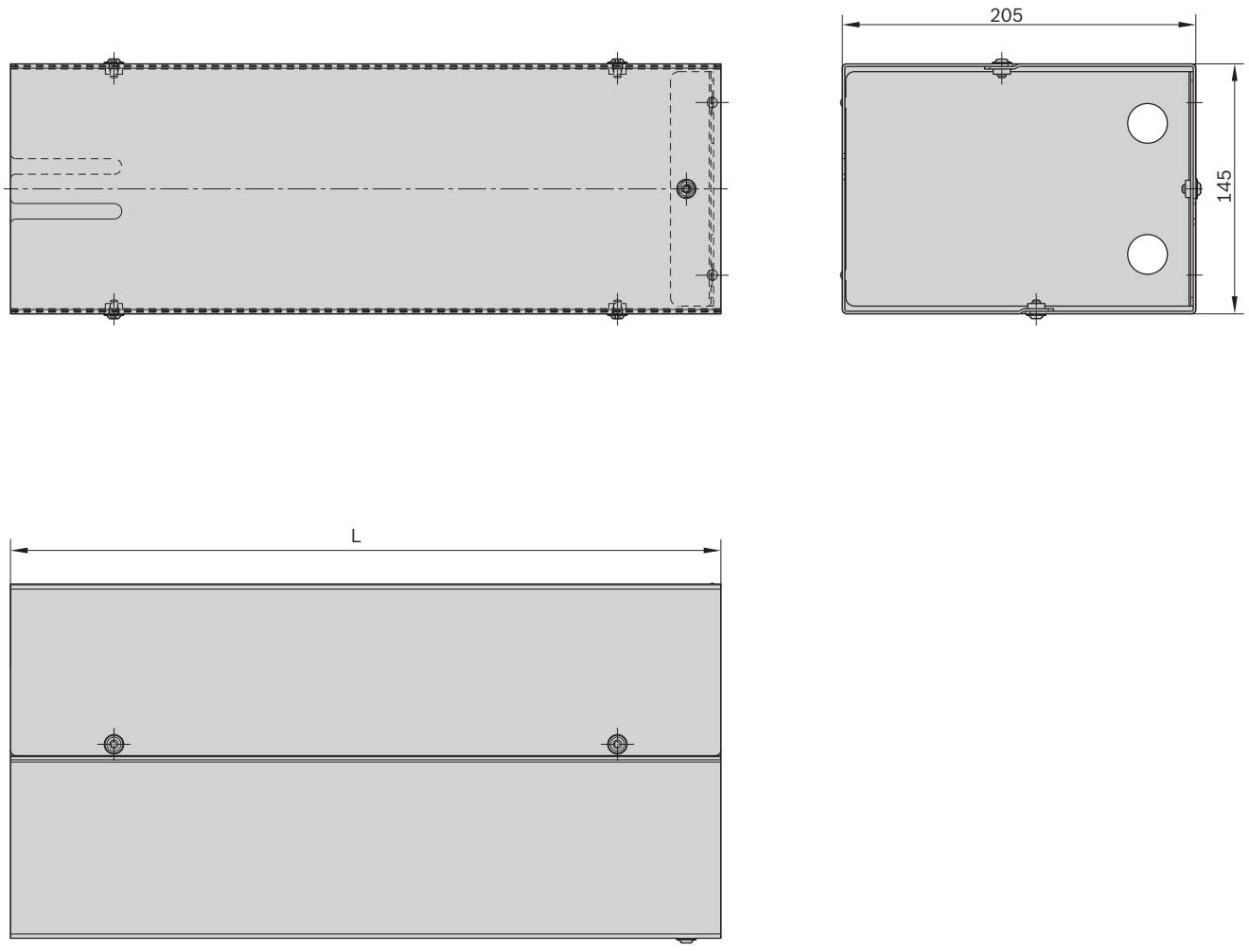


- Housing element for HP 2/L lift positioning unit

Ordering information

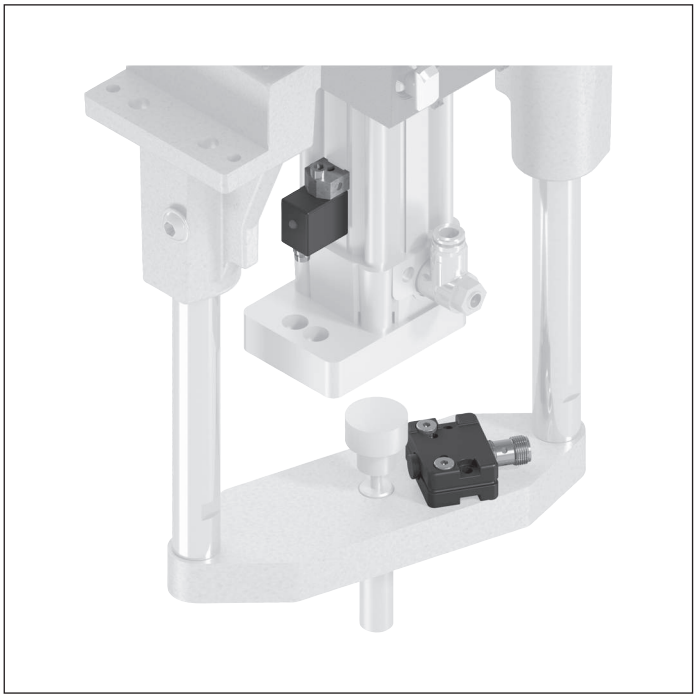
Product designation	Nominal stroke h_N (mm)	Length L (mm)	Material number
HP 2/L housing element	50	315	3842536977
HP 2/L housing element	100	353	3842536960
HP 2/L housing element	160	353	3842536960
HP 2/L housing element	200	715	3842536962
HP 2/L housing element	250	715	3842536962

Dimensions



Length L (mm)	Material number
315	3842536977
353	3842536960
715	3842536962

RA position sensor set



- Position sensor for HP 2/L special design with turret stop

For use with a turret stop (e.g., Somatec), the HP 2/L can be ordered with longer guide rails as a modification.
An accompanying sensor is used instead of the cylinder switch to sense the upper positions on the turret stop (RA position sensor set).

Delivery notes

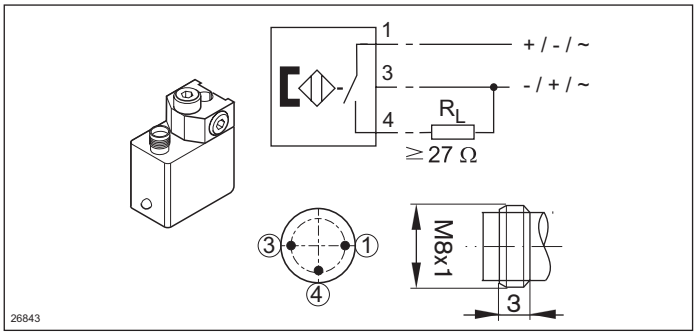
Scope of delivery

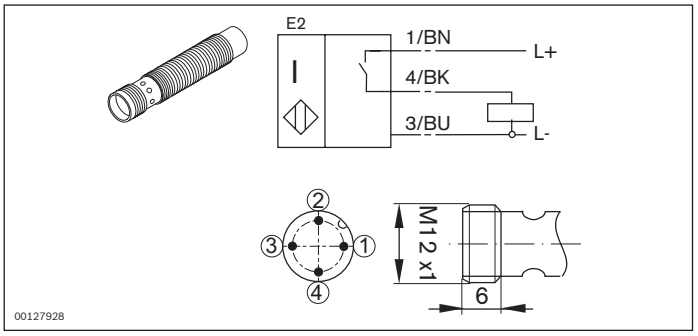
- 1x SN 2 series cylinder switch (cube)
- 1x clamping holder for cylinder switch
- 1x M12x1 sensor with S_N= 8 mm rated sensing range, length 50 mm (3842557633), see p. 8-108
- 1x switch bracket for mounting on the base plate

Ordering information

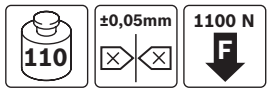
Product designation	Material number
RA position sensor	3842536975

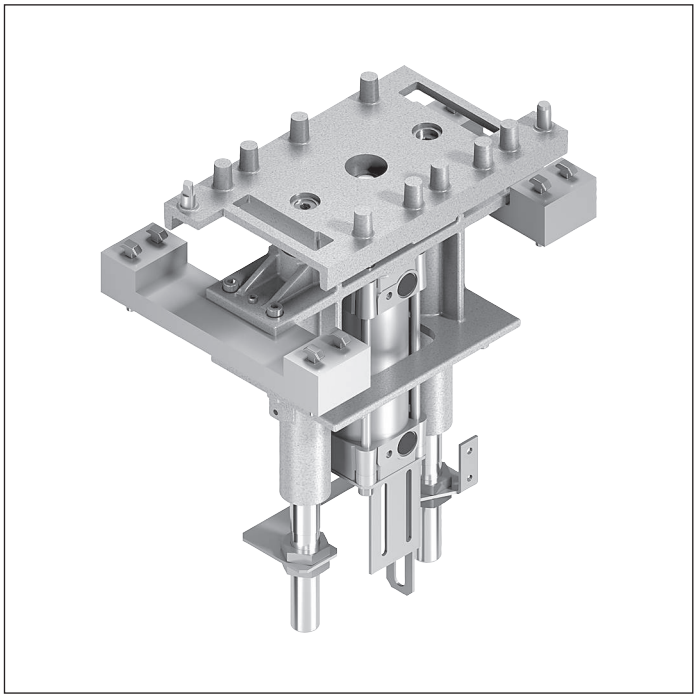
Circuit diagrams





HP 2 lift positioning unit





- Positions a workpiece pallet in a processing station with high positioning accuracy requirements and higher workpiece pallet weights.
- Positioning via the HP 2 positioning pins and the positioning bushings on the WT 2 workpiece pallet
- Lifting cylinder with adjustable top-end and bottom stop-end damping
- Top-end damping takes effect only under full lift.
- Continuously adjustable lift height in 8 lift ranges h_N of 0 ... 404 mm
- Can be combined with workpiece pallets WT 2, WT 2/F, WT 2/E

Damping at the top end of the cylinder takes effect only under full lift. With larger lifts, we recommend separately fixing the workpiece pallet while the HP 2 is in the highest position in order to improve positioning accuracy.

Accessories

Required accessories

- VE 2 stop gate, see p. 8-4
- Throttle non-return valve, exhaust air, G3/8", diameter d = 6 mm

Recommended accessories

- Damping kit (3842211355) to set the WT on the conveyor medium without any shocks
- HP 2 housing element, see p. 7-34

Delivery notes

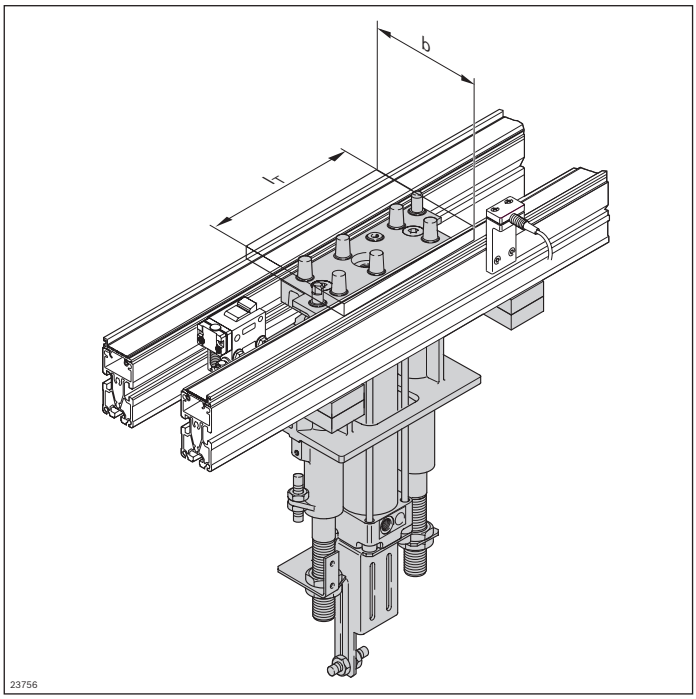
Scope of delivery

- Incl. fastening material
- Switch bracket for mounting of M12 sensors for top and bottom lift position sensing

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842999678**
b (mm)	Track width in direction of transport	160; 240; 320; 400; 480
l_T (mm)	Length in direction of transport	0[1]; 160; 240; 320; 400; 480; 640; 800
w x l_d (mm x mm)	Combination options	160 x 0[1]; 160; 240; 320; 400; 480 240 x 0[1]; 160; 240; 320; 400; 480 320 x 0[1]; 160; 240; 320; 400; 480 400 x 0[1]; 320; 400; 480; 640; 800 480 x 0[1]; 320; 400; 480; 640; 800
h_N (mm)	Nominal stroke	55; 100; 150; 200; 250; 300; 350; 400
AO	Installation location Under the conveyor section (AO = UB) On the machine table (AO = AT) For custom design without fastening material (AO = O)	UB; AT; O

[1] If the value is "0", HP 2 will be delivered with a lift plate (3842516048, see p. 7-31) instead of the lift position plate for custom designing of the lift positioning plate.

Technical data

Material number			**3842999678**
Load			
Max. total workpiece pallet weight	m_G	kg	110
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector[2]	d	mm	6
Repeat accuracy		mm	±0.05
Permissible vertical process forces[1]		N	1100

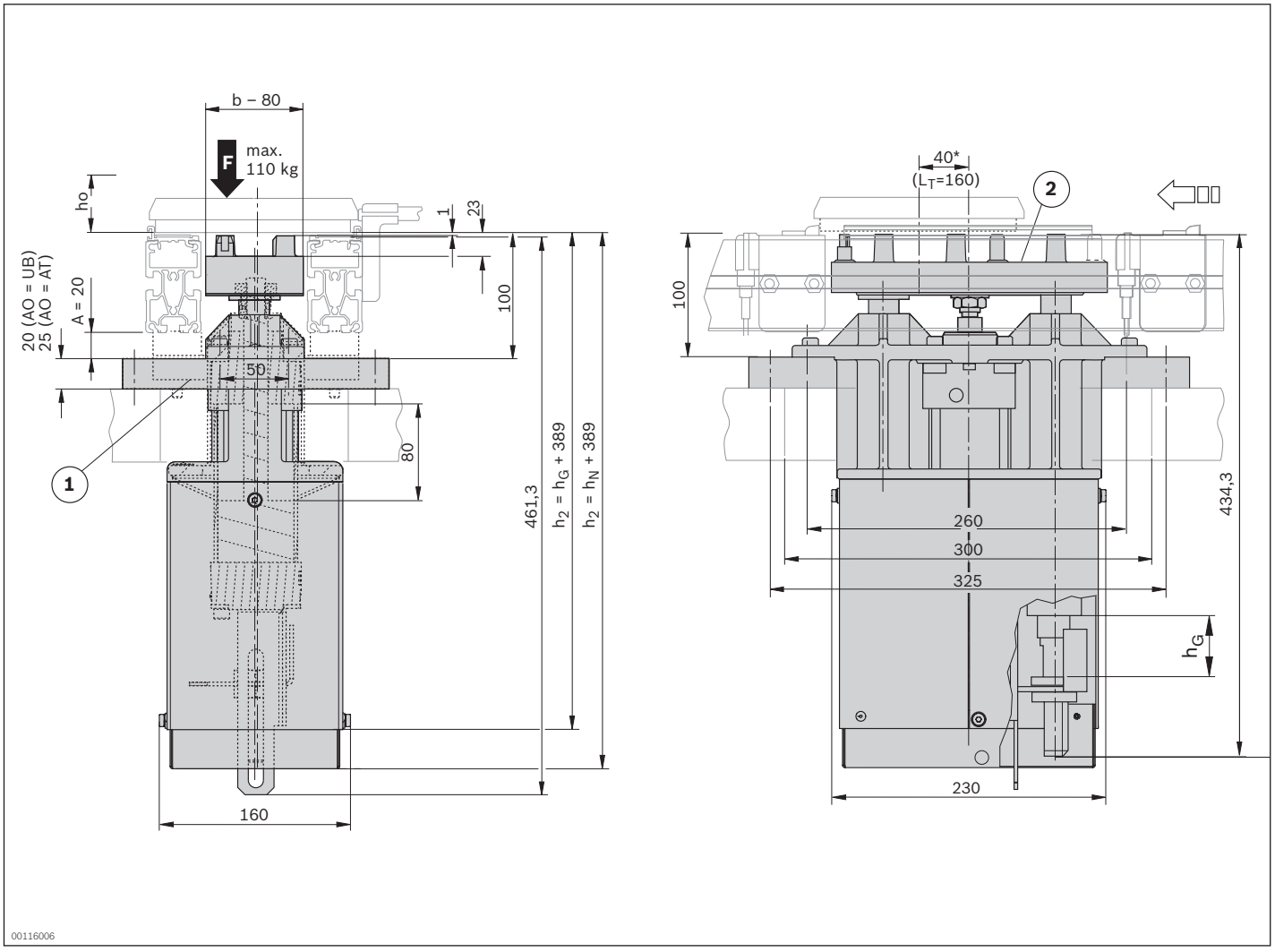
[1] Incl. WT 2

[2] Throttle non-return valve, exhaust air with connector, diameter d = 6 mm, for thread G 3/8" must be attached by the customer

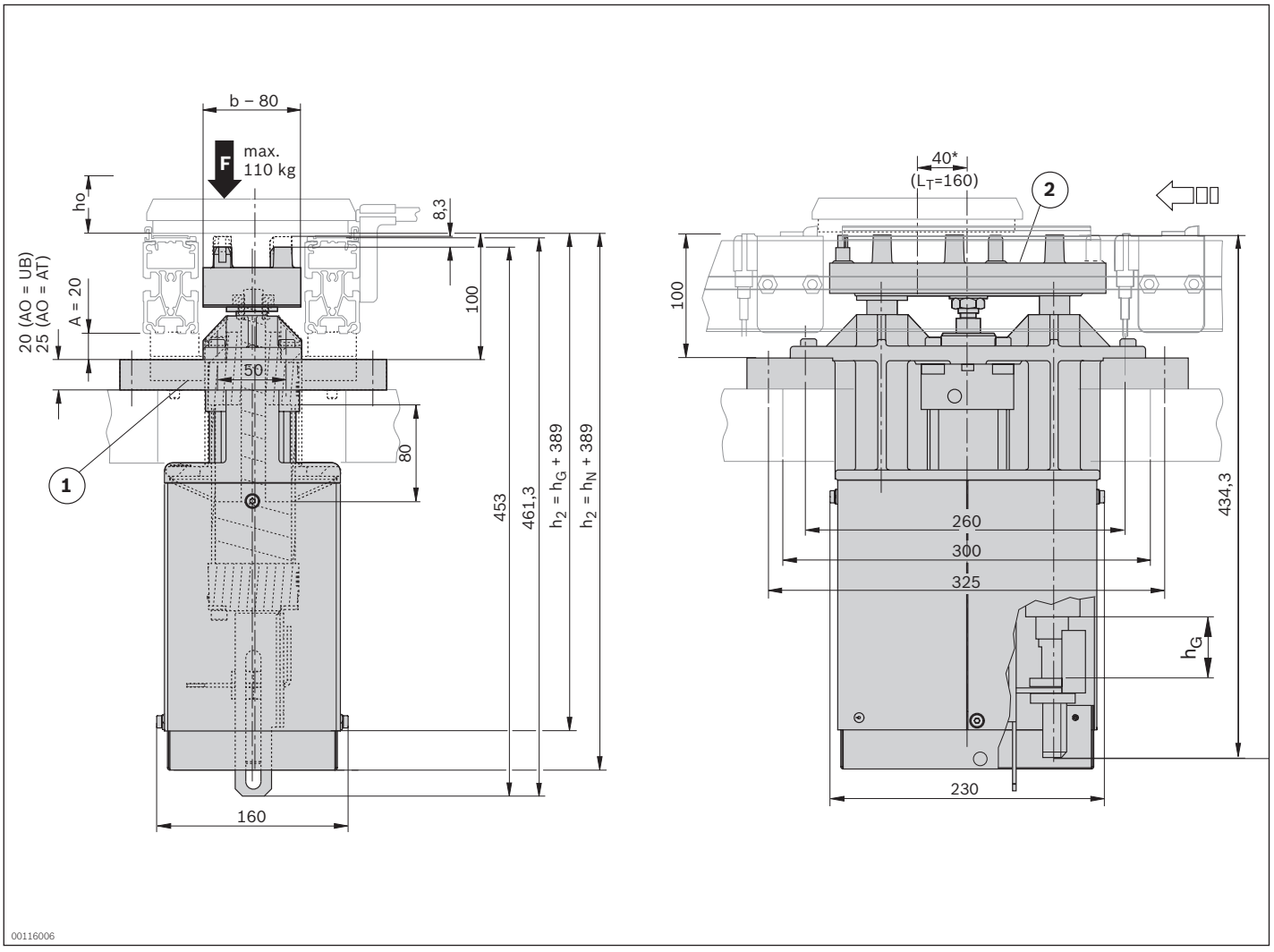
Lift range

Cylinder total lift h_G (mm)	Nominal stroke h_N (mm)	WT lift above conveying level h_0 (mm)
80	55	0 ... 59
125	100	60 ... 104
175	150	105 ... 154
225	200	155 ... 204
275	250	205 ... 254
325	300	255 ... 304
375	350	305 ... 354
425	400	355 ... 404

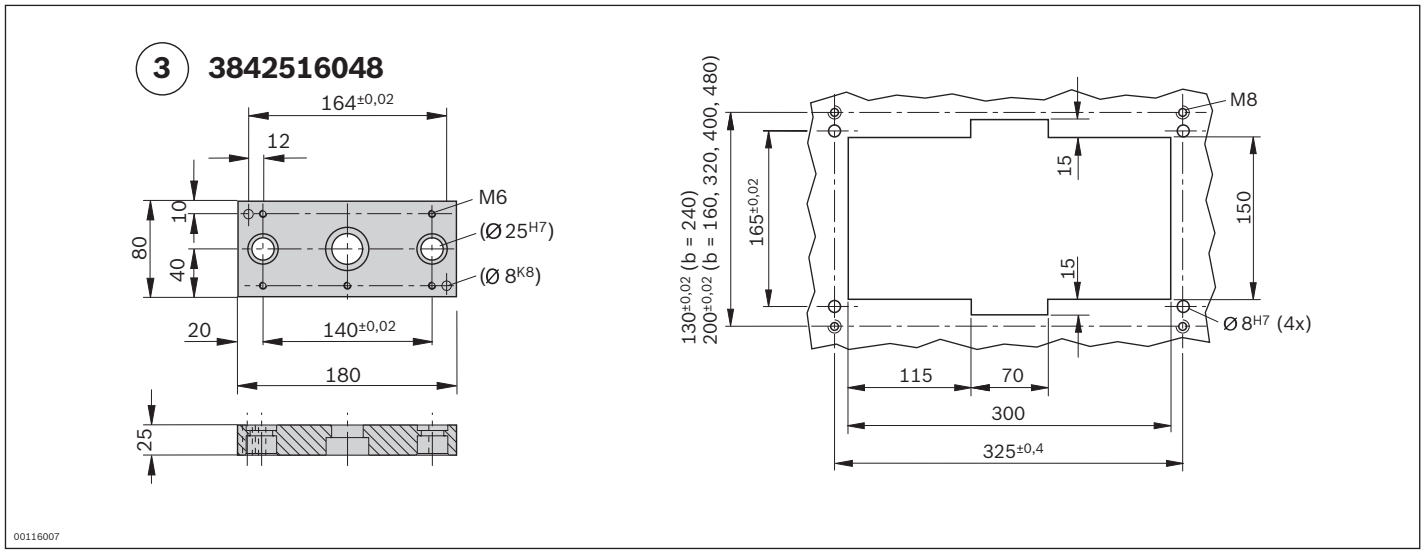
Dimensions



* Eccentric position for WT L_T = 160 mm
1 Fastening kit (UB or AT)
2 Positioning plate
h_0 WT lift above transportation level
h_G total cylinder lift

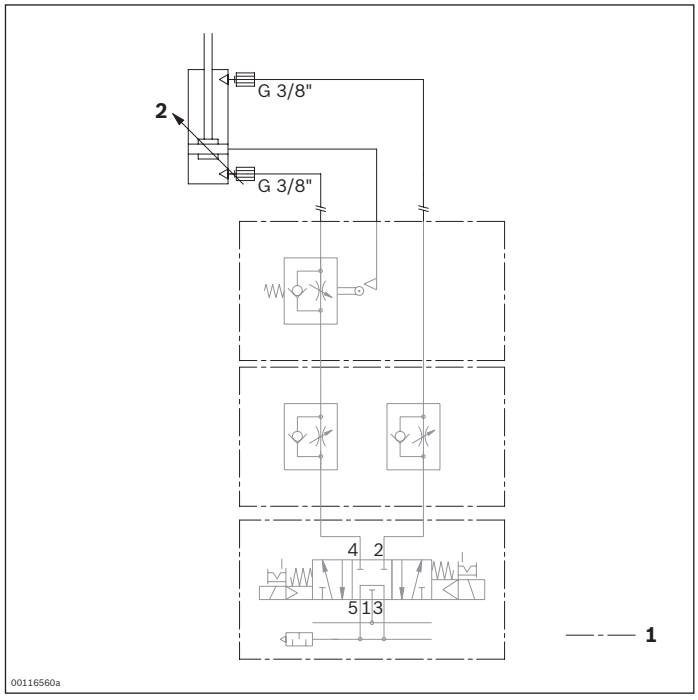


* Eccentric position for WT L_T = 160 mm
1 Fastening kit (UB or AT)
2 Positioning plate
h_0 WT lift above transportation level
h_G total cylinder lift



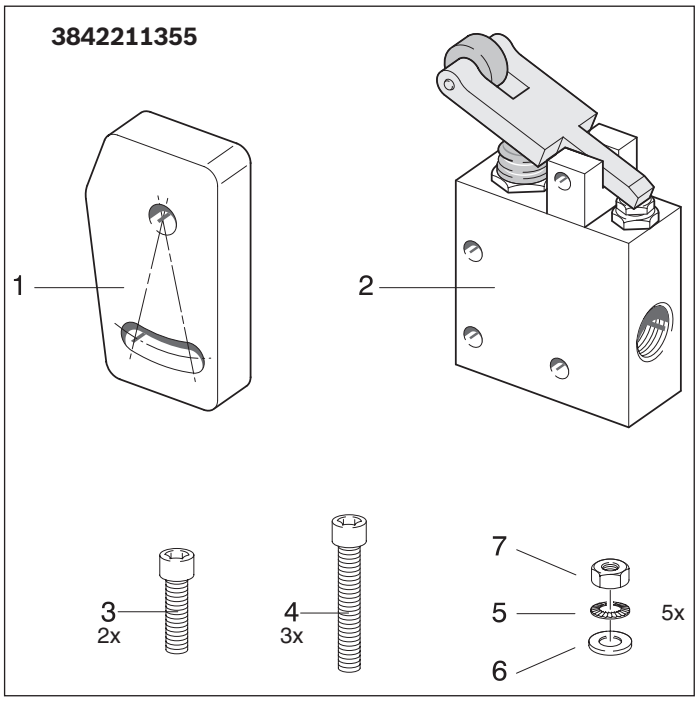
3 Lift plate

Circuit diagrams



1 Not included in delivery
2 Adjustable top-end damping

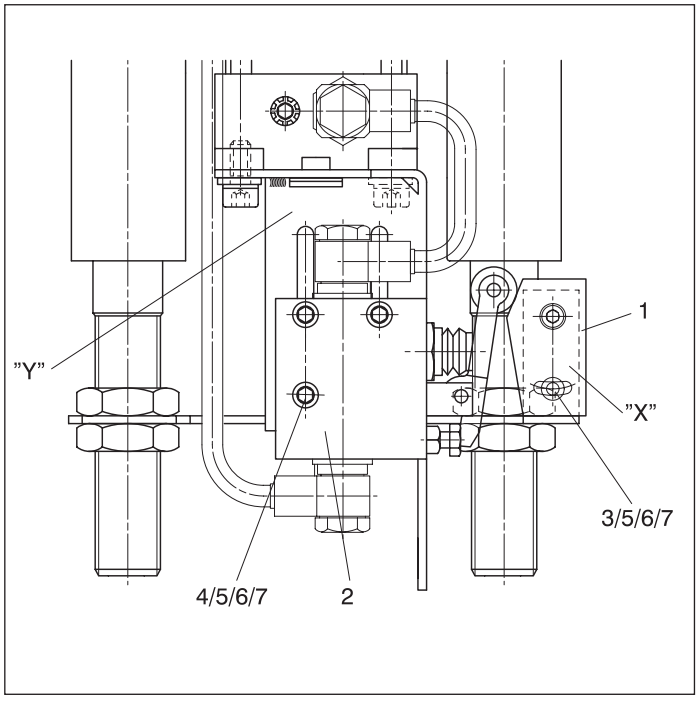
Kit for lower end damping

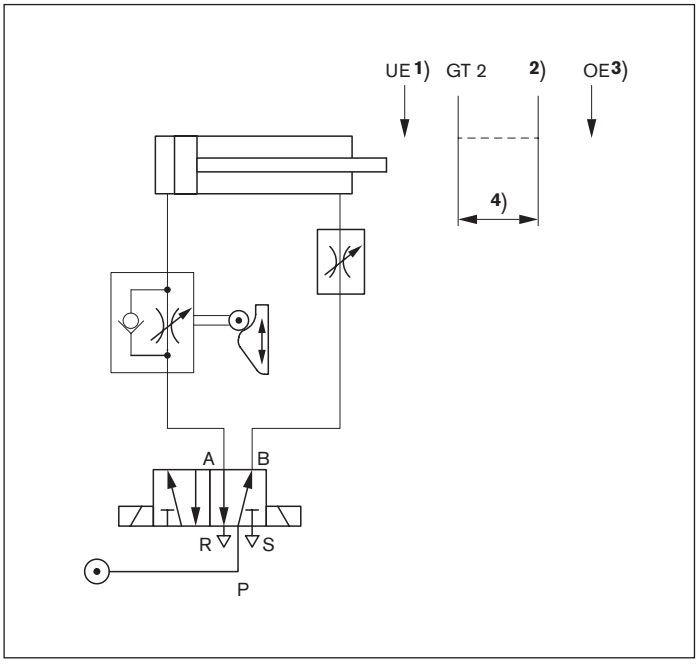


- Fasten each switching tappet (1) to the metal bracket "X" with two cylinder head screws M6x20 (3), lock washers (6) and hexagon nuts (7)
- Fasten each valve (2) to the limit switch holder "Y" with three cylinder head screws M6x35 (4) lock washers (5) washers (6) and hexagon nuts (7)

Ordering information

Product designation	Material number
Kit for bottom-end damping	3842211355





1 Lower end position
2 Tappet
3 Upper end position
4 Damping (adjustable)

HP 2 housing element

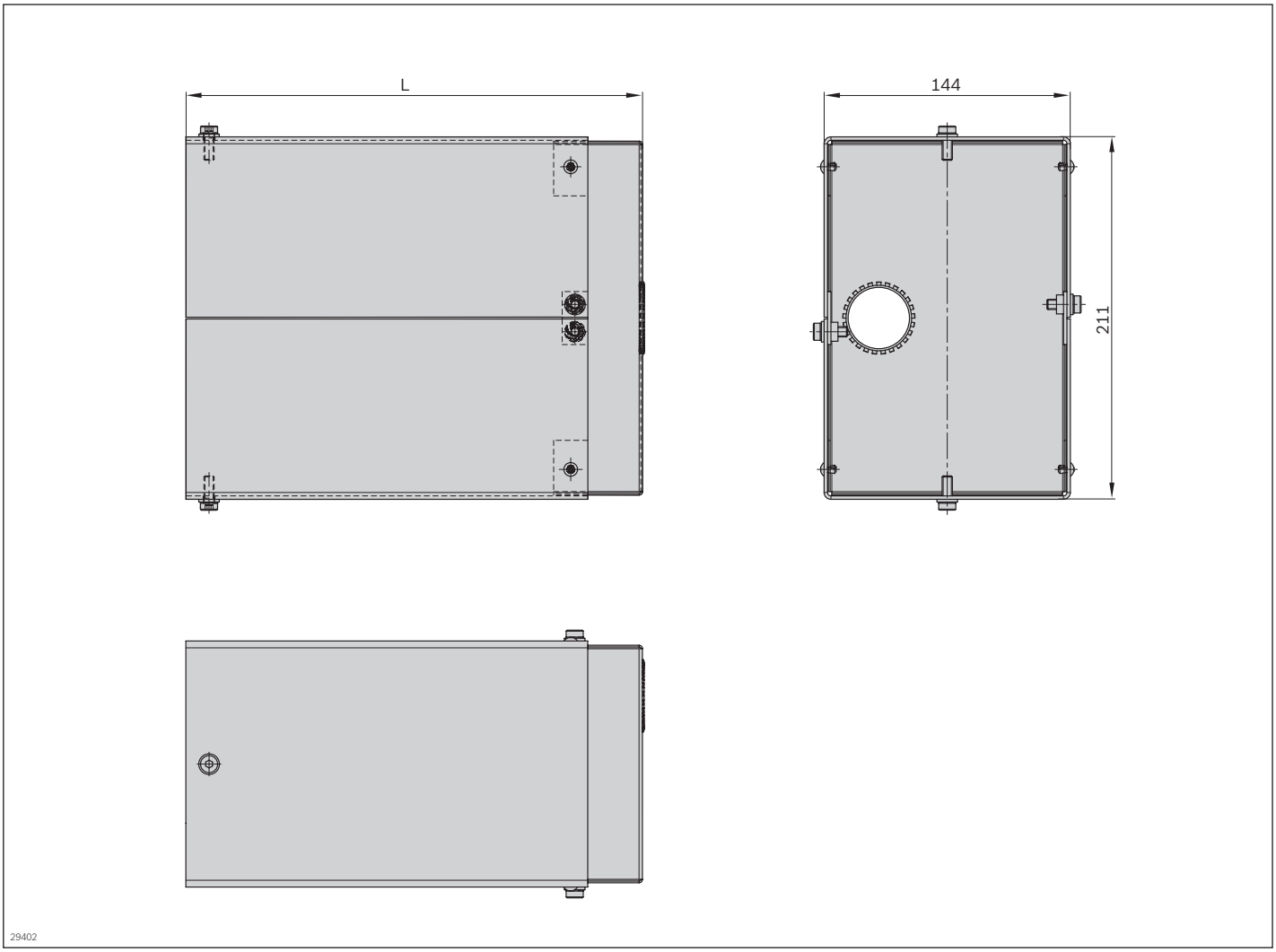


- Housing element for HP 2 lift positioning unit

Ordering information

Product designation	Nominal stroke h_N (mm)	Length L (mm)	Material number
HP 2 housing element	55	267	3842510157
HP 2 housing element	100	312	3842510158
HP 2 housing element	150	362	3842510159
HP 2 housing element	200	412	3842510160
HP 2 housing element	250	462	3842532409
HP 2 housing element	300	512	3842532410
HP 2 housing element	350	562	3842532411
HP 2 housing element	400	612	3842532412

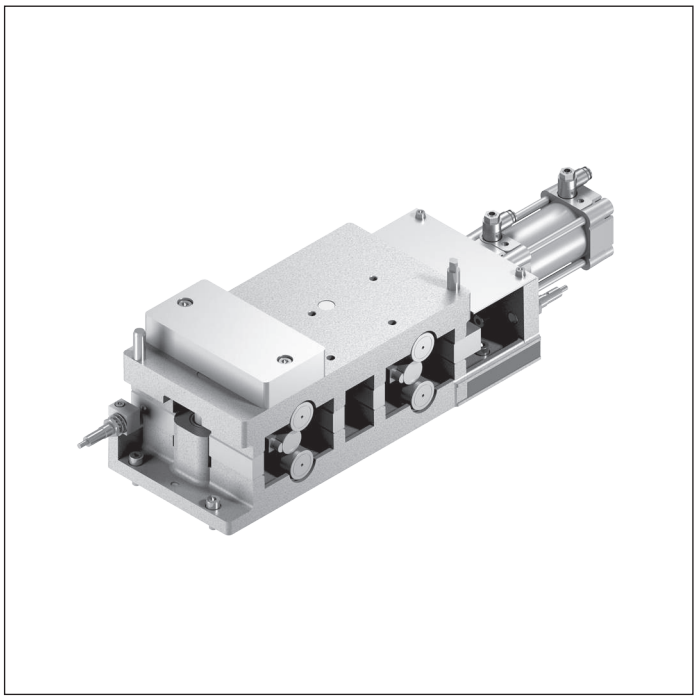
Dimensions



Length L (mm)	Material number
267	3842510157
312	3842510158
362	3842510159
412	3842510160
462	3842532409
512	3842532410
562	3842532411
612	3842532412

PE 2/XP positioning unit





- Positions a workpiece pallet in a processing station with especially high vertical process force requirements (100 kN/60 kN), such as those needed for press-fit or riveting work.
- Mounting in force cells, positive force introduction
- WT lift above transportation level, approx. 3 mm
- Can be combined with WT 2 workpiece pallets

Note: Maximum total workpiece pallet weight m_G, incl. anvil plate or positioning plate for BG 1, is: m_G = 20 kg and BG 2: m_G = 30 kg.

Accessories

Required accessories

- Anvil plate for standard sizes from 160 x 160 mm to 320 x 240 mm, see p 7-40
- Anvil plate for 320 x 240 mm workpiece pallets, see p. 7-39
- Positioning pins, round and flat-sided
  h = 30 mm for standard anvil plate
  h = 21 mm for special designs
- VE 2/... stop gate, see p. 8-4
- 2x M12x70 and M12x67 sensor with rated sensing range S_N = 4 mm, can be installed flush, see p. 8-108/8-110

Delivery notes

Condition on delivery

- Fully assembled

Ordering information

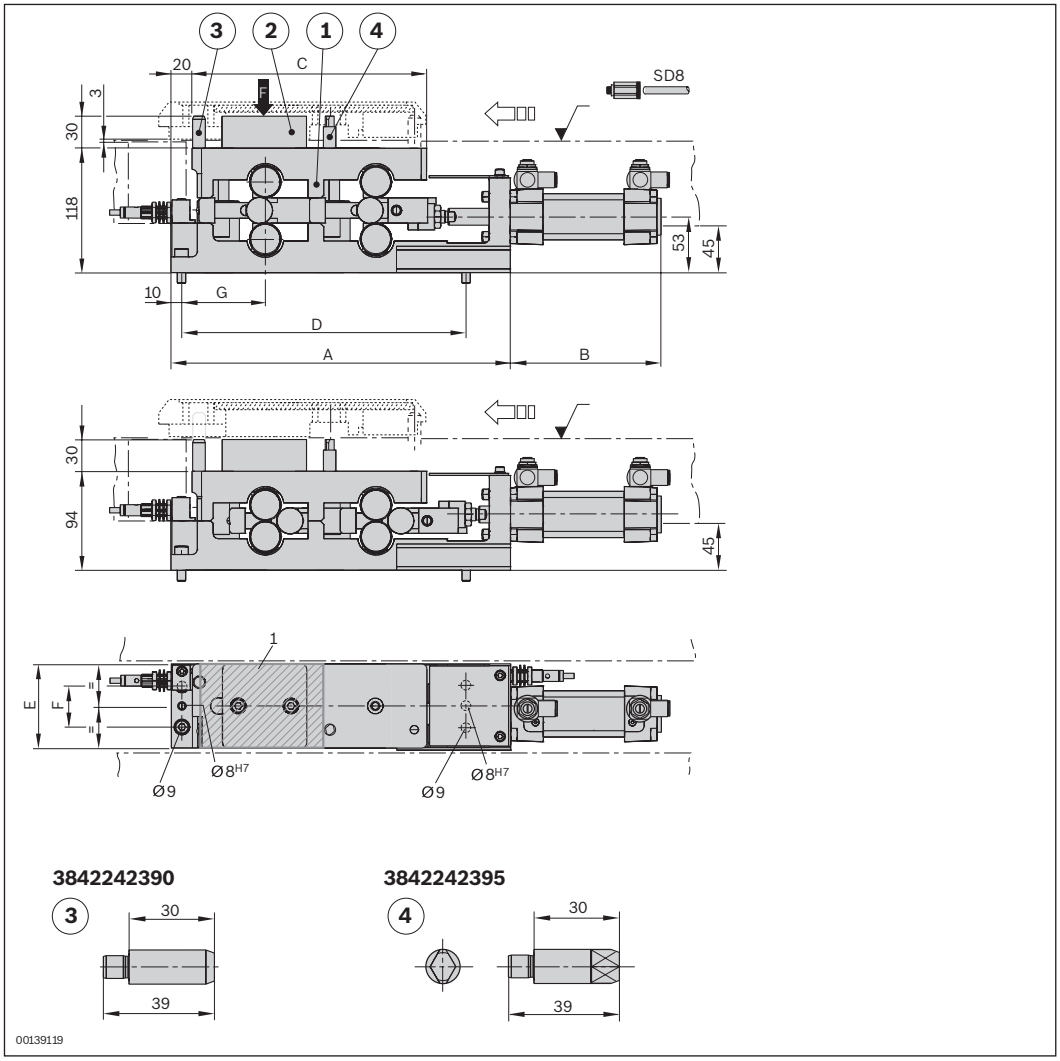
Product designation	Size	Width of workpiece pallet (mm)	Material number
PE 2/XP positioning unit	BG 1	160	3842242350
PE 2/XP positioning unit	BG 2	240	3842242351

Technical data

Material number			**3842242350**	**3842242351**
Load				
Max. total workpiece pallet weight	m_G	kg	20	30
Features				
ESD			Yes	Yes
Design				
Size	BG		BG 1	BG 2
Additional information				
Repeat accuracy		mm	±0.05	±0.05
Permissible vertical process forces[1]		kN	60	100
WT lift above conveying level		mm	3	3

[1)] Incl. WT 2

Dimensions

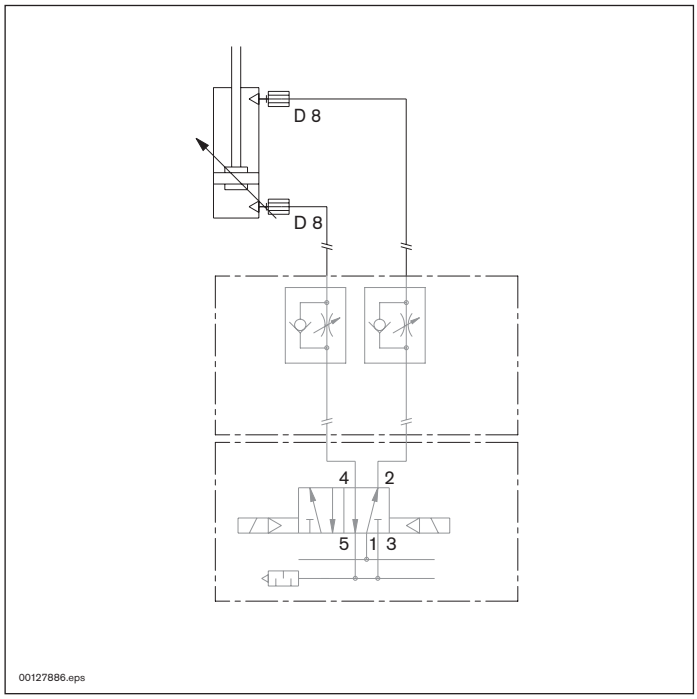


1 PE 2/XP
2 Anvil plate
3 Positioning pin, round
4 Positioning pin, flat-sided

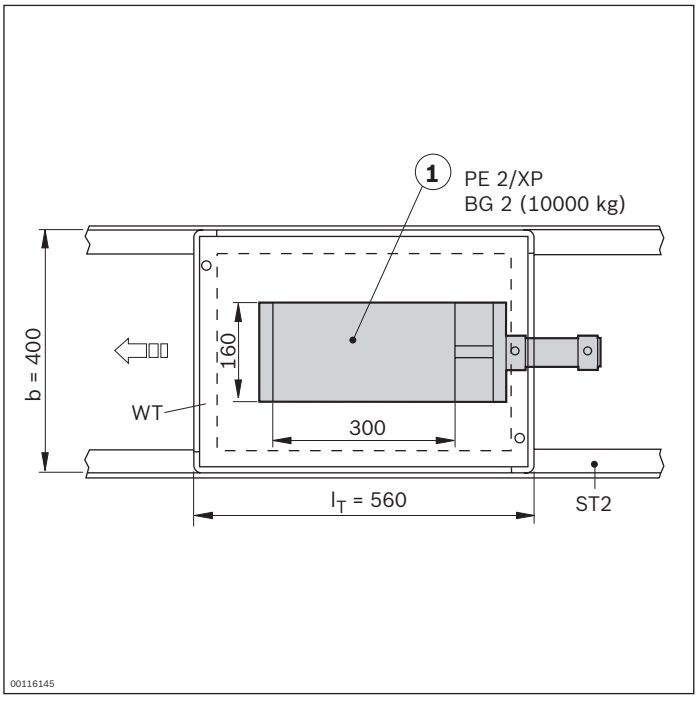
Dimensions

Size	Workpiece pallet size l_T (mm)	Workpiece pallet size b (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
BG 1	160	160	322	142	222	270	80	40±0.2	78.5
BG 1	240	160	322	142	222	270	80	40±0.2	118.5
BG 2	160	240	405	146	298	350	160	100±0.3	78.5
BG 2	240	240	405	146	298	350	160	100±0.3	118.5
BG 2	320	240	405	146	298	350	160	100±0.3	158.5

Circuit diagrams



Not included in delivery

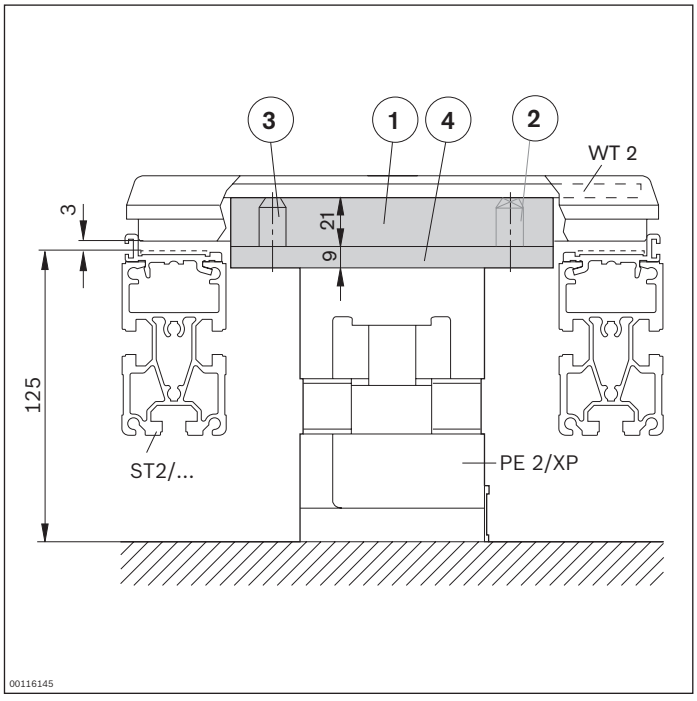


1 Anvil plate, example:
Process forces applied at center of workpiece pallet

Use of PE 2/XP positioning unit with workpiece pallets larger than LT = 320 mm x b = 240 mm

The PE 2/XP positioning unit, designed to absorb forces, can also be used with workpiece pallets with large dimensions if the process forces are applied at certain points.

The PE 2/XP must then be arranged in such a manner that it can absorb the forces directly.
The forces may be applied off-center.
However, where process forces are applied must be within the area of the upper part of the PE 2/XP.



1 Anvil plate
2 Positioning pin, round
3 Positioning pin, flat-sided
4 Positioning plate

Design notes

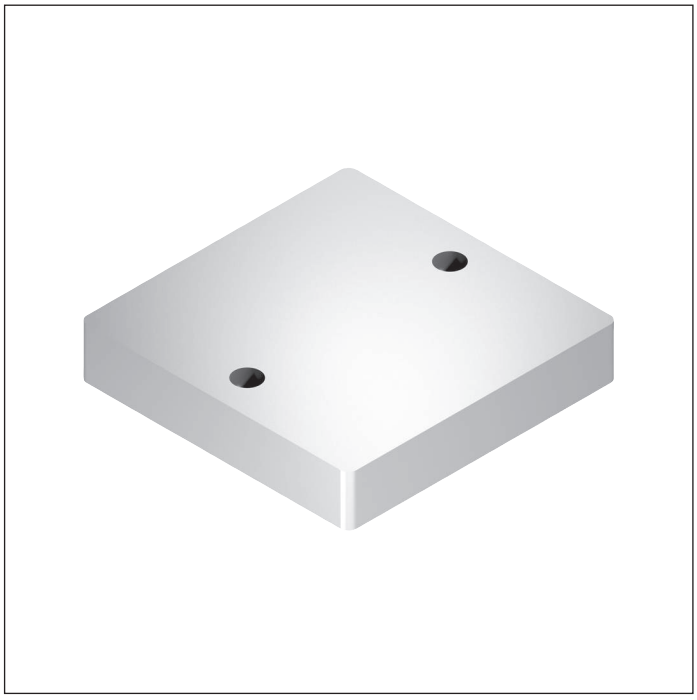
When the unit is used with workpiece pallets larger than l_T x b = 320 x 240 mm, a special anvil plate with a thickness of 21 mm and a positioning plate with a thickness of 9 mm must be designed.

The positioning plate must also receive the positioning pins. The anvil plate should support the WT carrying plate.

The anvil plate can also be replaced with several domes for workpiece pallet support and power transmission. Benefits: Weight reduction.

The maximum total workpiece pallet weight m_G, incl. anvil plate or positioning plate, is as follows for the following sizes:
BG 1: m_G = 20 kg
BG 2: m_G = 30 kg

Anvil plate



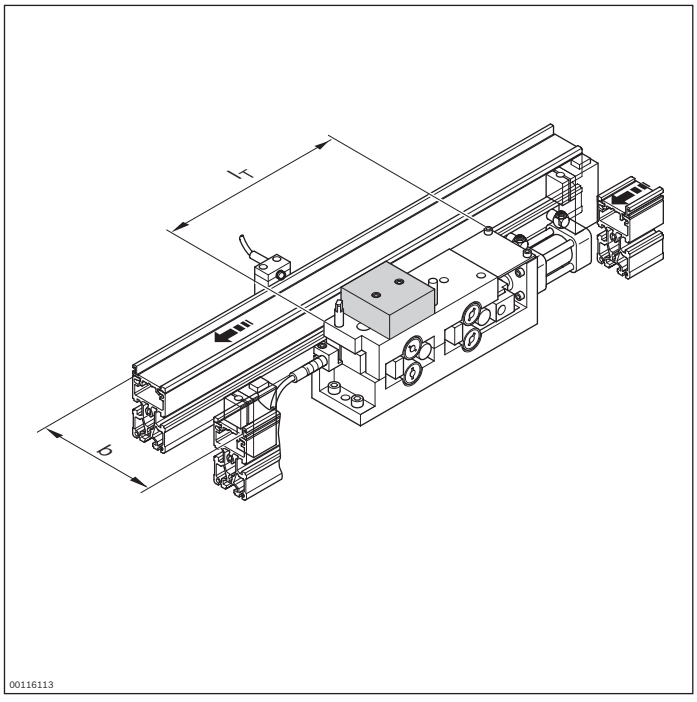
- For PE 2/XP positioning unit

Ordering information

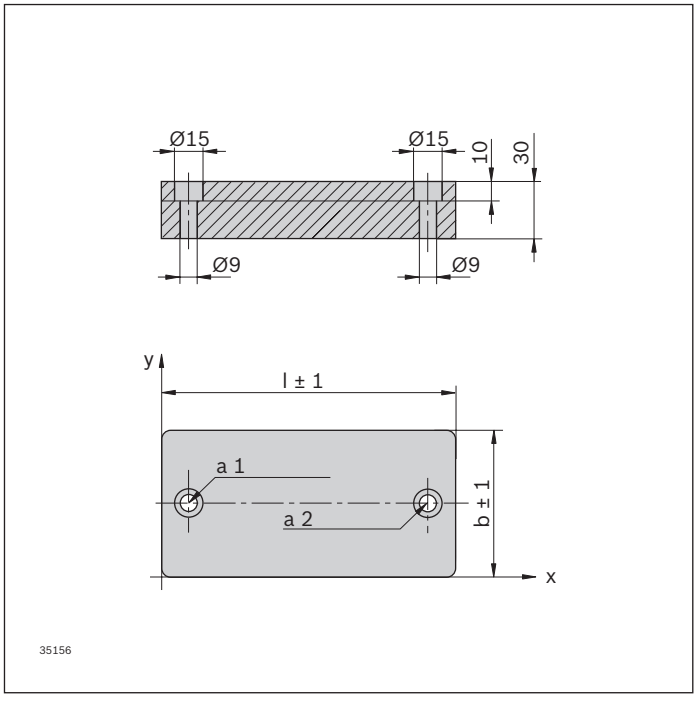
Product designation	BG	Track width in direction of transport b (mm)	Length in direction of transport l_T (mm)	Material number
Anvil plate	BG 1	160	160	3842242375
Anvil plate	BG 2	240	160	3842242376
	BG 1	160	240	3842242376
Anvil plate	BG 2	240	240	3842242377
Anvil plate	BG 2	240	320	3842242378

Technical data

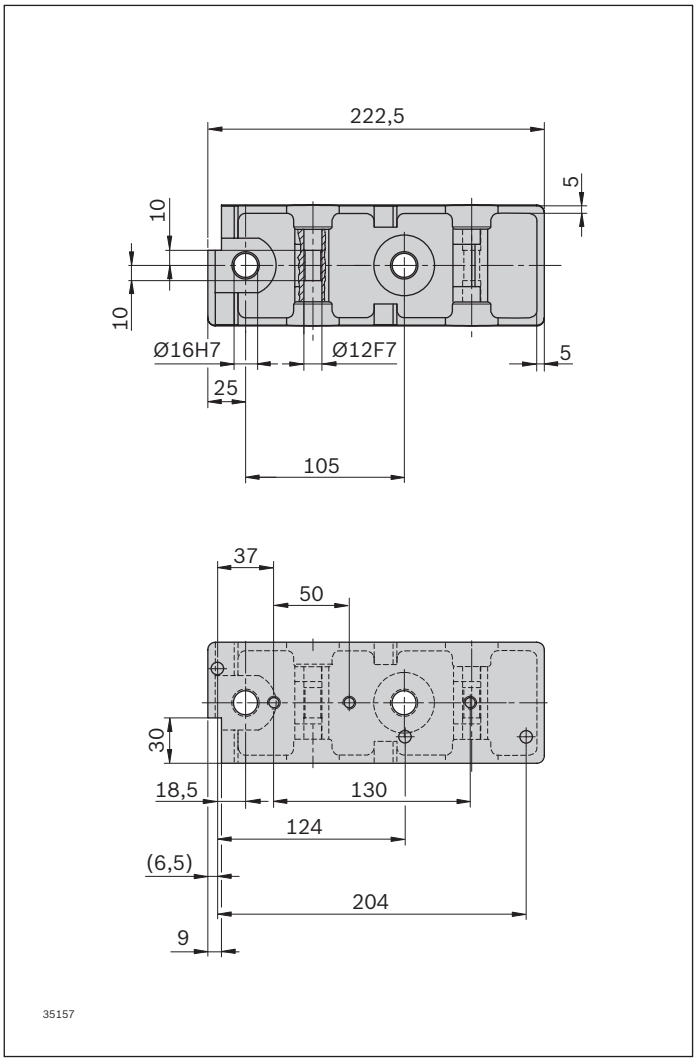
Material number			3842242375	3842242376	3842242377	3842242378
Load						
Max. total workpiece pallet weight	m_G	kg	BG 1: 20	BG 1; 2: 20; 30	BG 2: 30	BG 2: 30



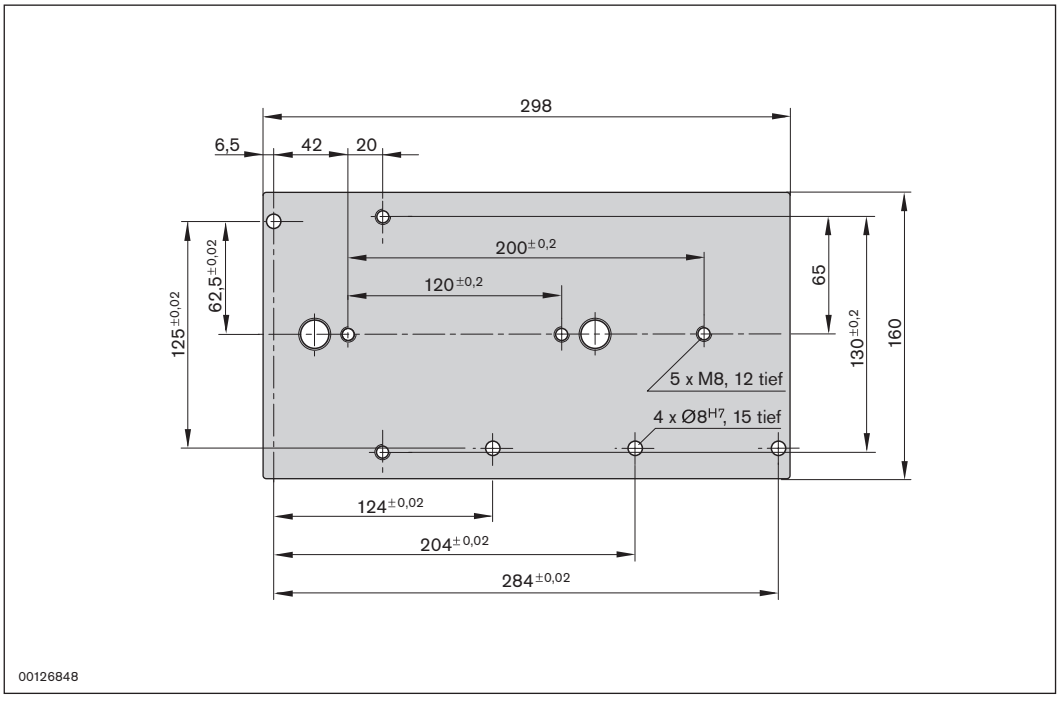
Anvil plate drilling plan



Workpiece pallet size b_{WT} (mm)	Workpiece pallet size l_{WT} (mm)	Type	b (mm)	l (mm)	x (mm)	y (mm)
160	160	a1	80	80	15	40
		a2	80	80	65	40
160	240	a1	80	160	15	40
		a2	80	160	145	40
240	160	a1	80	160	15	40
		a2	80	160	145	40
240	240	a1	160	160	20	80
		a2	160	160	140	80
240	320	a1	160	240	20	80
		a2	160	240	220	80



Drilling plan for upper part of PE 2/XP (BG 1)



Drilling plan for upper part of PE 2/XP (BG 2)

Positioning pin, round

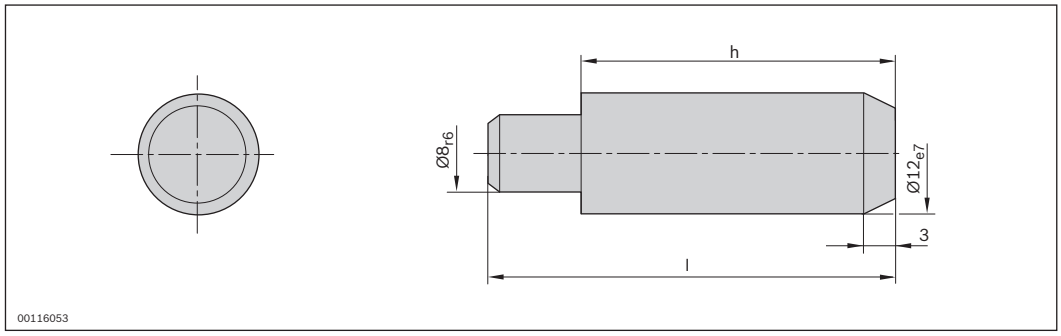


- For PE 2/XP positioning unit

Ordering information

Product designation	Length l (mm)	Height h (mm)	Material number
Positioning pin, round	30	21	3842242391
Positioning pin, round	38	21	3842242392
Positioning pin, round	39	30	3842242390

Dimensions



Positioning pin, flat-sided

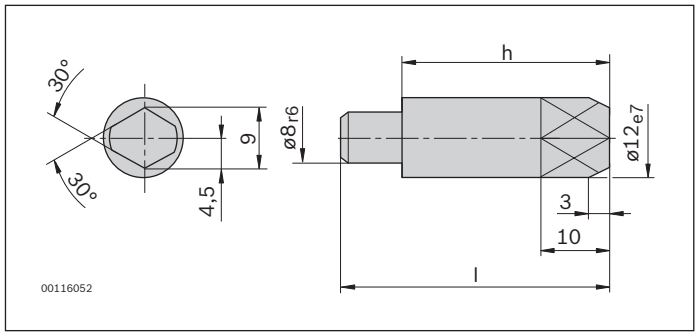


- For PE 2/XP positioning unit

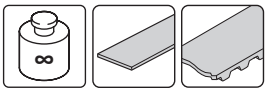
Ordering information

Product designation	Length l (mm)	Height h (mm)	Material number
Positioning pin, flat-sided	30	21	3842242396
Positioning pin, flat-sided	38	21	3842242397
Positioning pin, flat-sided	39	30	3842242395

Dimensions



PE 2/XX process force decoupler
Components





The process force decoupler is assembled using the following parts:

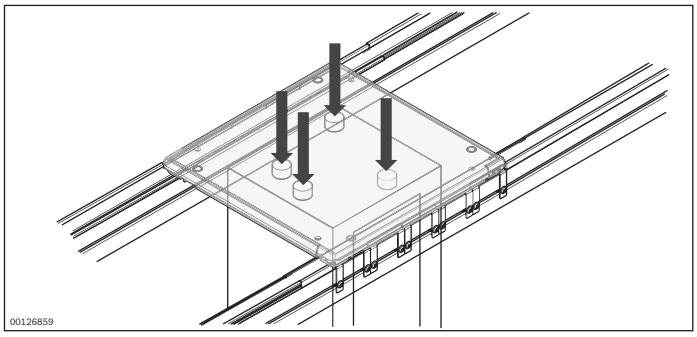
- Spring element in versions with 5.8 N/cm and 10 N/cm surface load, see p. 7-46
- Transition pieces to and from the spring elements, see p. 7-48
- Lateral guides, see p. 7-50

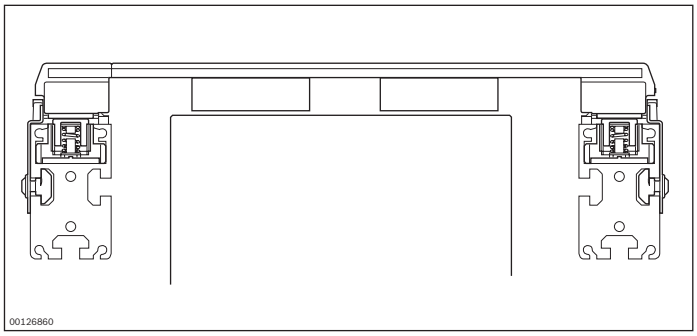
Accessories

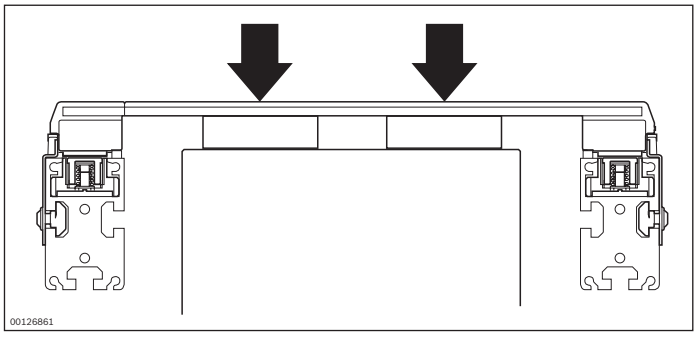
Required accessories

- Anvil (customer force cell) to absorb process forces at the mounting location of the positioning unit
- Substructure plate for workpiece pallets to transfer the process forces to the anvil (provided by customer)
- VE 2 stop gate, see p. 8-4

- For mounting processes with especially high demands on vertical process forces
- To guide the belt or toothed belt near a force cell to be constructed by the customer.
- Permissible vertical process force depending on the construction by the customer
- Lift below conveying level approx. 1 mm.
- Prepositioning via VE (accessories)
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H, on which the customer must install spacer plates under the force introduction side



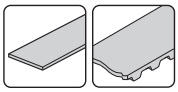


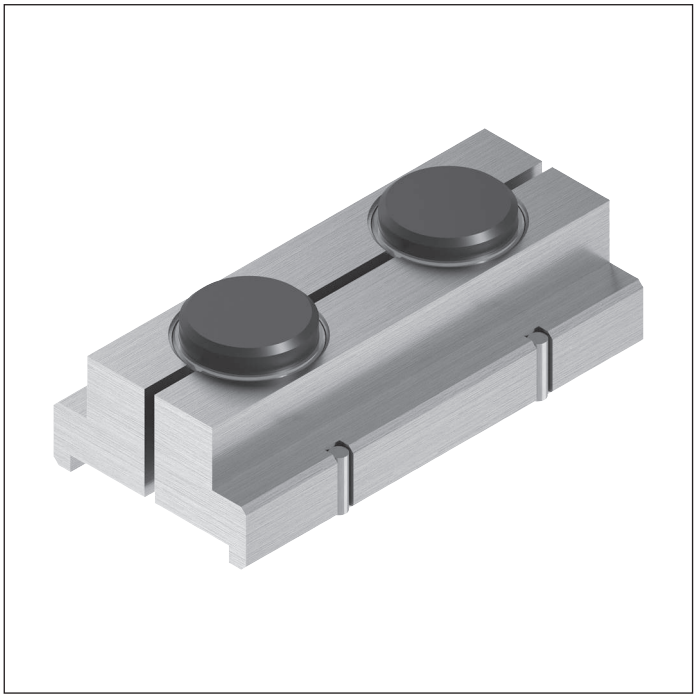


Mode of operation

Vertical process forces are deflected via a force cell constructed by the customer. In doing so, the plate of the workpiece pallet is supported via the spacer blocks on the anvil of the force cell. The guide profile is replaced by spring elements near the force cell to prevent the conveyor medium (belt or toothed belt) from getting jammed between the workpiece pallet and guide profile. The conveyor medium can thus be pushed down by up to 1.5 mm.

Spring element





- For mounting in sections where the workpiece pallet is stressed by the process forces
- For section loads of 5.8 N/cm and 10 N/cm

Delivery notes

Scope of delivery

- Set containing 2x spring element

Ordering information

Product designation	Packaging unit	Material number
10 N/cm spring element	Set	3842536930
5.8 N/cm spring element	Set	3842536931

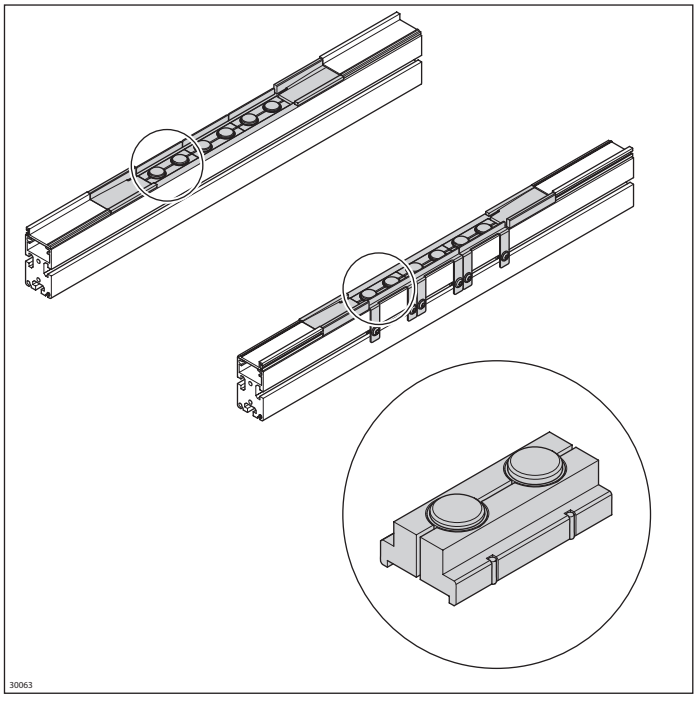
Technical data

Material number	3842536930	3842536931
Features		
ESD	Yes	Yes

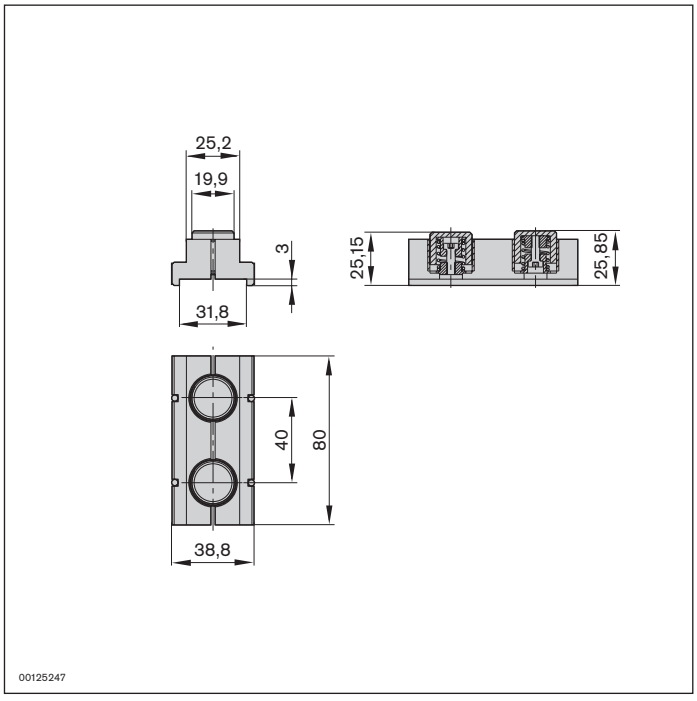
Length of workpiece pallet l_{WT} (mm)	Quantity required per section profile X	5.8 N/cm section load 3842536931 m_{WT} max[1] (kg)	10 N/cm section load 3842536930 m_{WT} max[1] (kg)
160	2	9.3	16
240	3	14.0	23.1
320	4	18.7	31.9
400	5	23.3	40
480	6	28.0	48

Length of workpiece pallet **l_{WT}** **(mm)**	**Quantity required per section profile** **X**	**5.8 N/cm section load** **3842536931** **m_{WT} max**[1] **(kg)**	**10 N/cm section load** **3842536930** **m_{WT} max**[1] **(kg)**
640	8	37.3	64
800	10	46.7	70
1040	13	60.7	70

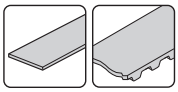
[1] Maximum workpiece pallet weight, incl. spacer block/base plate

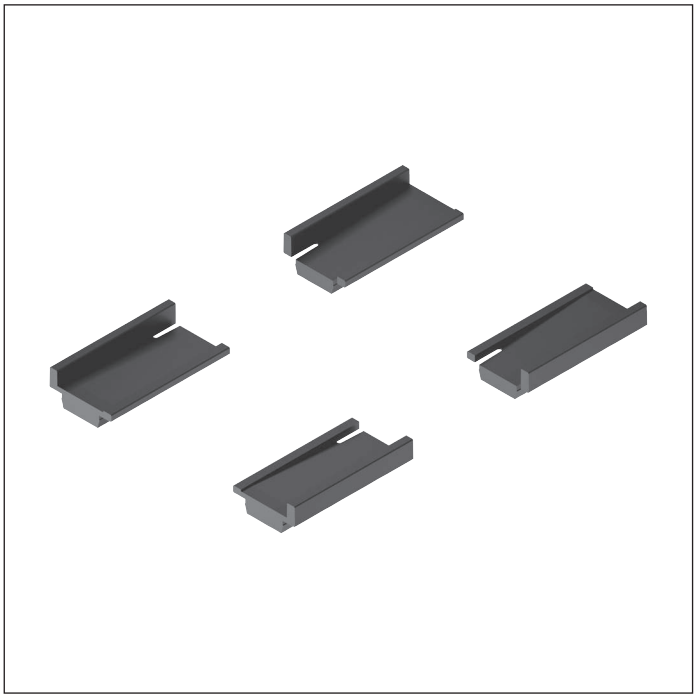


Dimensions



Transition piece





- For transitioning from guide profile to spring elements and vice versa
- For use with the belt or toothed belt conveyor medium

Delivery notes

Scope of delivery

- Set containing 2x left transition piece, 2x right transition piece

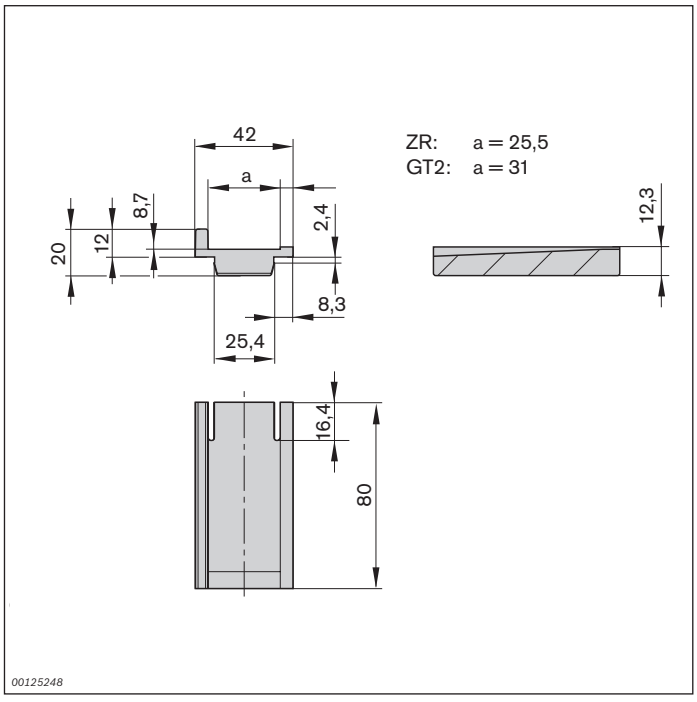
Ordering information

Product designation	Packaging unit	Material number
Transition piece for belt	Set	3842536932
Transition piece for toothed belt	Set	3842536933

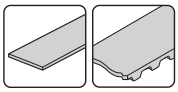
Technical data

Material number			3842536932	3842536933
Features				
ESD			Yes	Yes
Dimensions				
Length	l	mm	80	80

Dimensions



Lateral guide





- For laterally guiding workpiece pallets in the sections where the spring elements are mounted
- A WT 2 stop can be positioned diagonally the stop gate to prevent workpiece pallets from rotating and tilting

Delivery notes

Scope of delivery

- 1 set (containing 2x lateral guide), incl. fastening material

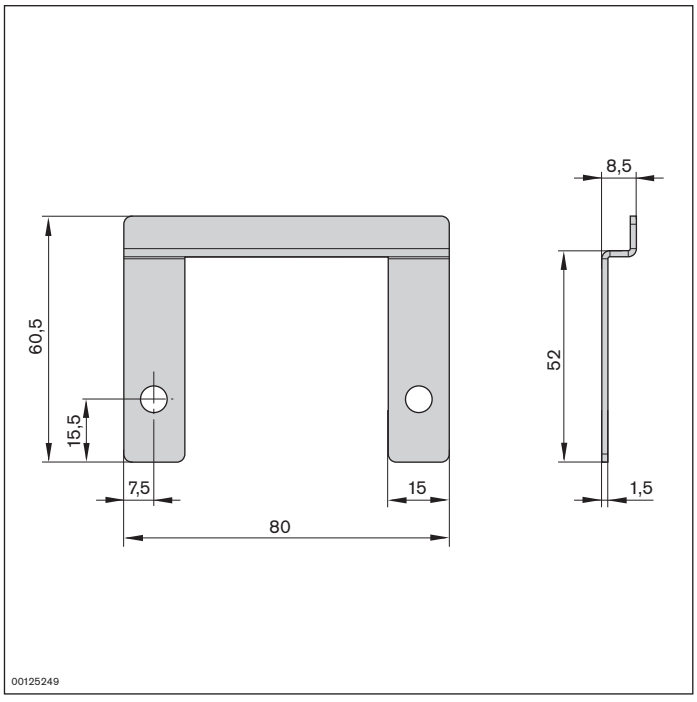
Ordering information

Product designation	Packaging unit	Material number
Lateral guide	Set	3842536926

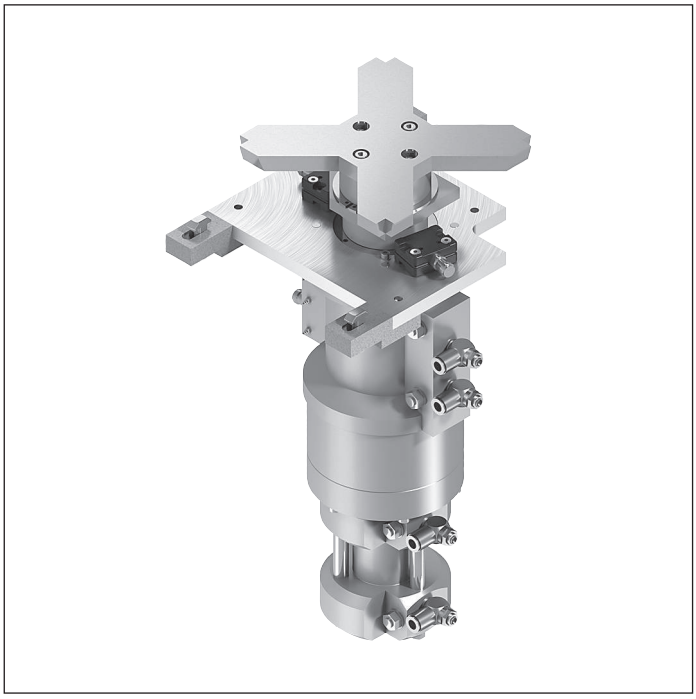
Technical data

Material number			**3842536926**
Features			
ESD			Yes
Material specification			Sheet steel; galvanized
Dimensions			
Length	l	mm	80

Dimensions



HD 2 lift rotate unit



- Turning angles on the Z axis: 90° or 180°. The direction of rotation of the HD 2/90° can be individually selected for each workpiece pallet as required
- WT lift 40 mm or 90 mm above transportation level
  The version with a 40 mm lift is suitable for turning workpiece pallets directly above the conveyor section. If there are any components mounted at the side of the workpiece pallet, e.g., identification and data storage modules, it may be necessary to select the version with a 90 mm lift
- Max. permitted mass moment of inertia: 0.65 kgm^2

The HD 2 lift rotate unit turns workpiece pallets to the required orientation. On circuits without curves it ensures that the workpiece pallet always runs with the correct orientation, i.e., front is always front.

Work on the HD 2 is permitted without additional forces.

Accessories

Required accessories

- VE 2 stop gate, see p. 8-4
- M12x1 sensor with rated sensing range $S_N \geq 4$ mm, can be installed at 0.5 mm rather than being installed flush, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

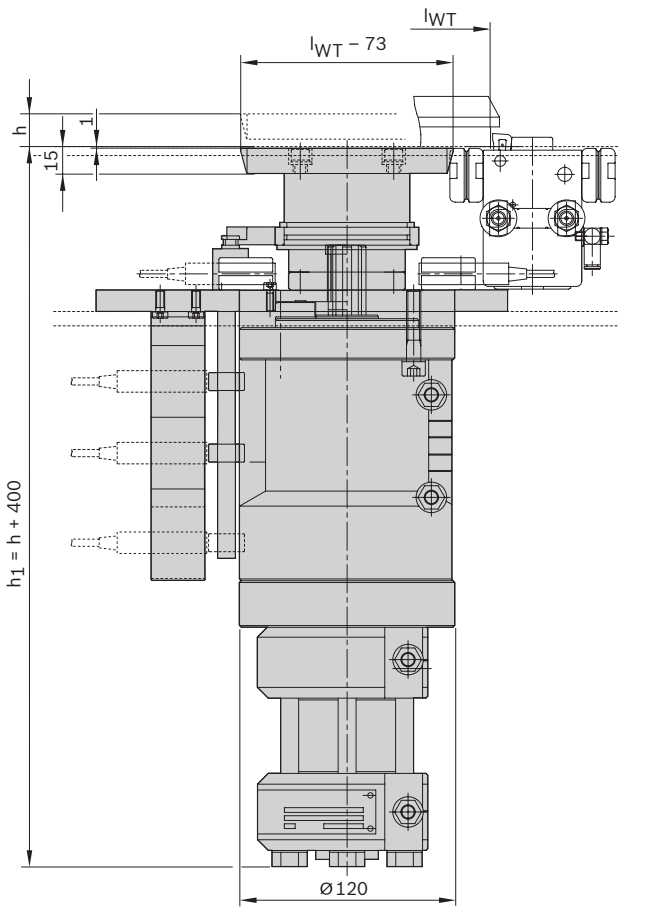
Ordering information

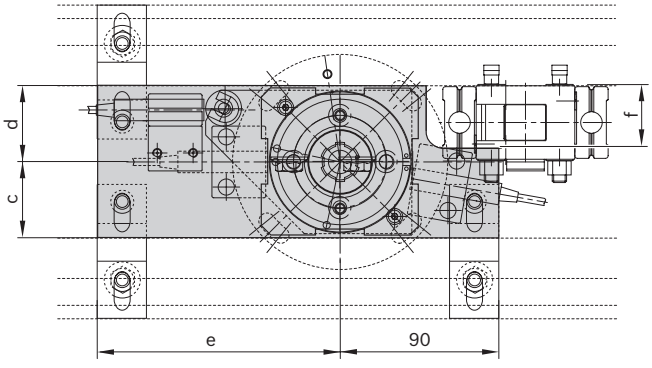
Product designation	b (mm)	l_T (mm)	DW (°)	h (mm)	Material number
HD 2 lift rotate unit	160	160	90	40	3842525847
HD 2 lift rotate unit	160	160	180	40	3842525848
HD 2 lift rotate unit	160	160	90	90	3842525849
HD 2 lift rotate unit	160	160	180	90	3842525850
HD 2 lift rotate unit	160	240	180	40	3842525851
HD 2 lift rotate unit	160	240	180	90	3842525852
HD 2 lift rotate unit	160	320	180	40	3842525853
HD 2 lift rotate unit	160	320	180	90	3842525854
HD 2 lift rotate unit	240	160	180	40	3842525855
HD 2 lift rotate unit	240	160	180	90	3842525856
HD 2 lift rotate unit	240	240	90	40	3842525857
HD 2 lift rotate unit	240	240	180	40	3842525858
HD 2 lift rotate unit	240	240	90	90	3842525859
HD 2 lift rotate unit	240	240	180	90	3842525860
HD 2 lift rotate unit	240	320	180	40	3842525861
HD 2 lift rotate unit	240	320	180	90	3842525862
HD 2 lift rotate unit	320	160	180	40	3842525863
HD 2 lift rotate unit	320	160	180	90	3842525864
HD 2 lift rotate unit	320	240	180	40	3842525865
HD 2 lift rotate unit	320	240	180	90	3842525866
HD 2 lift rotate unit	320	320	90	40	3842525867
HD 2 lift rotate unit	320	320	180	40	3842525868
HD 2 lift rotate unit	320	320	90	90	3842525869
HD 2 lift rotate unit	320	320	180	90	3842525870

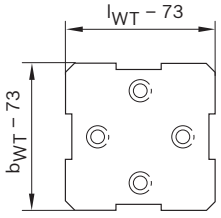
Technical data

Material number			**3842525847** **3842525848** **3842525849** **3842525850** **3842525851** **3842525852**	**3842525853** **3842525854** **3842525855** **3842525856** **3842525857** **3842525858**	**3842525859** **3842525860** **3842525861** **3842525862** **3842525863** **3842525864**	**3842525865** **3842525866** **3842525867** **3842525868** **3842525869** **3842525870**
Load						
Max. total workpiece pallet weight	m_G	kg				16
Features						
ESD						Yes
Additional information						
WT lift above conveying level						40; 90

Dimensions

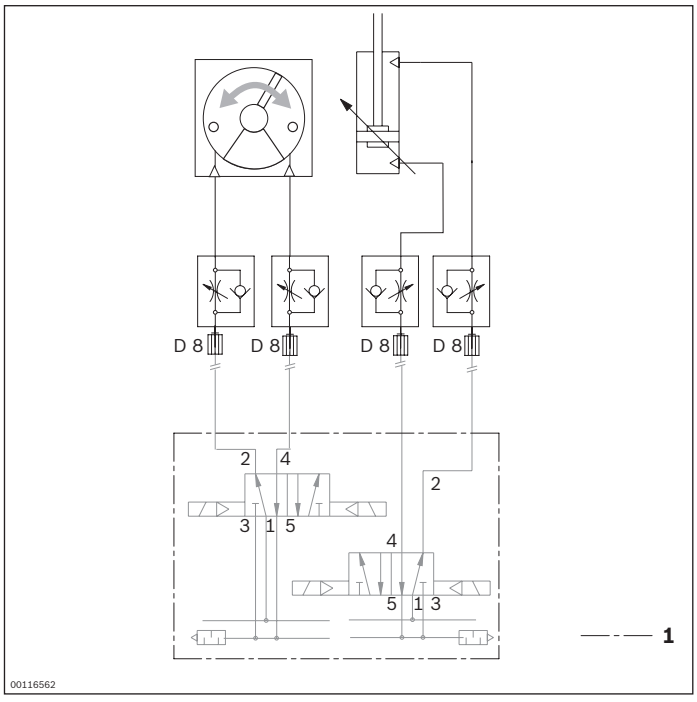






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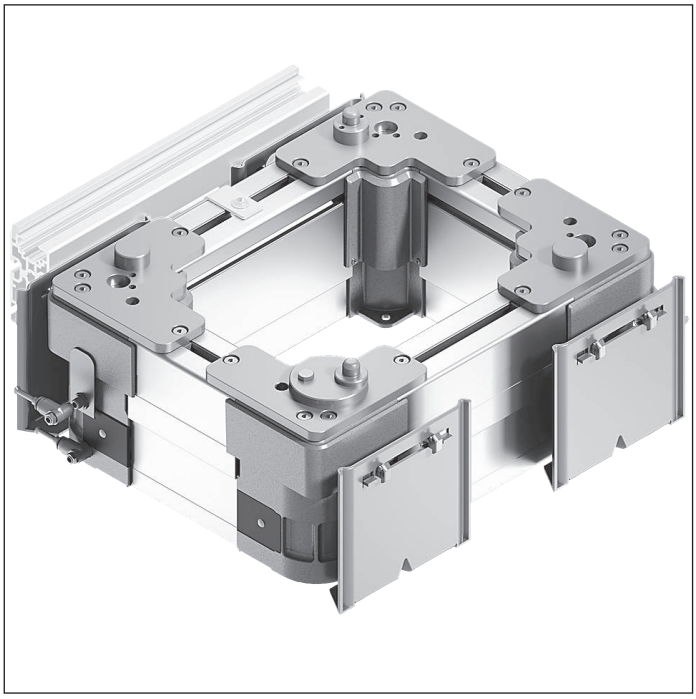
Circuit diagrams



1 Not included in delivery

PE 2/H positioning unit





- For positioning a workpiece pallet in a manual/ automatic processing station
- Positioning accuracy up to ±0.1 mm when assembled on a separate machine frame
- WT lift above transportation level, approx. 16 mm
- Positioning via the PE 2 positioning pins and the positioning bushings on the WT 2 workpiece pallet
- Mounting holes on lift frame as an optional fastening point for a separate machine frame
- Permissible vertical process forces: 3500 N, incl. WT 2
- Can be combined with all WT 2/H and WT 2/F-H workpiece pallets

Accessories

Required accessories

- VE 2/D100-H stop gate, see p. 8-33 or VE 2/D250-H stop gate, see p. 8-37

Delivery notes

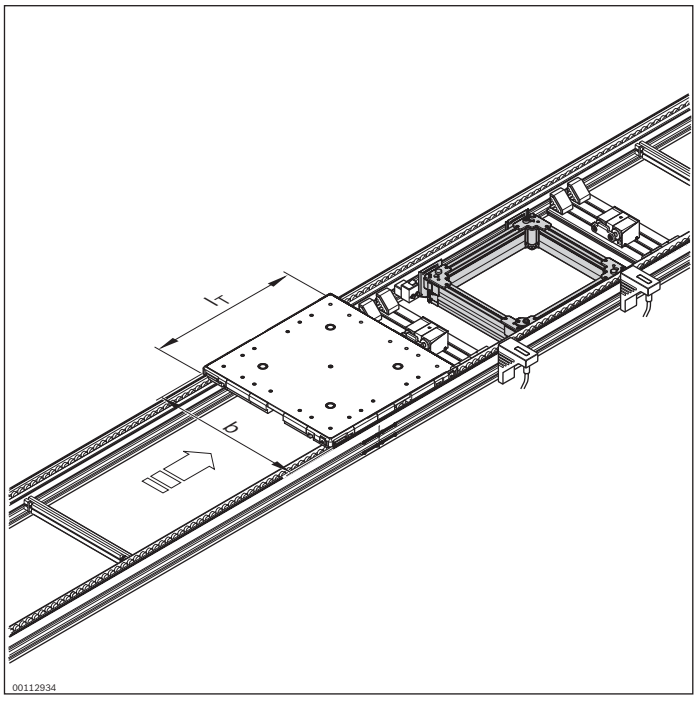
Scope of delivery

- Incl. fastening material
- Pneumatic elements

Condition on delivery

- Fully assembled

Ordering information



Material number		**3842999000**
b (mm)	Track width in direction of transport	480; 640; 800; 1040; 1200
		480 ... 1200[1]
l_T (mm)	Length in direction of transport	480; 640; 800; 1040; 1200
		480 ... 1200[1]
w x l_d (mm x mm)	Combination options	480 ... 1200 x 480 ... 1200

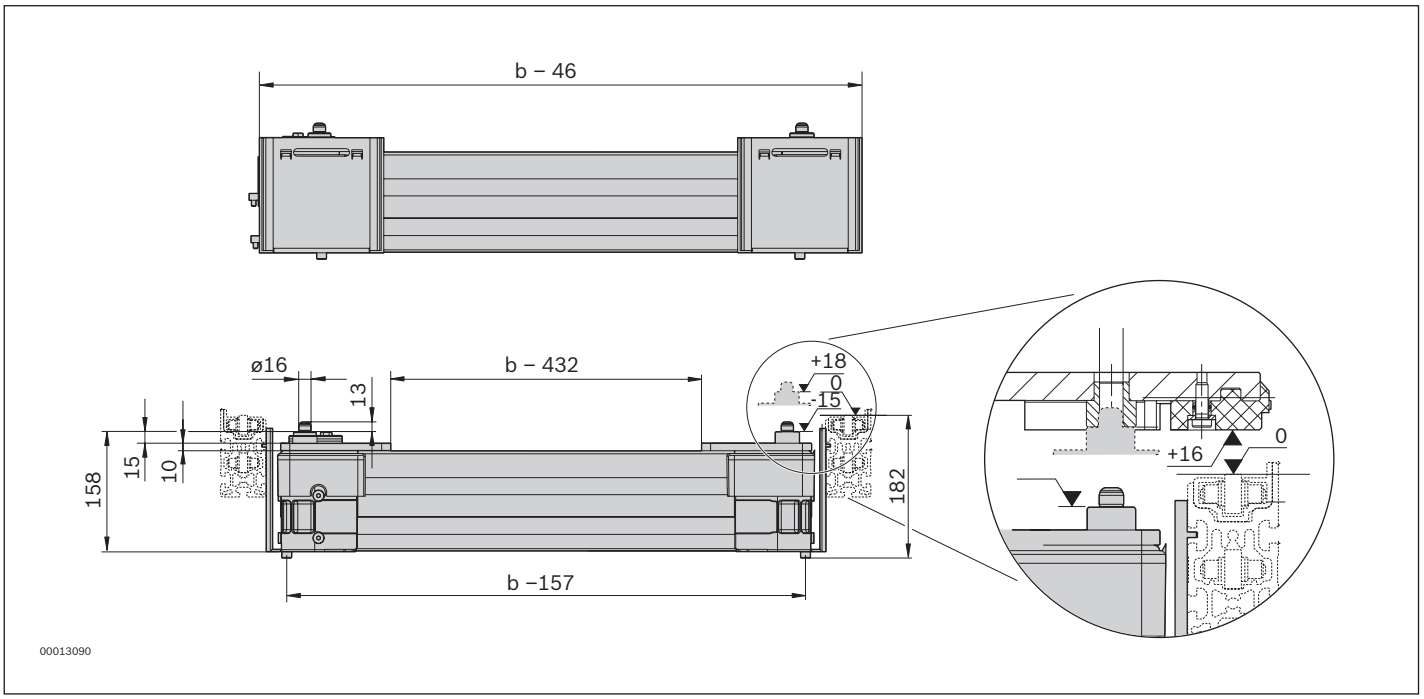
[1] Individual width variants available

Technical data

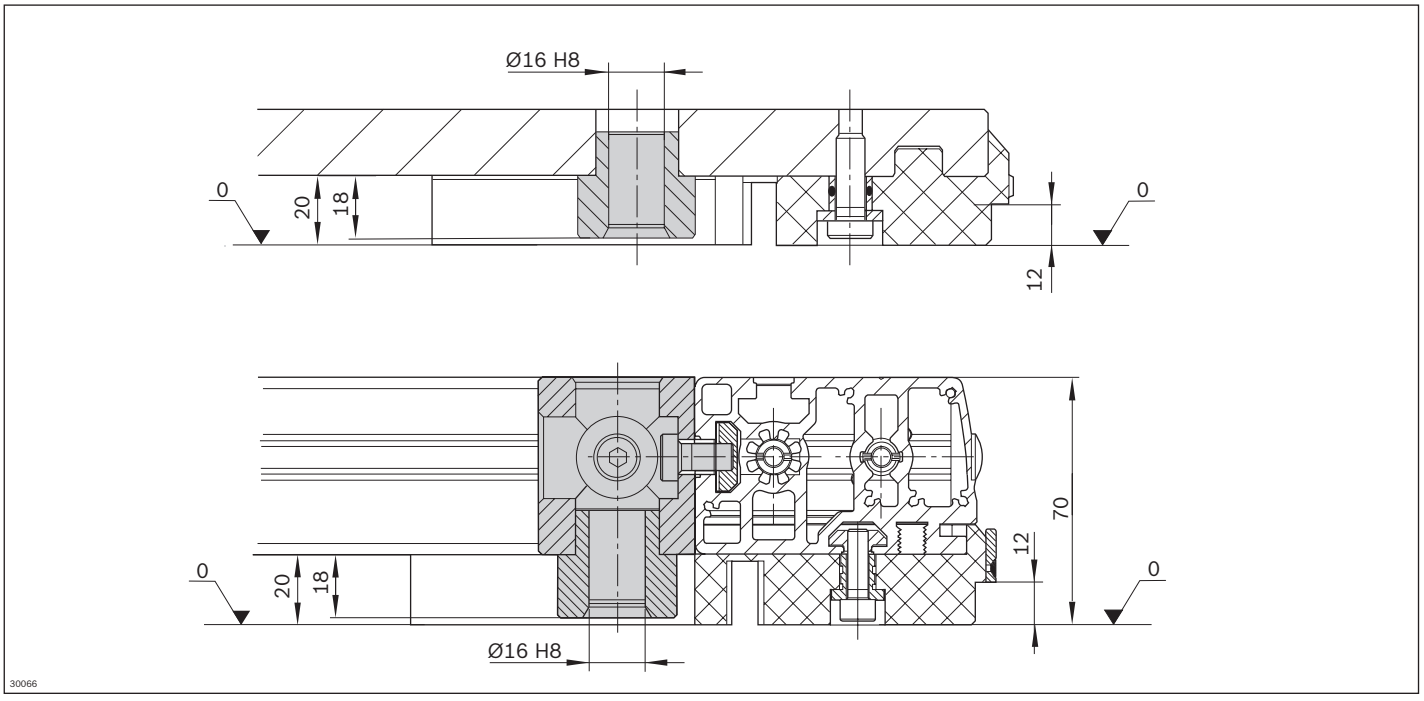
Material number			**3842999000**
Load			
Max. total workpiece pallet weight	m_G	kg	240
Features			
ESD			Yes
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	8
WT lift above conveying level		mm	16
Repeat accuracy[1]		mm	±0.1
Permissible vertical process forces[2]		N	3500

[1] When assembled on a separate machine frame
[2] Incl. WT 2

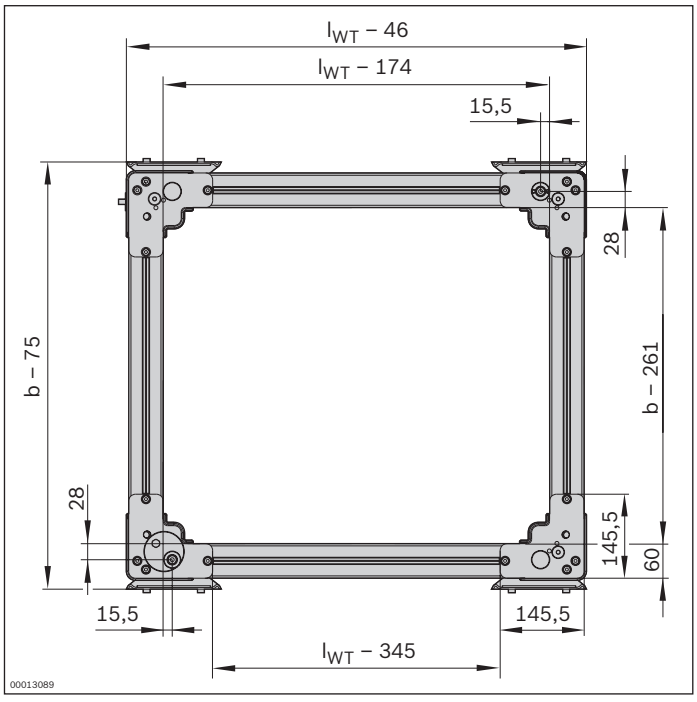
Dimensions

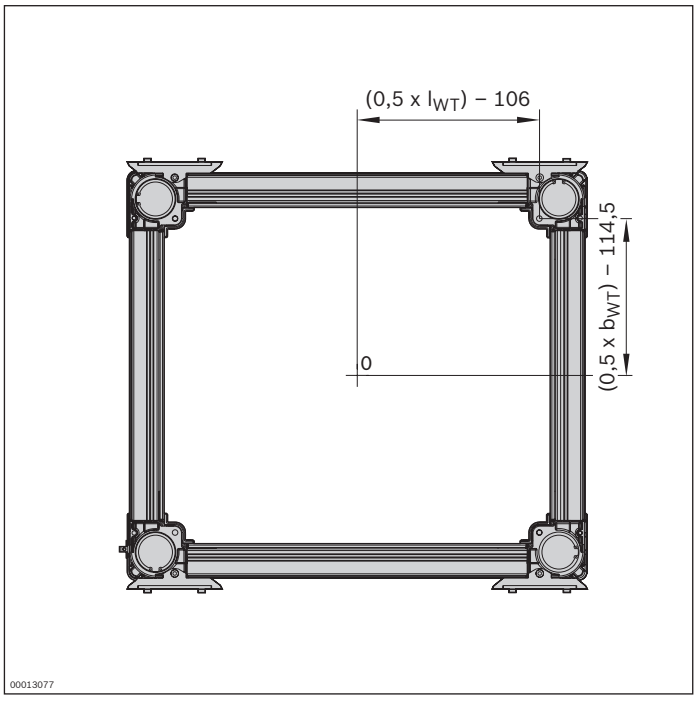


0 Transport level

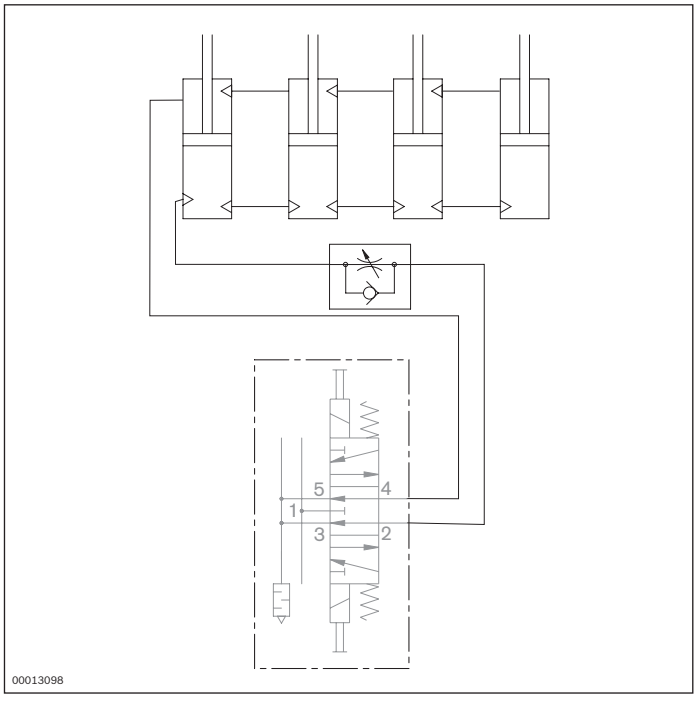


Dimensions



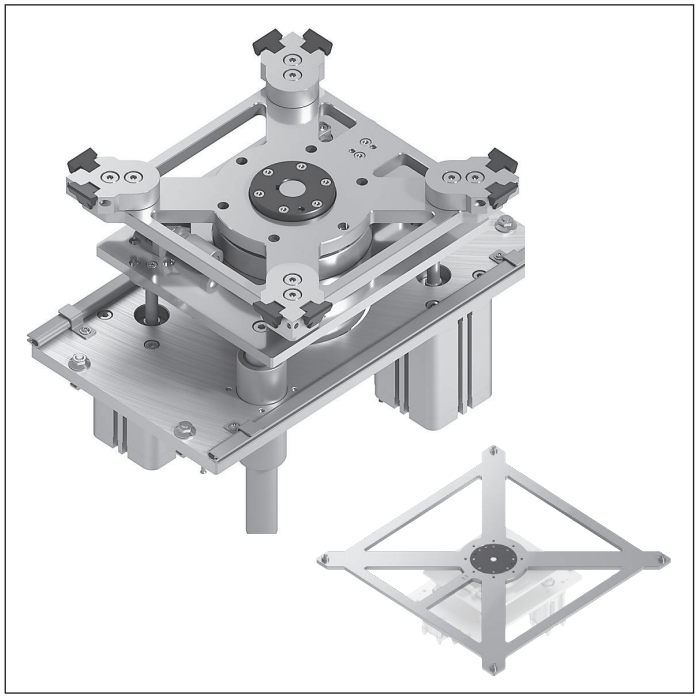


Circuit diagrams



1 Not included in delivery

HD 2/H lift rotate unit



- WT lift above transportation level, approx. 50 mm
- Available in 3 sizes (BG) for WT total weights up to 240 kg
  - BG 1 and BG 2 for use with WT 2 and WT 2/F workpiece pallets
  - BG 3 for use with WT 2/H and WT 2/F-H workpiece pallets
- Rotation 90° or 180°
  - For rotating quadratic workpiece pallets 90° or 180°
  - For rotating non-quadratic workpiece pallets 180°
  - For BG 1 and BG 2 at a 90° rotation, the reverse rotation occurs below the belt Reduced cycle times by means of reverse rotation during workpiece pallet change
    For BG 3 at a 90° rotation, the reverse rotation occurs below the belt
  - Center position only with BG 1 and BG 2 in 90° version

The HD 2/H lift rotate unit turns workpiece pallets to the required orientation.

Accessories

Required accessories

- Housing element, see p. 7-67
- Leg sets for BG 2 over 50 kg, see p. 6-24
- Leg sets for BG 3 generally, see p. 6-24
- Cylinder switch (0830100433) for the top/center/bottom lift positions, see p. 7-61
- Sensor for rotary movement at 0°/180° or 0°/90°, see p. 7-61

Recommended accessories

- VE 2 stop gate, see p. 8-6, or VE 2/D stop gate, see p. 8-24, for damped stopping of a workpiece pallet
- Recommended accessories for BG3: VE 2/D-100 or VE 2/D-250 stop gate

Delivery notes

Scope of delivery

- 2x damper for end rotary movement positions
- Incl. fastening material for assembly on conveyor sections
- Pneumatic elements such as fittings, throttle non-return valves, etc. for the top/center/bottom lift positions

Condition on delivery

- Fully assembled

Ordering information

Product designation	Size BG	Max. total workpiece pallet weight m_G (kg)	Width b_{WT} (mm)	Length l_T (mm)	Angle of rotation DW[3] (°)	Installation location AO[4]	Material number
HD 2/H lift rotate unit	BG 1[1]	50	240	240; 320; 400	90; 180	0; 1	**3842998760**
			320	240; 320; 400; 480	90; 180	0; 1	**3842998760**
			400	320	180	0; 1	**3842998760**
HD 2/H lift rotate unit	BG 2[1]	128	400	400; 480	90; 180	0; 1	**3842998761**
			480	400; 480; 640; 800	90; 180	0; 1	**3842998761**
			640	480; 640; 800; 1040	90; 180	0; 1	**3842998761**
			800	640	180	0; 1	**3842998761**
HD 2/H lift rotate unit	BG 3[2]	240	800	800; 1040	90; 180	0; 1	**3842998762**
			1040	800; 1040; 1200	90; 180	0; 1	**3842998762**
			1200	1200	90; 180	0; 1	**3842998762**

1 For use with WT 2 and WT 2/F-H workpiece pallets only
2 For use with WT 2/H and WT 2/F-H workpiece pallets only
3 Only possible for DW = 90° quadratic workpiece pallets
4 Installation location: 0 = 80 mm and 1 = 100 mm

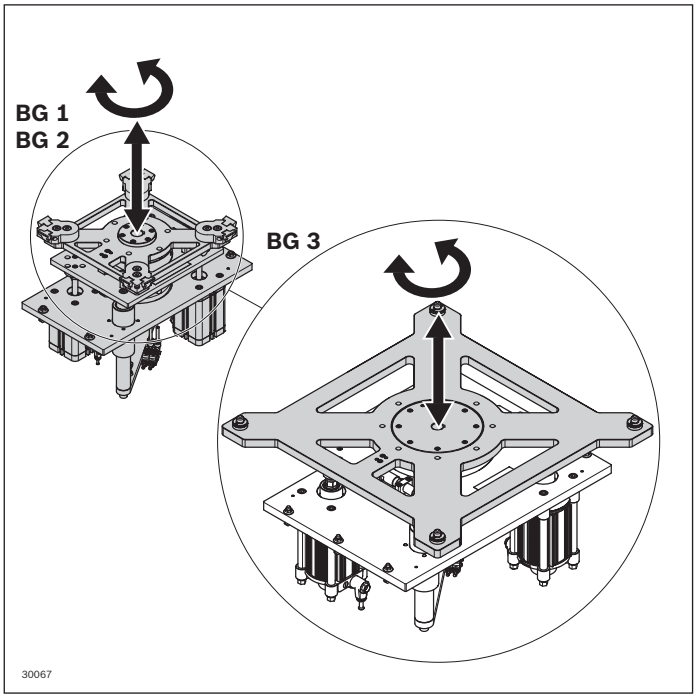
Ordering information

Product designation	Material number
Cylinder switch for top/center/bottom position sensing ST6-PN-M12R-030 sensor	0830100433

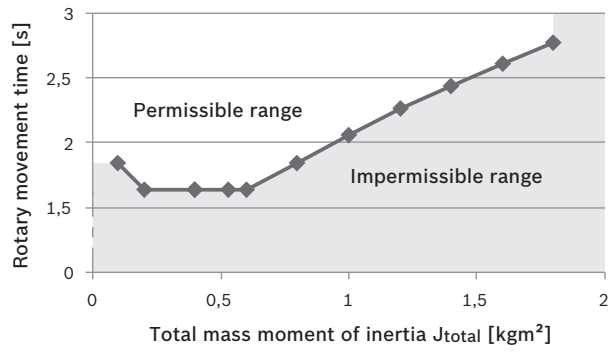
Product designation	Material number
Sensor, short, for rotary movement end position sensing IEC/EN 60947-5-2:-2004	3842549811

Technical data

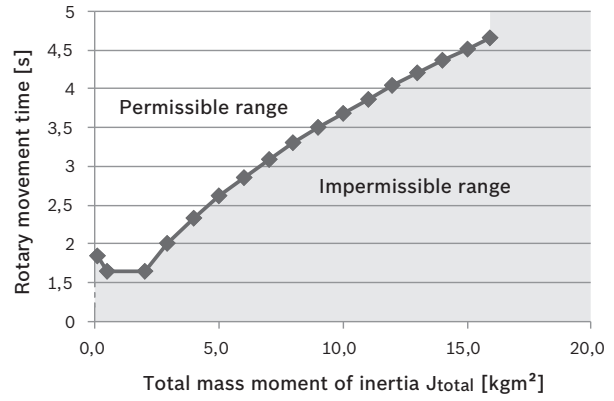
Material number	3842998760	3842998761	3842998762
Additional information			
WT lift above conveying level	50	50	50



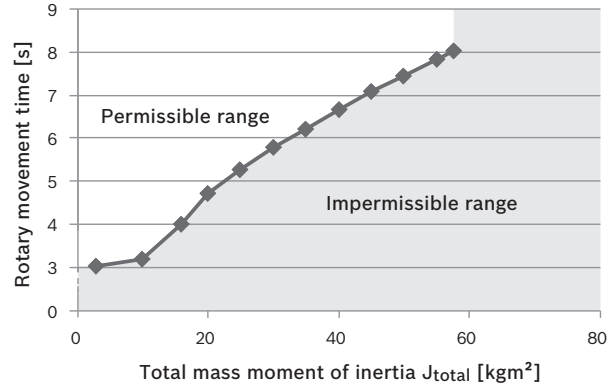
Size 1



Size 2



Size 3



Operating limits of the HD 2/H lift rotate unit

Mass moment of inertia

Note:

In the arrangement of supports and workpieces on the WT (= workpiece carrier) it must be ensured that the center of gravity of the loaded WT is within ⅓ of the length/width of the WT around the center of the WT.

It must also be ensured that the loading center of gravity at height h_S does not exceed ½ b_{WT} (with $b_{WT} \leq l_{WT}$).

Size 1: HD 2/H lift rotate unit, 3842998760

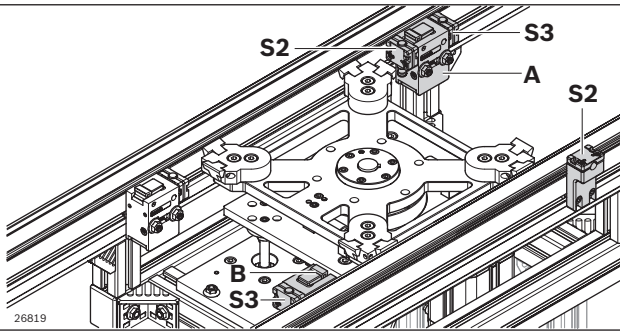
Mass max. 50 kg; mass moment of inertia max. 1.8 kg/m²

Size 2: HD 2/H lift rotate unit, 3842998761

Mass max. 128 kg; mass moment of inertia max. 15.9 kg/m²

Size 3: HD 2/H lift rotate unit, 3842998762

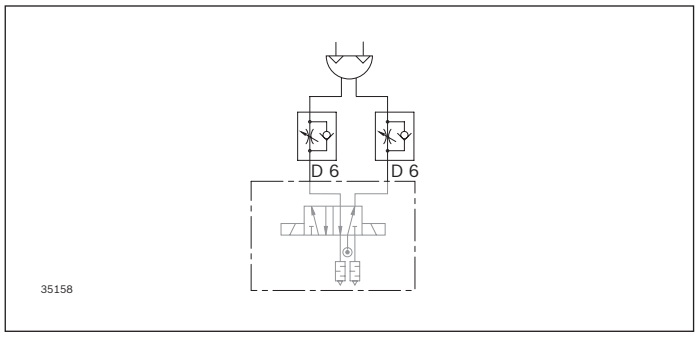
Mass max. 240 kg; mass moment of inertia max. 57.6 kg/m²

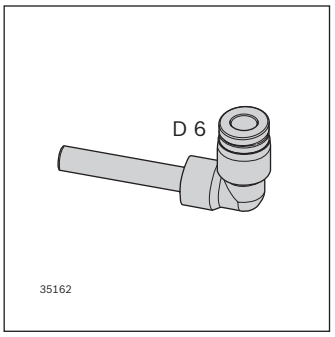


Additional operating limits

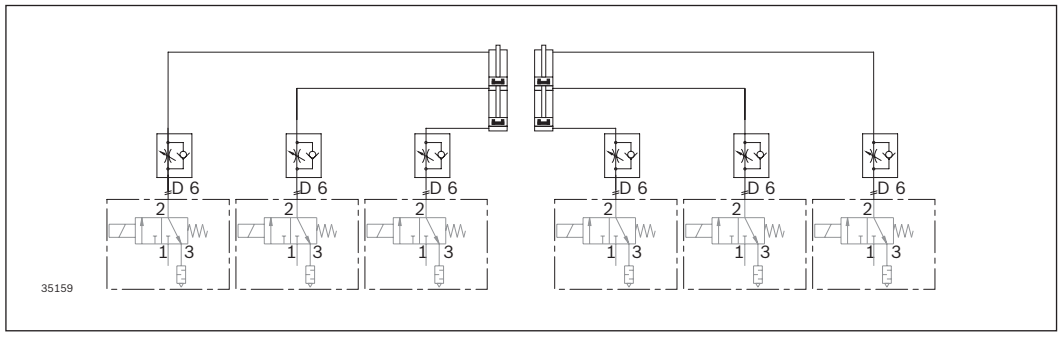
- Switch bracket mounting at b_{WT} x l_{WT} 240 mm x 240 mm is only possible from outside => see S2
- Reversible operation possible from b_{WT} x l_{WT} 320 mm x 320 mm => see A and B

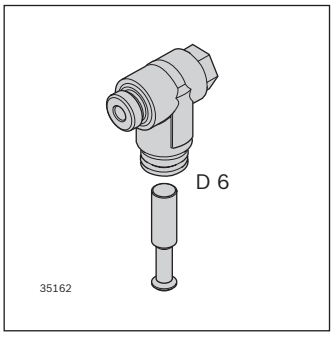
Pneumatic diagram of the HD 2/H lift rotate unit:
Rotating cylinder for Size 1/2/3, rotation angle 90° and 180°



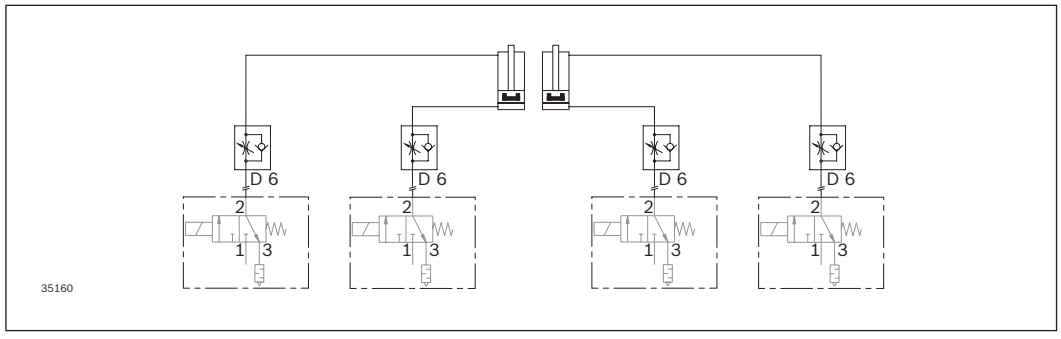


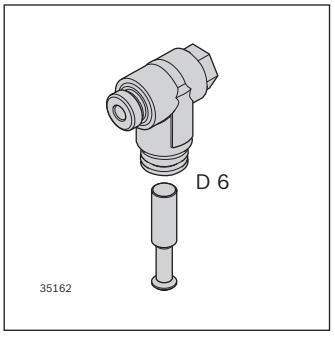
Pneumatic diagram of the HD 2/H lift rotate unit:
Lifting cylinder for Size 1/2, rotation angle 90° (multiple position cylinder)



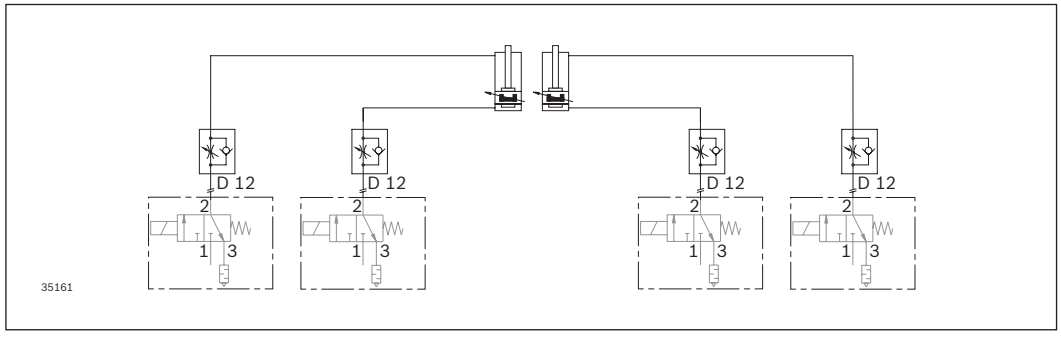


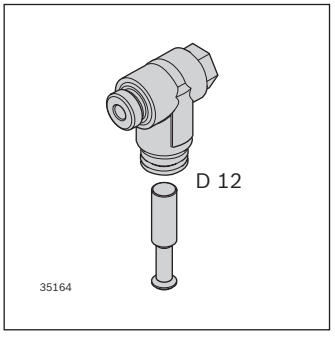
Pneumatic diagram of the HD 2/H lift rotate unit:
Lifting cylinder for Size 1/2, rotation angle 180°





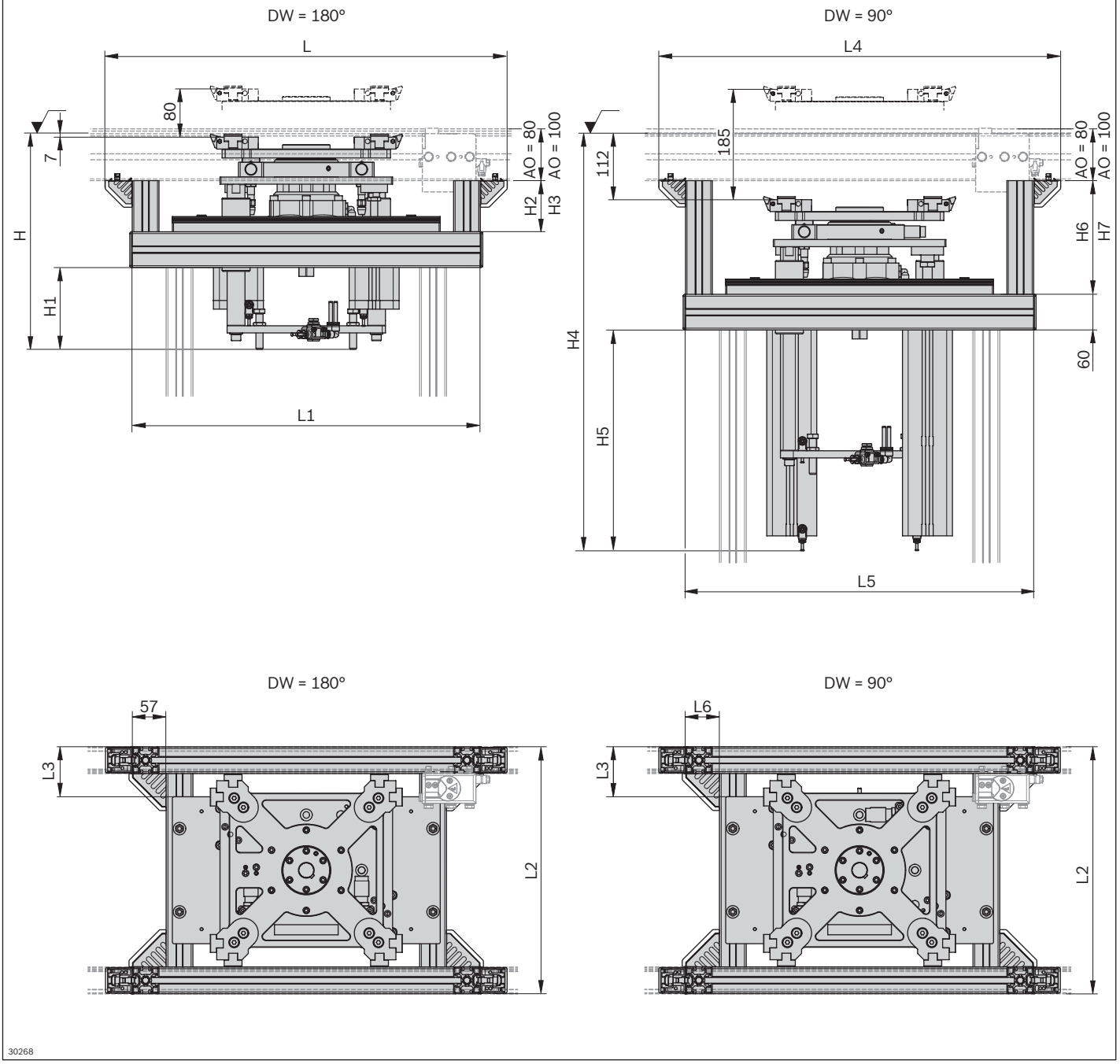
Pneumatic diagram of the HD 2/H lift rotate unit:
Lifting cylinder for Size 3, rotation angle 90° and 180°





Dimensions for BG 1 (3842998760)/BG 2 (3842998761)

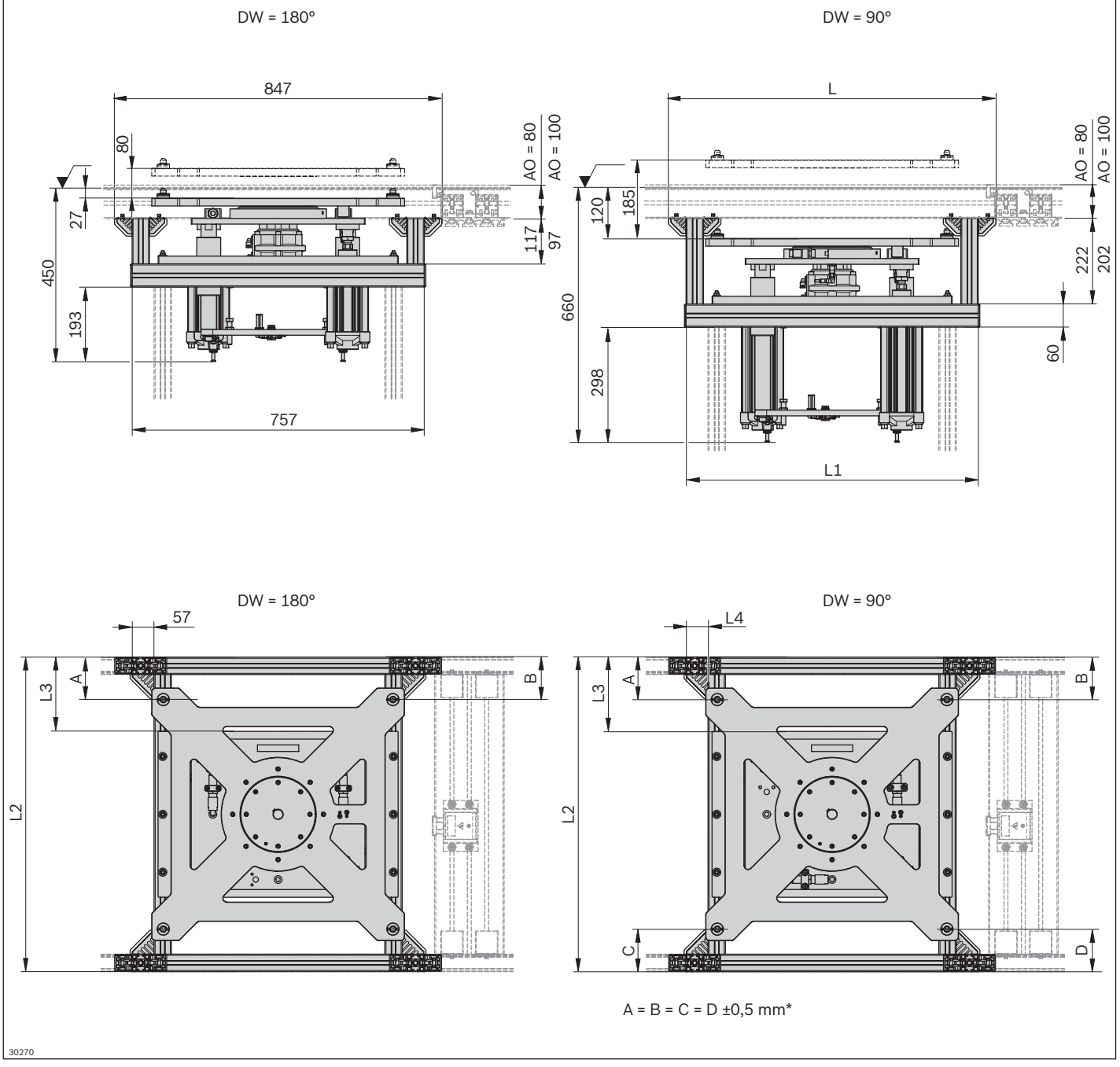
BG 1
BG 2



BG	Width b_{WT} (mm)	H (mm)	H1 (mm)	H2 (mm)	H3 (mm)	H4 (mm)	H5 (mm)	H6 (mm)	H7 (mm)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)
BG 1	240	336.4	120.4	76	56	672.2	351.2	181	161	597	507	255	47.5	597	507	57
BG 1	320	336.4	120.4	76	56	672.2	351.2	181	161	597	507	335	87.5	597	507	57
BG 1	400	336.4	120.4	76	56	672.2	351.2	181	161	597	507	415	127.5	597	507	57
BG 2	400	363.5	137.5	86	66	701.9	370.9	191	171	675	585	415	84.0	675	585	57
BG 2	480	363.5	137.5	86	66	701.9	370.9	191	171	675	585	495	124.0	675	585	57
BG 2	640	363.5	137.5	86	66	701.9	370.9	191	171	675	585	655	204.0	725	635	82
BG 2	800	363.5	137.5	86	66	701.9	370.9	191	171	675	585	815	284	725	635	82

Dimensions for BG 3 (3842998762)

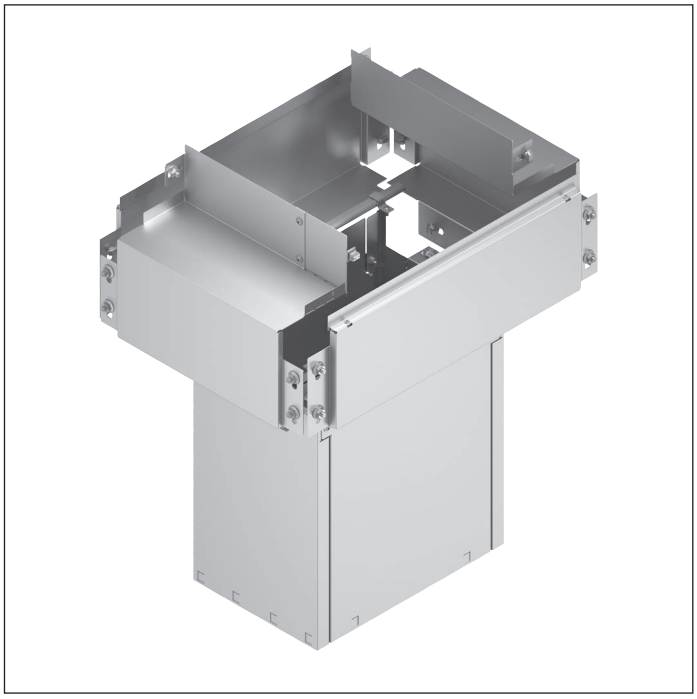
BG 3



*Rotation angle setting

BG	Width b_{WT} (mm)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)
BG 3	800	847	757	815	192.5	57.0
BG 3	1040	1040	950	1055	312.5	153.5
BG 3	1200	1190	1100	1215	392.5	228.5

HD 2/H housing element

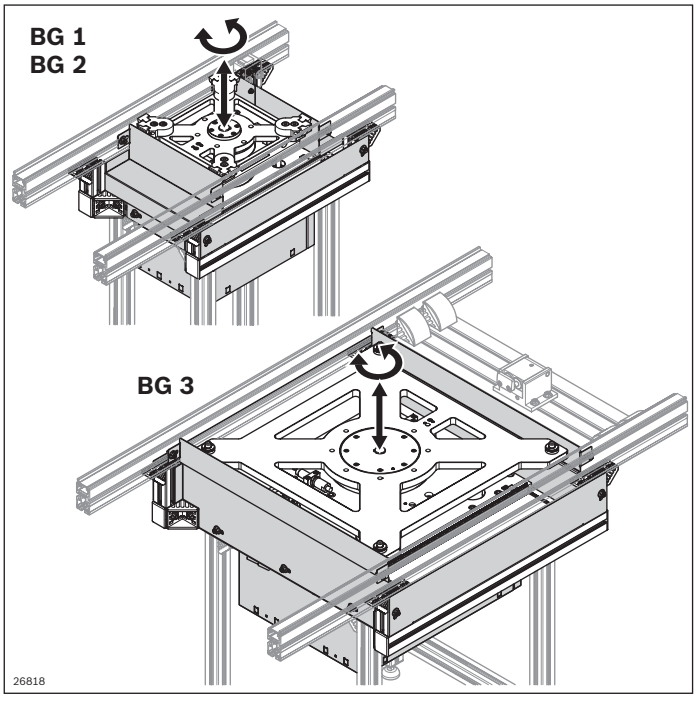


- For the safety of the unit and to protect against interference from outside below the conveying level
- Protection above the conveying level must be configured individually for each application

Ordering information

BG	Width b_{WT} (mm)	Length l_{WT} (mm)	Rotation angle DW (°)	Material number
BG 1	240	240	90	**3842552593**
BG 1	240	240	180	**3842552601**
BG 1	240	320	180	**3842552602**
BG 1	240	400	180	**3842552603**
BG 1	320	240	180	**3842552604**
BG 1	320	320	90	**3842552594**
BG 1	320	320	180	**3842552605**
BG 1	320	400	180	**3842552606**
BG 1	320	480	180	**3842552607**
BG 1	400	320	180	**3842552609**
BG 2	400	400	90	**3842552595**
BG 2	400	400	180	**3842552611**
BG 2	400	480	180	**3842552612**
BG 2	480	400	180	**3842552613**
BG 2	480	480	90	**3842552596**
BG 2	480	480	180	**3842552614**
BG 2	480	640	180	**3842552615**
BG 2	480	800	180	**3842552616**
BG 2	640	480	180	**3842552617**
BG 2	640	640	90	**3842552597**
BG 2	640	640	180	**3842552618**

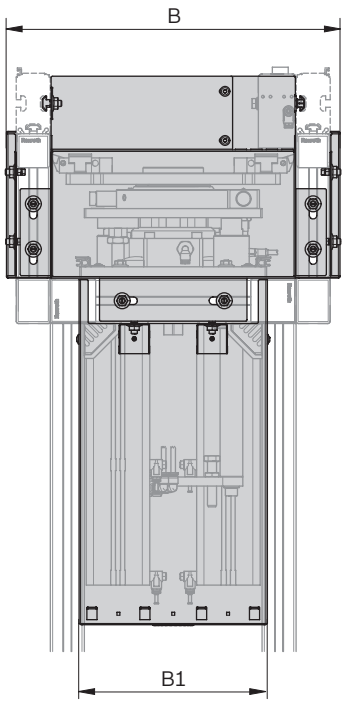
BG	Width b_{WT} (mm)	Length l_{WT} (mm)	Rotation angle DW (°)	Material number
BG 2	640	800	180	**3842552619**
BG 2	640	1040	180	**3842552620**
BG 2	800	640	180	**3842552622**
BG 3	800	800	90	**3842552598**
BG 3	800	800	180	**3842552624**
BG 3	800	1040	180	**3842552625**
BG 3	1040	800	180	**3842552626**
BG 3	1040	1040	90	**3842552599**
BG 3	1040	1040	180	**3842552627**
BG 3	1040	1200	180	**3842552628**
BG 3	1200	1200	90	**3842552600**
BG 3	1200	1200	180	**3842552630**



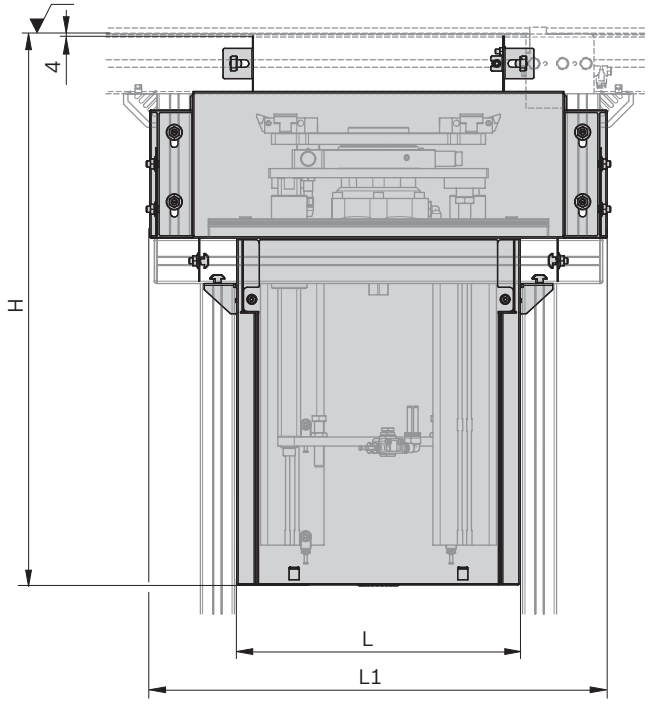
Housing element dimensions for BG 1 and BG 2

BG 1
BG 2

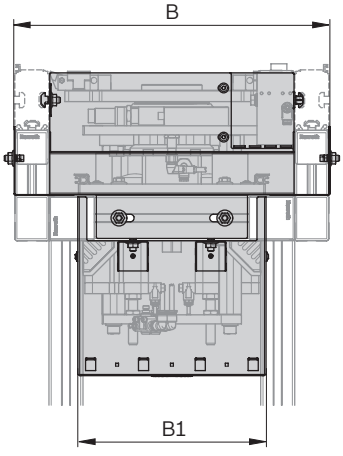
DW = 90°



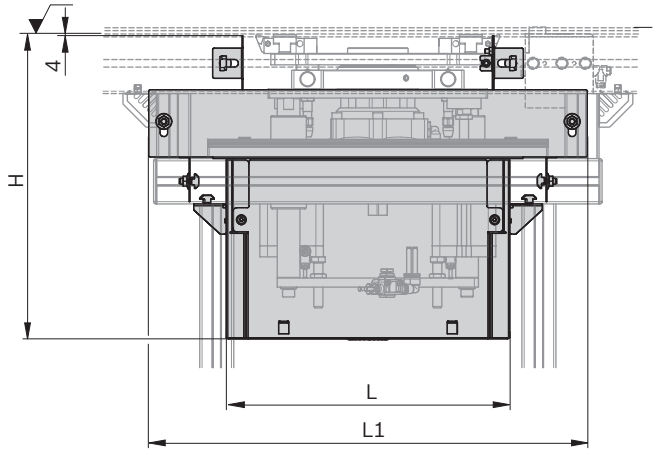
DW = 90°



DW = 180°



DW = 180°



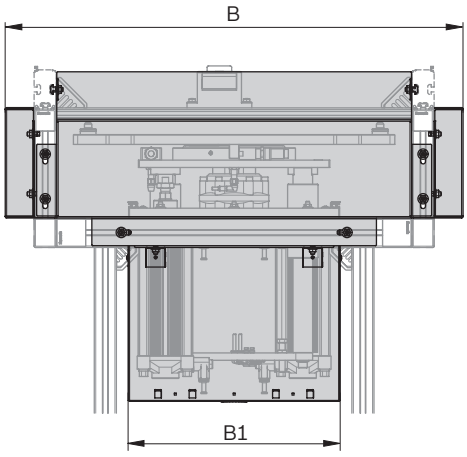
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BG	Width b_{WT} (mm)	Length l_{WT} (mm)	Rotation angle DW (°)	H (mm)	L (mm)	L1 (mm)	B (mm)	B1 (mm)	Material number
BG 1	240	240	90	699.5	297	509	257.2	157	**3842552593**
BG 1	240	240	180	371.5	297	423	257.2	157	**3842552601**
BG 1	240	320	180	371.5	297	423	257.2	157	**3842552602**
BG 1	240	400	180	371.5	297	423	257.2	157	**3842552603**
BG 1	320	240	180	371.5	297	423	337.2	162	**3842552604**
BG 1	320	320	90	699.5	297	509	337.2	162	**3842552594**
BG 1	320	320	180	371.5	297	423	337.2	162	**3842552605**
BG 1	320	400	180	371.5	297	423	337.2	162	**3842552606**
BG 1	320	480	180	371.5	297	495	337.2	162	**3842552607**
BG 1	400	320	180	371.5	297	423	417.2	162	**3842552609**
BG 2	400	400	90	729.5	375	605	441.0	249	**3842552595**
BG 2	400	400	180	404.5	375	501	417.2	249	**3842552611**
BG 2	400	480	180	404.5	375	501	417.2	249	**3842552612**
BG 2	480	400	180	404.5	375	501	497.2	249	**3842552613**
BG 2	480	480	90	729.5	375	605	553.0	249	**3842552596**
BG 2	480	480	180	404.5	375	501	497.2	249	**3842552614**
BG 2	480	640	180	404.5	375	651	497.2	249	**3842552615**
BG 2	480	800	180	404.5	375	811	497.2	249	**3842552616**
BG 2	640	480	180	404.5	375	501	657.2	249	**3842552617**
BG 2	640	640	90	729.5	375	779	779.0	249	**3842552597**
BG 2	640	640	180	404.5	375	651	657.2	249	**3842552618**
BG 2	640	800	180	404.5	375	811	657.2	249	**3842552619**
BG 2	640	1040	180	404.5	375	1051	657.2	249	**3842552620**
BG 2	800	640	180	404.5	375	651	817.2	249	**3842552622**

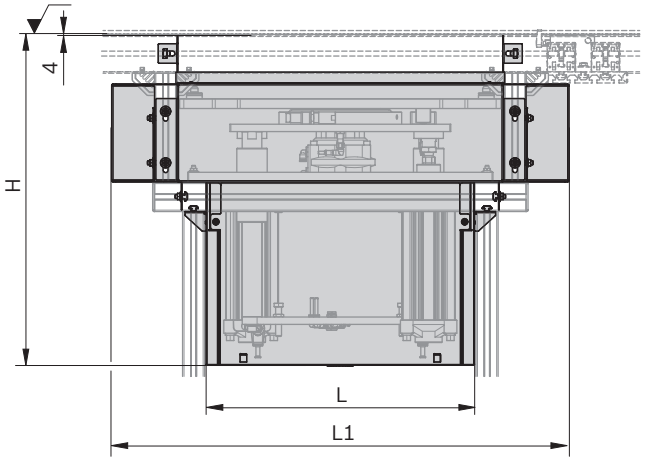
Housing element dimensions for BG 3

BG 3

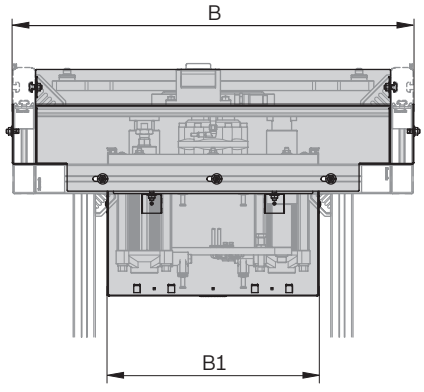
DW = 90°



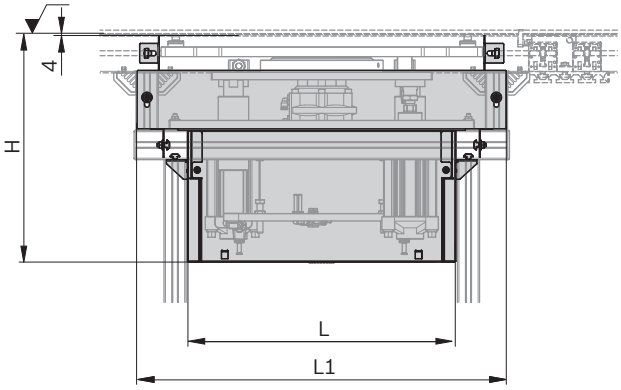
DW = 90°



DW = 180°



DW = 180°



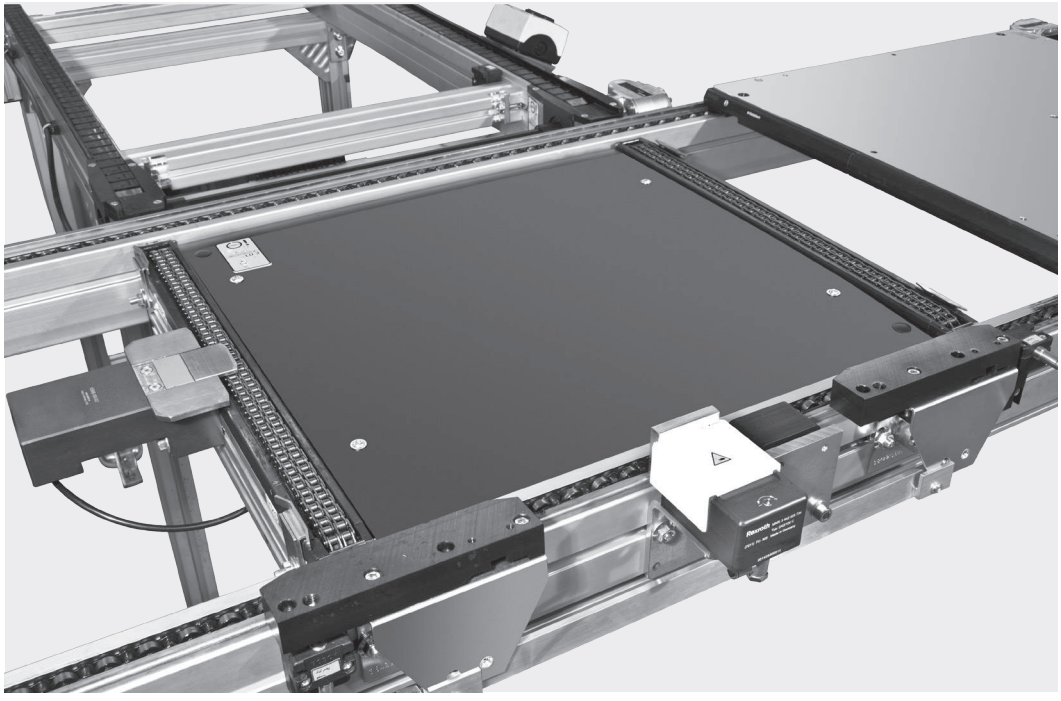
30271

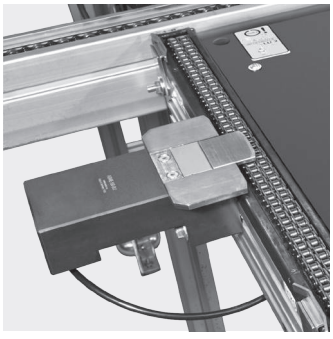
BG	Width b_{WT} (mm)	Length l_{WT} (mm)	Rotation angle DW (°)	H (mm)	L (mm)	L1 (mm)	B (mm)	B1 (mm)	Material number
BG 3	800	800	90	675.5	547	932	933.0	432	**3842552598**
BG 3	800	800	180	465.5	547	742	818.0	432	**3842552624**
BG 3	800	1040	180	465.5	547	982	818.0	432	**3842552625**
BG 3	1040	800	180	465.5	547	742	1058.0	432	**3842552626**
BG 3	1040	1040	90	675.5	547	1271	1271.0	432	**3842552599**
BG 3	1040	1040	180	465.5	547	982	1058.0	432	**3842552627**
BG 3	1040	1200	180	465.5	547	1142	1058.0	432	**3842552628**
BG 3	1200	1200	90	675.5	547	1497	1497.0	432	**3842552600**
BG 3	1200	1200	180	465.5	547	1142	1218.0	432	**3842552630**



Transportation control

Transportation control selection **8-2**







Transportation control selection

The modular units for transportation control are used to control the flow of the workpiece pallets on the transfer system. This involves stopping and separating pallets, inquiring the position of workpiece pallets, controlling all function processes, etc.

When WT 2/E, WT 2 and WT 2/F workpiece pallets are used, the VE 2/... stop gates are mounted directly on the section for lateral separation.

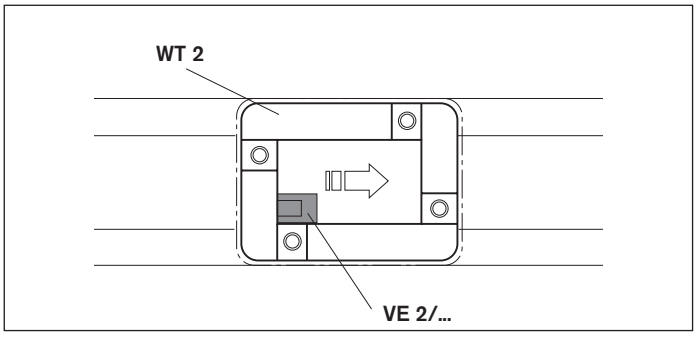
When WT 2/H and WT 2/F-H are used, the VE 2/D...-H stop gates are mounted by a cross strut for central separation.

All VE 2/... (without VE 2/...-H) can be used for lateral separation.
All VE 2/D...-H can be used for central separation.

Depending on the application and available space, stop gates may be mounted inside or outside the workpiece pallet.

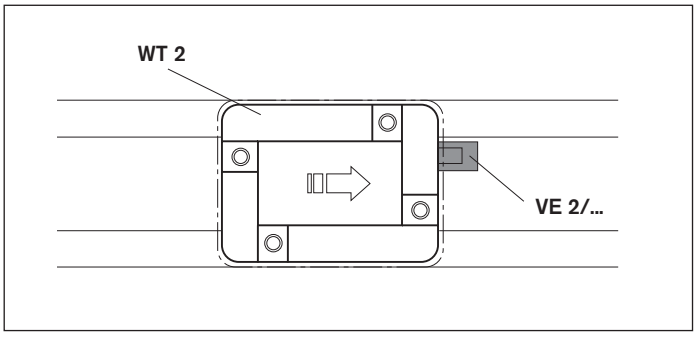
WT 2 workpiece pallet with lateral separation

Mounting in rear right position in the direction of transport, on the **inside** of the workpiece pallet surface



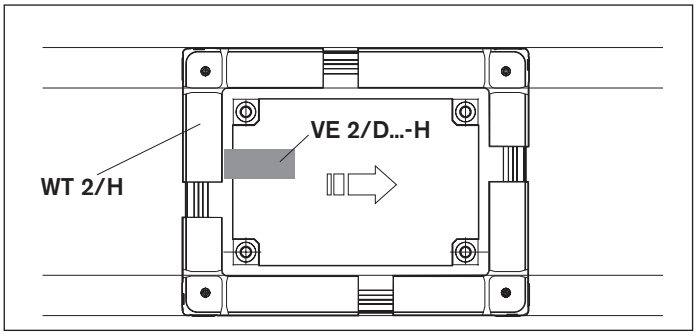
Mounting in front left position in the direction of transport, on the **outside** of the workpiece pallet surface





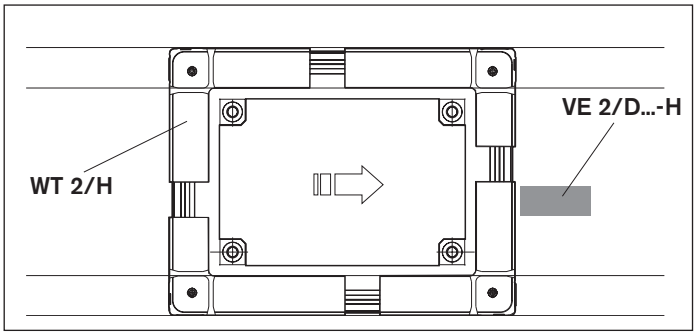
WT 2/H workpiece pallet with central separation

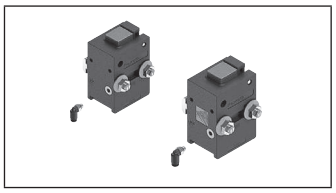
Mounting inside the workpiece pallet surface



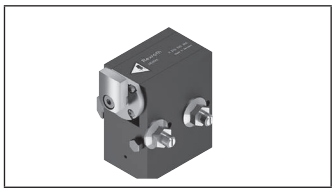
Mounting outside the workpiece pallet surface



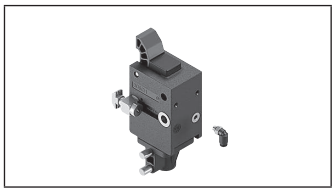




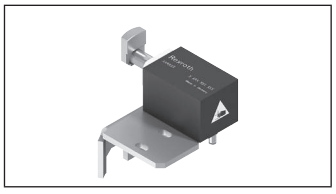
VE 2 stop gates 140 200 450 **8-4**



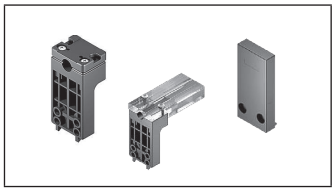
VE 2/D dampened stop gates 60 100 150 200 250 **8-24**



VA 2 slide stops 50 130 250 **8-46**



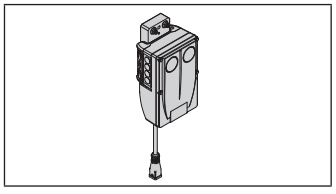
DA 2 dampers 60 100 150 250 **8-60**



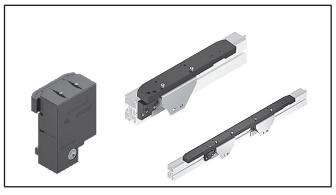
SH 2 switch brackets **8-90**



Sensors **8-106**



Frequency converters **8-116**

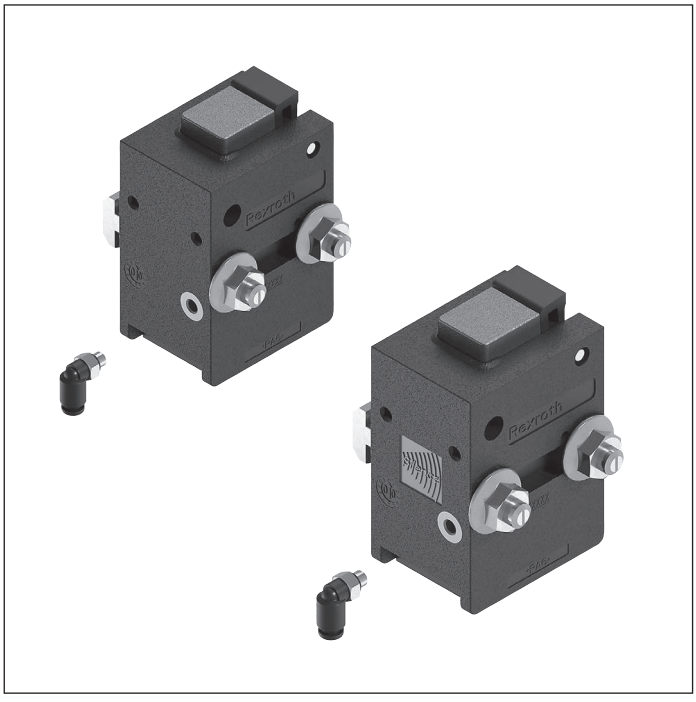


WI 2 rockers 30 100 **8-131**

VE 2 stop gate

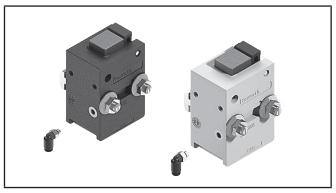
The VE 2 stop gates are used to stop and separate workpiece pallets, e.g., in an automated station. Actuation is performed pneumatically. In an unpressurized state, the stop gate is held in the blocking position by a spring and thus contributes significantly to production safety.

Stop gates are available with and without integrated shock absorbers.



Depending on the application and available space, stop gates may be mounted inside or outside the workpiece pallet.
Stop gates have mounting areas for sensors, which are used to monitor whether a workpiece pallet is standing at a stop gate or has passed it.

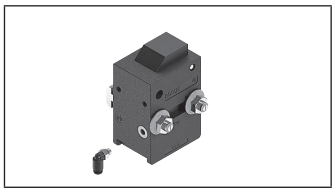
Dampened stop gates are used on conveyors where shock-sensitive and fragile parts are conveyed at speeds of up to 18 m/min.
All versions are designed as pneumatic stop gate with infinitely adjustable damping. This reduces the force of impact by up to 80% compared to an uncushioned stop gate. Dampened stop gates are not suitable for accumulation stop.



Stop gate
VE 2, VE 2/L, VE 2/M

200

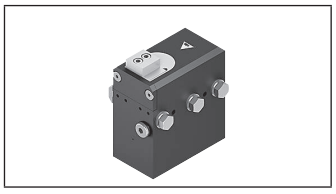
8-6



VE 2/S stop gate

140

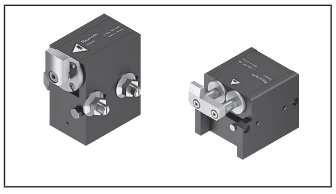
8-15



VE 2/X stop gate

450

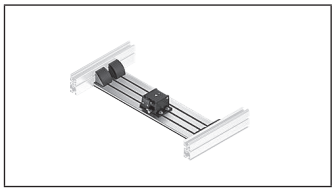
8-21



Stop gate
VE 2/D-60, VE 2/D-175, VE 2/D-200

60 175 200

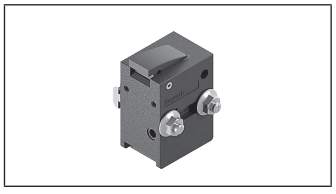
8-24



Stop gate
VE 2/D100-H, VE 2/D250-H

100 250

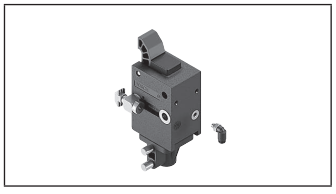
8-33



Return stops
VE 2/RS, VE 2/RS-H

250

8-40

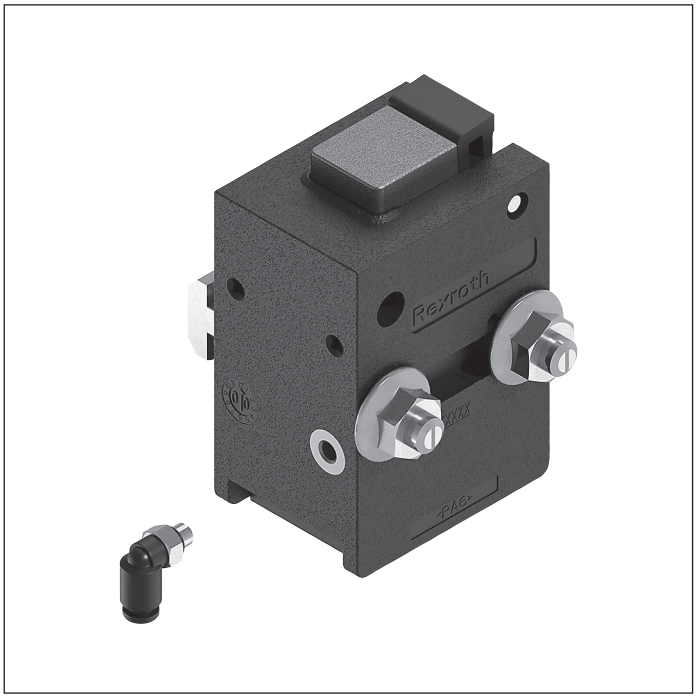


Slide stops
VA 2/50, VA 2/D-130, VA 2/D-250

50 130 250

8-46

VE 2 stop gate



- Pneumatic stop gate
- Tilting stop gate; can be opened without causing abrasion on the surface of the workpiece pallet stop surface
- Reversible operation not permitted
- Can be combined with WT 2/E, WT 2 and WT 2/F

Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40
- SH 2 switch bracket, see p. 8-88
- Position sensor, see p. 8-18

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Pneumatic elements

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2 stop gate	0842900300

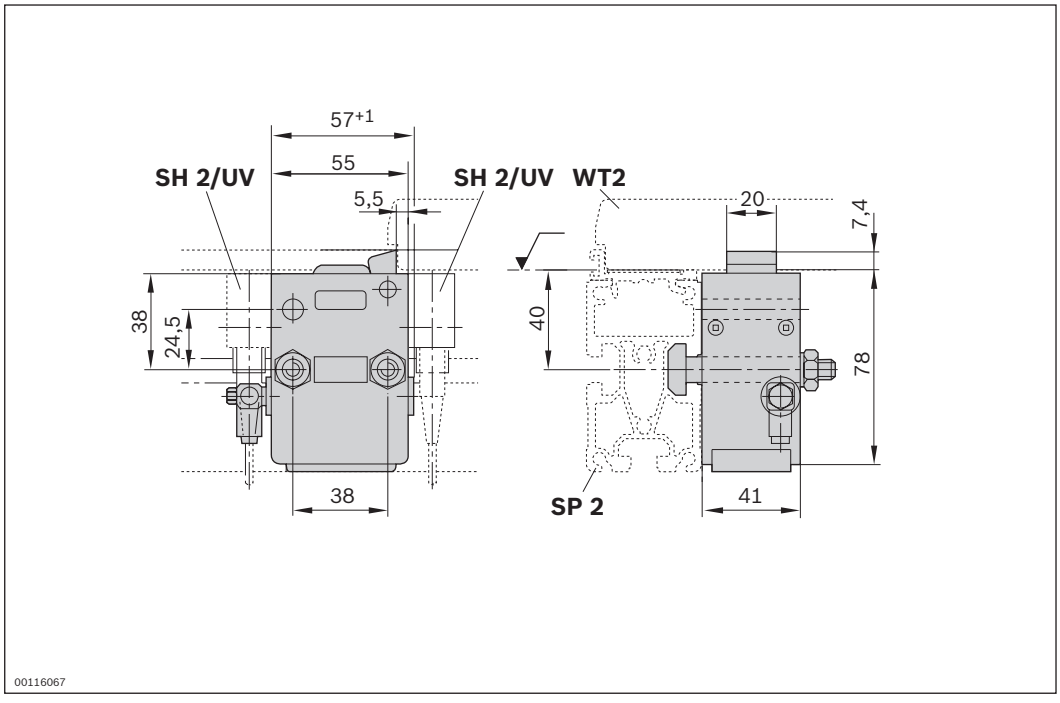
Technical data

Material number			**0842900300**
Load			
Max. total weight of workpiece pallet	m_G	kg	200
Features			
Material specification			Housing: PA6 Safety catch: Brass Lug cam: PA66
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

[1] High-temperature stop gate on request

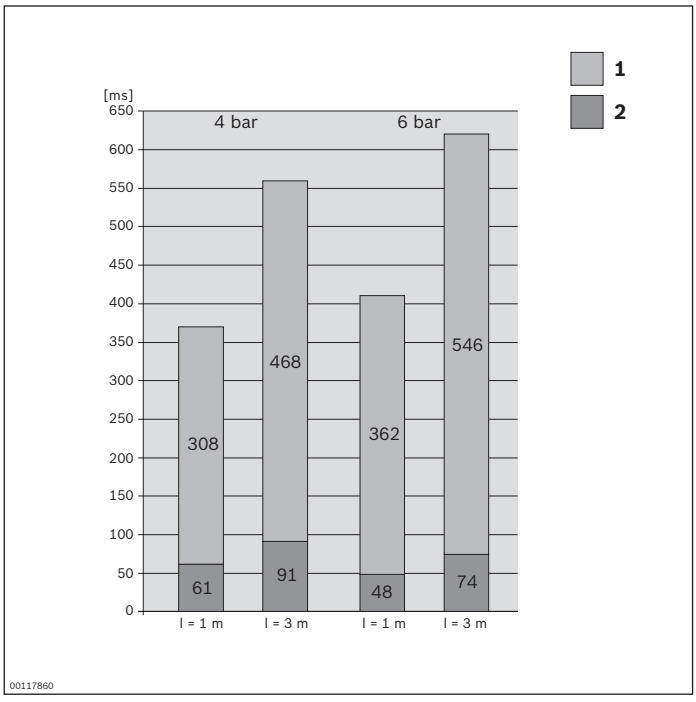
Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
200	6
140	9
100	12
70	15
50	18

Dimensions



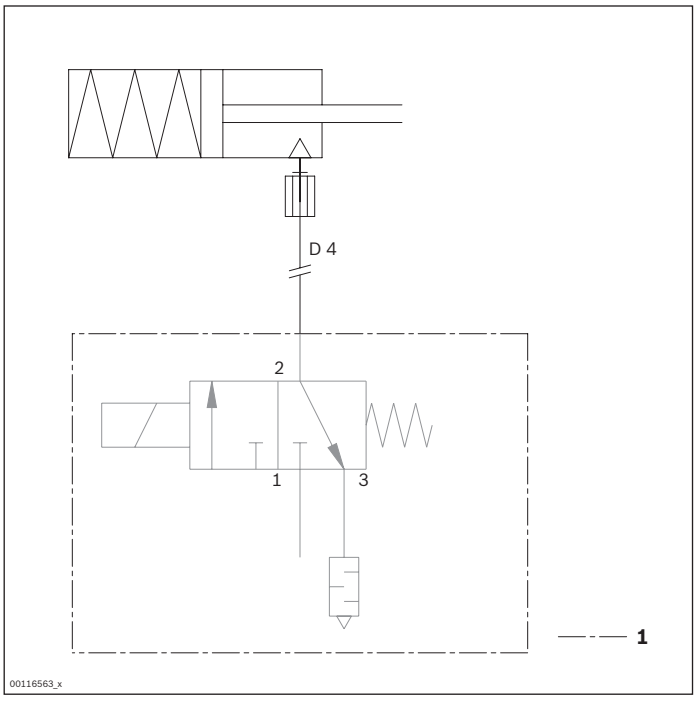
Circuit diagrams

Opening and shutting times



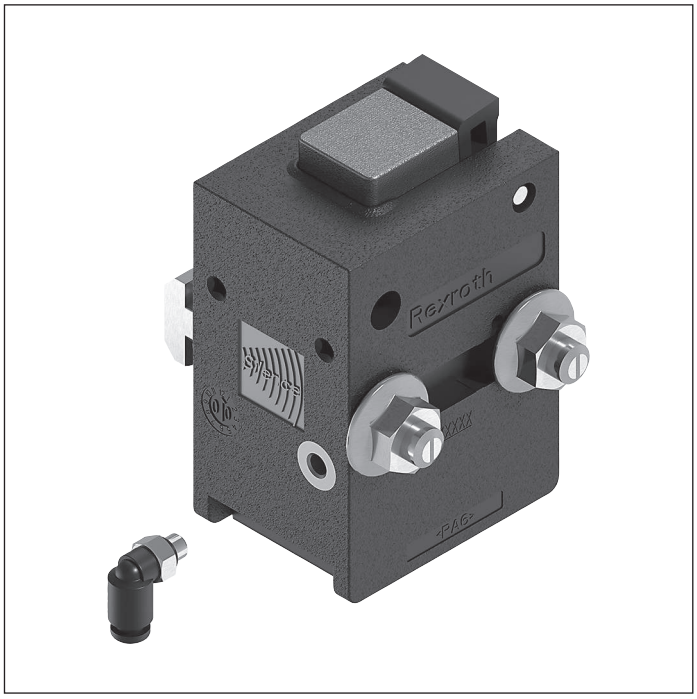
l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

VE 2/L stop gate



- Pneumatic stop gate
- Low-noise; especially quiet operation during opening and closing, therefore especially suitable for manual workstations
- Tilting stop gate; can be opened without causing abrasion on the surface of the workpiece pallet stop surface
- Reversible operation not permitted
- Can be combined with WT 2/E, WT 2 and WT 2/F

Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40
- SH 2 switch bracket, see p. 8-88
- Position sensor, see p. 8-18

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Pneumatic elements

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/L stop gate	3842530630

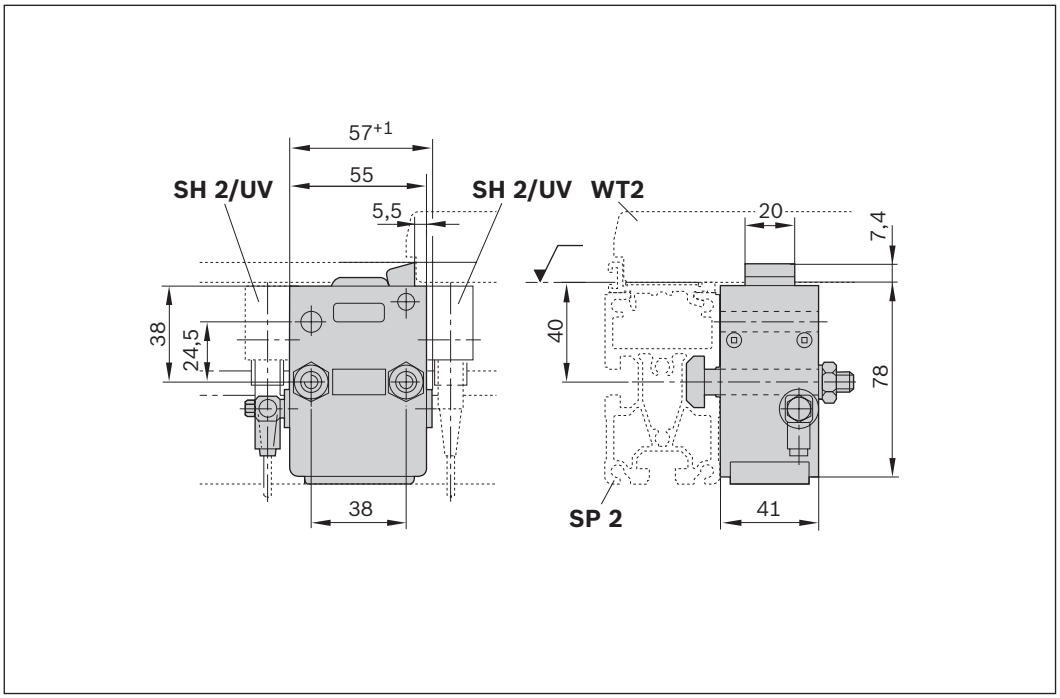
Technical data

Material number			**3842530630**
Load			
Max. total workpiece pallet weight	m_G	kg	200
Features			
Material specification			Housing: PA6 Safety catch: Brass Lug cam: PA66
A-rated emission sound pressure level	L_{PA}	dB(A)	<60
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

[1] High-temperature stop gate on request

	Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
	200	6
	140	9
	100	12
	70	15
	50	18

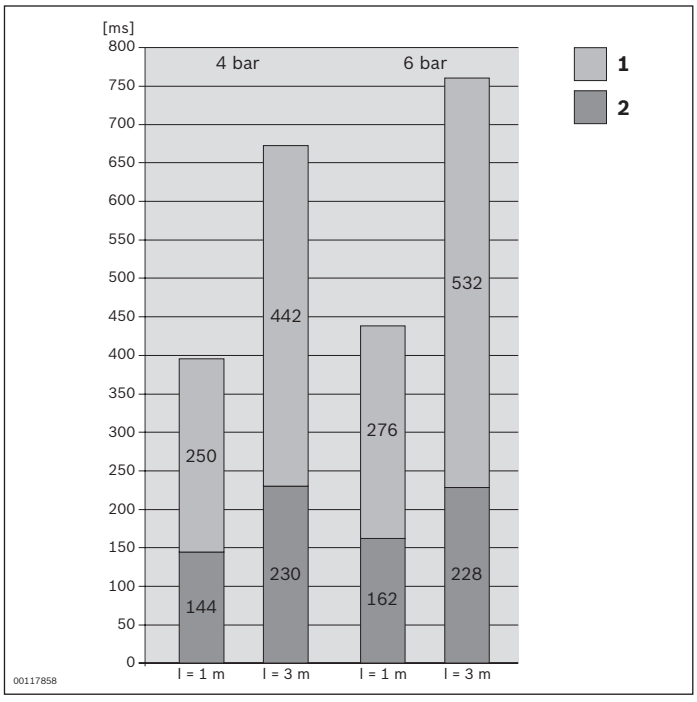
Dimensions



00116067

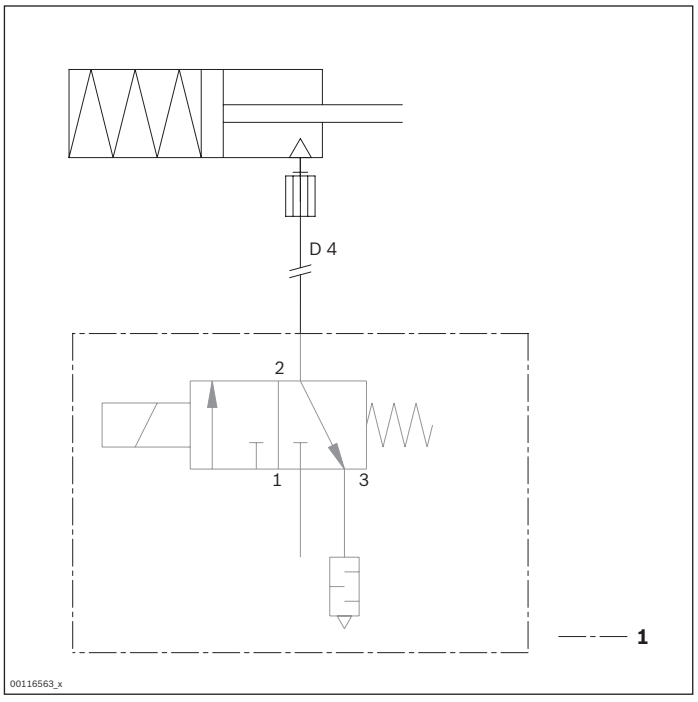
Circuit diagrams

Opening and shutting times



l = Hose length
1 Close
2 Open at 4 bar

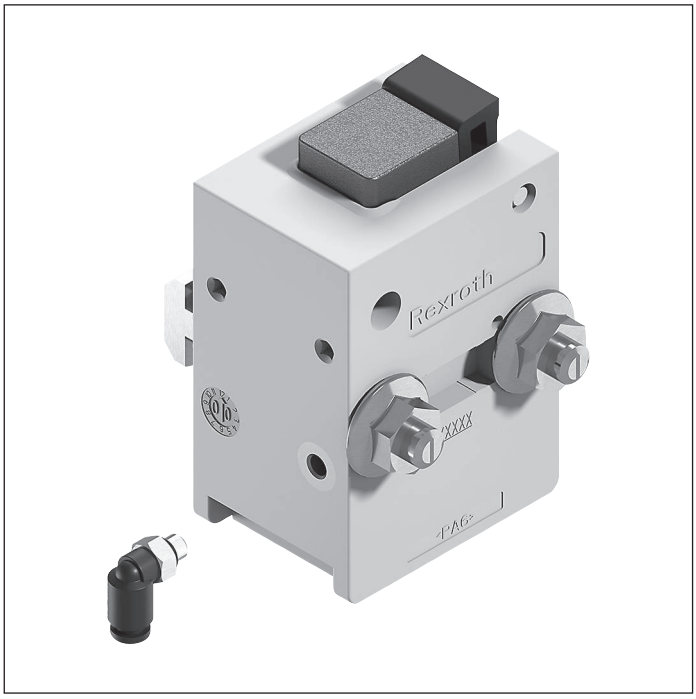
Circuit diagram



1 Not included in delivery

8

VE 2/M stop gate



- Pneumatic stop gate
- Media resistant
- Tilting stop gate; can be opened without causing abrasion on the surface of the workpiece pallet stop surface
- Low-noise; especially quiet operation during opening and closing
- Reversible operation not permitted
- Can be combined with WT 2/E, WT 2 and WT 2/F

Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40
- SH 2 switch bracket, see p. 8-88
- Position sensor, see p. 8-18

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Pneumatic elements

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/M stop gate	3842531610

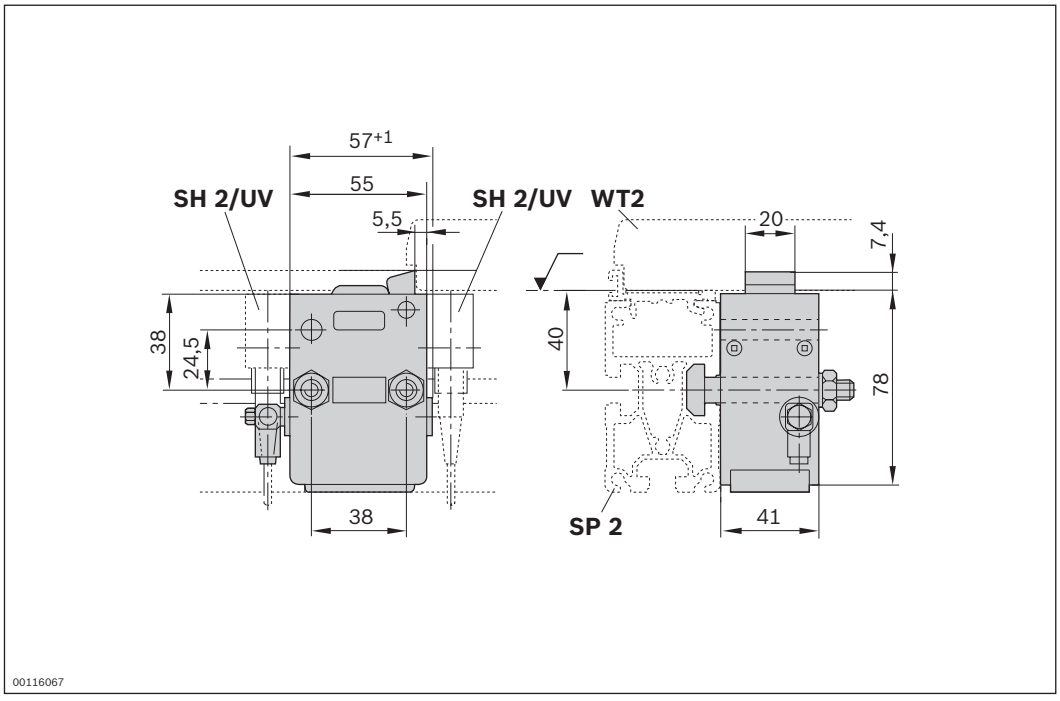
Technical data

Material number			**3842531610**
Load			
Max. total workpiece pallet weight	m_G	kg	200
Features			
Material specification			Housing: PA6 Safety catch: Brass Lug cam: PA66
A-rated emission sound pressure level	L_{PA}	dB(A)	<60
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

[1] High-temperature stop gate on request

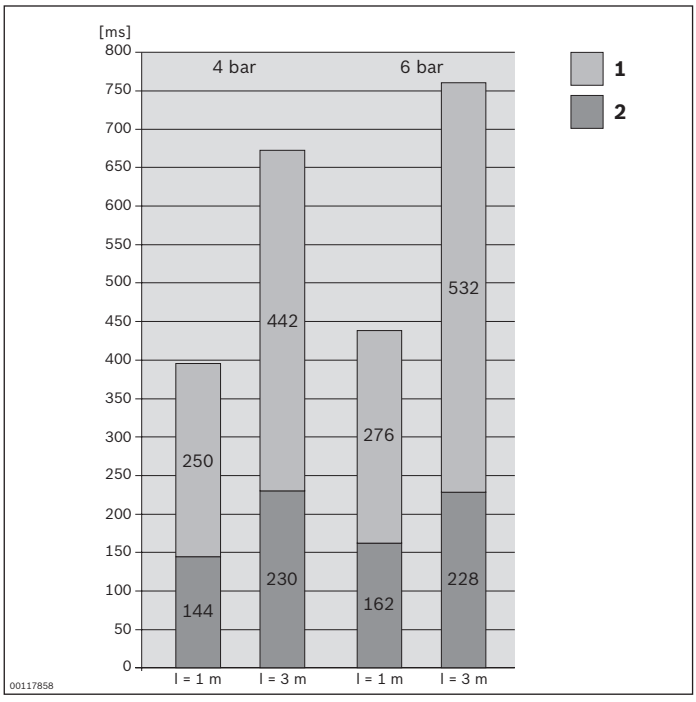
Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
200	6
140	9
100	12
70	15
50	18

Dimensions



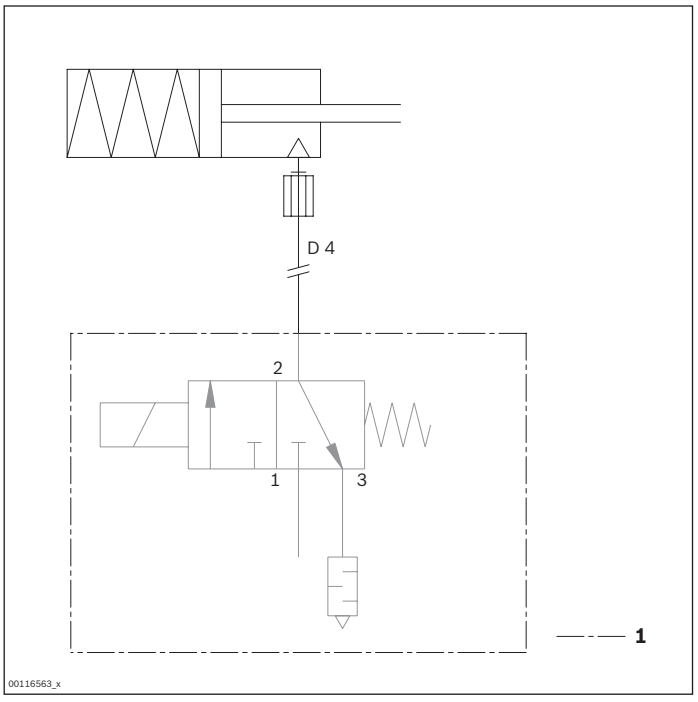
Circuit diagrams

Opening and shutting times



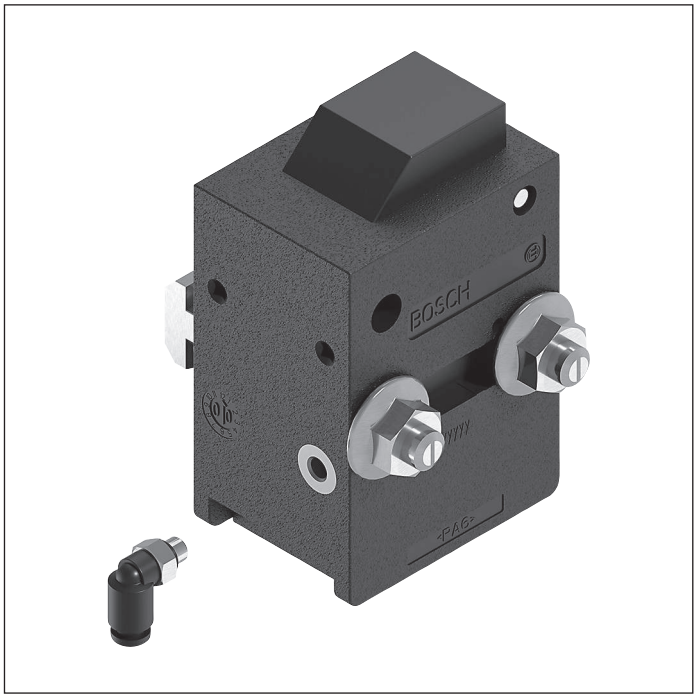
l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

VE 2/S stop gate



- Pneumatic stop gate
- Used on sections with possible reversible operation
- Pressure must not be exerted on VE 2/S by pallets traveling in reverse
- Can be combined with WT 2/E, WT 2 and WT 2/F

Note: Safe transition from both directions is possible by actively (pneumatically) opening the safety catch.

Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. The VE 2/S can only stop workpiece pallets coming from one direction. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Two VE 2/S stop gates are needed to stop pallets coming from both directions, since pressure must not be exerted on the stop gate by pallets traveling in reverse. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40
- SH 2 switch bracket, see p. 8-88
- Position sensor, see p. 8-18

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Pneumatic elements

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/S stop gate	3842515844

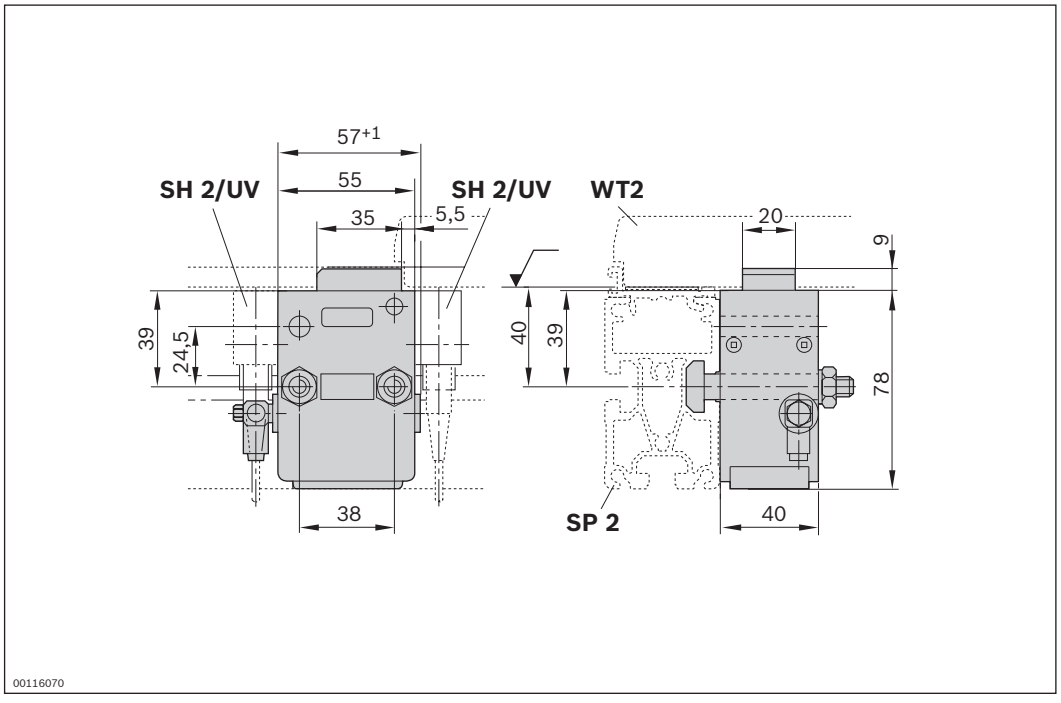
Technical data

Material number			**3842515844**
Load			
Max. total workpiece pallet weight	m_G	kg	140
Features			
Material specification			Housing: PA6 Lug cam: PA66
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

[1] High-temperature stop gate on request

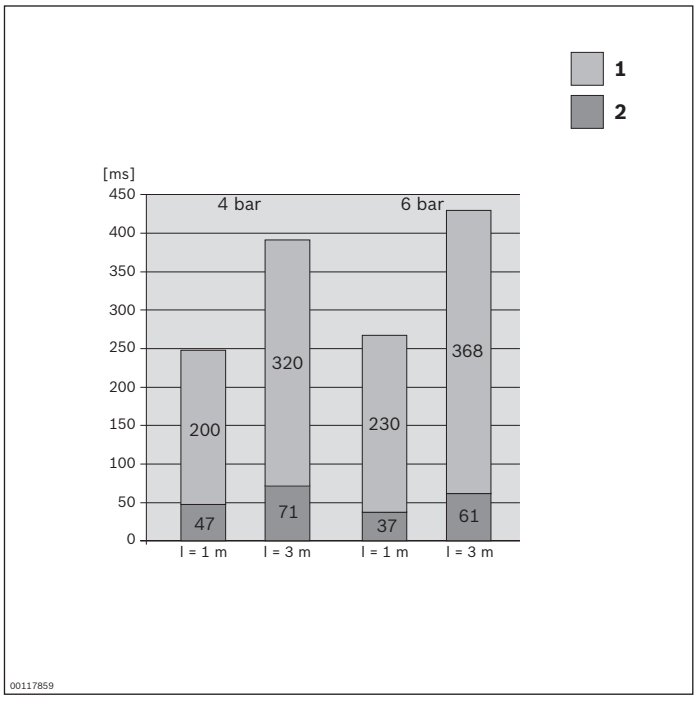
Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
140	6
90	9
70	12
50	15
30	18

Dimensions



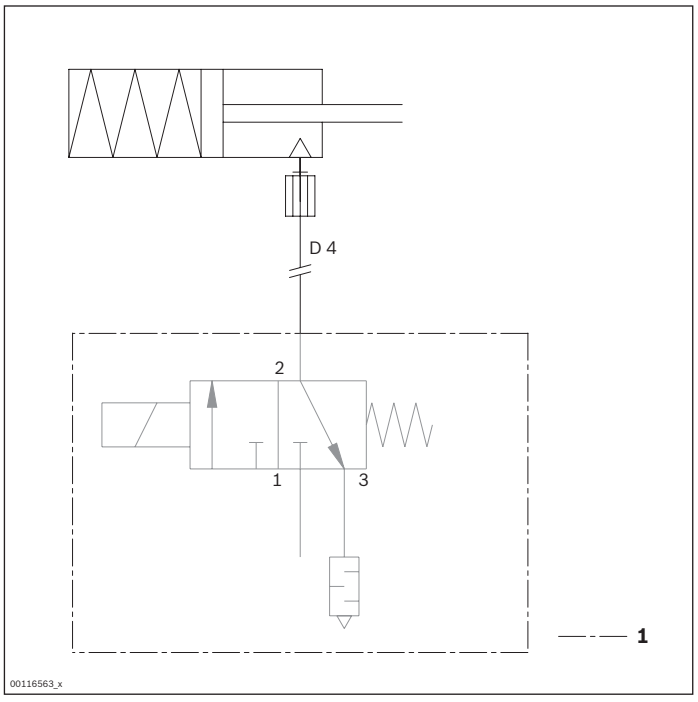
Circuit diagrams

Opening and shutting times



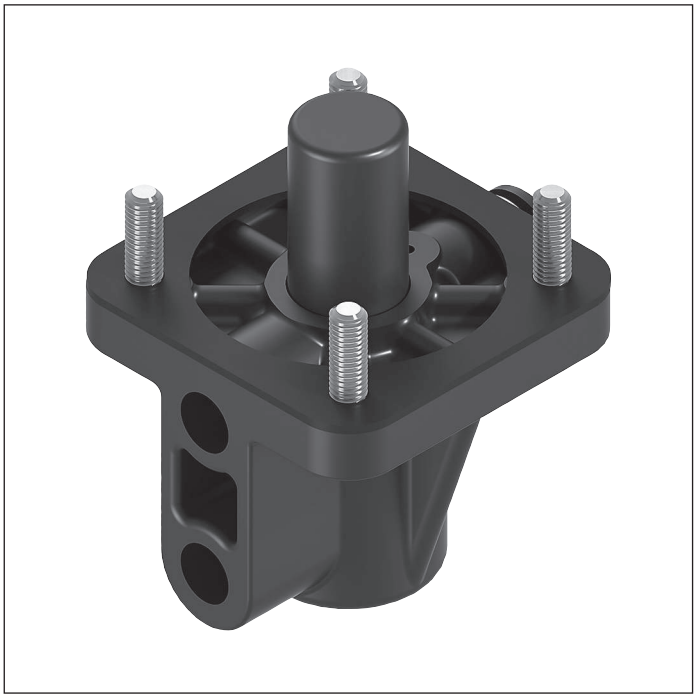
l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

Stop gate position sensor



- For retrofitting on the VE 2, VE 2/M, VE 2/L, or VE 2/S stop gates
- Upper and lower position sensing possible, only suitable for upper position sensing with VE 2/S
- Compressed air connection for double-action stop gate operation

The stop gate position sensor is used to detect the position of the stop gate using sensors and/or for active pneumatic closing of the stop gate.

Accessories

Required accessories

- VE 2, VE 2/M, VE 2/L, or VE 2/S, stop gates
- 2x M8x1 sensor with rated sensing range $S_N \geq 2$ mm, can be installed flush

Delivery notes

Scope of delivery

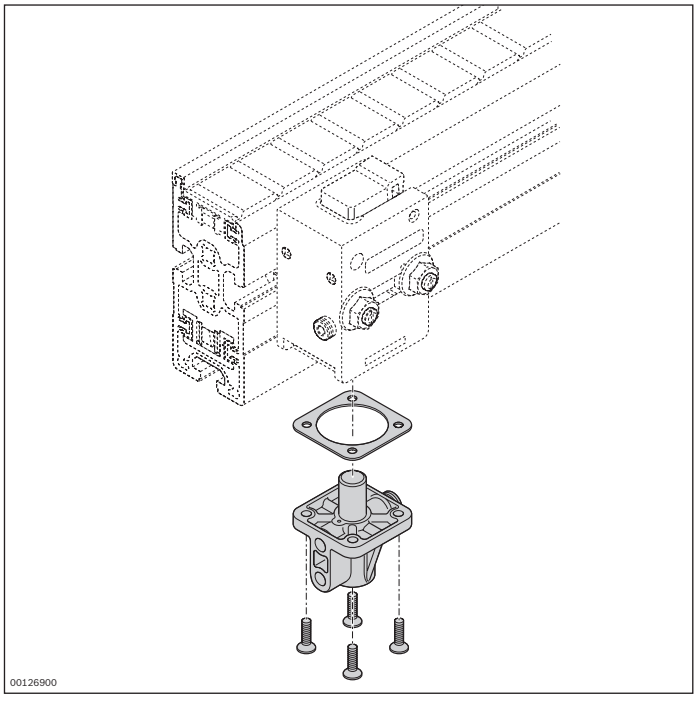
- Incl. fastening material

Ordering information

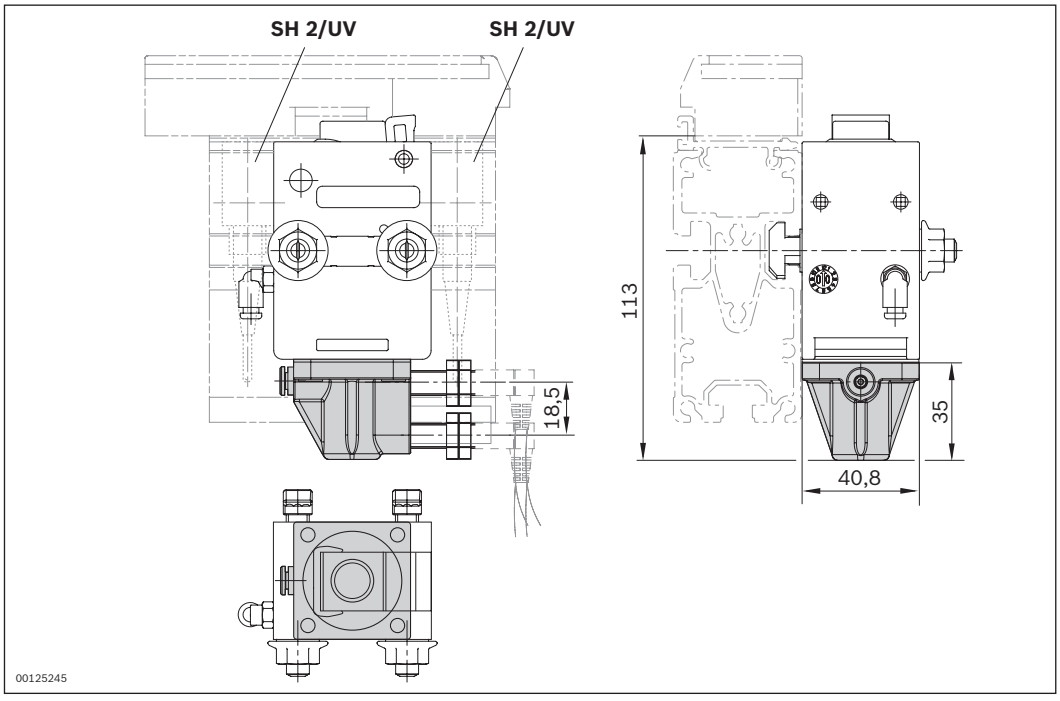
Product designation	Material number
Stop gate position sensor	3842528817

Technical data

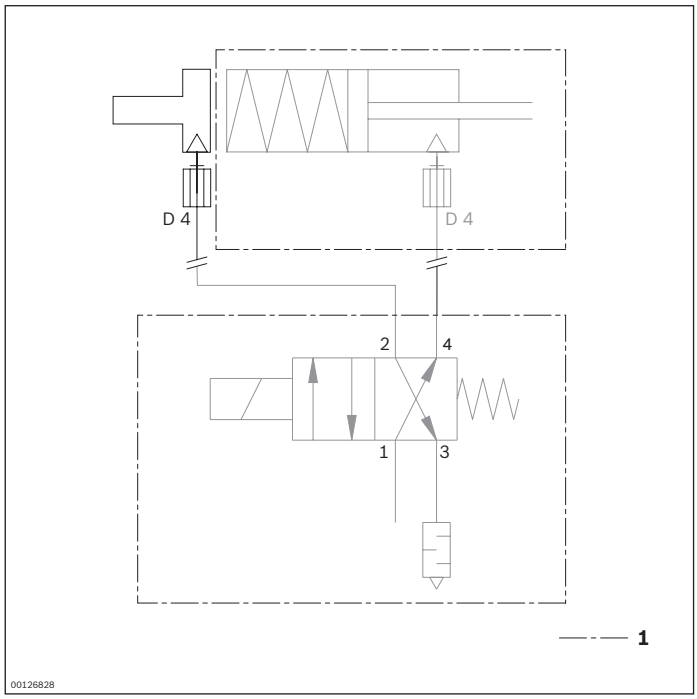
Material number			**3842528817**
Features			
Material specification			PA; black Housing: PA6
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4



Dimensions

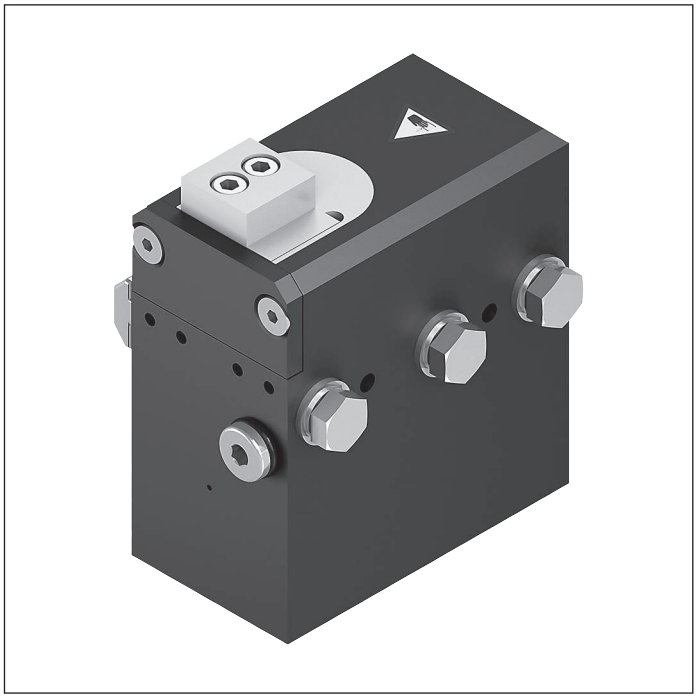


Circuit diagrams



1 Not included in delivery

VE 2/X stop gate



- Pneumatic stop gate
- For high permitted total weight of the workpiece pallet up to 450 kg
- Can be combined with WT 2 and WT 2/F

Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40
- SH 2 switch bracket, see p. 8-88

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/X stop gate	3842547770

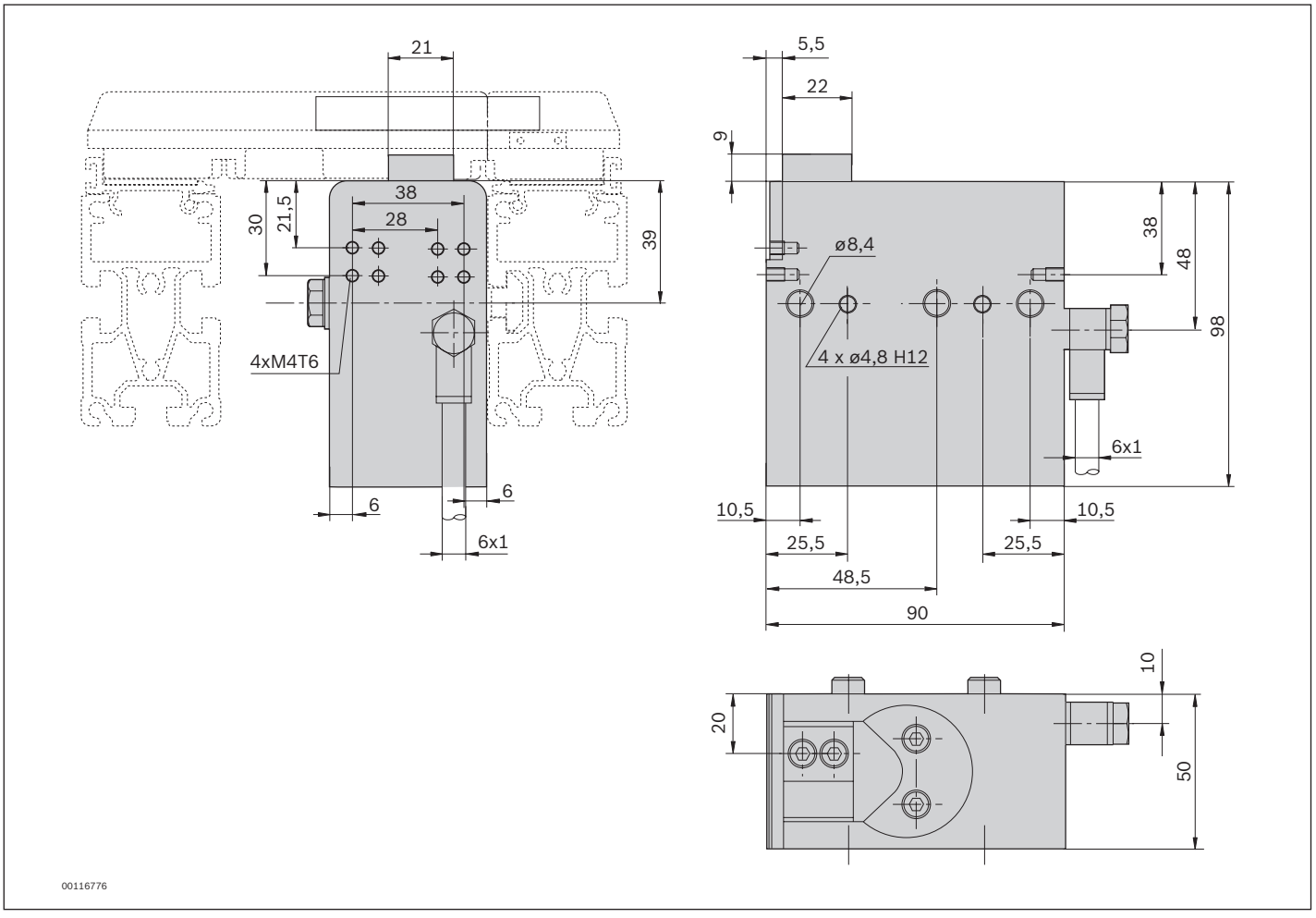
Technical data

Material number			**3842547770**
Load			
Max. total workpiece pallet weight	m_G	kg	450
Features			
Material specification			Housing: aluminum, hard anodized Lug cam: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6

[1] High-temperature stop gate on request

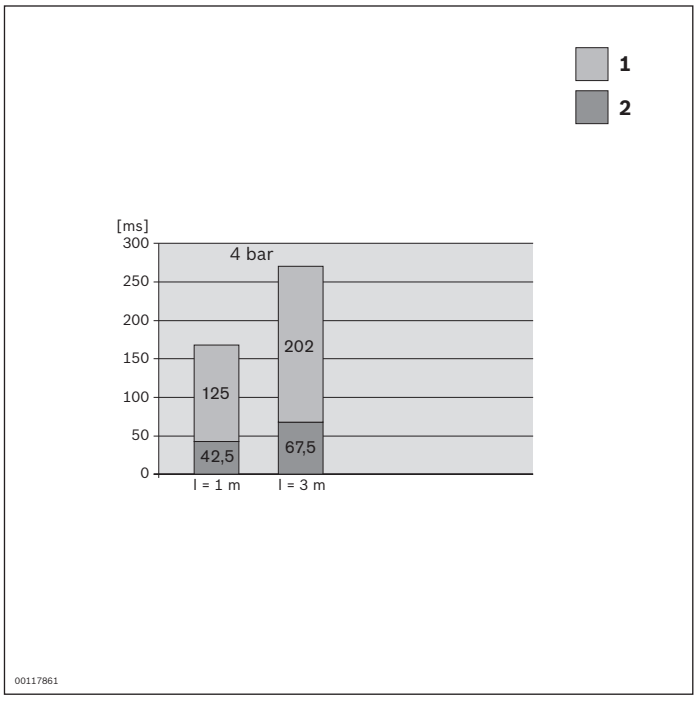
Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
450	6
300	9
220	12
140	15
100	18

Dimensions



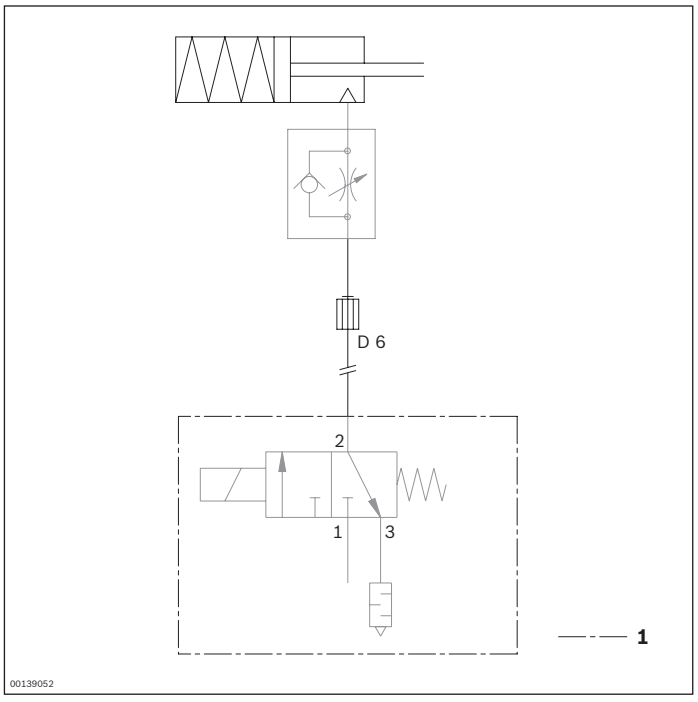
Circuit diagrams

Opening and shutting times



l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

VE 2/D-60 stop gate



- Pneumatic stop gate
- Optimal damping for workpiece pallet total weights up to 60 kg
- Continuously adjustable damping
- Can be combined with WT 2/E, WT 2 and WT 2/F

Dampened stopping of the first accumulating workpiece pallet. The stop gate stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/D-60 stop gate	3842547785

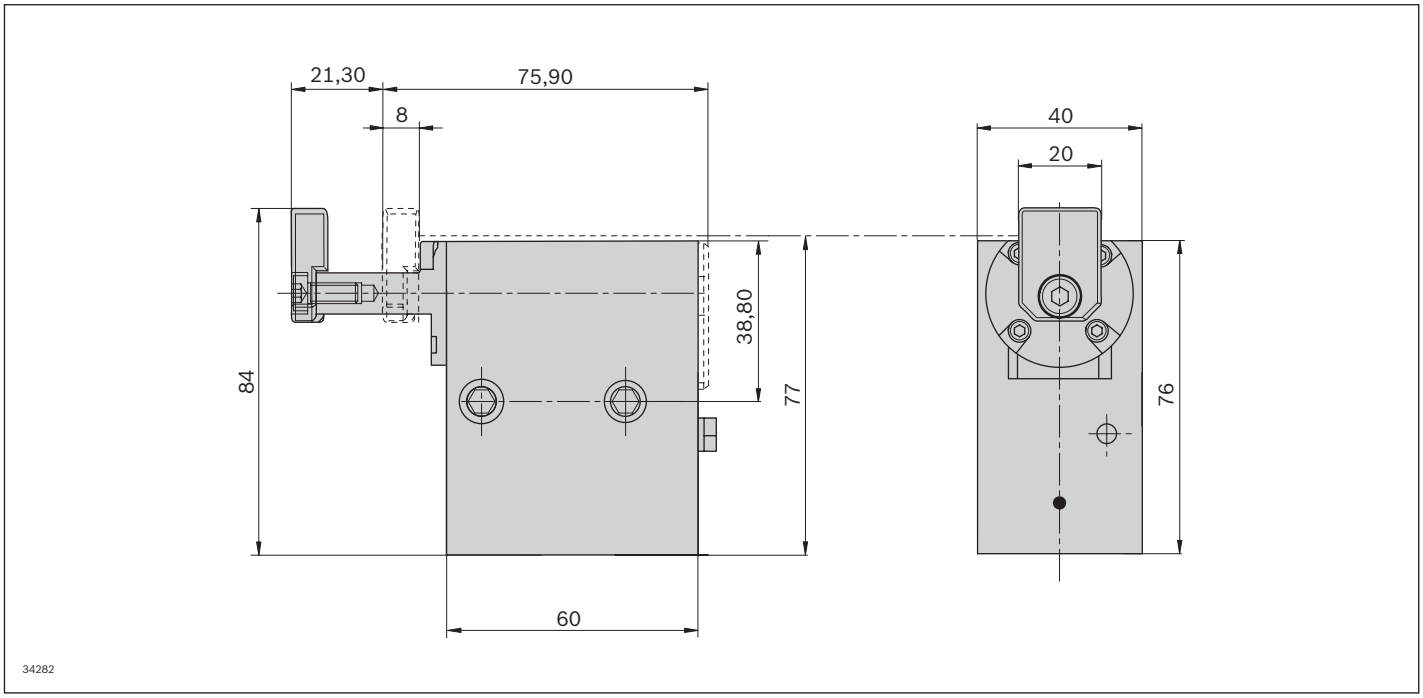
Technical data

Material number			**3842547785**
Load			
Max. total workpiece pallet weight	m_G	kg	60
Min. workpiece pallet weight	m	kg	1
Features			
Material specification			Housing: Aluminum, hard anodized Lug cam: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

[1] High-temperature stop gate on request

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
60	6
40	9
35	12
30	15
30	18
24	24

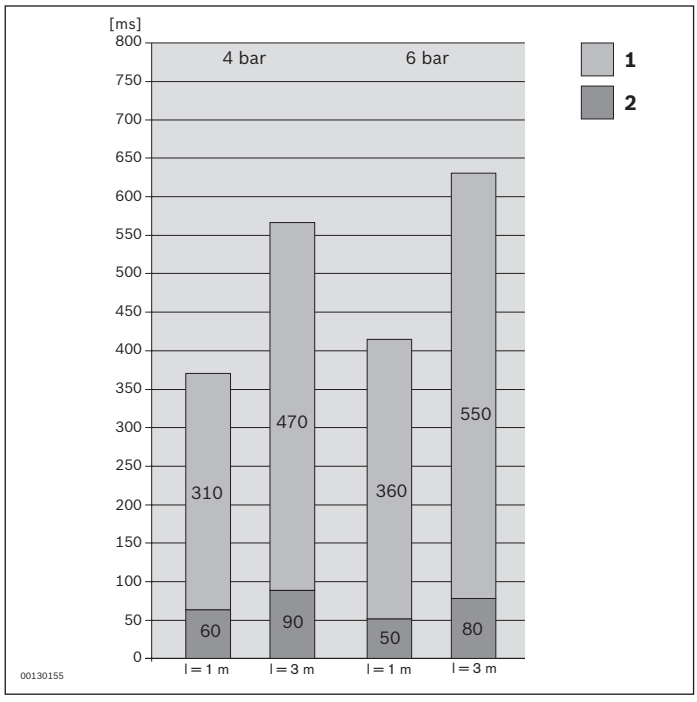
Dimensions



* Stroke

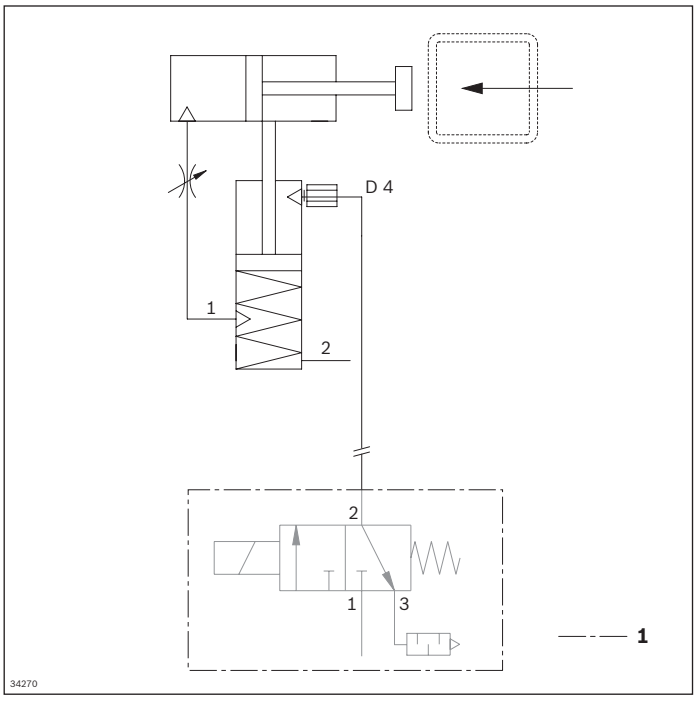
Circuit diagrams

Opening and shutting times



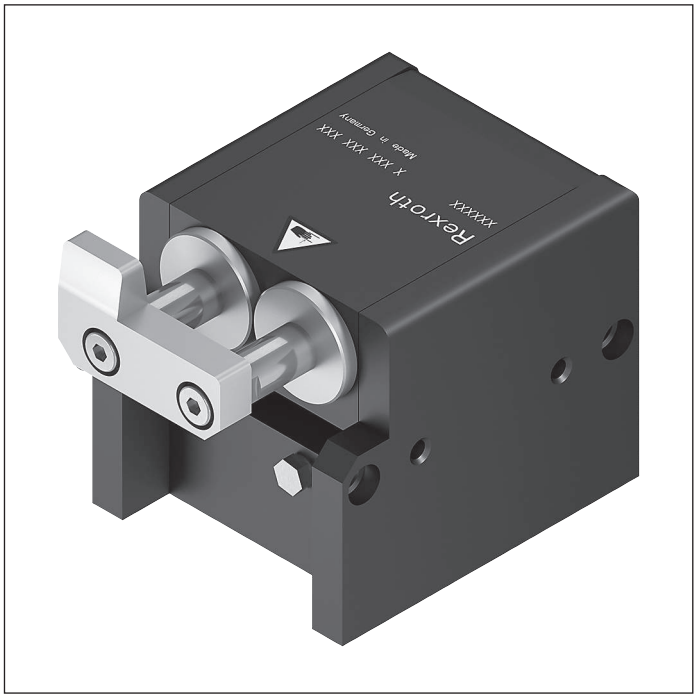
l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

VE 2/D-175 stop gate



- Pneumatic stop gate
- Especially sturdy all-metal design with double piston damper
- Continuously adjustable damping
- Short damping path of 20 mm
- Short damping time
- Short installation dimension
- Can be combined with WT 2 and WT 2/F

Dampened stopping of the first accumulating workpiece pallet. The stop gate stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/D-175 stop gate	3842558795

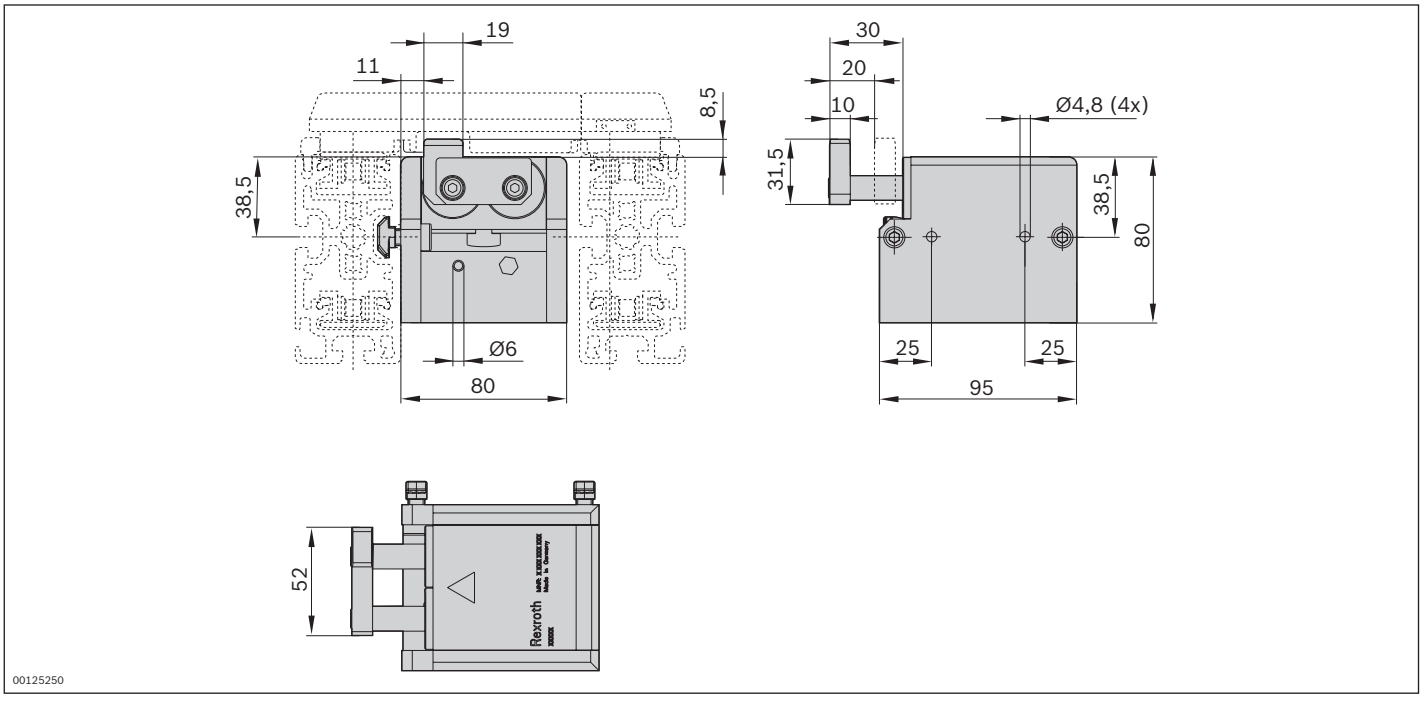
Technical data

Material number			**3842558795**
Load			
Max. total workpiece pallet weight	m_G	kg	175
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum; hard anodized Lug cam: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6

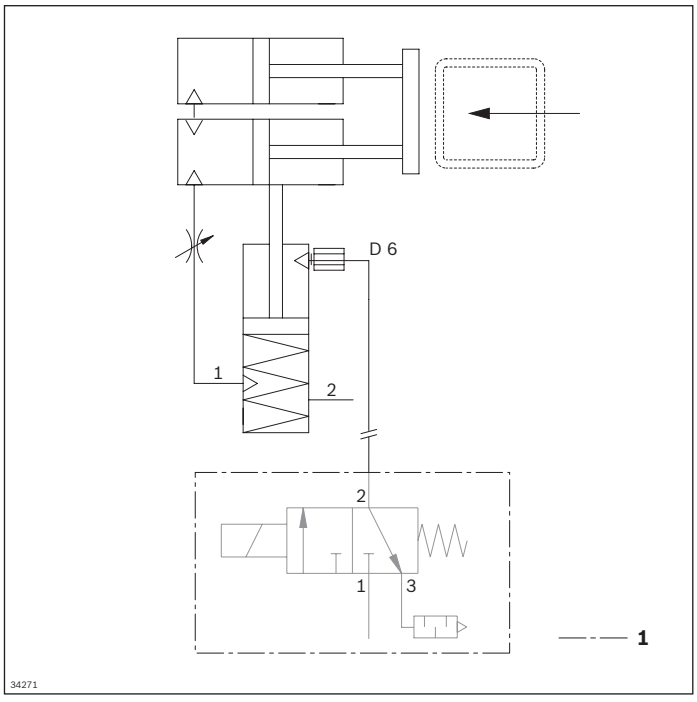
[1] High-temperature stop gate on request

	Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
	175	6
	160	9
	145	12
	110	15
	90	18
	50	24
	35	30

Dimensions

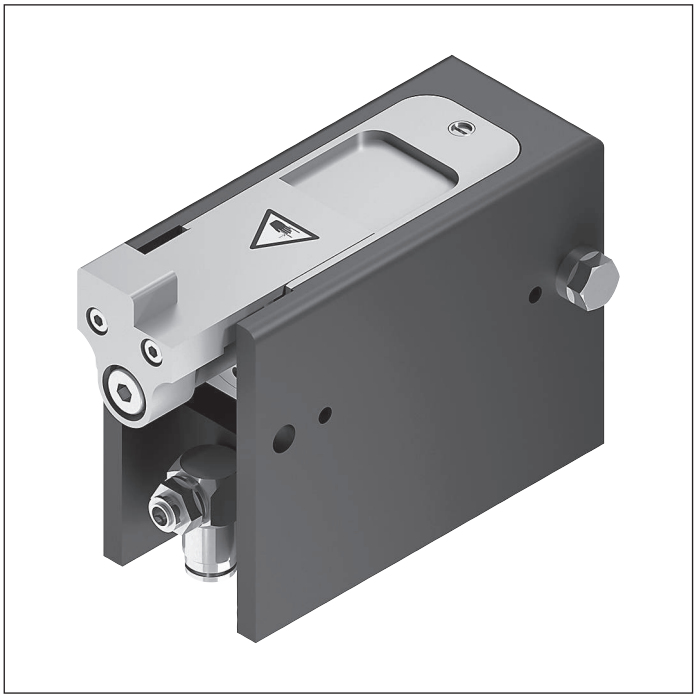


Circuit diagram



1 Not included in delivery

VE 2/D-200 stop gate



- Pneumatic stop gate
- Continuously adjustable damping
- Optimal damping for workpiece pallet total weights between 50 kg and 200 kg
- Can be combined with WT 2 and WT 2/F

Dampened stopping of the first accumulating workpiece pallet. Stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- VE 2/RS return stop, see p. 8-40

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

Product designation	Material number
VE 2/D-200 stop gate	3842524895

Technical data

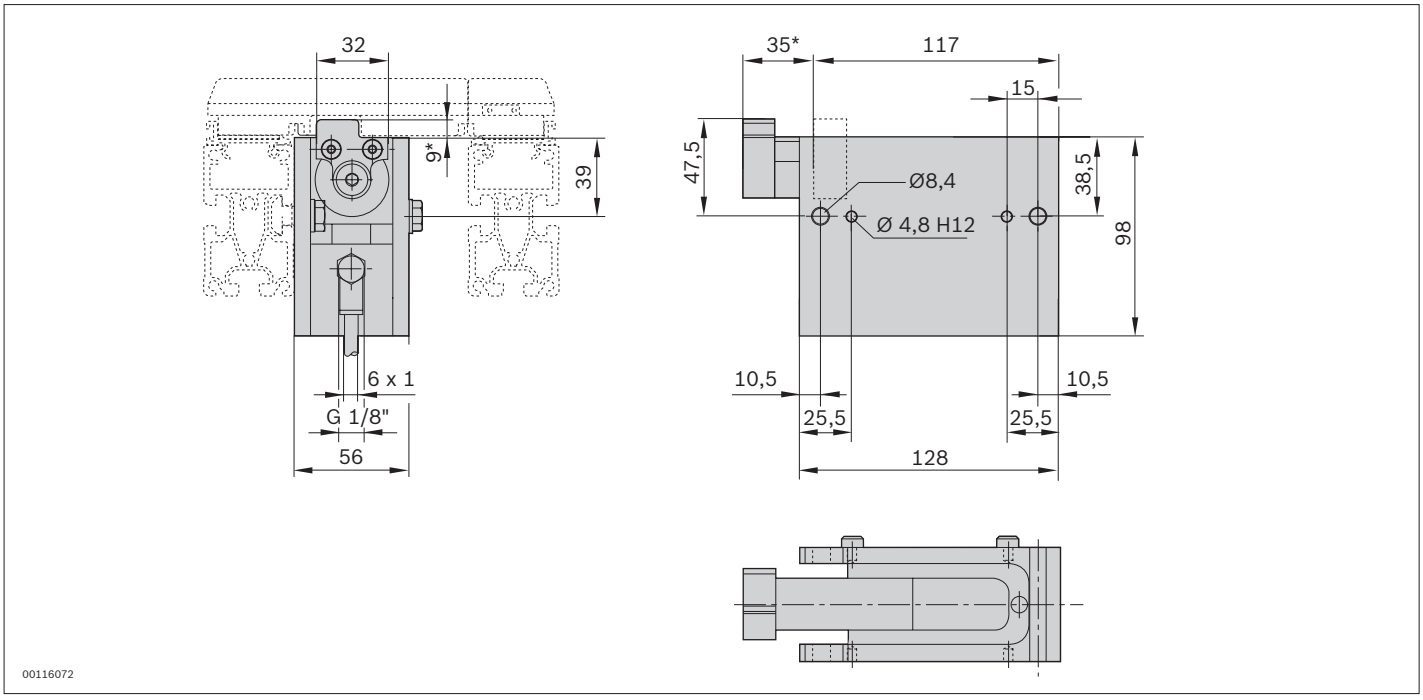
Material number			**3842524895**
Load			
Max. total workpiece pallet weight	m_G	kg	200
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum, hard anodized Lug cam: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6

[1] High-temperature stop gate on request

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
200	6
140	9
100	12
100	15
100	18
55	24
35	30

8

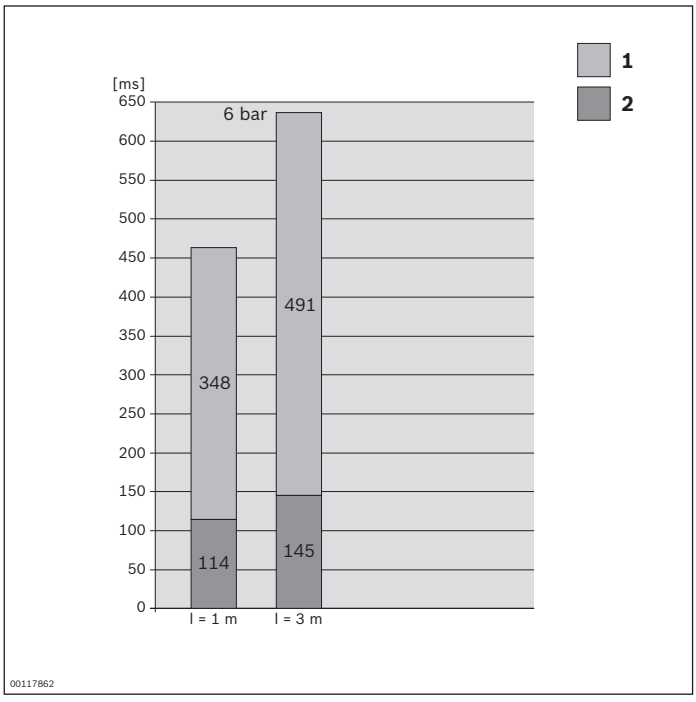
Dimensions



* Stroke

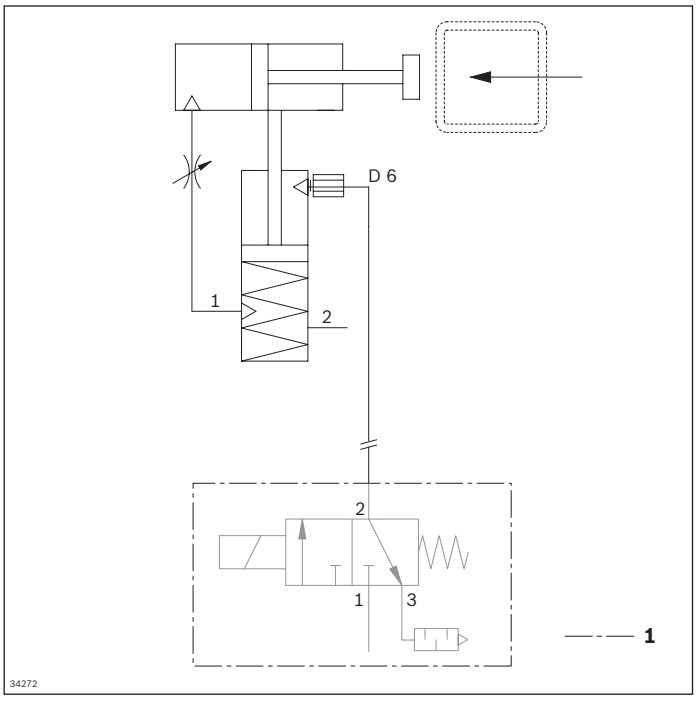
Circuit diagrams

Opening and shutting times



l = Hose length
1 Close
2 Open at 4 bar

Circuit diagram



1 Not included in delivery

VE 2/D100-H stop gate



- Pneumatic stop gate
- For central separation of the WT 2/H and WT 2/F-H workpiece pallets
- Suitable for accumulation loads up to 1000 kg
- Continuously adjustable damping
- Optimal damping for workpiece pallet total weights up to 100 kg
- Can be combined with WT 2/H and WT 2/F-H

Dampened stopping of the first accumulating workpiece pallet. The stop gate stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. For central separation, the stop gate is mounted inside the tracks on the conveyor section using the supplied cross connectors. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.

Accessories

Recommended accessories

- VE 2/RS-H return stop, see p. 8-42

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor sections

Condition on delivery

- Not assembled

Ordering information

Material number		**3842998747**
b (mm)	Track width	400; 480; 640; 800; 1040; 1200
b (mm)	Track width	400 ... 1200[1)]

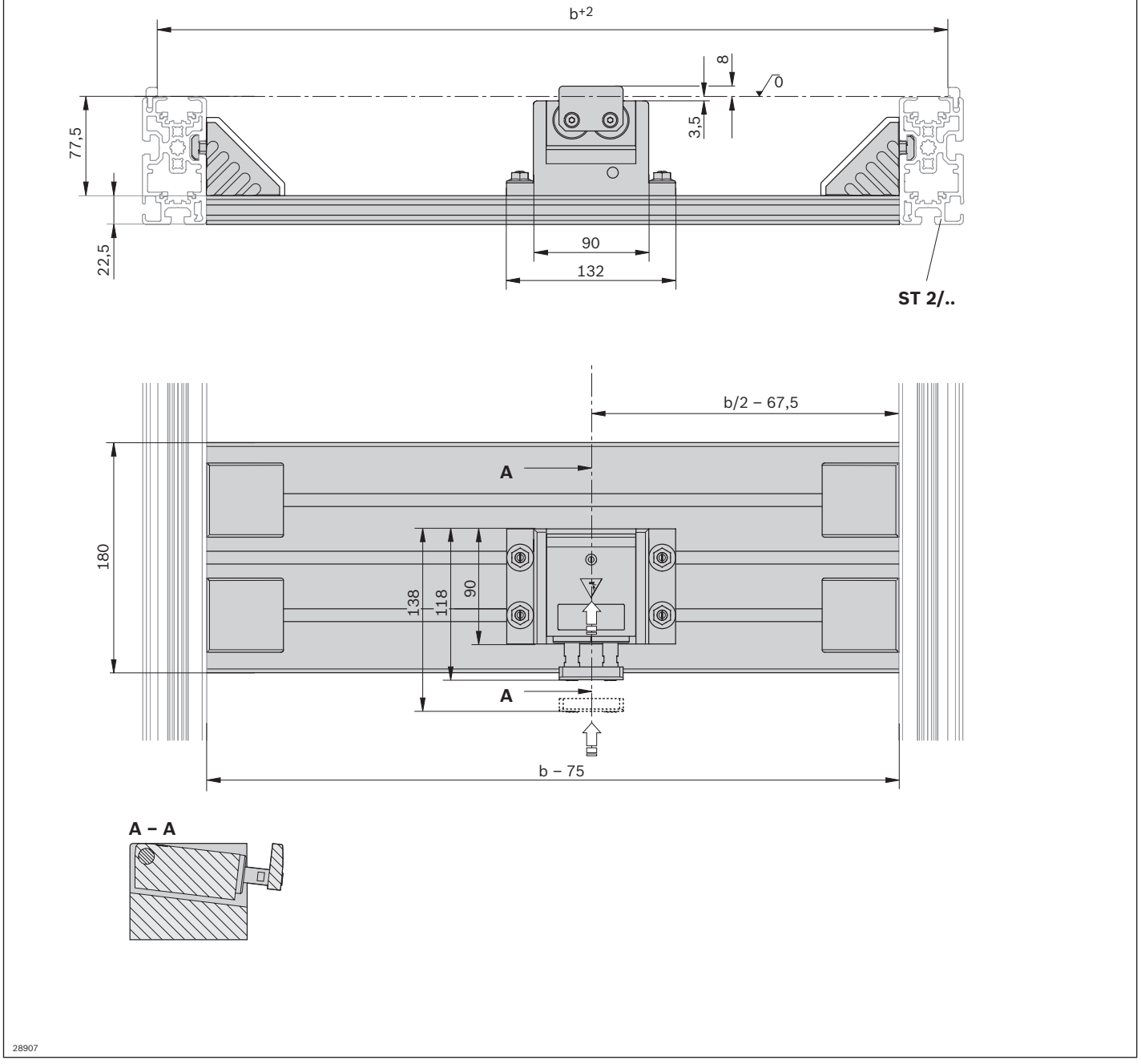
[1] Individual width variants possible

Technical data

Material number			**3842998747**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Steel Lug cam: Steel Cross strut: Aluminum
Operating temperature[1]		°C	0 ... +60

[1] High-temperature stop gate on request

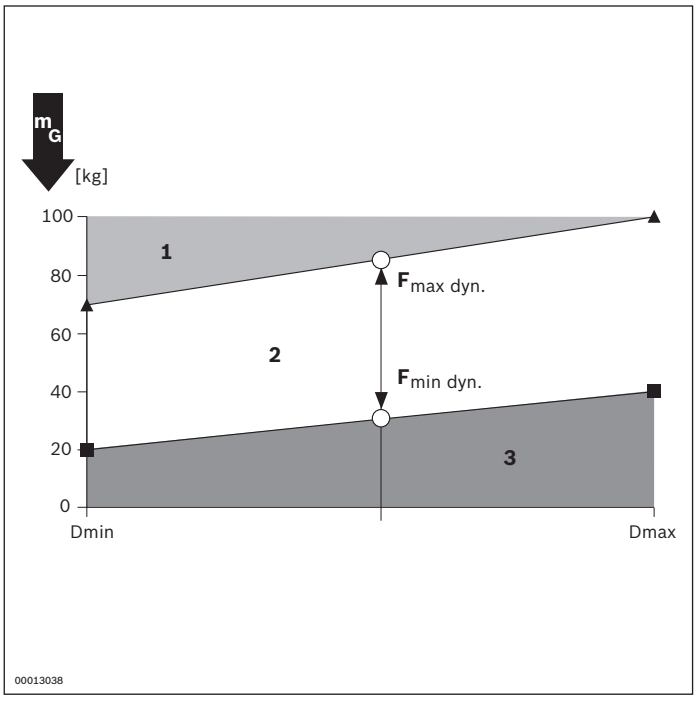
Dimensions



0 Transport level

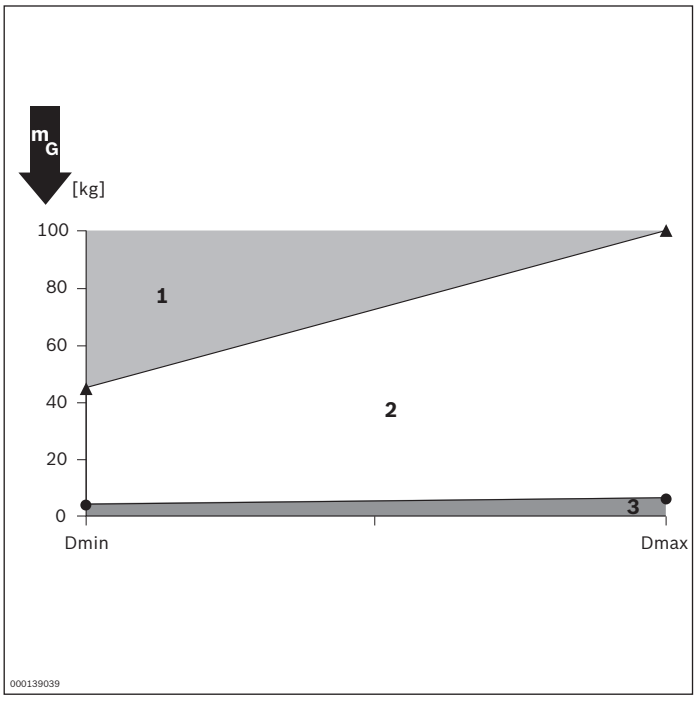
Characteristic curve diagram

Damping setting, accumulation roller chain μ = 0.02



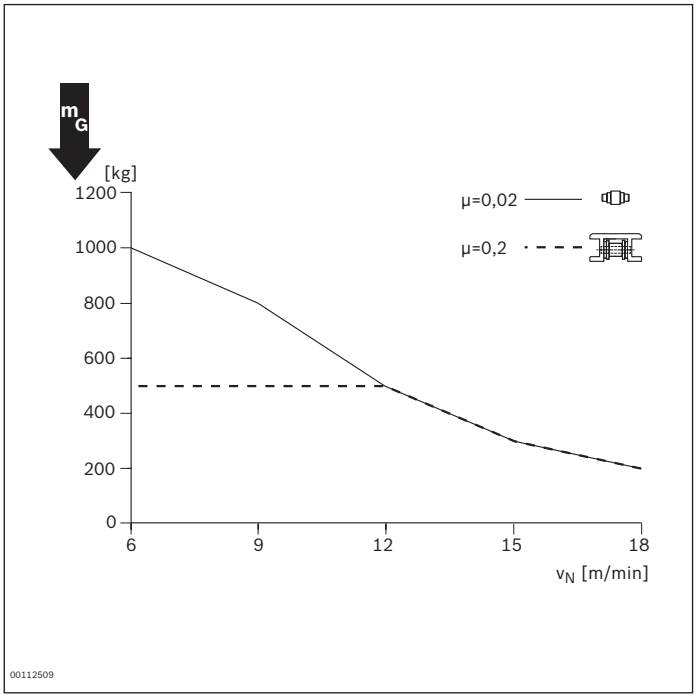
1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

Damping setting, flat top chain μ = 0.2

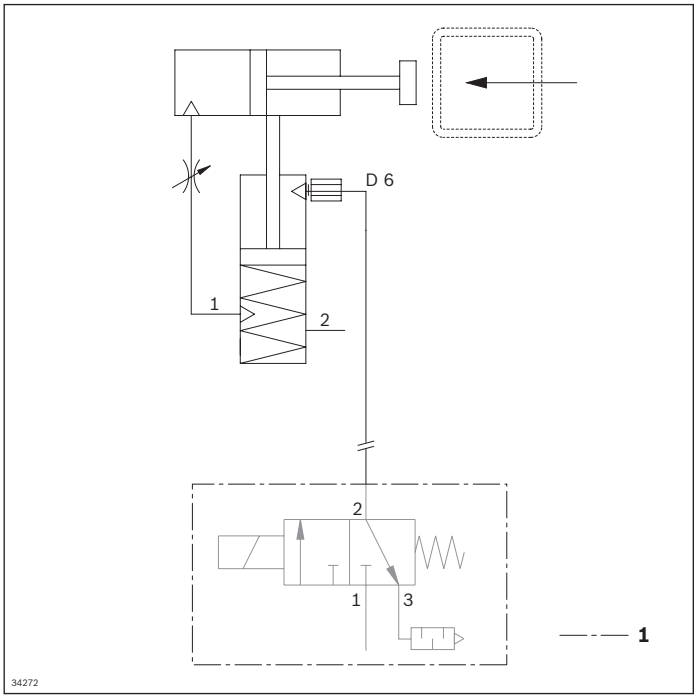


1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

Max. permitted section load



Circuit diagram



VE 2/D250-H stop gate



- Pneumatic stop gate
- For central separation of the WT 2/H and WT 2/F-H workpiece pallets
- Suitable for accumulation loads up to 2250 kg
- Continuously adjustable damping
- Optimal damping for total weights up to 250 kg
- Can be combined with WT 2/H and WT 2/F-H

Dampened stopping of the first accumulating workpiece pallet. The stop gate stops one or more accumulating workpiece pallets at the defined stop surface of the workpiece pallet. For central separation, the stop gate is mounted inside the tracks on the conveyor section using the supplied cross connectors. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.

Accessories

Recommended accessories

- VE 2/RS-H return stop, see p. 8-42

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor sections

Condition on delivery

- Not assembled

Ordering information

Material number		**3842998748**
b (mm)	Track width	400; 480; 640; 800; 1040; 1200
b (mm)	Track width	400 ... 1200[1)]

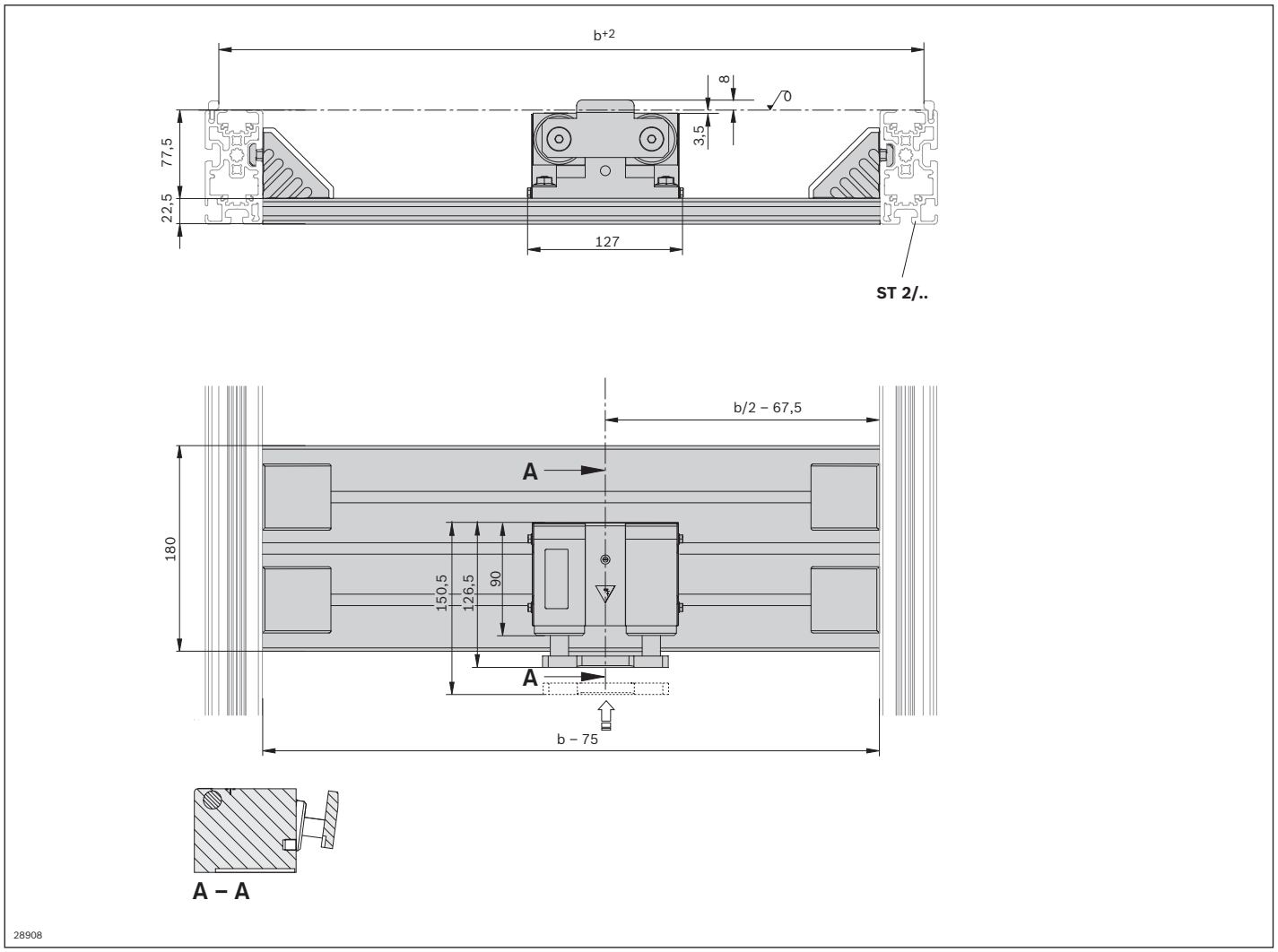
[1] Individual width variants possible

Technical data

Material number			**3842998748**
Load			
Max. total workpiece pallet weight	m_G	kg	250
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Steel; coated Lug cam: Steel; coated Cross strut: Aluminum, natural; anodized
Operating temperature[1]		°C	0 ... +60

[1] High-temperature stop gate on request

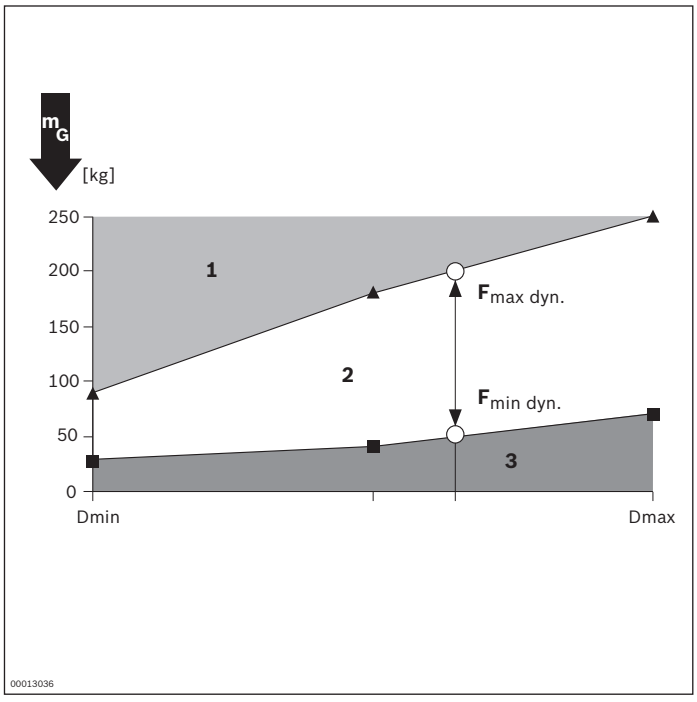
Dimensions



0 Transport level

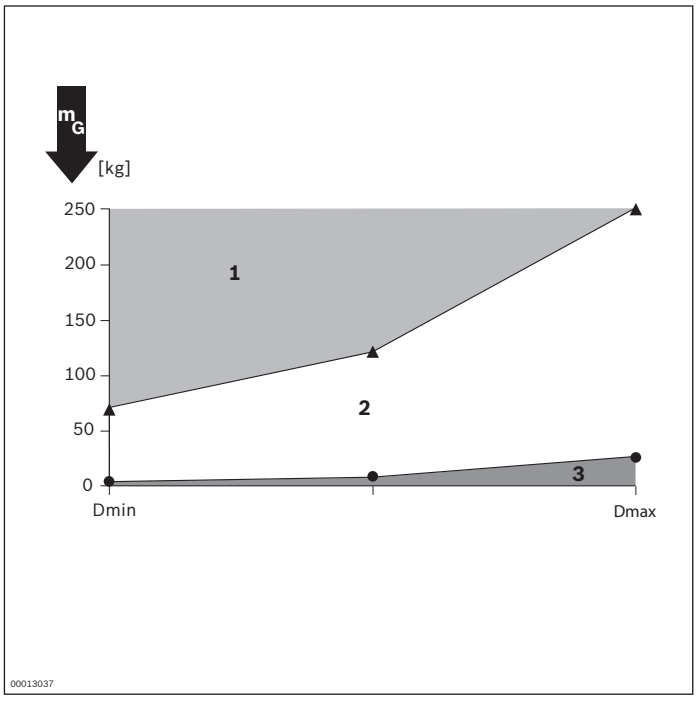
Characteristic curve diagram

Damping setting, accumulation roller chain μ = 0.02



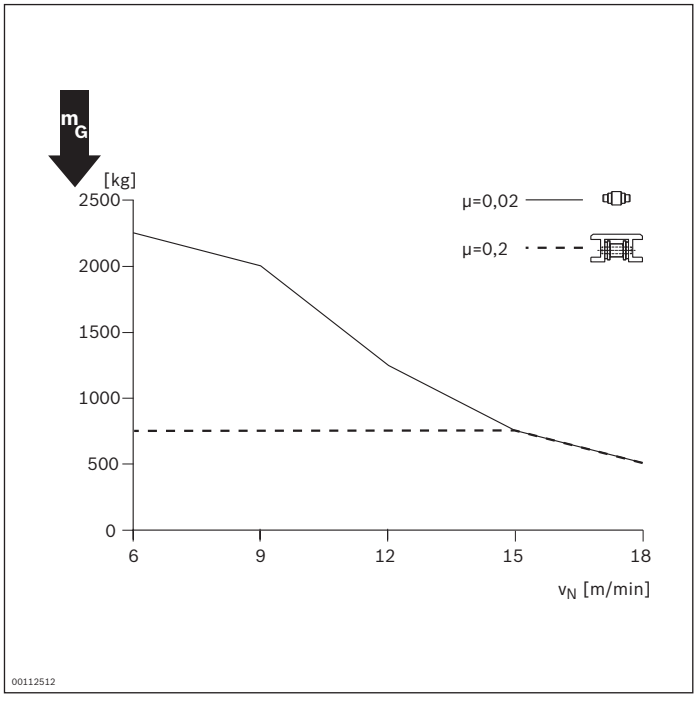
1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

Damping setting, flat top chain μ = 0.2

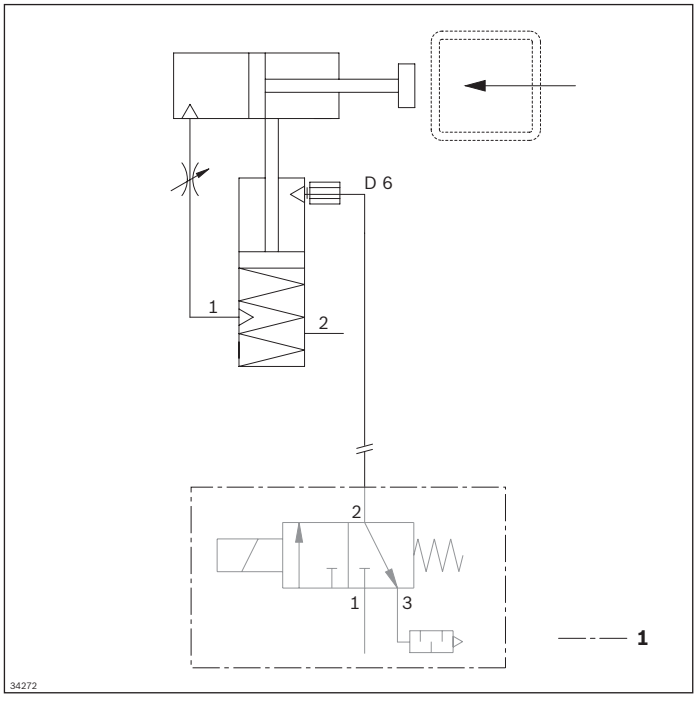


1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

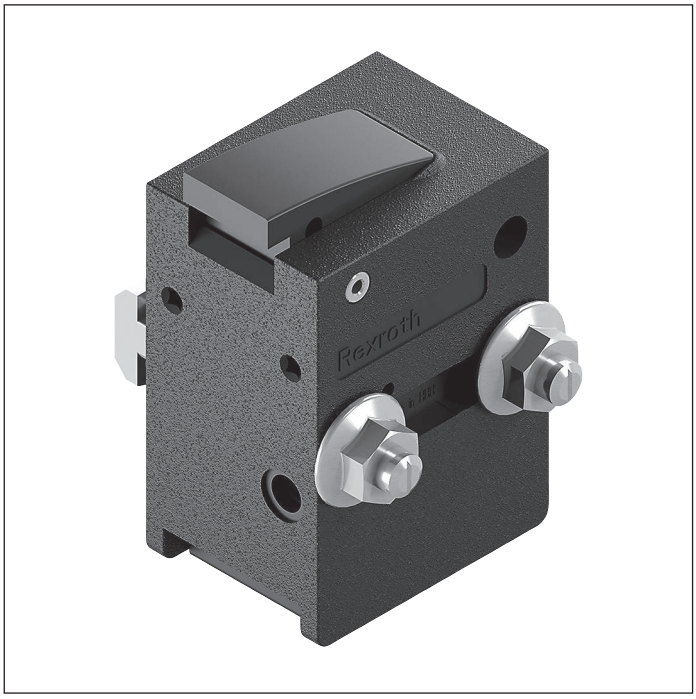
Max. permitted section load



Circuit diagram



VE 2/RS return stop



- Spring-loaded safety catch
- Can be used on the left or right
- Use for one direction of transport, reversible operation not permitted
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note: The VE 2/RS return stop can only be installed outside the workpiece pallet surface on the WT2/H and WT 2/F-H.

The return stop prevents the rebound impact of the workpiece pallet from the stop gate. The use of the VE 2/RS return stop is especially recommended when the accumulation roller chain is used as conveyor medium in connection with undamped stop gates. In normal condition the stop gate is moved into the lock position by a spring and the workpiece pallet overtravels the VE 2/RS in the direction of transport and is stopped against the transport direction. Mounted inside the tracks, directly on the conveyor section.

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section

Condition on delivery

- Fully assembled

Ordering information

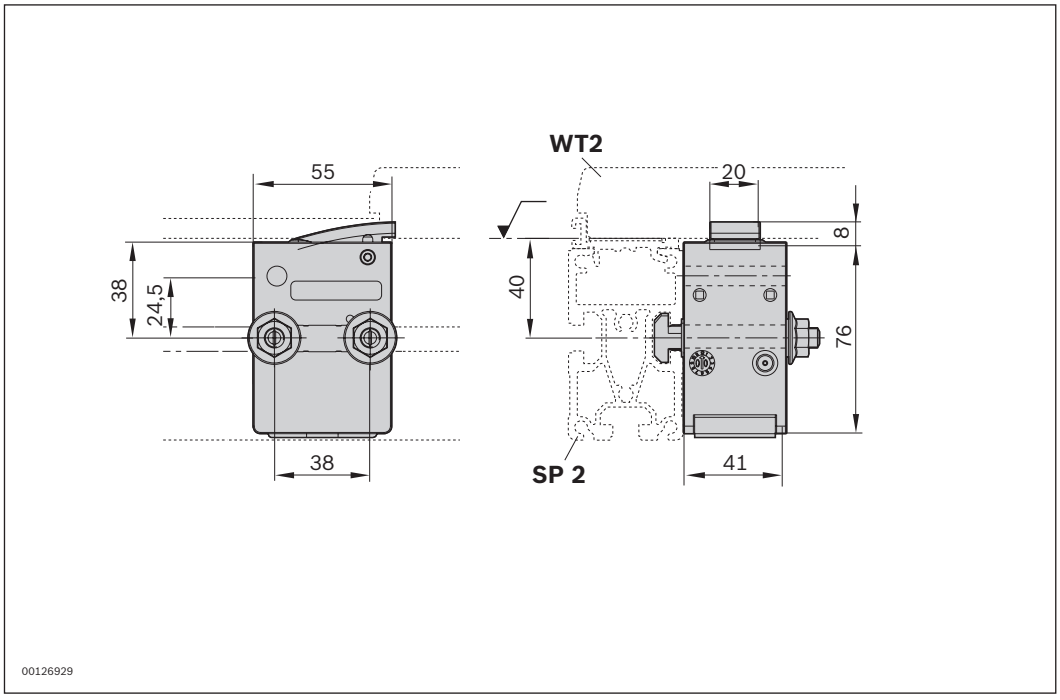
Product designation	Material number
VE 2/RS return stop	3842531696

Technical data

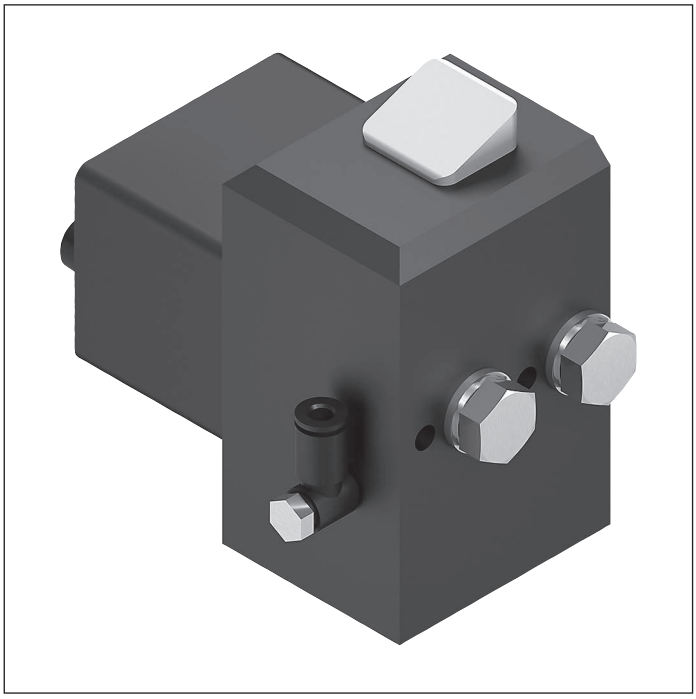
Material number			**3842531696**
Load			
Max. total workpiece pallet weight	m_G	kg	250
Min. workpiece pallet weight	m	kg	3
Features			
Material specification			Housing: PA6 Lug cam: PA66
Operating temperature[1]		°C	0 ... +60

[1] High-temperature stop gate on request

Dimensions



VE 2/RS-H return stop



- Spring-loaded safety catch
- Can be used on the left or right
- Easy fastening in the groove of the ST 2 or BS 2 section profile
- Pneumatic version, including pneumatic cylinder to open the safety catch. Necessary for reversible operation
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

Note: The VE 2/RS-H return stop can only be installed on the WT 2 and WT 2/F without spacers.

The return stop prevents the workpiece pallet from rebounding off the VE 2/D stop gate or the DA 2 damper. The use of the VE 2/RS is especially recommended for high total weights and low damping.

In normal condition the stop gate is moved into the lock position by a spring and the workpiece pallet overtravels the VE 2/RS in the direction of transport and is stopped against the transport direction. Mounted inside the tracks, directly on the conveyor section.

Note: Reversible operation is only possible with the pneumatic version.

Delivery notes

Condition on delivery

- Not assembled

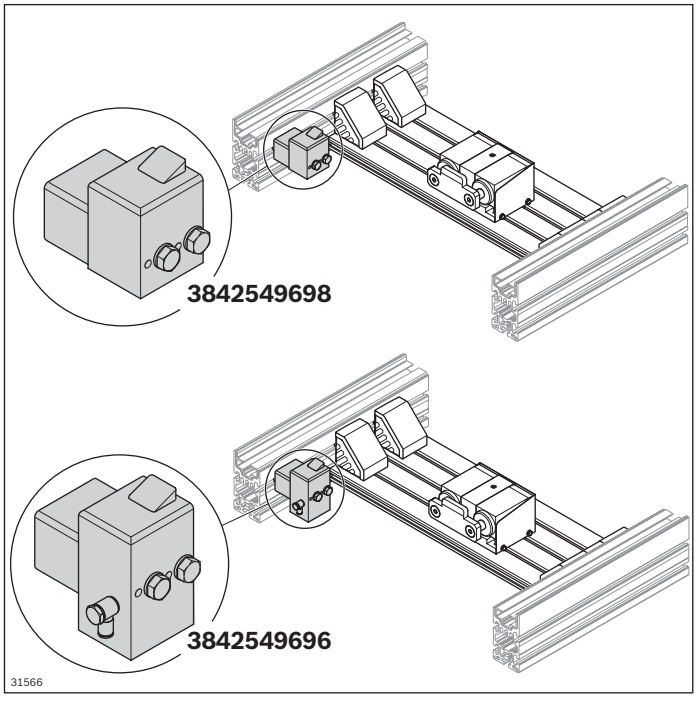
Ordering information

Product designation	Material number
VE 2/RS-H return stop	3842549698
VE 2/RS-H return stop, pneumatic	3842549696

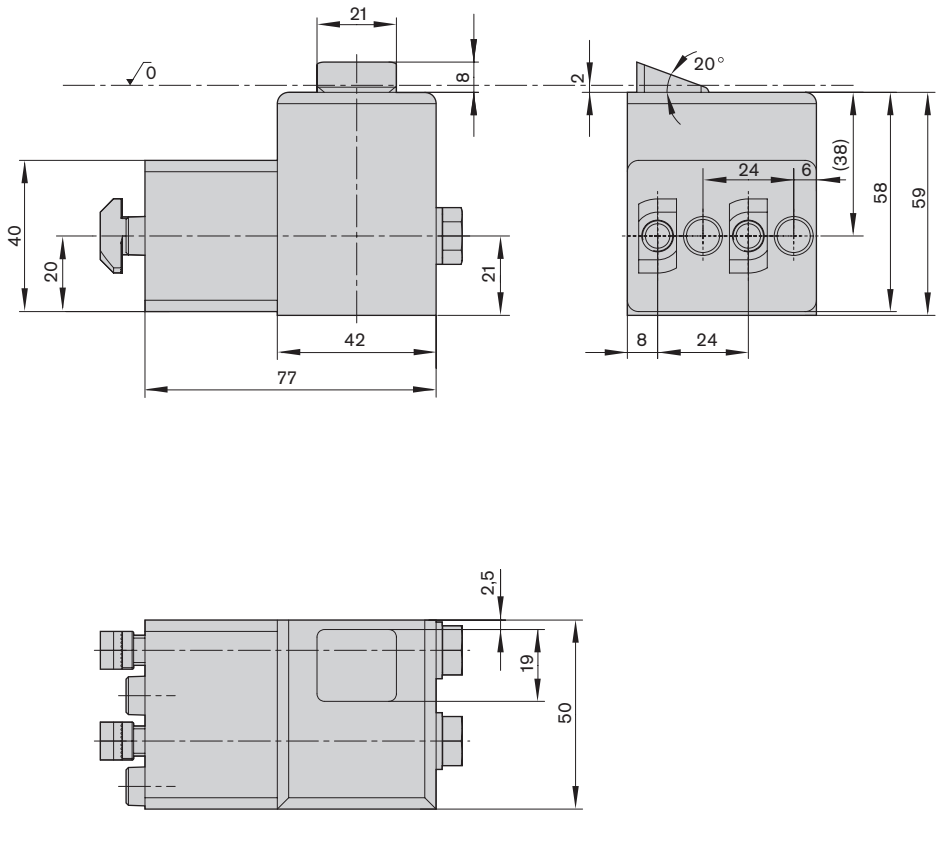
Technical data

Material number			**3842549696**	**3842549698**
Load				
Max. total workpiece pallet weight	m_G	kg	250	250
Min. workpiece pallet weight	m	kg	3	3
Features				
Material specification			Housing: Aluminum, hard anodized Lug cam: Steel, hardened	Housing: Aluminum, hard anodized Lug cam: Steel, hardened
Operating temperature[1]		°C	0 ... +60	0 ... +60

[1] High-temperature stop gate on request

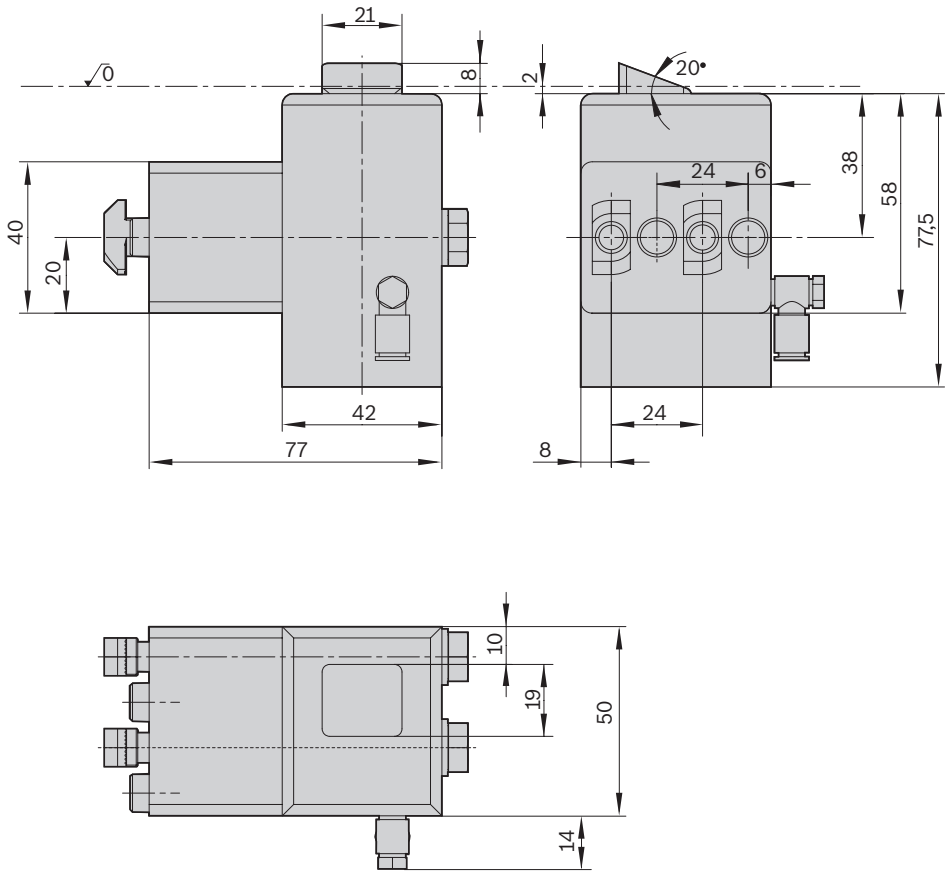


VE 2/RS-H return stop

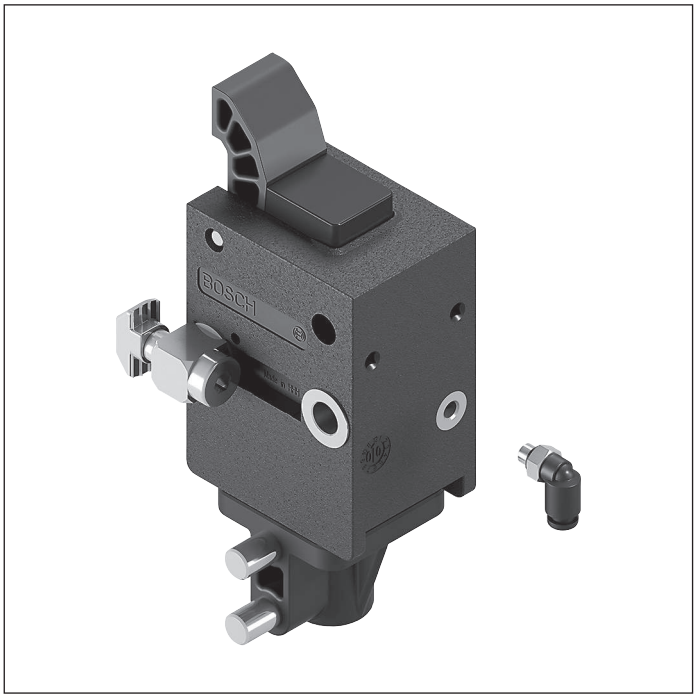


00013092

VE 2/RS-H return stop, pneumatic



VA 2/50 slide stop



- Slide stop, can be lowered pneumatically
- Reversible operation not permitted
- Removable slide stop position sensor
- Not suitable for ST 2...-H sections
- Can be combined with WT 2/E, WT 2 and WT 2/F

The slide stop is used in a transverse section that connects more than two longitudinal sections and that requires supplementary stops. A lift transverse unit can feed in the workpiece pallet onto the longitudinal section when the slide stop is activated.
When depressurized, the pneumatically lowered slide stop is extended to the upper end position. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- 2x M8x1 sensor, see p. 8-112

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Position sensor

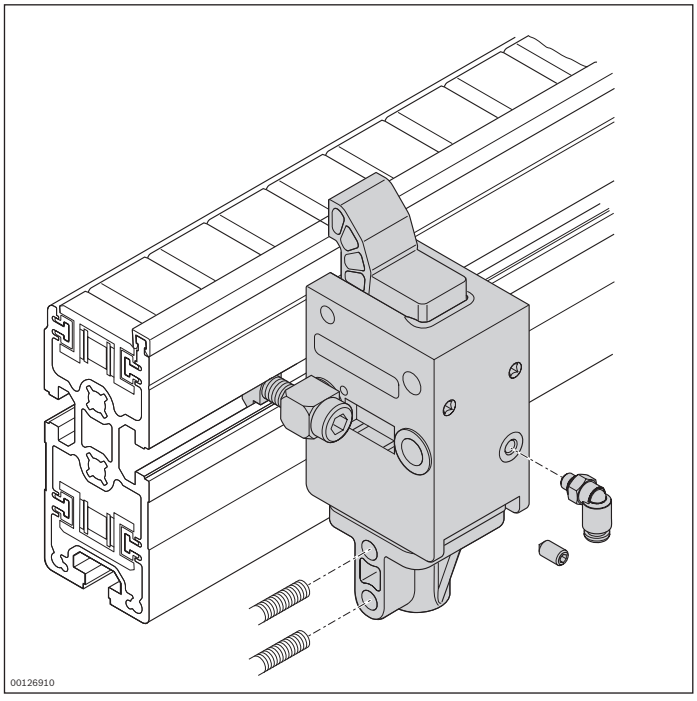
Ordering information

Product designation	Material number
VA 2/50 slide stop	3842528808

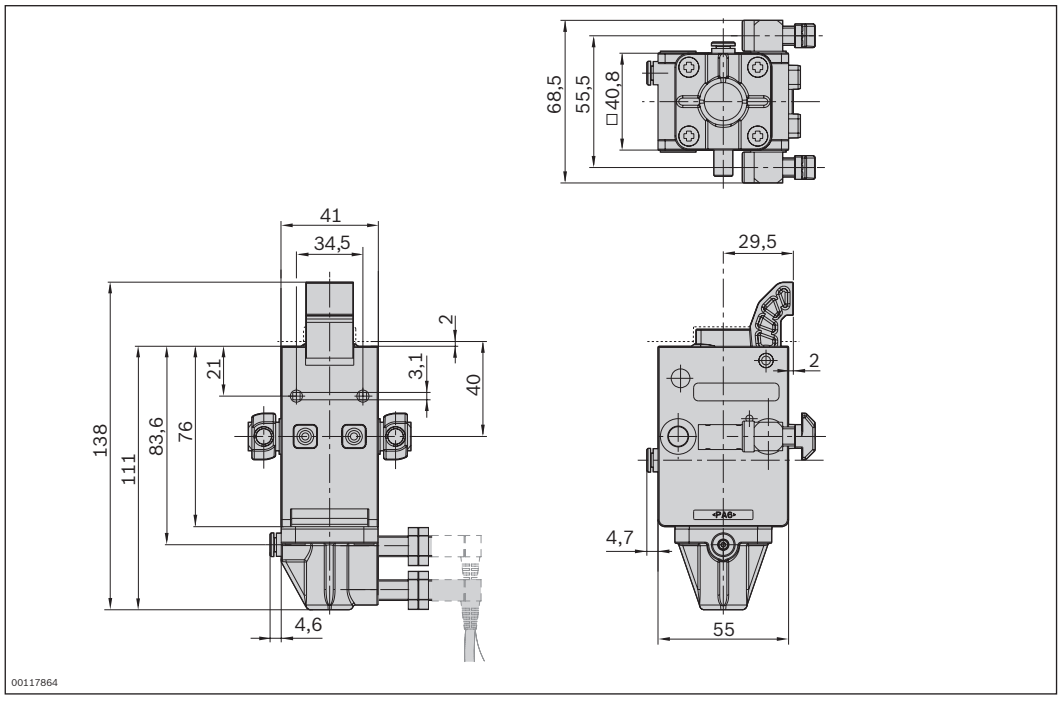
Technical data

Material number			**3842528808**
Load			
Max. total workpiece pallet weight	m_G	kg	50
Features			
Material specification			Housing: PA6 Safety catch: PA66 Lug cam: PA66
Max. operating temperature		°C	60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	4

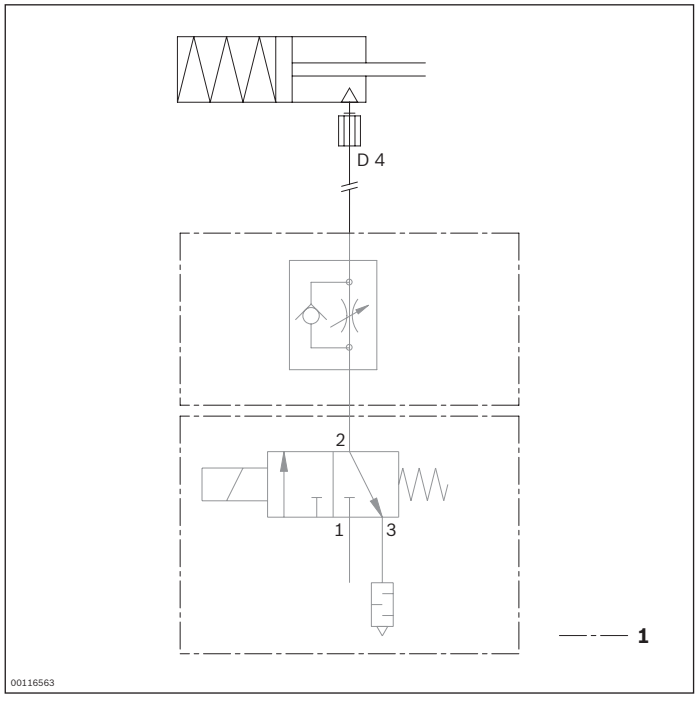
	Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
	50	6
	50	9
	35	12
	25	15
	20	18



Dimensions

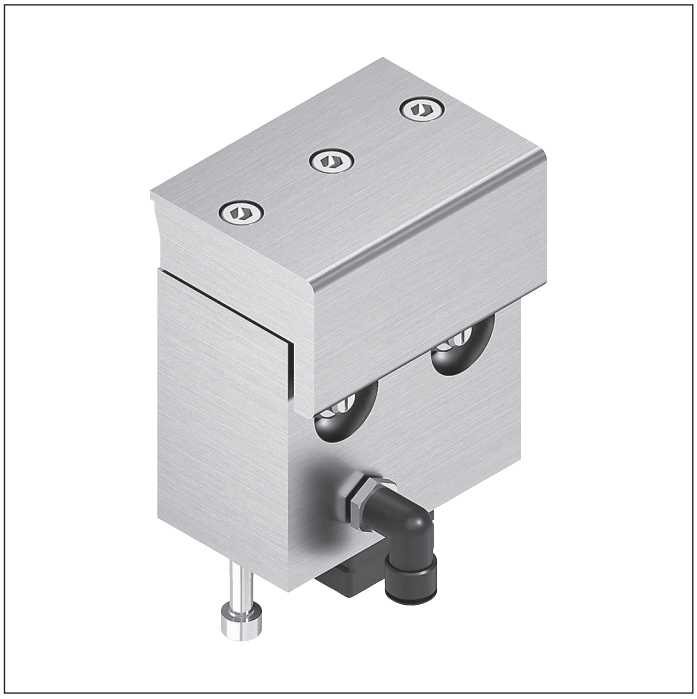


Circuit diagrams



1 Not included in delivery

VA 2/50 slide stop – reversible



- Slide stop, can be extended pneumatically
- Integrated switch bracket
- Reversible operation possible
- Not suitable for ST 2...-H sections
- Inquiry of the slide stop upper position via sensors
- Can be combined with WT 2 and WT 2/F

The slide stop is used in a transverse section that connects more than two longitudinal sections and that requires supplementary stops. A lift transverse unit can feed in the workpiece pallet onto the longitudinal section when the slide stop is activated.

When depressurized, the pneumatically extended slide stop is lowered to the lower end position. The slide stop upper position can be detected using sensors. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- M12x1 sensor, see p. 8-108

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Pivoting elbow fitting

Ordering information

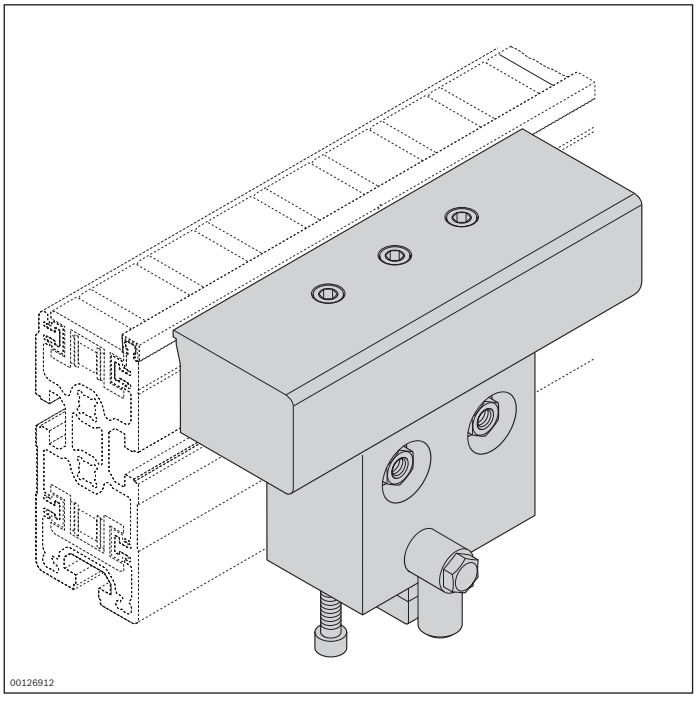
Product designation	Material number
VA 2/50 slide stop – reversible	3842191721

Technical data

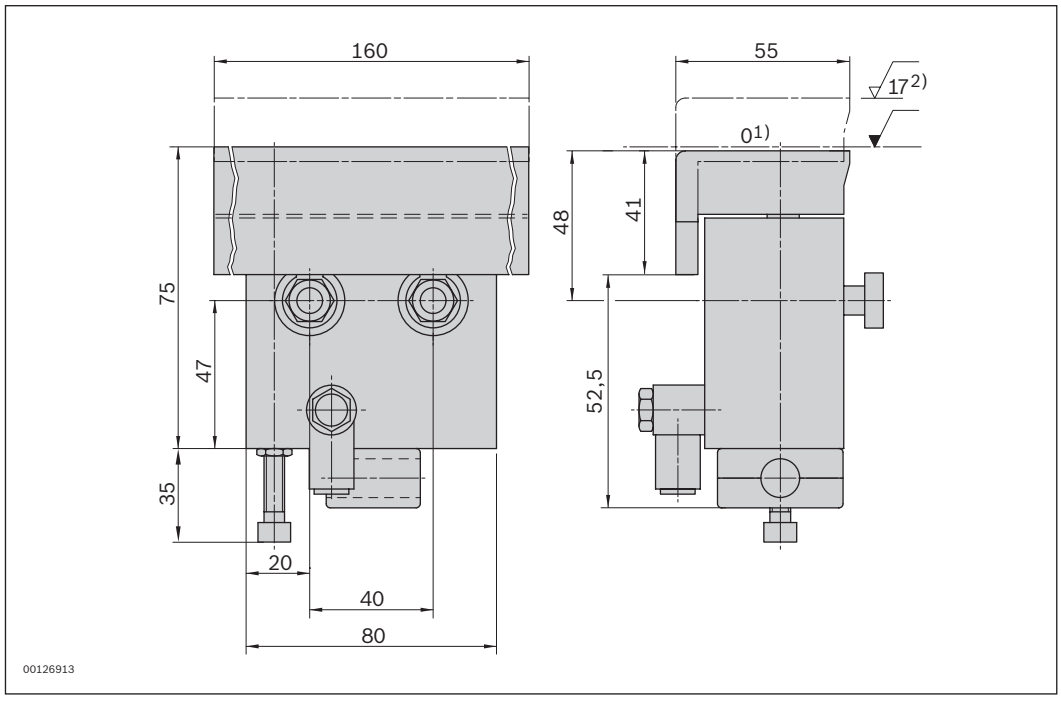
Material number			**3842191721**
Load			
Max. total workpiece pallet weight	m_G	kg	50
Features			
Material specification			Housing: Aluminum Stop: Aluminum
Max. operating temperature[1]		°C	60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6

[1] High-temperature stop gate on request

	Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
	50	6
	50	9
	35	12
	25	15
	20	18

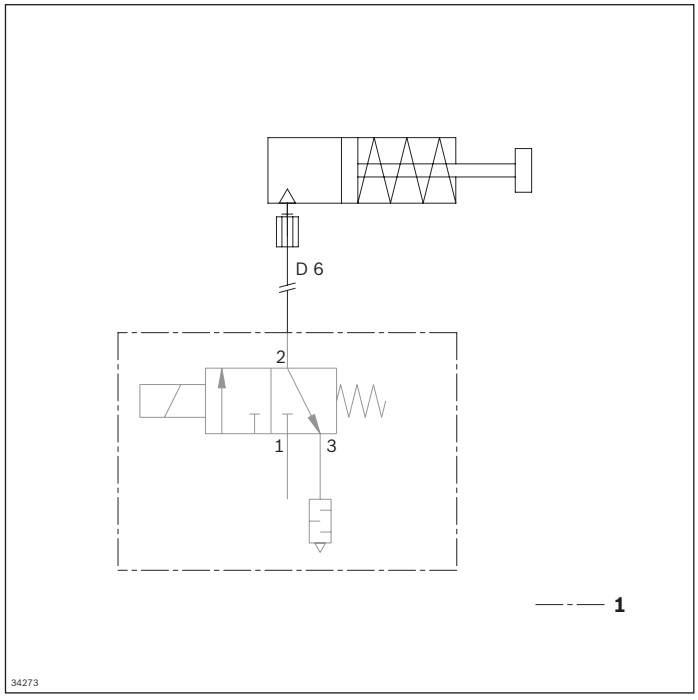


Dimensions



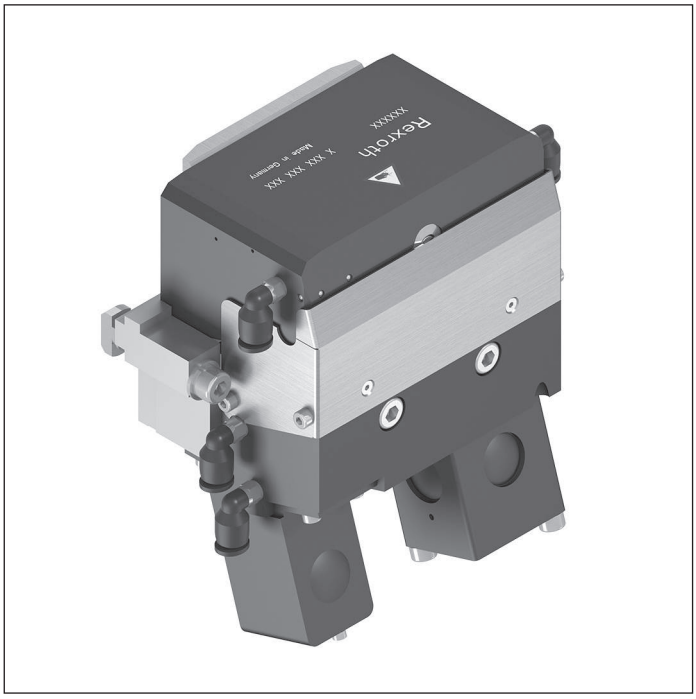
1 Conveying level
2 Limit stop activated

Circuit diagrams



1 Not included in delivery

VA 2/D-130 slide stop



- Slide stop; can be lowered pneumatically, dampened stop
- Stopping on the outside of the frame module
- Can be used in reversible operation
- Design permits installation to a = 90 mm where space is limited
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- 4 positions, can be moved to pneumatically:
  - Upper, lower position and latch in the extended and retracted state
- 3 positions can be detected:
  - Top, bottom and extended stop rail
  - Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

The slide stop is used in a transverse section that connects more than two longitudinal sections and that requires supplementary stops. A lift transverse unit can feed in the workpiece pallet onto the longitudinal section when the slide stop is activated.
The pneumatically adjustable slide stop is extended to the upper end position when the system is depressurized. Mounted inside the tracks, directly on the conveyor section.

Accessories

Recommended accessories

- M12x1 sensor (3842549814) with $S_N \geq 4$ mm rated sensing range, length 45 mm, see p. 8-108
- Clamping holder, see p. 8-55

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Right-angle connector for the Quickfix air connections
- Position sensor

Condition on delivery

- Fully assembled

Ordering information

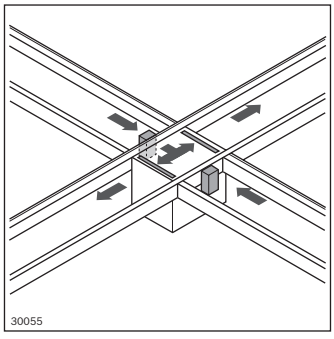
Product designation	Material number
VA 2/D-130 slide stop	3842559001

Technical data

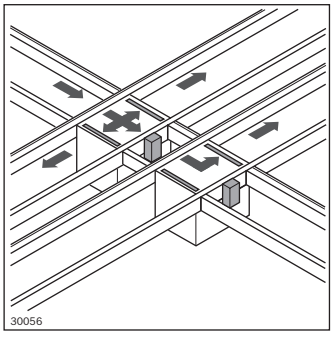
Material number			**3842559001**
Load			
Max. total workpiece pallet weight	m_G	kg	130
Min. workpiece pallet weight	m	kg	15
Features			
Material specification			Housing: Aluminum, hard anodized Latch: Steel
Max. operating temperature		°C	60
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6
Minimum width for mounting between sections	b_L	mm	320

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
130	6
110	9
110	12
100	15
100	18

Possible installation location for VA2/D-130

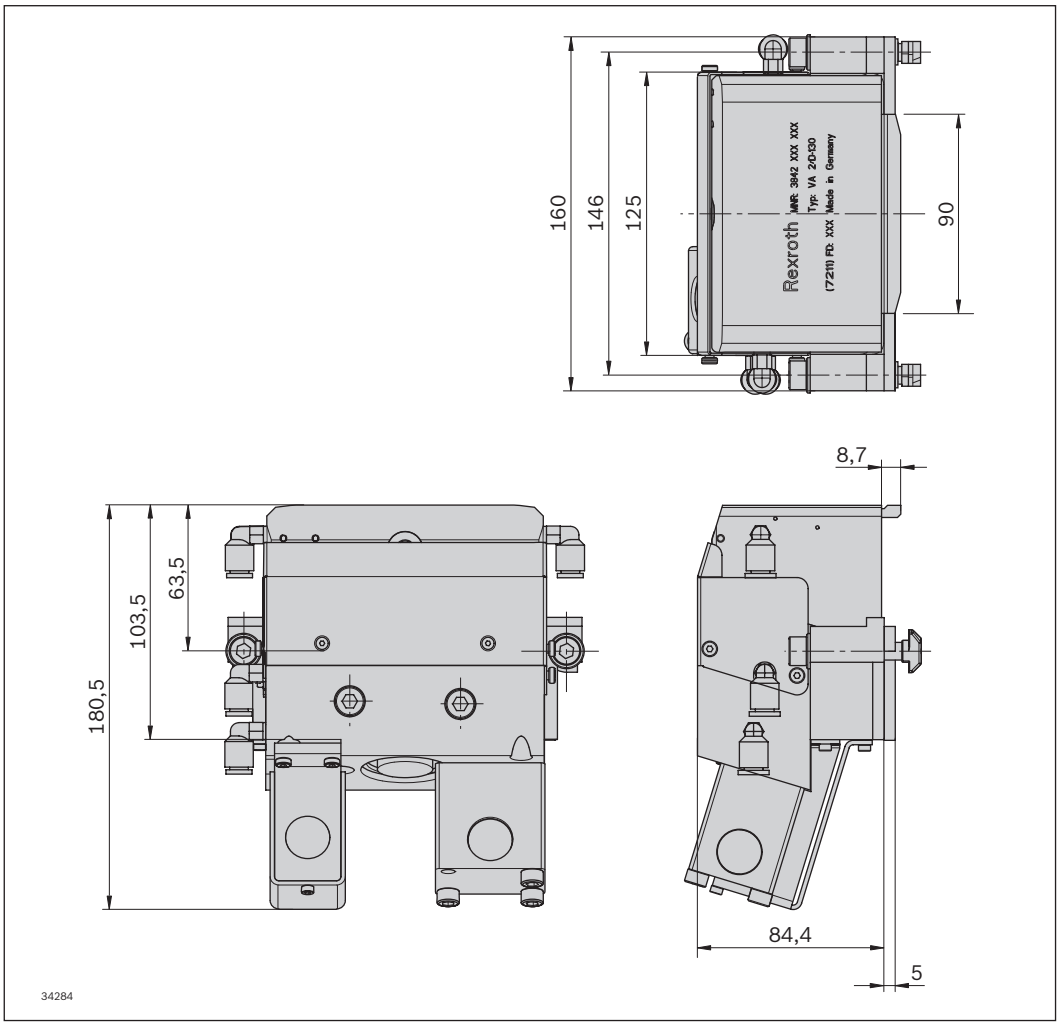


As a node point

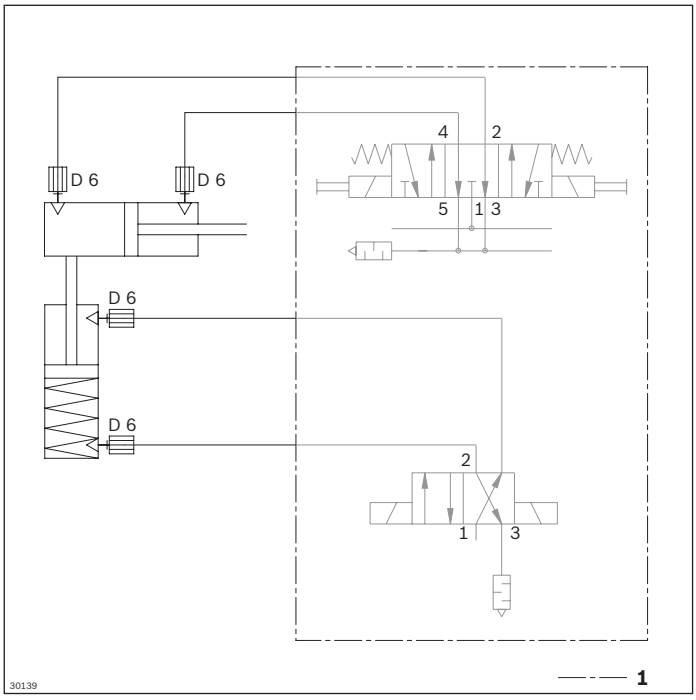


During outfeeding on parallel section

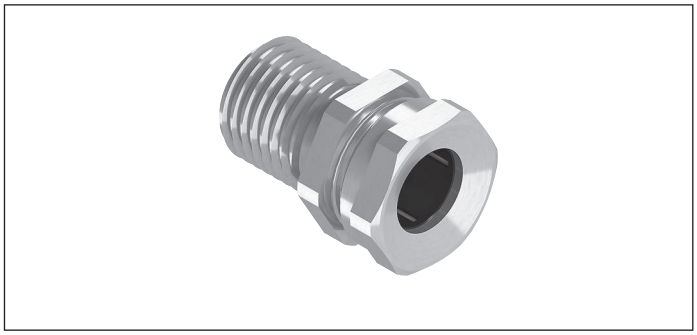
Dimensions



Circuit diagram



Clamping holder

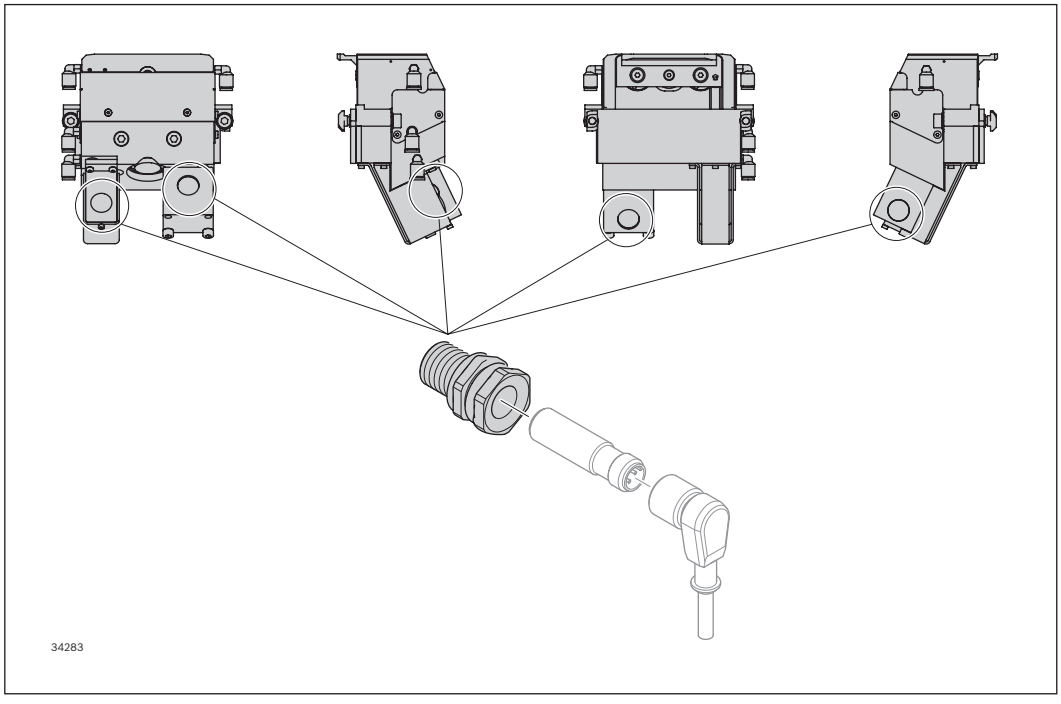


- Clamping holder for sensor for screwing into VA 2/D-130 slide stop, d = 12 mm
- Adapter for variable positioning of the sensor

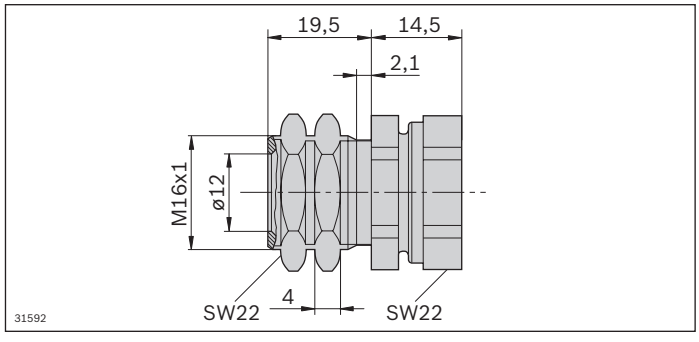
Ordering information

Product designation	Packaging unit	Material number
Clamping holder	1	3842545974

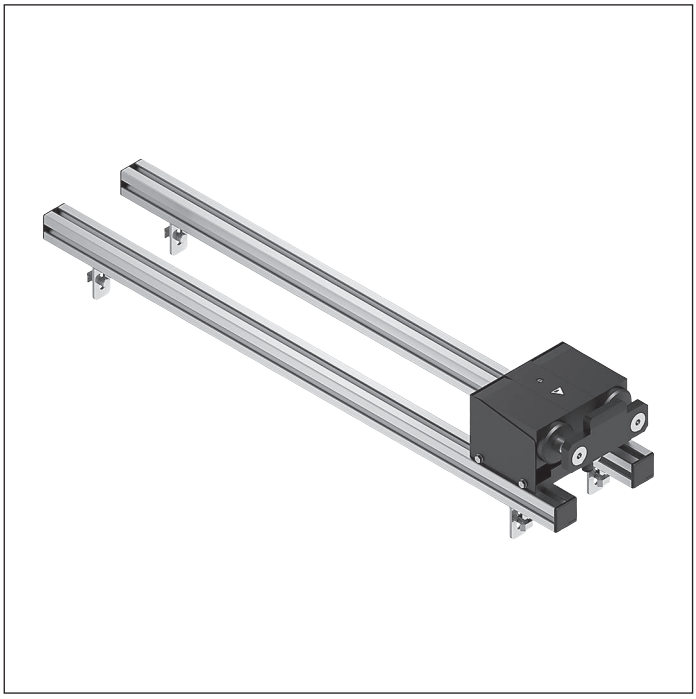
Technical data



Dimensions



VA 2/D-250 slide stop



- Slide stop, pneumatically lowered, dampened stop for use with HQ 2/C-H only (minimum longitudinal width from b_Q = 480 mm, minimum transverse width from b_L = 640 mm)
- Stopping on the inside of the WT frame module
- Continuously adjustable damping
- When the pressure is released by a spring into the lock position
- Can be combined with WT 2/H and WT 2/F-H

The slide stop is used in a transverse section that connects more than two longitudinal sections and that requires supplementary stops. A lift transverse unit can feed in the workpiece pallet onto the longitudinal section when the slide stop is activated.
The pneumatically adjustable slide stop is extended to the upper end position when the system is depressurized. Mounting inside the HQ 2/C-H lift transverse unit.

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor section
- Right-angle connector for the Quickfix design air connection
- Position sensor

Condition on delivery

- Not assembled

Ordering information

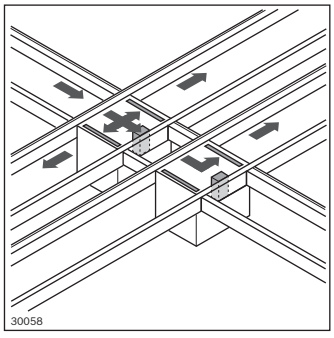
Material number		**3842998796**
b_L (mm)	Track width in the longitudinal conveyor	640; 800; 1040; 1200
b_L (mm)	Track width in the longitudinal conveyor	640 ... 1200
b_Q (mm)	Track width in the transverse conveyor	480; 640; 800; 1040; 1200; 480 ... 1200

Technical data

Material number			**3842998796**
Load			
Max. total workpiece pallet weight	m_G	kg	250
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	-20 ... +80
Dimensions			
Minimum length of workpiece pallet	l_{wt}		400
Additional information			
Required compressed air connection	p	bar	4 ... 6
Pneumatic connector	d	mm	6

[1] High-temperature stop gate on request

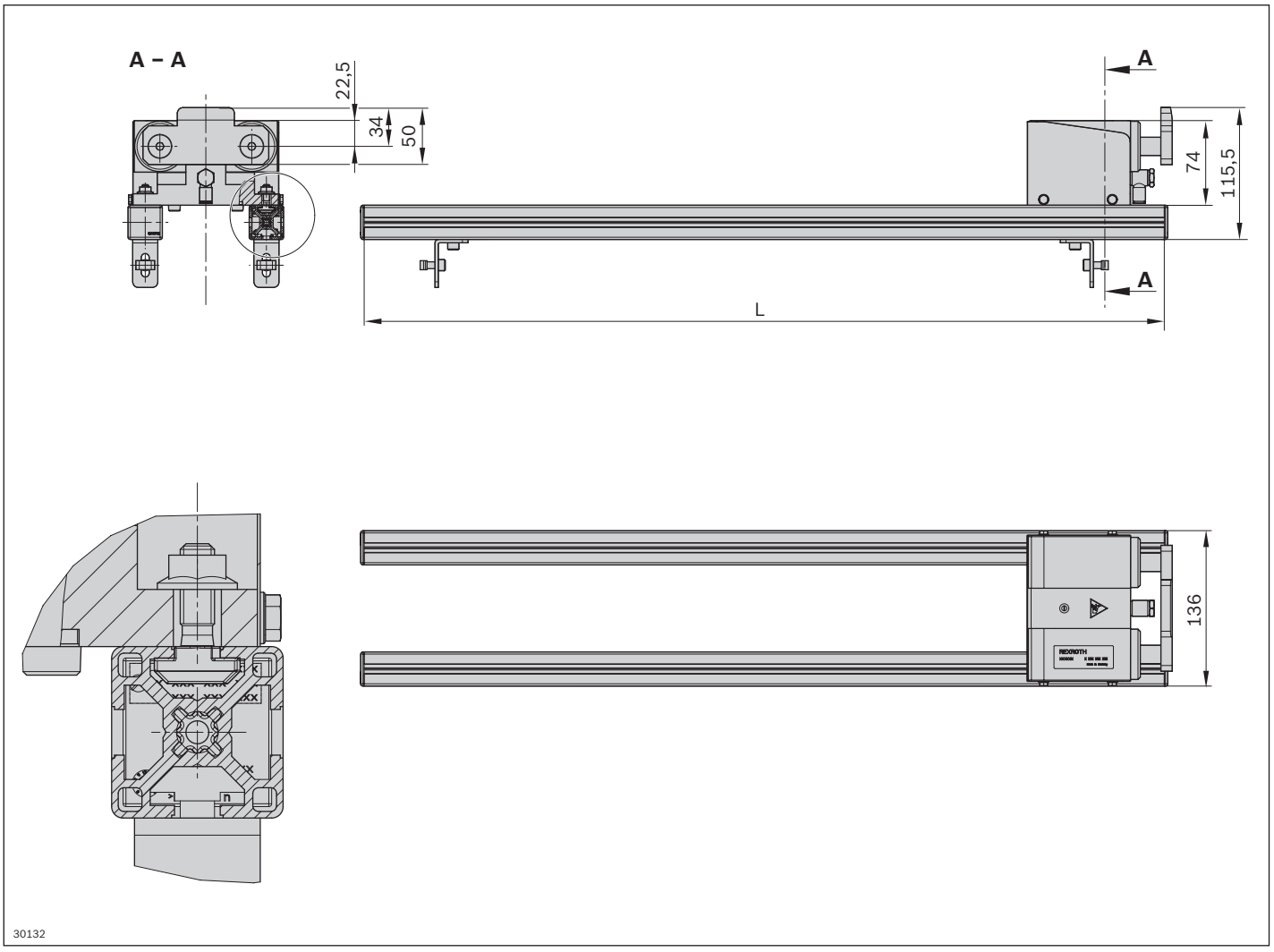
Possible installation location for VA 2/D-250



During outfeeding on parallel section

When attaching inside an HQ 2/C-H, the VA 2/D-250 must be positioned on the opposite side of the hexagonal shaft in each case.

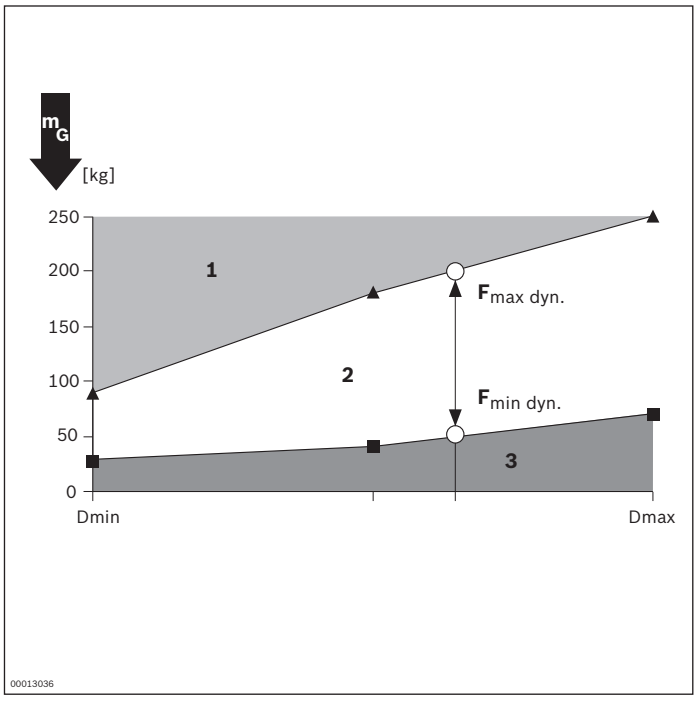
Dimensions



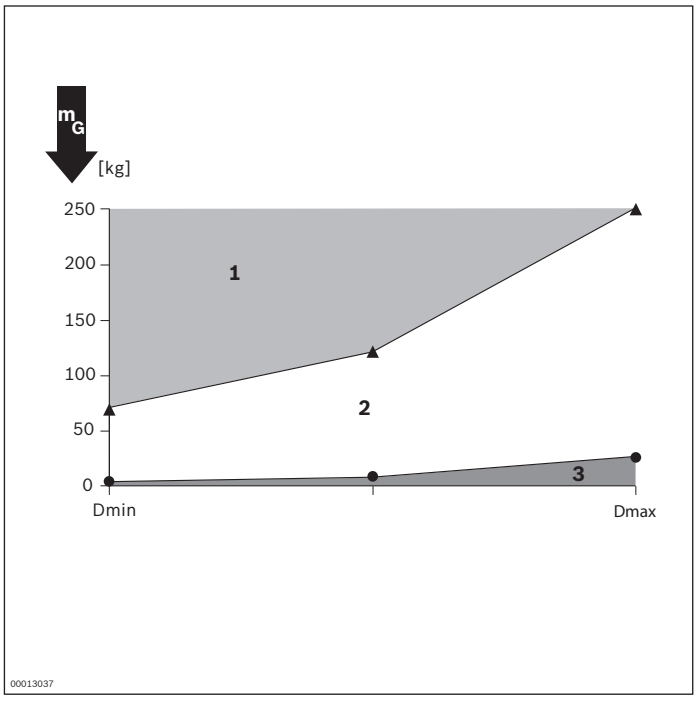
Track width in the longitudinal conveyor b_L (mm)	Dimension L (mm)
640	519
800	679
1040	919
1200	1079

Characteristic curve diagram

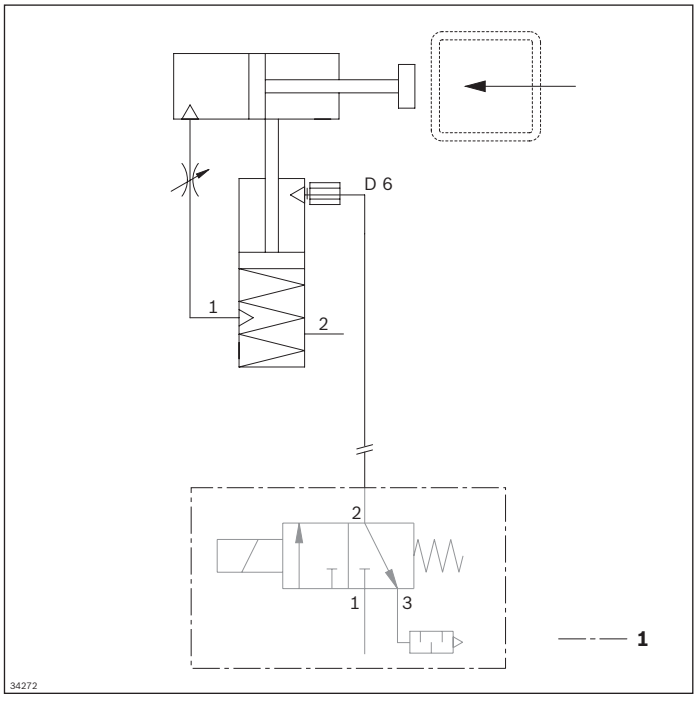
Damping setting, accumulation roller chain μ = 0.02



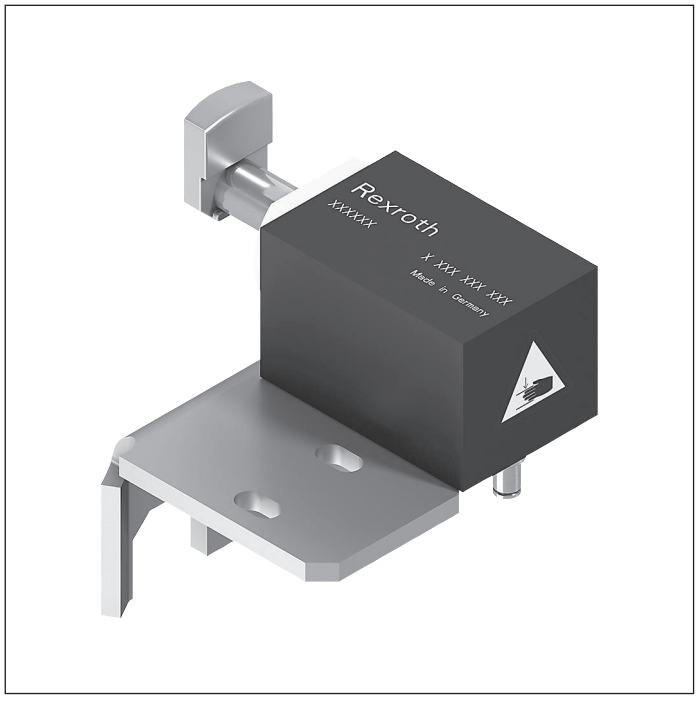
Damping setting, flat top chain μ = 0.2



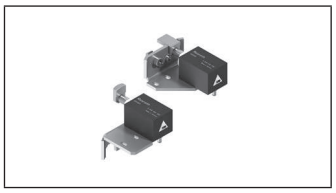
Circuit diagram



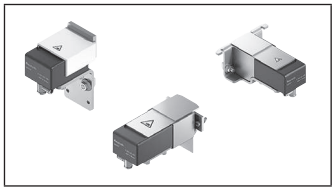
Damper



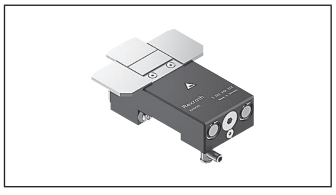
DA 2 dampers are used to cushion the impact of workpiece pallets when they are moved from a transverse conveyor section into a longitudinal conveyor section or vice versa.



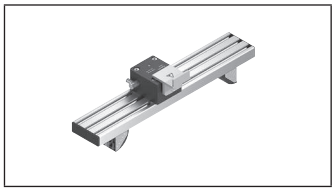
DA 2/60 damper 60 **8-62**



DA 2/100, DA 2/100-C, DA 2/100-E damper 100 **8-67**

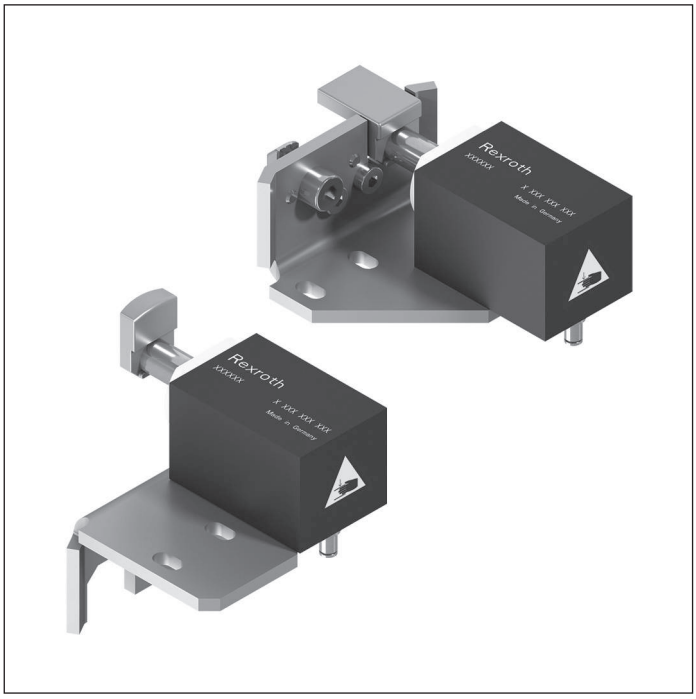


DA 2/150-E damper 150 **8-79**



DA 2/100-H, DA 2/250-H damper 250 **8-82**

DA 2/60 damper



- For permitted total weight of workpiece pallets up to 60 kg
- Pneumatic damper
- Continuously adjustable
- Optimal damping at a ratio of 2:1 between heavy and light workpiece pallets
- Can be combined with WT 2/E, WT 2, WT 2/F, WT 2/H and WT 2/F-H
- Installation location: ST 2 section, BS 2 belt section and HQ 2 lift transverse unit
- Not suitable for HQ 2/U2 and HQ 2/...-H

The damper cushions the impact of workpiece pallets when they are moved from a transverse conveyor section into a longitudinal section and vice versa. The pneumatic return occurs as the stop gate opens, which permits the workpiece pallet to move toward the damper.

Delivery notes

Scope of delivery

- Includes fastening material for mounting on an ST 2 or a BS 2, and EQ 2 or HQ 2/U, HQ 2/T, HQ 2/S or HQ 2/O
- DA 2/60 damper with two different stops for optional use infeeding or outfeeding use

Condition on delivery

- Not assembled

Ordering information

Product designation	Material number
DA 2/60 damper	3842557983

Technical data

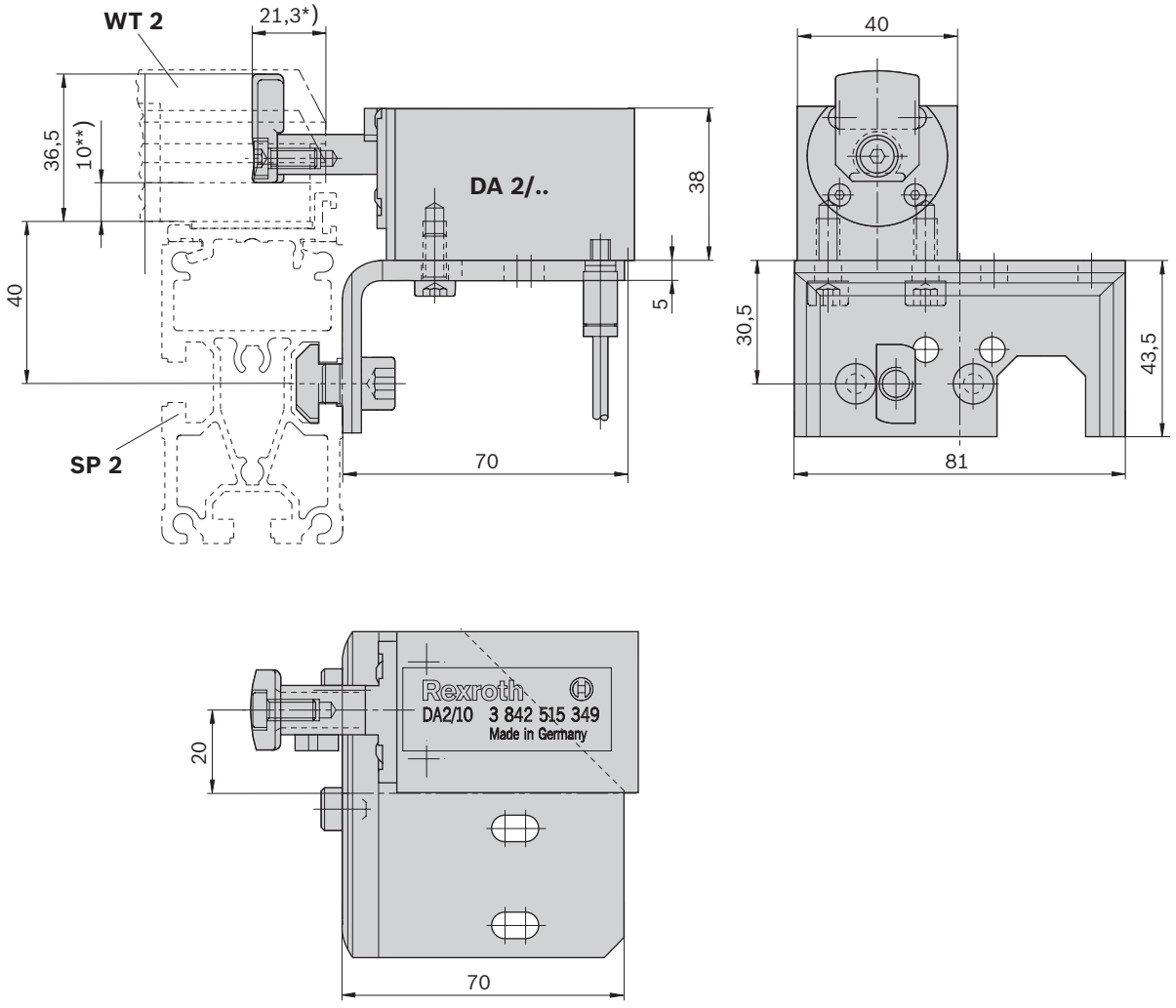
Material number			**3842557983**
Load			
Max. total workpiece pallet weight	m_G	kg	60
Min. workpiece pallet weight	m	kg	1
Features			
Material			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Pneumatic connector	d	mm	4

[1] High-temperature damper on request

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
60	6
40	9
35	12
30	18
24	24
18	30
10	36

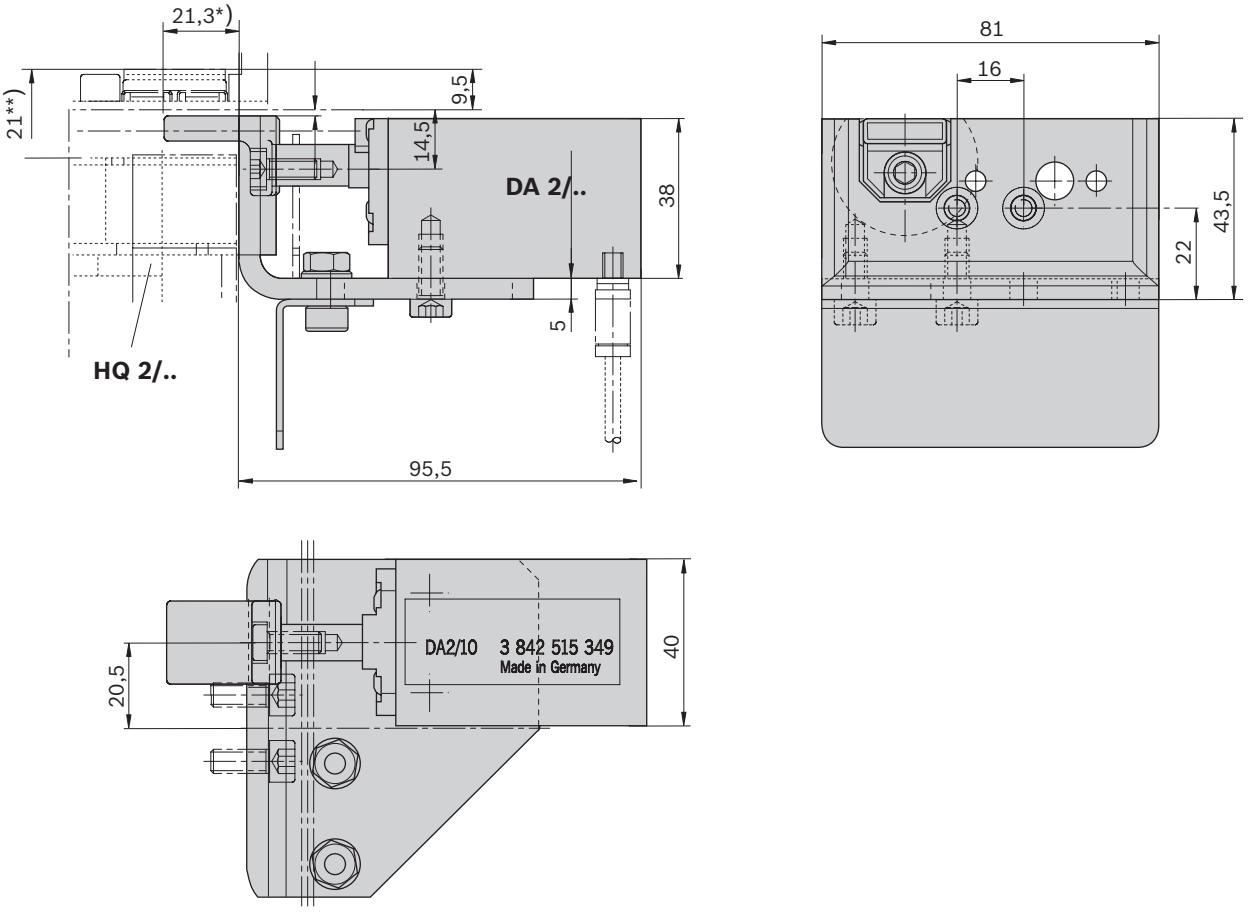
Dimensions

DA 2 – SP 2



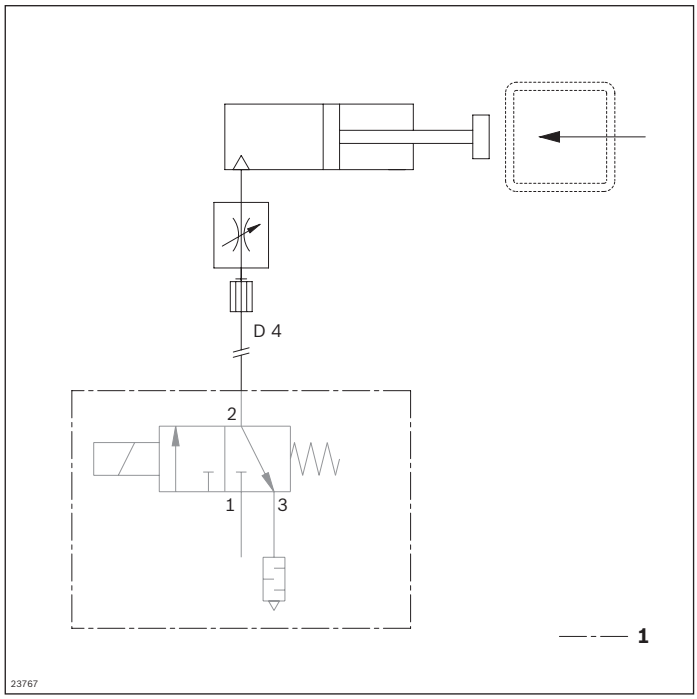
* = Stroke of damper
** = Stroke of WT 2

DA 2 – HQ 2



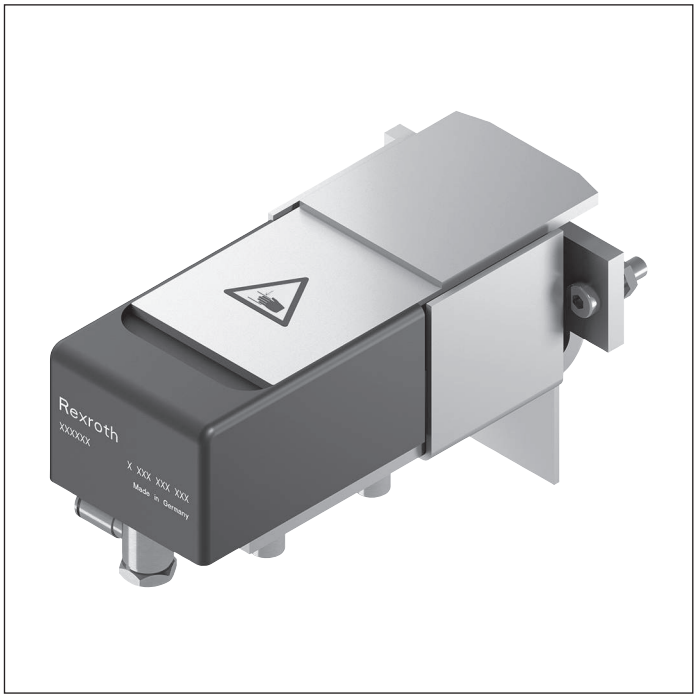
* = Stroke of damper
** = Stroke of HQ 2
*** = Center HQ 2

Circuit diagrams



1 Not included in delivery

DA 2/100-B damper



- For permitted total weight of workpiece pallets up to 100 kg
- Pneumatic damper
- Continuously adjustable
- Before outfeeding via an HQ 2/U2 lift transverse unit
- Optimal damping at a ratio of 2:1 between heavy and light workpiece pallets
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H
- Installation location: HQ 2/U2 lift transverse unit

The damper cushions the impact of the arriving workpiece pallet. The DA 2/100 is suitable for outfeeding via an HQ 2/U2 lift transverse unit.
The pneumatic return occurs as the stop gate opens, which permits the workpiece pallet to move toward the damper. Mounted at the end or in the transverse conveyor directly on the conveyor section, since the damper is not traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA 2/100-B damper for outfeeding the WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets, via an HQ 2/U2, required at v_N > 12 m/min or total weight of the workpiece pallet > 1 kg/cm

Condition on delivery

- Not assembled

Ordering information

Product designation	Material number
DA 2/100-B damper	3842525733

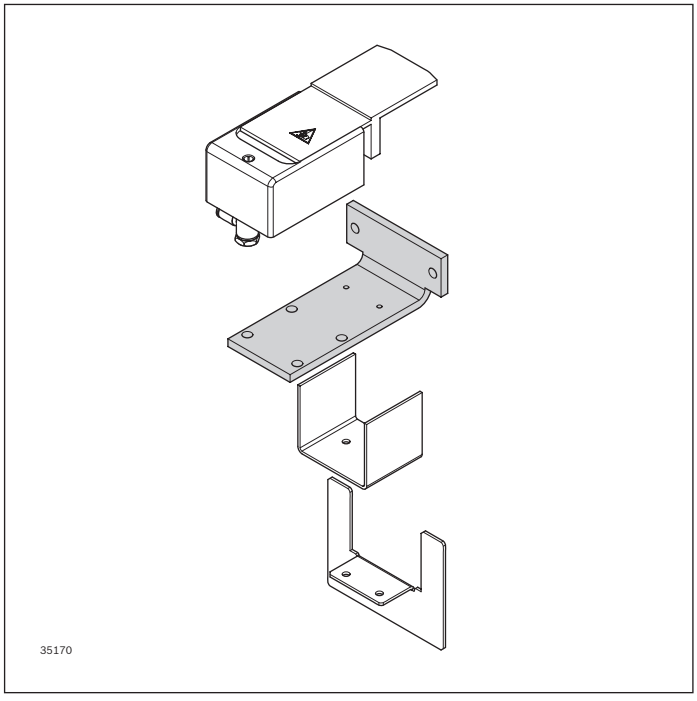
Technical data

Material number			**3842525733**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Pneumatic connector	d	mm	6

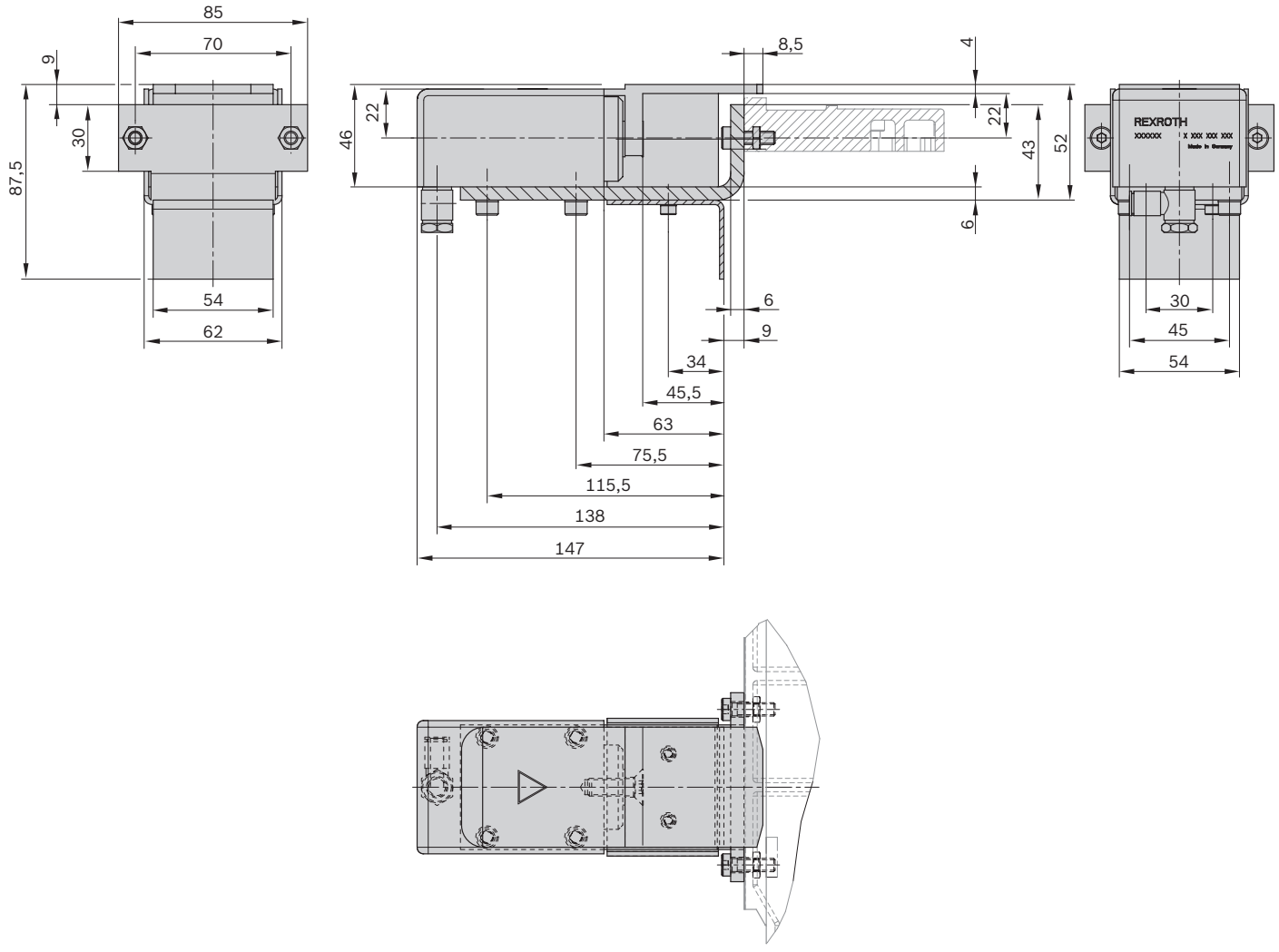
[1] High-temperature damper on request

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
100	6
100	9
100	12
95	15
55	18

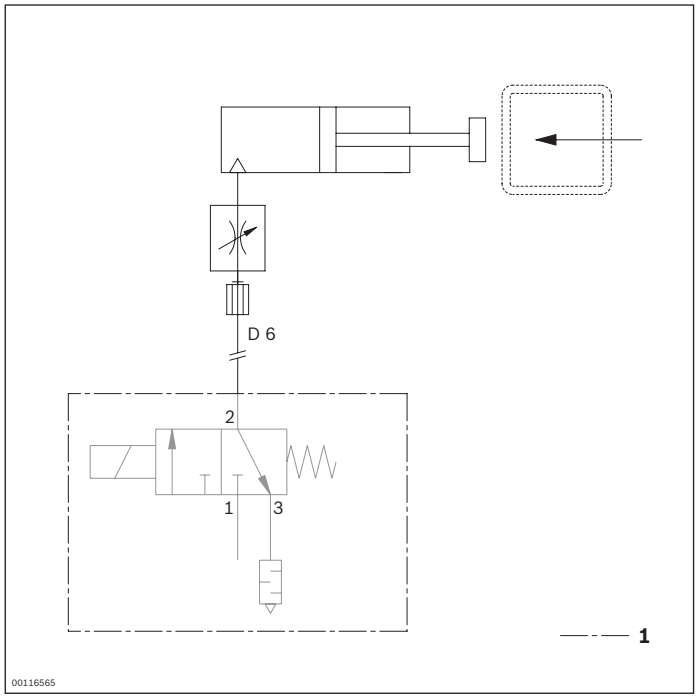
Attachment plate



Dimensions

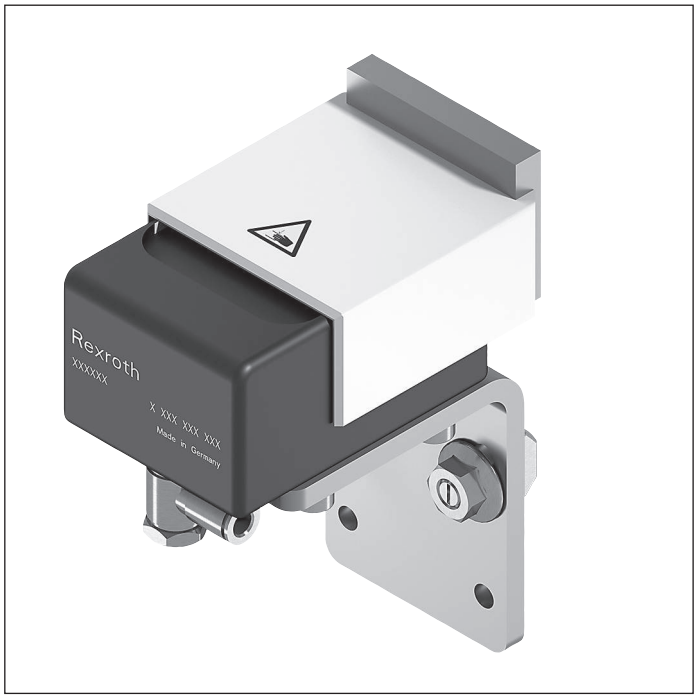

85
70
9
30
87,5
54
62
8,5
4
22
46
22
43
52
6
6
9
34
45,5
63
75,5
115,5
138
147
REXROTH
30
45
54
28923

Circuit diagrams



1 Not included in delivery

DA 2/100-C damper



- For permitted total weight of workpiece pallets up to 100 kg
- Pneumatic damper
- Continuously adjustable
- During infeeding in a longitudinal section
- Optimal damping at a ratio of 2:1 between heavy and light workpiece pallets
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H
- Installation location: ST 2 section or BS 2 belt section

The damper cushions the impact of the arriving workpiece pallet. The DA 2/100-C is suitable for infeeding from a transverse section into a longitudinal section. It is mounted directly on the section profile of the longitudinal section.

The pneumatic return occurs as the stop gate opens, which permits the workpiece pallet to move toward the damper. The damper is not traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA2/100-C damper for infeeding the WT 2 and WT 2/F workpiece pallets

Condition on delivery

- Not assembled

Ordering information

Product designation	Material number
DA 2/100-C damper	3842525734

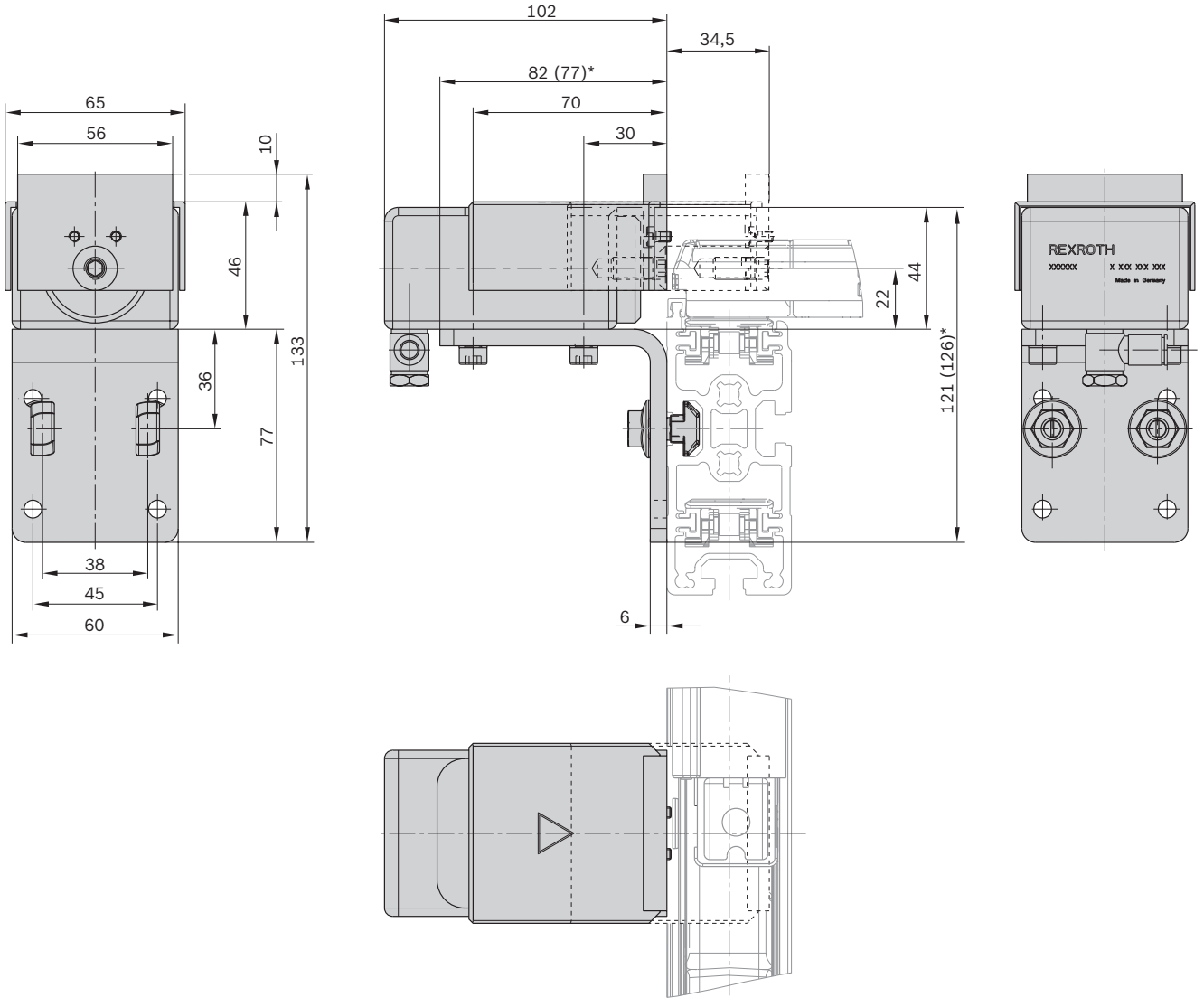
Technical data

Material number			**3842525734**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Pneumatic connector	d	mm	6

[1] High-temperature damper on request

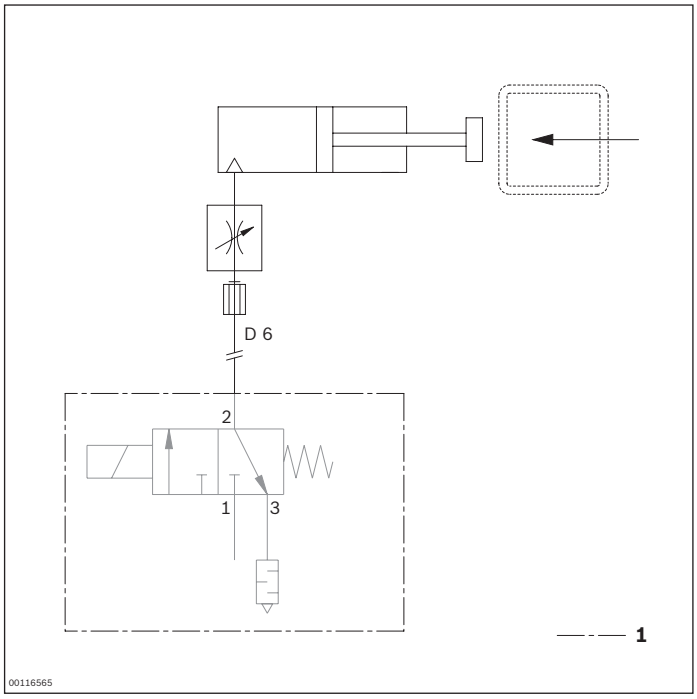
Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
100	6
100	9
100	12
95	15
55	18

Dimensions



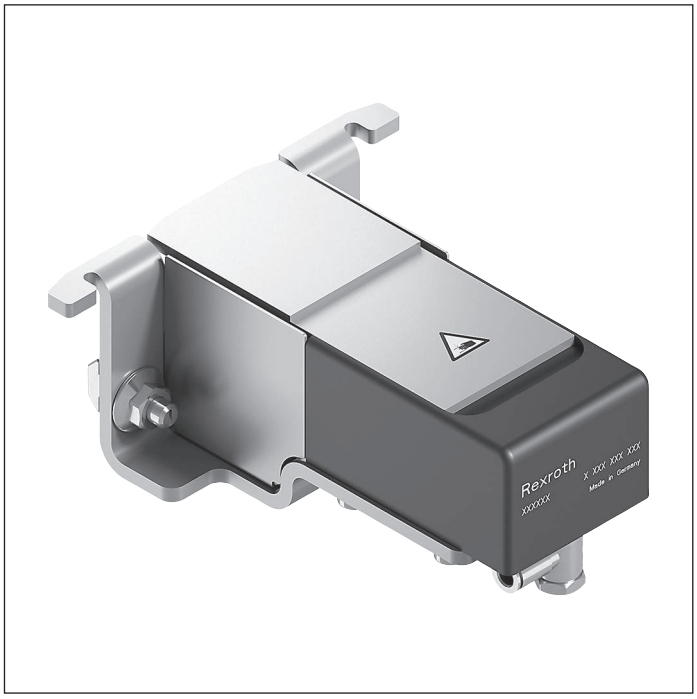
* Dimension in brackets apply to mounting on ST 2/...-H section profile

Circuit diagrams



1 Not included in delivery

DA 2/100-E damper



- For permitted total weight of workpiece pallets up to 100 kg
- Pneumatic damper
- Continuously adjustable
- Optimal damping at a ratio of 2:1 between heavy and light workpiece pallets
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H
- Installation location: HQ 2/C-H or HQ 2 lift transverse unit

The damper cushions the impact of the arriving workpiece pallet. The DA 2/100-E is suitable for outfeeding via an HQ 2/U-H. The pneumatic return is parallel to opening of the stop gate, which permits the workpiece pallet to move towards the damper. The damper is traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA 2/100-E damper for outfeeding the WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets via an HQ 2/U-H

Condition on delivery

- Not assembled

Ordering information

Product designation	Material number
DA 2/100-E damper	3842548585

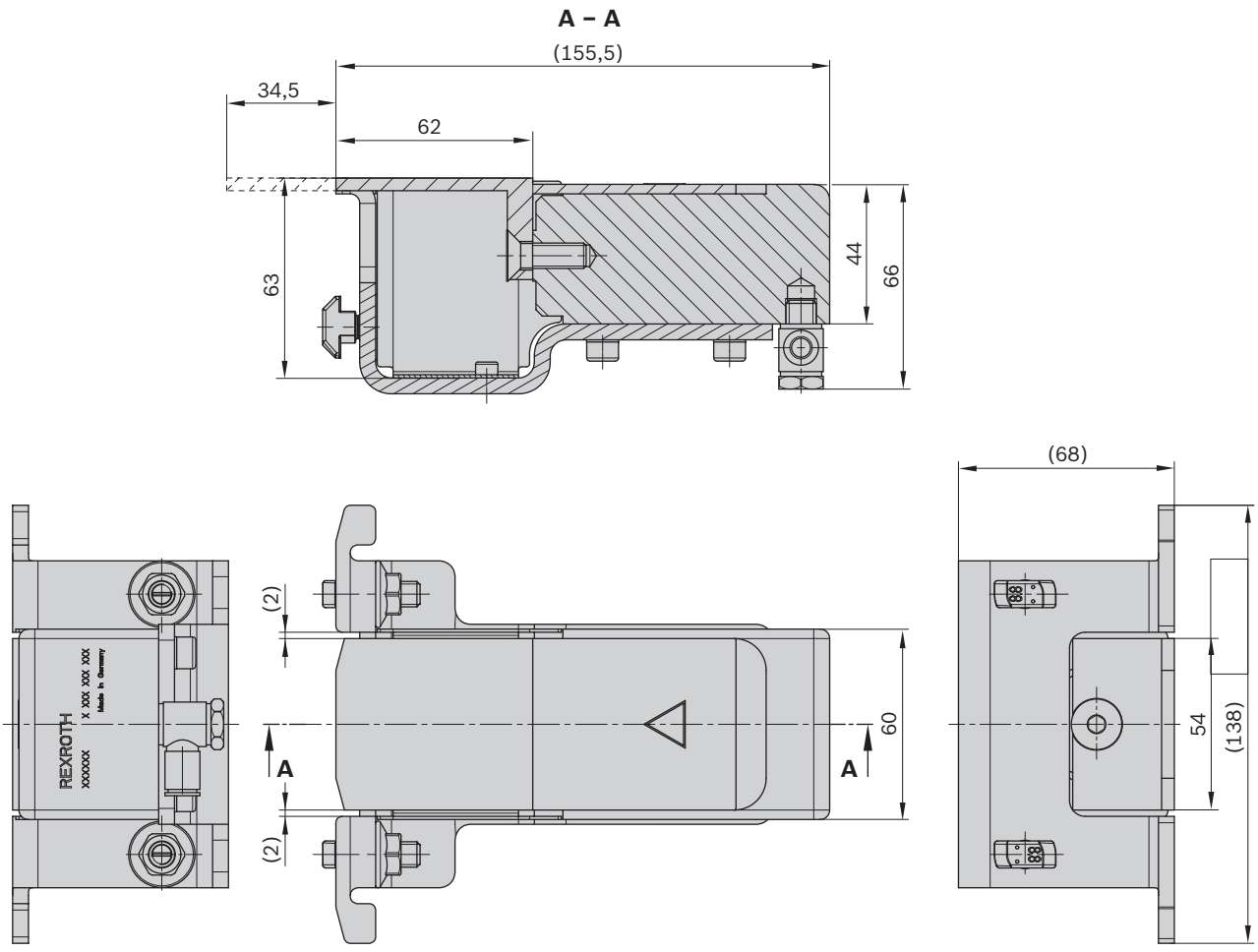
Technical data

Material number			**3842548585**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Pneumatic connector	d	mm	6

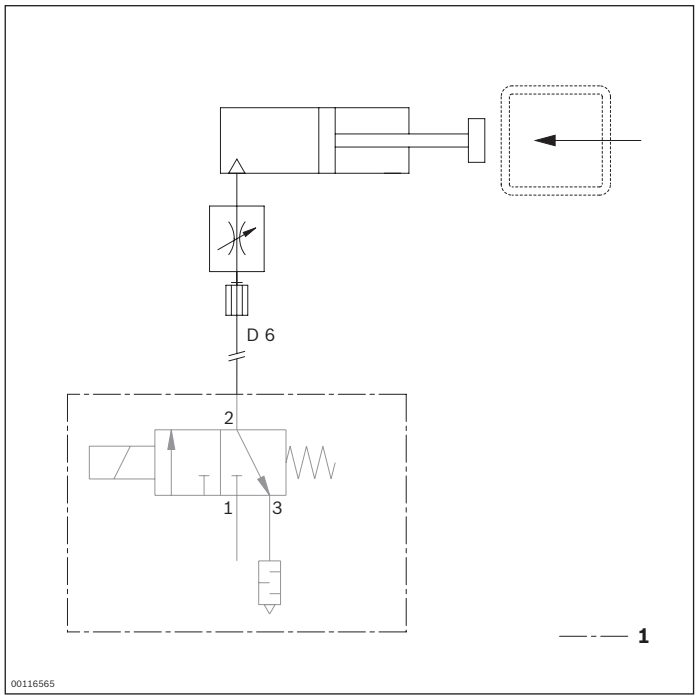
[1] High-temperature damper on request

Permitted total weight of workpiece pallet m_G (kg)	**Nominal speed v_N (m/min)**
100	6
100	9
100	12
95	15
55	18

Dimensions

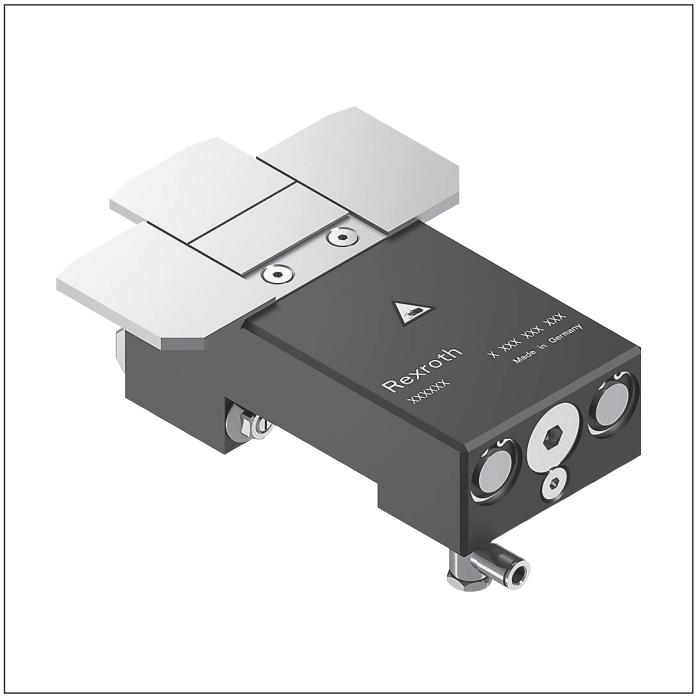


Circuit diagrams



1 Not included in delivery

DA 2/150-E damper



- Hydraulic damper with closed damping system
- Before outfeeding via an HQ 2/U-H lift transverse unit
- For permitted total weight of workpiece pallets up to 130 kg with belts, toothed belts or flat top chains
- For permitted total weight of workpiece pallets up to 150 kg with accumulation roller chains
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H
- Installation location: HQ 2/C-H or HQ 2 lift transverse unit

The damper cushions the impact of the arriving workpiece pallet. The DA 2/150-E damper is suitable for outfeeding a workpiece pallet via an HQ 2/U-H. The pneumatic return is parallel to opening of the stop gate, which permits the workpiece pallet to move towards the damper. The damper is traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA 2/150-E damper for outfeeding the WT 2, WT 2/F, WT 2/H or WT 2/F-H workpiece pallets via an HQ 2/U-H

Condition on delivery

- Not assembled

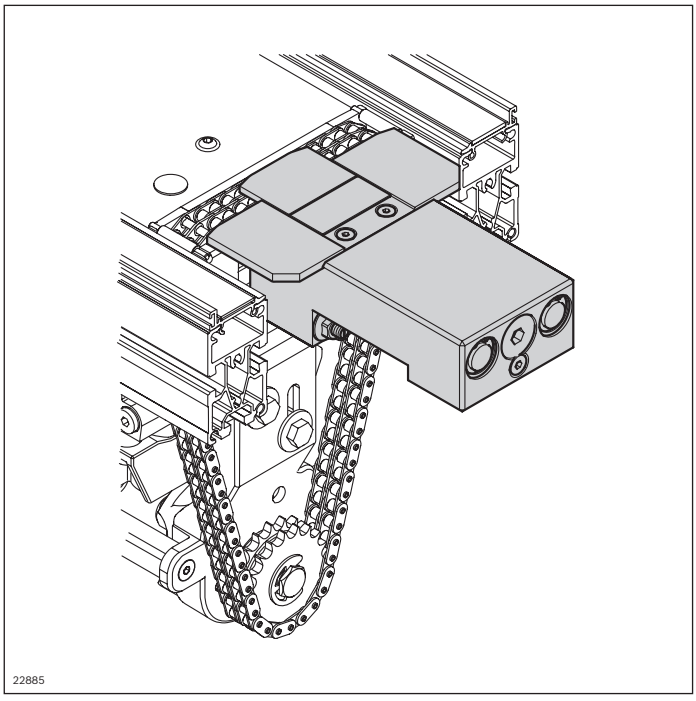
Ordering information

Product designation	Material number
DA 2/150-E damper	3842548644

Technical data

Material number			**3842548644**
Load			
Max. total workpiece pallet weight	m_G	kg	Belt, toothed belt, flat top chain 130 Accumulation roller chain 150
Min. workpiece pallet weight	m	kg	Belt, toothed belt, flat top chain 15 Accumulation roller chain 40
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel, hardened
Operating temperature[1]		°C	0 ... +60
Additional information			
Pneumatic connector	d	mm	6

[1] High-temperature damper on request



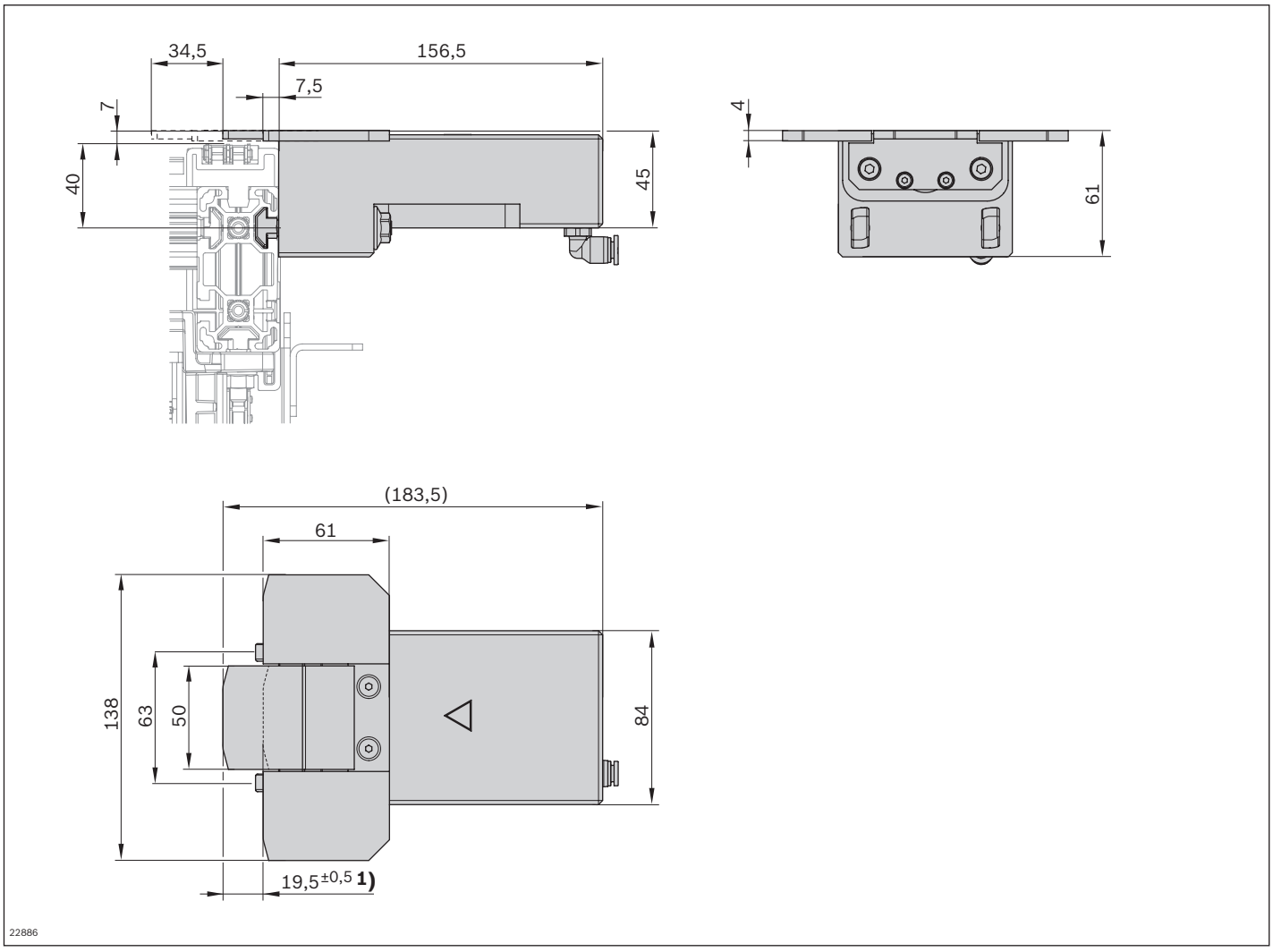
Belt, toothed belt, or flat top chain

Permitted total weight of workpiece pallet m_G (kg)	Nominal speed v_N (m/min)
130	6
130	9
130	12
130	15
130	18

Accumulation roller chain

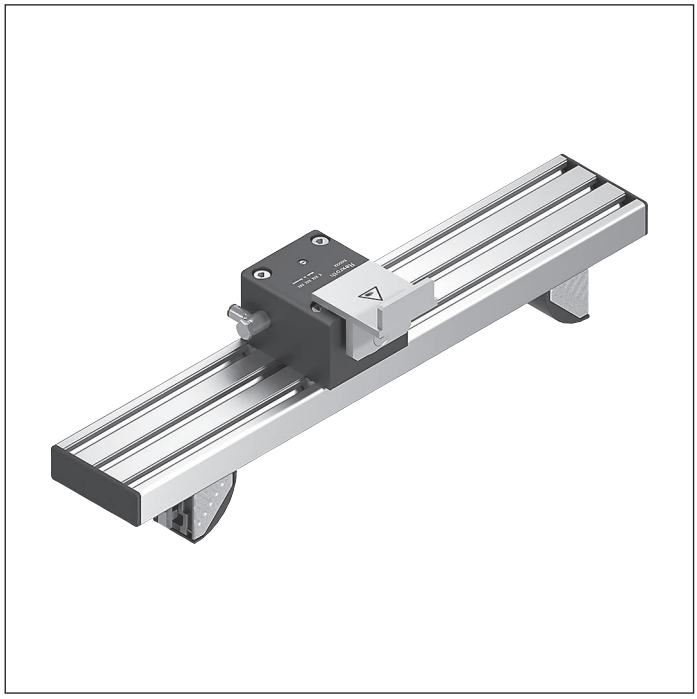
Permitted total weight of workpiece pallet m_G (kg)	Nominal speed v_N (m/min)
150	6
150	9
150	12
150	15
150	18

Dimensions



1 Stroke

DA 2/100-H damper



- For permitted total weight of workpiece pallets up to 100 kg
- Pneumatic damper
- Continuously adjustable
- Installation location: HQ 2/C-H lift transverse unit
- Can be combined with WT 2/H and WT 2/F-H

The damper cushions the impact of workpiece pallets when they are moved from a transverse conveyor section into a longitudinal section and vice versa. The pneumatic return occurs as the stop gate opens, which permits the workpiece pallet to move toward the damper. For installation in a HQ 2/C-H lift transverse unit. The damper is traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA 2/100-H damper for infeeding or outfeeding the WT 2/H or WT 2/F-H workpiece pallets via an HQ 2/C-H

Condition on delivery

- Not assembled

Ordering information

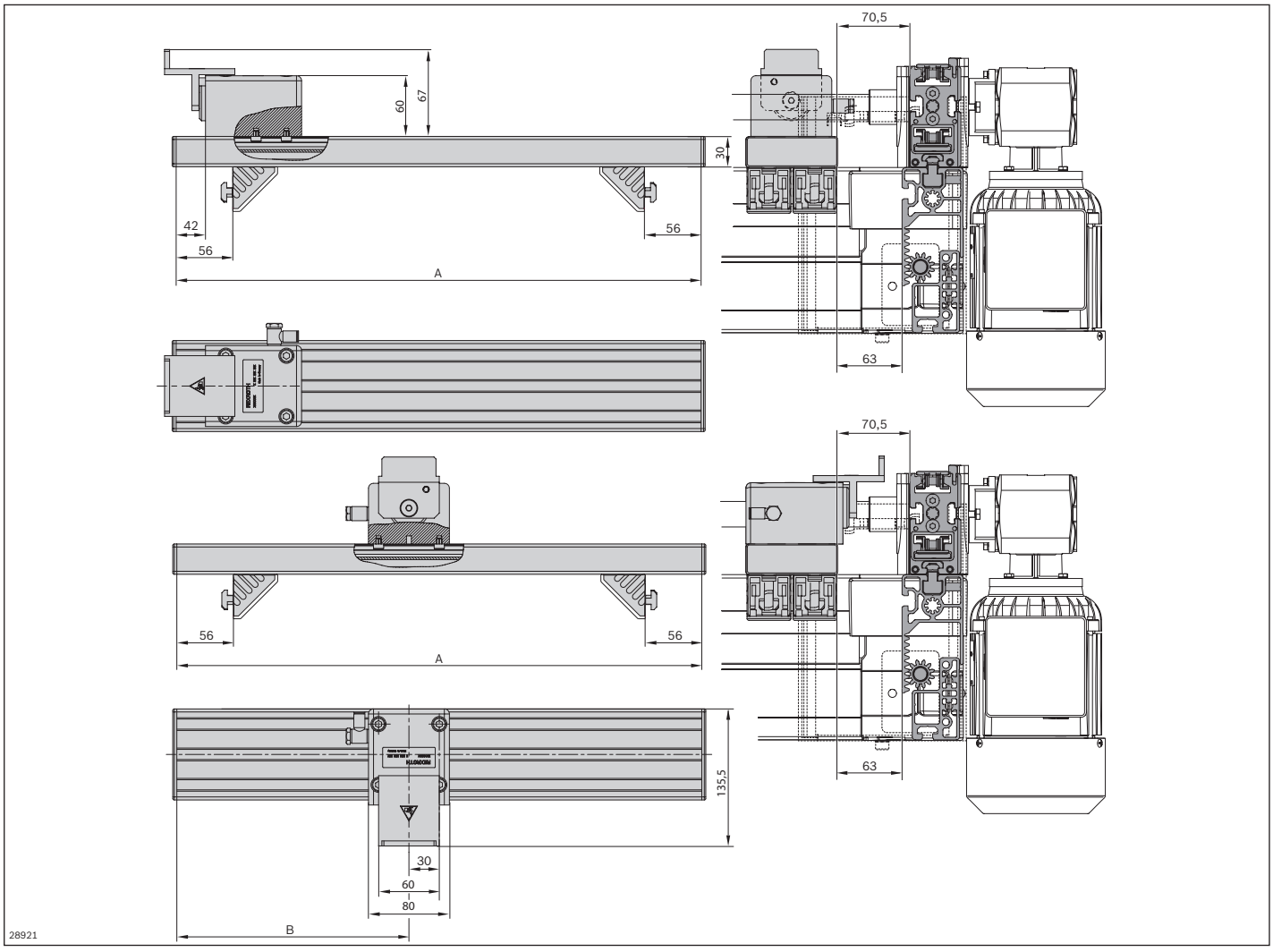
Material number		**3842998745**
b_L (mm)	Track width in the longitudinal conveyor	480, 640, 800, 1040, 1200
b_L (mm)	Track width in the longitudinal conveyor	480 ... 1200

Technical data

Material number			**3842998745**
Load			
Max. total workpiece pallet weight	m_G	kg	100
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum; hard anodized Stop: Steel; hardened Section profile: Aluminum, natural; anodized
Operating temperature[1]		°C	0 ... +60
Pneumatic connector	d	mm	6

[1] High-temperature damper on request

Dimensions

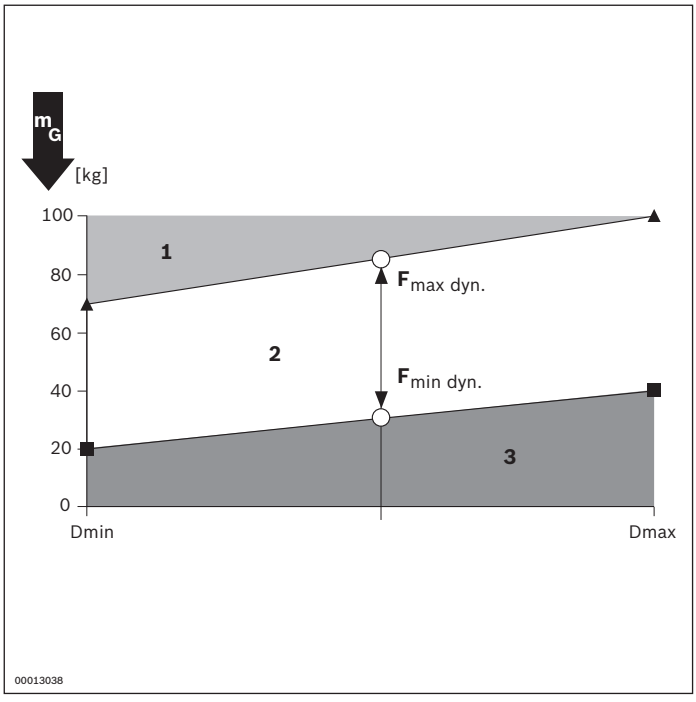


Track width in the longitudinal conveyor b_L (mm)	Dimension A (mm)
480	359
640	519
800	679
1040	919
1200	1079

Track width in the longitudinal conveyor b_L (mm)	Dimension B (mm)
480	149.5
640	229.5
800	309.5
1040	429.5
1200	509.5

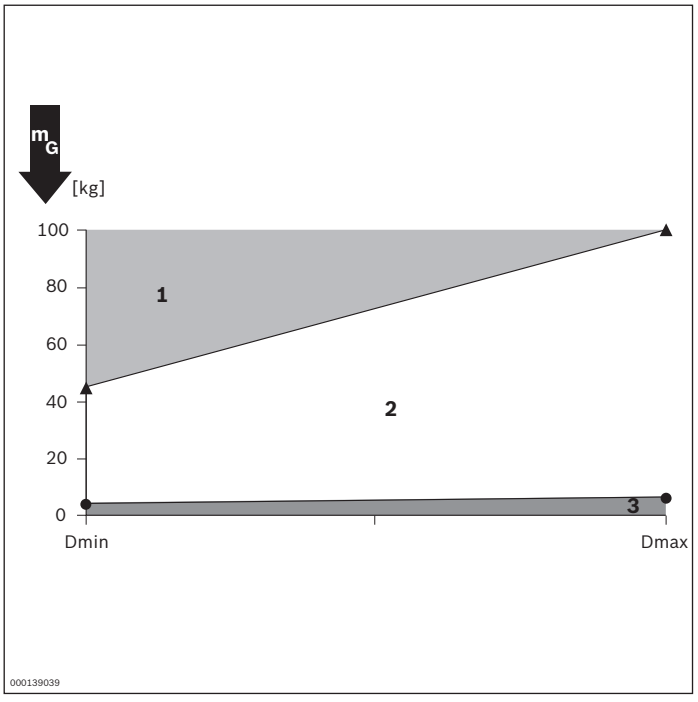
Characteristic curve diagram

Damping setting, accumulation roller chain μ = 0.02



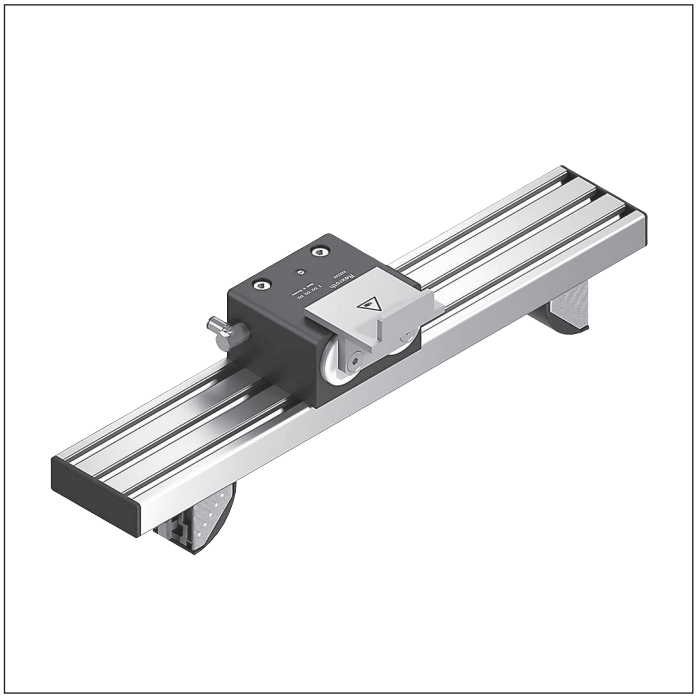
1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

Damping setting, flat top chain μ = 0.2



1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

DA 2/250-H damper



- For permitted total weight of workpiece pallets up to 250 kg
- Pneumatic damper
- Continuously adjustable
- Installation location: HQ 2/C-H lift transverse unit
- Can be combined with WT 2/H and WT 2/F-H

The damper cushions the impact of workpiece pallets when they are moved from a transverse conveyor section into a longitudinal section and vice versa. The pneumatic return occurs as the stop gate opens, which permits the workpiece pallet to move toward the damper. For installation in a HQ 2/C-H lift transverse unit. The damper is traversable.

Delivery notes

Scope of delivery

- Incl. fastening material
- DA 2/100-H damper for infeeding or outfeeding the WT 2/H or WT 2/F-H workpiece pallets via an HQ 2/C-H

Condition on delivery

- Not assembled

Ordering information

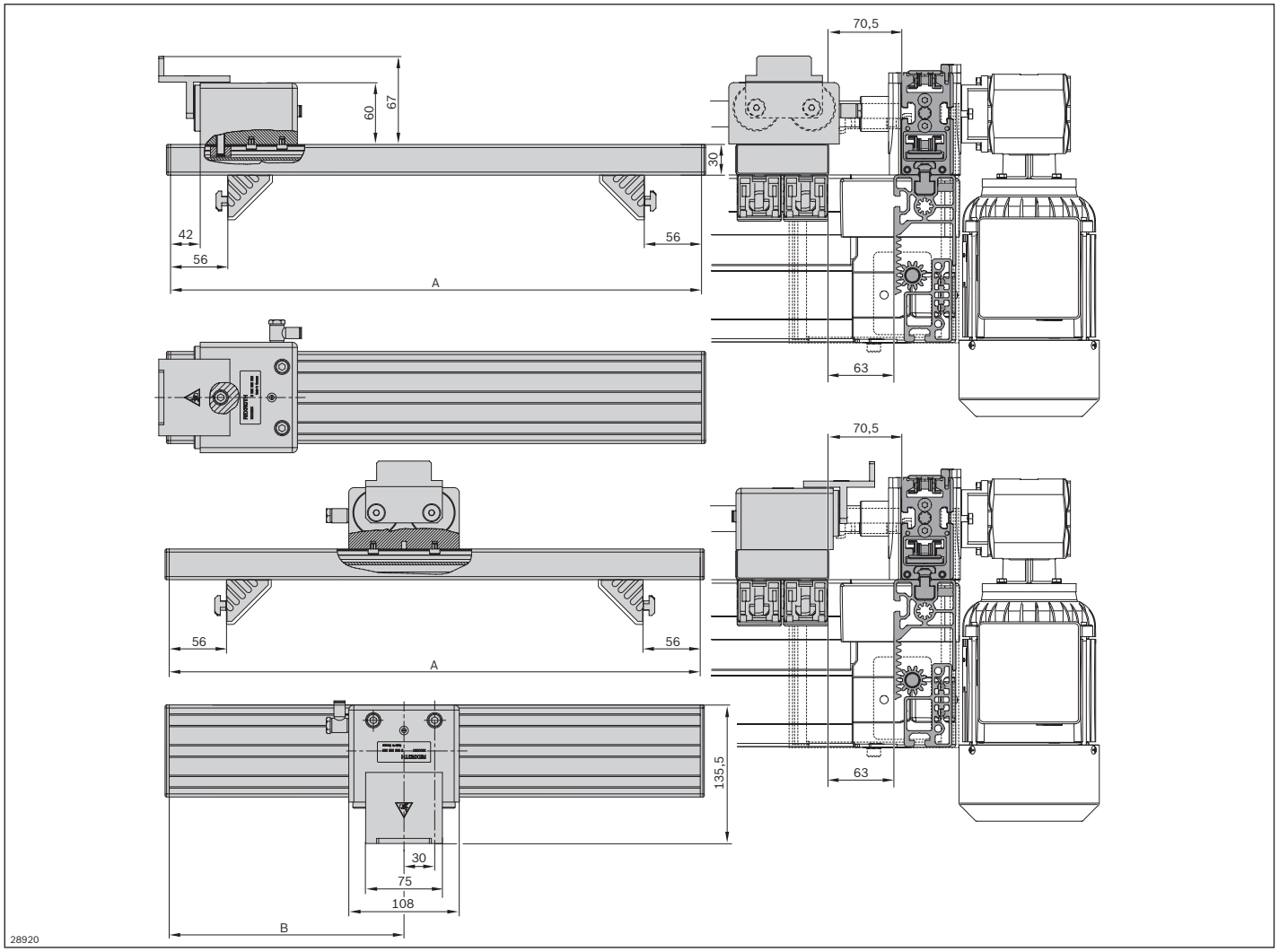
Material number		**3842998746**
b_L (mm)	Track width in the longitudinal conveyor	480, 640, 800, 1040, 1200
b_L (mm)	Track width in the longitudinal conveyor	480 ... 1200

Technical data

Material number			**3842998746**
Load			
Max. total workpiece pallet weight	m_G	kg	250
Min. workpiece pallet weight	m	kg	5
Features			
Material specification			Housing: Aluminum, hard anodized Stop: Steel; hardened Section profile: Aluminum, natural; anodized
Operating temperature[1]		°C	0 ... +60
Pneumatic connector	d	mm	6

[1] High-temperature damper on request

Dimensions

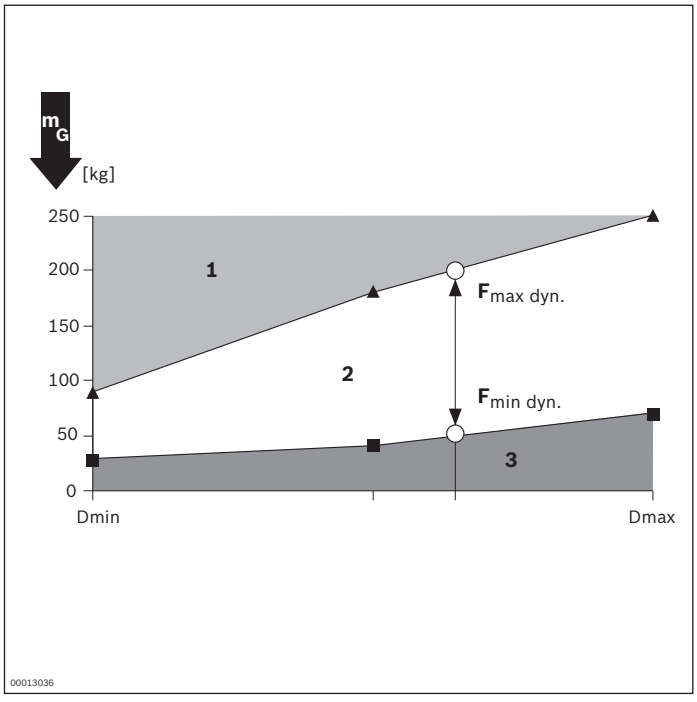


Track width in the longitudinal conveyor b_L (mm)	Dimension A (mm)
480	359
640	519
800	679
1040	919
1200	1079

Track width in the longitudinal conveyor b_L (mm)	Dimension B (mm)
480	149.5
640	229.5
800	309.5
1040	429.5
1200	509.5

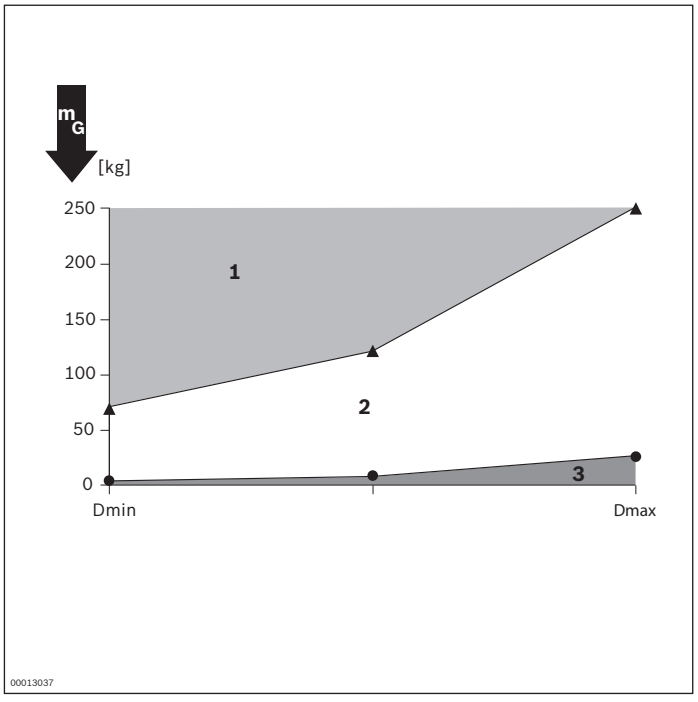
Characteristic curve diagram

Damping setting, accumulation roller chain μ = 0.02



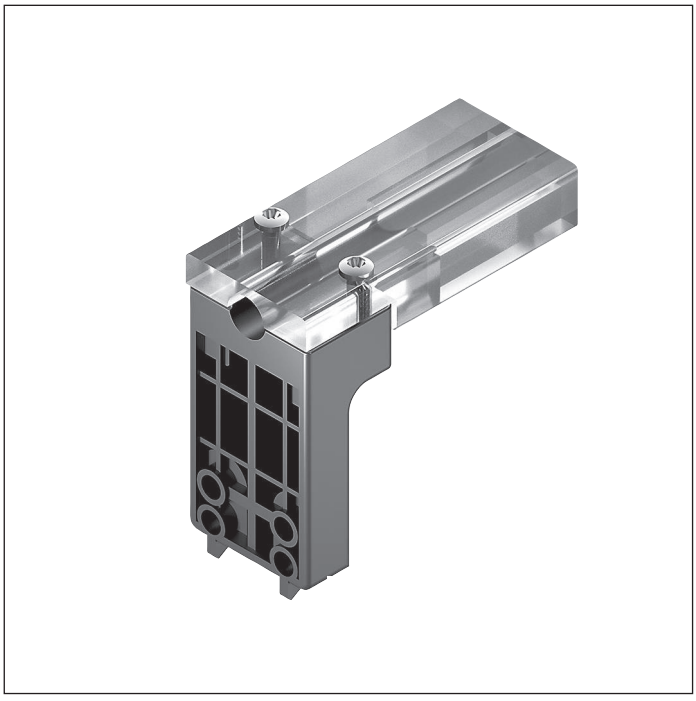
1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

Damping setting, flat top chain μ = 0.2

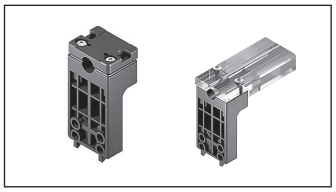


1 Damping effect limited, use of a VE 2/RS-H return stop recommended
2 Recommended range
3 Not possible
Dmax/min damping setting

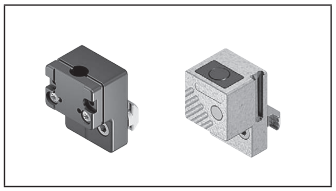
SH 2/... switch bracket



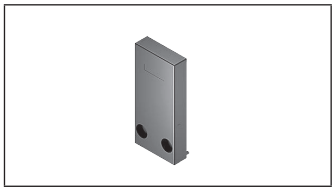
There are five types of sensor switch brackets available for use in the TS 2*plus* transfer system.



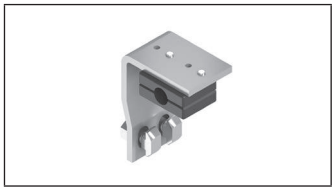
SH 2/S, SH 2/ST, SH 2/S-H switch bracket **8-90**



SH 2/U, SH 2/UV, SH 2/U-H switch bracket **8-96**

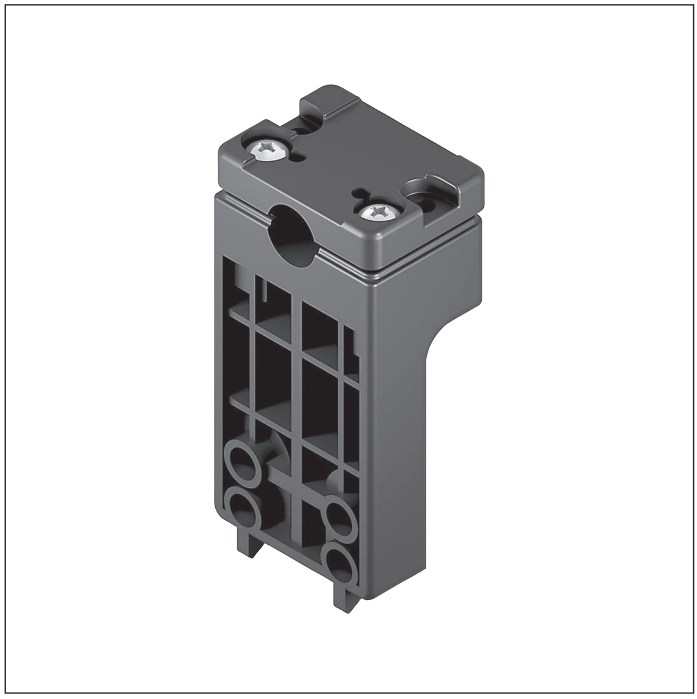


SH 2/SF switch bracket **8-102**



SH 2/EP switch bracket **8-104**

SH 2/S switch bracket



- For fastening a sensor
- Suitable for lateral sensing of the workpiece pallet position
- Mounted in the upper groove on the side of a conveyor section

The switch bracket can be used to fix an M12x1 sensor in place for lateral sensing of the workpiece pallet position.

Accessories

Required accessories

- M12x1 sensor with $S_N \geq 4$ mm rated sensing range, length 50 mm, see p. 8-108

Delivery notes

Scope of delivery

- Incl. all fastening material to mount on ST 2 conveyor sections

Condition on delivery

- Not assembled

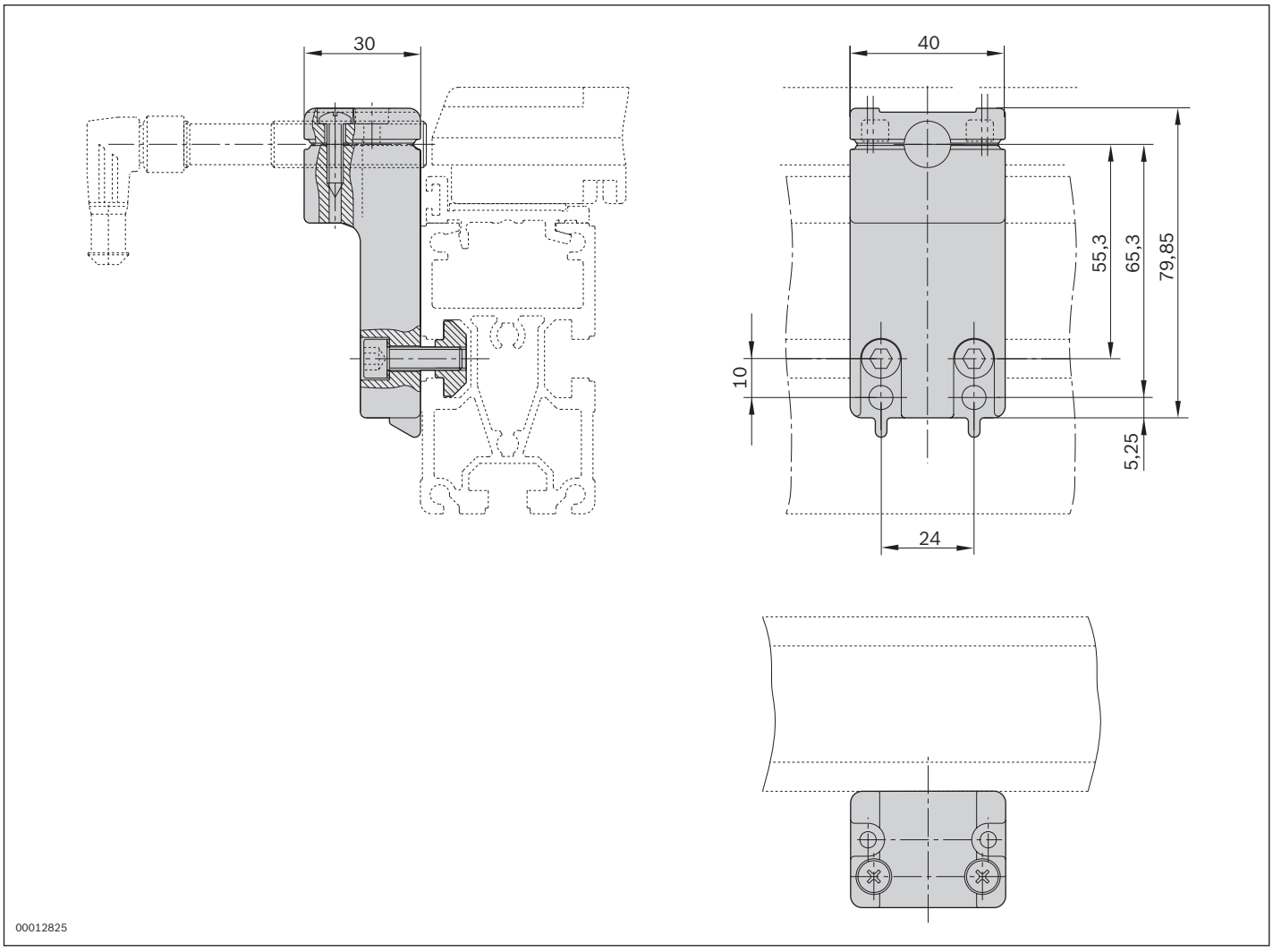
Ordering information

Product designation	Material number
SH 2/S switch bracket	3842168830

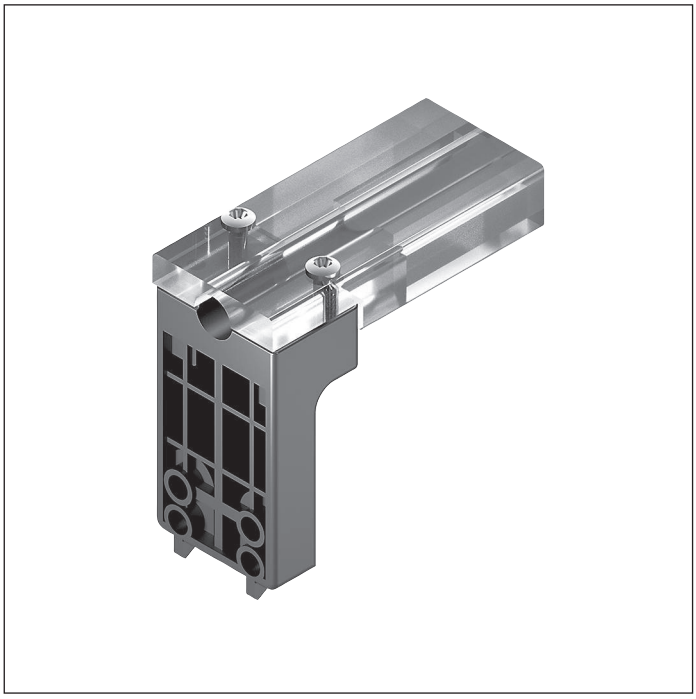
Technical data

Material number			3842168830
Features			
Material specification			Housing: PA 6; black Switch cover: PA 6; black
Dimensions			
Length	l	mm	30

Dimensions



SH 2/ST switch bracket



- For fastening a sensor
- Switch cover to protect switches and cables
- Suitable for lateral sensing of the workpiece pallet position
- Mounted in the upper groove on the side of a conveyor section

The switch bracket can be used to fix an M12x1 sensor in place for lateral sensing of the workpiece pallet position.

Accessories

Required accessories

- M12x1 sensor with $S_N \geq 4$ mm rated sensing range, length 70 mm, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

- Not assembled

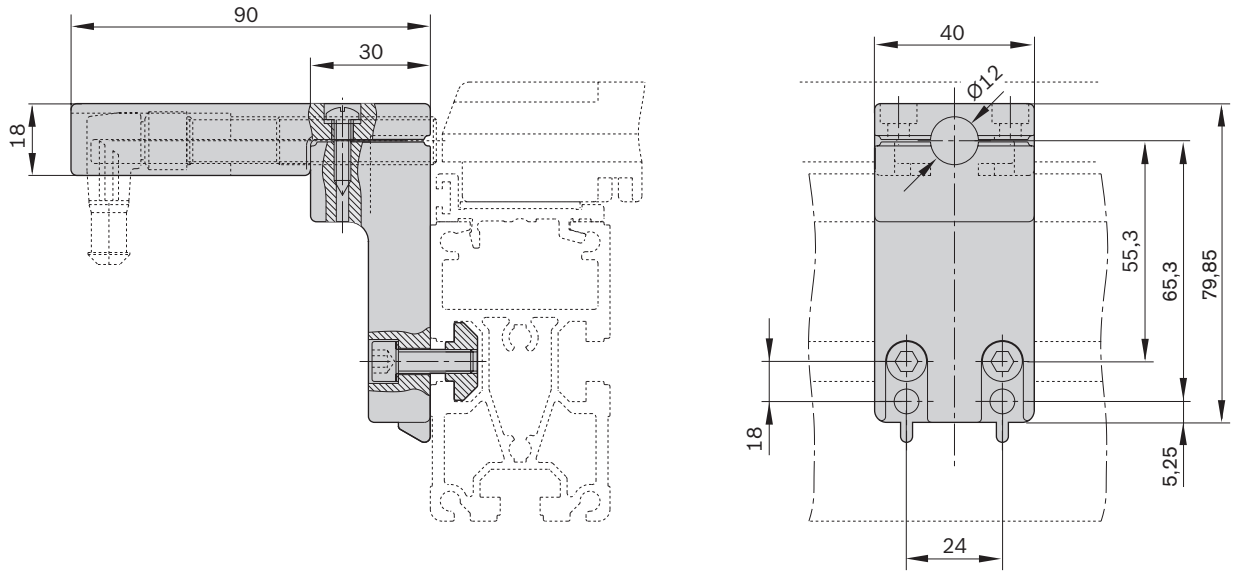
Ordering information

Product designation	Material number
SH 2/ST switch bracket	3842168850

Technical data

Material number			**3842168850**
Features			
Material specification			Housing: PA 6; black Switch cover: ABS; transparent
Dimensions			
Length	l	mm	90

Dimensions



00012826

SH 2/S-H switch bracket



- For fastening a sensor
- Especially sturdy metal design
- Able to bear loads of up to 100 kg
- Centering lugs for pre-positioning and quick assembly in the profile groove
- Integrated stop for 12 mm sensor
- Integrated cable guide
- Mounting on the outer profile groove of the section profile.

The switch bracket can be used to fix an M12x1 sensor in place for lateral sensing of the workpiece pallet position.

Accessories

Required accessories

- M12x1 sensor with S_N= 7 mm rated sensing range, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

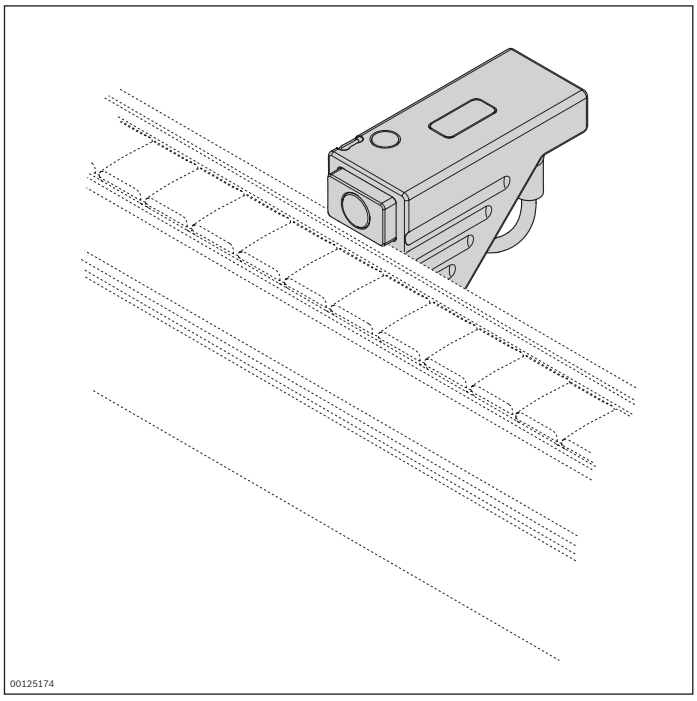
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Ordering information

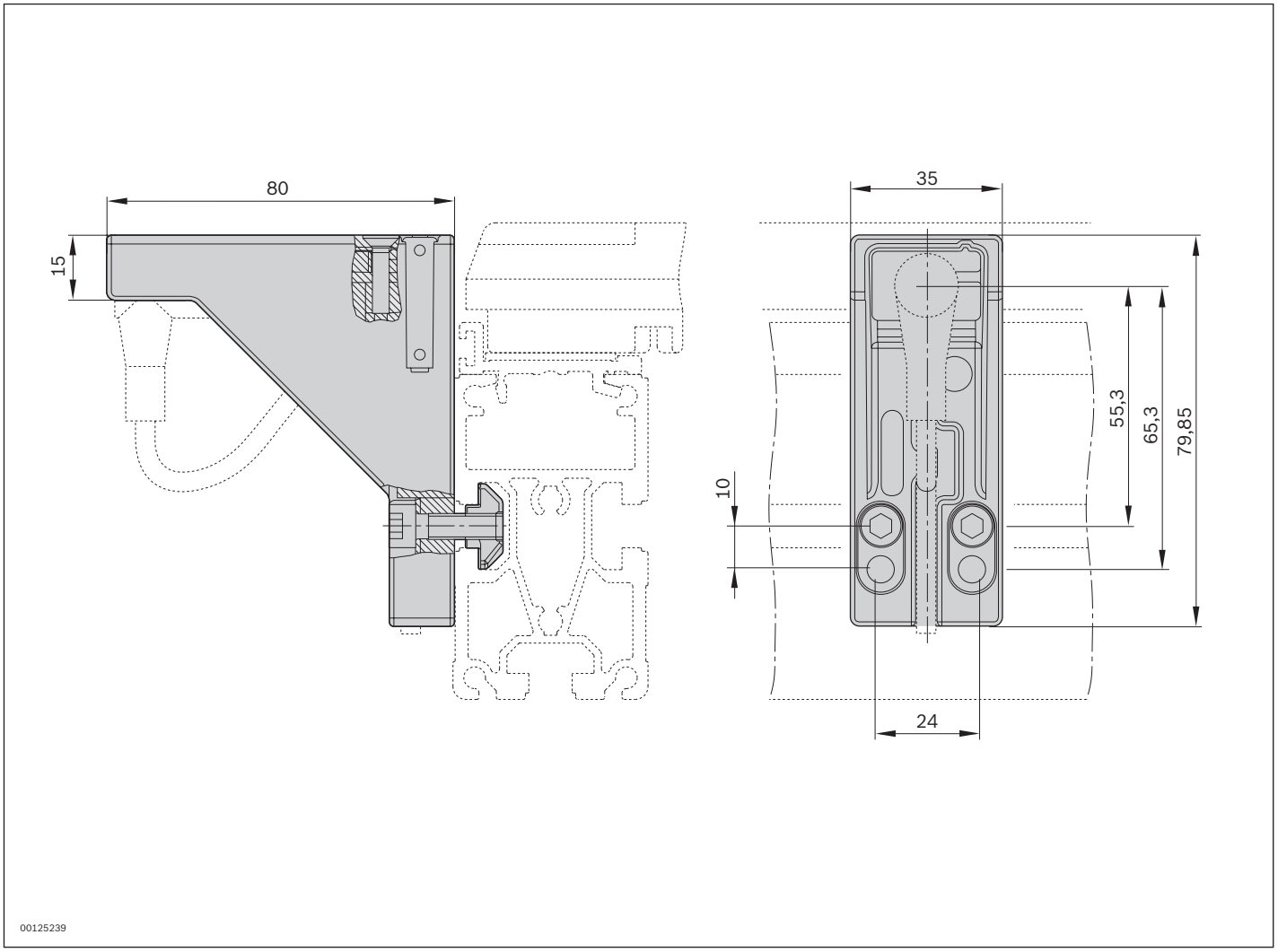
Product designation	Material number
SH 2/S-H switch bracket	3842537280

Technical data

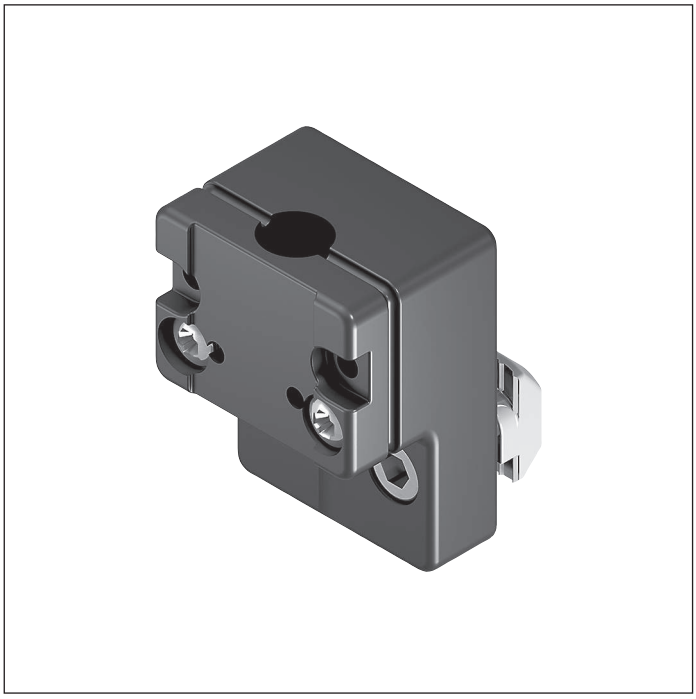
Material number	3842537280
Features	
Material specification	Die-cast aluminum



Dimensions



SH 2/U switch bracket



- For fastening a sensor
- Installation location in the upper groove on the side of a conveyor section
- For sensing of the workpiece pallet position from below

The switch bracket is used for fastening an M12x1 sensor for inquiry of the workpiece pallet position from below.

Accessories

Required accessories

- M12x1 sensor with S_N= 4 mm rated sensing range, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

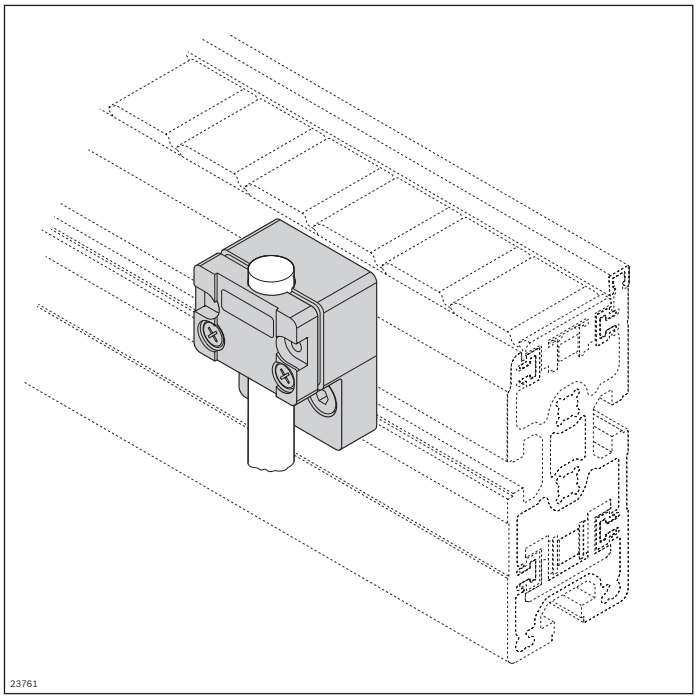
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Ordering information

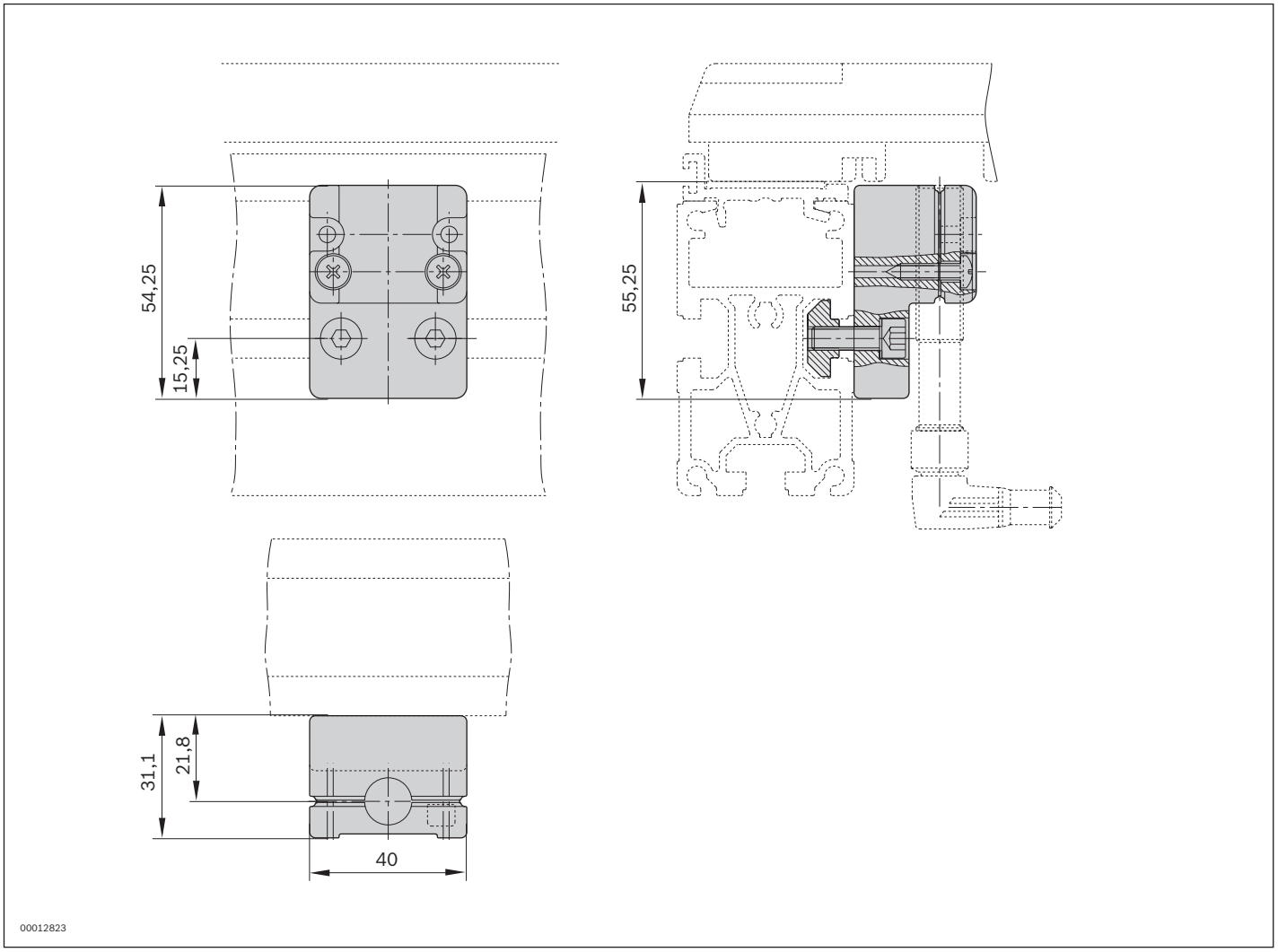
Product designation	Material number
SH 2/U switch bracket	3842168820

Technical data

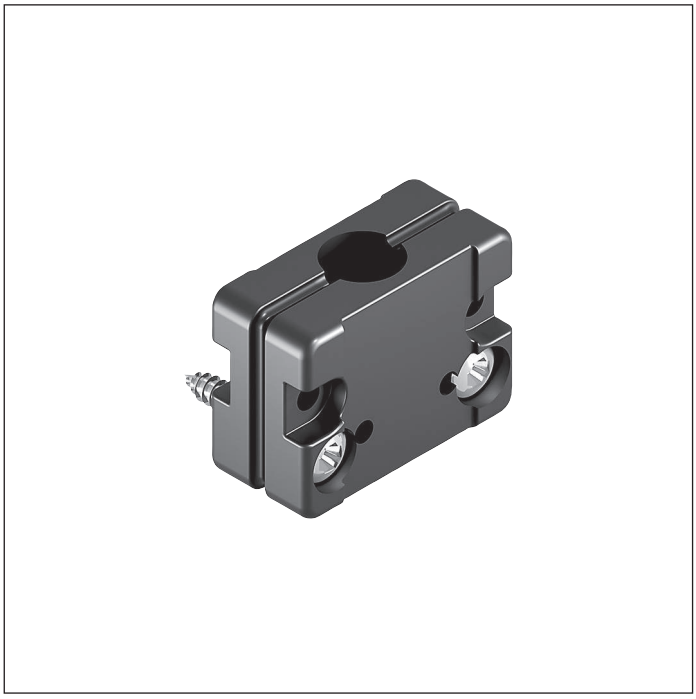
Material number	3842168820
Features	
Material specification	PA6



Dimensions



SH 2/UV switch bracket



- For fastening a sensor
- Installation location on the VE 2 stop gate
- For sensing of the workpiece pallet position from below

The switch bracket is used for fastening an M12x1 sensor for inquiry of the workpiece pallet position from below.

Accessories

Required accessories

- M12x1 sensor with S_N= 4 mm rated sensing range, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

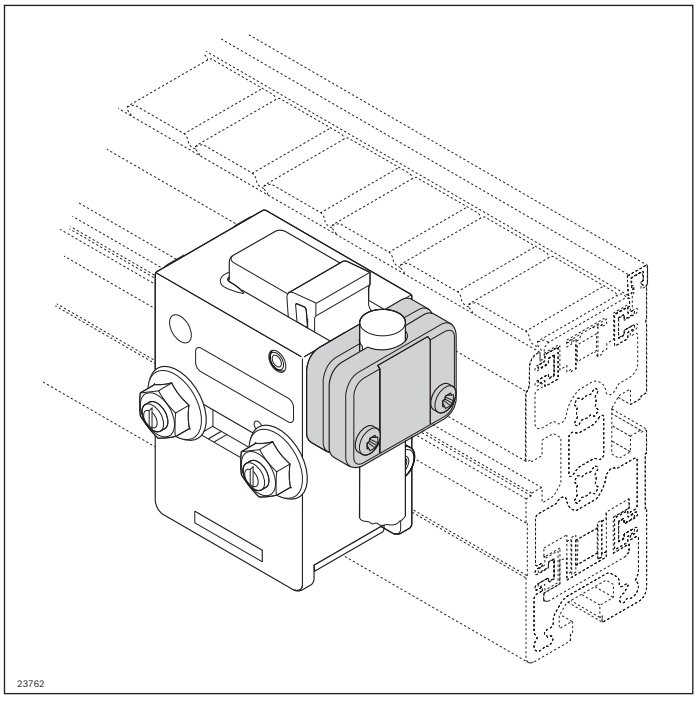
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Ordering information

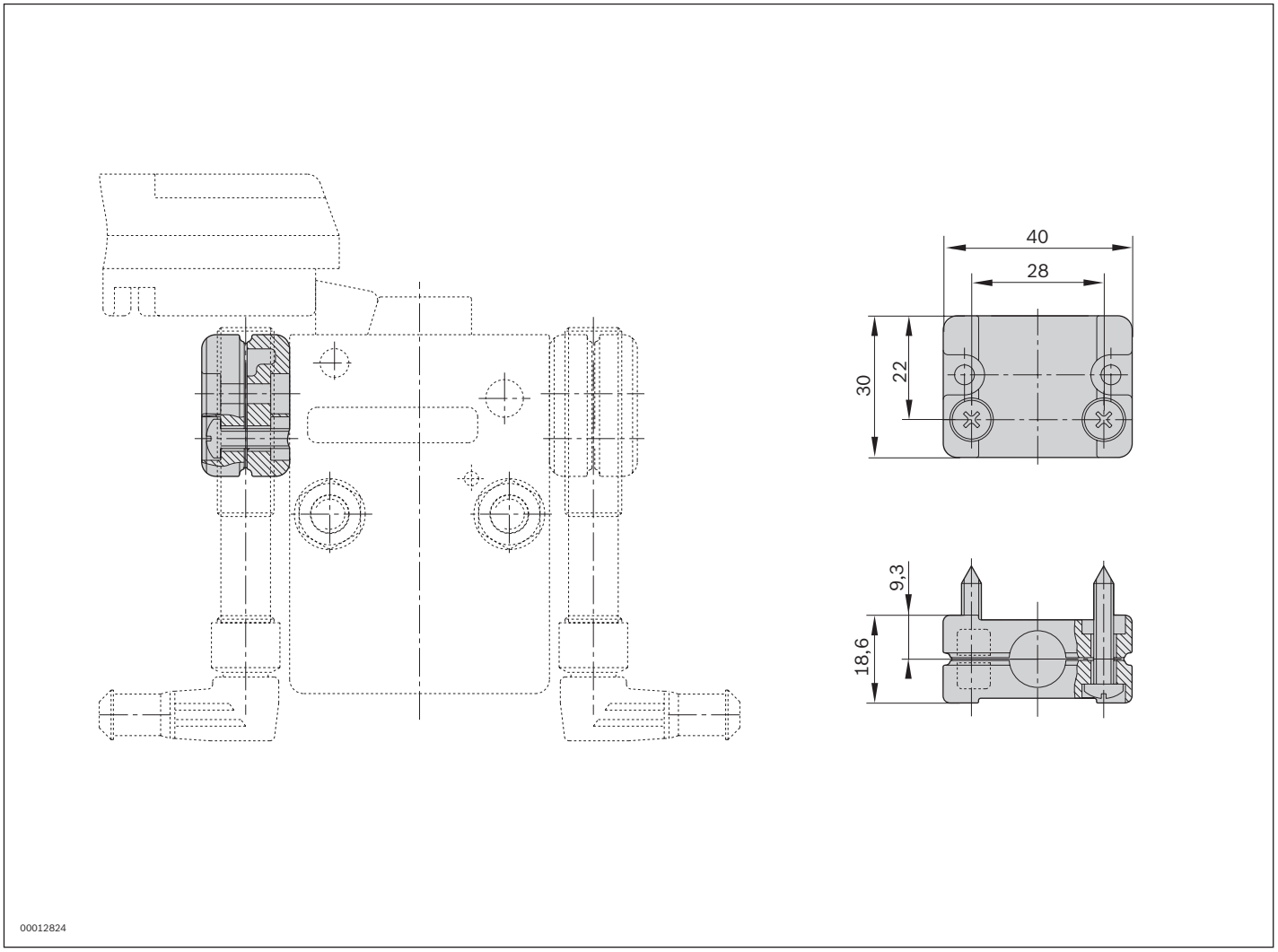
Product designation	Material number
SH 2/UV switch bracket	3842168600

Technical data

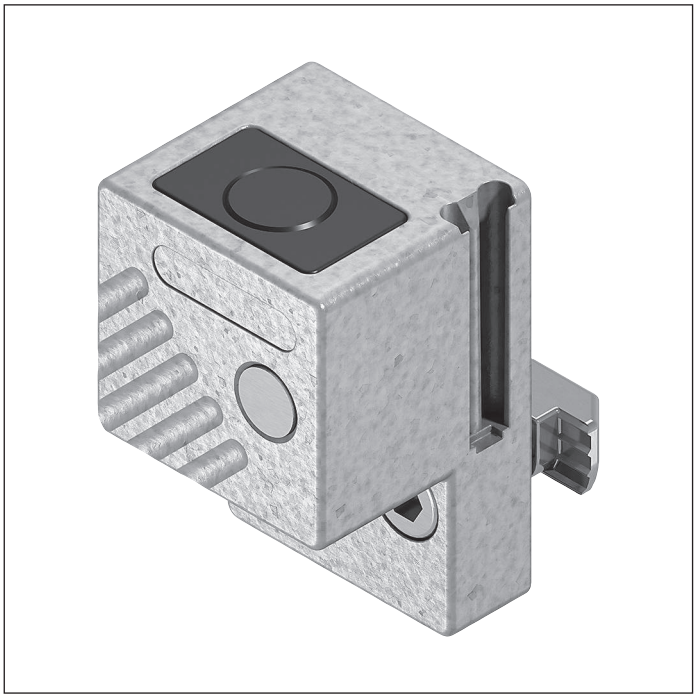
Material number	3842168600
Features	
Material specification	PA6



Dimensions



SH 2/U-H switch bracket



- For fastening a sensor
- For sensing the workpiece pallet position from below
- Especially sturdy metal design
- Able to bear loads of up to 100 kg
- Centering lugs for pre-positioning and quick assembly in the profile groove
- Installation location on the inner profile groove of the section profile
- Integrated stop for 12 mm sensor

The switch bracket is used for fastening an M12x1 sensor for detecting the workpiece pallet position from below.

Accessories

Required accessories

- M12x1 sensor with S_N= 7 mm rated sensing range, see p. 8-108

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

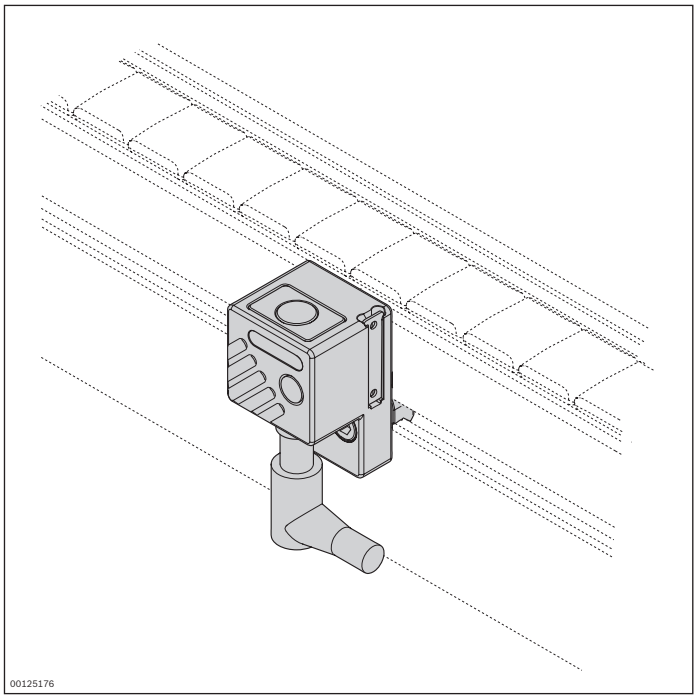
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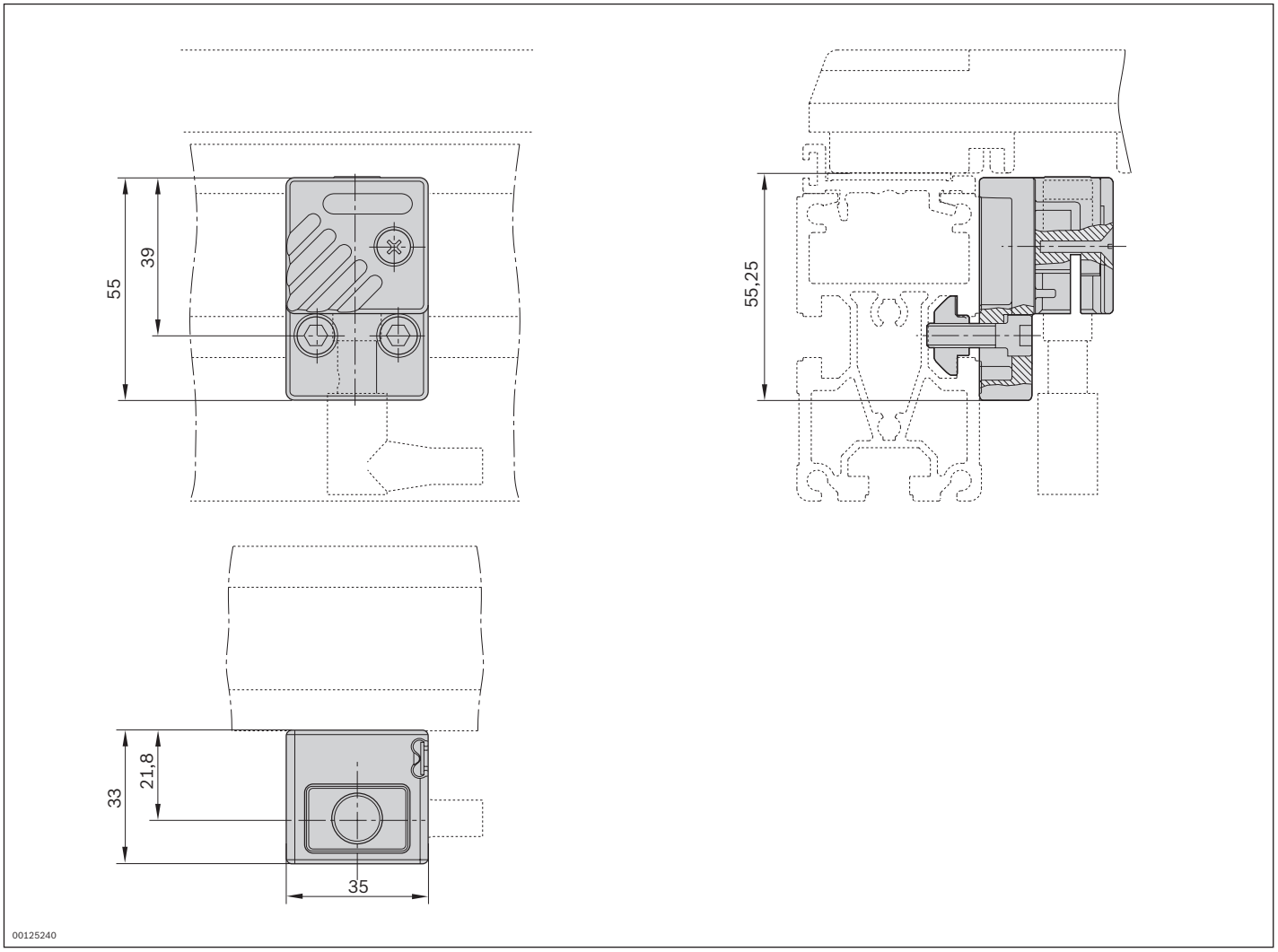
Product designation	Material number
SH 2/U-H switch bracket	3842537289

Technical data

Material number	3842537289
Features	
Material specification	Die-cast aluminum



Dimensions



SH 2/SF switch bracket



- For fastening a sensor with special flat design
- Installation in the upper groove on the side of a conveyor section

The switch bracket is used for fastening a sensor with special flat design for lateral inquiry of the workpiece pallet position.

Note: Not suitable for use in heavy duty profiles and sections with a profile width of 50 mm, for example ST 2/C-H, ST 2/R-H, BS 2/R-H, BS-2/C-H

Accessories

Required accessories

- Sensor with special flat design, rated sensing range $S_N \leq 4$ mm, e.g., Balluff BES 516-347-SA-2-03

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

- Not assembled

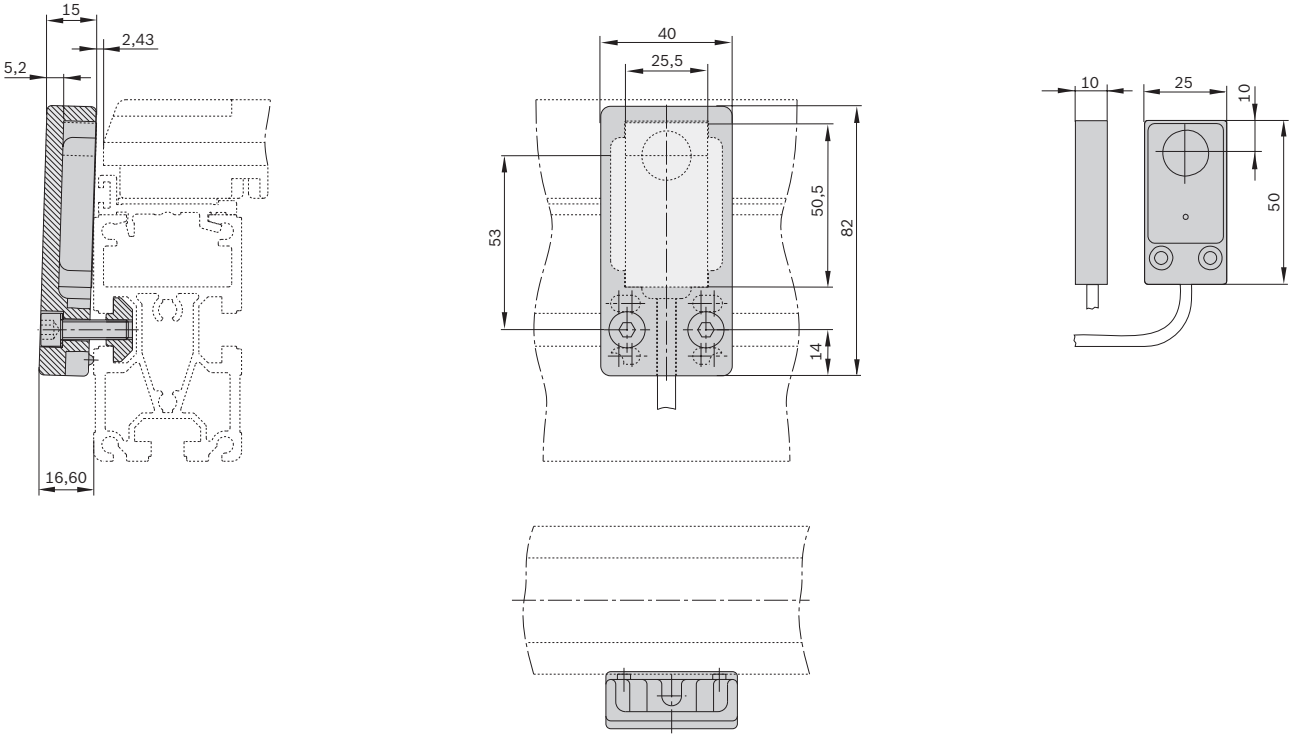
Ordering information

Product designation	Material number
SH 2/SF switch bracket	3842168840

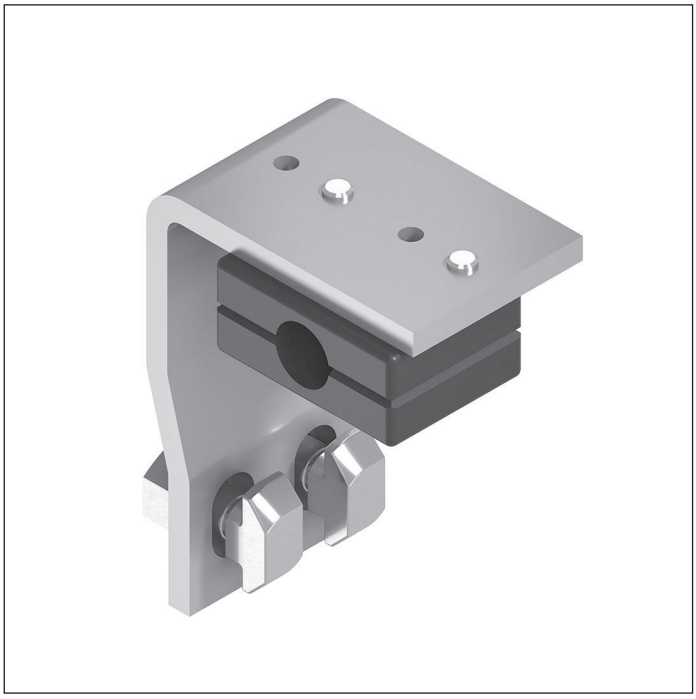
Technical data

Material number	3842168840
Features	
Material specification	PA6

Dimensions

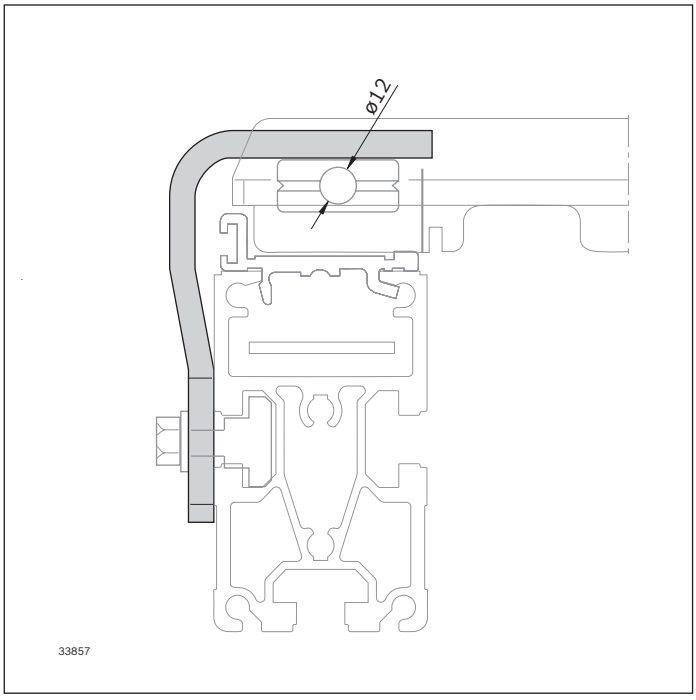


SH 2/EP switch bracket



- For fastening a sensor
- For sensing the workpiece carrier at the end of the line, not traversable
- Installation location on the inner or outer profile groove of the section profile

Ordering information

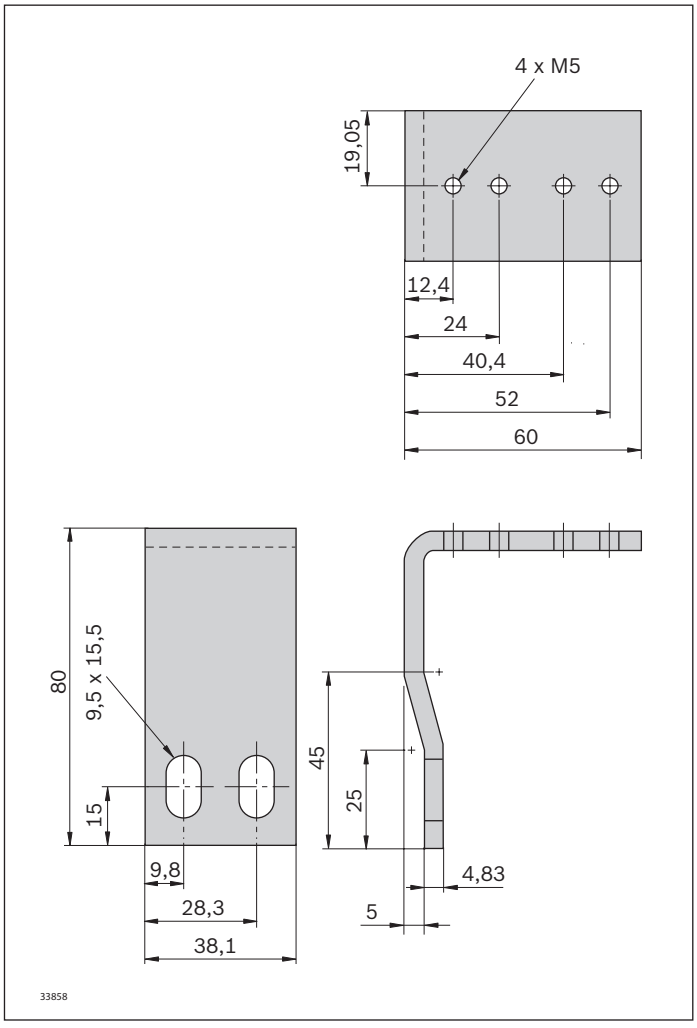


Product designation	Material number
SH 2/EP switch bracket	8981022903

Technical data

Material number	**8981022903**
Features	
Material specification	Steel; PA66

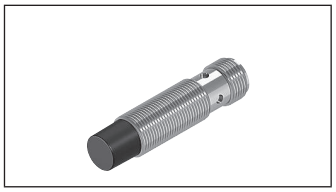
Dimensions



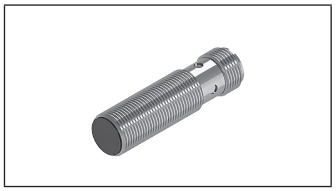
Sensors



M12 and M8 inductive sensors with M12 or M8 connector for workpiece pallet detection, position sensing for lift/ transverse units, positioning units, and rotate units.



M12 inductive sensors with M12 connector **8-108**



M12 inductive sensors with M8 connector **8-110**



M8 inductive sensors with M8 connector **8-112**

M12 sensors with M12x1 connector



Workpiece pallet position detection, lift/transverse unit, lift position unit and lift transverse unit position detection.

Accessories

Required accessories

- Switch bracket, see p. 8-90

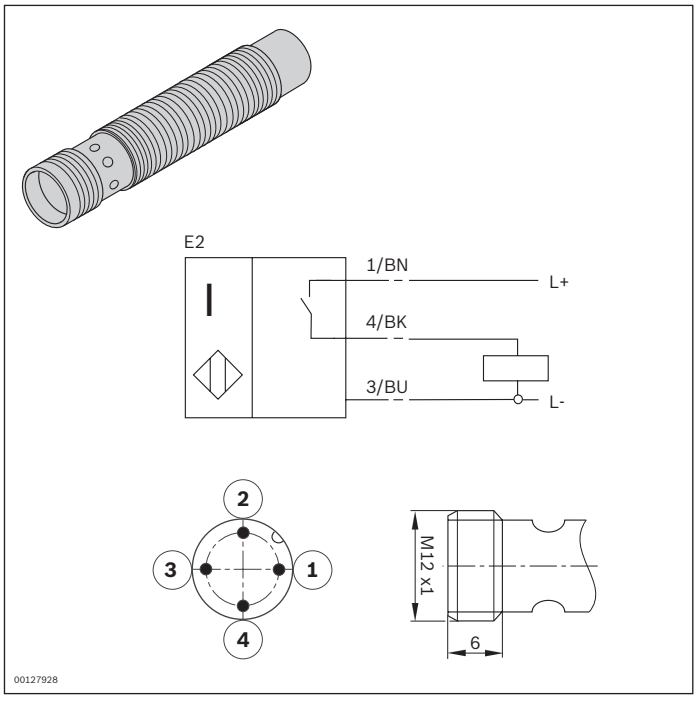
Ordering information

Product designation	Material number
M12x50 sensor	3842557633
M12x45 sensor	3842549814
M12x70 sensor	3842501548

Technical data

Material number			**3842557633**	**3842549814**	**3842501548**
Features					
IP rating			IP 68	IP 67	IP 68
Material specification			Housing: CuZn; active surface has nickel-free coating: LCP	Housing: CuZn; active surface has nickel-free coating: LCP	Housing: Stainless steel, rustless Active surface: LCP
Max. operating temperature	T	°C	-25 ... +70 °C	-25 ... +70 °C	-40 ... +85 °C
Dimensions		mm	M12 x 45	M12 x 45	M12 x 70
Connector			M12x1	M12x1	M12x1
Additional information					
Rated sensing range	S_N	mm	8	4	4
Switching frequency		Hz	500	300	2500
Operating current		mA	200	200	200
Mechanical installation			Not flush	Flush	Not flush
Function indicator			LED	LED	LED
Switching output			PNP	PNP	PNP
Switching function			Normally open (NO)	Normally open (NO)	Normally open (NO)
Operating voltage		V DC	10 ... 30	10 ... 30	10 ... 30
Approvals			CE, UL, CSA, EAC	CE, UL, CSA	CE, UL, CSA, EAC
Conformity with standards			IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2

Circuit diagrams



M12 sensors with M8x1 connector



Workpiece pallet position detection, lift/transverse unit, lift position unit and lift transverse unit position detection.

Accessories

Required accessories

- Switch bracket, see p. 8-90

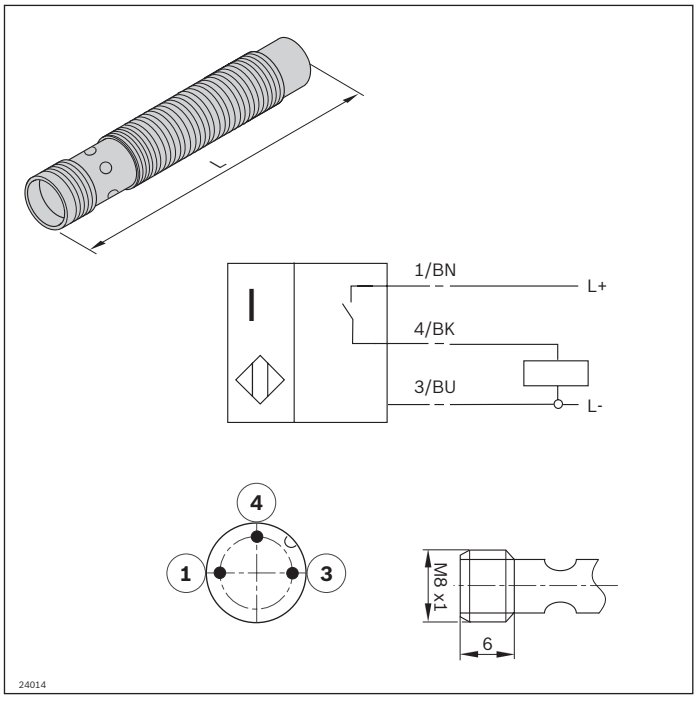
Ordering information

Product designation	Material number
M12x44 sensor	3842549813
M12x67 sensor	3842549812
M12x44 sensor	3842549811

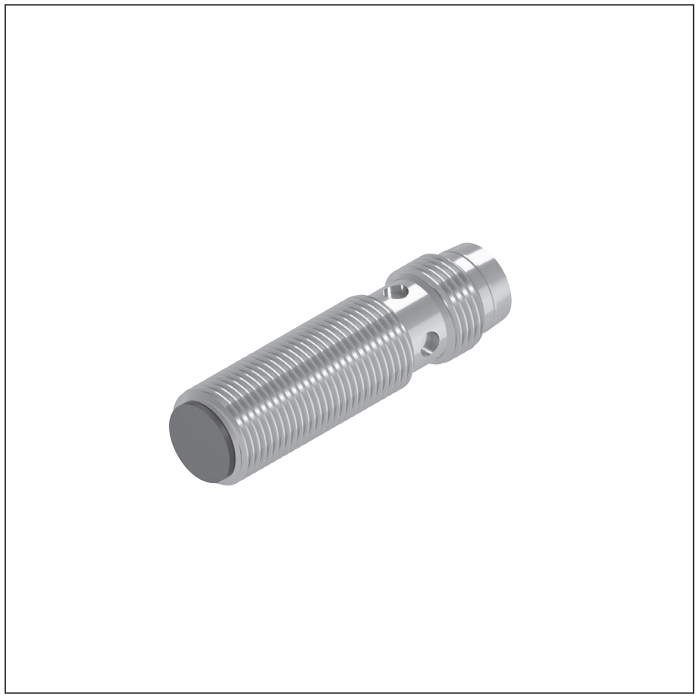
Technical data

Material number			**3842549813**	**3842549812**	**3842549811**
Features					
IP rating			IP 67	IP 67	IP 67
Material specification			Housing: CuZn; active surface has nickel-free coating: PBT	Housing: CuZn; active surface has nickel-free coating: LCP	Housing: CuZn; active surface has nickel-free Active surface: LCP
Max. operating temperature	T	°C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C
Dimensions		mm	M12 x 44	M12 x 67	M12 x 44
Connector			M8x1	M8x1	M8x1
Additional information					
Rated sensing range	S_N	mm	8	4	4
Switching frequency		Hz	800	2500	2500
Operating current		mA	200	200	200
Mechanical installation			Not flush	Flush	Flush
Function indicator			LED	LED	LED
Switching output			PNP	PNP	PNP
Switching function			Normally open (NO)	Normally open (NO)	Normally open (NO)
Operating voltage		V DC	10 ... 30	10 ... 30	10 ... 30
Approvals			CE, UL, CSA	CE, UL, CSA	CE, UL, CSA
Conformity with standards			IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2

Circuit diagrams



M8 sensors with M8x1 connector



For VE 2, VE 2/L, VE 2/M or VE 2/S position sensing in connection with 3842528817 (see p. 8-18). For VA 2/50 position sensing or for chain tensioner sensing with AS/BS 2/C-100, -250, AS/BS 2/R-300, -700, KU 2

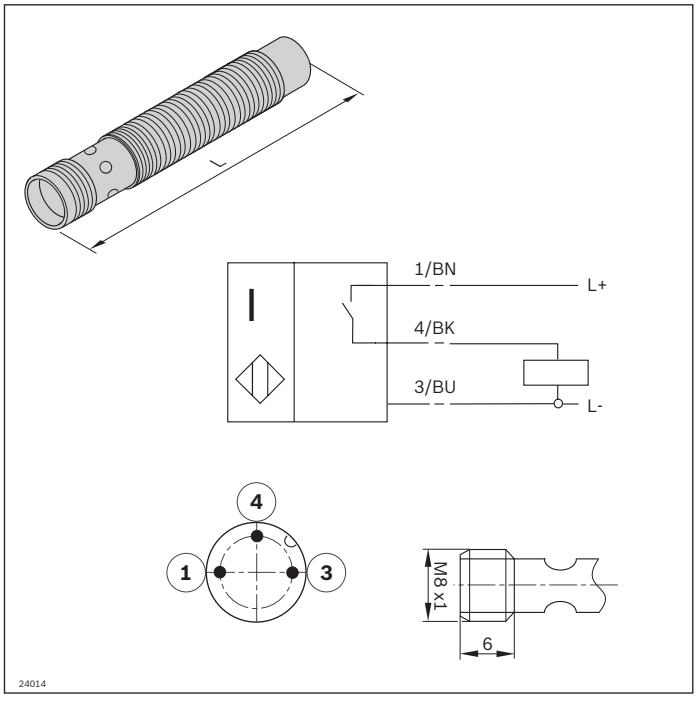
Ordering information

Product designation	Material number
M8x30 sensor	3842551761

Technical data

Material number			**3842551761**
Features			
IP rating			IP 68
Material specification			Housing: Stainless steel, rustless Active surface: PBT
Operating temperature	T	°C	-25 ... +70 °C
Dimensions			M8 x 30
Connector			M8x1
Additional information			
Rated sensing range	S_N	mm	2
Switching frequency		Hz	1500
Operating current		mA	200
Mechanical installation			Flush
Function indicator			LED
Switching output			PNP
Switching function			Normally open (NO)
Operating voltage		V DC	10 ... 30
Approvals			CE, cULus
Conformity with standards			IEC 60947-5-2

Circuit diagrams

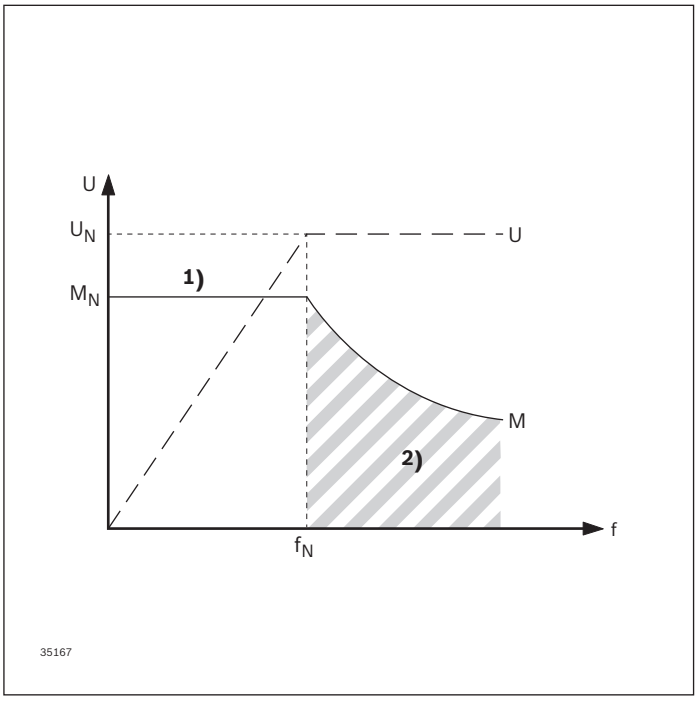


Sensor application matrix

	Diameter with connector	**Sensor**				
	M12 with M12	**3842557633**	**3842501548**		**3842549814**	
	M12 with M8	**3842549813**	**3842549812**	**3842549811**		
	M8 with M8					**3842551761**
Position sensor	AS 2/C-100, AS 2/C-250					X
	AS 2/R-300, AS 2/R-700					X
	BS 2/R-300, BS 2/R-700					X
	BS 2/C-100, BS 2/C-250					X
	EQ 2/TR		X			
	EQ 2/TR-90		X			
	EQ 2/T		X			
	EQ 2/TE		X			
	HQ 2/S		X			
	HQ 2/O		X			
	HQ 2/T		X			
	HQ 2/U		X			
	HQ 2/U2		X			
	HQ 2/H			X	X	
	HQ 2/U-H			X	X	
	HQ 2/C-H		X			
	HD 2		X			
	HD 2/H			X	X	
	KU 2					X
	PE 2			X	X	
	PE 2/X, PE 2/H, PE 2/XP		X			
	RA (HP 2/L)	X				
	HP 2			X	X	
	VE 2 position indication					X
	VA 2/D-130/clamping holder				X	
WT position sensing	SH 2/S	X				
	SH 2/ST		X			
	SH 2/S-H	X				
	SH 2/U	X				
	SH 2/UV	X				
	SH 2/U-H	X				
	WI/M		X			
	WI 2		X			
	WI 2/H		X			
	WI 2/D		X			
	HQ 2/U-H			X	X	

FU frequency converter

U/f mode



A frequency converter is a power converter that adjusts the frequency and amplitude of AC voltage in order to directly power three-phase motors.

- VFC*plus*: U/f open loop, linear and quadratic
- SLVC: Sensorless vector control (torque/speed)
- VFC eco (energy-saving function)

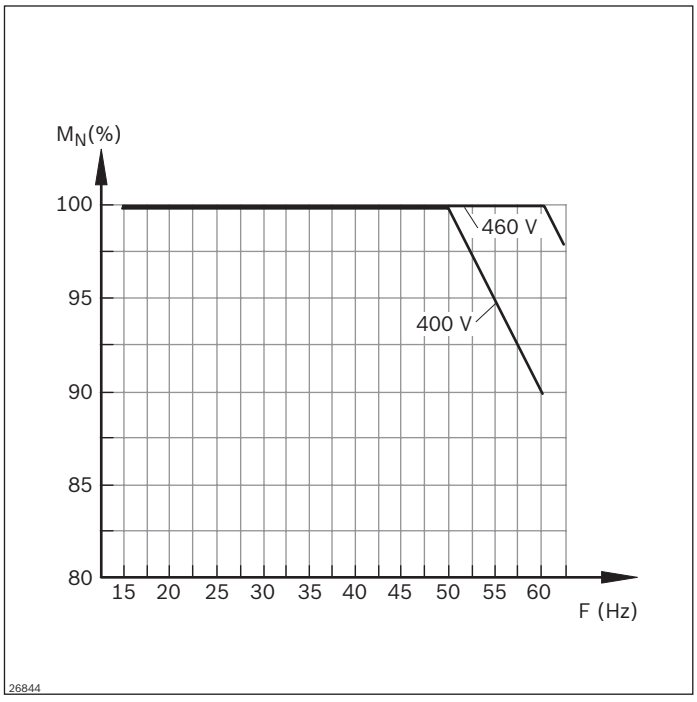
1 M = const.
2 Field weakening mode
f = frequency
f_N = nominal frequency
M = torque
M_N = nominal torque
U = voltage
U_N = nominal voltage

Operating modes

U/f mode, U/f characteristic curve
The converter regulates motor voltage and keeps the frequency constant. Frequency and voltage are proportional to each other. Due to the inductive nature of the motor, this results in a constant torque over an extensive range without overloading the motor.
In U/f mode, the speed of the connected motor varies depending on the load.
For this reason, U/f mode is only adequate when speed does not need to be constant at all times and there is no heavy starting.

Field-oriented controller
The vector controller, also called the field-oriented controller, is a speed regulator that is based on an underlying current regulator.
The instantaneous active and reactive current components are regulated. In an electronic motor model saved in the converter, the motor parameters can be saved or, if necessary, automatically detected and adapted. The instantaneous current is the only returned value used for control.
This value and voltage phasing is used to determine all necessary motor states (speed, slip, torque and thermal dissipation loss).
This makes very high speed and torque calibration ranges possible.

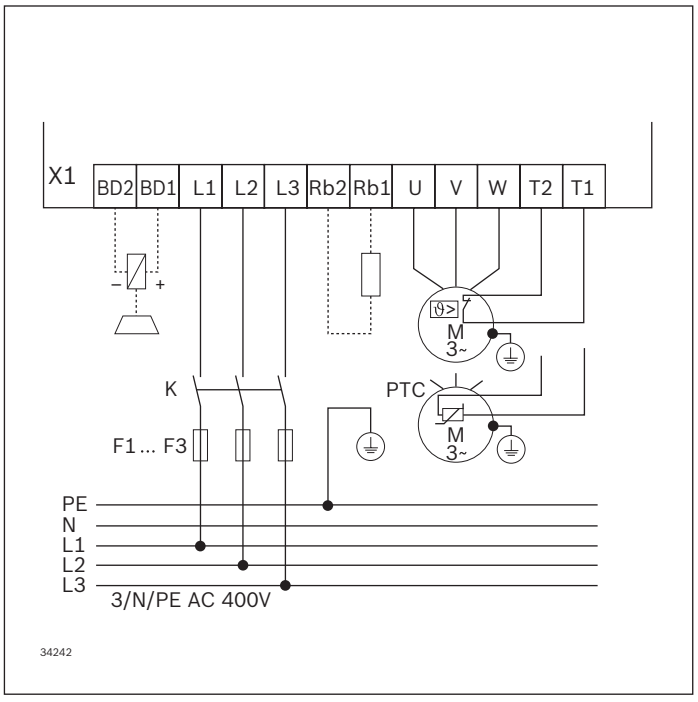
Drive range of motors with frequency converters (FU)



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.

Principle circuit diagram



Circuit diagram for moltec 8400

——— 1 Minimum wiring required for operation
----*)---- 2 Additional wiring to change direction of rotation

In order to operate a drive with a frequency converter (FU), the user needs to work out the minimum wiring required for the internal and external voltage supply (see terminal assignment plan).

Technical data

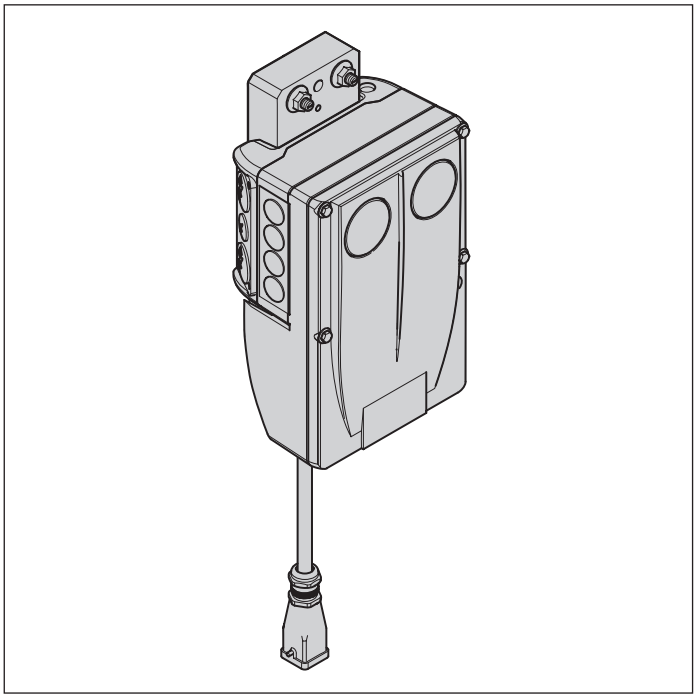
Note: The speed range of the frequency converter is based on the base speed of the motor.

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

Base speed of motor at 50 Hz (m/min)	Min. (m/min)	Max. (m/min)	Max. at max. 80% (m/min)
4	2*	4.5	6
6	2*	6	8
9	3.5	10	13
12	4	13	17
15	5	15	20
18	6	18.5	25

* Additional measures may be necessary

Frequency converter selection guide



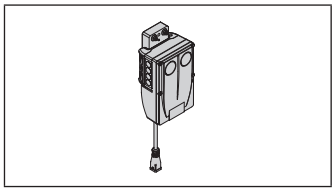
FU/motec 8400 frequency converter

- Decentralized frequency converter for motor wall mounting
- U/f controller motor control, sensorless vector control
- Communication via field buses: ASInterface, CANopen, EtherCAT, PROFIBUS, PROFINET, Ethernet I/P
- Built-in brake chopper
- IP 65 rating
- Output: 0.55 kW

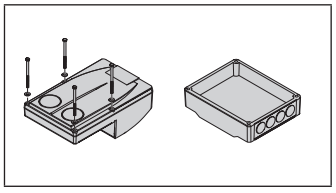


EFC 3610 and EFC 5610 frequency converters

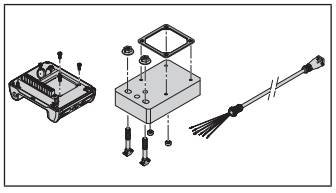
- Frequency converters for control cabinet installation
- U/f controller and SVC motor control (only possible with EFC 5610)
- Multi-Ethernet interface (sercos III, EtherCAT, Ethernet I/P, PROFINET, Modbus TCP, CAN, PROFIBUS)
- Built-in brake chopper (max. 22 kW)
- Removable control panel for quick and easy start-up
- I/Os: Analog voltage/current input/output switching
- IP 20 rating
- Output: 0.44 kW; 0.75 kW



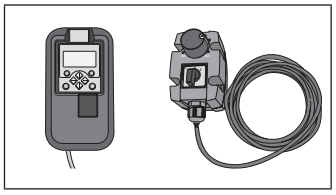
FU/motec 8400 frequency converter **8-120**



FU frequency converter: power unit **8-121**
Communication module



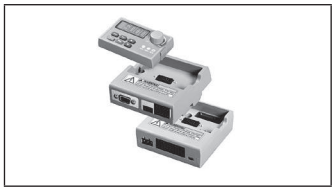
Connection unit **8-122**
Attachment kit
Connection cable



Hand-held control panel, Switching/potentiometer unit **8-123**

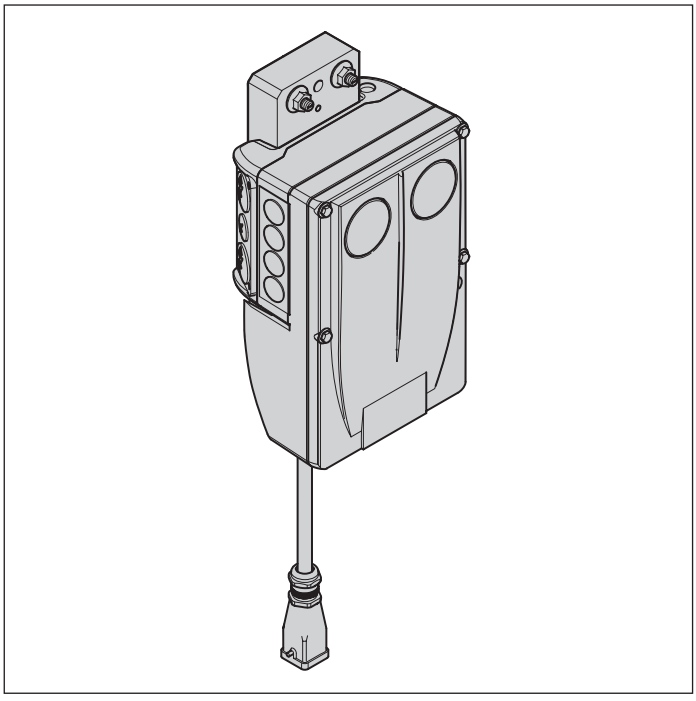


EFC 3610, EFC 5610 frequency converters **8-126**



Option cards **8-127**

FU/motec 8400 frequency converter



Complete frequency converter (FU) consisting of the following modules:

- Frequency converter power unit
- Communication module
- Connection unit
- Attachment kit
- Optional: Connection cable 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.

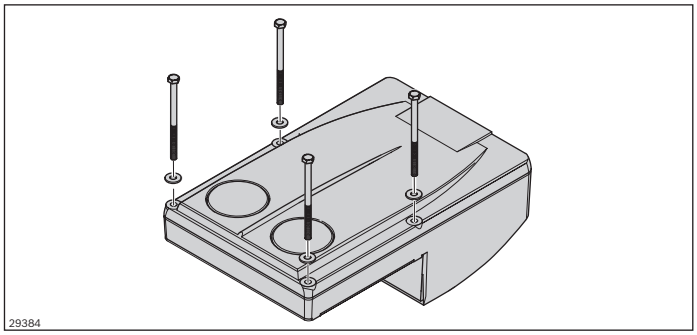
Required accessories

- Manual control unit, see p. 8-123
- Switching/potentiometer unit, see p. 8-123

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
- (Connected voltage: 400 V ± 10% ... 460 V/480 V ± 10%)
- Speed (v_N) depends on the base speed of the gear motor used

FU frequency converter: power unit

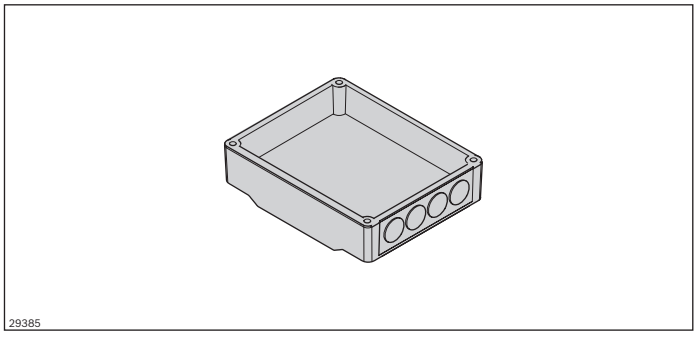


- Power unit: 0.55 kW
  (400 V ± 10% ... 460 V/480 V ± 10%)
- Easy start-up via hand-held control panel
- Easy-to-replace memory module
- Large LED status indicator

Ordering information

Product designation	Material number
Frequency converter: 0.55 kW power unit	3842553447

Communication module



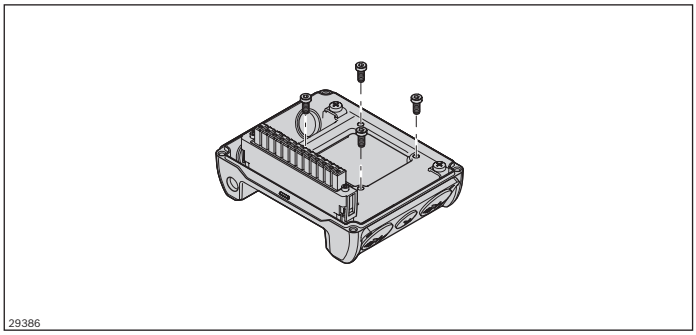
Depending on their function, the individual communication modules are provided with the corresponding connections.

- Used to control the frequency converter
- Cable connection options

Ordering information

Product designation	Material number
Standard I/O communication module	3842553449
AS-I communication module	3842553453
CANopen communication module	3842553454
EtherNet/IP communication module	3842553451
EtherCAT communication module	3842553459
PROFIBUS communication module	3842553452
PROFINET communication module	3842553450

Connection unit

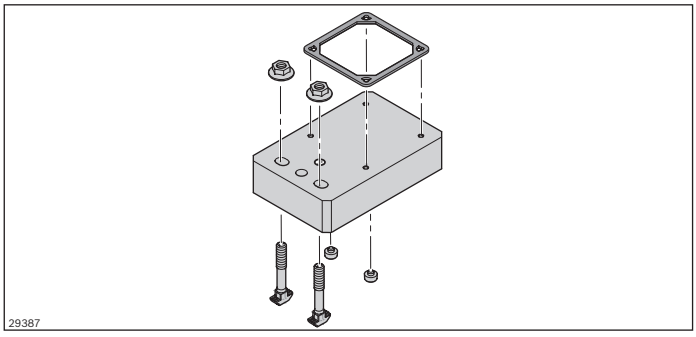


- Power grid connection options

Ordering information

Product designation	Material number
Connection unit	3842553445

Attachment kit

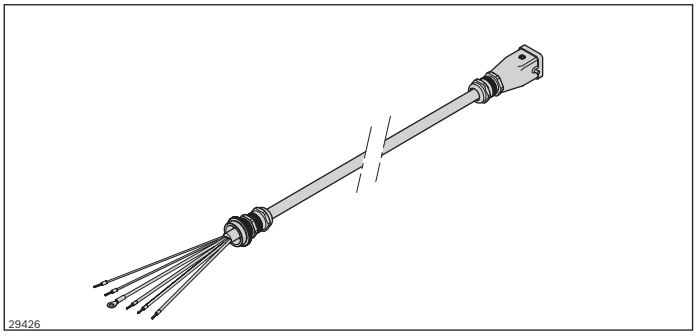


- For the simple attachment of the frequency converter to the AL leg set (grooves of a 60 mm or 80 mm strut profile)

Ordering information

Product designation	Material number
Attachment kit	3842553457

Connection cable

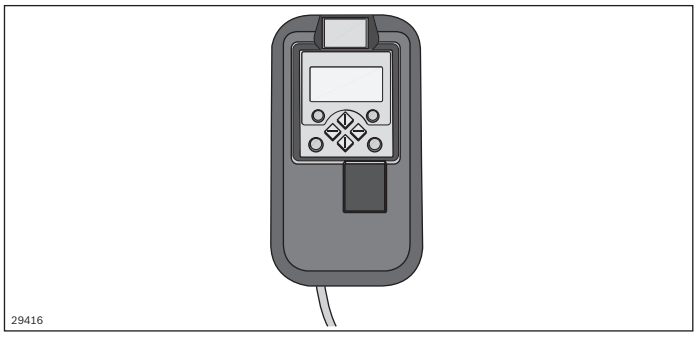


- For connecting the gear motor to the frequency converter (length: 1 m)

Ordering information

Product designation	Material number
Connection cable	3842553512

Hand-held control panel



- For the parameterization of drives with frequency converters
- For controlling (e.g., block and release)
- For displaying operating data
- For infinitely variable control of the transport speed on drives
- For transferring parameter sets to other base units

Delivery notes

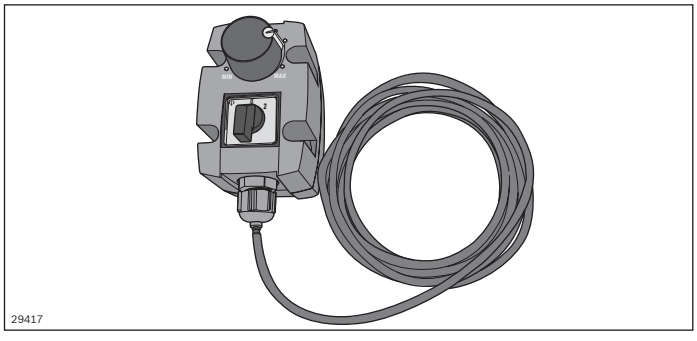
Scope of delivery

- Incl. 2.5 m connection cable

Ordering information

Product designation	Material number
Hand-held control panel	3842552821

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.

Note: It is imperative that the direction in which the chain conveyor is running is checked prior to start-up.

Delivery notes

Scope of delivery

- Incl. 2.5 m connection cable

Ordering information

Product designation	Material number
Switching/potentiometer unit	3842553184

Technical data

Connection conditions			
Motor connection			
4-pin ASM motor cable	P_{aN}	kW	0.55
No. phases			3
Motor cable length	m		< 20 (system cable, shielded)
Control			
Control method			VFCplus: U/f control (linear or quadratic), SLVC: sensorless vector control (torque/speed); VFCplus eco: energy-efficient U/f control
Switching frequency	kHz		4; 8; 16
Torque response			
Max. torque when rated motor output = rated controller output			1.5 x M_N for 60 s; 2.0 x M_N for 3 s
Sensorless vector control (speed)			
Min. output frequency	Hz		0.5 (0 ... M_N)
Accuracy in 3 ... 50 Hz speed range	%		±0.5
Concentricity in 3 ... 50 Hz speed range	Hz		±0.1
Output frequency			
Range	Hz		-300 ... +300
Absolute resolution	Hz		0.2
Standardized resolution	%		Parameter data: 0.01; Process data: 0.006 (= 2^{14})

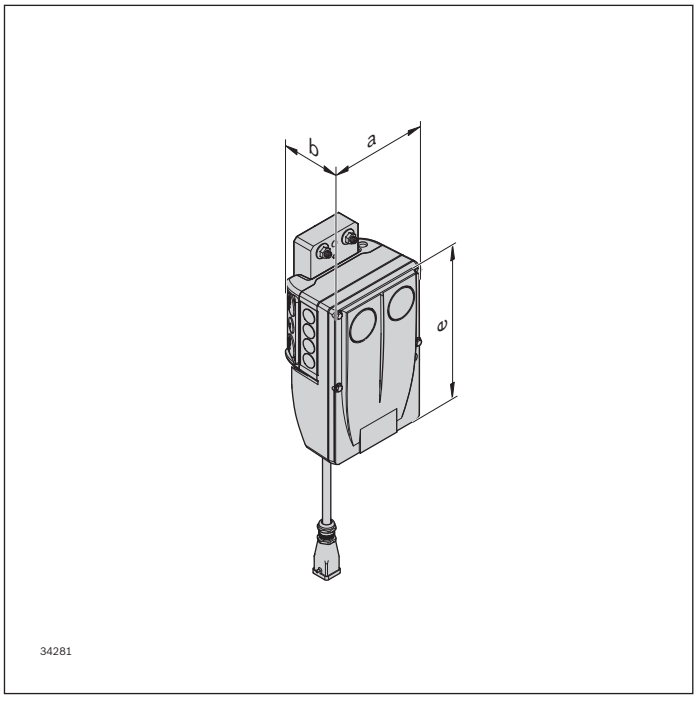
Grid			3 PE/AC
Line voltage	U_{LN}	V	320 -0% ... 528 +0%
Line frequency range	f	Hz	45 -0% ... 65 +0%
Output voltage	U_{LN}		0 ... line voltage
Output frequency	f	Hz	0 ... 300
Line current at I_{aN}	I_{AN}	A	1.8

Note:
The max. output voltage possible is approx. 88% of the line voltage.

Safety technology		
STO		SIL 3, PLe Cat.4
Drive unit IP rating		IP 65
Certifications		CE, UL, CSA, EAC
Climate conditions		
In operation	°C	-30 ... +55
Derating	%/K	2.5

	Digital inputs	**Digital outputs**	**Relay outputs**	**Analog inputs**
	No.	No.	No.	No.
I/O modules				
Basic I/O	2	–	1	–
Standard I/O	5	1	1	1
Extended I/O	8	1	1	2

Dimensions

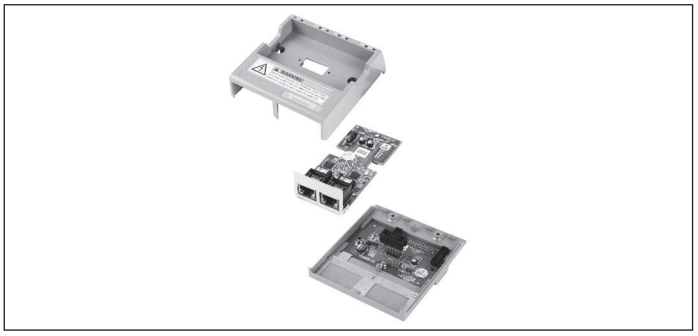


Dimension a (mm)	**Dimension b (mm)**	**Dimension e (mm)**	**Mass m (kg)[1]**
161	109	241	2.6

[1] For the Basic I/O version without cable gland

EFC 3610, EFC 5610 frequency converters





FU for control cabinet installation

- No control panel (-NN-)
- 7-segment display (7 digits) (-7P-)
- LCD display (extra option)
- Languages: DE, EN, FR, ES, IT, PT, KR, RU, ZH

Optional module with two slots:
Multi-Ethernet interface (sercos III, EtherCAT, Ethernet I/P, PROFINET, Modbus TCP, CAN, PROFIBUS)

I/O extension

- Relay module (250 V AC, 3 A/30 V DC, 3 A)
- Standard I/O extension:
  - 4 digital inputs (24 V DC, 8 mA/12 V DC, 4 mA)
  - 1 digital output (24 V DC/50 mA)
  - 1 relay output (250 V AC, 3 A/30 V DC, 3 A)
  - 1 analog input (-10 ... 10 V/0[2] ... 10 V/0[4] ... 20 mA)
  - 1 analog output (0[2] ... 10 V/0[4] ... 20 mA)
- U/f controller and SVC motor control (only possible with EFC 5610)
- Output: 0.44 kW; 0.75 kW



You can find more detailed information on both frequency converters in the "EFC 3610/EFC 5610 frequency converter" catalog.

	Material number
DE	R999000429
EN	R999000430
PL	R999001226
TW	EFC/VFC x610

EFC 3610, EFC 5610 frequency converters



- FU for control cabinet installation
- U/f controller and SVC motor control (only possible with EFC 5610)
- Loadable, application-specific firmware (ASF)
- Integrated line filter
- Built-in brake chopper (max. 22 kW)
- Removable control panel for quick and easy start-up
- I/Os: Analog voltage/current input/output switching
- EFC 5610: STO, Cat. 4 SIL3 PLe safety function
- IP 20 rating

Ordering information

Product designation	Material number
EFC 3610 0.4 kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, LED display	R912005717
EFC 3610 0.75kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3A, LED display	R912005718
EFC 5610 0.4kW, 3 AC 380 ... 480 V, 50/60 Hz, 1.3A, LED display	R912007272
EFC 5610 0.75kW, 3 AC 380 ... 480 V, 50/60 Hz, 2.3A, LED display	R912007273

Option cards

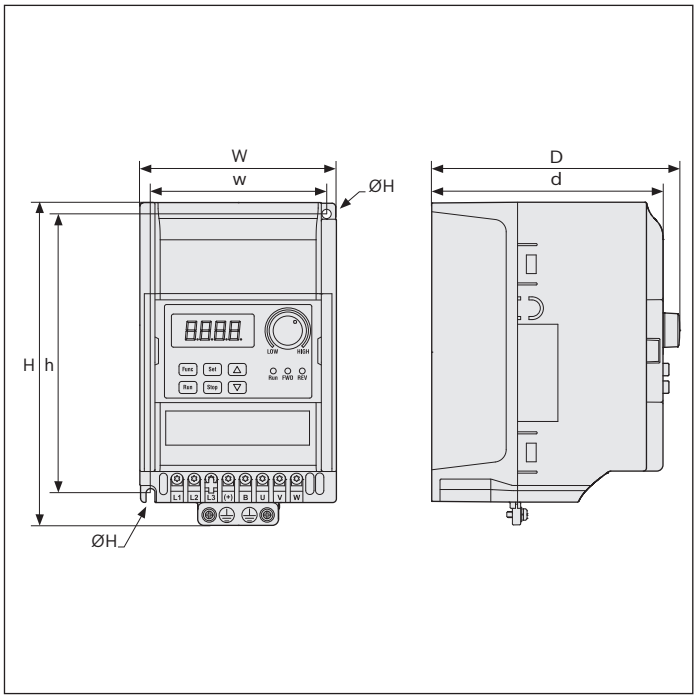


Description	Material number
Option terminal base	R912006052
Relay card	R912006051
I/O card	R912006050
I/O plus extension	R912007257
CANopen interface	R912006133
PROFIBUS interface	R912006132
Multi-Ethernet interface	R912006134

Technical data

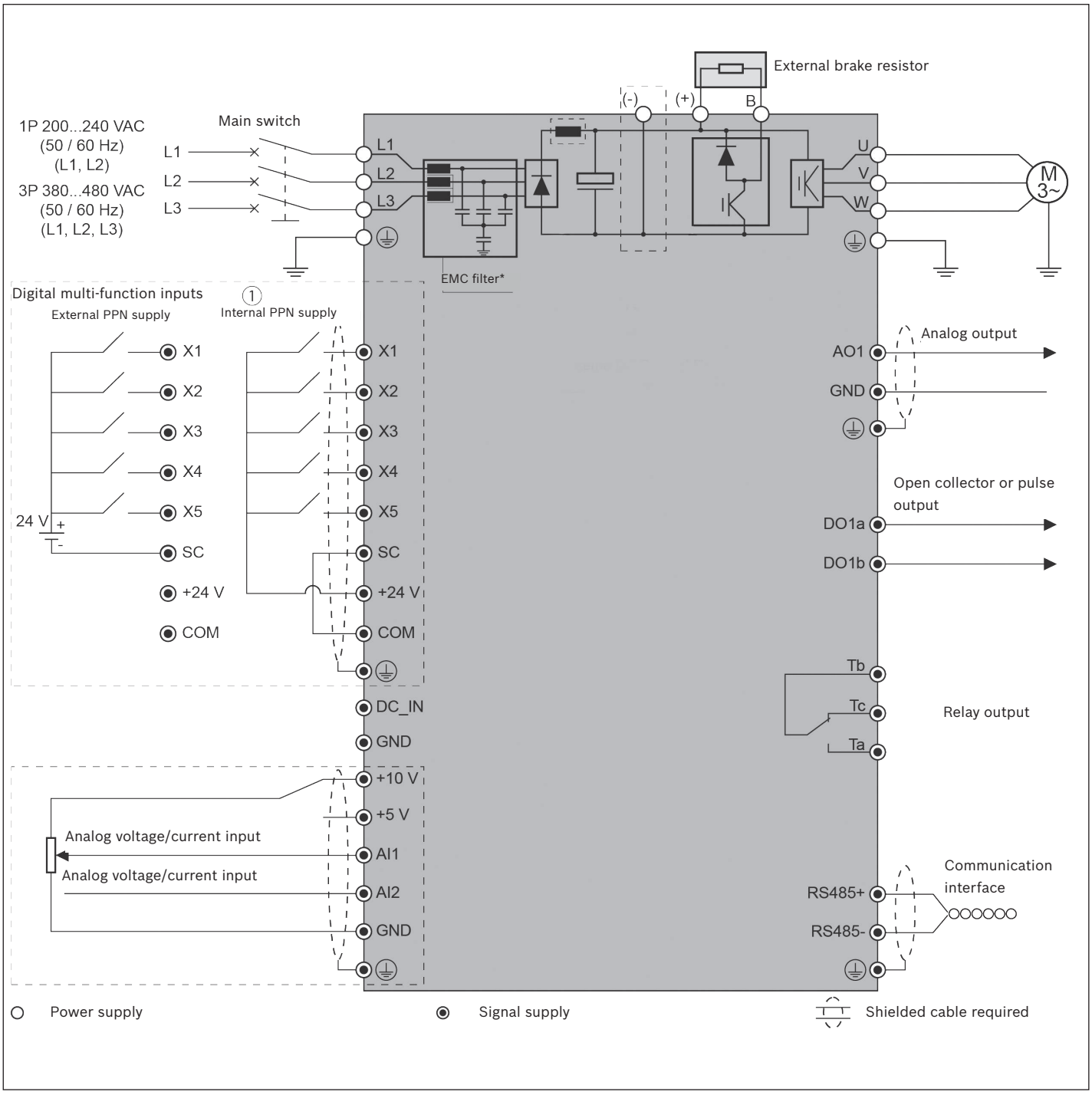
			EFC 3610		EFC 5610	
(3P 380 ... 480 V AC -15%/+10%)			Max. rated current (A)	Rated motor output (kW)	Max. rated current (A)	Rated motor output (kW)
EFC3610-0K40-3P4-.../EFC5610-0K40-3P4-...			1.3	0.4	1.3	0.4
EFC3610-0K75-3P4-.../EFC5610-0K75-3P4-...			2.3	0.75	2.3	0.75
Type						
Line voltage		V	3 AC 380 ... 480 (-15%/+10%)			
Line frequency		Hz	50 ... 60 (±5%)			
Rated motor voltage		V	3-phase, 0 ... line voltage			
Output voltage		V	0 ... line voltage			
Output frequency		Hz	0 ... 400			
Overload capacity, heavy-duty mode			150% for 60 s, 200% for 1 s			
Functions						
Control technology			U/f		U/f or SVC (sensorless vector control)	
Pulse width modulation (PWM)			1 ... 15 kHz, adjustable in 1 kHz increments			
Speed control range			1:50			
Starting torque	U/f		100% at 1,5 Hz; 150% at 3 Hz			
	SVC		Not available		200% at 0.5 Hz	
Frequency resolution	Analog		1/1000 of output frequency			
	Digital	Hz	0.01			
Frequency setting accuracy	Analog	%	0.1			
	Digital	%	0.01			
U/f characteristic curve			Linear, quadratic, openly definable			
Acceleration and brake ramps			Linear, S-curve			
DC brake	Starting frequency	Hz	0 ... 50			
	Brake time	s	0 ... 10			
Integrated controller			Integrated stepping mechanism			
Controller			PID			
Bus systems			On-board: Modbus/Ext. Options: PROFIBUS, CANopen, multi-Ethernet			
No. digital 24 V DC inputs			5 (with 1x 50 kHz pulse train)			
No. digital 24 V DC/50 mA outputs			1 (32 kHz pulse train)			
No. 230 V AC/30 V DC/3 A relay outputs			1			
No. analog 0 ... 10 V or 0 ... 20 mA inputs			2			
No. analog 0 ... 10 V or 0 ... 20 mA outputs			1			
Display			Dust cover with 5 diagnostic LEDs; 5-point LED (optional); LCD (optional)			
Status LED			Direction of rotation and operating state			
Brake						
Brake chopper			Internal up to 22 kW			
Brake resistor			External			
Motor cable length						
Internal C3 filter	0.4 kW ... 4 kW	m	15			
External C3 filter	0.4 kW ... 4 kW	m	30			
Ambient conditions						
Ambient temperature (during operation)			-10 ... 45 °C (derating 1.5% of output per 1° from 45 ... 55 °C)			
Relative humidity		%	< 90 (no condensation)			
IP rating			IP20			
Certifications			CE, UL, cUL, EAC, RCM			

Dimensions



Type	Dimension W (mm)	Dimension w (mm)	Dimension H (mm)	Dimension h (mm)	Dimension D (mm)	Dimension d (mm)	Dimension dH (mm)	Mass (kg)
EFC3610-0K40-3P4-.../EFC5610-0K40-3P4-...	95	66	166	156	167	159	4.5	1.5
EFC3610-0K75-3P4-.../EFC5610-0K75-3P4-...	95	66	166	156	167	159	4.5	1.5

Circuit diagram



WI/M, WI 2/... rockers



Rockers are used for the following areas:

- For area monitoring
- As a stop for transverse conveying of workpiece pallets
- For workpiece pallet detection

Depending on the desired function, the WI/M, WI 2/... rockers should be fitted with either one (WI/M) or two (WI 2) sensors (see p. 8-114).

Rocker functions



Area monitoring

The stop rail leans slightly to one side and, together with a sensor, signals the presence of a workpiece pallet in the area of this rail. The length of the monitored area depends on the length of the stop rail.

The sensor for the stop rail is damped when the rocker is deactivated. For WI/M, the sensor is dampened when the rocker is activated.



Stop

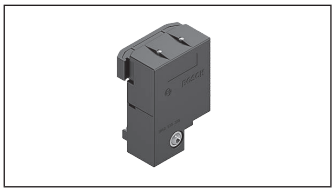
At the end of a lift transverse unit the workpiece pallet is stopped by the slide stop or by the rocker in its capacity as a stop.

Dampened WI 2/D rockers are recommended for total workpiece pallet weights of > 35 kg.

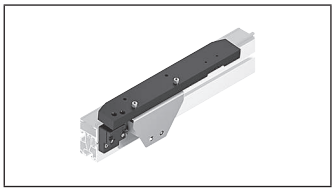


Workpiece pallet detection

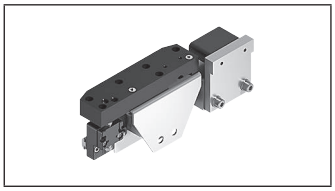
If a WI 2 rocker is fitted with a second sensor, not only can an area be monitored, but the position of a WT 2 workpiece pallet – in position on the lift transverse unit – can also be detected. This is necessary, for example, if rockers are used together with EQ 2 reversible lift transverse units. The second sensor, which can be fitted later whenever required, is attenuated if the workpiece pallet is positioned centrally in front of the activated rocker.



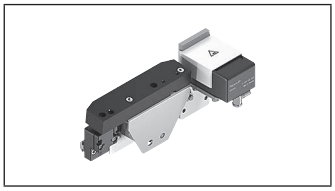
WI/M rockers **8-133**



WI 2 rockers 30 **8-139**



WI 2/X rockers 100 **8-143**



WI 2/D rockers 100 **8-145**

WI/M rocker



- For area monitoring
- For workpiece pallet detection
- For accumulation pressure control
- Simple and compact construction
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2, WT 2/F, WT 2/H and WT 2/F-H

The WI/M rocker is used for area monitoring on transfer systems. The WI/M rocker is unsuitable for use as a stop for workpiece pallets arriving from the transverse conveyor. In addition, a stop or damper must be installed to absorb the impact pulse corresponding to the workpiece pallet weight. The spring-mounted rocker switch physically detects workpiece pallets. The metal element in the rocker switch engages a sensor to enable detection. Alternatively, a pneumatic cylinder switch can be used to convert the rocker activation directly into a pneumatic signal. Simple, purely pneumatic accumulation pressure regulation can be established in conjunction with a VE 2 stop gate.

Accessories

Recommended accessories

- M12x1 sensor with $S_N \geq 4$ mm rated sensing range, length 70 mm, see p. 8-108
- Pneumatic cylinder switch, see p. 8-136

Delivery notes

Scope of delivery

- Including fastening material for installation on ST 2 conveyor sections or BS 2 belt sections.

Ordering information

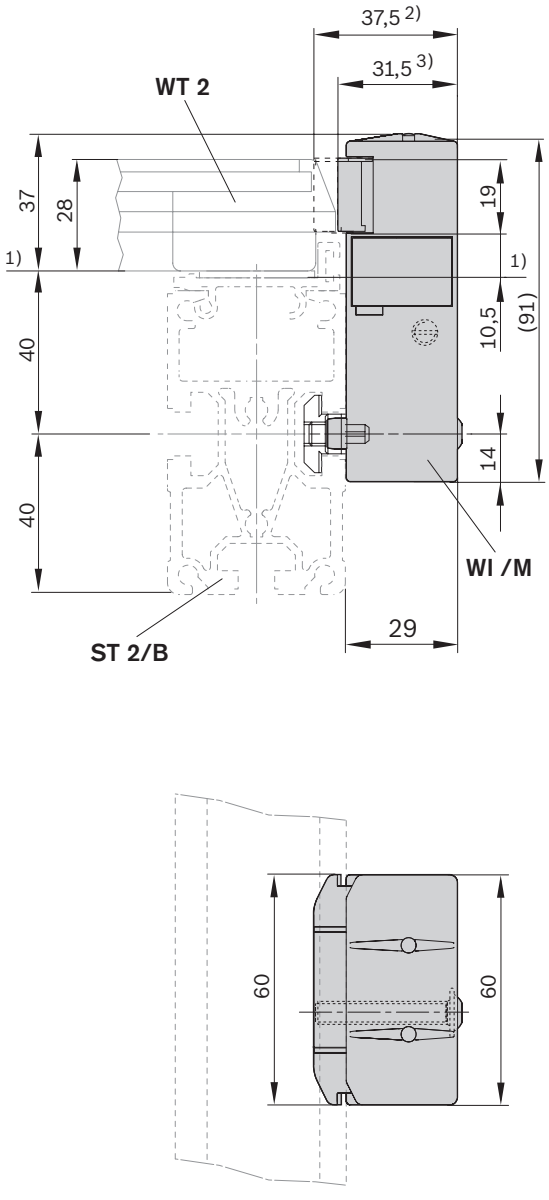
Product designation	Material number
WI/M rocker	3842530797

Technical data

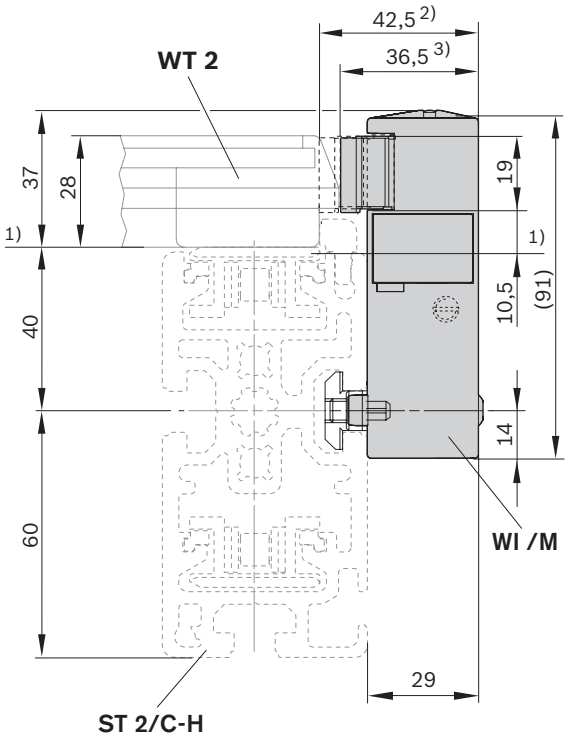
Material number		3842530797
Features		
Monitoring range	mm	60

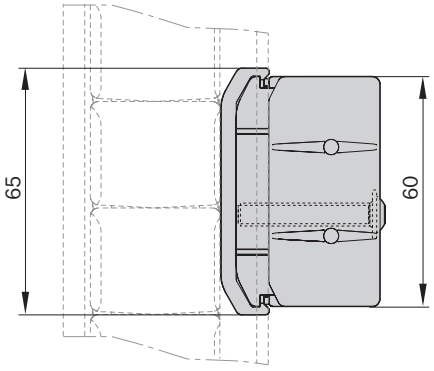
Dimensions

Mounting on ST2/...



Mounting on ST2/...-H



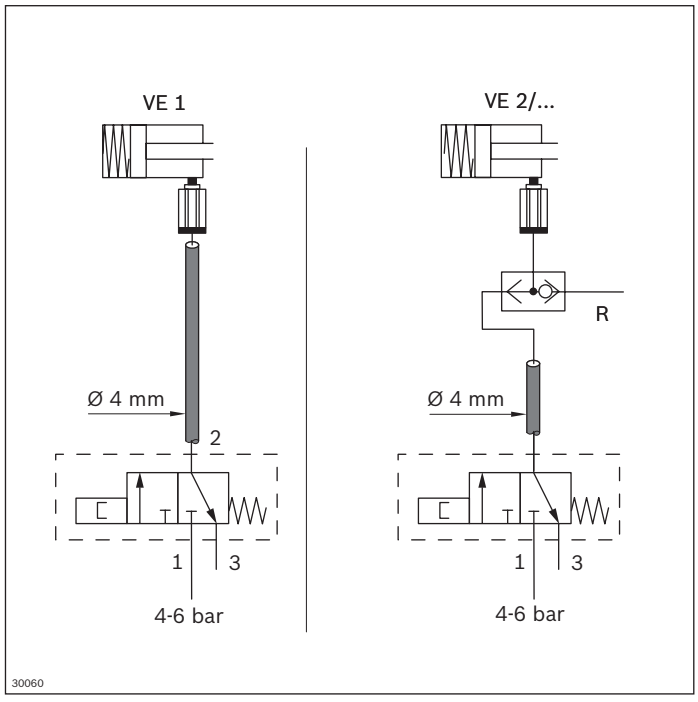


00012816

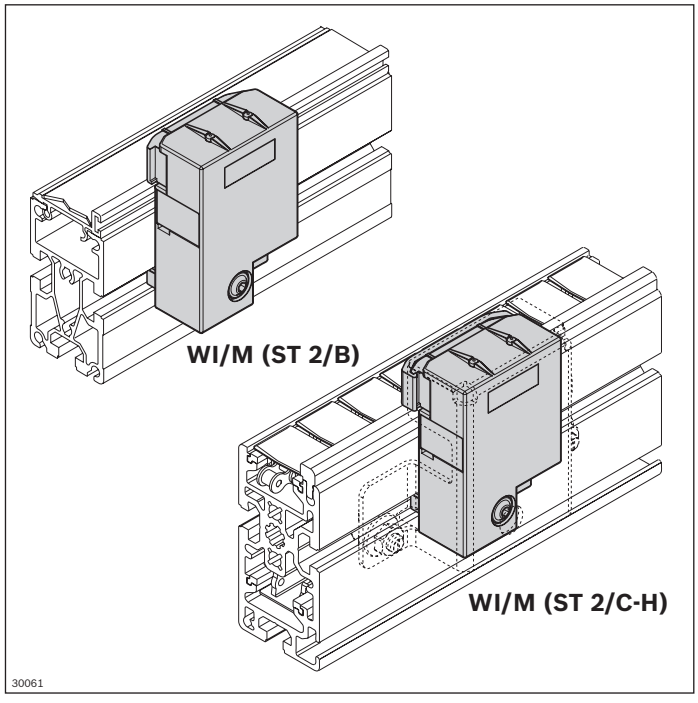
1 Conveying level
2 Limit stop not activated
3 Limit stop activated

Note: Rocker activated, electrical sensor dampened

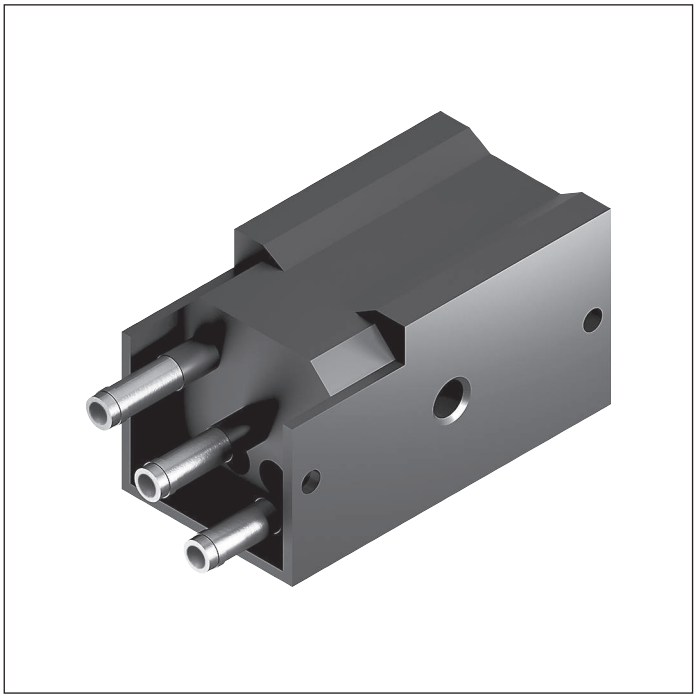
Circuit diagrams



Installation locations on ST 2 or ST 2/...-H



Pneumatic cylinder switch



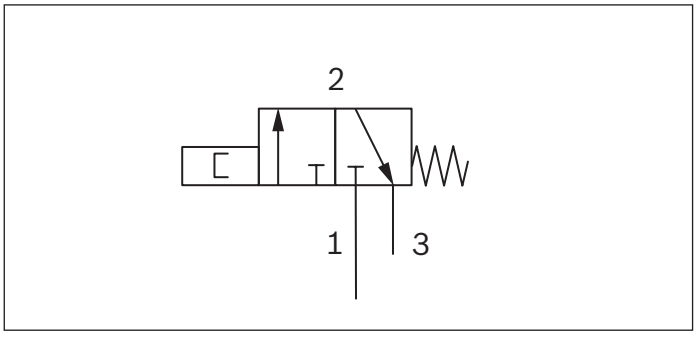
The pneumatic cylinder switch is used for direct conversion of the slide activation into a pneumatic signal. Simple, purely pneumatic accumulation pressure regulation can be established in conjunction with a VE 2 stop gate.

Ordering information

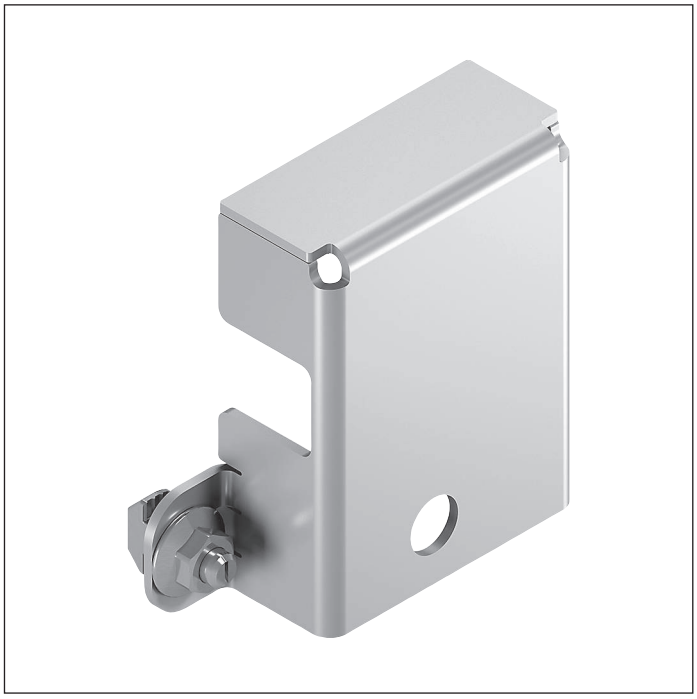
Product designation	Material number
Pneumatic cylinder switch	3842532151

Note: Rocker not activated, pneumatic cylinder switch in operating position.

Circuit diagrams



WI/M protective cover



The protective cover enables the WI/M rocker to be used in harsh industrial environments.

Delivery notes

Scope of delivery

- Incl. fastening material

Condition on delivery

- Not assembled

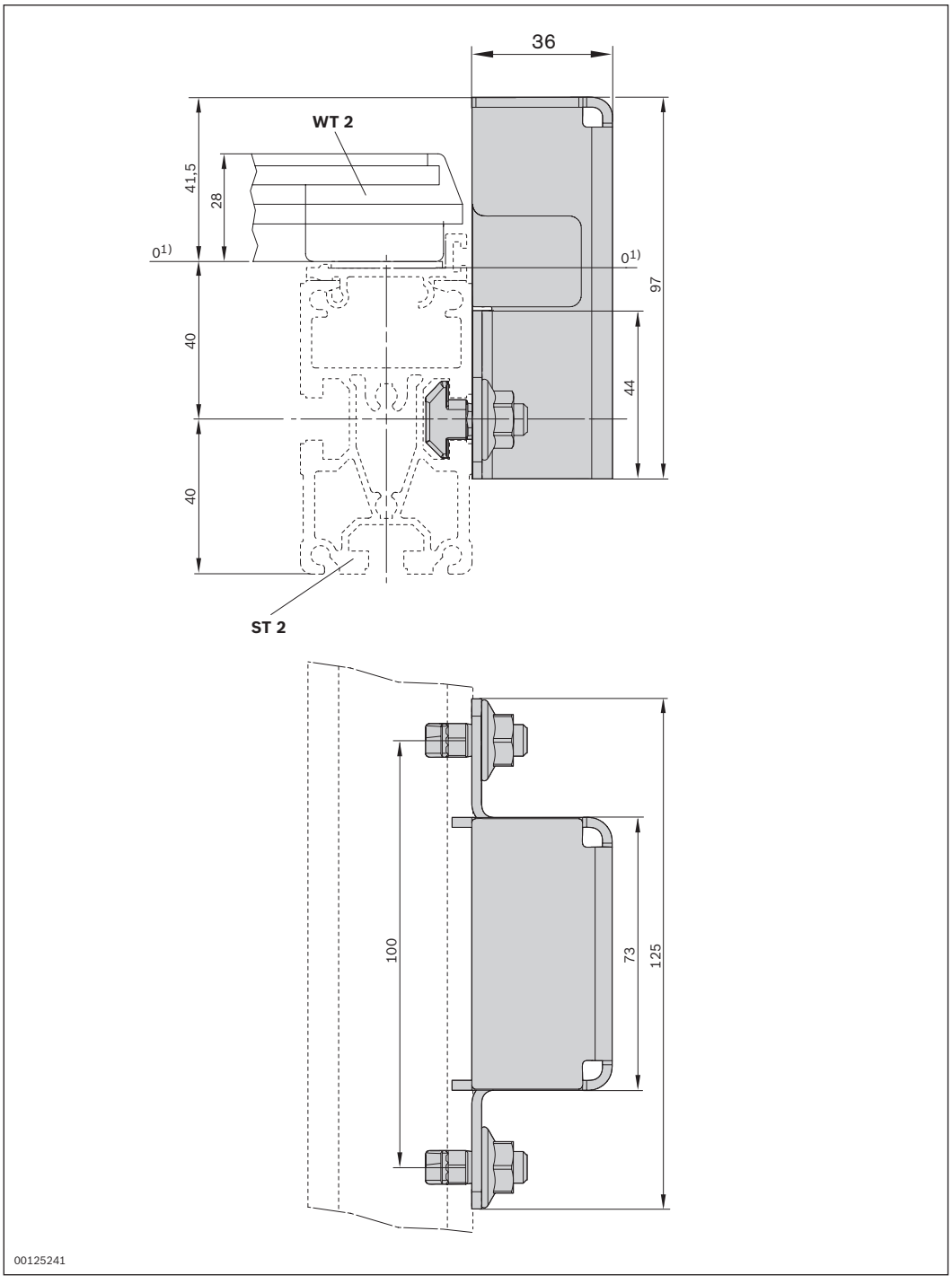
Ordering information

Product designation	Material number
WI/M protective cover	3842537855

Technical data

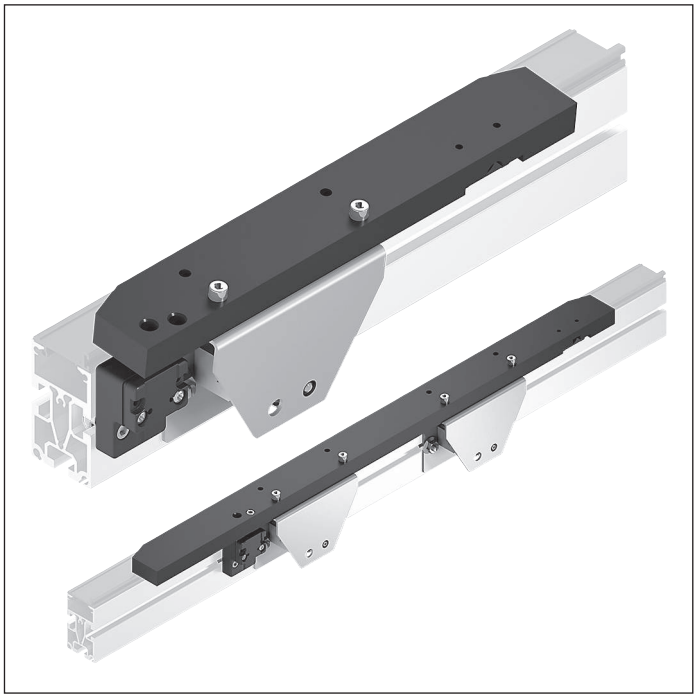
Material number	3842537855
Features	
Material specification	Sheet steel; corrosion-resistant

Dimensions



1 Conveying level

WI 2 rocker



- For area monitoring
- For workpiece pallet detection
- As a stop for transverse transportation of workpiece pallets
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/F
- Suitable for use in an EPA

One basic rocker element for workpiece pallet lengths of ≤ 480 mm

Two basic rocker elements for workpiece pallet lengths of ≥ 640 mm

Delivery notes

Scope of delivery

- Including fastening material for installation on the ST 2 conveyor section or BS 2 belt section.

Ordering information

Product designation	Material number
WI 2 rocker b_Q = 160	3842348780
WI 2 rocker b_Q = 240	3842348781
WI 2 rocker b_Q = 320	3842348782
WI 2 rocker b_Q = 400	3842348783
WI 2 rocker b_Q = 480	3842348784
WI 2 rocker b_Q = 640	3842348786
WI 2 rocker b_Q = 800	3842348788

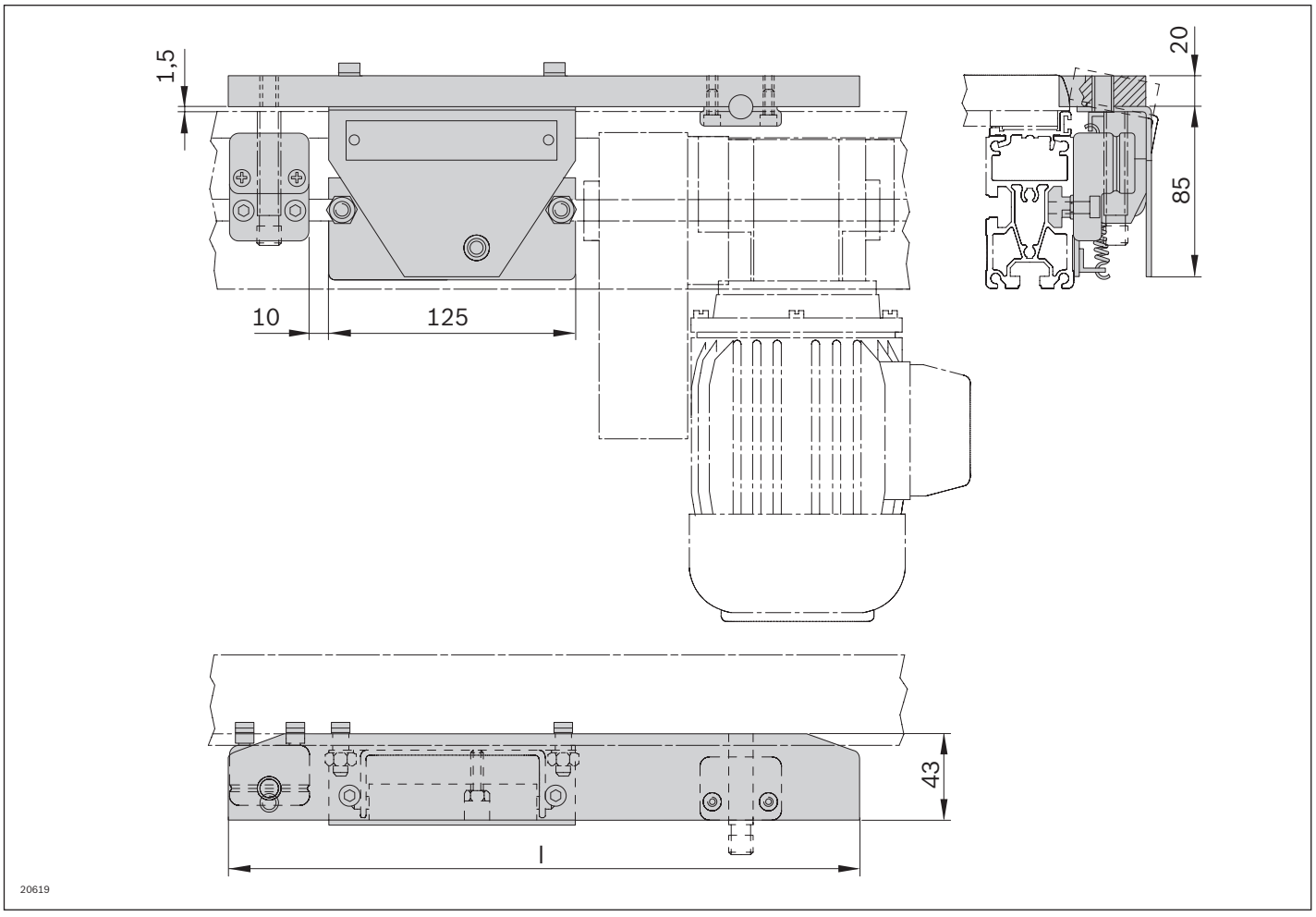
Technical data

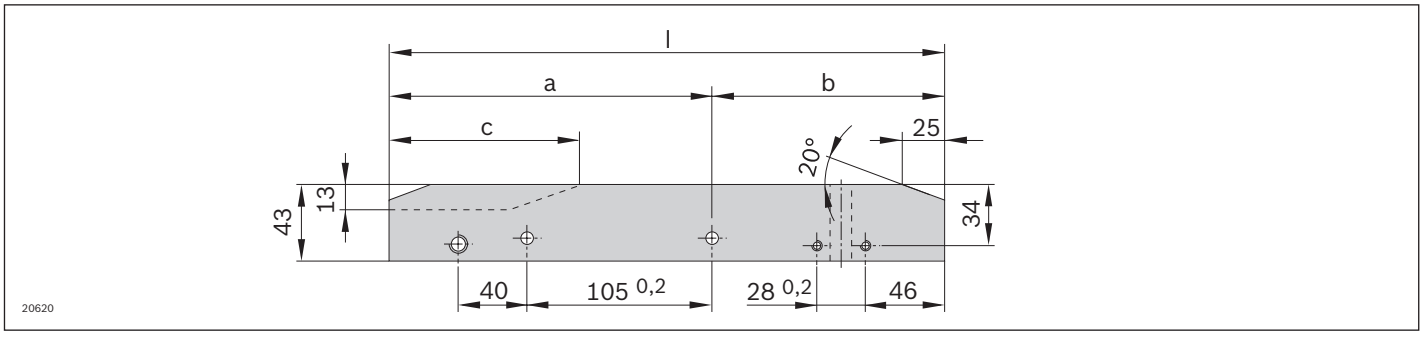
Material number			**3842348780**	**3842348781**	**3842348782**	**3842348783**
Load						
Max. total workpiece pallet weight[1]	m_G	kg	30	30	30	30
Min. workpiece pallet weight[2]	m	kg	1.5	1.5	1.5	1.5
Features						
ESD			Yes	Yes	Yes	Yes
Monitoring range		mm	165	270	350	430
Dimensions						
Length	l	mm	320	320	400	480
Material number				**3842348784**	**3842348786**	**3842348788**
Load						
Max. total workpiece pallet weight[1]	m_G	kg		30	30	30
Min. workpiece pallet weight[2]	m	kg		1.5	3.0	3.0
Features						
ESD				Yes	Yes	Yes
Monitoring range		mm		510	670	830
Dimensions						
Length	l	mm		560	720	880

[1] Max. total WT weight applies when feeding from a transverse section into a main section; for area monitoring, only the max. system weight of 240 kg cannot be exceeded.

[2] Min. WT weight applies per rocker

For workpiece pallet lengths of ≤ 480 mm

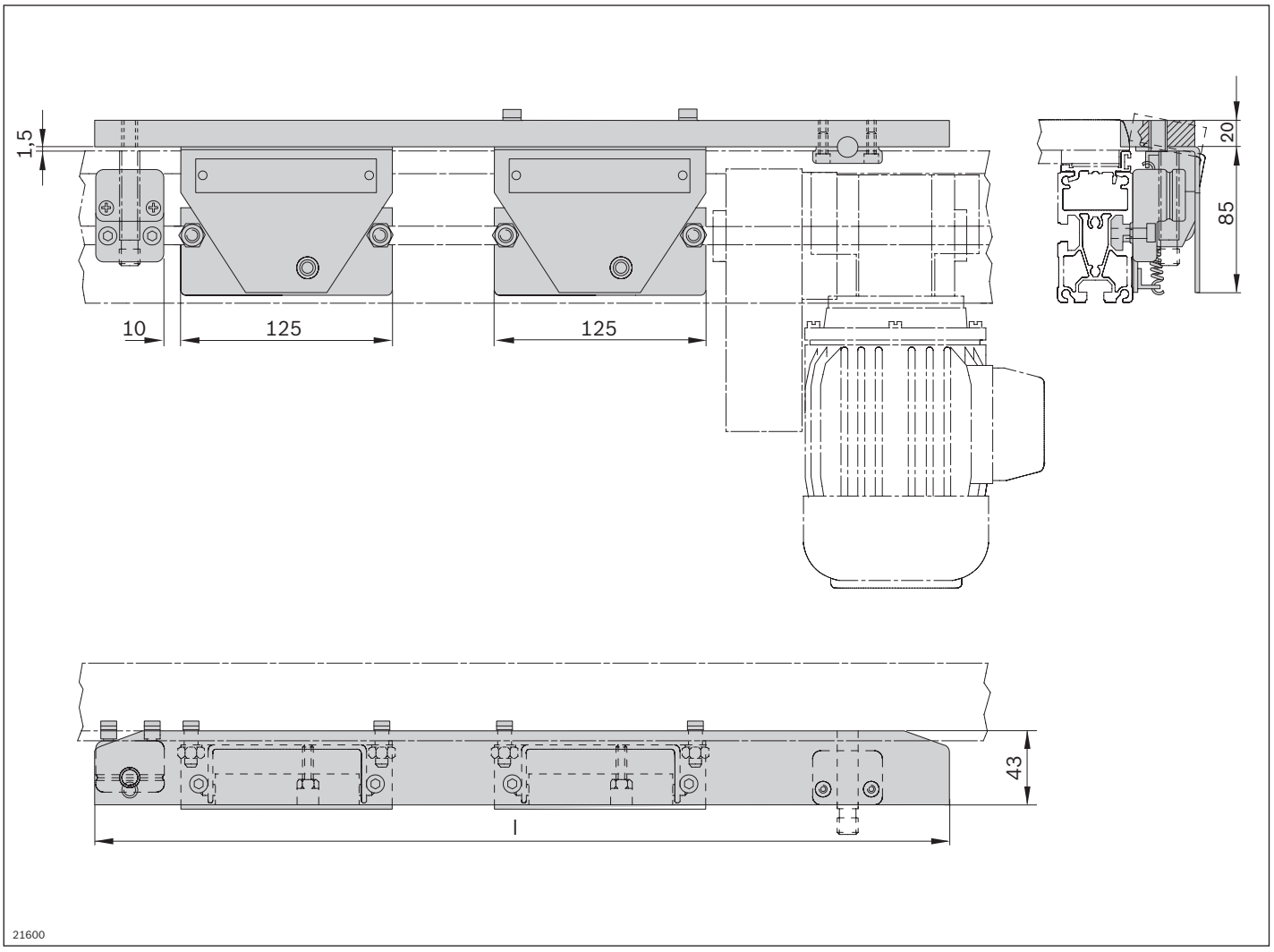


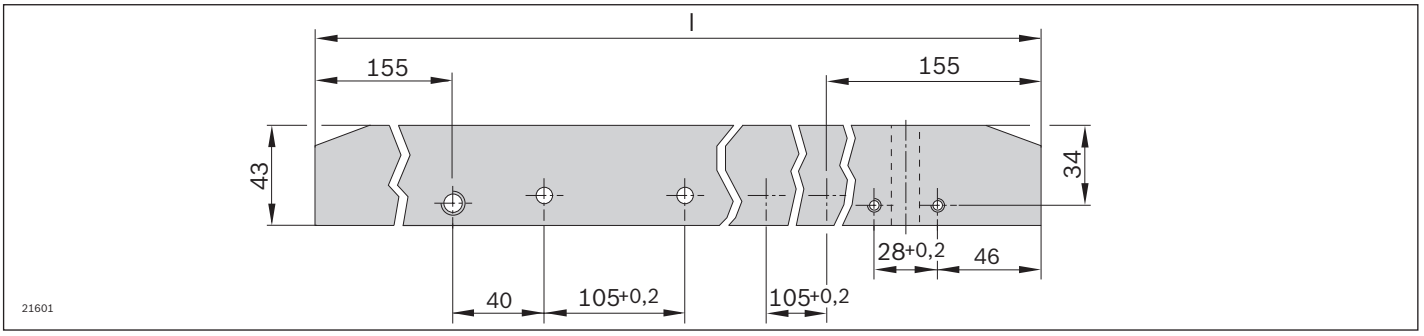


Track width in the transverse conveyor b_Q (mm)	Dimension a (mm)	Dimension b (mm)	Dimension c (mm)	Dimension l (mm)
160	165	155	105	320
240	165	155	25	320
320	245	155	25	400
400	292	188	25	480
480	332	228	25	560

Dimensions

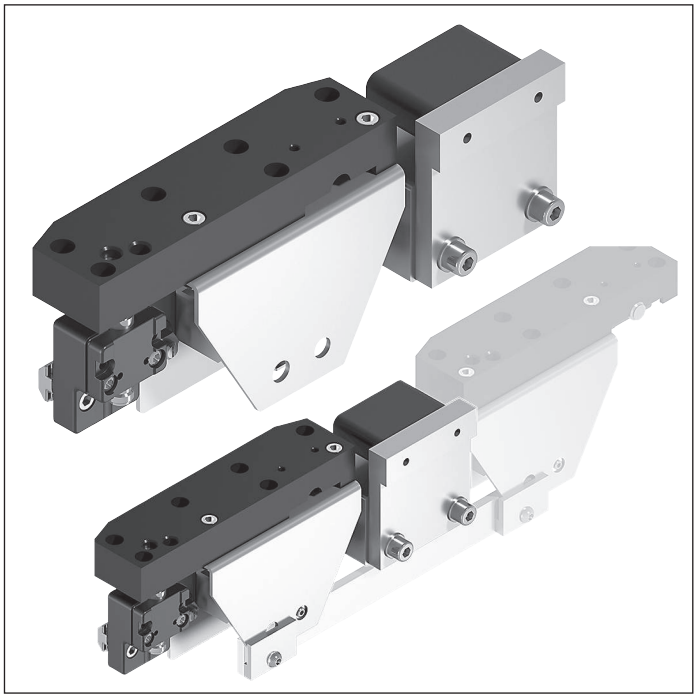
For workpiece pallet lengths of ≥ 640 mm





Track width in the transverse conveyor b_Q (mm)	Dimension l (mm)
640	720
800	880

WI 2/X rocker



- Fixed stop for workpiece pallet in the transverse conveyor
- For area monitoring
- For workpiece pallet detection
- For permitted total weight of workpiece pallets > 30 kg
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/F
- Suitable for use in an EPA

Accessories

Required accessories

- Round M12 sensor with a rated sensing range $S_N \geq 4$ mm, see p. 8-108

Recommended accessories

- Additional MS rocker extension with second rocker and connecting strip for installation of a rocker positioned between the start and end of the conveyor section.

Delivery notes

Scope of delivery

- Including fastening material for fastening to ST 2 conveyor sections or BS 2 belt sections.

Ordering information

Product designation	Material number
WI 2/X rocker	3842524447
MS rocker extension l_{wt} = 400	3842524449
MS rocker extension l_{wt} = 480	3842524450
MS rocker extension l_{wt} = 640	3842524451
MS rocker extension l_{wt} = 800	3842524452
MS rocker extension l_{wt} = 1040; 1200	3842524453

Technical data

Material number			**3842524447**
Load			
Max. total workpiece pallet weight[1]	m_G	kg	100
Min. workpiece pallet weight[2]	m	kg	1.5
Features			
ESD			Yes
Monitoring range		mm	430 ... 1230

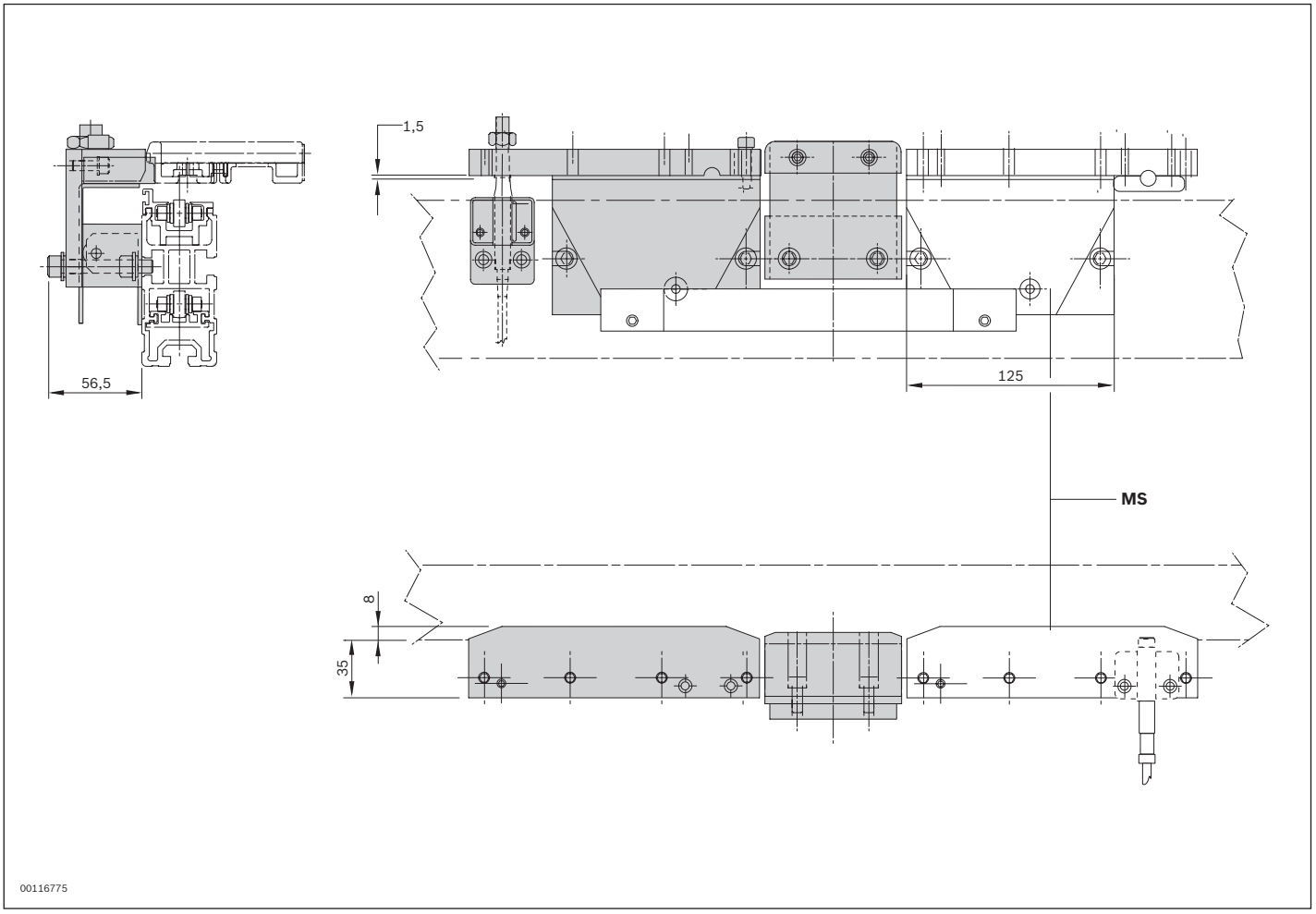
[1] Max. total WT weight applies when feeding from a transverse section into a main section; for area monitoring, only the max. system weight of 240 kg cannot be exceeded.

[2] Min. WT weight applies per rocker

MS rocker extension

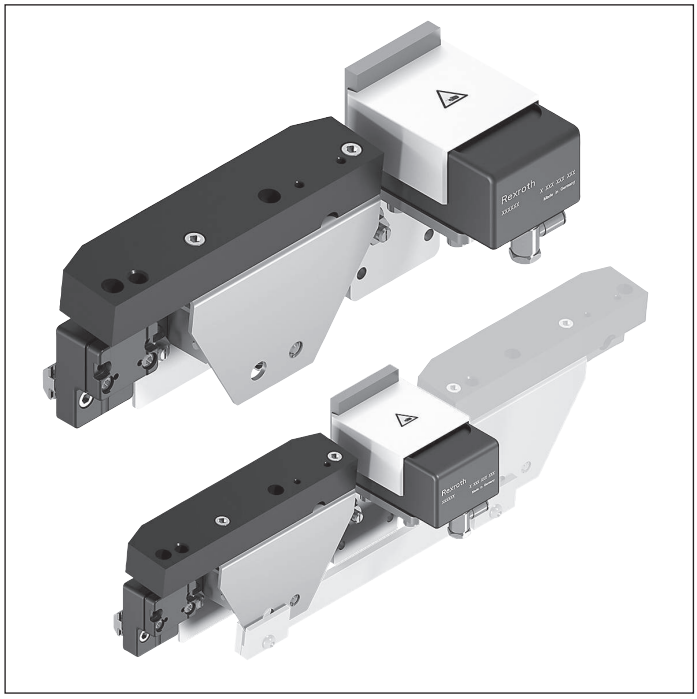
Material number			**3842524449**	**3842524450**	**3842524451**	**3842524452**	**3842524453**
Dimensions							
Length of workpiece pallet	l_{WT}	mm	400	480	640	800	1040; 1200
Features							
ESD			Yes	Yes	Yes	Yes	Yes
Monitoring range		mm	430	510	670	830	1230

Dimensions



MS Additional rocker extension

WI 2/D rocker



- As a dampened stop for workpiece pallets in the transverse conveyor
- For area monitoring
- For workpiece pallet detection
- For permitted total weight of workpiece pallets > 35 kg
- Suitable for mounting on an ST 2/... section with a profile width of 45 mm or an ST 2/...-H section with a profile width of 50 mm
- Can be combined with WT 2 and WT 2/F
- Suitable for use in an EPA

Accessories

Required accessories

- Round M12 sensor with a rated sensing range $S_N \geq 4$ mm, see p. 8-108

Recommended accessories

- Additional MS rocker extension with second rocker and connecting strip for installation of a rocker positioned between the start and end of the conveyor section from a monitoring range of 400 mm.

Delivery notes

Scope of delivery

- Incl. fastening material
- Incl. DA 2/100 damper

Ordering information

Product designation	Material number
WI 2/D rocker	3842524448

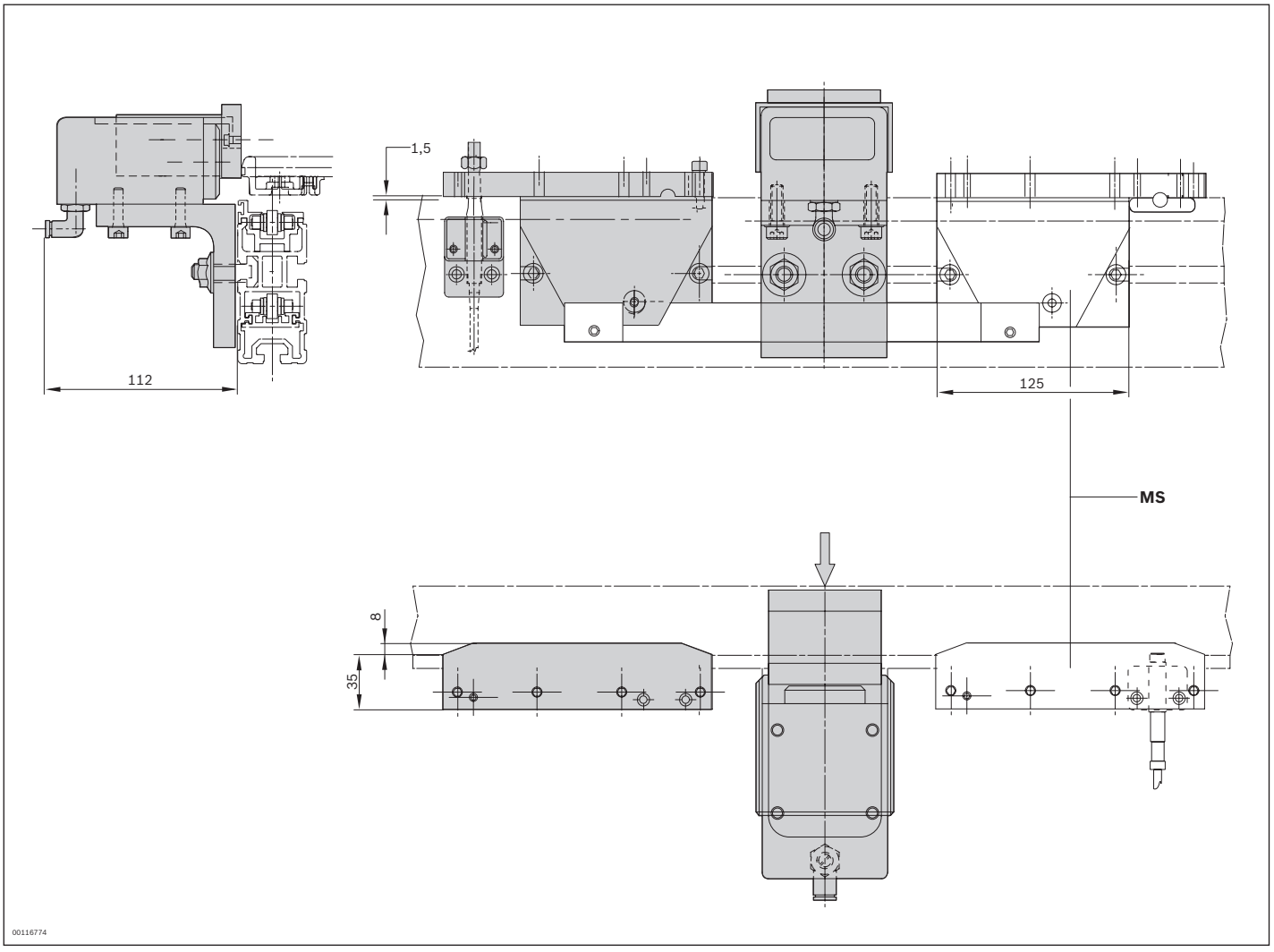
Technical data

Material number			**3842524448**
Load			
Max. total workpiece pallet weight[1]	m_G	kg	100
Min. workpiece pallet weight[2]	m	kg	5
Features			
ESD			Yes
Monitoring range		mm	430 ... 1230

[1] Max. total WT weight applies when feeding from a transverse section into a main section; for area monitoring, only the max. system weight of 240 kg cannot be exceeded.

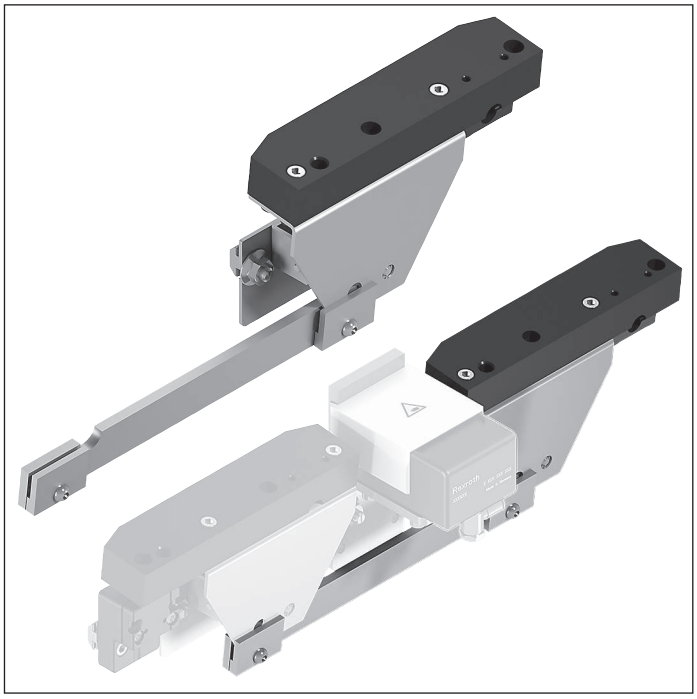
[2] Min. WT weight applies per rocker

Dimensions



MS Additional rocker extension

MS rocker extension



- Suitable for use in an EPA

Rocker extension as a second rocker with connecting strip for installation of a rocker positioned between the start and end of the conveyor section.

Required accessories

- WI 2/X or WI 2/D rocker, see p. 8-143/8-145

Ordering information

Product designation	Material number
MS rocker extension l_{WT} = 400	3842524449
MS rocker extension l_{WT} = 480	3842524450
MS rocker extension l_{WT} = 640	3842524451
MS rocker extension l_{WT} = 800	3842524452
MS rocker extension l_{WT} = 1040; 1200	3842524453

Technical data

Material number			3842524449	3842524450	3842524451	3842524452	3842524453
Dimensions							
Length of workpiece pallet	l_{WT}	mm	400	480	640	800	1040; 1200
Features							
ESD			Yes	Yes	Yes	Yes	Yes
Monitoring range		mm	430	510	670	830	1230

WT 2 stop



- Fixed stop in the transverse conveyor
- Installation location: ST 2 section and BS 2. belt section
- Not suitable for mounting on ST 2/...-H or BS 2/...-H sections

The WT 2 stop is used as a fixed stop for workpiece pallets entering a longitudinal section from a transverse section.

Delivery notes

Scope of delivery

- Including fastening material for installation between two ST 2 conveyor sections or BS 2 belt sections.

Condition on delivery

- Not assembled

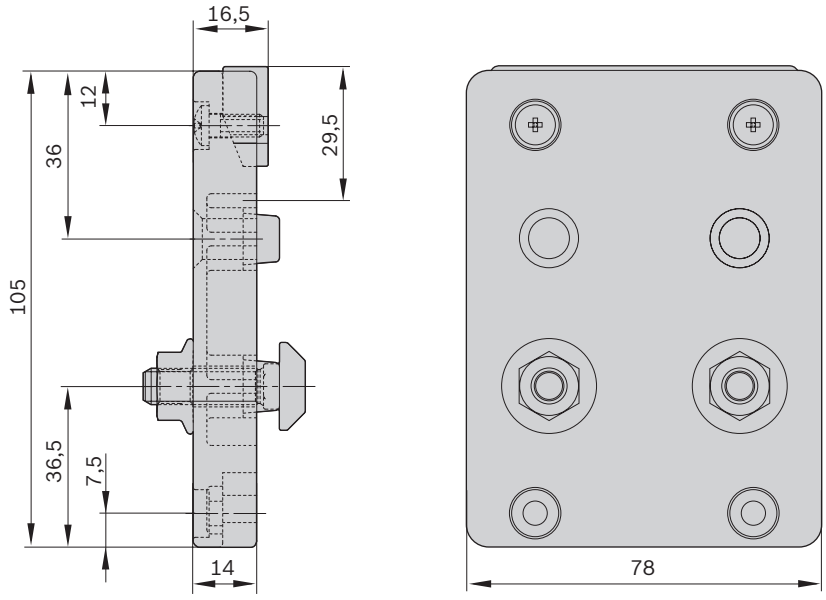
Ordering information

Product designation	Material number
WT 2 stop	3842519717

Technical data

Material number			3842519717
Load			
Max. total workpiece pallet weight	m_G	kg	30
Features			
ESD			Yes
Material specification			PA66

Dimensions



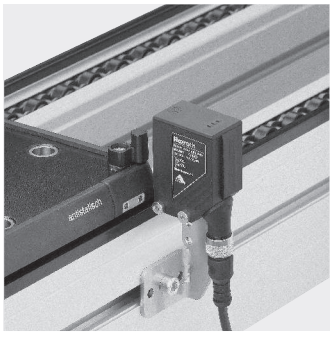
00125246

Identification systems

Identification systems **9-3**







Identification systems



Identification and data tag systems are used to control numerous production and transport systems in assembly technology applications.

Data related to objects is the basis for

- VE, VE 2/M, VE 2/L or VE 2/S stop gates
- M8x1 sensor with rated sensing range $S_N \geq 2$ mm, can be installed flush

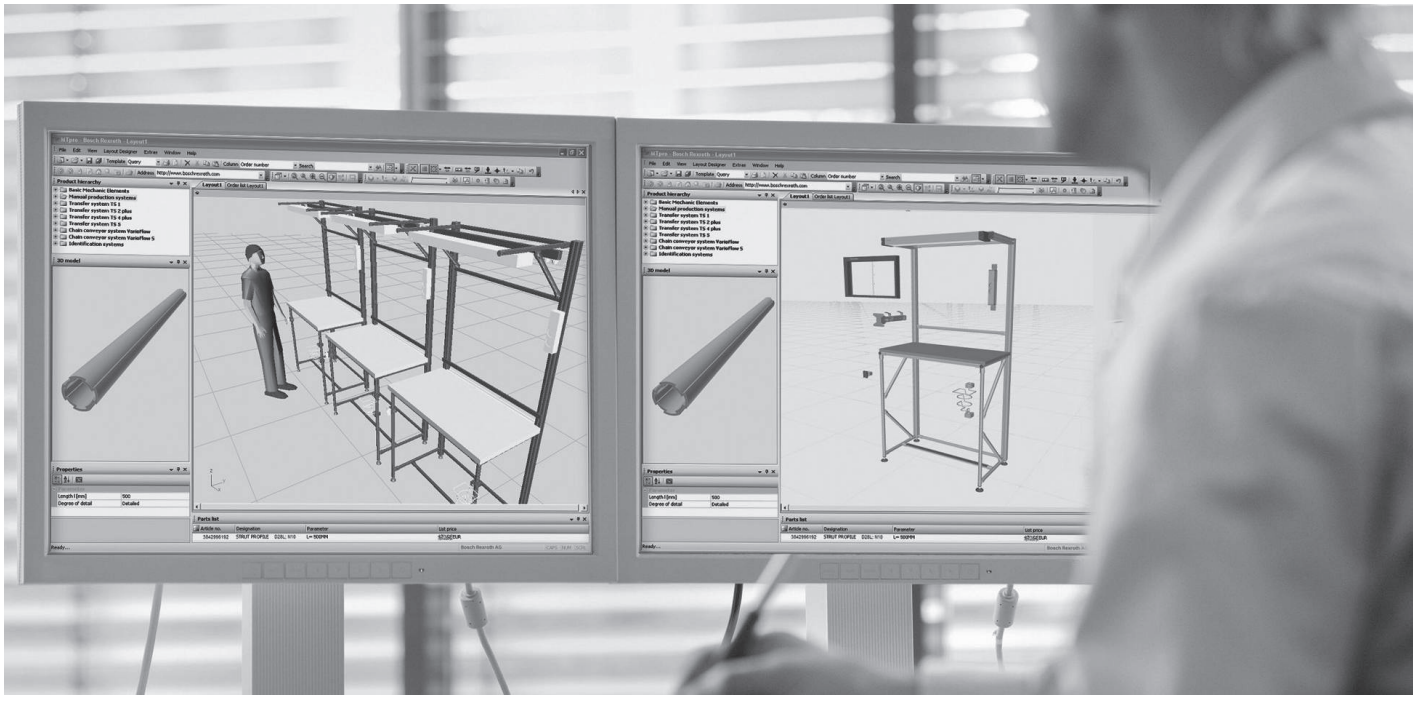
You can find our current range of identification and data tag systems in the RFID systems catalog.

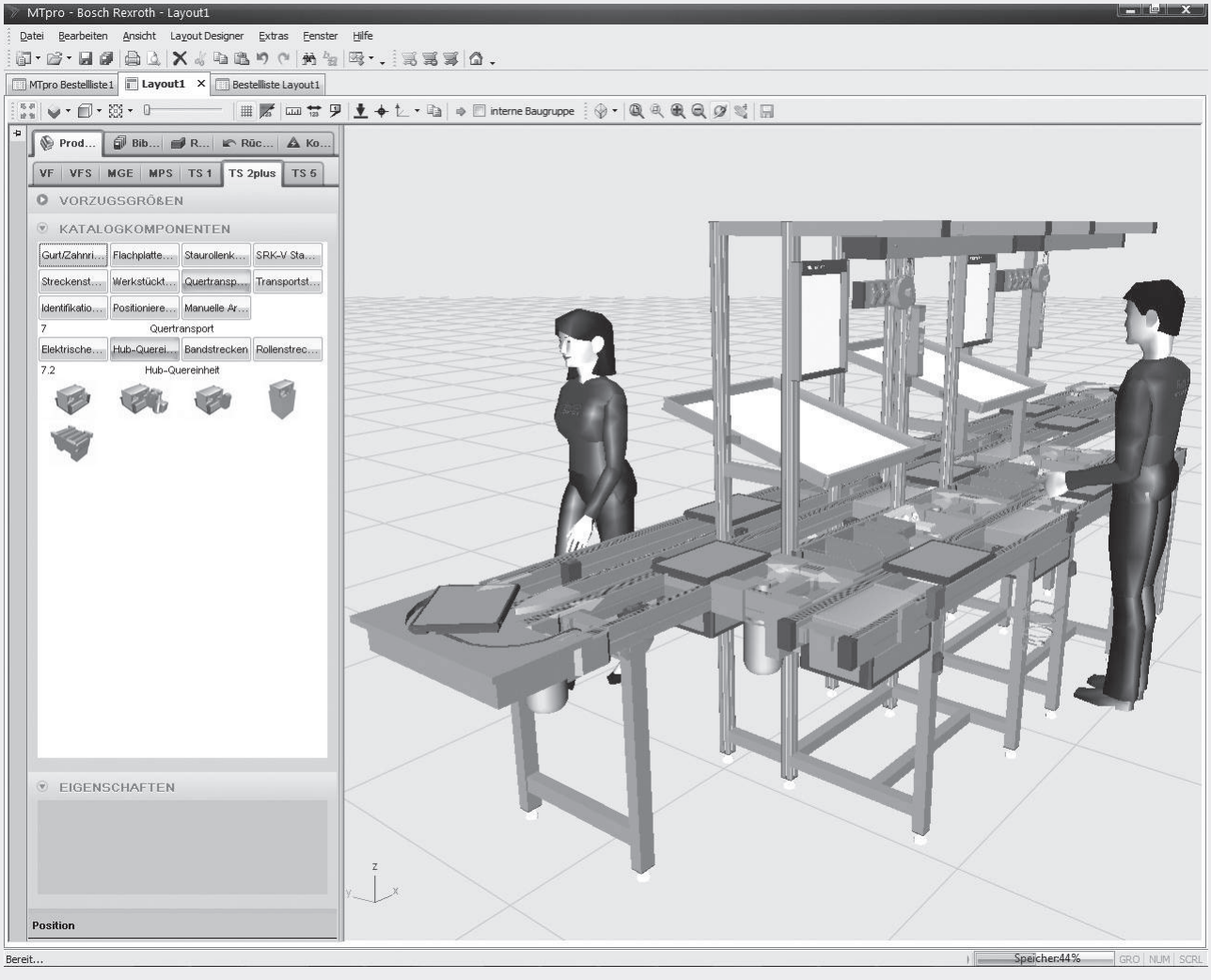
Catalog: 3842541003
www.boschrexroth.de/mediadirectory



MT*pro* planning software

MT*pro* planning software **10-3**




MTpro - Bosch Rexroth - Layout1
Datei Bearbeiten Ansicht Layout Designer Extras Fenster Hilfe
MTpro Bestelliste1
Layout1
Bestelliste Layout1
interne Baugruppe
Prod...
Bib...
R...
Rüc...
Ko...
VF VFS MGE MPS TS 1 TS 2plus TS 5
VORZUGSGRÖßEN
KATALOGKOMPONENTEN
Gurt/Zahnri...
Flachplatte...
Staurollenk...
SRK-V Sta...
Streckenst...
Werkstückt...
Quertransp...
Transportst...
Identifikatio...
Positioniere...
Manuelle Ar...
7
Quertransport
Elektrische...
Hub-Querei...
Bandstrecken
Rollenstrec...
7.2
Hub-Quereinheit
EIGENSCHAFTEN
Position
Bereit...
Speicher:44%
GRO
NUM
SCRL

MT*pro* planning software

MT*pro* is a software program used for planning assembly systems. It assists you from selection to configuration and ordering of the Rexroth products. The program offers the following functions and full content in seven languages (en/de/fr/es/it/ja/zh):

Layout Designer for planning and designing complete frames and conveyor systems

- Simple design using the drag & drop and snap functions without a CAD system
- Design logic for automatic configuration and assembly adaptation
- Automatic order list generation of all small parts and accessories
- Export of 3D volume models
- Library for saving and reusing your own modules and layouts

Product information

- Technical data
- Catalog data sheets
- Assembly instructions
- Spare parts lists and drawings

Configuration and calculation

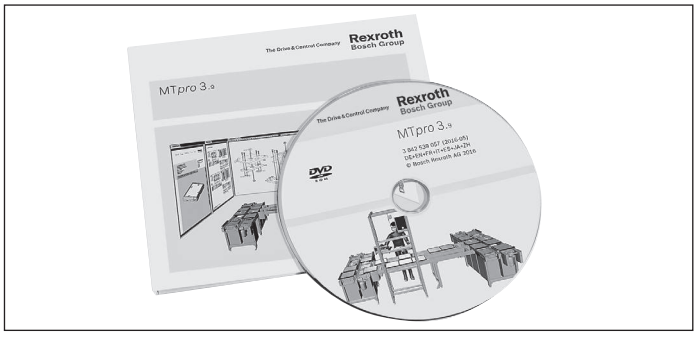
- Product configuration and generation of ordering information
- Issuing of order lists in user-specific presentations
- Direct connection to Rexroth eShop
- Quick & Easy profile configuration and drafting
- Other design and calculation programs

CAD library

- Configurable CAD models
- Memories in standard formats
- Direct integration into all common CAD systems

System requirements

- Windows from version 7 onwards
- DVD-ROM drive
- At least 6 GB of free disk space hard disk space
- Adobe Reader from version 10 onwards
- Internet access for layout designer licensing and automatic updates

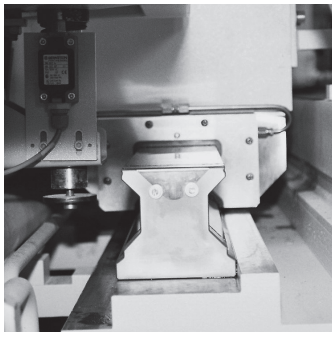


Catalog: 3842539057
www.boschrexroth.de/mediadirectory

Technical data

System specifications **11-2**







System specifications

Application

The Rexroth transfer systems all form a program of fine-tuned mechanical components that are used to convey, separate, and position workpiece pallets. With these components, you can create almost any system layout you need.
The systems are primarily used to convey workpieces (on Rexroth workpiece pallets) to and from manual or automatic work stations on an assembly line.

Planning

Transfer system planning (the combination of components into a modular system), setup, initial start up and maintenance should only be done by trained personnel. Rexroth offers training courses for this.

Scope of delivery – small parts

The sensors, pneumatic valves, and electrical and pneumatic installation material that are necessary for operation are usually not included in the scope of delivery. These parts are only preassembled if doing so guarantees special functional safety or if installing them at a later point would require a disproportionate effort.
Please note the references for the required flow control valves and check valves in the pneumatic switching plan (listed in the assembly and operation instructions) must be followed.

Note

Examples
Installation references, pneumatic switching plans and typical function processes are described in the catalogs and assembly instructions. These must be followed when setting up and starting the initial operation of the system.

CE identification, responsibility

Components that fall under the EC Machinery Directive are delivered with the corresponding declaration of incorporation. Overall responsibility for system safety (declaration of conformity, CE identification) lies with the system builder. The references in the assembly instructions and in the Instructions for Employees on Safety – 3842527147 – must be followed.

Media resistance

Our products are guaranteed to be resistant to numerous media common to manufacturing, such as water, mineral oil, grease and detergents. Contact your Rexroth representative if you have any doubts about resistance to specific chemicals, e.g., test oil, doped oils, aggressive detergents, solvents, or brake fluid.
Avoid prolonged contact with highly reactive acidic or alkaline materials.

Contamination

Wear may increase dramatically if the system is contaminated due to environmental factors, particularly with abrasive media such as sand and silicates, but also due to processes running on the transfer system (e.g., welding beads, pumice dust, glass shards, shavings, or lost parts, etc.). In such cases, maintenance intervals must be substantially shortened.

Functional safety

Resistance to media and contamination does not mean that functional safety is guaranteed in every case.

- Liquids that thicken on evaporation and are highly viscous or adhesive (sticky) could lead to a disruption in function.
- Media with lubricating properties may reduce the driving power that is caused by friction if they are transported on systems with belts or round belts.
- The chain lubricant used on conveyor chains can be washed away with solvents or detergents.

Such cases require special attention when planning the system and adjusting the maintenance intervals.

Environmental sustainability, recycling

The materials used are environmentally friendly.
They can be recycled or reused (components may have to be processed and replaced). Recyclability is ensured by the selection of materials and the ability to take the components apart.

Pneumatic connection data

Oiled or non-oiled, filtered, dry compressed air.
Operating pressure 4 to 6 bar
Performance data is for an operating pressure of 5 bar.

Maintenance

The TS components require very little maintenance. Maintenance instructions are included in the operating manual.

Wear

Wear is caused by the basic principle of this system and cannot be avoided. Design measures and appropriate materials help ensure functional safety over the life of the product. However, wear depends on the operating, maintenance, and ambient conditions of the system and the location (resistance, contamination).

Measures to reduce wear

The following measures reduce wear and the friction caused by it:

- Switch off conveyor sections when the system is not running, e.g., during breaks, overnight, on the weekend.
- Do not select conveyor section speeds that are higher than those required for the particular function
- Minimize the weight of the workpiece pallet – do not overload workpiece supports with material.
- Avoid unnecessary accumulation sections, e.g., by reducing the number of workpiece pallets
- Switch off accumulation sections carrying heavy workpiece pallets if transport is not necessary.
- Very important: Avoid contamination by abrasive media or reduce contamination with regular cleaning

Load specifications

Permitted loads apply for conveyor sections under the condition that only workpiece pallets with the maximum total permitted weight have accumulated.
Higher loads are permitted if accumulation can be safely avoided.
Accumulation operation is not permitted on lift-transverse units.

Wear and conveyor speed

Nominal data for the permitted workpiece pallet weight describe operation at standard speeds and under normal operating conditions.
Wear on the workpiece pallet wear pads and the conveyor medium will not influence system function throughout the service life.

Wear and higher/lower loads

Higher loads may lead to more wear and thus require, among other measures, shorter maintenance intervals.
A linear decrease in wear can be calculated for lower loads (half load = half the wear = twice the service life).

System specifications

Loading the workpiece pallet, combination of empty and loaded workpiece pallet

When setting up and testing the modular units, the workpieces pallets should not all have the same weight on the conveyor sections, i.e., full and empty pallets should all come through the circuit.

Extreme differences in weight may require special measures to avoid functional disruptions. This applies, e.g., to the permitted accumulation length before stop gates, for the function of dampers and damped stop gates, and also for accumulation in curves.

Function is usually not limited if the weight ratio is 2:1 between heavy (loaded with a workpiece) and light workpiece pallets (empty).

Loading the workpiece pallet, minimum weight

The minimum weight of the workpiece pallet is generally not relevant. In special cases – depending on the marginal conditions – an application-specific minimum weight may be required for safe and continuous transport. This can occur, for example, if switching elements have to be manually operated (on the rocker), or if a lighter workpiece pallet does not run smoothly when changing directions, e.g., jumps out of the guide on the HQ. In such unusual cases, additional weight should be added when designing the workpiece pallet.

Overloading

Overloading the conveyor sections may damage the conveyor medium and cause the motor and gears to break down.

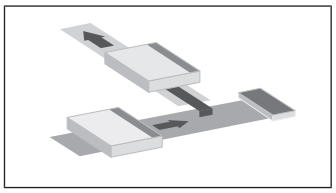
When overloading of pneumatic components occurs function cannot be guaranteed.

Transportation speed, Influence on wear

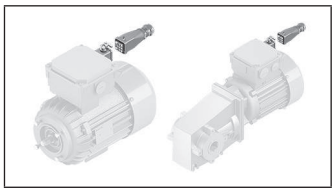
Wear on the conveyor medium, slide rails, workpiece pallet wear pads and the like is proportional to the conveying speed. This means that, in comparison to the standard speed of 12 m/min, when running at 18 m/min the wear limit is already reached at 12/18 = 2/3 of the running time.

Transportation speed, dynamic influences

When the conveying speed increases bumps when changing directions and the rebound force on the stop gates also increase. This may require longer damping periods or shock absorbers before the next movement. If accumulation roller chains are the conveyor medium a return stop combined with stop gates is recommended for operation at higher speeds.



Function plans **11-12**



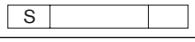
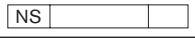
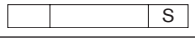
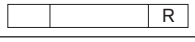
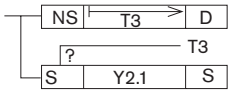
Motor data/motor connection **11-24**

Transportation and nominal speeds v_N **11-28**
Compressed air consumption of the TS 2*plus* units

Function plans

On the following pages, you can find proven fundamental function plans for control tasks in transfer systems.

Characters are used in the action blocks that deviate from DIN IEC 61131--3. They are explained in the following table.

Action block	Explanation
	Storing
	Non-storing
	Set
	Reset
	Non-storing triggering of a time function (with runtime T), after which a switching function is triggered.

Simple VE 2 stop gates are used to stop workpiece pallets. The position of the workpiece pallets is queried with separate sensors.

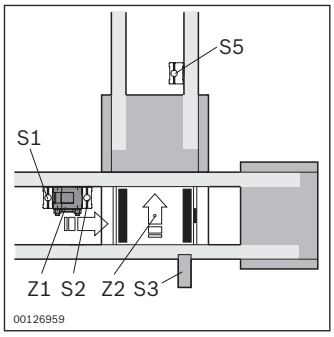
The function plans are simplified accordingly if using stop gates with integrated sensors and internal switching logic.

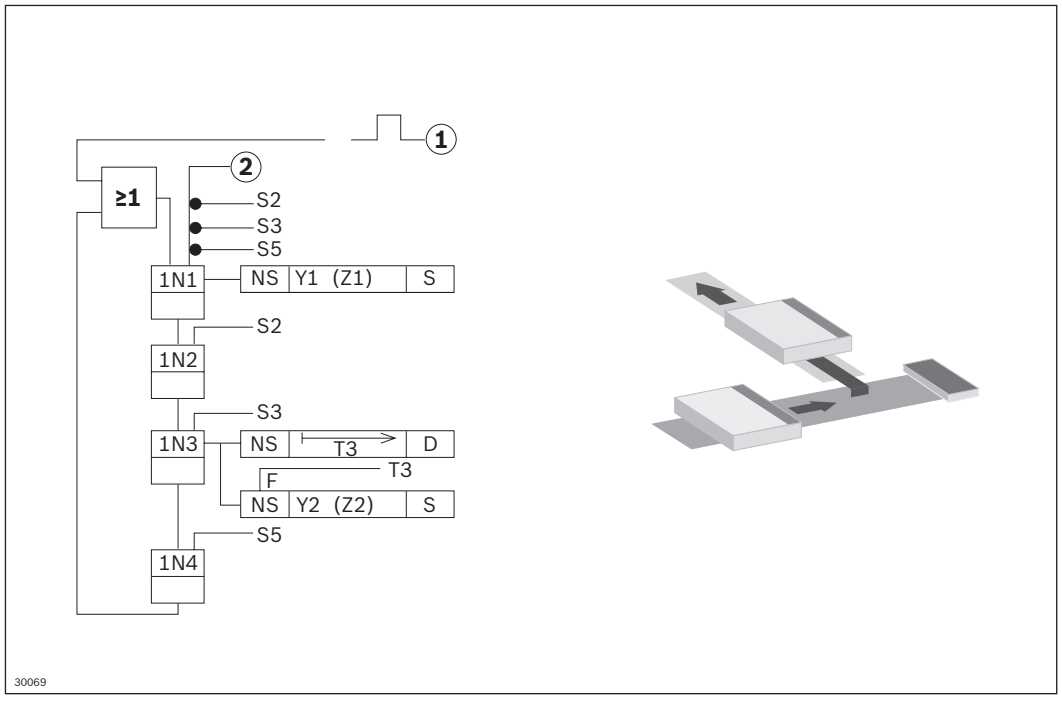
General abbreviations

WT	=	Workpiece pallet
VE	=	Stop gate
S...	=	Signaling device
Y...	=	Valve
Z...	=	Cylinder
LT	=	Longitudinal conveyor (main section)
QT	=	Transverse conveyor (adjacent section)
HQ	=	Lift transverse unit
DA	=	Damper
①	=	Start pulse after end of start-up
②	=	Release cyclic travel

Function plans

Transfer to transverse section (TFE 1)

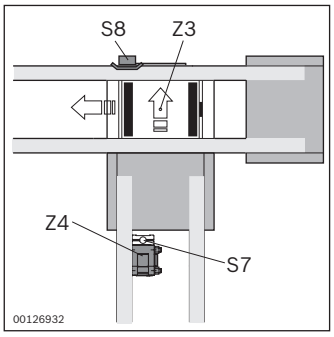


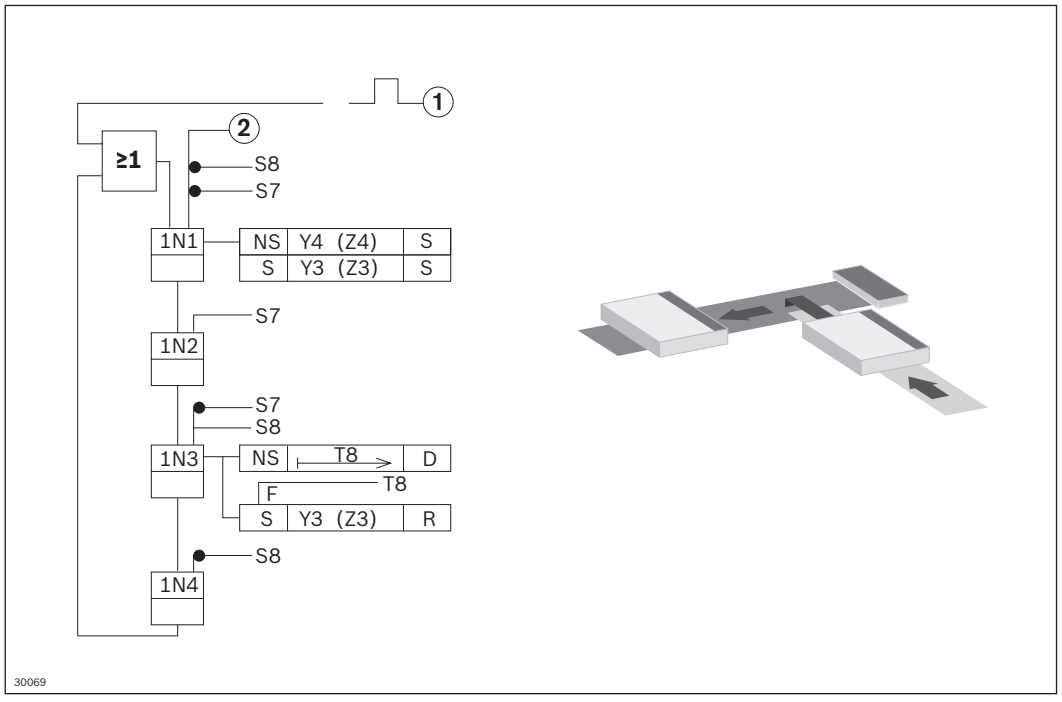


S2 = WT after VE1 (Z1)
S3 = WT in position on HQ (Z2) (WI/M rocker)
T3 = Delaying time 100 ... 200 ms
S5 = Enable main section 1
Y1 = Main section VE (Z1)
Y2 = Lifting cylinder HQ (Z2)

Function plans

Transfer to longitudinal section (TFE 2)

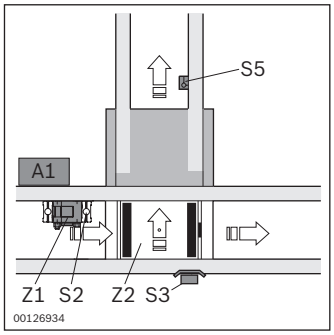


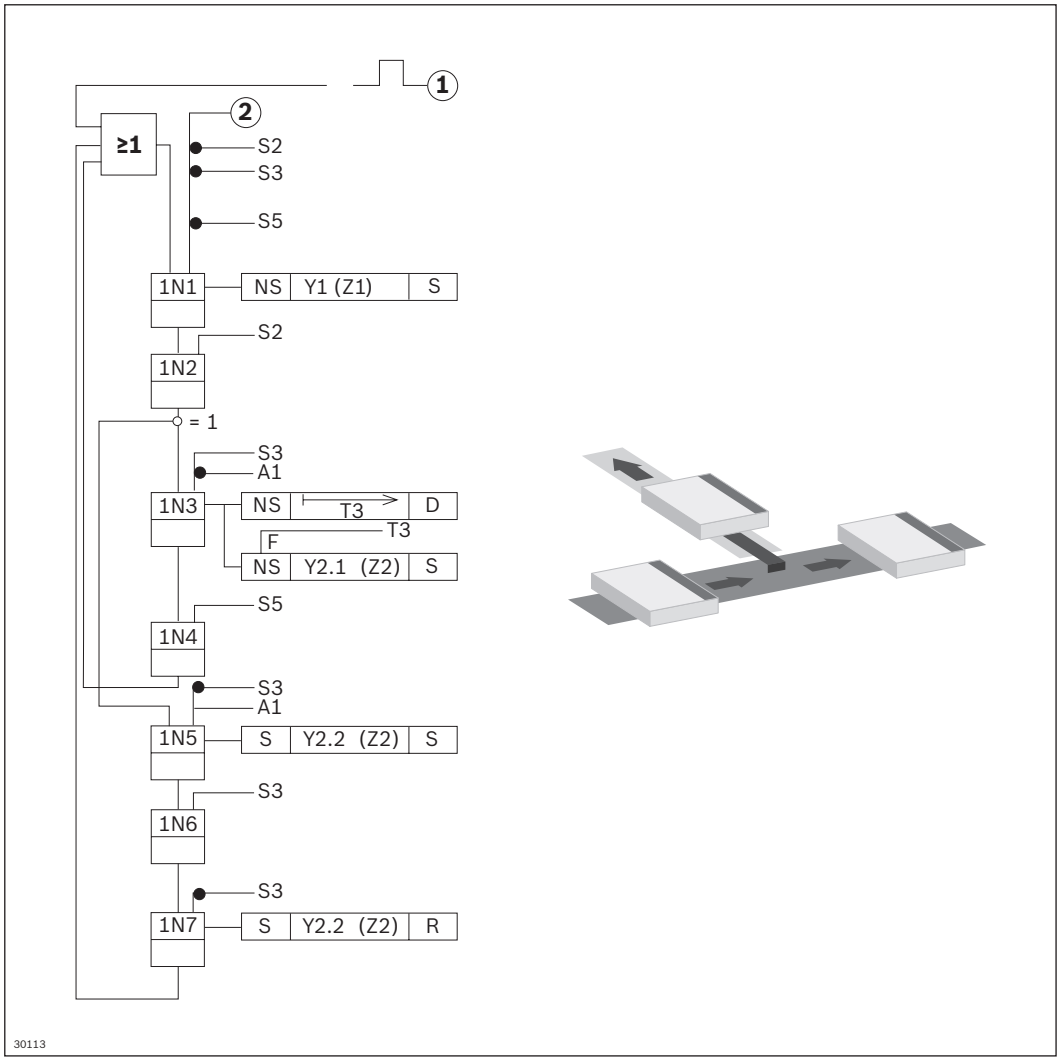


S7 = WT after VE4 (Z4)
S8 = WT in position on HQ (WI/M rocker)
T8 = Delaying time 100 ... 200 ms
Y3 = EQ lifting cylinder (Z3)
Y4 = Adjacent section VE (Z4)

Function plans

Transverse conveyor (separating, outfeeding) (TFE 3)

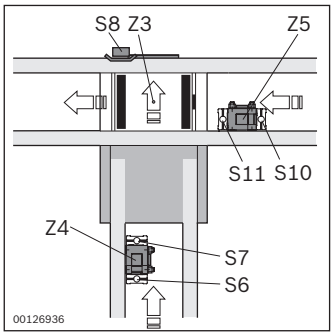


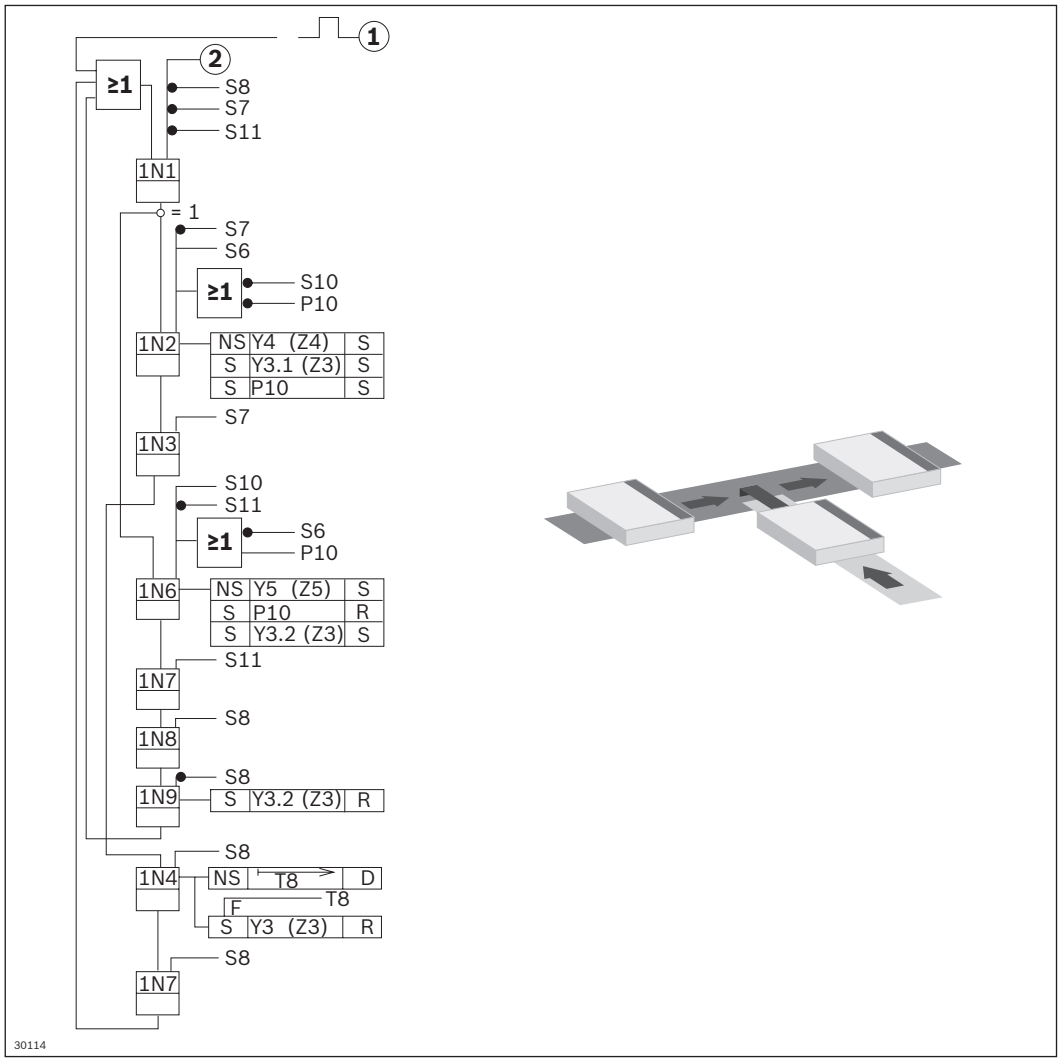


S2 = WT after VE1 (Z1)
S3 = WT in position on HQ
T3 = Delaying time 100 ... 200 ms
S5 = Enable branch section
Y1 = Main section VE (Z1)
Y2 = Lifting cylinder HQ (Z2)
P10 = Priority main section
A1 = Identification system with straight-ahead signal
(0 = branching
1 = straight)

Function plans

Transverse conveyor (separating, feeding) (TFE 4)

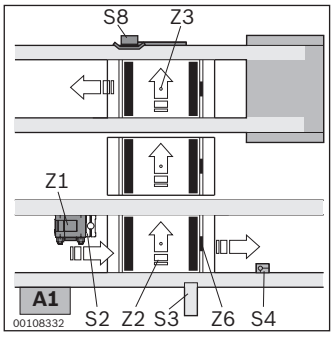


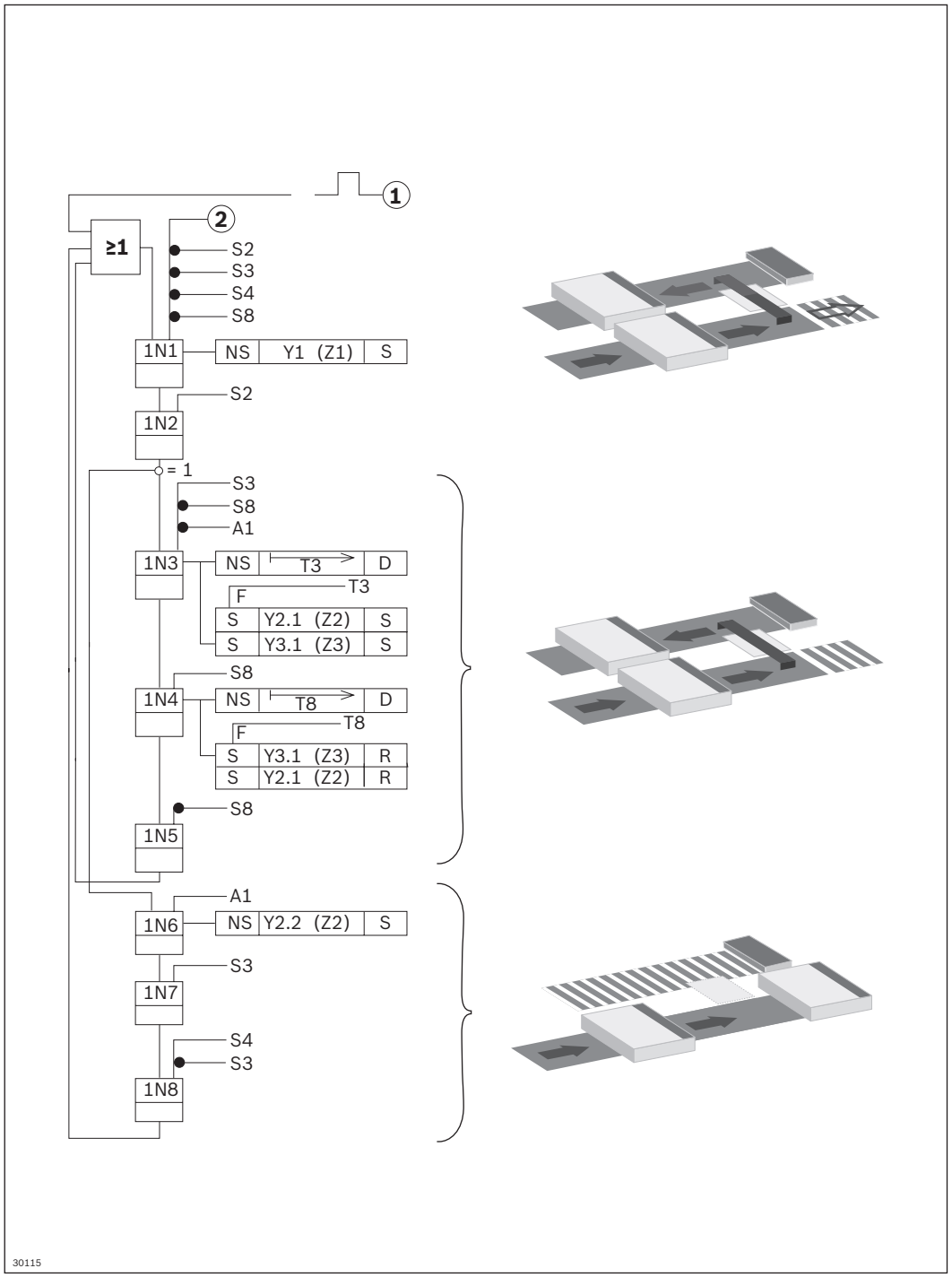


T8	=	Delaying time 100 ... 200 ms
S6	=	WT before VE4 (Z4)
S7	=	WT after VE4 (enable branch section)
S8	=	WT in position on HQ (WI/M rocker)
S10	=	WT before VE5 (Z5)
S11	=	WT after VE5 (Z5)
Y3	=	HQ lifting cylinder (Z3)
Y4	=	Adjacent section VE (Z4)
Y5	=	Main section VE (Z5)
Y6	=	VE in EQ (Z6)
P10	=	Priority main section

Function plans

EQ 2/TR transverse conveyor (separating, outfeeding) (TFE 5)

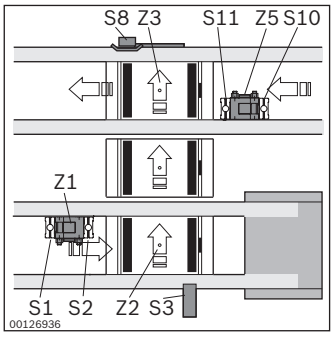


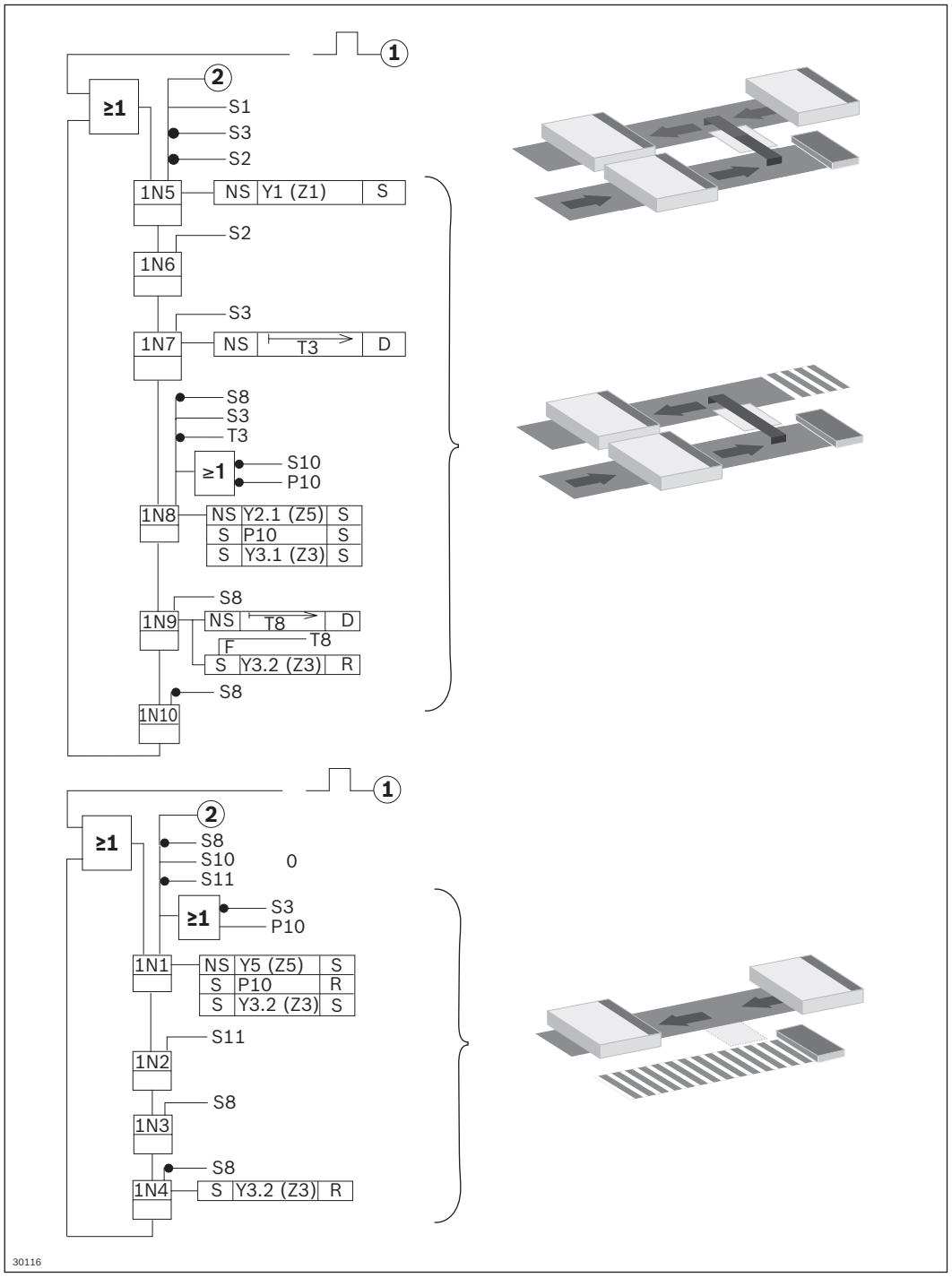


S1	=	WT in position at VE1 (Z1)
S2	=	WT after VE1 (Z1)
S3	=	WT in position on EQ Part 1
T3	=	Switch-on delay 100 ... 200 ms
T8	=	Switch-on delay 100 ... 200 ms
S4	=	Enable main section 1
S6	=	WT before VE4 (Z4)
S7	=	WT after VE4
S8	=	WT on EQ Part 2 (WI/M rocker)
Y1	=	Main section VE (Z1)
Y2.1/2.2	=	EQ lifting cylinder (Z2)
Y3.1/3.2	=	EQ lifting cylinder (Z3)
A1	=	Straight-ahead signal (0 = branching 1 = straight)

Function plans

EQ 2/TR transverse conveyor (feeding) (TFE 6)

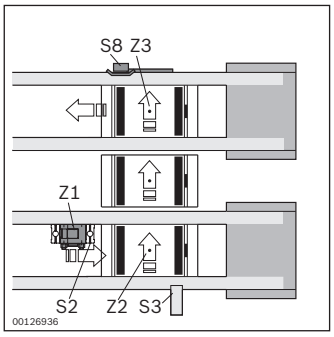


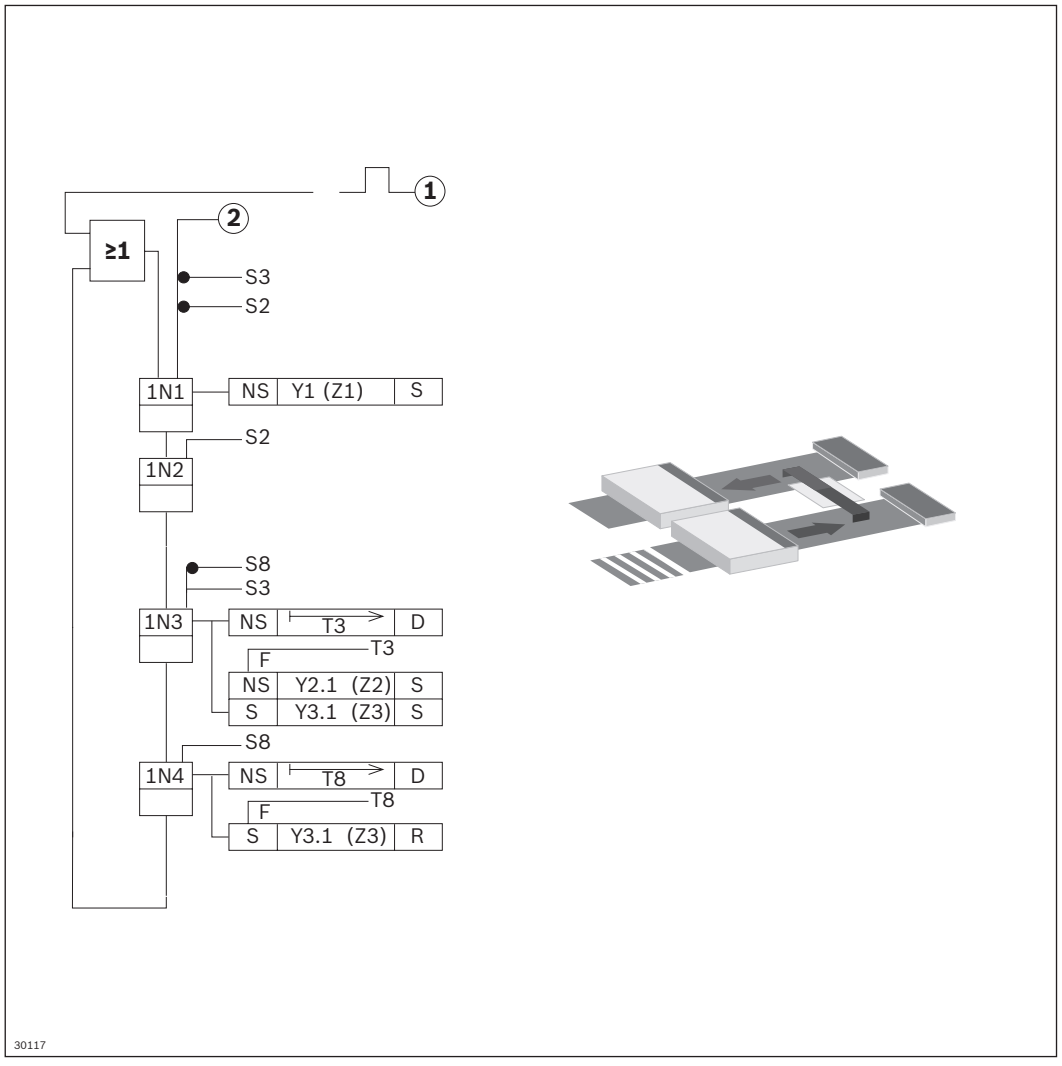


S1	=	WT in position at VE1 (Z1)
S2	=	WT after VE1 (Z1)
S3	=	WT in position on EQ Part 1
T3	=	Switch-on delay 100 ... 200 ms
T8	=	Switch-on delay 100 ... 200 ms
S8	=	WT on EQ-part 2
S10	=	WT before VE5 (Z5)
S11	=	WT after VE5 (Z5)
Y1	=	Main section VE (Z1)
Y2.1/2.2	=	EQ lifting cylinder (Z2)
Y3.1/3.2	=	EQ lifting cylinder (Z3)
Y5	=	Main section VE (Z5)
P10	=	Priority

Function plans

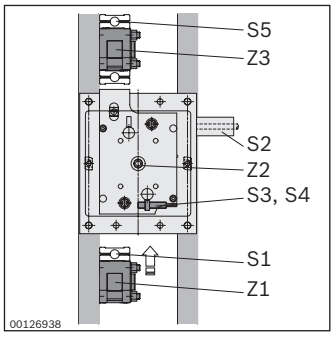
EQ 2/TR transverse conveyor (transfer) (TFE 7)

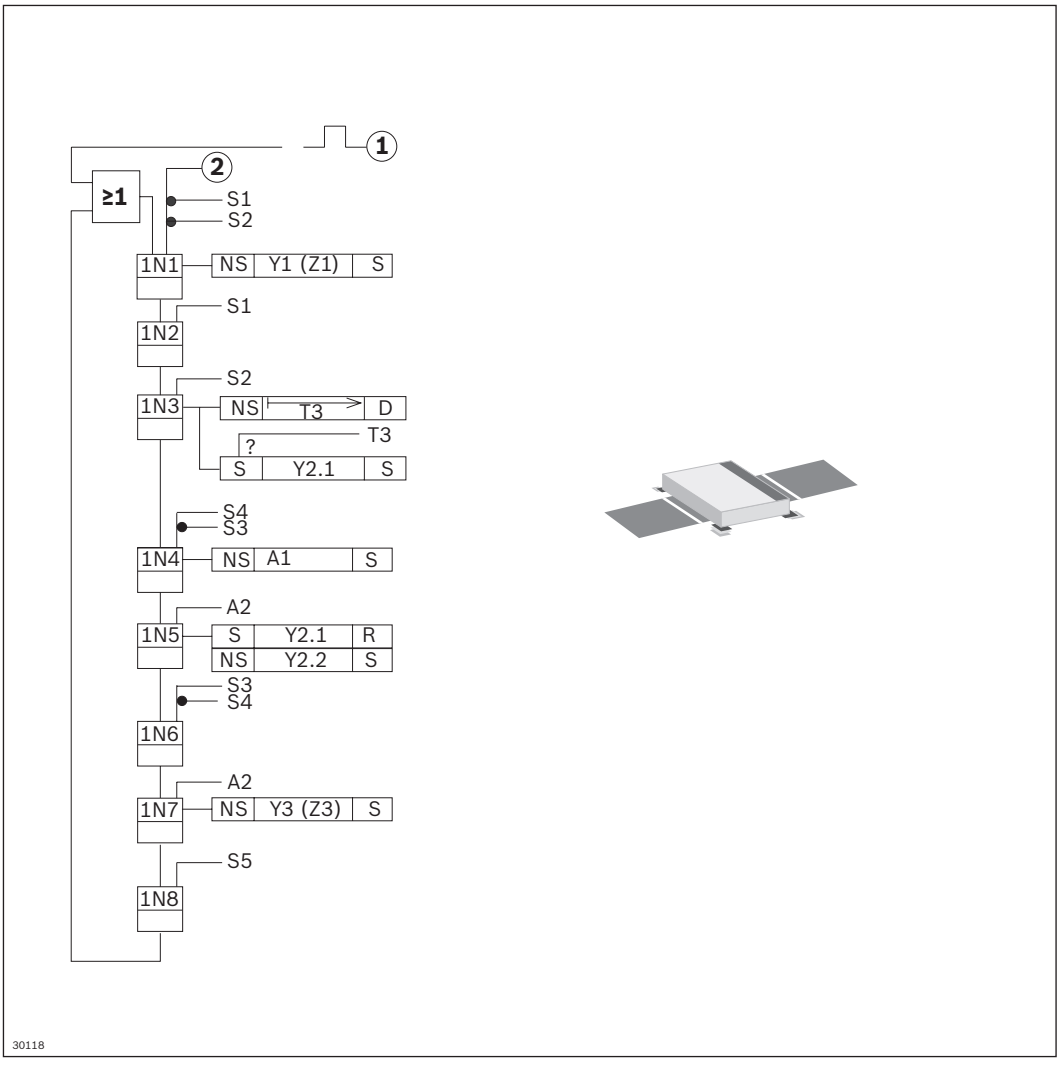




S1 = WT in position at VE1 (Z1)
S2 = WT after VE1 (Z1)
S3 = WT in position on EQ Part 1
T3 = Switch-on delay 100 ... 200 ms
T8 = Switch-on delay 100 ... 200 ms
S8 = WT on EQ Part 2 Enable main section 1 (WI/M rocker)
Y1 = Main section VE (Z1)
Y2.1/2.2 = EQ lifting cylinder (Z2)
Y3.1/3.2 = EQ lifting cylinder (Z3)

PE conveyor function unit





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S1 = WT after VE1
S2 = WT arrival
S3 = Bottom end lifting position
S4 = Top end lifting position
S5 = WT after VE2
Y1 = Open VE1 (Z1)
Y2 = WT lift
Y3 = Open VE (Z3)
A1 = Start process
A2 = Process ended

Function plans

HQ 2
– No HQ 2 position sensing

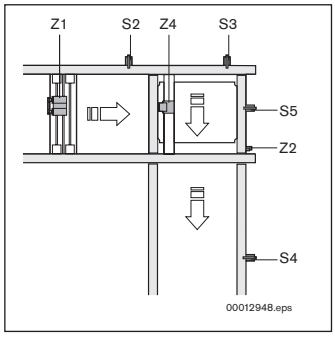
VE 2
– Stop gate remains open in joint standby position

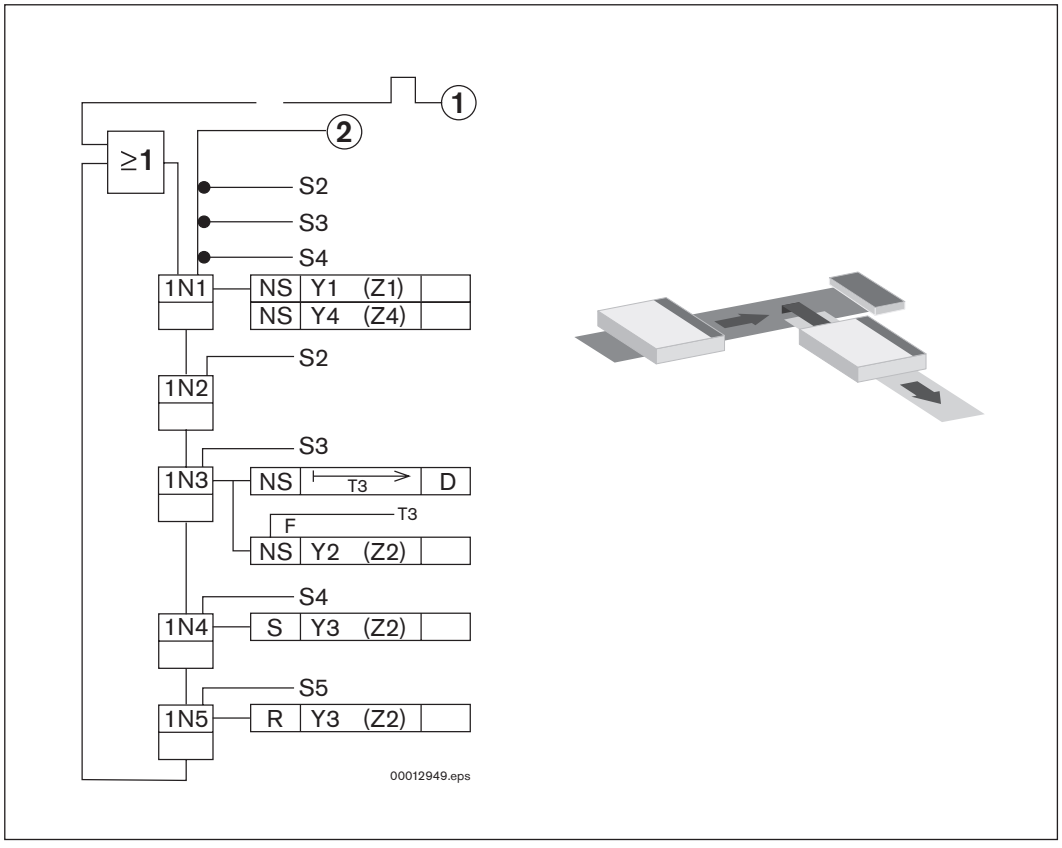
General
– WT 2 cannot be detected from below by proximity switch

DA 2
– For TFE 2 and TFE 4 conveyor function units, damper extension must be delayed. This ensures that the HQ 2 is already in the upper position

Function plans

Transfer to transverse section (TFE 1) function plan for HQ 2/C-H

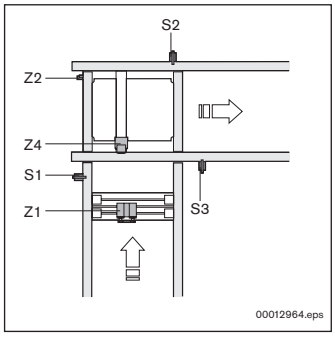


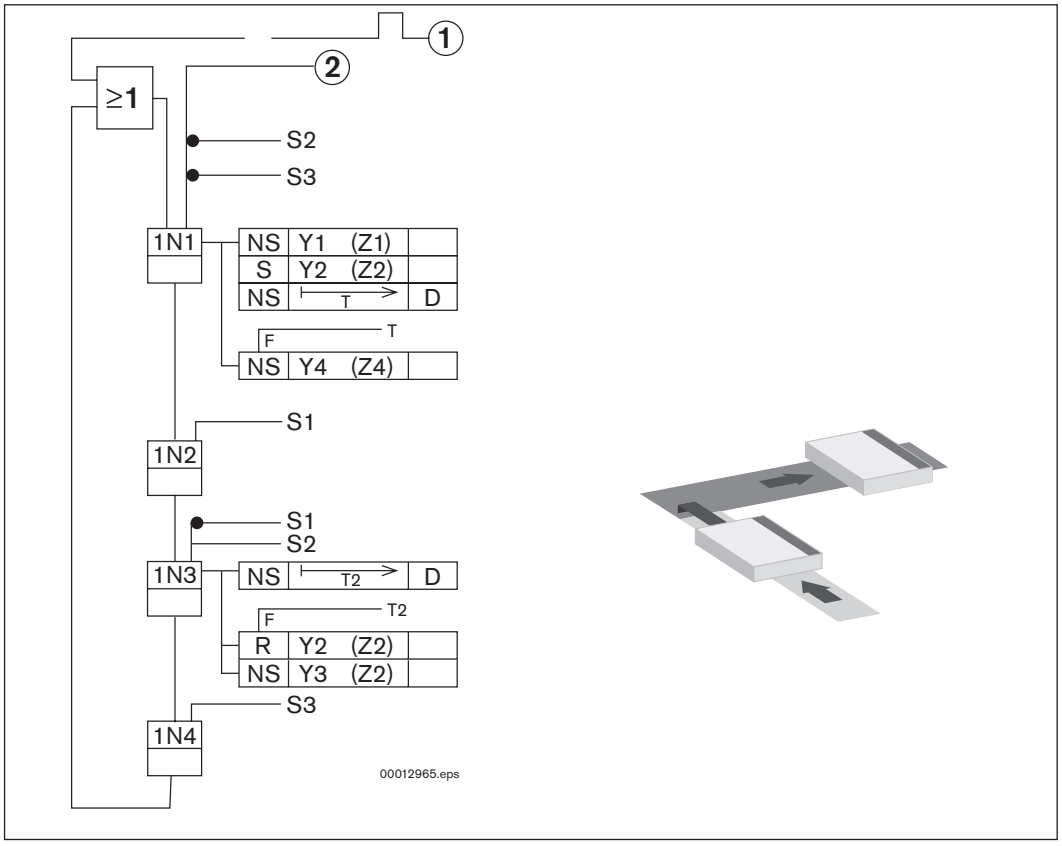


①	=	Start pulse after end of start-up
②	=	Enable cyclic travel
S2	=	WT after VE2
S3	=	WT in position on HQ 2
S4	=	Enable adjacent section, HQ 2 free
S5	=	HQ 2 down
Y1	=	Main section VE 2 (Z1)
Y2	=	HQ 2 up (Z2)
Y3	=	HQ 2 down (Z2)
Y4	=	Extend DA 2 damper (Z4), stop position
Note:		Central position of HQ 2 is centered by springs (without pressurization)
Note:		Distance Z1–Z3 IWT +200 mm

Function plans

Transfer to transverse section (TFE 2) function plan for HQ 2/C-H

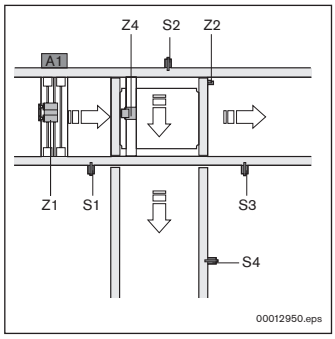


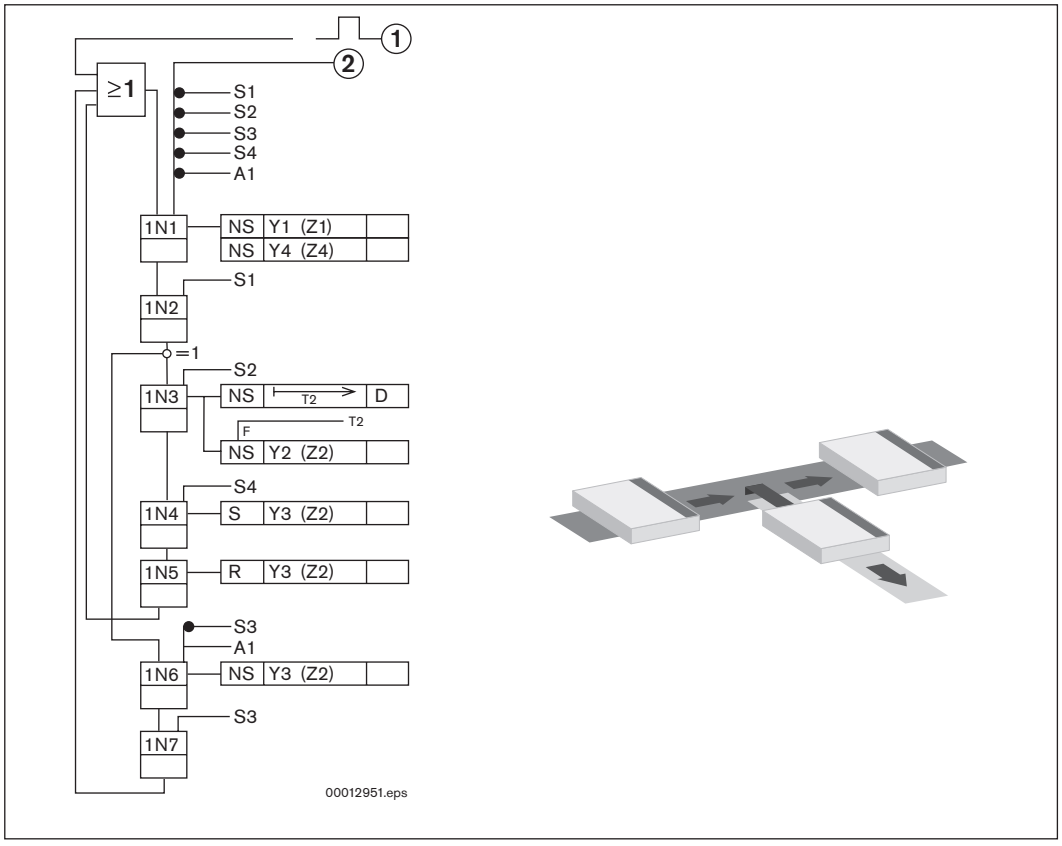


①	=	Start pulse
②	=	Enable cyclic travel
S1	=	WT after VE 2
S2	=	WT in position on HQ 2
S3	=	Enable main section, HQ 2 free
Y1	=	Adjacent section VE 2 (Z1)
Y2	=	HQ 2 up (Z2)
Y3	=	HQ 2 down
Y4	=	Extend DA 2 damper
Note:		Distance Z1–Z3 bWT +200 mm

Function plans

Outfeeding from longitudinal conveyor (TFE 3) function plan for HQ 2/C-H

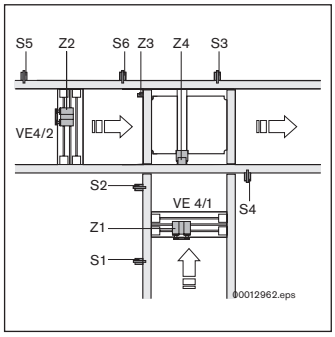


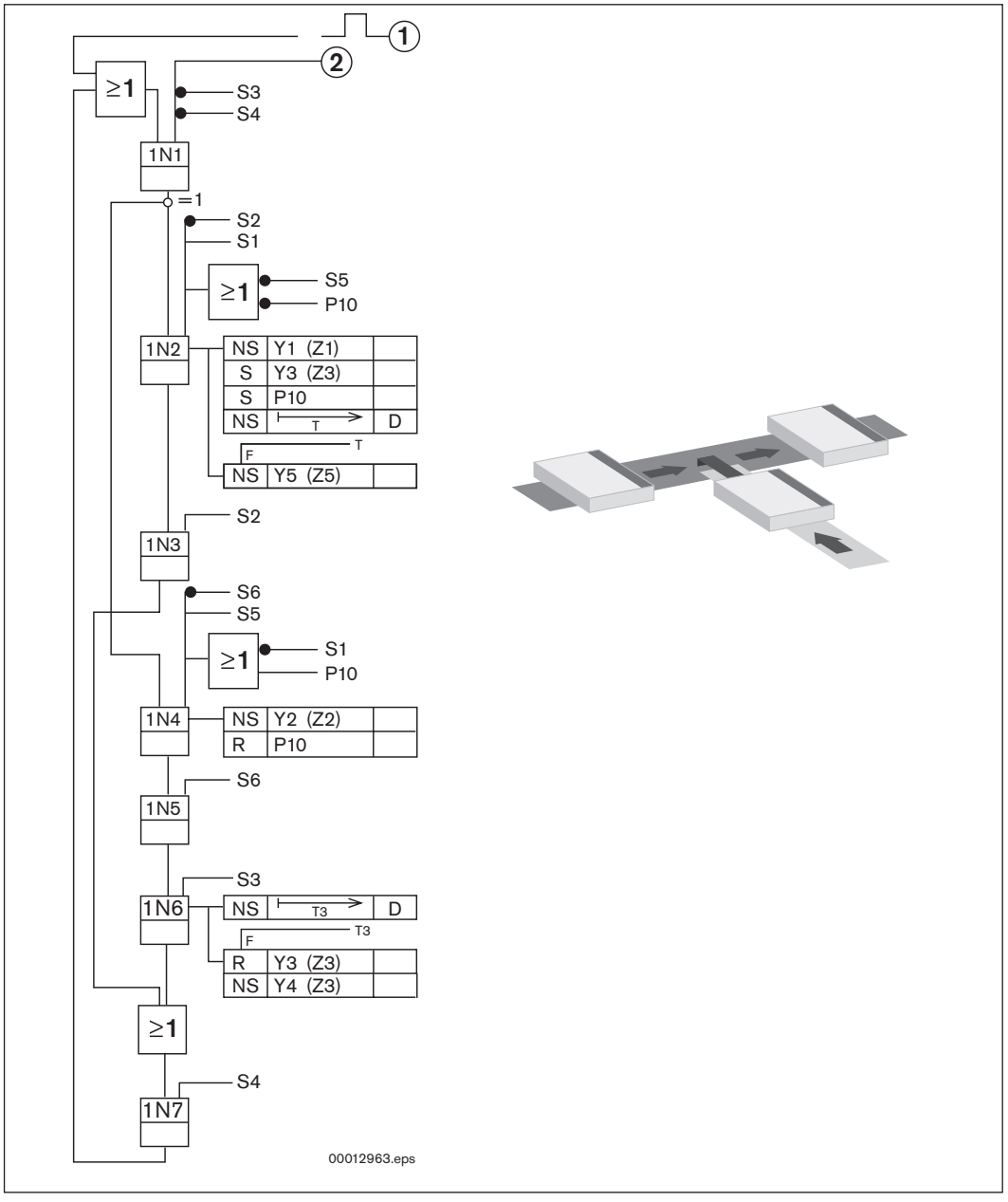


①	=	Start pulse
②	=	Enable cyclic travel
S1	=	WT after VE4
S2	=	WT in position on HQ 2
S4	=	Enable adjacent section, HQ 2 free
S3	=	Enable main section, HQ 2 free
S5	=	HQ 2 down (Z2)
Y1	=	Main section VE 2 (Z1)
Y2	=	HQ 2 up (Z")
Y3	=	HQ 2 down (Z2)
Y4	=	Extend DA 2 damper
A1	=	Straight-ahead signal
Note:		Central position (WT 2 stop position) of HQ 2 is centered by springs (without pressurization)
Note:		Distance Z1–Z3 IWT +200 mm Distance S2–S3 = min. 200 mm

Function plans

Infeeding to longitudinal conveyor (TFE 4) function plan for HQ 2/C-H





①	=	Start pulse after end of start-up
②	=	Enable cyclic travel
S1	=	WT before VE 2
S2	=	WT after VE 2
S3	=	WT in position on HQ 4
S4	=	WT after VE 4
S5	=	WT before VE 2
S6	=	WT after VE 2
Y1	=	Adjacent section VE 2 (Z1)
Y2	=	Adjacent section VE 2 (Z2)
Y3	=	HQ 2 up (Z3)
Y4	=	HQ 4 down; not required
Y5	=	Extend DA 2 damper (Z4)
P10	=	Priority

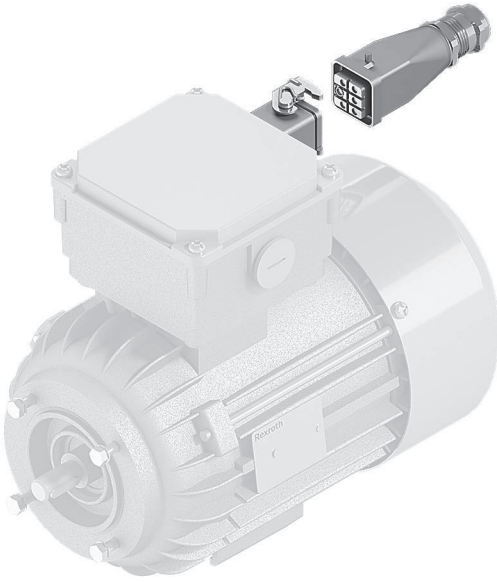
Motor data

Electrical connection requirements:
Connection to a 3-phase, 5-wire system (L1, L2, L3, N, PE); a connection plan is included in the terminal box.
All motors are equipped with a thermal contact*, which has to be connected to an overload switch-off.

All of the motors have an IP 55 rating.

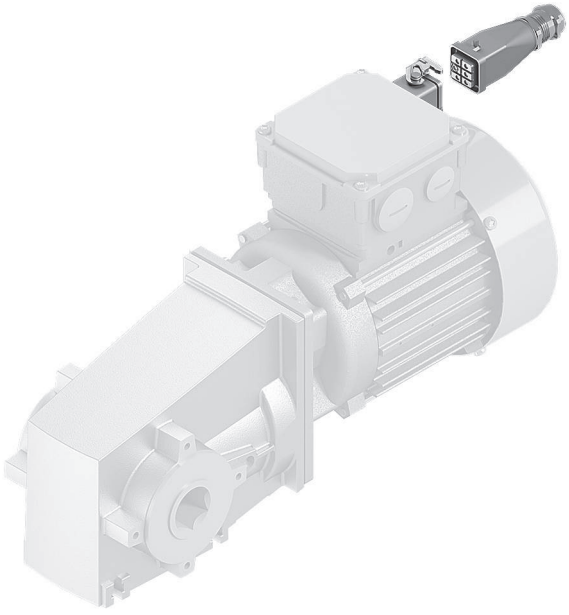
* Bi-metal thermal contact, tripping at 150 °C ± 5 °C

Motor types without Index b



Motor connection with plug (AT = S) and 3A metal industrial plug-in connector for motor types without Index b, e.g., 734

Motor types with Index b



Motor connection with plug (AT = S) and 3A metal industrial plug-in connector for motor types without Index b, e.g., 734b

Motor data

Performance data

Note: 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%	
	200 V ±10%		400 V +10...-12%	
Voltage U at f = 60 Hz	220 V ±10%	400 V ±10%	460 V ±10%	575 V ±10%
	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
	614b	–	–	–	0.49	–	0.56	0.12	0.14
	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
	644b	–	–	–	–	0.75	0.6	0.25	0.29
	714b	–	1.75	1	0.8	–	0.64	0.25	0.3
	716b	–	1.45	0.85	0.6	0.55	0.66 ... 0.68	0.18	0.22
	716	x	1.3	0.75	0.6	0.62	0.68	0.18	0.22
	734b	–	2.3	1.35	0.95	0.95	0.72 ... 0.77	0.37	0.45
	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
	738b	–	1.4	0.8	0.55	0.5	0.60 ... 0.63	0.12	0.14
	744b	–	–	–	1.4	–	0.77	0.55	0.68
	814b	–	3	1.75	–	1.27	0.68 ... 0.69	0.55	0.64
	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 an operating time of up to 70% and frequency converter operation.

Certification for the motor, cable and plug components:

IE3 motors: CE, cURURS, CCC

Motors with Index b: CE/CCC (50 Hz), CE/cURUS (60 Hz)

< 40	1[1]
45	0.95
50	0.90
55	0.85
60	0.8

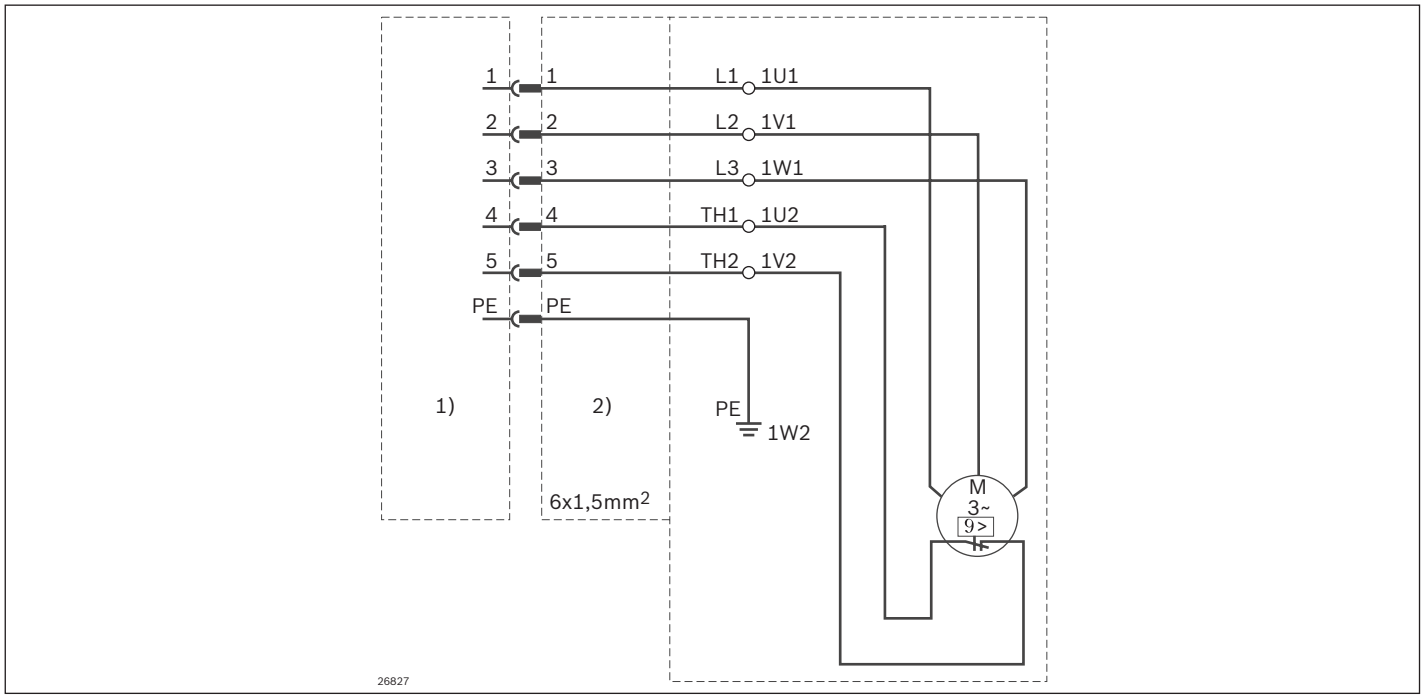
[1] Rated motor power (0.37; 0.25; 0.12 kW)

Rated motor power

The ambient operating temperature T_U influences the rated power P_N of the gear motors.

Motor connection

Motor connection with cable/plug (AT = 1), circuit diagram

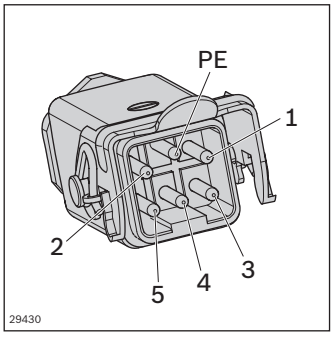


1 Connection cable side
2 Motor side

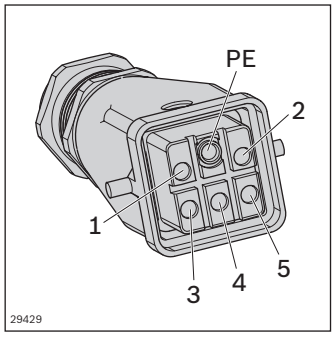
The plug connection consists of UL components.

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

Motor protection switch

Motor type	50 Hz			60 Hz			Motor protection switch	
	Rated output	Voltage Δ (V)	Y (V)	Rated output	Voltage Δ (V)	Y (V)	Δ (A)	Y (A)
524	0.09	200	N/A	0.10	220	400	0.75	0.43
		N/A	400		N/A	460	N/A	0.37
		N/A	N/A		N/A	575	N/A	0.30
624	0.18	200	N/A	0.22	220	400	1.30	0.75
		N/A	400		N/A	460	N/A	0.65
		N/A	N/A		N/A	575	N/A	0.55
634	0.25	200	N/A	0.29	220	400	1.90	1.10
		N/A	400		N/A	460	N/A	1.00
		N/A	N/A		N/A	575	N/A	0.80
734	0.37	200	N/A	0.42	220	400	2.15	1.25
		N/A	400		N/A	460	N/A	1.10
		N/A	N/A		N/A	575	N/A	0.90
734a	0.45	200	N/A	0.52	220	400	2.75	1.60
		N/A	400		N/A	460	N/A	1.40
		N/A	N/A		N/A	575	N/A	1.15
814	0.55	200	N/A	0.63	220	400	3.30	1.95
		N/A	400		N/A	460	N/A	1.70
		N/A	N/A		N/A	575	N/A	1.30
824	0.75	200	N/A	0.86	220	400	4.40	2.55
		N/A	400		N/A	460	N/A	2.25
		N/A	N/A		N/A	575	N/A	1.90
716	0.18	200	N/A	0.22	220	400	1.50	0.85
		N/A	400		N/A	460	N/A	0.70
		N/A	N/A		N/A	575	N/A	0.60

Country applicability

	Europe	Switzerland	USA	Canada	Brazil	Australia	New Zealand	South Korea	China	India
Line voltage (3x....)	400 V	400 V	480 V	480 V 575 V	220 V 380 V 440 V	400 V 415 V	400 V 415 V	220 V 380 V 440 V	380 V	415 V
Line voltage tolerance	±10%	±10%	±10%	±10%	±10%	±5%	±5%			±5%
Line frequency	50 Hz	50 Hz	60 Hz	60 Hz	60 Hz	50 Hz	50 Hz	60 Hz	50 Hz	50 Hz

Transportation and nominal speeds v_N

Modular unit	v_N (m/min)	50 Hz v [m/min]	Motor type	60 Hz v [m/min]	Motor type
AS 2/B–150	18	18.5	734a	18.9	734
	15	15.7	734	13.4	734
	12	11.2	734	13.4	734
	9	8.5	734	10.2	734
	6	5.7	716	6.8	716
AS 2/B–250	18	18.5	824	18.9	824
	15	15.7	824	15.7	824
	12	10.9	824	11.1	814
	9	9.2	814	8.9	734
	6	5.9	734	5.9	716
AS 2/C–100	18	18.5	634	16.6	624
BS 2/C–100	15	13.9	624	13.3	624
CS/C	12	11.1	624	11.1	624
AS 2/R–300	9	9.2	624	8.3	624
BS 2/R–300	6	5.5	624	6.7	624
KU 2/90					
KU 2/180					
BS 2/C–H	18	16.8	744b[1]/814b[2]	15.8	734b
AS 2/C–400	15	13.2	734b	15.8	734b
BS 2/R–H	12	10.4	734b	12.5	734b
AS 2/R–1200	9	8.1	714b	9.8	714b
	6	5.4	716b	6.5	716b
AS 2/C–700	18	16.8	824	17.2	824
AS 2/R–2200	15	14.4	824	14.3	824
	12	11.9	824	12.0	824
	9	8.4	814	8.1	734
	6	5.4	734	6.5	734
AS 2/C–250	18	18.5	734b	17.5	734b
BS 2/C–250	15	14.6	734b	14.5	734b
AS 2/R–700	12	12.0	734b	11.5	734b
BS 2/R–700	9	9.6	734b	9.0	734b
	6	5.9	734b	5.5	714b
BS 2	18	18.0	634	18.0	634
BS 2/M, BS 2/M	15	15.0	634	14.4	634
BS 2/T, BS 2/TE	12	12.0	634	10.8	624
CU 2/90	9	9.0	624	8.7	624
BS 2/K	6	6.0	624	5.4	624
EQ 2/T, EQ 2/TE					
EQ 2/M					
BS 2/130					

v_N = nominal speed
v = conveyor medium speed
[1] For voltage class: B (see p. 11-25)
[2] For voltage class: A, D (see p. 11-25)

Transportation and nominal speeds v_N

Modular unit	v_N (m/min)	50 Hz v [m/min]	Motor type	60 Hz v [m/min]	Motor type
HQ 2/U	18	15.8	524	19.0	524
	15	13.2	524	15.8	524
	12	10.6	524	12.7	524
	9	8.3	524	10.0	524
	6	5.7	524	6.8	524
KE 2	18	18.0	524	18.0	524
EQ 2/TR, EQ 2/TR-90	15	15.0	524	14.4	524
	12	12.0	524	10.8	524
	9	9.0	524	9.0	524
HQ 2/S, HQ2/U2	6	6.0	524	5.7	524
HQ 2/C-H	18	18.5	634	16.6	624
	15	13.9	624	13.3	624
	12	11.1	624	11.1	624
	9	9.2	624	8.3	624
	6	5.5	624	6.7	624
HQ 2/U-H	18	16.7	624	20.4	624
	15	16.7	624	15.3	624
	12	12.5	624	10.2	624
	9	8.4	624	7.6	624
	6	6.3	624	6.1	624

v_N = nominal speed
v = conveyor medium speed

Modular unit	v_N (m/min)	50 Hz v [m/min]	50 Hz v_T (m/min)	Motor type	60 Hz v [m/min]	60 Hz v_T (m/min)	Motor type
BS 2/R–V–1200	18	16.8	42.0	744b[1]/814b[2]	–	–	–
AS 2/R–V–1200	15	13.2	33.0	734b	15.8	39.5	734b
	12	10.4	26.0	734b	12.5	31.3	734b
	9	8.1	20.3	714b	9.8	24.5	714b
	6	5.4	13.5	716b	6.5	16.3	716b
AS 2/R–V–2200	18	16.8	42.0	824	17.2	43.0	824
	15	14.4	36.0	824	14.3	35.8	824
	12	11.9	29.8	824	12.0	30.0	824
	9	8.4	21.0	814	8.1	20.3	734
	6	5.4	13.5	734	6.5	16.3	734

v_N = nominal speed
v = conveyor medium speed
v_T = max. transportation speed
[1] For voltage class: B (see p. 11-25)
[2] For voltage class: A, D (see p. 11-25)

Compressed air consumption of TS 2*plus* units

Unit	Type	Rotation angle (°)	Diameter d (mm)	Lift (mm)	Volume* (cm³)
Block cylinder	PE 2, HQ 2 (BG 1)	–	50	25	59
	EQ 2, HQ 2 (BG 2) HQ 2/U2	–	2 x 50	25	118
	HQ 2/U-H	–	2 x 50	25	118
		–	3 x 50	25	177
		–	4 x 50	25	236
HP 2 lift positioning unit		–	63	80	249
				125	390
				175	546
				225	701
				275	856
				325	1011
				375	1166
				425	1321
PE 2/X, PE 2/H positioning unit, HQ 2/C-H lift transverse unit		–	4 x 63	33	103
PE 2/XP positioning unit	BG 1	–	40	34	43
	BG 2	–	50	34	67
HD 2 lift rotate unit		–	50	40	201
		–	50	90	452
		90	80	125	628
		180	80	180	905
HD 2/H lift rotate unit	BG 1 rotating cylinder	90; 180	–	–	146
	BG 2, 3 rotating cylinder	90; 180	–	–	283
	BG 1 lifting cylinder	90	40	185	232.4
		180	40	80	100.5
	BG 2 lifting cylinder	90	63	185	576
		180	63	80	249.4
	BG 3 lifting cylinder	90	100	185	1452.9
		180	100	80	628.3
Stop gate	VE 2, VE 2/L, VE 2/M	–	32	20	16
	VE 2/X	–	44	9	11
	VE 2/D-60	–	34	8	5
	VE 2/D-175	–	38	6	5
	VE 2/D-200	–	50	10	16
	VE 2/D-100H	–	25	20	10
	VE 2/D-250H	–	40	24	30
	DA 2/100H	–	35	24	20
	DA 2/250H, VA 2/250-H	–	40	24	30
Damper	DA 2/60	–	20	18	6
	DA 2/100	–	35	35	34
VA 2 slide stop	3 842 528 808	–	32	20	16
	3 842 191 721	–	20	17	5

* Details on request

Material number overview

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0 842 090 032	2-9	3 842 338 757	5-40, 5-41	3 842 518 828	3-236, 3-237,	3 842 525 862	7-53
0 842 090 034	2-9	3 842 338 758	5-40, 5-41		4-40, 5-78	3 842 525 863	7-53
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The Drive & Control Company

Rexroth
Bosch Group

Bosch Rexroth AG
Postfach 30 02 07
70442 Stuttgart, Germany
www.boschrexroth.com

Find your local contact person here:
www.boschrexroth.com/contact

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