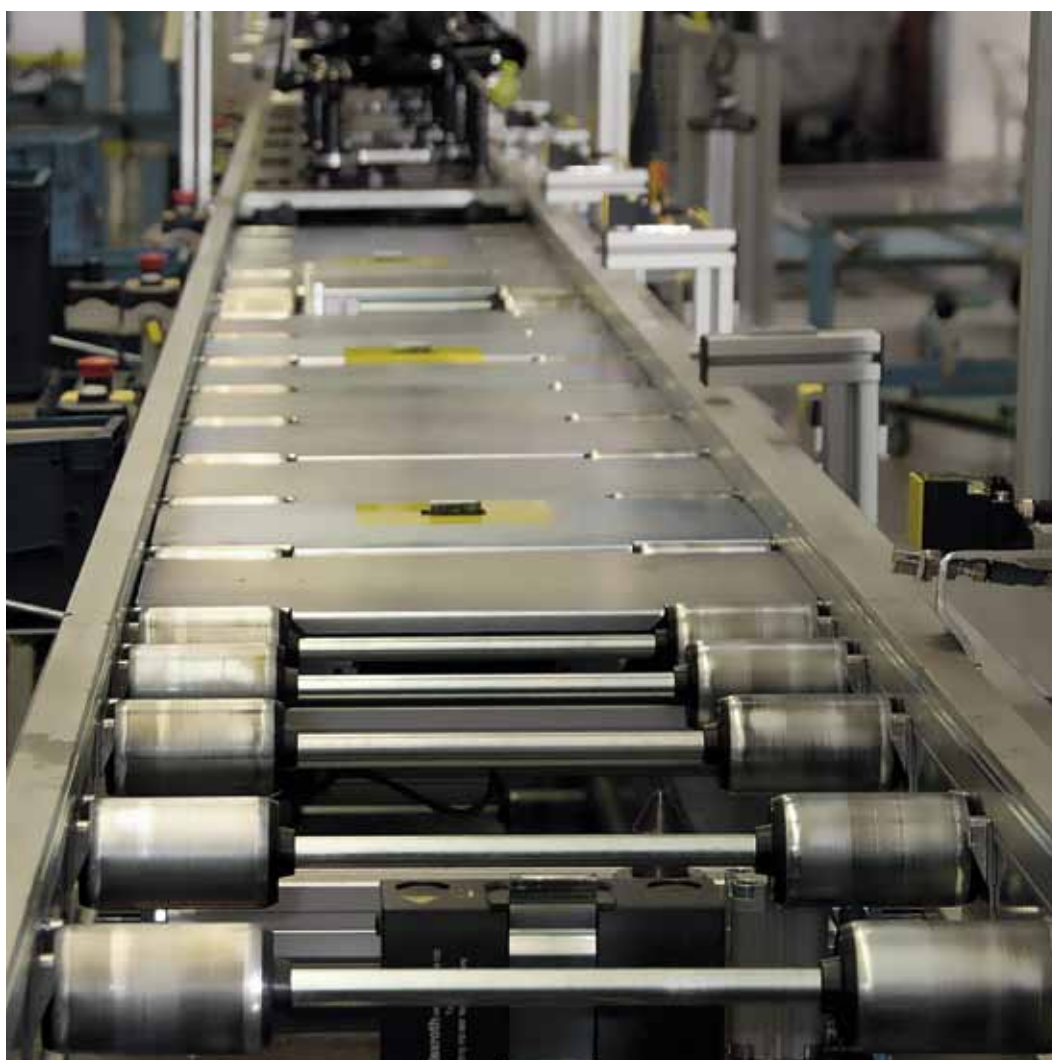
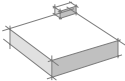
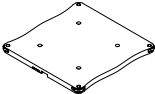
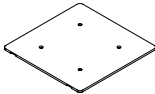
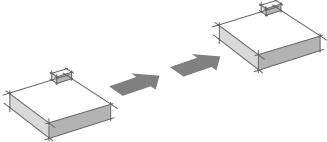
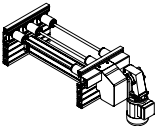
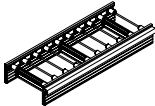
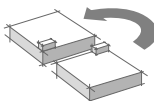
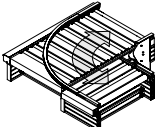
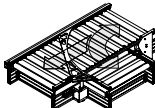
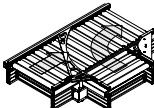
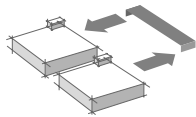
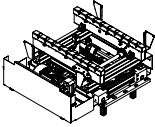
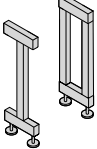
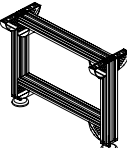
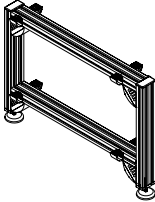
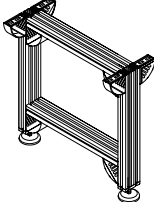
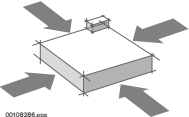
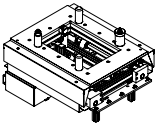
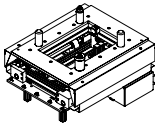
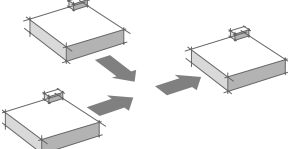
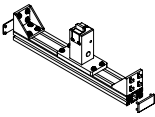
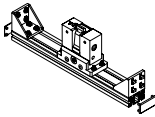
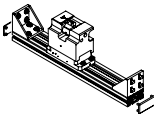
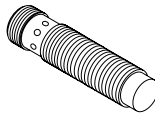


TS 5 Transfer System

3.0



TS 5 system overview

				
	  2-4	  2-8		
				
	  3-4	  4-3		
	  3-6	  4-7		
	  3-8	  4-10		
				
	  5-4	  5-6	  5-8	
				
	  6-4			
				
	  7-4	  7-5	  7-6	
				
00108285.eps	  8-3	  8-4		
				
00108295.eps	  9-7	  9-8	  9-9	  9-11

Parameters

Recurring parameters:		
b	width (track width in direction of transport)	BG bevel wheel material 1: plastic; 2: sintered metal
l	length graduated according to the roller dimensions $l = p \times N$ (stored default values)	TR roller material 1: steel, galvanized; 2: steel, nitrocarburized
p	roller spacing (pitch) 130 mm; 195 mm; 260 mm; 325 mm	l_{WT} workpiece pallet length, note the interdependencies for p and l _{WT} !
LG	lateral guide material 1: steel; 2: plastic; 3: aluminum	N number of rollers, multiplier for length ($l = p \times N$), pricing factor in the price list.
Specific parameters:		
AT	motor connection K: with terminal box; S: with cable/plug	AS 5/ HQ 5
DP	drive position	AS 5
DP_r	drive position, right (only for Open Center drive unit)	AS 5
DP_l	drive position, left (only for Open Center drive unit)	AS 5
DD	king shaft for drive units 1: on one side with 1 gear motor 2: on two sides with 1 gear motor 3: on two sides with 2 gear motors	AS 5, ST 5 for conveyor units 1: on one side 2: on two sides
GM	gear motor 0: without (interface SW27); 1: with gear motor SW27; 2: without (interface to SEW connection, round shaft Ø 20)	AS 5
v_N	nominal speed (m/min)	AS 5, HQ 5
CD	curve direction / diverter direction 1: left; 2: right	CU 5, DI 5
DSM	king shaft installation on main section 1: left; 2: right	CU 5, DI 5, JU 5
DST	king shaft installation on secondary section 1: left; 2: right	CU 5, DI 5, JU 5
JD	junction direction 1: left; 2: right	JU 5
SC	protective covers / protective casing (see product pages) 1: without protective covers / protective casing; 2: with protective covers / protective casing;	CU 5, DI 5, JU 5, HQ 5, PE 5
b_L (b_{WT})	track width in direction of transport (longitudinal conveyor)	HQ 5, PE 5, PE 5/T
b_Q (l_{WT})	track width in direction of transport (transverse conveyor)	HQ 5, PE 5, PE 5/T
OFD	direction of the outfeed (see product pages) 1: left; 2: right; 3; to both sides	HQ 5
AO	installation location H: ST 5/H; XH: ST 5/XH	SZ 5
MT	delivery condition 0: assembled; 1: not assembled	SZ 5
H	transport height	SZ 5

Symbols

 No. A 10 3 842 532 998	Part number; size of packing unit (here: 10 x 3 842 532 998)		Reversible operation possible
No. 3 842 998 786 b = ... mm l = ... mm SC = ...	Indicate the desired parameters on the order		Reversible operation not possible
 3-4	Reference to another page		Accumulation operation possible
	Width of profile T-slot (for fixtures on the profile T-slot)		Accumulation operation not possible
	Delivered in single parts, not pre-assembled		
	Delivered as components, partially pre-assembled		
	Delivered fully assembled		
	Compressed air connection required		
	Pneumatic push-in connector		
	Conveying level		
	Reference to technical data/dimensions		
	Reference to further information		

Table of contents

TS 5 features	1
Workpiece pallets	2
Drive unit	3
Longitudinal conveyors	4
Curves/diverters/junctions	5
Transverse conveyors	6
Leg sets	7
Positioning and orientation	8
Transportation control	9
Identification systems	10
Tools	11
Planning	12
Technical data	13
Overview of part numbers	14
Index	15

TS 5 features

TS 5 – The roller conveyor in a class by itself

The TS 5 transfer system transports loads of up to 400 kg. Rexroth offers you a comprehensive system of conveyor modules: drive modules, workpiece pallets, roller sections, curves, diverters, lift transverse units, positioning units and components for transportation control. Everything is designed for modular flexibility and pre-assembled and can be combined as needed using a single interface.

Driven by high-quality technology: the king shaft

The TS 5 transfer system with king shaft offers you considerable advantages compared to the usual chain drives:

- Absolutely maintenance-free
- Noise-free operation
- High energy efficiency through effective performance with low drive force requirements
- Friction can be adjusted by hand (after removing the protective cover on the king shaft).

New possibilities in all directions

As opposed to a chain-driven conveyor system, TS 5 can be used without any limitations. Its drive concept gives you a great amount of planning freedom. You can, for example, branch the system off to the right or to the left. This is very economical because no additional drive modules are needed in many system layouts.

Flexible planning, simple set-up, quick commissioning

As a system supplier for all areas of automation, we offer you an extensive, industrially manufactured modular product line-up.

The new TS 5 transfer system is also based on a flexible system of modular components. As a Rexroth customer, this offers you many advantages, including the fact that you will be operating in a familiar environment right from the start of assembly – with everything proceeding quickly and smoothly. As the components for the TS 5 are included in our *MTpro* program, the parts list is generated automatically, which considerably simplifies the entire planning process.

A choice of transport types

Different products require different types of conveyor sections. Accordingly, you can choose whether to transport your goods on a workpiece pallet or directly on a continuous roller conveyor.

Advantages at a glance

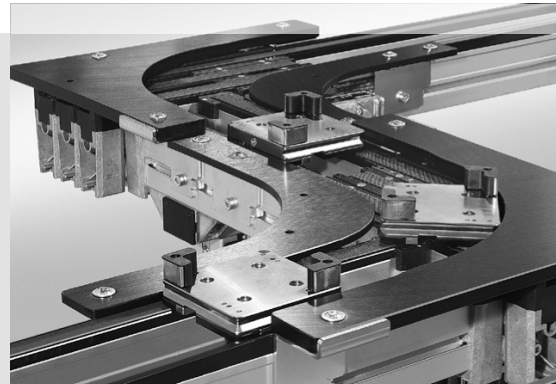
- Fast, cost-effective system planning and expansion:
The conveyor section design allows branching in both directions. And because the assembly space required for the drive is lower than the conveyor height, you can choose to have the drive mounted on either side. As always, all components are available in the *MTpro* planning tool.
- Reliable construction and fast commissioning:
Industrially manufactured modular system with standardized components, resulting in short delivery times. High system uptime thanks to the maintenance-free king shaft drive concept.
- Advantages: No more need for lubrication and greasing.
- Sturdy design:
Suitable for particularly harsh production environments and heavy loads.
- Everything from a single source:
Easy ordering thanks to compatibility with the entire assembly technology product range.

TS 5 features

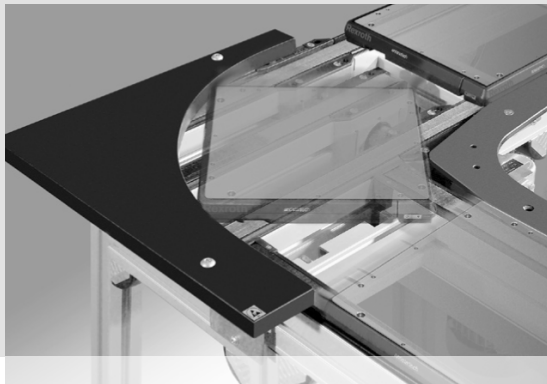
Overview of transfer systems

Material and information flow technology MIT

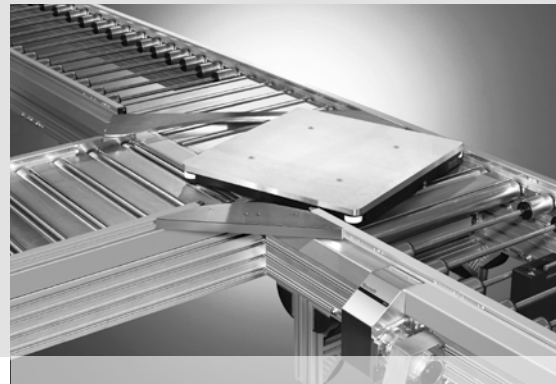
The letters TS stand for a flexible transfer system. The systems – TS 1, TS 2*plus* and TS 5 – differ in size and permissible load. The transfer systems consist of standardized components that are freely combinable to form a system. This permits the construction of numerous variants and provides made-to-measure systems, tailored to the particular assembly task.



TS 1 (3 kg)



TS 2*plus* (240 kg)



TS 5 (400 kg)



ID 40



ID 200

Identification and data storage systems store all product and process-related data directly on the workpiece pallet and enable local or central data processing.

TS 5 features

Selection data

Available workpiece pallets (WT)

— Dimensions

Workpiece pallets with a surface of 80 x 80 mm (TS 1) to 1200 x 1200 mm (TS 2*plus*) allow adjustment to the respective workpiece geometry as needed. Several workpieces can also be fixed on one workpiece pallet (WT), if needed.

Permissible workpiece pallet (WT)

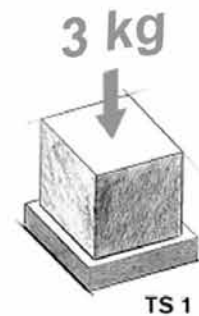
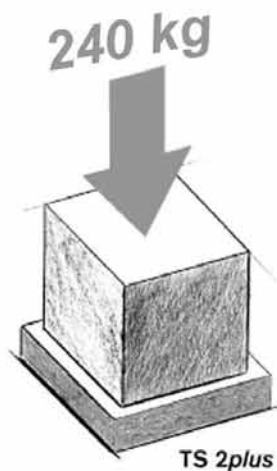
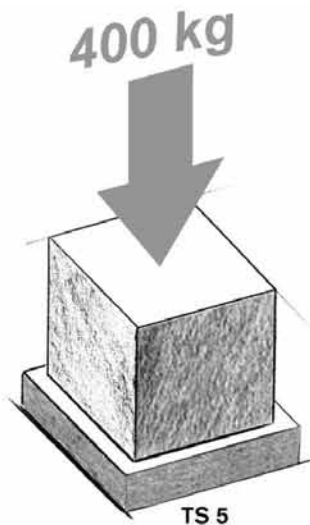
— Masses

To ensure that the permissible surface pressure between the WT and conveyor medium is not exceeded, the WT total mass is limited for each WT size.

The WT total mass results from:

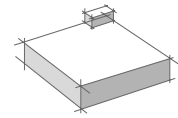
- Workpiece pallet mass
- WT load (workpiece, support, etc.)
- Mass of the special equipment (data carrier, etc.)

For workpiece pallets that are not square, please note that the permissible WT total mass may be different for longitudinal conveyors and transverse conveyors.



Workpiece pallets

Workpiece pallets



Workpiece pallet selection

  2-2

Base pallets

  2-4

Accessories

  2-5

Permissible workpiece pallet load

  2-6

Selection of workpiece pallets in accordance with load limits

  2-7

Carrying plates, standard sizes

  2-8

Carrying plates, variable dimensions

  2-9

Workpiece pallet selection

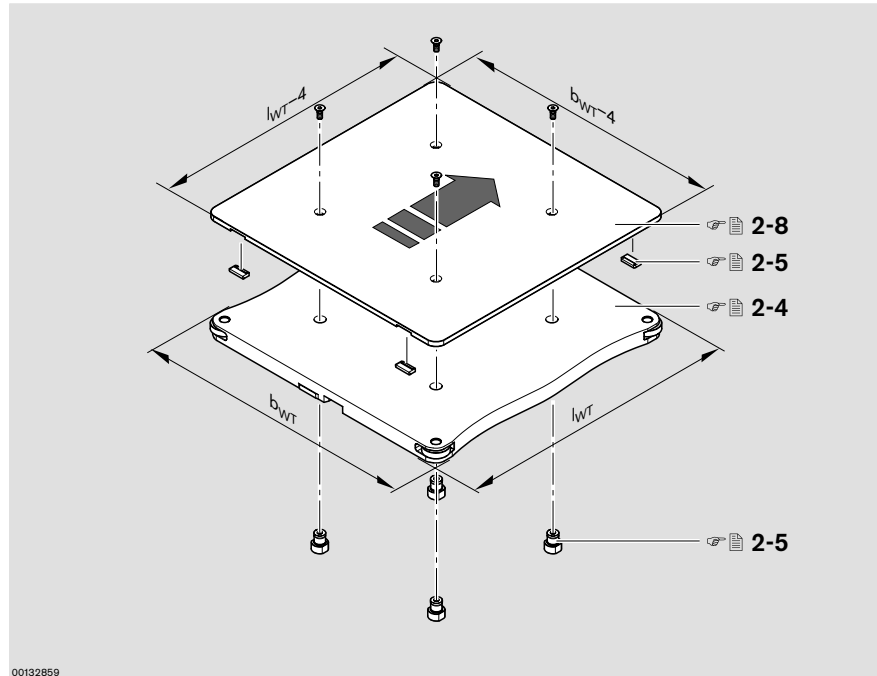
Application and functions

The workpiece pallet transports the workpiece in the transfer system as it goes through the processing stations.

- Defined positioning of the supported workpiece in the processing station is enabled through integrated positioning bushings.
- Integrated damping elements help to avoid noise and damage when workpiece pallets run into each other.
- Workpiece-related information can be transferred with the workpiece during processing using optional data tags. The information can then be evaluated locally and updated.

The orientation of the workpiece pallet on the conveyor section must strictly be observed:

- Traveling through curves/diverters is only possible in a longitudinal conveyor direction (see arrow on workpiece pallet).
- Separating workpiece pallets is only possible in a longitudinal conveyor direction (see arrow on workpiece pallet). A WT can also be brought cleanly to a halt on the outside of a transverse conveyor.
- In order to read out data tags, the workpiece pallet must cross the reader in the proper position.



Versions

The workpiece pallet is a modular system consisting of a base pallet, damping elements, carrying plate, and positioning bushings.

- Workpiece pallet in 6 standard sizes.
- Side rollers reduce friction, particularly in curves, diverters, and junctions.
- Aluminum carrying plates in 2 thicknesses and with variable dimensions. The carrying plate may extend beyond all sides of the base pallet.

Workpiece pallets

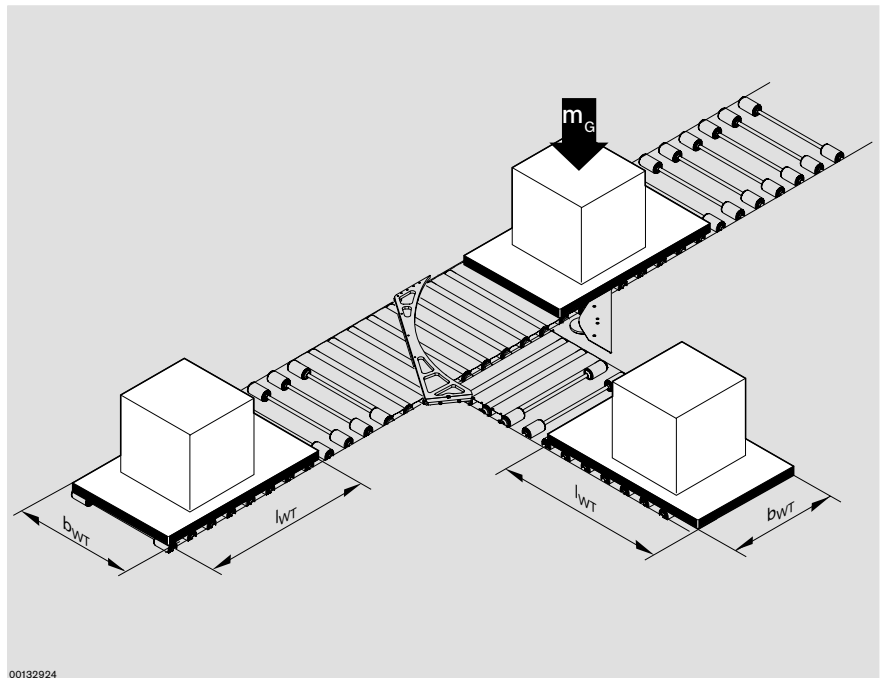
Size and load carrying capacity

The total mass of a workpiece pallet m_G is the sum of the

- Base pallet mass
- Carrying plate mass
- Workpiece support mass
- Workpiece mass
- Identification system mass

Depending on the total mass m_G of the workpiece pallet, the transport system can be set up with various parameters:

- Roller spacing
- Load class of the conveyor unit



00132924

Permissible gravity center position

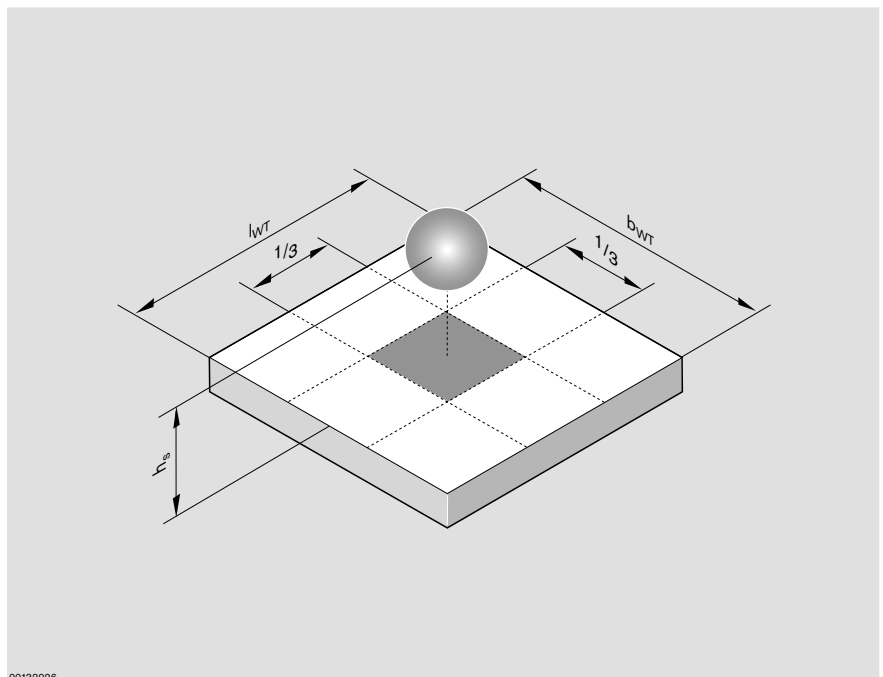
In order to absorb acceleration forces without any problems when separating and changing the direction of the pallets (in curves, when changing to transverse conveyors), the location of the load center position on the workpiece pallet must be noted.

We generally recommend:

1. Loading the workpiece pallet as close as possible to the center
2. do not let the loading center of gravity at height h_s exceed $1/2 b_{WT}$ (where $b_{WT} \leq l_{WT}$)

Limits with junctions and diverters

 5-10



00132926

Workpiece pallets

Base pallets



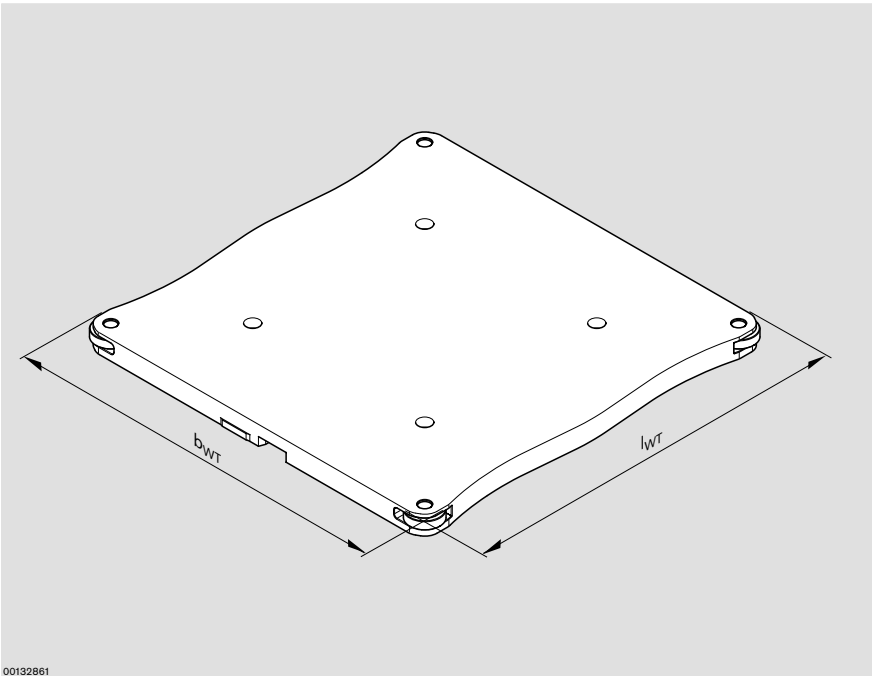
Application:
The base pallet is the interface between the transfer system and the carrying plate with workpiece fixtures.
The base pallet is designed to deal with the highest loads.

- Version:**
- 6 standard sizes
 - Lateral guiding via rollers
 - Optimized contours for easier movement through curves
 - Stop gate stop on interior and exterior of the workpiece pallet surface (in the longitudinal conveyor direction)
 - Damping elements to cushion inductive proximity switches
 - Prepared for installation of mobile data tags from the ID 40 and ID 200 identification systems
 - RFID systems catalog

Material:
Base pallets: PE UHMW, ESD-capable
Rollers: POM

Delivery condition:
Assembled, without carrying plate

- Optional accessories:**
- Positioning bushing kit 2-5
 - Damping elements 2-5
 - Carrying plate 2-8; 2-9



Base pallets

b _{WT} (mm)	l _{WT} (mm)	m _{WT} ¹⁾ (kg)	No.
455	455	6.4	3 842 545 254
455	650	8.9	3 842 545 255
650	650	13.5	3 842 545 256
650	845	17.2	3 842 545 257
845	845	23.2	3 842 545 258
845	1040	27.2	3 842 545 259

¹⁾ Base pallet weight

Workpiece pallets

Accessories

Positioning bushing kits

Application:

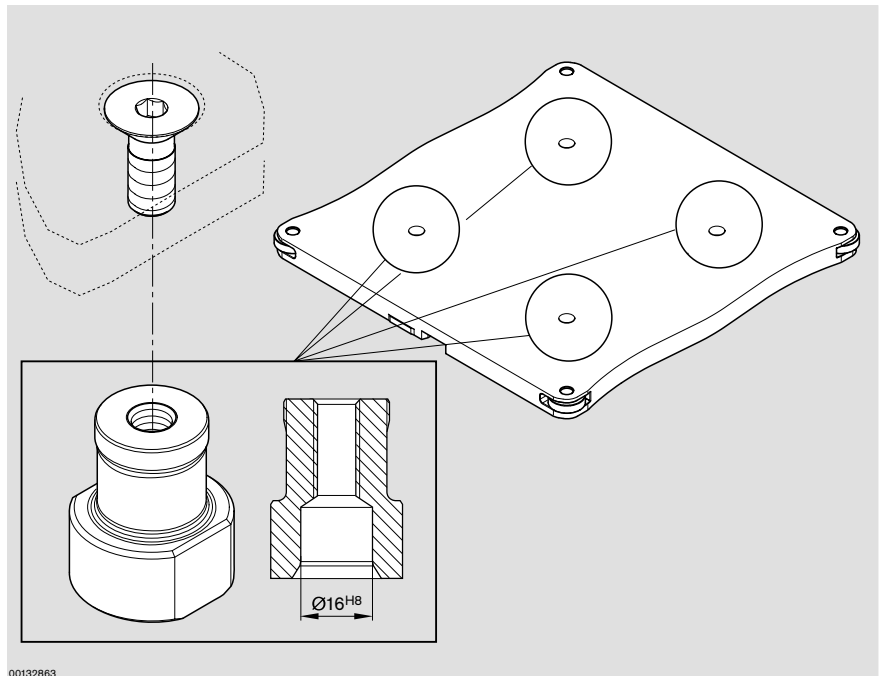
- For fastening the carrying plate
- For a defined workpiece pallet entry in the positioning unit
- Scope of delivery: 4 positioning bushings, 4 screws for fixing the carrying plate

Material:

Hardened steel

Positioning bushing kits

No.	
Set	3 842 545 264



00132863

Damping elements

Application:

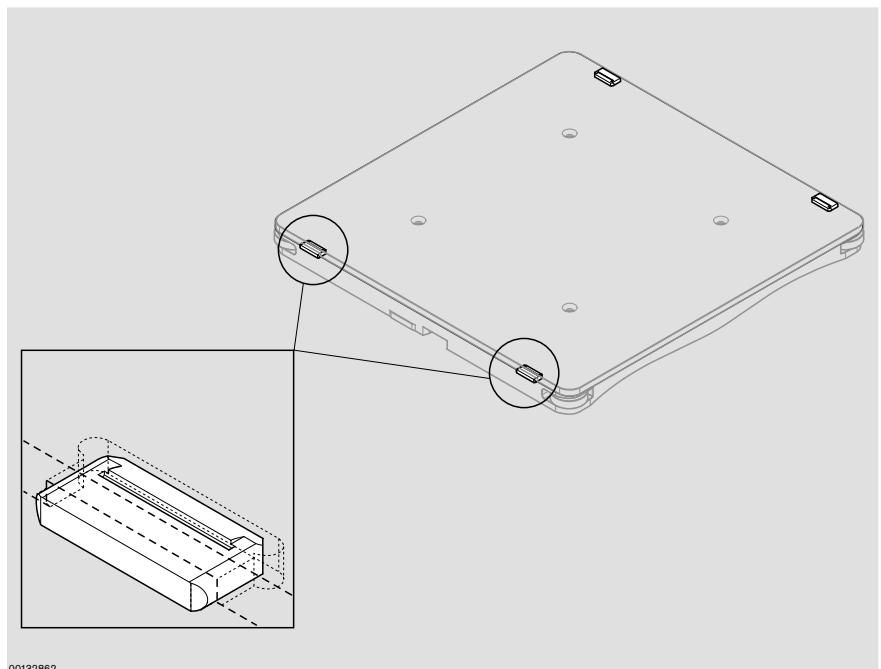
Damping elements for assembly with the carrying plate. They help to avoid noise and damage when workpiece pallets run into each other. Four damping elements (= 1 set) are required per workpiece pallet.

Material:

PUR

Damping elements

No.	
Set	3 842 545 265



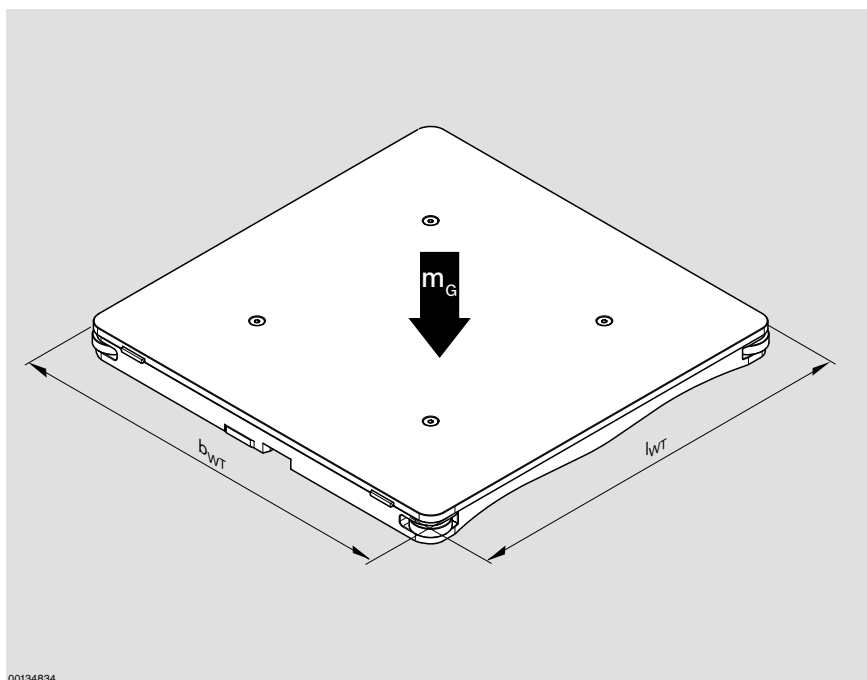
00132862

Workpiece pallets

Permissible workpiece pallet load

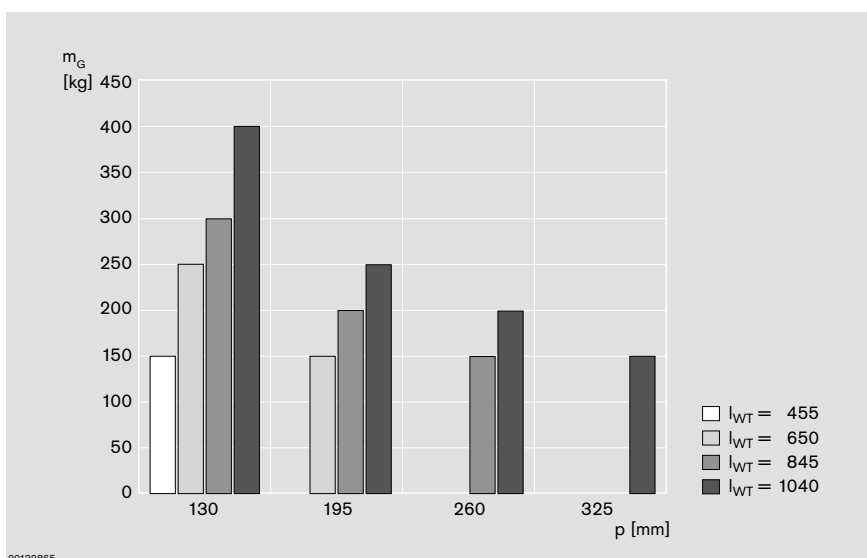
The permissible load from the conveyed goods is calculated based on the permissible WT total mass less the weight of the workpiece pallet itself including supports and special equipment etc.

The permissible total mass depends on the length of the workpiece pallet l_{WT} and on the roller spacing.



00134834

The carrying force per roller is 50 kg, and the WT must always be on at least 3 rollers. The resulting load limits for the longitudinal conveyor are illustrated in the graphic.



00132865

Workpiece pallets

Selection of workpiece pallets in accordance with load limits

For workpiece pallets that are not square, please note that the permissible WT total mass m_{Gzul} is different for longitudinal and transverse conveyors. In the transverse conveyor the shorter side (b_{WT}) is to be used for the calculation.

The resulting permissible WT total masses are shown in the table opposite.

The WT total mass m_G results from:

- Workpiece pallet mass
- WT load (workpiece, support, etc.)
- Mass of the special equipment (data carrier, etc.)

The WT total mass m_G must not exceed the permissible WT total mass m_{Gzul} :

$$m_G \leq m_{Gzul}$$

The workpiece pallet must be designed with sufficient rigidity for the load. The deflection of the workpiece pallet (base pallet can be ignored) must not exceed 1 mm.

Permissible load according to the number of rollers

b_{WT}	l_{WT}	p	m_{Gzul} Longitudinal conveyors	m_{Gzul} Transverse conveyors	m_{WT1}	m_{WT2}	m_{WT3}
(mm)	(mm)	(mm)	(kg)	(kg)	(kg)	(kg)	(kg)
455	455	130	150	150	13.6	17.4	6.7
455	650	130	250	150	18.8	24.3	8.9
		195	150	-			
650	650	130	250	250	28.8	35.3	13.9
		195	150	150			
650	845	130	300	250	36.3	45.5	17.7
		195	200	150			
		260	150	-			
845	845	130	300	300	48.0	60.0	23.8
		195	200	200			
		260	150	150			
845	1040	130	400	300	57.6	72.4	27.7
		195	250	200			
		260	200	150			
		325	150	-			

p = roller spacing (pitch)

d_{Pl} = plate thickness

m_{WT1} = mass of workpiece pallet, fully installed with carrying plate
(mass of base plate + mass of carrying plate $d_{Pl} = 12.7$)

m_{WT2} = mass of workpiece pallet, fully installed with carrying plate
(mass of base plate + mass of carrying plate $d_{Pl} = 19.05$)

m_{WT3} = mass of workpiece pallet, fully installed without carrying plate
(mass of base plate)

Workpiece pallets

Carrying plates, standard sizes

Application:

- for combination with a base pallet to form a WT 5 workpiece pallet
- For finishing fixtures by the user

Version:

- 6 standard sizes in 2 thicknesses
- Carrying plate, ready to assemble with mounting holes

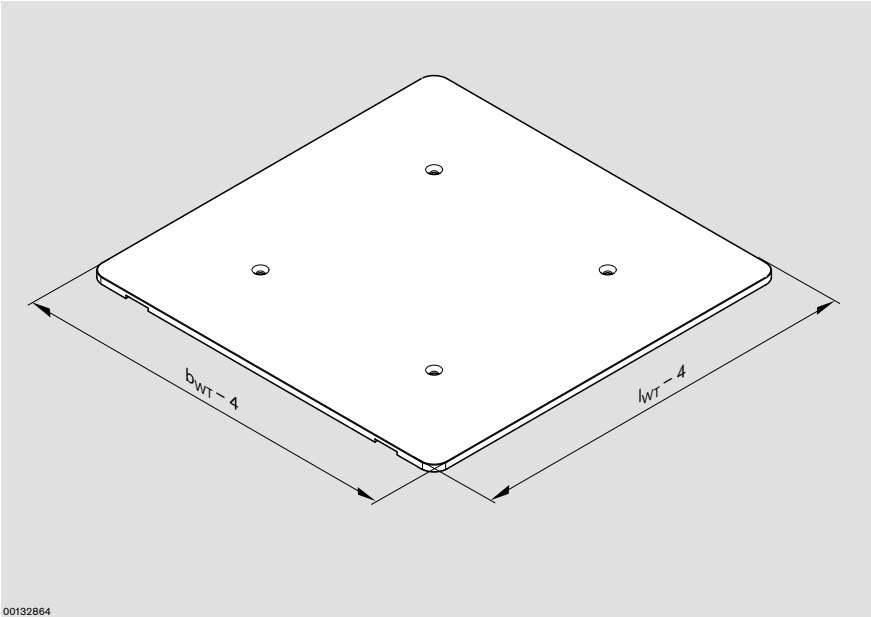
Material:

aluminum

Note:

To assemble the carrying plate on the base pallet:

- positioning bushing kit
3 842 545 264 2-5
- damping elements 3 842 545 265 2-5



Carrying plates (adapted to the base pallets)

b _{WT} (mm)	l _{WT} (mm)	d _{PL} (mm)	m _{PL} (kg)	No.	d _{PL} (mm)	m _{PL} (mm)	No.
455	455	12.7	6.9	3 842 545 081	19.05	10.4	3 842 545 266
455	650	12.7	9.9	3 842 545 084	19.05	14.9	3 842 545 267
650	650	12.7	14.3	3 842 545 087	19.05	21.4	3 842 545 268
650	845	12.7	18.6	3 842 545 090	19.05	27.9	3 842 545 269
845	845	12.7	24.2	3 842 545 093	19.05	36.3	3 842 545 270
845	1040	12.7	29.8	3 842 545 096	19.05	44.7	3 842 545 271

d_{PL} = plate thickness

m_{PL} = plate weight

Workpiece pallets

Carrying plates, variable dimensions

Application:

- for combination with a base pallet to form a WT 5 workpiece pallet
- For finishing fixtures by the user

Version:

- Variable sizes in 2 thicknesses
- Carrying plate, ready to assemble with mounting holes

Material:

aluminum

Note:

The carrying plate may extend beyond all sides of the base pallet. Exception: The HQ 5 cannot be passed through if the carrying plate protrudes on the sides. The user must install dampers in the direction of transport.

To assemble the carrying plate on the base pallet: positioning bushing kit 3 842 545 264  2-5.

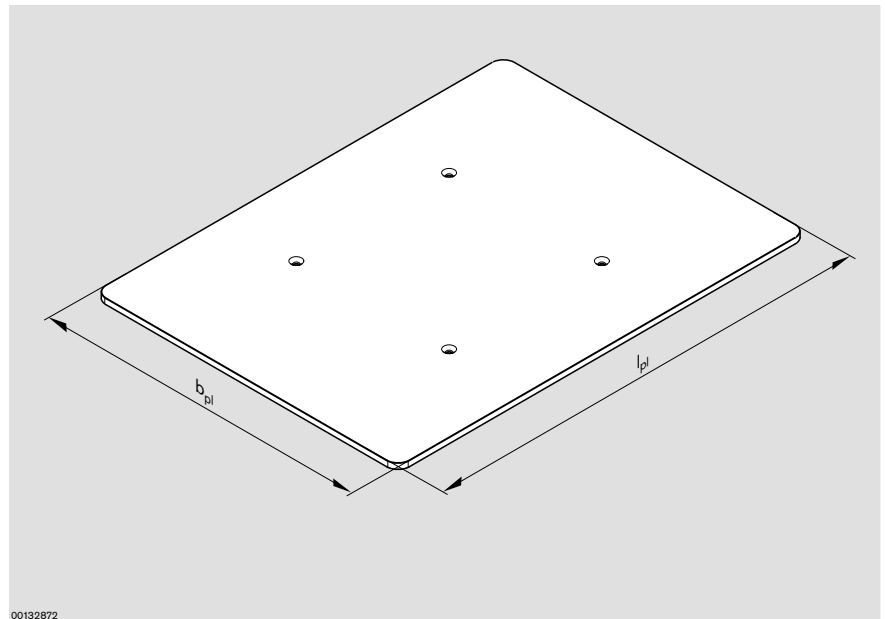
Formula for calculating the weight of a carrying plate:

$$m_{PL} \text{ (kg)} = (b_{PL} - 4) \text{ (mm)} \times (l_{PL} - 4) \text{ (mm)} \times d_{PL} \text{ (mm)} \times 0.0000027 \text{ (kg/mm}^3\text{)}$$

Order examples:

Standard plate without cut-out for damping element:

- $b_{PL} = b_{WT} = 455 \text{ mm}$;
 $l_{PL} = l_{WT} = 455 \text{ mm}$
Ordering dimensions: 451 mm x 451 mm
- $b_{PL} = b_{WT} = 650 \text{ mm}$;
 $l_{PL} = l_{WT} = 650 \text{ mm}$
Ordering dimensions: 646 mm x 646 mm
- $b_{PL} = b_{WT} = 845 \text{ mm}$;
 $l_{PL} = l_{WT} = 845 \text{ mm}$
Ordering dimensions: 841 mm x 841 mm



Carrying plates in various dimensions, adapted to the base pallets $b_{WT} \times l_{WT}$

$b_{WT} \times l_{WT}$ (mm)	b_{PL} (mm)	l_{PL} (mm)	d_{PL} (mm)	No.
455 x 455	$451 \leq b_{PL} \leq 650$	$451 \leq l_{PL} \leq 650$	12.7	3 842 998 562
455 x 650	$451 \leq b_{PL} \leq 650$	$646 \leq l_{PL} \leq 845$	12.7	3 842 998 564
650 x 650	$646 \leq b_{PL} \leq 845$	$646 \leq l_{PL} \leq 845$	12.7	3 842 998 566
650 x 845	$646 \leq b_{PL} \leq 845$	$841 \leq l_{PL} \leq 1040$	12.7	3 842 998 568
845 x 845	$841 \leq b_{PL} \leq 1040$	$841 \leq l_{PL} \leq 1040$	12.7	3 842 998 570
845 x 1040	$841 \leq b_{PL} \leq 1040$	$1036 \leq l_{PL} \leq 1250$	12.7	3 842 998 572

$b_{WT} \times l_{WT}$ (mm)	b_{PL} (mm)	l_{PL} (mm)	d_{PL} (mm)	No.
455 x 455	$451 \leq b_{PL} \leq 650$	$451 \leq l_{PL} \leq 650$	19.05	3 842 998 563
455 x 650	$451 \leq b_{PL} \leq 650$	$646 \leq l_{PL} \leq 845$	19.05	3 842 998 565
650 x 650	$646 \leq b_{PL} \leq 845$	$646 \leq l_{PL} \leq 845$	19.05	3 842 998 567
650 x 845	$646 \leq b_{PL} \leq 845$	$841 \leq l_{PL} \leq 1040$	19.05	3 842 998 569
845 x 845	$841 \leq b_{PL} \leq 1040$	$841 \leq l_{PL} \leq 1040$	19.05	3 842 998 571
845 x 1040	$841 \leq b_{PL} \leq 1040$	$1036 \leq l_{PL} \leq 1250$	19.05	3 842 998 573

$b_{WT} \times l_{WT}$ = base pallet dimensions

b_{PL} = carrying plate width

l_{PL} = carrying plate length

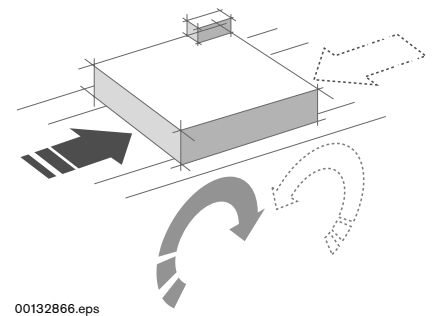
d_{PL} = plate thickness



Workpiece pallets

Drive unit

Drive unit



Design	3-2
Drive layout	3-3
AS 5/XH, AS 5/H drive units (with split rollers)	3-4
AS 5/XH-FR, AS 5/H-FR drive units (with full rollers)	3-6
AS 5/OC drive units (Open Center)	3-8
Drive options for an Open Center section	3-10
Frequency converter (FU)	3-11
Frequency converter (FC) accessories	3-16

Drive unit

Design

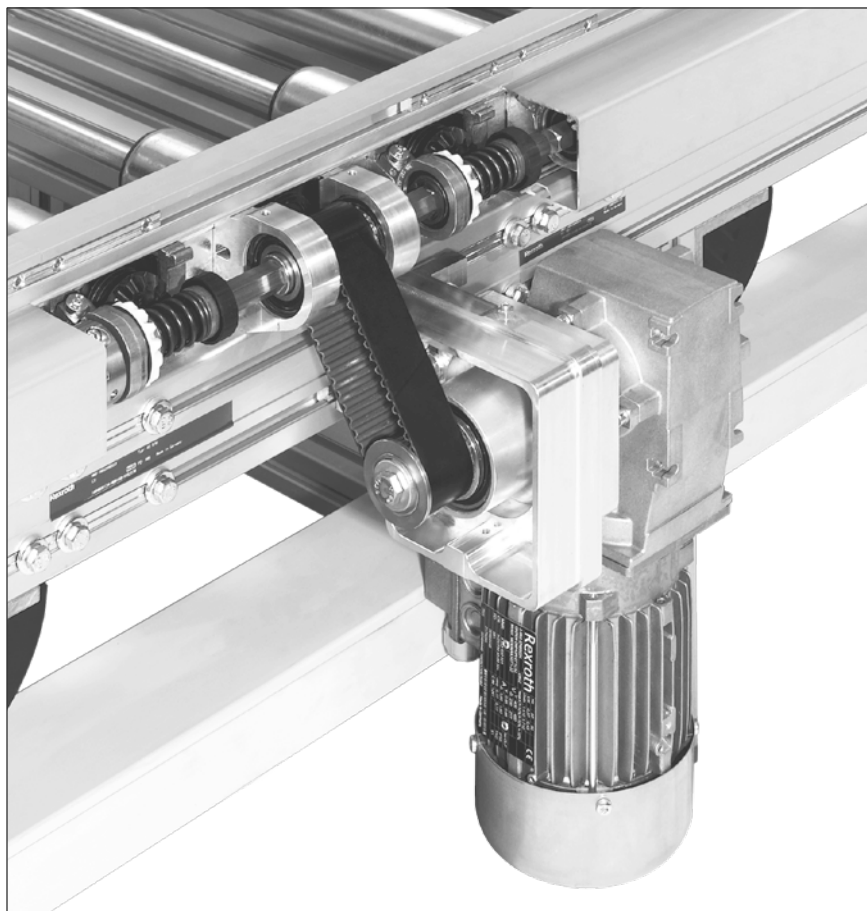
Drive units

Ready-for-operation module to drive conveyor units, curves, diverters, and junctions in 4 system widths and 2 load classes. Versions available with split rollers (standard) or full rollers. The rollers in the conveyor section are driven by a king shaft in the drive unit. The king shaft is located behind a protective cover below the transport level; the workpiece pallet can pass over the king shaft.

The length of the driven conveyor section depends on the roller spacing. A drive torque of up to 45 Nm (in reversible operation: 20 Nm) is enough to drive a section of up to 10 m with 2 curves/diverters, or a straight section of up to 21 m, with roller spacing of 195 mm and 80% of the section in accumulation operation.

Required accessories:

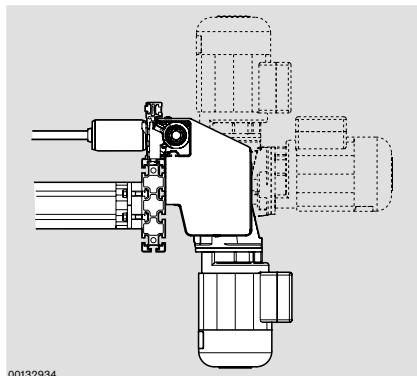
- SZ 5/... leg sets  7-2
- Connection kit  4-14



00137414

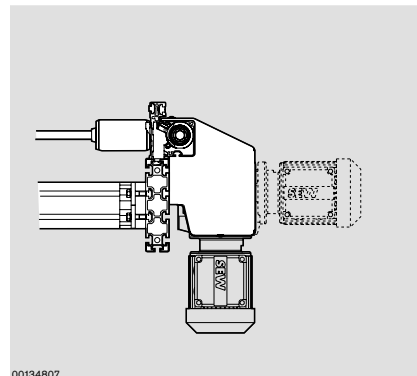
Attachment options for the gear motor:

Standard



00132934

Custom motor



00134807

Drive unit

Drive layout

When laying out the system, make sure that there is enough driving power for the entire conveyor section.

The rollers are driven by the drive unit via a king shaft. A friction clutch on each roller prevents blocking of the drive. The maximum transferable total torque thus results from the torque present briefly before an individual clutch slides, multiplied by the total number of rollers in the section.

Example layout:

Drive torque 45 Nm, each roller loads the drive with 0.5 Nm (with a sliding clutch). Each curve, diverter, or junction loads the drive with 12 Nm.

Note:

Install the motor as close as possible to the center of the section.
The driven rollers of the drive module itself are included in the calculation (if $p = 130$ one drive module roller is not being driven).

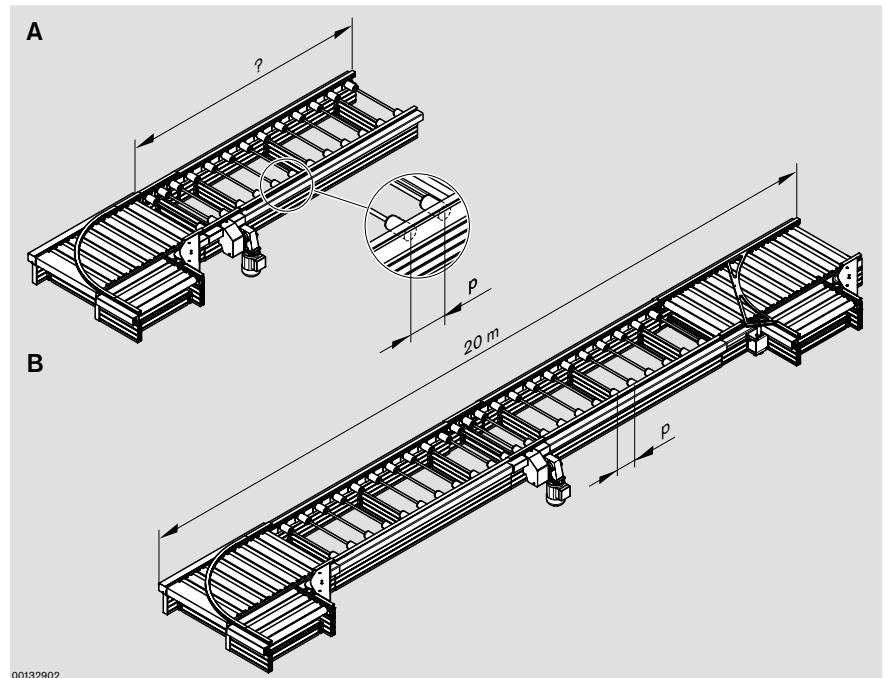
Example A:

Section, $b = 650$ mm, with roller division $p = 130$ mm and a curve; 100% of the section in accumulation operation
Question: If one drive unit is used, how long may the straight section be?

Calculation:

$45 \text{ Nm} - 12 \text{ Nm (for curve)} = 33 \text{ Nm}$ remaining for the straight section
 $33 \text{ Nm} \div 0.5 \text{ Nm} = 66$ (driven rollers)

$66 \times 130 \text{ mm} = 8580 \text{ mm}$ straight section.



Note:

If a section is not operated completely in accumulation operation, the section length can be multiplied by a corresponding factor. For example, with 50% accumulation operation in the case of example A the section length is doubled to 17160 mm ($2 \times 66 \times 130 \text{ mm}$).

Example B:

Section, $b = 650$ mm, length 20 m, $p = 130$, includes 1 diverter and 1 curve; 100% of the section in accumulation operation
Question: Will one drive unit be sufficient?

Calculation:

$45 \text{ Nm} - 12 \text{ Nm (diverter)} - 12 \text{ Nm (curve)} = 21 \text{ Nm}$ remaining for the straight section

$20000 \text{ mm} - 1560 \text{ mm (diverter)} - 1149 \text{ mm (curve)} = 17291 \text{ mm}$ straight section

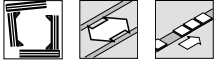
$17291 \text{ mm} \div 130 \text{ mm} = 133$ rollers
 $133 \times 0.5 \text{ Nm} = 66.5 \text{ Nm}$
 $66.5 \text{ Nm} > 21 \text{ Nm}$, 2 drives are therefore needed in order to attain the torque to be transferred.

Note:

If a section is not operated completely in accumulation operation, the section length can be multiplied by a corresponding factor. For example, with 30% accumulation operation in the case of example B the required torque is reduced to:
 $66.5 \text{ Nm} \times 30\% = 19.95 \text{ Nm} < 21 \text{ Nm}$.
In this case, only one drive would be needed.

Drive unit

AS 5/XH, AS 5/H drive units (with split rollers)

**Application:**

To drive

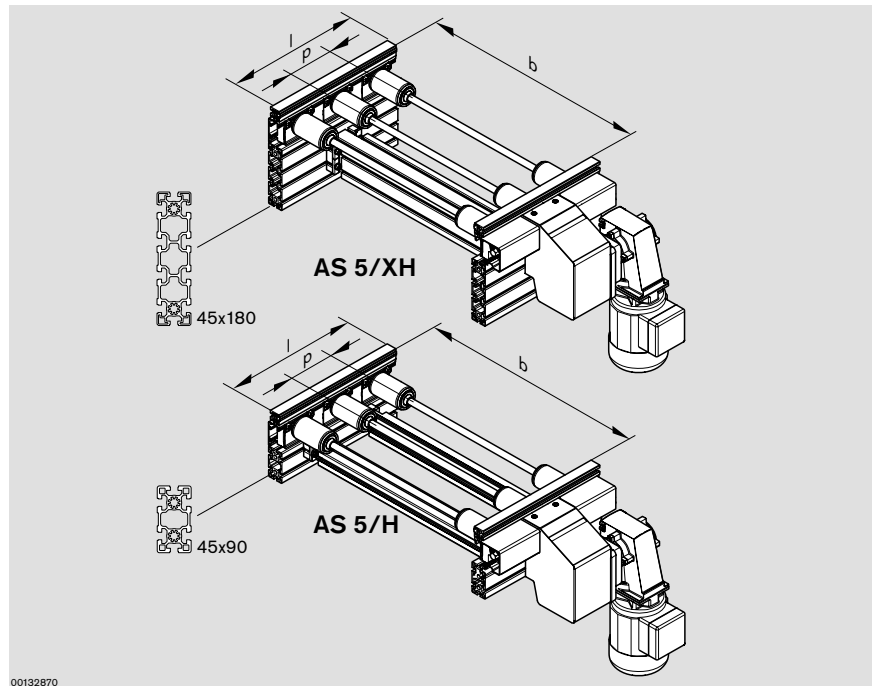
- ST 5/... conveyor units
- CU 5/... curves
- DI 5/... diverters
- JU 5/... junctions
- HQ 5/... lift transverse unit

Version:

- Suitable for reversible operation
- Motor connection with cable/plug (AT=S) or terminal box (AT=K)
- Freely selectable motor position and length
- Frequency converter optional 3-11

Delivery condition:

- Ready-to-install, gear motor enclosed separately.
- Attachment option for the gear motor 3-2



AS 5/XH, AS 5/H drive units

b (mm)	l_{WT} (mm)	p (mm)	l (mm)	N	LG	BG	GM ¹⁾	TR	DP ²⁾	No.
3-5										
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	3 842 998 800 (AS 5/XH)
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	3 842 998 801 (AS 5/H)
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	b = ... mm
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	p = ... mm 3-5
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	l = ... mm
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	LG = ...
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	BG = ...
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	TR = ...
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 11	DP = ... 3-5
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	v_N = ... m/min ³⁾
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	U = ... V 13-9
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	f = ... Hz 13-9

¹⁾ GM = gear motor
 0: without (SW27 interface)
 1: with gear motor SW 27
 2: without (interface to SEW connection, round shaft Ø 20)

²⁾ DP = drive position 3-5

³⁾ v_N = nominal speed (m/min);
 2; 4; 6; 9; 12; 15; 18
 v_N = 0 (without gear motor)

Description of further parameters 0-3

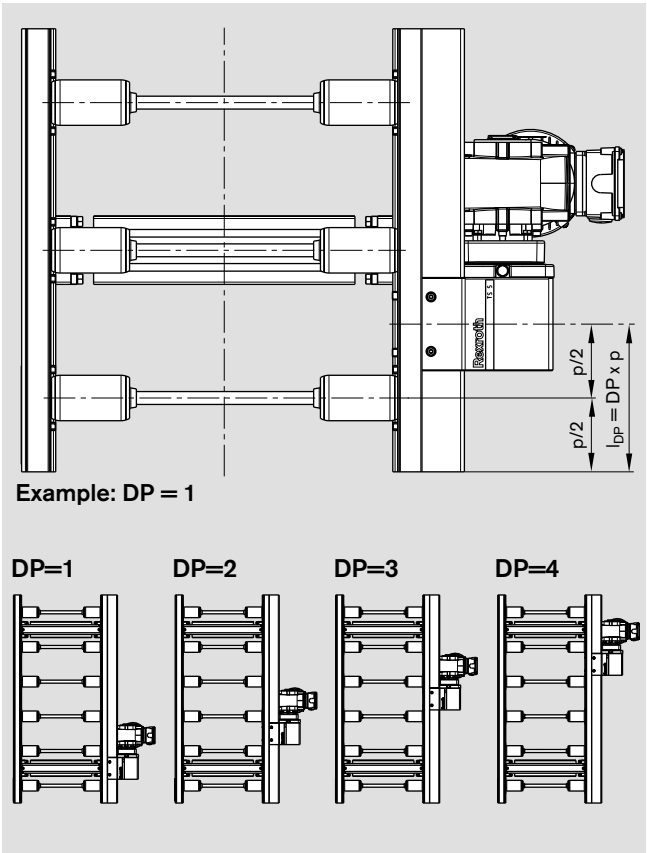
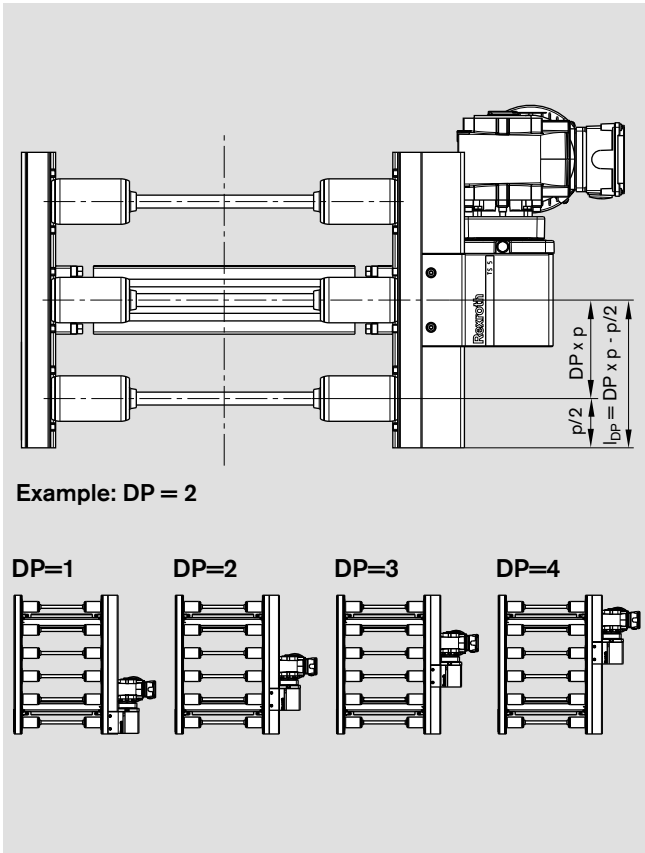
* Any necessary additional measures

Drive unit

Division p and drive position DP

p = 130 mm
DP is the roller to which the transmission drive is fitted.
This roller is not driven.

p = 195 mm; p = 260 mm; p = 325 mm
DP is the space between two rollers in which the transmission drive is fitted.



Possible drive positions DP with division p

p (mm)	DP
130	1 ... 31

Note:
Only if p = 130 mm: roller corresponding to DP is not driven.

Permissible position l_{DP} (mm) after start of section:
 $l_{DP} = DP \times p - p/2$

Example for p = 130 mm and DP = 10:
 $l_{DP} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm}$

Possible drive positions DP with division p

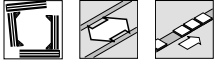
p (mm)	DP
195	1 ... 20
260	1 ... 15
325	1 ... 11

Permissible position l_{DP} (mm) after start of section:
 $l_{DP} = DP \times p$

Example for p = 260 mm and DP = 5:
 $l_{DP} = 5 \times 260 \text{ mm} = 1300 \text{ mm}$

Drive unit

AS 5/XH-FR, AS 5/H-FR drive units (with full rollers)

**Application:**

To drive

- ST 5/...-FR conveyor units
- CU 5/...-FR curves
- DI 5/...-FR diverters
- JU 5/...-FR junctions
- HQ 5/... lift transverse unit

Version:

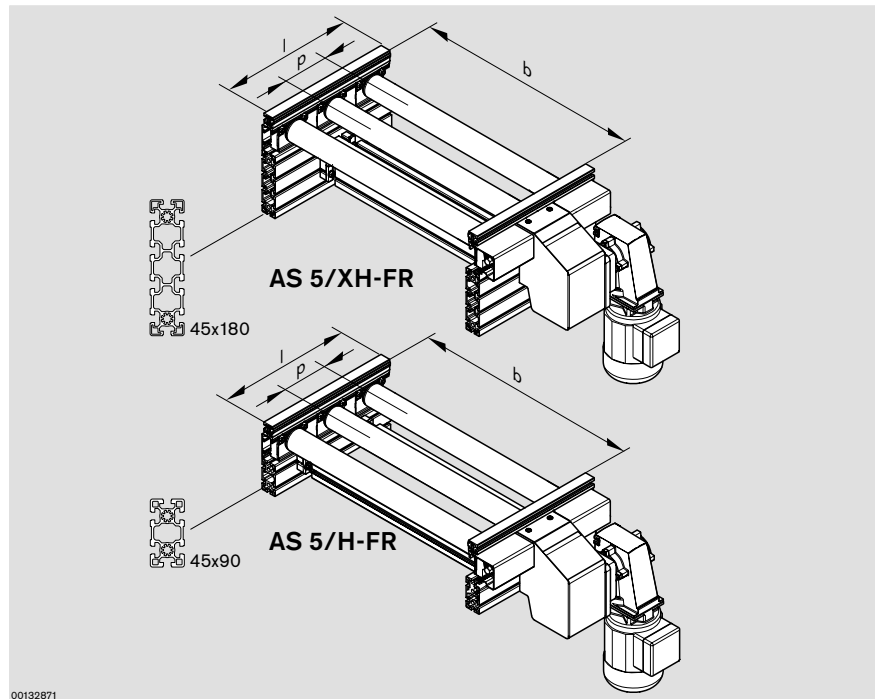
- Suitable for reversible operation
- Motor connection with cable/plug (AT=S) or terminal box (AT=K)
- Freely selectable motor position and length
- Frequency converter optional ☞ 3-11

Delivery condition:

- Ready-to-install, gear motor enclosed separately.
Attachment option for the gear motor ☞ 3-2

Note:

To transport workpieces without workpiece pallets. Use polymer lateral guides to ensure the workpiece is not damaged!



AS 5/XH-FR, AS 5/H-FR drive units

b (mm)	l_{WT} (mm)	p (mm)	l (mm)	N	LG	BG	GM ¹⁾	TR	DP ²⁾	No.
☞ 3-7										
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	3 842 998 802 (AS 5/XH-FR)
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	3 842 998 803 (AS 5/H-FR)
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	b = ... mm
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	p = ... mm ☞ 3-7
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	l = ... mm
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	LG = ...
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	BG = ...
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	TR = ...
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 11	DP = ... ☞ 3-7
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 31	v_N = ... m/min ³⁾
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 20	U = ... V ☞ 13-9
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2	1; 2; 3 ... 15	f = ... Hz ☞ 13-9

¹⁾ GM = gear motor
0: without (SW27 interface)
1: with gear motor SW 27
2: without (interface to SEW connection, round shaft Ø 20)

²⁾ DP = drive position ☞ 3-7

³⁾ v_N = nominal speed (m/min);
2'; 4; 6; 9; 12; 15; 18
 v_N = 0 (without gear motor)

Description of further parameters ☞ 0-3

* Additional measures may be necessary



☞ 13-20

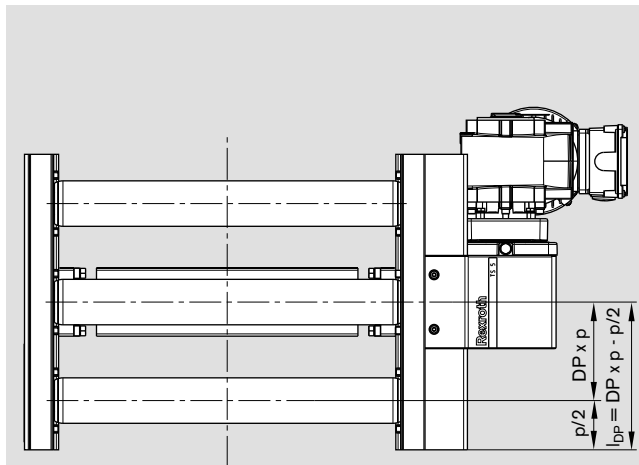
Drive unit

Division p and drive position DP

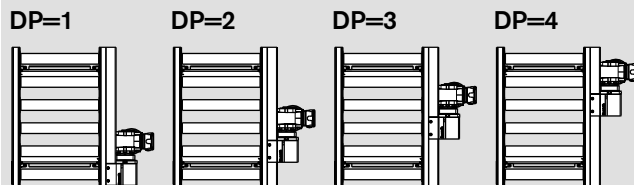
$p = 130 \text{ mm}$

DP is the roller to which the transmission drive is fitted.

This roller is not driven.



Example: DP = 2



28114

Possible drive positions DP with division p

p (mm)	DP
130	1 ... 31

Note:

Only if $p = 130 \text{ mm}$: roller corresponding to DP is not driven.

Permissible position l_{DP} (mm) after start of section:

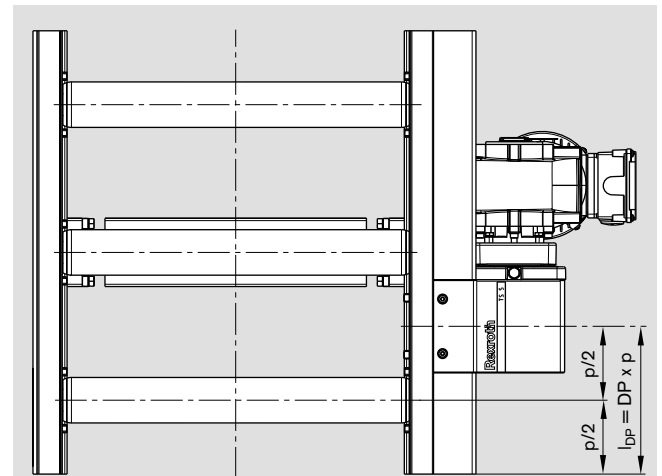
$$l_{DP} = DP \times p - p/2$$

Example for $p = 130 \text{ mm}$ and $DP = 10$:

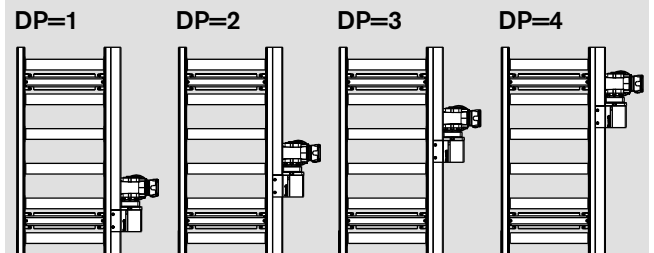
$$l_{DP} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm}$$

$p = 195 \text{ mm}; p = 260 \text{ mm}; p = 325 \text{ mm}$

DP is the space between two rollers in which the transmission drive is fitted.



Example: DP = 1



28115

Possible drive positions DP with division p

p (mm)	DP
195	1 ... 20
260	1 ... 15
325	1 ... 11

Permissible position l_{DP} (mm) after start of section:

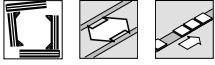
$$l_{DP} = DP \times p$$

Example for $p = 260 \text{ mm}$ and $DP = 5$:

$$l_{DP} = 5 \times 260 \text{ mm} = 1300 \text{ mm}$$

Drive unit

AS 5/OC drive units (Open Center)



Application:

- To drive
- ST 5/OC... conveyor units

Version:

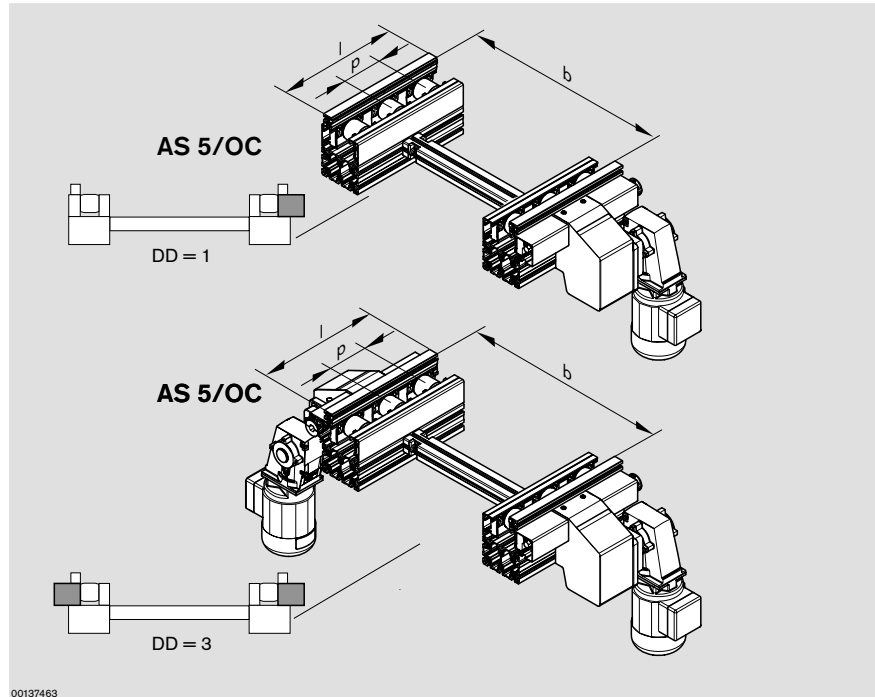
- Suitable for reversible operation
- Motor connection with cable/plug (AT=S) or terminal box (AT=K)
- Freely selectable motor position and length
- Frequency converter optional 3-11

Delivery condition:

- Ready-to-install, gear motor enclosed separately.
- Attachment option for the gear motor 3-2

Note:

Please take account of the load center of gravity when selecting the drive 3-10



AS 5/OC drive units

b (mm)	l_{WT} (mm)	p (mm)	l (mm)	N	LG	BG	GM ¹⁾	DD ²⁾	TR	DP _r /DP _i ³⁾ 3-9	No.
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 31	3 842 998 799
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 20	b = ... mm
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 31	p = ... mm 3-9
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 20	l = ... mm
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 15	LG = ...
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 31	BG = ...
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 20	TR = ...
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 15	DP _r /DP _i = ... 3-9
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 11	v_N = ... m/min ⁴⁾
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 31	U = ... V 13-9
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 20	f = ... Hz 13-9
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	0; 1; 2	1; 2; 3	1; 2	1; 2; 3 ... 15	

¹⁾ GM = gear motor
 0: without (SW27 interface)
 1: with gear motor SW 27
 2: without (interface to SEW connection, round shaft Ø 20)

²⁾ DD = king shaft
 1: on one side with 1 gear motor
 2: on two sides with 1 gear motor
 3: on two sides with 2 gear motors

³⁾ DP_r/DP_i = drive position 3-9
⁴⁾ v_N = nominal speed (m/min);
 2; 4; 6; 9; 12; 15; 18
 v_N = 0 (without gear motor)

Description of further parameters 0-3

* Additional measures may be necessary



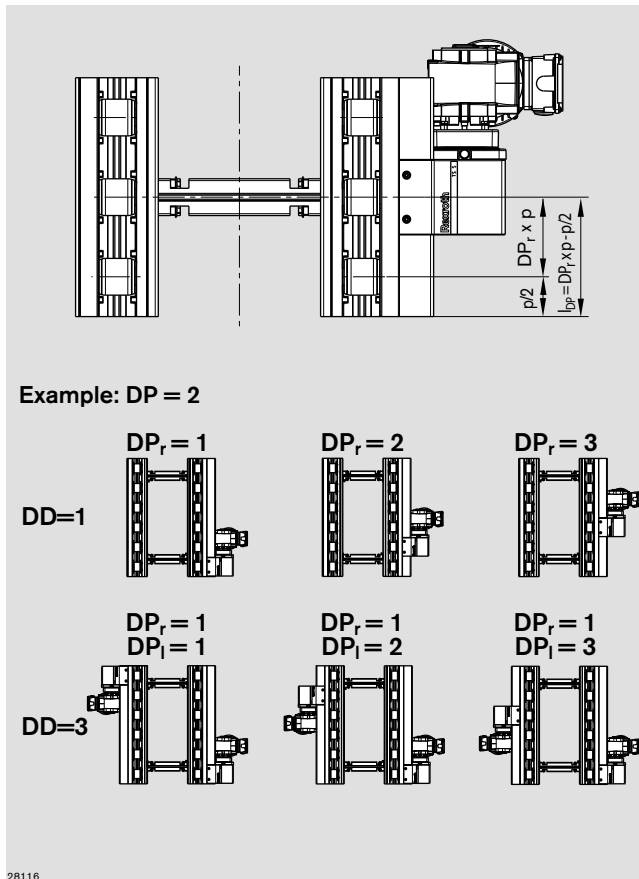
Drive unit

Division p and drive position DP

$p = 130 \text{ mm}$

DP is the roller to which the transmission drive is fitted.

This roller is not driven.



Possible drive positions DP with division p

p (mm)	DP
130	1 ... 31

Note:

Only if $p = 130 \text{ mm}$: roller corresponding to DP is not driven.

Permissible position l_{DP} (mm) after start of section:

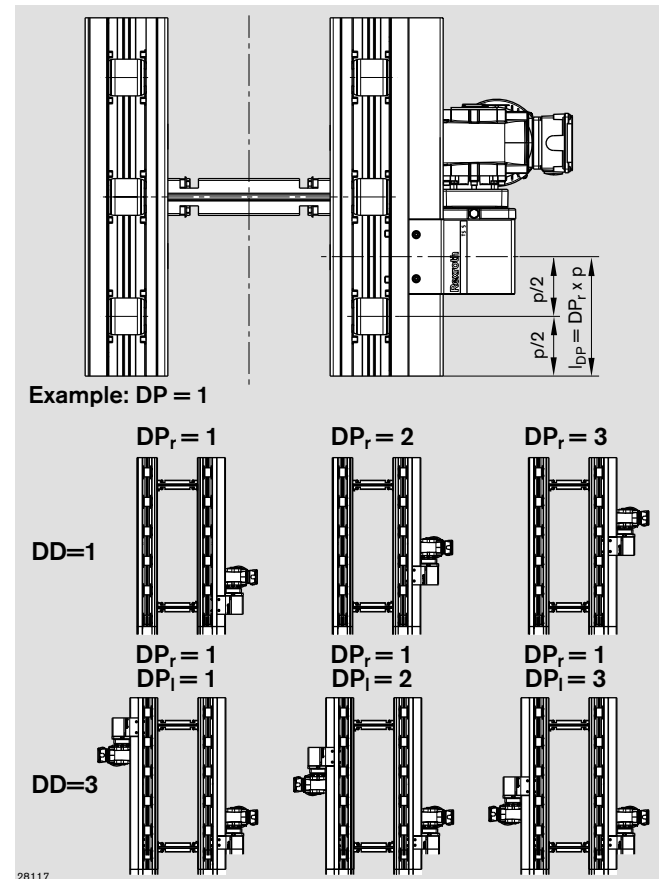
$$l_{DP} = DP \times p - p/2$$

Example for $p = 130 \text{ mm}$ and $DP = 10$:

$$l_{DP} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm}$$

$p = 195 \text{ mm}; p = 260 \text{ mm}; p = 325 \text{ mm}$

DP is the space between two rollers in which the transmission drive is fitted.



Possible drive positions DP with division p

p (mm)	DP
195	1 ... 20
260	1 ... 15
325	1 ... 11

Permissible position l_{DP} (mm) after start of section:

$$l_{DP} = DP \times p$$

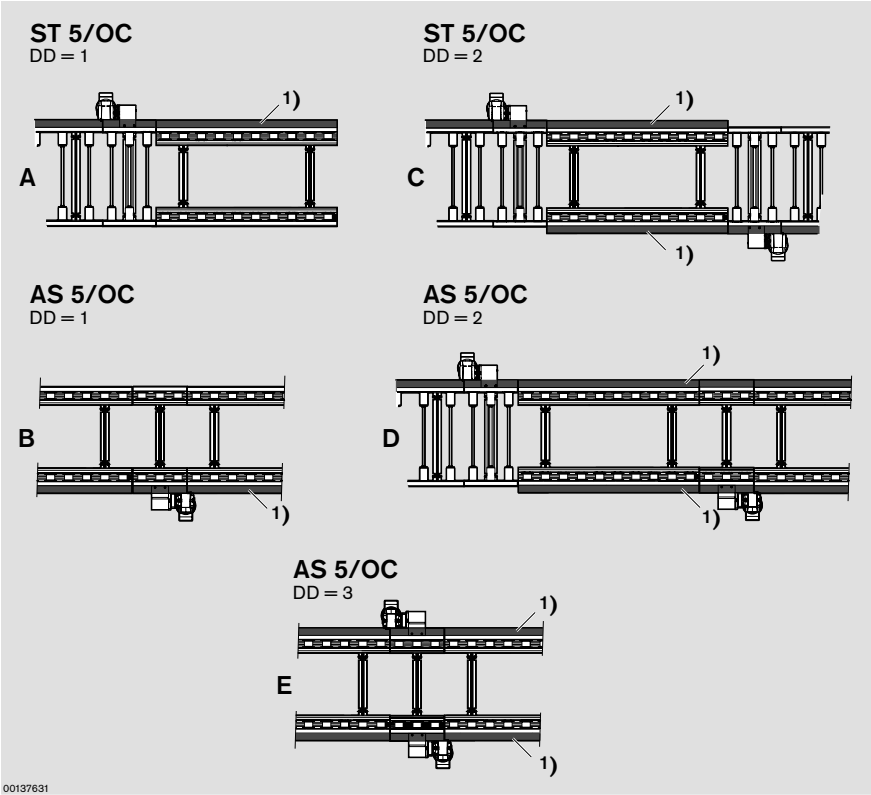
Example for $p = 260 \text{ mm}$ and $DP = 5$:

$$l_{DP} = 5 \times 260 \text{ mm} = 1300 \text{ mm}$$

Drive unit

Drive options for an Open Center section

The TS 5 drive concept enables one- or two-sided drive of an Open Center section connected to adjacent sections. Depending on the loading situation, a separate AS 5/OC drive may not be required.



1) Drive side
A, B: Drive on one side
C, D, E: Drive on both sides

Load position centered on WT

$b_{WT} \times l_{WT}$ (mm)	m_{WTmax} (kg)	DD =
455 x 455	150	1 ²⁾
455 x 650	250	1 ²⁾
650 x 650	250	1 ²⁾
650 x 845	300	1 ²⁾
845 x 845	300	1 ²⁾
845 x 1040	300	1 ²⁾

²⁾ drive on one side sufficient (DD = 1)
³⁾ drive on both sides required (DD = 2 or DD = 3)

Load position off-center and within the permissible load area

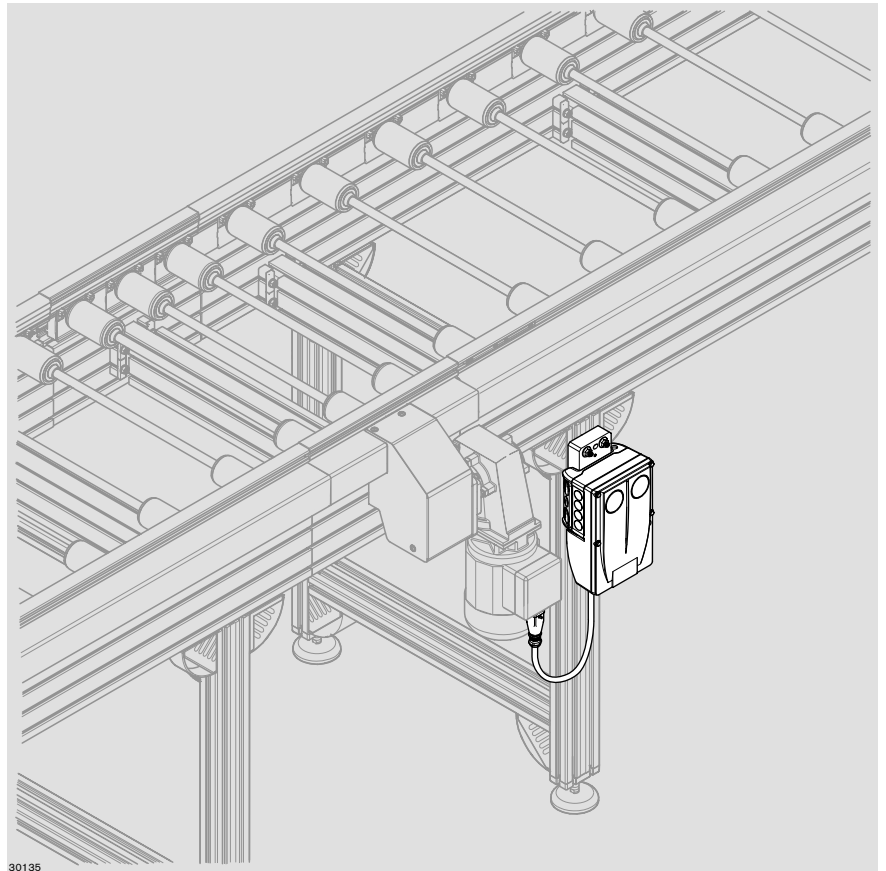
$b_{WT} \times l_{WT}$ (mm)	m_{WTmax} (kg)	DD =	m_{WTmax} (kg)	DD =
455 x 455	100	1 ²⁾	150	x ³⁾
455 x 650	160	1 ²⁾	250	x ³⁾
650 x 650	160	1 ²⁾	250	x ³⁾
650 x 845	200	1 ²⁾	300	x ³⁾
845 x 845	200	1 ²⁾	300	x ³⁾
845 x 1040	200	1 ²⁾	300	x ³⁾

Drive unit

Frequency converter (FU)

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.

- Connection power: 0.55 kW
(connection voltage:
400 V $\pm$ 10% ... 460 V/480 V $\pm$ 10%)
- Speed (v_N) depending on the base
speed of the gear motor used
- Permissible speed range:
2 ... 18 m/min



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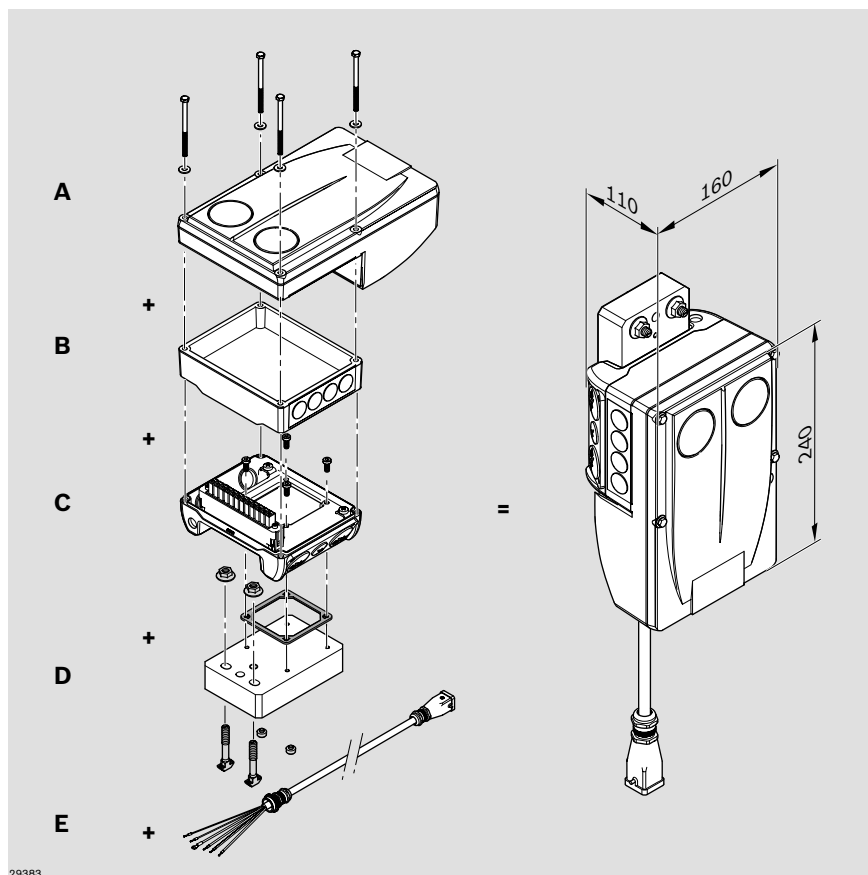


Drive unit

Complete frequency converter consisting of the modules

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

The individual modules can be ordered separately and are easy to connect using the supplied screws. For the internal and external voltage supply, the modules must be wired by the user (see terminal assignment plan,  13-12).



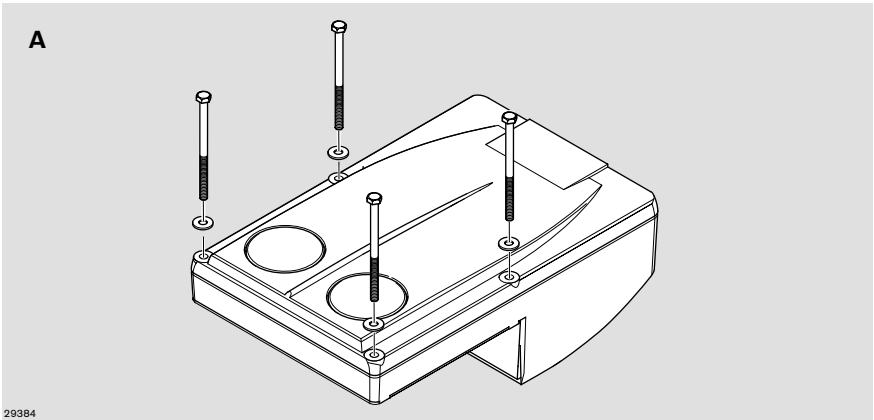
Drive unit

Frequency converter (A)

- Power element: 0.55 kW
(400 V ± 10% ... 460 V/480 V ± 10%)
- Easy commissioning via hand-held terminal
 - Easy to replace memory module
 - Large LED as status display

Frequency converter

No.
Power element 0.55 kW 3 842 553 447



The speed range of the frequency converter is based on the base speed of the motor:¹⁾

¹⁾ By accepting a resulting loss of power, a higher bandwidth can be covered (➡ 13-11)

Motor base speed (m/min) at 50 Hz	Min (m/min)	Max (m/min)	Max (m/min) at max. 80% torque
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

Drive unit

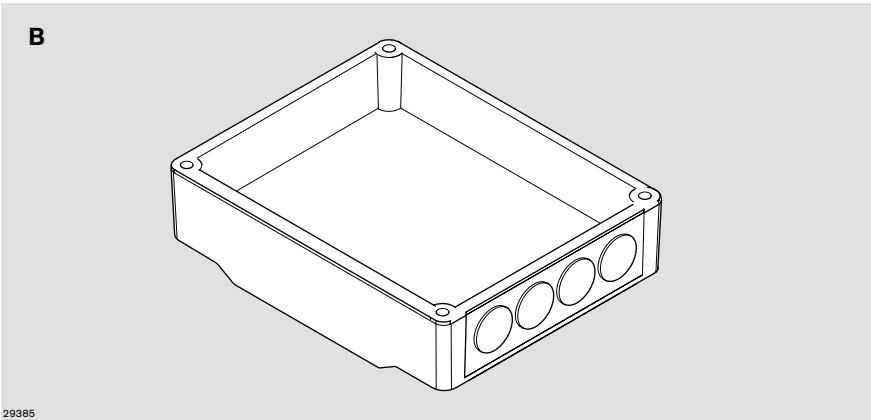
Communication module (B)

- Used to control the frequency converter
- Cable connection options

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

Communication module

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

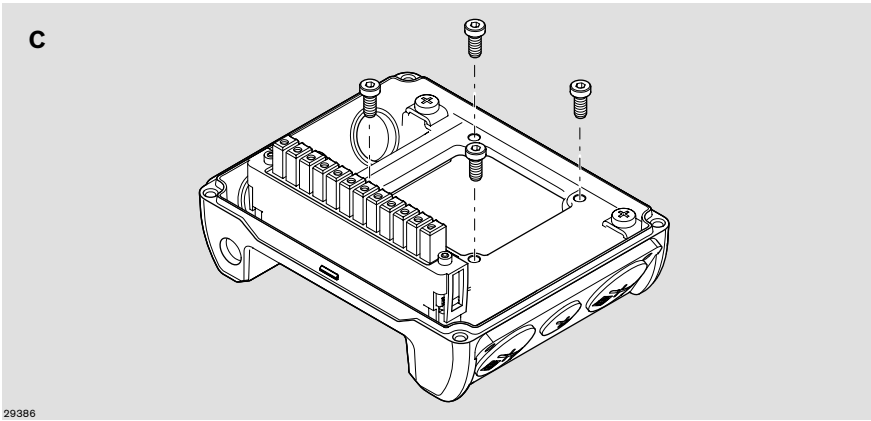


Connection unit (C)

- Grid connection options

Connection unit

	No.
	3 842 553 445



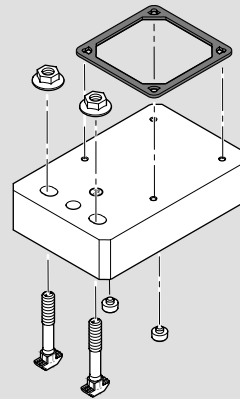
Drive unit

Attachment kit (D)

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

Attachment kit

No.
3 842 553 457

D

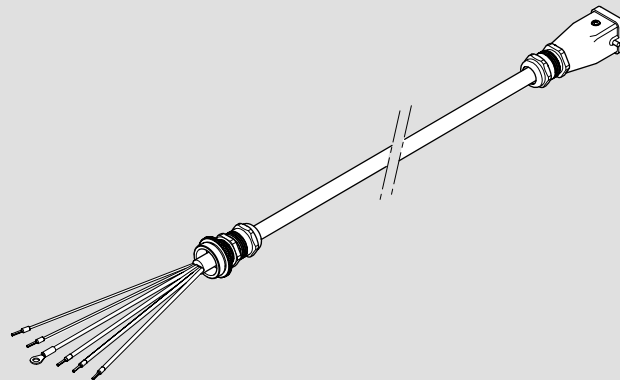
29387

Connection cable (E)

- For connecting the gear motor with the frequency converter (length: 1 m)

Connection cable

No.
3 842 553 512

E

29426

Drive unit

Frequency converter (FC) accessories

Manual control unit (A)

The manual control unit is required for the parameterization of drives with frequency converters.

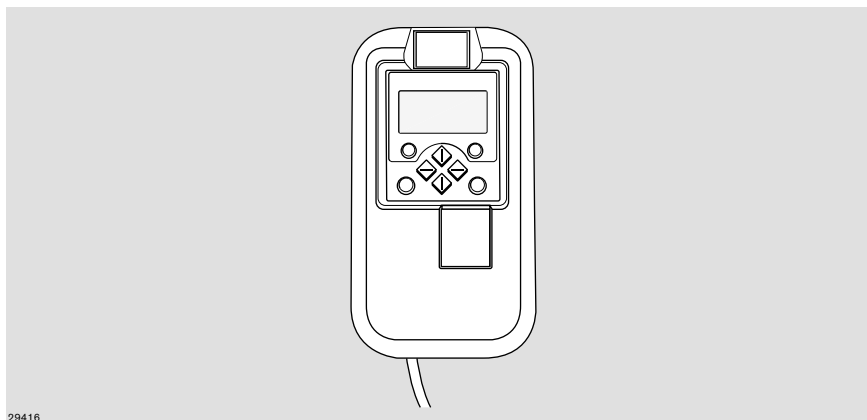
In addition, you can:

- control (e.g. block and release)
- display operating data
- continuously regulate the transport speed
- transfer parameter sets to other basic devices

Manual control unit

No.

3 842 552 821



Switch /potentiometer unit (B)

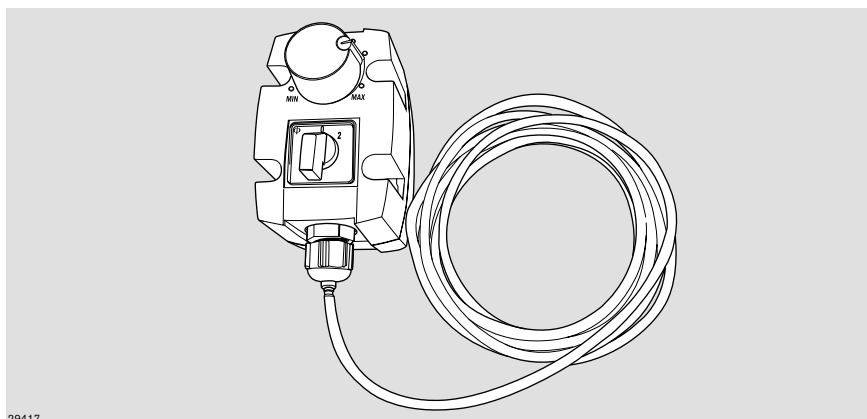
The switch /potentiometer unit is used to fine-tune the transport speed within a range that has been preset with the manual control unit. The switch / potentiometer unit is connected to the frequency converter by a cable. The drive can be started or stopped with the rotary switch.

Note: It is imperative that the direction in which the chain conveyor is running is checked prior to commissioning.

Switch /potentiometer unit

No.

3 842 553 184

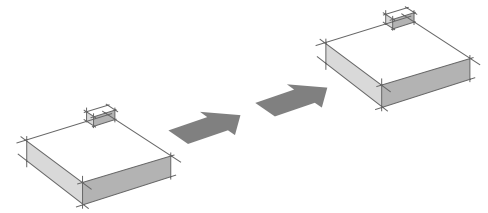


Scope of delivery:

A, B: Incl. 2.5 m connection cable

Longitudinal conveyors

Longitudinal conveyors



Conveyor unit selection	4-2
ST 5/XH, ST 5/H conveyor units (with split rollers)	4-3
End plates for ST 5/XH, ST 5/H	4-4
Protective covers for ST 5/XH, ST 5/H	4-5
ST 5/XH-FR, ST 5/H-FR conveyor units (with full rollers)	4-7
End plates for ST 5/XH-FR, ST 5/H-FR	4-8
Protective covers for ST 5/XH-FR, ST 5/H-FR	4-9
ST 5/OC conveyor units (Open Center)	4-10
End plates for ST 5/OC	4-11
Protective covers for ST 5/OC	4-12
Cover for transition OC/XH, OC/H	4-13
Connection kits	4-14

Longitudinal conveyors

Conveyor unit selection

Application and functions

Conveyor units are available in 2 load classes and 3 different system widths (455, 650, 845 mm) for longitudinal conveyors, as well as a further width for transverse conveyors (1040 mm). All rollers in the conveyor unit are driven by a king shaft in the respective drive unit. The king shaft is located behind a protective cover below the transport level; the workpiece pallet can pass over the king shaft.

The conveyor units have a symmetrical design and there is no drive side selection.

The rollers are driven by bevel wheels; a friction clutch protects the drive during accumulation operation.

2 roller types:

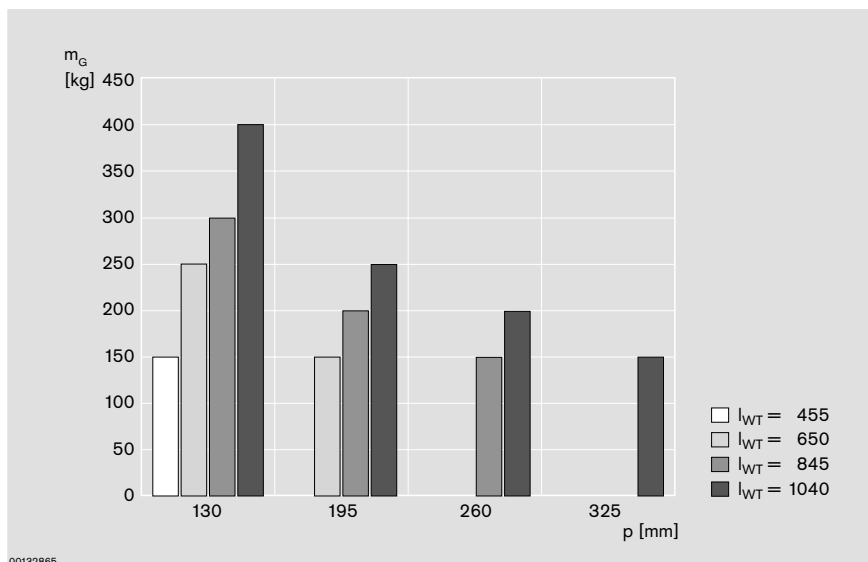
- Split rollers as standard for longitudinal conveyors
- Full rollers (FR) as standard for curves, diverters, and junctions
- Full rollers for longitudinal conveyors to transport workpieces without workpiece pallets

Note:

The use of conveyor units with full rollers with WTs is limited. Depending on the roller dimensions, it may not be possible to assemble stop gates, sensor supports, and supports for ID systems.

Required accessories:

- AS 5/... drive unit 3-2
- SZ 5/... leg sets 7-2
- Connection kits 4-14



m_G = WT total mass
 p = roller spacing (pitch)

Conveyor unit load carrying capacity

Permissible section load with a leg distance ≤ 2 m:

ST 5/XH: 380 kg/m
 ST 5/H: 200 kg/m

The permissible loads apply only on condition that workpiece pallets with the maximum permitted weight m_{Gzul} have accumulated.

Accumulation operation is not permitted in curves, diverters, junctions, or the positioning unit.

Max. permissible WT weight m_{Gzul} with various WT lengths and roller spacings (division p)

When designing the transfer system, the WT length, WT total weight m_G and roller spacing (division p) must be adjusted to each other.

The carrying force per roller is 50 kg. The WT must always be on at least 3 rollers. The resulting load limits are illustrated in the graphic (2-6).

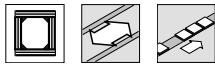
Use of the customer's own workpiece pallets

The indicated interdependencies between b_{WT} and l_{WT} must be taken into account when using curves, diverters and lift transverse units.

If a WT is only conveyed on a straight section, it can be any length; note the permissible section load and roller load.

Longitudinal conveyors

ST 5/XH, ST 5/H conveyor units (with split rollers)



Application:

The conveyor unit is a ready-for-operation module used to transport workpiece pallets.

Version:

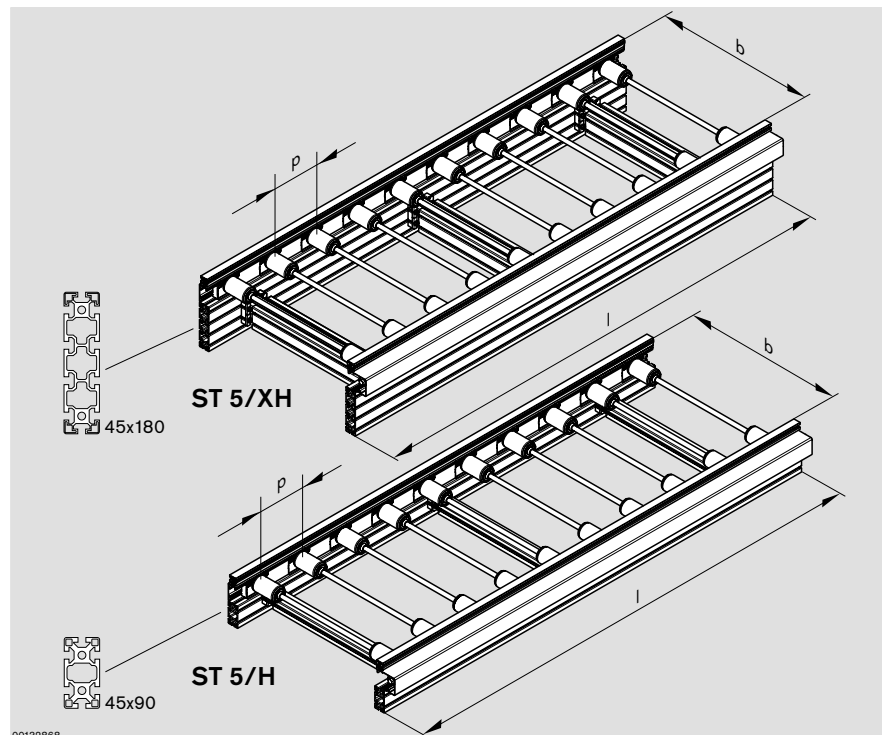
- Support profile made of anodized aluminum
- Permissible section load:
ST 5/XH: 380 kg/m
ST 5/H: 200 kg/m
- Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
- Driven via king shaft with bevel wheels made of polymer or sintered metal

Delivery condition:

- Ready-to-install.

Note:

Other roller spacings available on request



ST 5/XH, ST 5/H conveyor units

b ¹⁾ (mm)	l _{WT} ²⁾ (mm)	p ³⁾ (mm)	l ⁴⁾ (mm)	N ⁵⁾	LG ⁶⁾	BG ⁷⁾	TR ⁸⁾	No.
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	3 842 998 521 (ST 5/XH)
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	3 842 998 520 (ST 5/H)
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	b = ... mm
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	p = ... mm
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	l = ... mm
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	LG = ...
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	BG = ...
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	TR = ...
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	1; 2	
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	

- 1) b = width (track width in direction of transport)
- 2) l_{WT} = workpiece pallet length, note the interdependencies for p and l_{WT}!
- 3) p = roller spacing (pitch)
- 4) l = length graduated according to the roller dimensions. l = p×N (stored default values)

- 5) N = number of rollers, multiplier for length (l = p×N), pricing factor in the price list.
- 6) LG = lateral guide material
1: steel
2: plastic
3: aluminum

- 7) BG = bevel wheel material
1: plastic
2: sintered metal
- 8) TR = roller material
1: steel, galvanized
2: steel, nitrocarburized



Longitudinal conveyors

End plates for ST 5/XH, ST 5/H

Application:

The protective covers and end plates are provided in working areas to increase safety. They can be ordered separately for conveyor units; for curves, diverters, and junctions they are optionally included in the scope of delivery (SC = 2).

The protective covers and end plates are clipped between the rollers using spring elements.

Note:

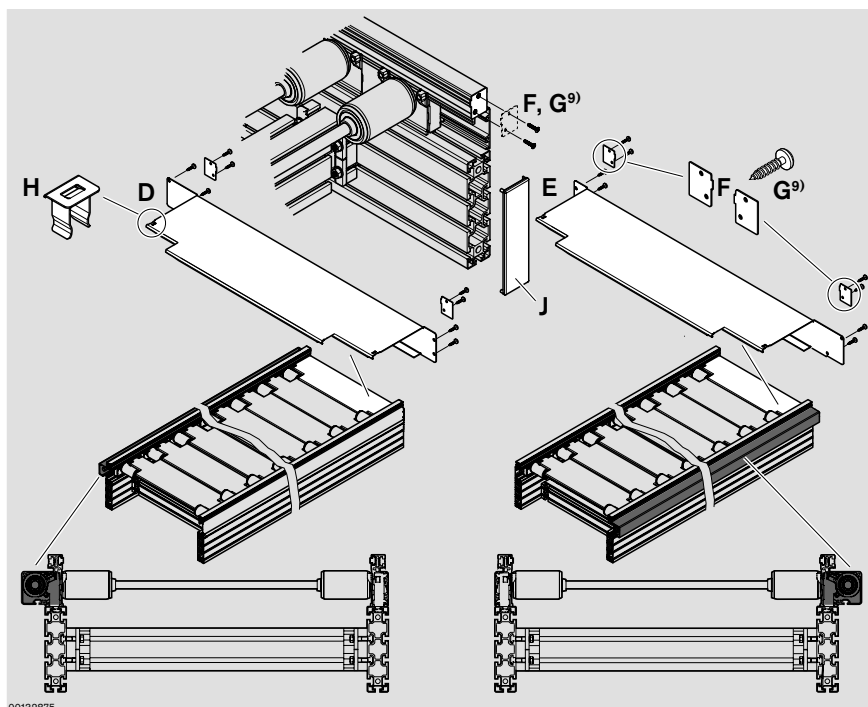
Do not walk on the protective covers or end plates.

Versions:

- Protective covers for various widths and roller spacings.
- Special covers for conveyor section center, transitions, and ends.

Material:

- Steel, galvanized



End plates

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
D ⁶⁾	455	130	3 842 545 679
	455	195	3 842 545 680
	650	130	3 842 545 681
	650	195	3 842 545 682
	650	260	3 842 545 683
	845	130	3 842 545 684
	845	195	3 842 545 685
	845	260	3 842 545 686
	845	325	3 842 545 687
	1040	130	3 842 545 476
	1040	195	3 842 545 477
	1040	260	3 842 545 688

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
E ⁷⁾	455	130	3 842 545 689
	455	195	3 842 545 690
	650	130	3 842 545 691
	650	195	3 842 545 692
	650	260	3 842 545 693
	845	130	3 842 545 694
	845	195	3 842 545 695
	845	260	3 842 545 696
	845	325	3 842 545 697
	1040	130	3 842 545 474
	1040	195	3 842 545 475
	1040	260	3 842 545 698

Lateral guide cover

	No.
F ⁸⁾ 2	3 842 545 276

Spring element

	No.
H ¹⁰⁾ 50	3 842 545 214

Caps

	No.
J ¹¹⁾ ST 5/XH (45x180) 20	3 842 503 845
ST 5/H (45x90) 20	3 842 511 783

¹⁾ b = track width in direction of transport

²⁾ p = roller spacing

⁶⁾ D = end plate, left drive side

⁷⁾ E = end plate, right drive side

⁸⁾ F = lateral guide protective cover, 2 required

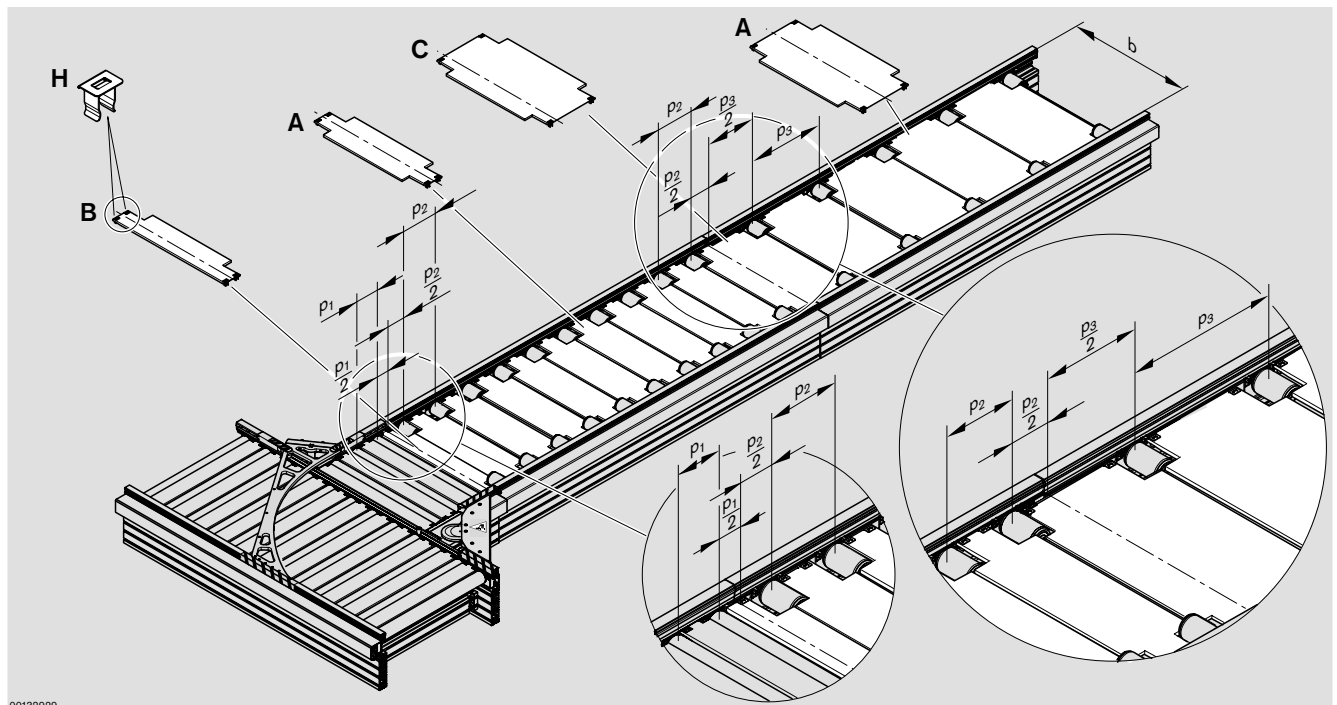
⁹⁾ G = screw DIN7500-EEM5X16-8.8, 4 required for each end plate, 2 for each lateral guide cover

¹⁰⁾ H = spring element, 2 required for each end plate

¹¹⁾ J = cover cap for the open profile ends, 2 required for each section end

Longitudinal conveyors

Protective covers for ST 5/XH, ST 5/H



00132929

Protective covers for center and transitions

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
A ³⁾	455	130	3 842 545 404
	455	195	3 842 545 609
	650	130	3 842 545 405
	650	195	3 842 545 360
	650	260	3 842 545 612
	845	130	3 842 545 361
	845	195	3 842 545 362
	845	260	3 842 545 363
	845	325	3 842 545 403
	1040	130	3 842 545 638
	1040	195	3 842 545 641
	1040	260	3 842 545 365

	b ¹⁾ (mm)	p1/p2 ²⁾ (mm)	No.
B ⁴⁾	455	130/130	3 842 545 482
	455	130/195	3 842 545 617
	650	130/130	3 842 545 483
	650	130/195	3 842 545 485
	650	130/260	3 842 545 621
	845	130/130	3 842 545 484
	845	130/195	3 842 545 506
	845	130/260	3 842 545 507
	845	130/325	3 842 545 508

	b ¹⁾ (mm)	p2/p3 ²⁾ (mm)	No.
C ⁵⁾	455	130/195	3 842 545 616
	650	130/195	3 842 545 619
	650	195/260	3 842 545 644
	845	130/195	3 842 545 628
	845	195/260	3 842 545 629
	845	260/325	3 842 545 645
	1040	130/195	3 842 545 640
	1040	195/260	3 842 545 364

¹⁾ b = track width in direction of transport²⁾ p = roller spacing (pitch); p1/p2 and p2/p3 = transition between different roller spacing dimensions³⁾ A = section center protective cover⁴⁾ B = protective covers for transition between curve (diverter, junction)/conveyor unit⁵⁾ C = protective covers for transition between conveyor unit/conveyor unit with different rollers

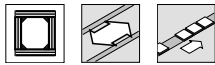
H = spring element, 4 required for each protective cover 4-4

Longitudinal conveyors



Longitudinal conveyors

ST 5/XH-FR, ST 5/H-FR conveyor units (with full rollers)

**Application:**

The conveyor unit is a ready-for-operation module which is particularly suitable for transporting workpieces without workpiece pallets.

Note:

Depending on the roller spacing, the use of ST 5/...-FR conveyor units with WTs is limited 4-2.

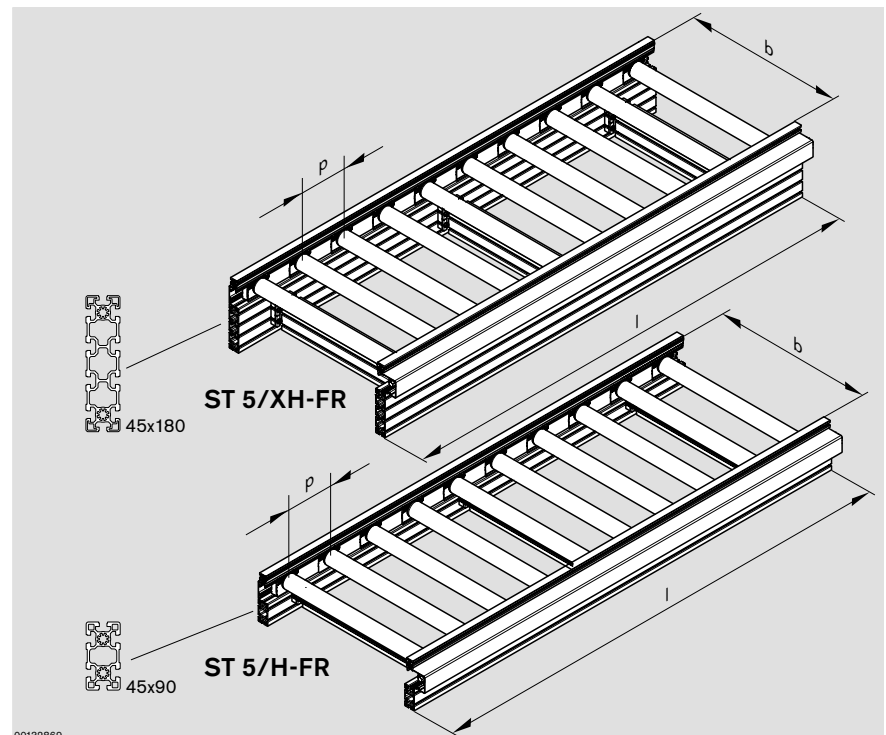
Other roller spacings available on request

Version:

- Support profile made of anodized aluminum
- Permissible section load:
ST 5/XH-FR: 380 kg/m
ST 5/H-FR: 200 kg/m
- Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
- Driven via king shaft with bevel wheels made of polymer or sintered metal

Delivery condition:

- Ready-to-install



ST 5/XH-FR, ST 5/H-FR conveyor units

b ¹⁾ (mm)	l _{WT} ²⁾ (mm)	p ³⁾ (mm)	l ⁴⁾ (mm)	N ⁵⁾	LG ⁶⁾	BG ⁷⁾	TR ⁸⁾ No.
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	1; 2
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2

¹⁾ b = width (track width in direction of transport)

²⁾ l_{WT} = workpiece pallet length, note the interdependencies for p and l_{WT}!

³⁾ p = roller spacing (pitch)

⁴⁾ l = length graduated according to the roller dimensions. l = p×N (stored default values)

⁵⁾ N = number of rollers, multiplier for length (l = p×N), pricing factor in the price list.

⁶⁾ LG = lateral guide material
1: steel
2: plastic
3: aluminum

⁷⁾ BG = bevel wheel material
1: plastic
2: sintered metal

⁸⁾ TR = roller material
1: steel, galvanized
2: steel, nitrocarburized



Longitudinal conveyors

End plates for ST 5/XH-FR, ST 5/H-FR

Application:

The protective covers and end plates are provided in working areas to increase safety. They can be ordered separately for conveyor units; for curves, diverters, and junctions they are optionally included in the scope of delivery (SC = 2).

The protective covers and end plates are clipped between the rollers using spring elements.

Note:

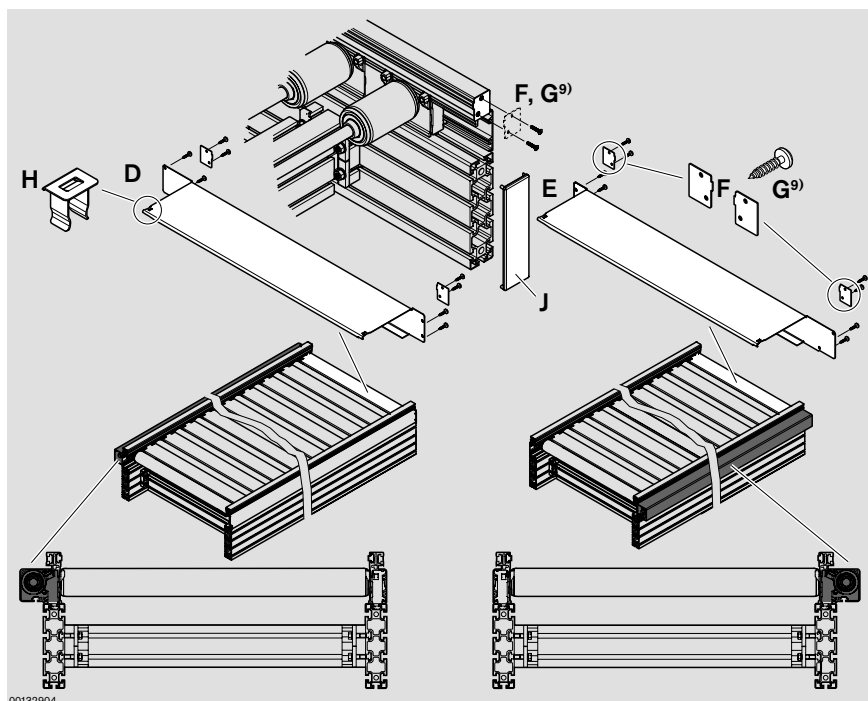
Do not walk on the protective covers or end plates.

Versions:

- Protective covers for various widths and roller spacings.
- Special covers for conveyor section center, transitions, and ends.

Material:

Steel, galvanized



End plates

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
D ⁶⁾	455	130	3 842 545 659
	455	195	3 842 545 660
	650	130	3 842 545 661
	650	195	3 842 545 662
	650	260	3 842 545 663
	845	130	3 842 545 664
	845	195	3 842 545 665
	845	260	3 842 545 666
	845	325	3 842 545 667
	1040	130	3 842 545 468
	1040	195	3 842 545 469
	1040	260	3 842 545 668

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
E ⁷⁾	455	130	3 842 545 669
	455	195	3 842 545 670
	650	130	3 842 545 671
	650	195	3 842 545 672
	650	260	3 842 545 673
	845	130	3 842 545 674
	845	195	3 842 545 675
	845	260	3 842 545 676
	845	325	3 842 545 677
	1040	130	3 842 545 466
	1040	195	3 842 545 467
	1040	260	3 842 545 678

Lateral guide cover

	No.
F ⁸⁾ 2	3 842 545 276

Spring element

	No.
H ¹⁰⁾ 50	3 842 545 214

Caps

	No.
J ¹¹⁾ ST 5/XH (45x180) 20	3 842 503 845
ST 5/H (45x90) 20	3 842 511 783

¹⁾ b = track width in direction of transport

²⁾ p = roller spacing

⁶⁾ D = end plate, left drive side

⁷⁾ E = end plate, right drive side

⁸⁾ F = lateral guide protective cover, 2 required

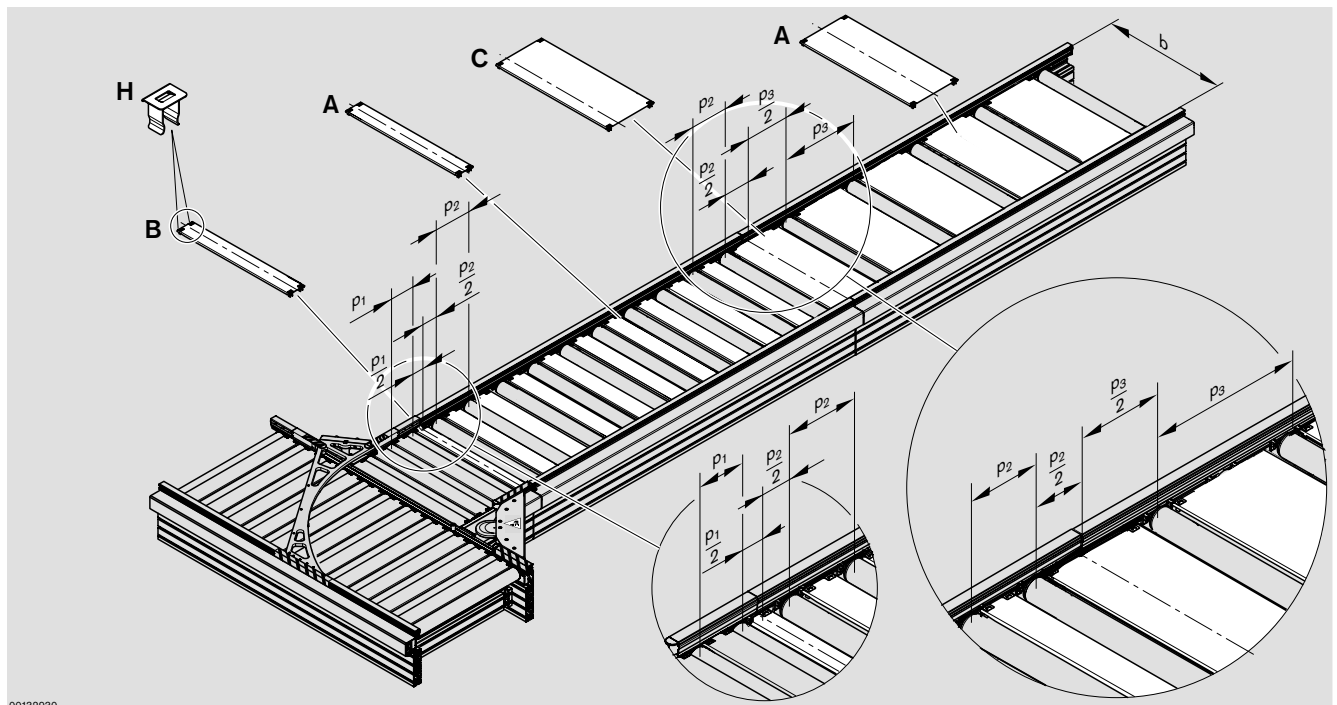
⁹⁾ G = screw DIN7500-EEM5X16-8.8, 4 required for each end plate, 2 for each lateral guide cover

¹⁰⁾ H = spring element, 2 required for each end plate

¹¹⁾ J = cover cap for the open profile ends, 2 required for each section end

Longitudinal conveyors

Protective covers for ST 5/XH-FR, ST 5/H-FR



00132930

Protective covers for center and transitions

	b ¹⁾ (mm)	p ²⁾ (mm)	No.
A ³⁾	455	130	3 842 545 406
	455	195	3 842 545 610
	650	130	3 842 545 407
	650	195	3 842 545 408
	650	260	3 842 545 613
	845	130	3 842 545 409
	845	195	3 842 545 410
	845	260	3 842 545 411
	845	325	3 842 545 415
	1040	130	3 842 545 412
	1040	195	3 842 545 413
	1040	260	3 842 545 414

	b ¹⁾ (mm)	p1/p2 ²⁾ (mm)	No.
B ⁴⁾	455	130/130	3 842 545 406
	455	130/195	3 842 545 614
	650	130/130	3 842 545 407
	650	130/195	3 842 545 620
	650	130/260	3 842 545 408
	845	130/130	3 842 545 409
	845	130/195	3 842 545 626
	845	130/260	3 842 545 410
	845	130/325	3 842 545 630
	1040	130/130	3 842 545 412
	1040	130/195	3 842 545 639
	1040	130/260	3 842 545 413

	b ¹⁾ (mm)	p2/p3 ²⁾ (mm)	No.
C ⁵⁾	455	130/195	3 842 545 614
	650	130/195	3 842 545 620
	650	195/260	3 842 545 642
	845	130/195	3 842 545 626
	845	195/260	3 842 545 630
	845	260/325	3 842 545 643
	1040	130/195	3 842 545 639
	1040	195/260	3 842 545 637

1) b = track width in direction of transport

2) p = roller spacing (pitch); p1/p2 and p2/p3 = transition between different roller spacing dimensions

3) A = section center protective cover

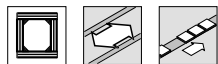
4) B = protective covers for transition between curve (diverter, junction)/conveyor unit

5) C = protective covers for transition between conveyor unit/conveyor unit with different rollers

H = spring element, 4 required for each protective cover 4-8

Longitudinal conveyors

ST 5/OC conveyor units (Open Center)



Application:

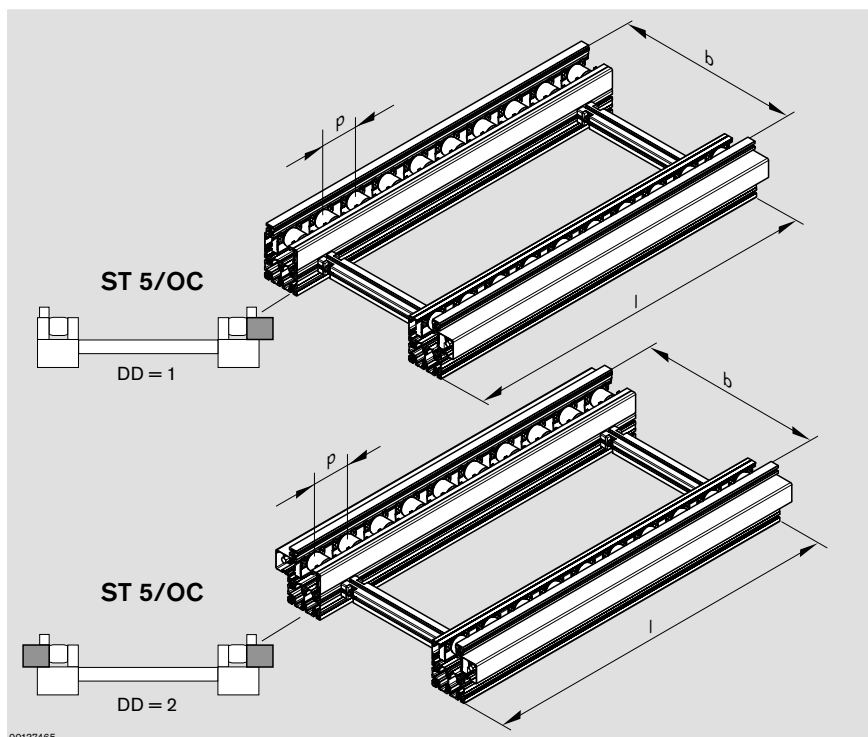
The conveyor unit is a ready-for-operation module used to transport workpiece pallets. The open center allows processes from below.

Version:

- Support profile made of anodized aluminum
- Permissible section load: 380 kg/m
- Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
- Driven via king shaft with bevel wheels made of polymer or sintered metal

Delivery condition:

- Ready-to-install



00137465

b (mm)	l _{WT} (mm)	p (mm)	l (mm)	N	LG	BG	TR	DD ¹⁾	No.
455	455; 650	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	1; 2	3 842 998 574 (ST 5/OC)
455	650	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	1; 2	b = ... mm
650	650; 845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	1; 2	p = ... mm
650	650; 845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	1; 2	l = ... mm
650	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	1; 2	LG = ...
845	845; 1040	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	1; 2	BG = ...
845	845; 1040	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	1; 2	TR = ...
845	845; 1040	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	1; 2	DD = ...
845	1040	325	975-3900	3; 4; 5 ... 12	1; 2; 3	1; 2	1; 2	1; 2	
1040	845	130	390-4160	3; 4; 5 ... 32	1; 2; 3	1; 2	1; 2	1; 2	
1040	845	195	585-4095	3; 4; 5 ... 21	1; 2; 3	1; 2	1; 2	1; 2	
1040	845	260	780-4160	3; 4; 5 ... 16	1; 2; 3	1; 2	1; 2	1; 2	

¹⁾ DD = drive

1: on one side

2: on two sides

Description of further parameters  0-3



 13-26

Longitudinal conveyors

End plates for ST 5/OC

Application:

The protective covers and end plates are provided in working areas to increase safety.

Note:

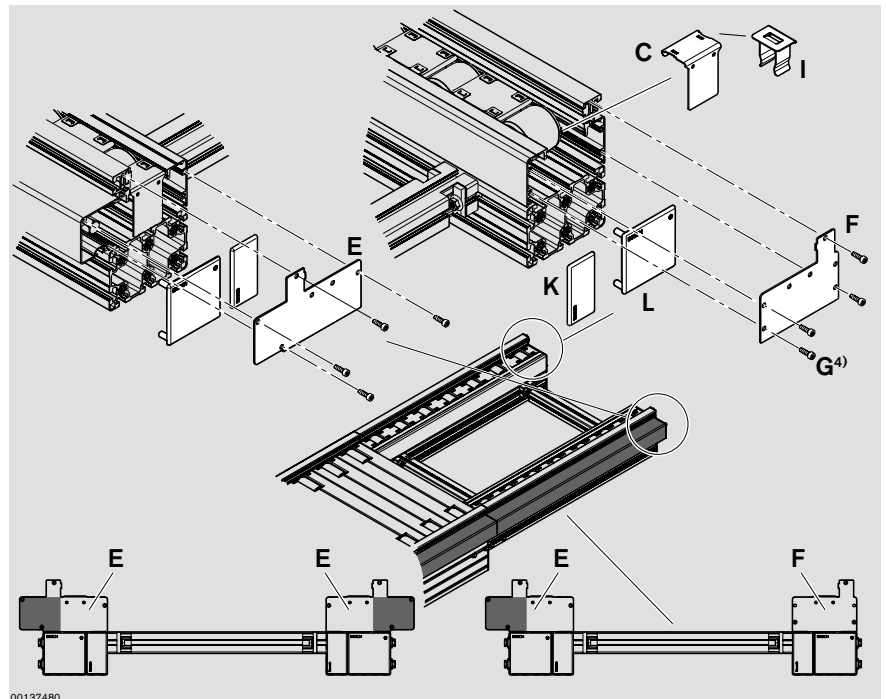
Do not walk on the protective covers or end plates.

Versions:

- Protective covers for various roller spacings.
- Special covers for conveyor section center, transitions, and ends.

Material:

Steel, galvanized



End plates

	p ¹⁾ (mm)		No.
C	130	2	3 842 545 573
	195	2	3 842 545 574
	260	2	3 842 545 575
	325	2	3 842 545 576

- ¹⁾ p = roller spacing
²⁾ E = end plate for operator side, left/right
³⁾ F = end plate for passive side, left/right
⁴⁾ G = screw DIN7500-EEM5X16-8.8, 4 required for each end plate
⁵⁾ H = spring element, 2 required for each end plate
⁶⁾ I, J = cover cap for the open profile ends, 2 required for each section end

Spring element

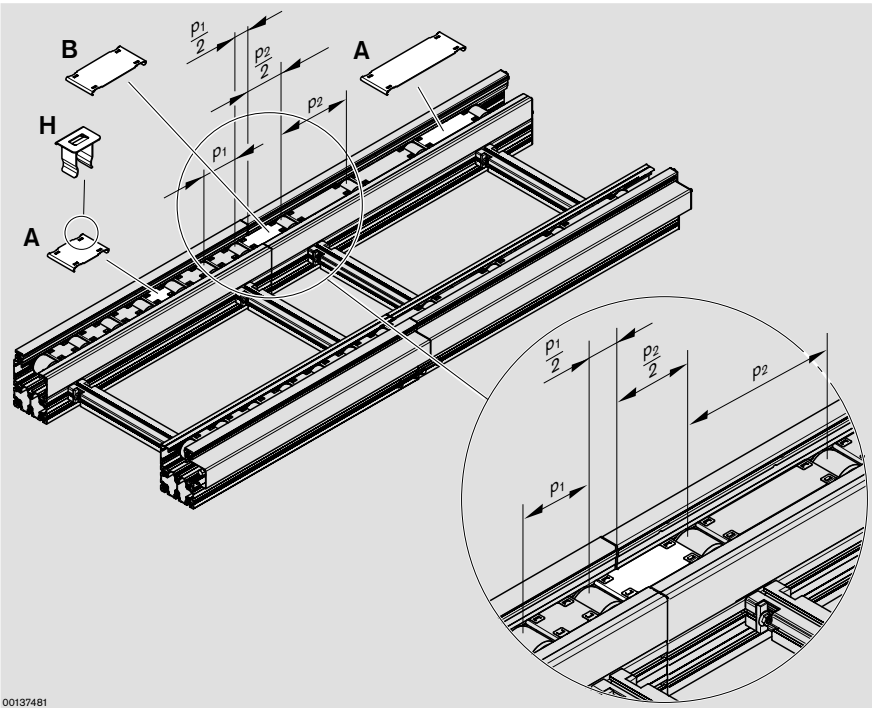
		No.
H⁵⁾	50	3 842 545 214

End caps

		No.
I⁶⁾	20	3 842 511 783
J⁶⁾	20	3 842 516 214

Longitudinal conveyors

Protective covers for ST 5/OC



Protective covers for center and transitions

	$p^{1)}$ (mm)	No.
A²⁾	130	3 842 545 541
	195	3 842 545 543
	260	3 842 545 545
	325	3 842 545 547

	$p1/p2^{1)}$ (mm)	No.
B³⁾	130/130	3 842 545 541
	130/195	3 842 545 542
	195/195	3 842 545 543
	195/260	3 842 545 544
	260/260	3 842 545 545
	260/325	3 842 545 546
	325/325	3 842 545 547

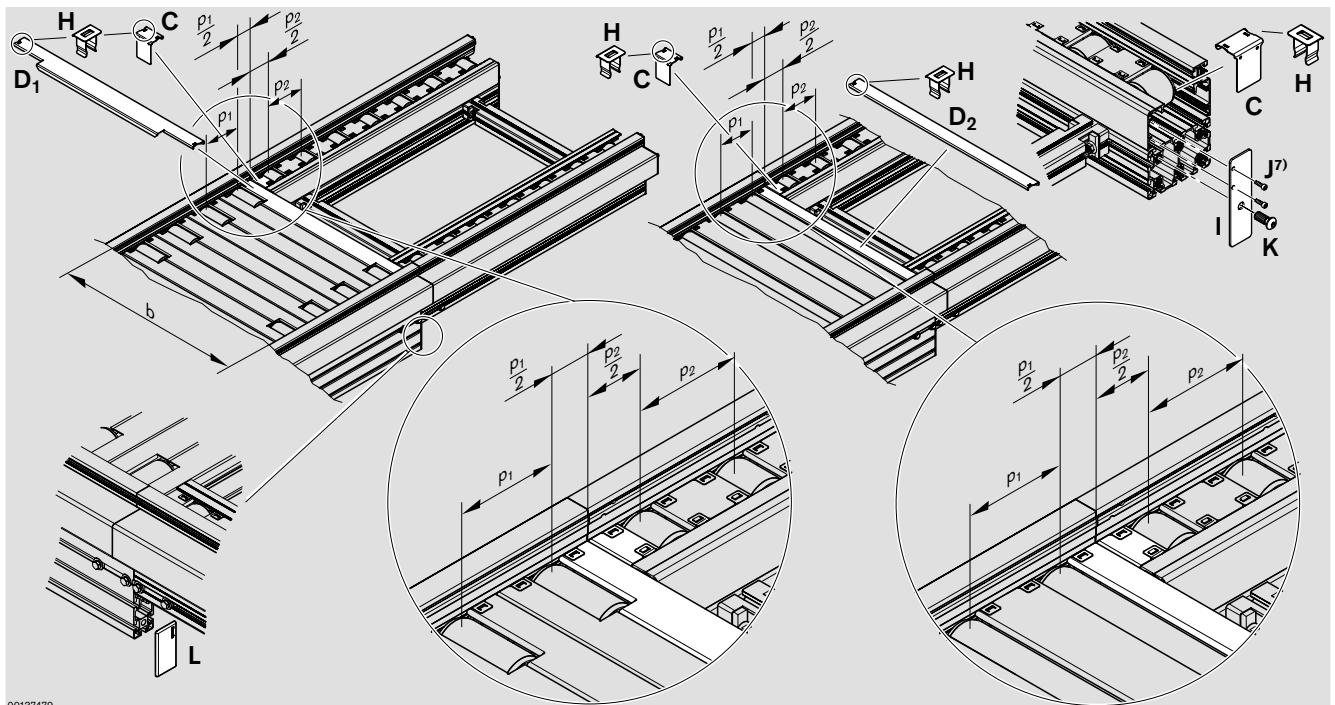
Spring element

		No.
H⁴⁾	50	3 842 545 214

¹⁾ p = roller spacing (pitch); p1/p2 = transition between different roller spacing dimensions
²⁾ A = section center protective cover
³⁾ B = protective covers for transition between conveyor unit/conveyor unit with the same or different rollers
⁴⁾ H = spring element, 4 required for each protective cover

Longitudinal conveyors

Cover for transition OC/XH, OC/H



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	b ¹⁾ (mm)	p1 ²⁾ (mm)	No.
D ₁ ³⁾	455	130	3 842 545 150
	455	195	3 842 545 151
	650	130	3 842 545 152
	650	195	3 842 545 153
	650	260	3 842 545 739
	845	130	3 842 545 154
	845	195	3 842 545 155
	845	260	3 842 545 740
	845	325	3 842 545 741
	1040	130	3 842 545 156
	1040	195	3 842 545 157
	1040	260	3 842 545 742
	1040	325	3 842 545 745

	b ¹⁾ (mm)	p1 ²⁾ (mm)	No.
D ₂ ⁴⁾	455	130	3 842 545 158
	455	195	3 842 545 248
	650	130	3 842 545 321
	650	195	3 842 545 548
	650	260	3 842 545 577
	845	130	3 842 545 549
	845	195	3 842 545 550
	845	260	3 842 545 578
	845	325	3 842 545 579
	1040	130	3 842 545 551
	1040	195	3 842 545 599
	1040	260	3 842 545 600
	1040	325	3 842 545 737

		p2 ²⁾ (mm)	No.
C	2	130	3 842 545 573
		195	3 842 545 574
		260	3 842 545 575
		325	3 842 545 576
I ⁶⁾	1		3 842 549 670

Spring element

		No.
H ⁵⁾	50	3 842 545 214

Screw

		No.
K ⁸⁾	100	3 842 530 236

End cap

		No.
L ⁹⁾	20	3 842 511 855

1) b = track width in direction of transport

2) p = roller spacing (pitch); p1/p2 = transition between different roller spacing dimensions

3) D₁ = cover for split rollers4) D₂ = cover for full rollers

5) H = spring element

6) I = cover cap for open profile ends

7) J = screw DIN7500-EEM5X16-8.8, 2 required for each lateral guide cover

8) K = screw, 1 required for each end plate

9) L = cover cap for the open profile ends

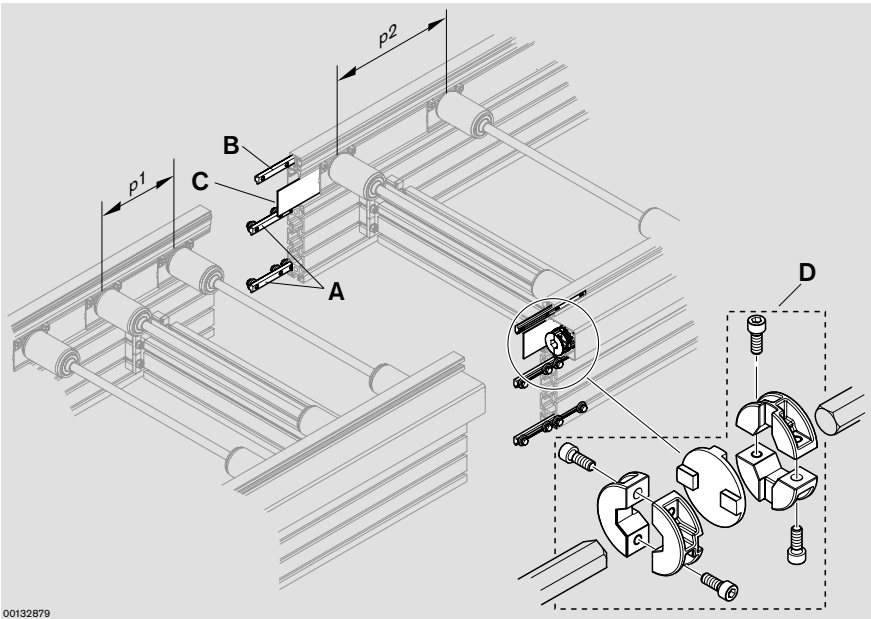
Longitudinal conveyors

Connection kits

Application:

- To connect two TS 5 modules, you will need:
- 4 profile connectors for section profiles (A)
 - 2 profile connectors for lateral guides (B)
 - 2 intermediate plates (C)
 - 1 coupling (D)

The coupling is used to connect the king shafts. A cross plate in the coupling compensates for alignment errors and concentricity tolerances.



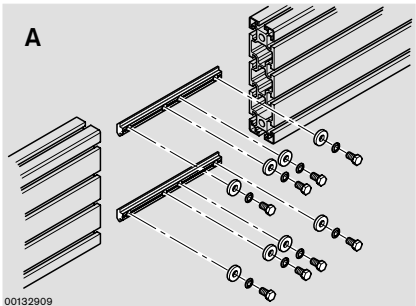
Profile connectors for conveyor section profiles/lateral guides

Application:

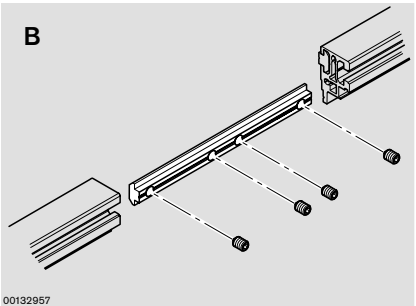
The profile ends are connected to each other using profile connectors.

Material:
Steel, galvanized

Scope of delivery:
Profile connectors, screws



Profile connectors for conveyor section profiles	
	No.
A	3 842 528 746



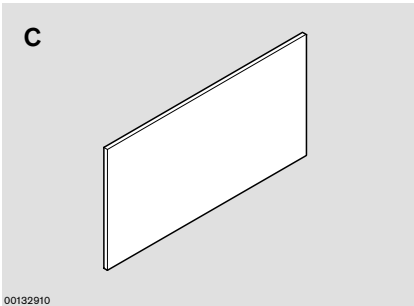
Profile connectors for lateral guides	
	No.
B	10 3 842 545 699

Longitudinal conveyors

Intermediate plates

Application:
The modules (conveyor sections, drives, curves, diverters) are separated using intermediate plates with the respective roller dimension p.

Material:
Steel, galvanized



Intermediate plates for module transitions

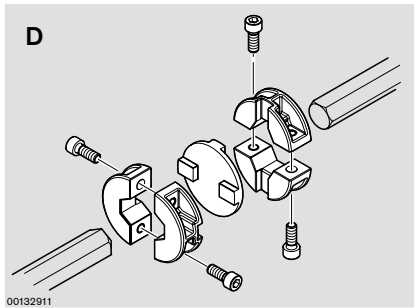
		p1/p2 ¹⁾ (mm)	No.
C	10	130/130	3 842 545 215
	10	130/195	3 842 545 354
	10	130/260	3 842 545 216
	10	130/325	3 842 545 355
	10	195/195	3 842 545 216
	10	195/260	3 842 545 355
	10	260/260	3 842 545 217
	10	260/325	3 842 545 648
	10	325/325	3 842 545 218

¹⁾ Roller spacing of the respective modules

Coupling

Application:
For connecting the king shaft.
Compensates for alignment errors and concentricity tolerances.

Material:
Steel, galvanized
Brass

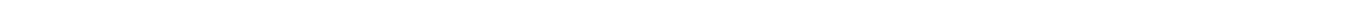


Coupling

		No.
D	10	3 842 545 160

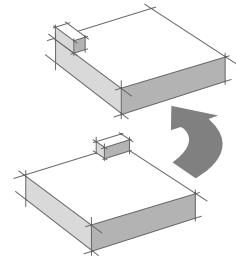
Scope of delivery:
Couplings, screws

Longitudinal conveyors



Curves/diverters/junctions

Curves/diverters/junctions



Design	 5-2
CU 5/XH, CU 5/H curves	 5-4
DI 5/XH, DI 5/H diverters	 5-6
JU 5/XH, JU 5/H junctions	 5-8
Limits for the permissible gravity center position for junctions and diverters	 5-10

Curves/diverters/junctions

Design

Curves, diverters, and junctions are available for branching transport of workpiece pallets.

The inlet and outlet of these modules are separately driven via king shafts. Due to the function, the transport height of the main and secondary sections (inlet and outlet) has a slight difference. This is why curves, diverters, and junctions must always be arranged with an opposite orientation (see the graphic).

Permissible conveyor speed

m_G (kg)	v_N (m/min)
max. 260	12
max. 300	9

m_G = total mass of workpiece pallet

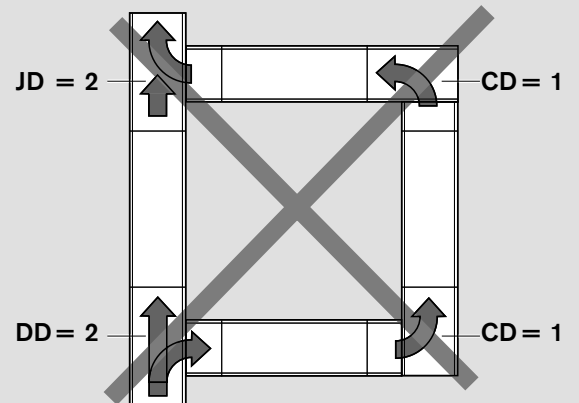
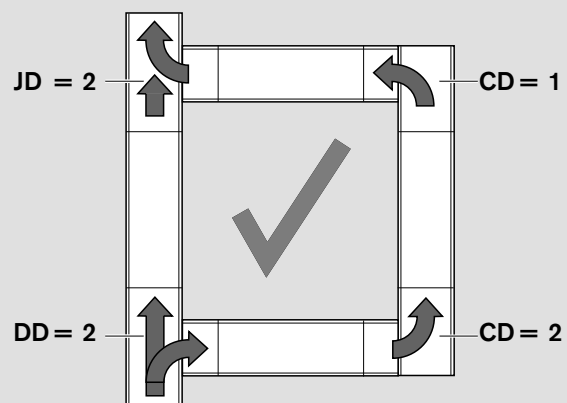
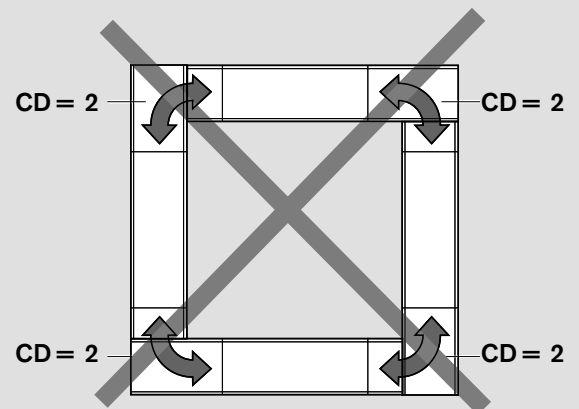
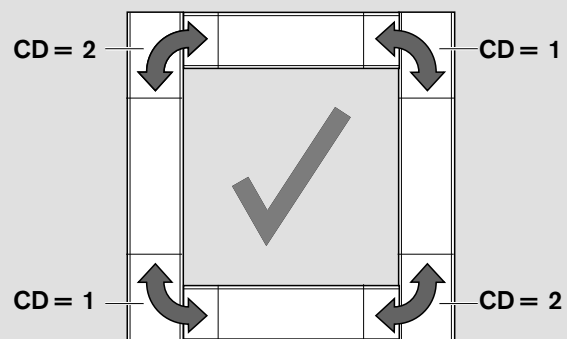
Higher weights available on request



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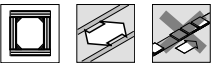
Curves/diverters/junctions

Arrangement of curves, diverters, and junctions



Curves/diverters/junctions

CU 5/XH, CU 5/H curves



Application:

The curve is a ready-for-operation module for branching transport of workpiece pallets. Curves can be driven either on the inside or on the outside.

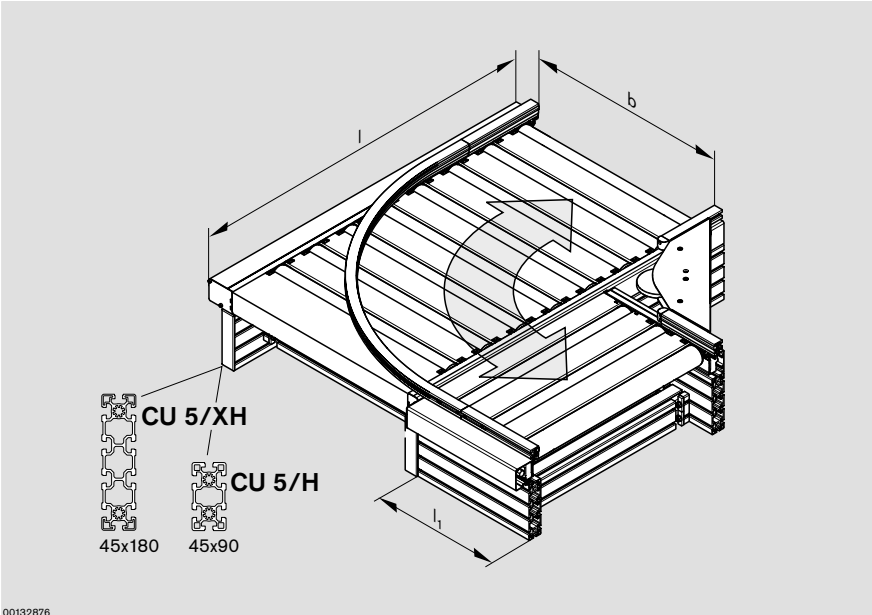
Note:

The curve is not suitable for accumulation operation.
Permissible conveyor speed 5-2

Version:

- Support profile made of anodized aluminum
- Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
- Driven via king shaft with bevel gears made of sintered metal
- Roller spacing p = 130
- Full rollers
- m_G up to 300 kg (where v = 9 m/min)

Delivery condition:
Ready-to-install
Optional: assembled protective covers
(protective covers cannot be ordered separately)



CU 5/XH, CU 5/H curves

b (mm)	l _{WT} (mm)	N	LG	CD ¹⁾	DSM ²⁾	DST ³⁾	TR	SC ⁴⁾	No.
455	455; 650	10	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 526 (CU 5/XH)
650	650; 845	11	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 525 (CU 5/H)
845	845; 1040	13	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	b = ... mm l _{WT} = ... mm N = ... LG = ... CD = ... DSM = ... DST = ... TR = ... SC = ...

¹⁾ CD = curve direction,
1: left
2: right

²⁾ DSM = king shaft installation on main
section
1: left
2: right

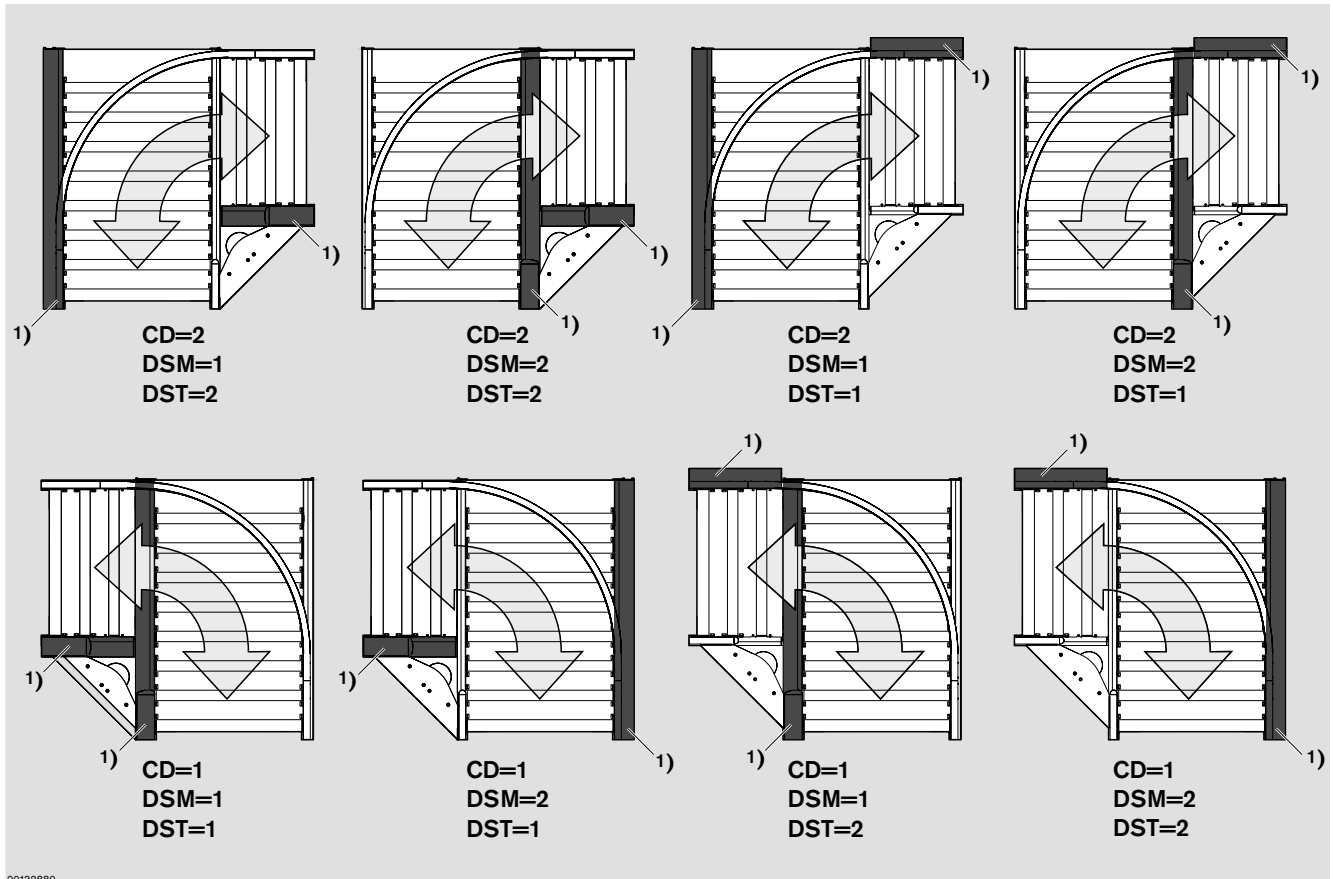
³⁾ DST = king shaft installation on secondary
section
1: left
2: right

⁴⁾ SC = protective covers
1: without protective covers
2: with protective covers

Description of further parameters 0-3
Order examples 5-5

Curves/diverters/junctions

Order examples:



Permissible conveyor speed

m_G (kg)	v_N (m/min)
max. 260	12
max. 300	9

m_G = total mass of workpiece pallet

Higher weights available on request

Curves/diverters/junctions

DI 5/XH, DI 5/H diverters



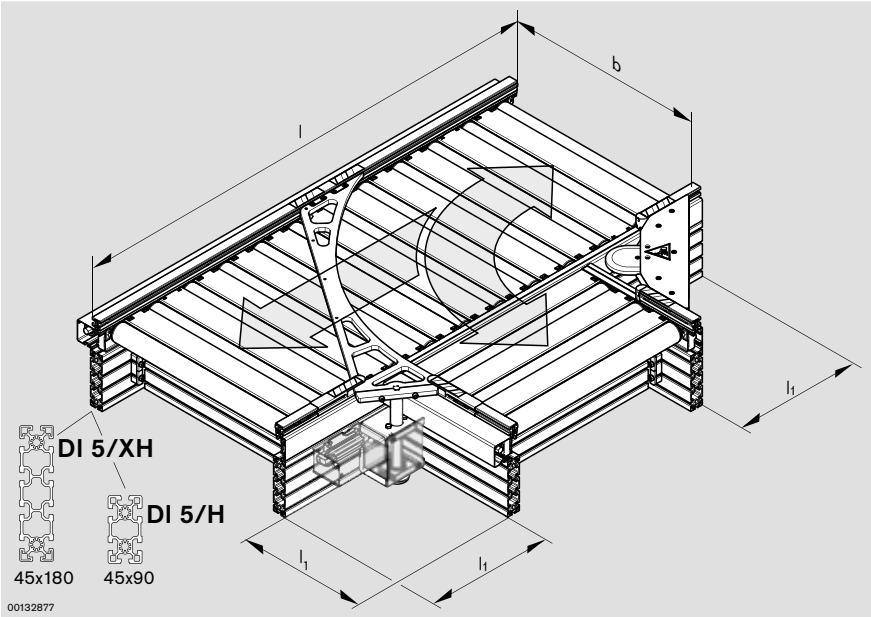
Application:
The diverter is a ready-for-operation module for branching transport of workpiece pallets. The king shaft installation for the main or secondary section can be installed on either side. The diverter is controlled as an active element via a pneumatic cylinder ($p = 5\text{--}6\text{ bar}$).

Note:
The diverter is not suitable for accumulation operation.
Permissible conveyor speed 5-2

- Version:**
- Support profile made of anodized aluminum
 - Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
 - Driven via king shaft with bevel gears made of sintered metal
 - Roller spacing $p = 130$
 - Full rollers
 - m_G up to 300 kg (where $v = 9\text{ m/min}$)

Delivery condition:
Ready-to-install.
Optional: assembled protective covers
(protective covers cannot be ordered separately)

DI 5/XH, DI 5/H diverters



b (mm)	l_{WT} (mm)	N	LG	DD ¹⁾	DSM ²⁾	DST ³⁾	TR	SC ⁴⁾	No.
455	455; 650	13	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 529 (DI 5/XH)
650	650; 845	15	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 528 (DI 5/H)
845	845; 1040	17	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	b = ... mm $l_{WT} = \dots$ mm N = ... LG = ... DD = ... DSM = ... DST = ... TR = ... SC = ...

¹⁾ DD = diverter direction
1: left
2: right

²⁾ DSM = king shaft installation on main section
1: left
2: right

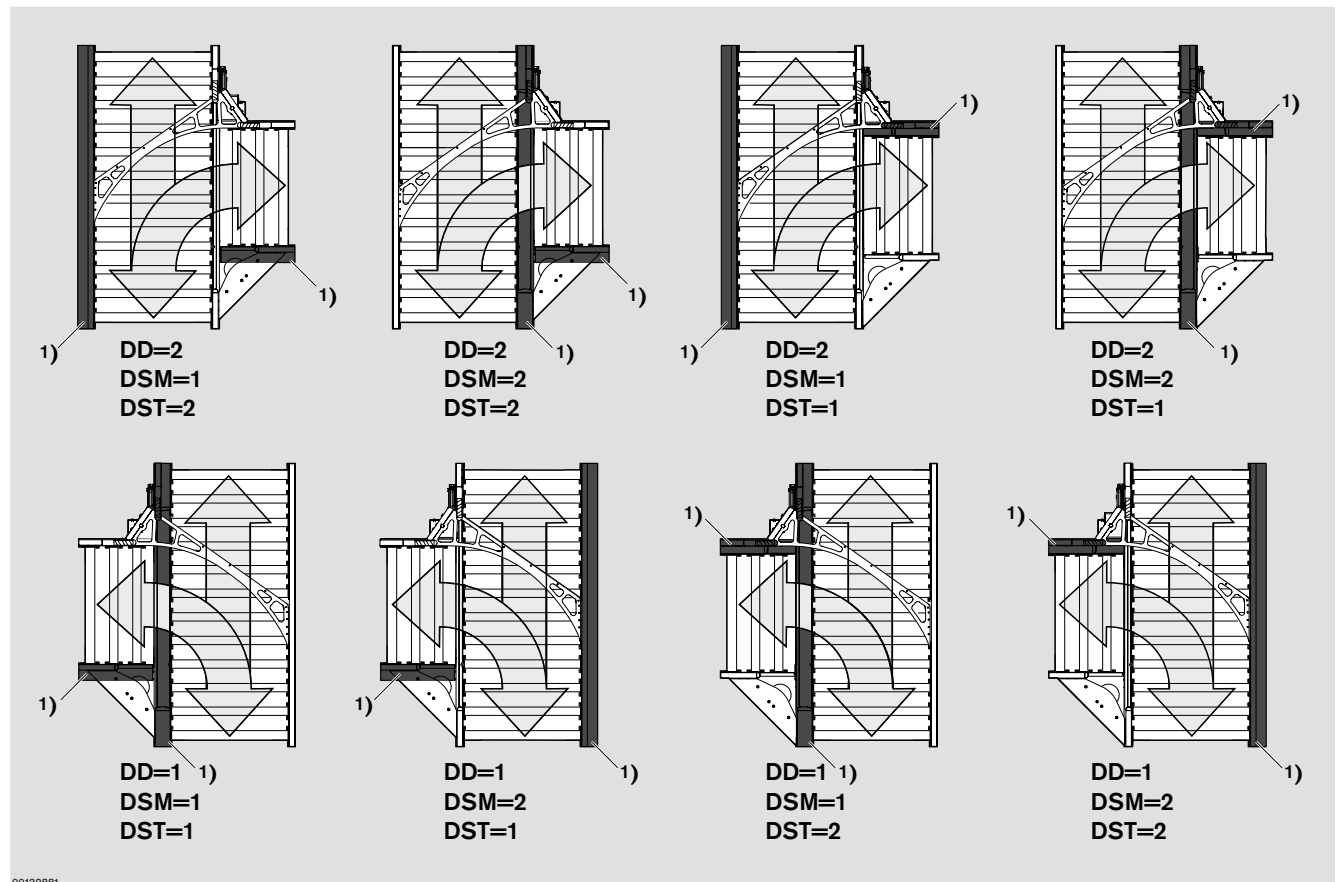
³⁾ DST = king shaft installation on secondary section
1: left
2: right

⁴⁾ SC = protective covers
1: without protective covers
2: with protective covers

Description of further parameters 0-3
Order examples 5-7

Curves/diverters/junctions

Order examples:



1) Drive side

Permissible conveyor speed

m_G (kg)	v_N (m/min)
max. 260	12
max. 300	9

m_G = total mass of workpiece pallet

Higher weights available on request

Diverter arm position inquiry on request

JU 5/XH, JU 5/H junctions



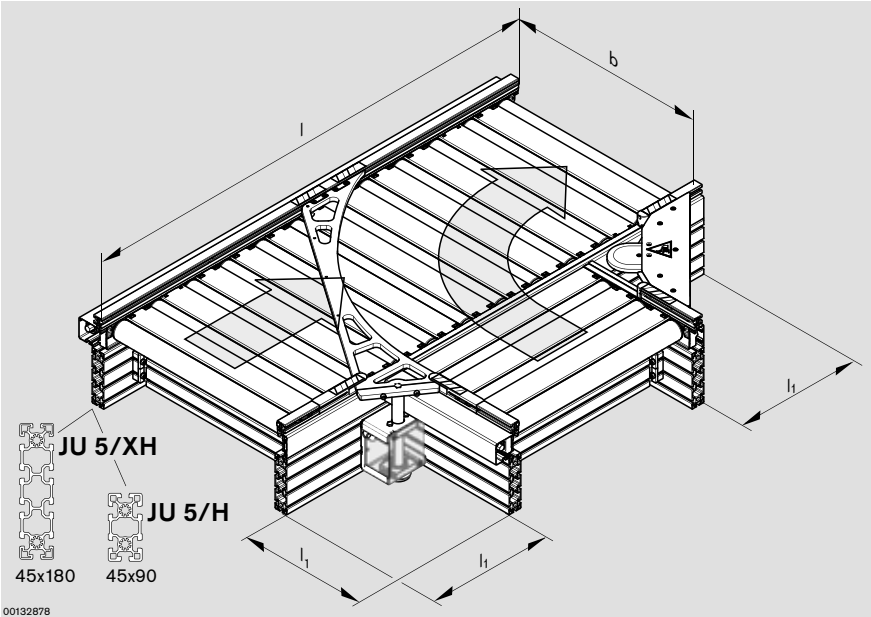
Application:
The junction is a module for branching transport of workpiece pallets. The king shaft installation for the main or secondary section can be installed on either side. The junction is a passive element without any control. The workpiece pallet moves the diverter arm into position.

Note:
The junction is not suitable for accumulation operation.
Permissible conveyor speed 5-2

- Version:**
- Support profile made of anodized aluminum
 - Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
 - Driven via king shaft with bevel gears made of sintered metal
 - Roller spacing $p = 130$
 - Full rollers
 - m_G up to 300 kg (where $v = 9$ m/min)

Delivery condition:
Ready-to-install.
Optional: assembled protective covers
(protective covers cannot be ordered separately)

JU 5/XH, JU 5/H junctions



b (mm)	l_{WT} (mm)	N	LG	JD ¹⁾	DSM ²⁾	DST ³⁾	TR	SC ⁴⁾	No.
455	455; 650	13	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 531 (JU 5/XH)
650	650; 845	15	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	3 842 998 530 (JU 5/H)
845	845; 1040	17	1; 2; 3	1; 2	1; 2	1; 2	1; 2	1; 2	b = ... mm $l_{WT} = \dots$ mm N = ... LG = ... JD = ... DSM = ... DST = ... TR = ... SC = ...

¹⁾ JD = junction direction
1: left
2: right

²⁾ DSM = king shaft installation on main section
1: left
2: right

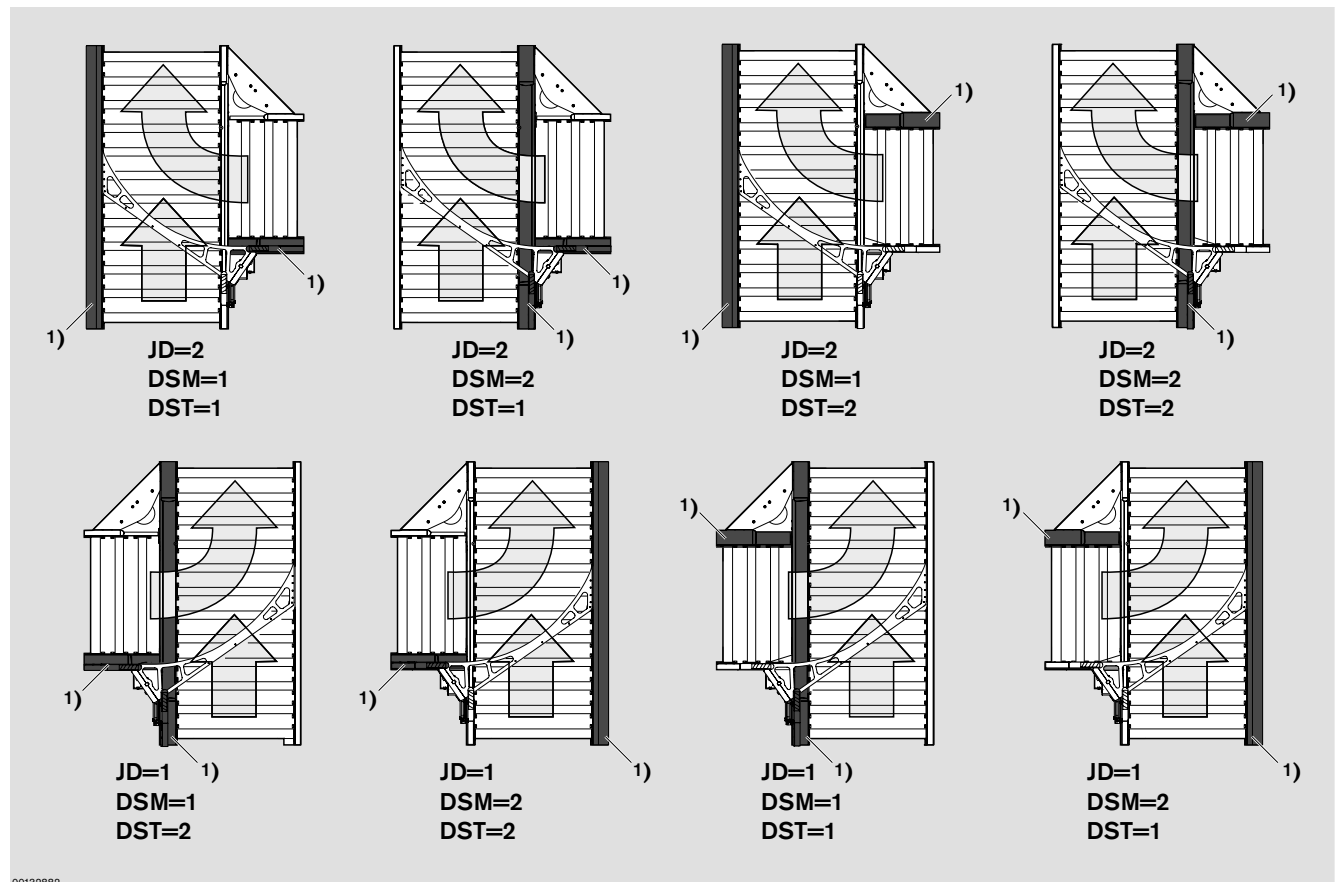
³⁾ DST = king shaft installation on secondary section
1: left
2: right

⁴⁾ SC = protective covers
1: without protective covers
2: with protective covers

Description of further parameters 0-3
Order examples 5-9

Curves/diverters/junctions

Order examples:



¹⁾ Drive side

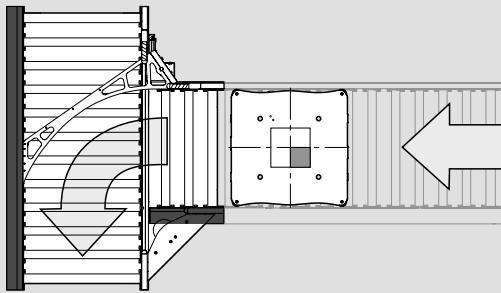
Permissible conveyor speed

m_G (kg)	v_N (m/min)
max. 260	12
max. 300	9

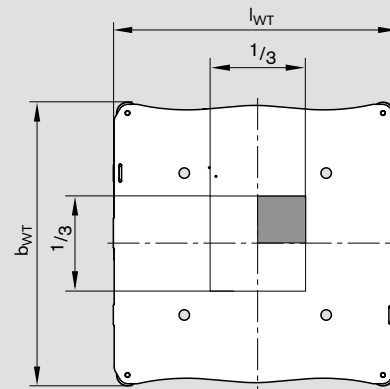
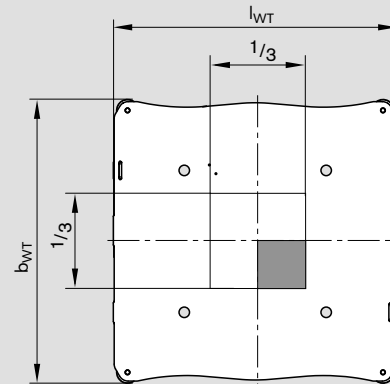
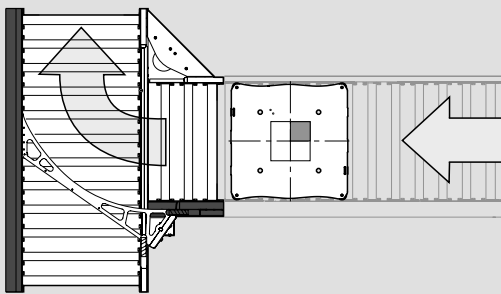
m_G = total mass of workpiece pallet

Higher weights available on request

Limits for the permissible gravity center position for junctions and diverters



JU 5/...
DI 5/...

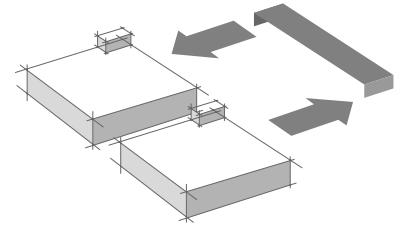


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With the illustrated gravity center position transport problems may occur at the transition from the secondary section to the main section. General information on the gravity center position  2-3

Transverse conveyors

Transverse conveyors



Design	 6-2
HQ 5 lift transverse unit	 6-4
VE 5/200, VE 5/D-300, VE 5/D-1000 stop gates	 6-6
DA 5/200, DA 5/1000 dampers	 6-7
Connection kit for connecting the transverse section	 6-8
Connection bridge	 6-9
Protective covers for HQ 5 lift transverse unit	 6-10
Cover for lateral guide of HQ 5 lift transverse unit	 6-11

Transverse conveyors

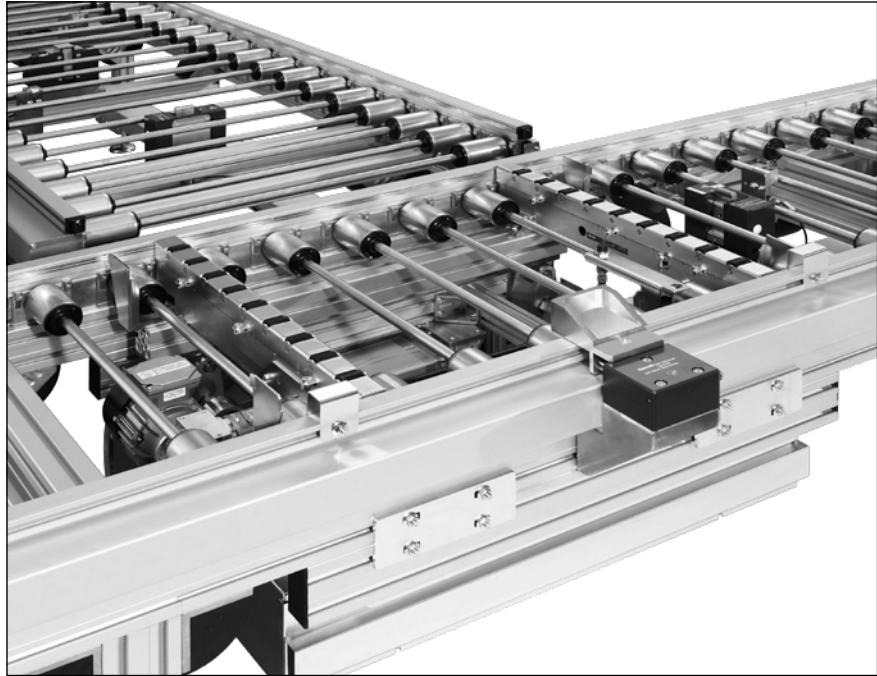
Design

Transverse conveyors are used to branch pallet paths into the individual processing stations.

When changing from a longitudinal conveyor to a transverse conveyor and vice versa, the workpiece pallet also changes its orientation with regard to its direction of transport.

Note:

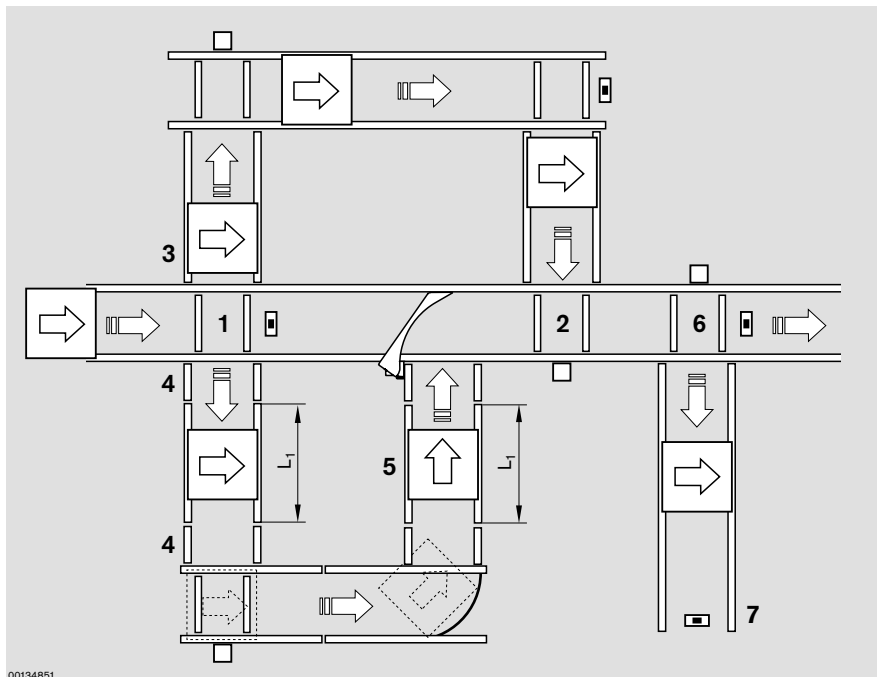
- Minimum speed of transverse section: 6 m/min
- Traveling through curves/diverters/junctions is only possible in a longitudinal direction (see arrow on workpiece pallet)!
- Accumulation is not permitted on HQ 5



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HQ 5 infeeding and outfeeding options.

- 1 Outfeeding to both sides
- 2 Infeeding from just one side  6-7
- 3 Connection of the transverse section (standard section) in a circuit with 4 lift transverse units  6-9
- 4 Connection of the transverse section (2x connection bridge + standard section) with parallel use of lift transverse unit and curve/diverter/junction  6-9
L₁: same section length
- 5 Rotation of the workpiece pallet by 90° with the combination of lift transverse unit and curve/diverter
- 6 Infeeding and outfeeding to dead end section
- 7 Dead end section with stop gate as end stop

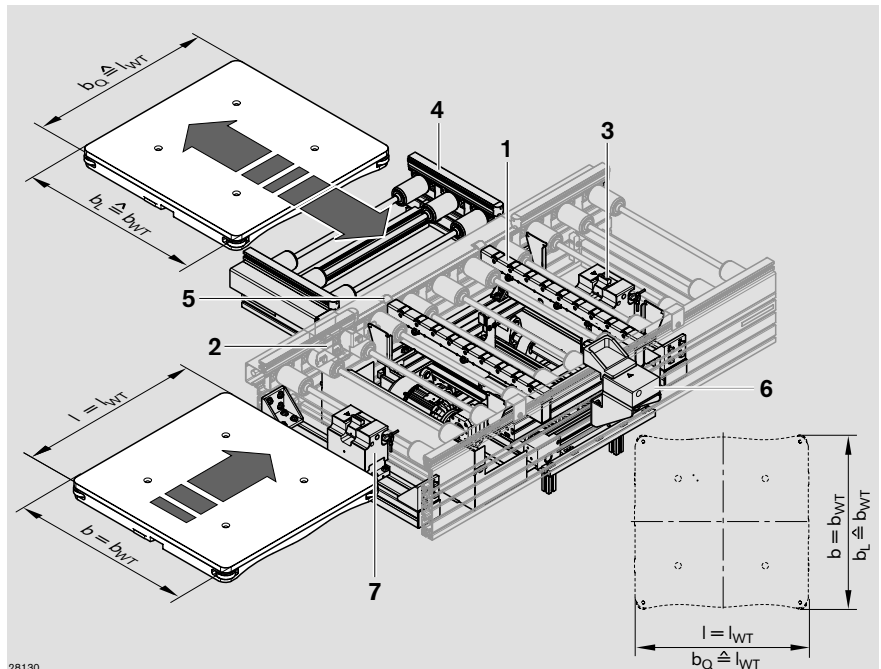


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Transverse conveyors

Transverse conveyor sections include the following components:

- 1 HQ 5 lift transverse unit ☞ 6-4
- 2 Connection kit for connecting the transverse section ☞ 6-8
- 3 VE 5/D-300 or VE 5/D-1000 stop gate to stop the workpiece pallet when outfeeding ☞ 6-6
- 4 Connection bridge ☞ 6-9 to compensate for length with parallel use of lift transverse unit and curve/diverter/junction
- 5 DA 5/... damper to stop the workpiece pallet when infeeding ☞ 6-7
- 6 3 842 549 813 or 3 842 537 995 proximity switch to query the position of the workpiece pallet ☞ 9-11
- 7 Stop gate, if required, to pre-stop the workpiece pallet ☞ 9-8



28130

Transverse conveyors

HQ 5 lift transverse unit



Application:
The HQ 5 lift transverse unit is a ready-to-operation module for branching transport. It lifts the workpiece pallet from the rollers and moves it transversely to the original conveyor direction via a driven roller section.

Note:
Note the orientation of the workpiece pallet after branching.

- Version:**
- Can be used with all WT 5 workpiece pallets
 - The transport level of the transverse section is 4.5 mm above the transport level of the longitudinal section
 - Protective casing can also be removed in the case of low conveyor heights

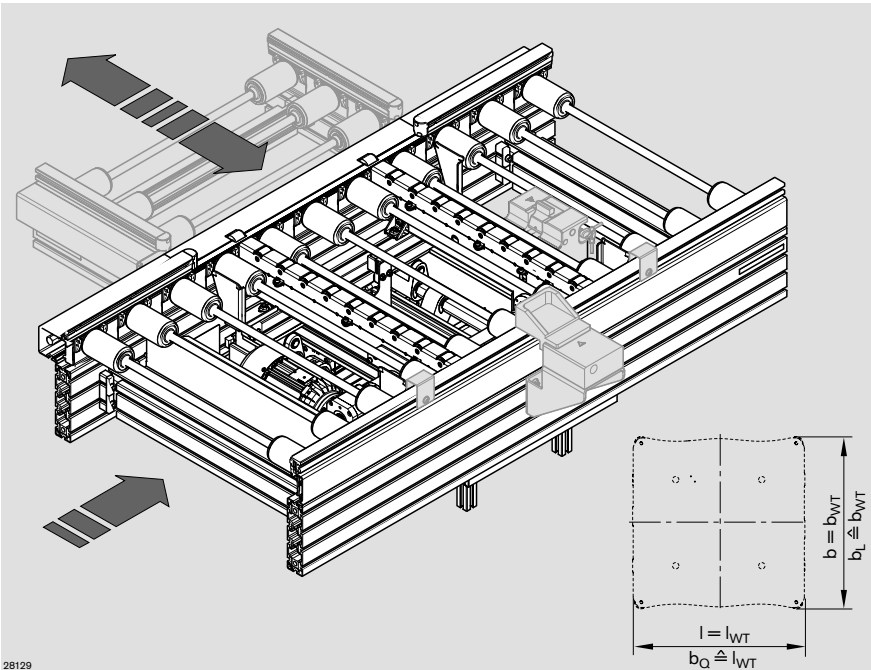
Scope of delivery:
Incl. ST 5/XH or ST 5/H conveyor unit, dimensions 13-25.

Delivery condition:
Assembled

- Required accessories:
- VE 5/200, VE 5/D-300 or VE 5/D-1000 stop gates
 - SH 2/U-H 3 842 537 289 switch bracket 9-12
 - SH 2/U-H 3 842 545 132 assembly kit 9-12; not for size $b = 455$ mm

- Optional accessories:
- Proximity switch 3 842 549 813 or 3 842 537 995 9-11
 - Protective covers 6-10

b_L = track width in direction of transport (longitudinal conveyor)
 b_Q = track width in direction of transport (transverse conveyor)
 v_N = nominal speed



HQ 5 lift transverse unit

b_L (mm)	b_Q (mm)	v_N (m/min)	SC	DSM	OFD	TR	U, f 13-7	AT	No.
455	455	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	3 842 998 781	(HQ 5/XH)
455	650	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	3 842 998 780	(HQ 5/H)
650	650	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	$b_L = \dots$ mm	
650	845	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	$b_Q = \dots$ mm	
845	845	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	$v_N = \dots$ m/min.	
845	1040	6; 9; 12	1; 2	1; 2	1; 2; 3	1; 2	K; S	SC = ...	

SC = protective casing 1: without protective casing 2: with protective casing	OFD = direction of the outfeed 1: left 2: right 3: left and right
DSM = king shaft installation on main section 1: left 2: right	AT = motor connection K: with terminal box S: with cable/plug

Description of further parameters 0-3
Order examples 6-5

HQ 5 lift transverse unit position inquiry (top/bottom) on request

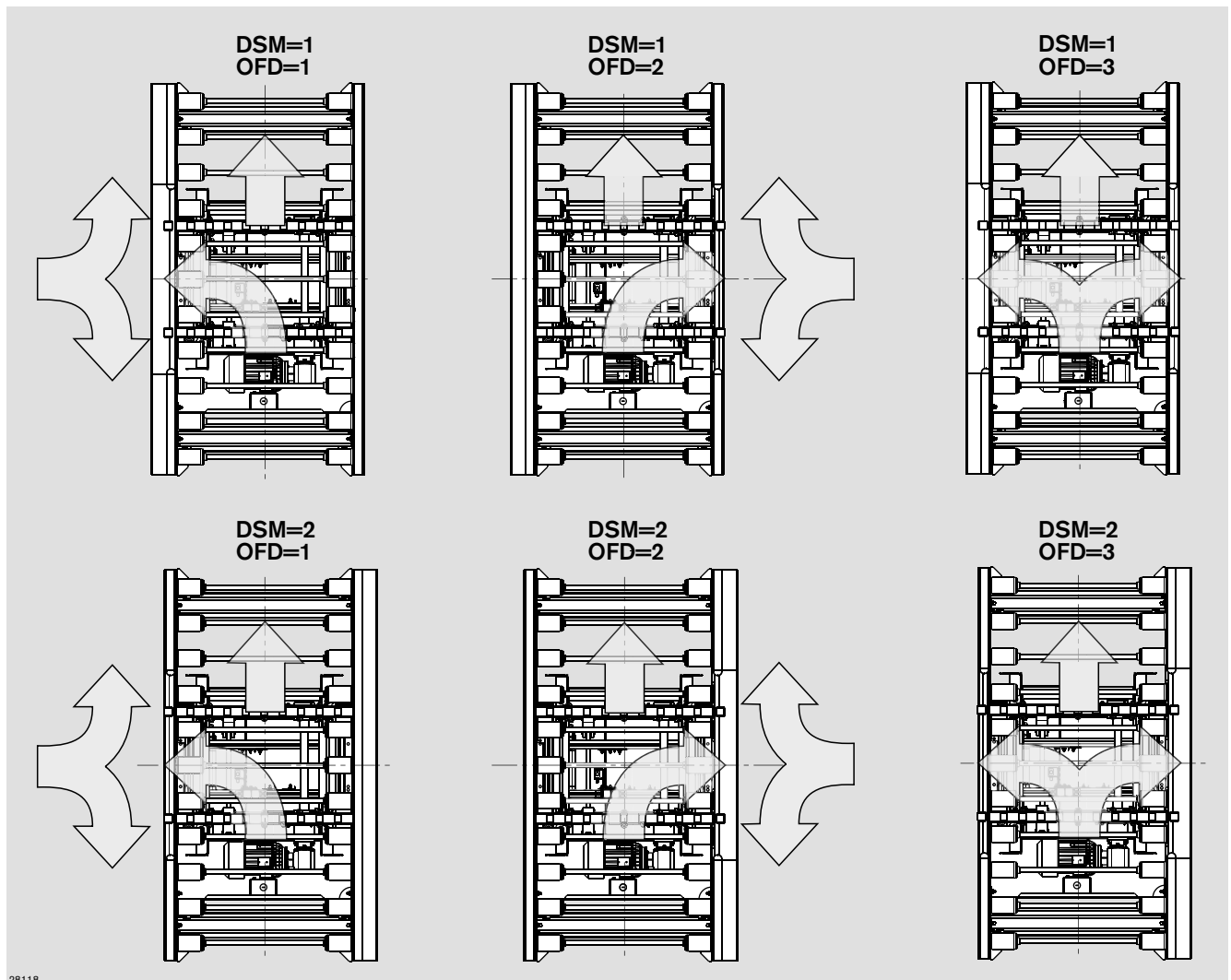


Transverse conveyors

Order examples for the king shaft installation and direction of the outfeed

Size shown

b = 650 x 650 mm



Transverse conveyors

VE 5/200, VE 5/D-300, VE 5/D-1000 stop gates



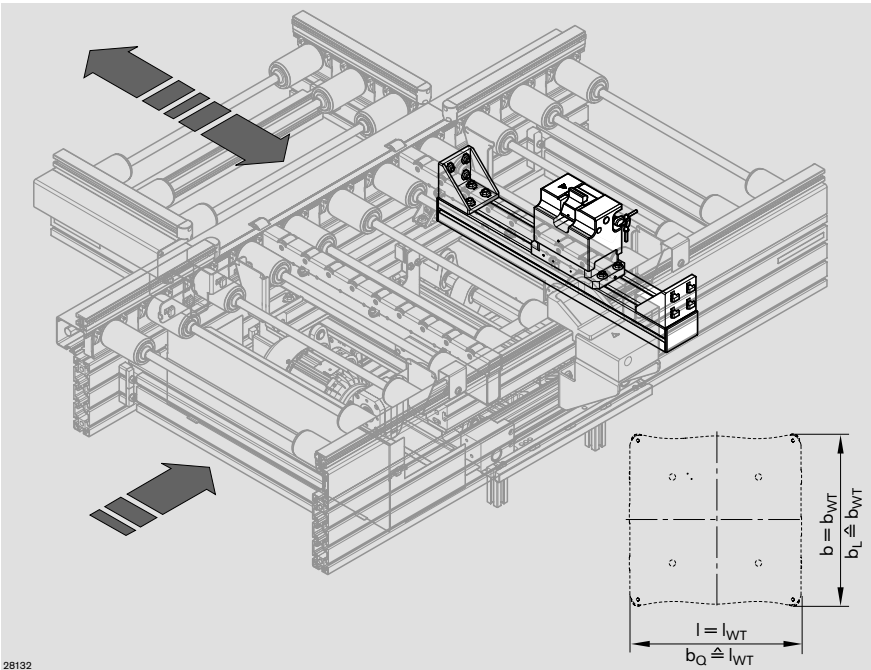
Application:
For non-damped (VE 5/200) or damped (VE 5/D-300 and VE 5/D-1000) stopping of accumulating workpiece pallets for outfeeding 9-5, 9-6

- Version:**
- Pneumatic stop gate. If no pressure is applied, the stop gate is moved into the locked position via a spring and stops the workpiece pallet.
 - Further technical details 9-7

Delivery condition:
Not assembled

Scope of delivery:
Incl. fastening material for assembly on the conveyor section, pneumatic push-in connector, $\varnothing$ 6 mm.

- Optional accessories:**
- 3 842 549 811 or 3 842 537 814 proximity switch 9-11
 - Clamping head for proximity switch 9-10



VE 5/200 stop gates

$b(b_L)$ (mm)	No.
455; 650; 845; 1040	3 842 998 518
$b_L = \dots$ mm	

b_L = track width in direction of transport (longitudinal conveyors)

Permissible impact force per WT

m_G (kg)	$v_N^{1)}$ (m/min)
200	2 – 9

¹⁾ Conveyor speed

VE 5/D-300 stop gates

$b(b_L)$ (mm)	No.
455; 650; 845; 1040	3 842 998 517
$b_L = \dots$ mm	

b_L = track width in direction of transport (longitudinal conveyors)

Permissible impact force per WT

m_G (kg)	$v_N^{1)}$ (m/min)
max. 300	2 – 9
max. 260	2 – 12
max. 160	2 – 18

¹⁾ Conveyor speed

VE 5/D-1000 stop gates

$b(b_L)$ (mm)	No.
455; 650; 845; 1040	3 842 998 805
$b_L = \dots$ mm	
$l_a = \dots (1/2)$	

b_L = track width in direction of transport (longitudinal conveyors)

Permissible impact force per WT

m_G (kg)	$v_N^{1)}$ (m/min)
min. 50 max. 1000	2 – 9
min. 50 max. 900	2 – 12
min. 50 max. 700	2 – 18

¹⁾ Conveyor speed

Transverse conveyors

DA 5/200, DA 5/1000 dampers

**Application:**

Damped stopping of an accumulating workpiece pallet during infeeding.

Version:

- Damping steplessly adjustable (DA 5/200, DA /1000 self-adjusting)
- See table for workpiece pallet loads
- The damper is extended pneumatically into the damping position (infeeding of the workpiece pallet to the main section) and is pushed into the end position by the infeeding workpiece pallet. A workpiece pallet can only move onto the main section if the damper is in the end position.

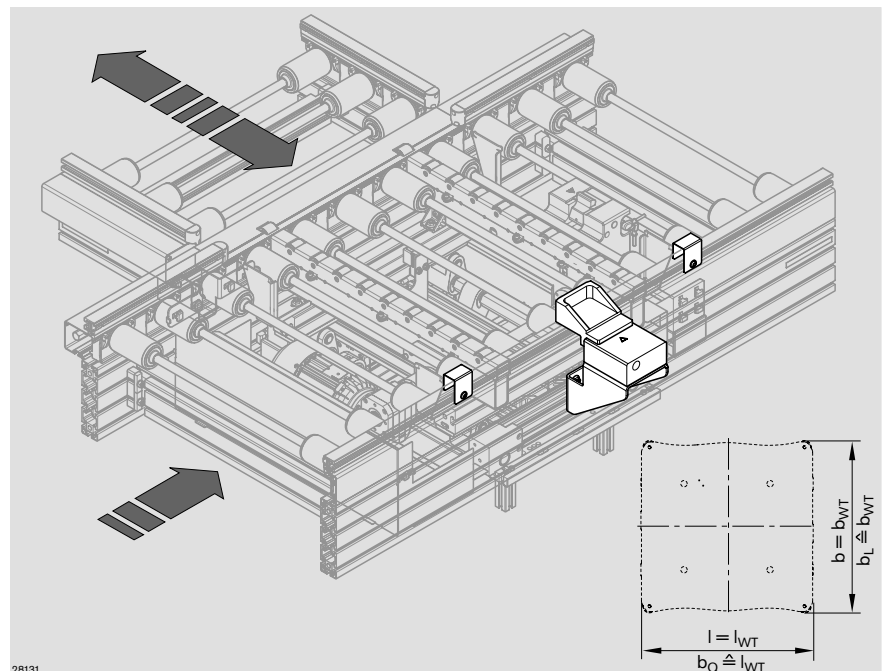
Note:

If the damper is extended, it moves into the main section and cannot be retracted pneumatically! The damper can only be retracted by infeeding a workpiece pallet. Collision hazard if there are overhanging carrier plates.

Delivery condition:
Not assembled

Scope of delivery:

Incl. fastening material for assembly on the conveyor section; pneumatic push-in connector, $\varnothing$ 6 mm.



DA 5/200 dampers

No.
Set **3 842 545 128**

Permissible impact force per WT

m_G (kg)	$v_N^{1)}$ (m/min)
max. 280	2 – 9
max. 240	2 – 12
max. 140	2 – 18

¹⁾ Conveyor speed

DA 5/1000 dampers

No.
Set **3 842 545 130**

Permissible impact force per WT

m_G (kg)	$v_N^{1)}$ (m/min)
min. 50 max. 1100	2 – 9
min. 50 max. 1000	2 – 12
min. 50 max. 800	2 – 18

¹⁾ Conveyor speed



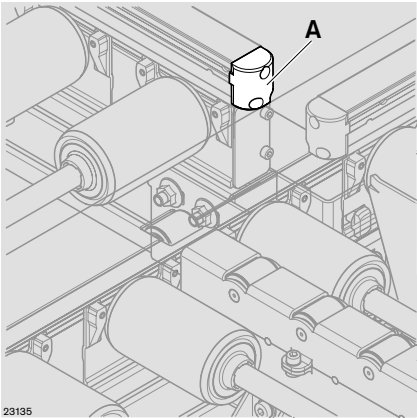
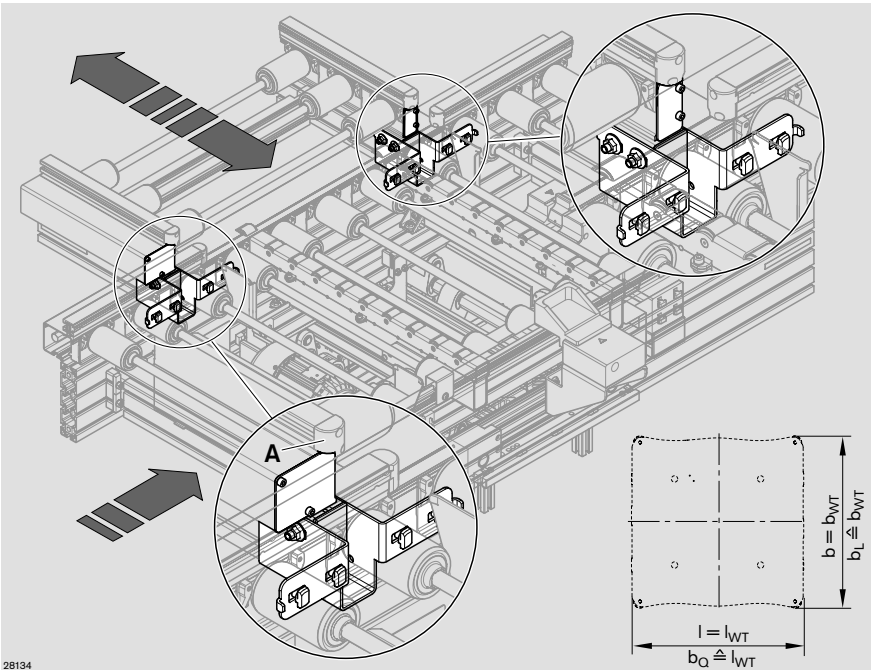
Connection kit for connecting the transverse section

Application:
For connecting the transverse section, independent of the drive side of the main section. If a circuit only consists of lift transverse units, the transverse sections are connected directly to the longitudinal section.
The guide kit (A) is part of the connection bridge (see 6-9).
For the connection of a standard section, the guide kit (A) must be ordered separately.

Version:
— Support brackets made from galvanized steel incl. covers for the open profile ends of the transverse section.

Scope of delivery:
— Connection kit for connecting the transverse section:
2 support brackets incl. fastening material for assembly.
— Guide kit:
2 guide aids incl. fastening material for assembly.

Delivery condition:
Not assembled



Connection kit for connecting the transverse section

	No.
ST 5/H, ST 5/XH	Set 3 842 549 782
ST 5/OC DD = 2 ¹⁾	Set 3 842 549 783
ST 5/OC DD = 1 ¹⁾	Set 3 842 549 784

Guide kit

	No.
A	Set 3 842 545 975

¹⁾ DD = drive
1: on one side
2: on two sides

Transverse conveyors

Connection bridge

Application:

The connection bridge is used for length adjustment when parallel transverse sections are used with lift transverse units and curves/diverters/junctions

Version:

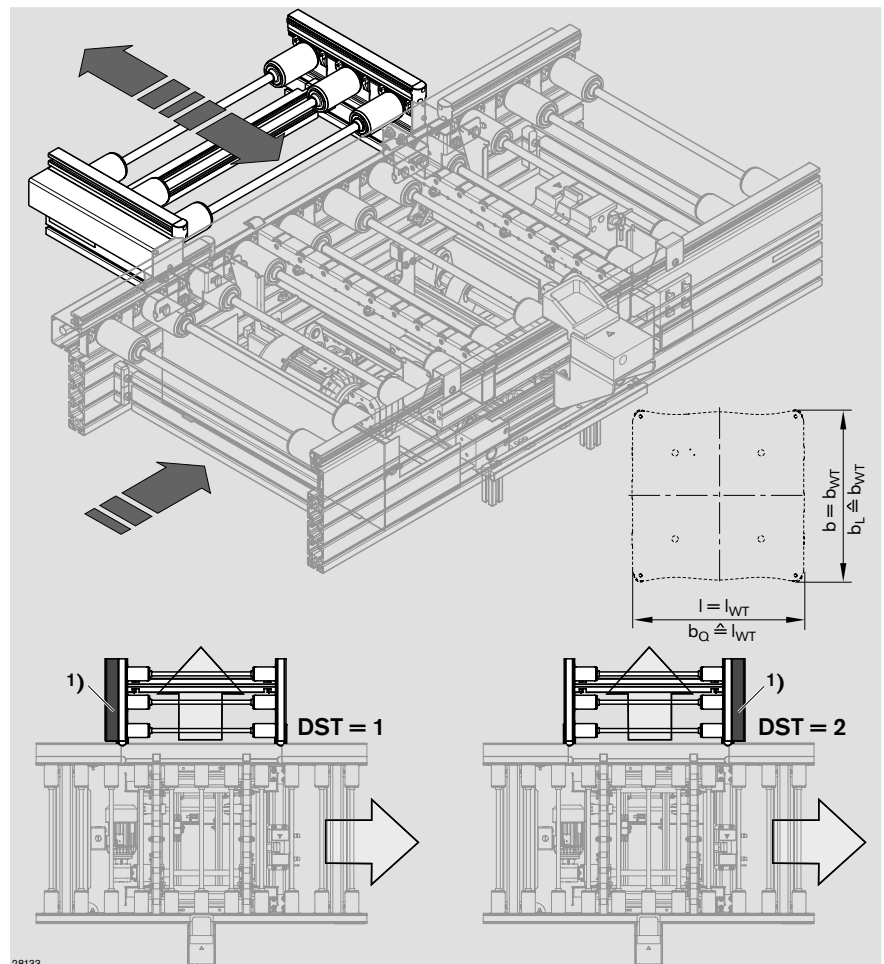
- Support profile made of anodized aluminum
- Permissible section load:
ST 5/XH: 380 kg/m
ST 5/H: 200 kg/m
- Lateral guide profile made of steel, polymer, or aluminum in an anodized aluminum support
- Driven via king shaft with bevel wheels made of polymer or sintered metal
- Roller material: Steel, galvanized

Delivery condition:

Ready-to-install.

Required accessories:

Connection kit for connecting the transverse section  6-8.



Connection bridge

¹⁾ Drive side

b_Q ¹⁾ (mm)	b_L ²⁾ (mm)	LG ³⁾	BG ⁴⁾	DST ⁵⁾	SC ⁶⁾ No.
455	455; 650	1; 2; 3	1; 2	1; 2	1; 2 3 842 998 605 (ST 5/XH)
650	650; 845	1; 2; 3	1; 2	1; 2	1; 2 3 842 998 604 (ST 5/H)
845	845; 1040	1; 2; 3	1; 2	1; 2	1; 2 $b_Q = \dots$ mm
1040	845	1; 2; 3	1; 2	1; 2	1; 2 $b_L = \dots$ mm
LG = ...; BG = ...					
DST = ...; SC = ...					

¹⁾ b_Q = width of transverse section

²⁾ b_L = workpiece pallet width

Description of further parameters  0-3

Order examples  6-5

³⁾ LG = lateral guide material
1: steel; 2: plastic;
3: aluminum

⁴⁾ BG = bevel wheel material
1: plastic
2: sintered metal

⁵⁾ DST = king shaft installation on secondary section

1: left

2: right

⁶⁾ SC = protective covers

1: without protective covers

2: with protective covers

Transverse conveyors

Protective covers for HQ 5 lift transverse unit

Application:

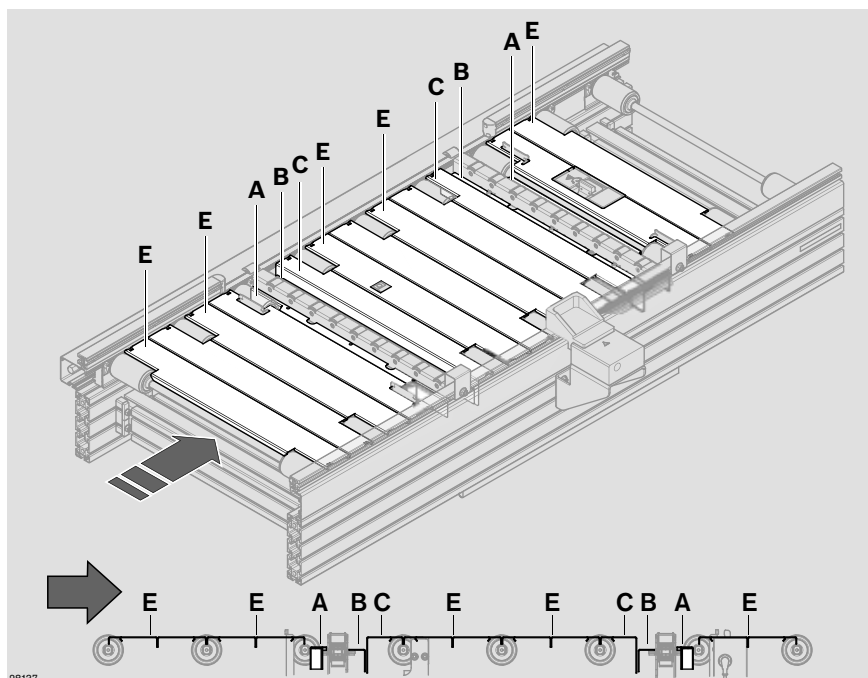
The protective covers are provided in working areas to increase safety. Mobile protective covers (A, B) are assembled to HQ 5, fixed protective covers (C, D) are clipped between the rollers using spring elements. The user must make the openings in the protective covers, see assembly instructions.

Note:

Do not walk on the protective covers. Slots for add-on parts must be made by the customer, for details see assembly instructions.

Versions:

- Protective covers for various widths and roller spacings.
- Material: Steel, galvanized



Required protective covers for HQ 5

b_L (mm)	b_Q (mm)	p (mm)	nx No. A	nx No. B	nx No. C	nx No. E
455	455	130	2x 3 842 545 989	2x 3 842 545 989		4x 3 842 545 404
455	650	130	2x 3 842 545 989	2x 3 842 545 989		5x 3 842 545 404
455	650	195	2x 3 842 545 992	2x 3 842 545 992		3x 3 842 545 609
650	650	130	2x 3 842 545 990	2x 3 842 545 990		5x 3 842 545 405
650	650	195	2x 3 842 545 993	2x 3 842 545 993		3x 3 842 545 360
650	845	130	2x 3 842 545 990	2x 3 842 545 990		7x 3 842 545 405
650	845	195	2x 3 842 545 990	2x 3 842 545 982	2x 3 842 545 984	5x 3 842 545 360
650	845	260	2x 3 842 545 990	2x 3 842 545 982	2x 3 842 545 985	3x 3 842 545 612
845	845	130	2x 3 842 545 991	2x 3 842 545 991		7x 3 842 545 361
845	845	195	2x 3 842 545 991	2x 3 842 545 983	2x 3 842 545 986	5x 3 842 545 362
845	845	260	2x 3 842 545 991	2x 3 842 545 983	2x 3 842 545 987	3x 3 842 545 363
845	1040	130	2x 3 842 545 991	2x 3 842 545 991		8x 3 842 545 361
845	1040	195	2x 3 842 545 994	2x 3 842 545 994		5x 3 842 545 362
845	1040	260	2x 3 842 545 991	2x 3 842 545 983	2x 3 842 545 987	5x 3 842 545 363
845	1040	325	2x 3 842 545 994	2x 3 842 545 998	2x 3 842 545 987	3x 3 842 545 403

b_L = track width in direction of transport (longitudinal conveyor)

b_Q = track width in direction of transport (transverse conveyor)

p = roller spacing (pitch)

n = required quantity

Transverse conveyors

Cover for lateral guide of HQ 5 lift transverse unit

Application:

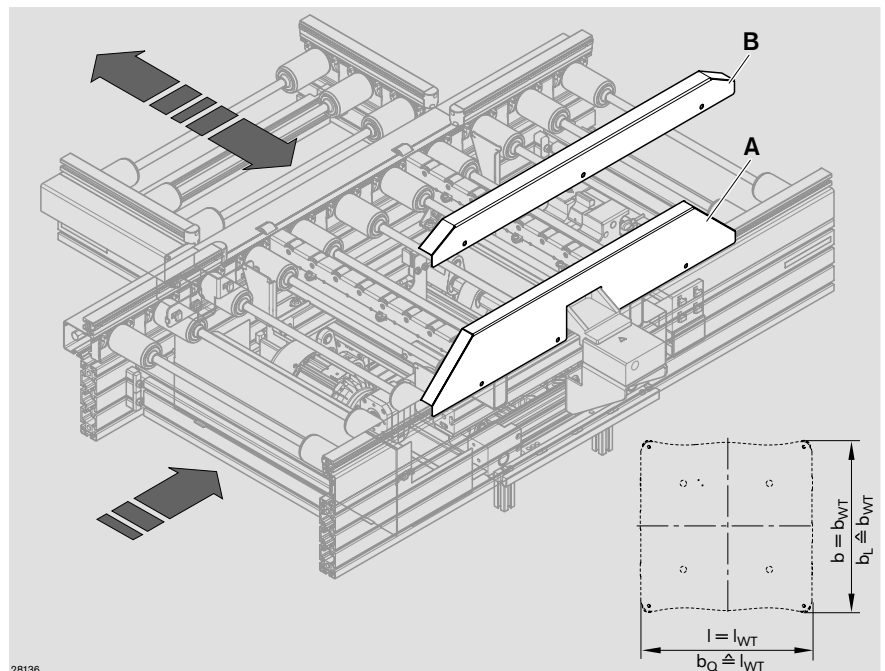
Covers must be provided for the lateral guide in the vicinity of the HQ 5 lift transverse unit (☞ 5-5) to increase safety.

Note:

Do not walk on the protective covers.

Versions:

- Covers with (A) and without (B) slot for DA 5/... damper
- Material: Steel, galvanized



Covers for lateral guide of HQ 5

b_Q (mm)	No. A	No. B
455	3 842 552 658	3 842 552 662
650	3 842 552 659	3 842 552 663
845	3 842 552 660	3 842 552 664
1040	3 842 552 661	3 842 552 665

b_Q = track width in direction of transport
(transverse conveyor)

Required fastening materials:

T-bolt and flange nut

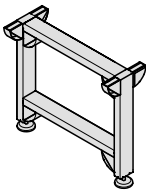
	No.	No.
C	100	3 842 345 081
D	100	3 842 528 718

Description of the T-bolt and flange nut ☞ 7-7

Transverse conveyors

Leg sets

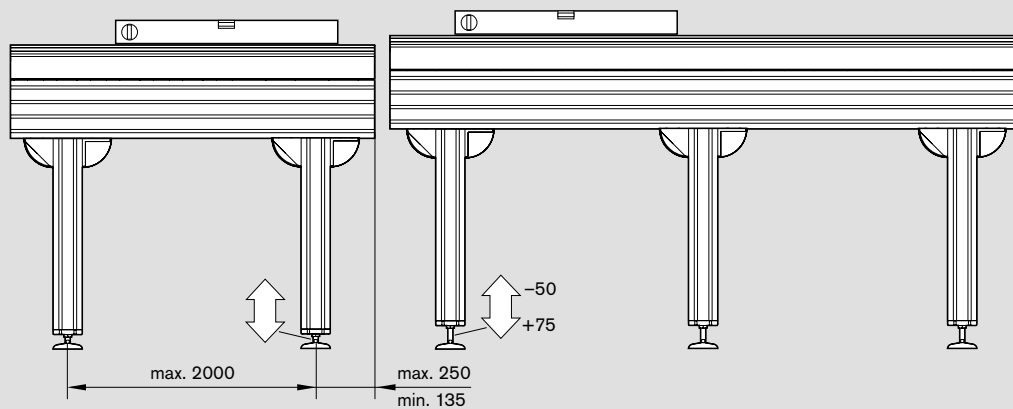
Leg sets



Design	 7-2
SZ 5 leg sets	 7-4
SZ 5/U leg sets	 7-5
SZ 5/OC leg sets	 7-6
Foundation brackets, dowels	 7-7

Leg sets

Design



Leg sets

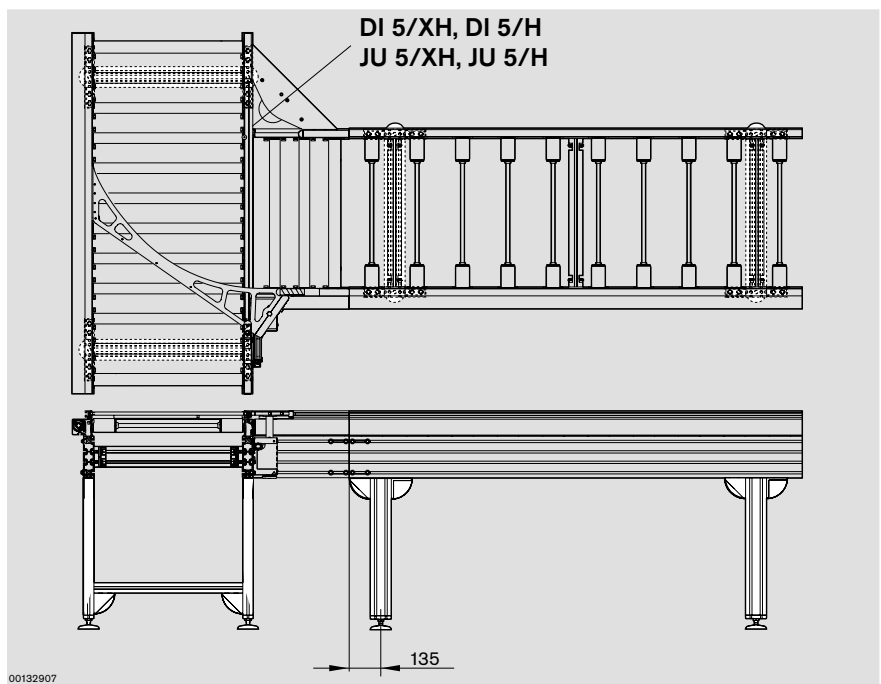
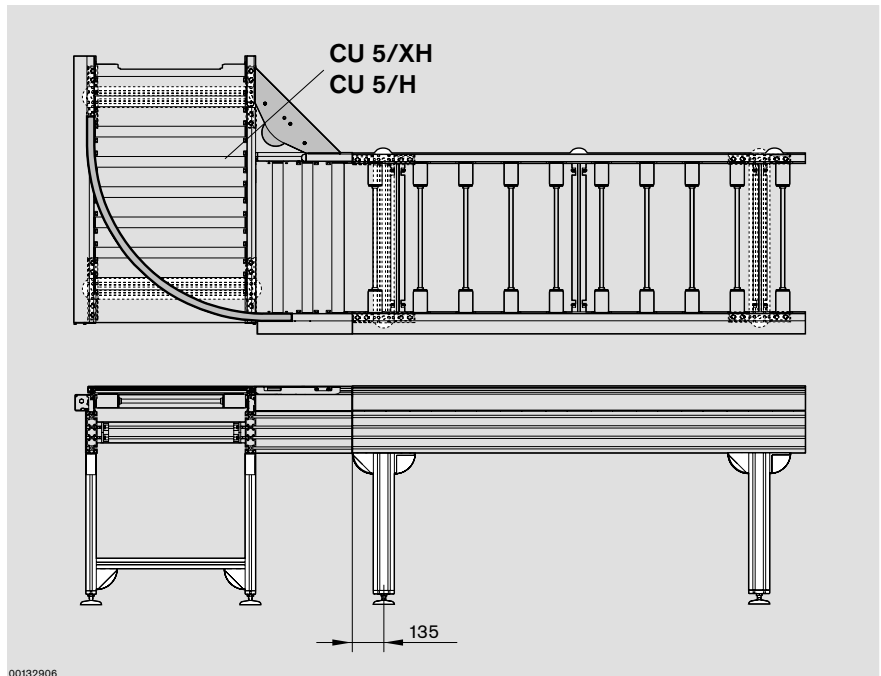
Leg sets support the conveyor section. We recommend providing a separate leg set for every module (conveyor unit, curve, diverter, junction) in order to compensate for height tolerances at the transitions. A max. leg distance of 2000 mm must be maintained per workpiece pallet.

Leg sets

Since curves, diverters, and junctions are only supported by 2 legs, the secondary section must be immediately supported after the transition, see Figures.

Optional accessories:

Leg sets can be anchored to the floor using foundation brackets 3 842 146 815 and dowels 3 842 526 560  7-7



Leg sets

SZ 5 leg sets



Application:

- Leg set for general applications

Version:

- Extruded aluminum profiles
- Height-adjustable bases
- Suitable for the construction of high-load conveyor sections in conjunction with the ST 5/... conveyor units
- Lowest possible transport level (with lowest possible foot setting of 35 mm):
ST 5/XH = 425.5 mm
ST 5/H = 335.5 mm

Note:

For transport heights > 1000 mm, we recommend that users compensate for horizontal braking forces with diagonal struts MGE catalog.

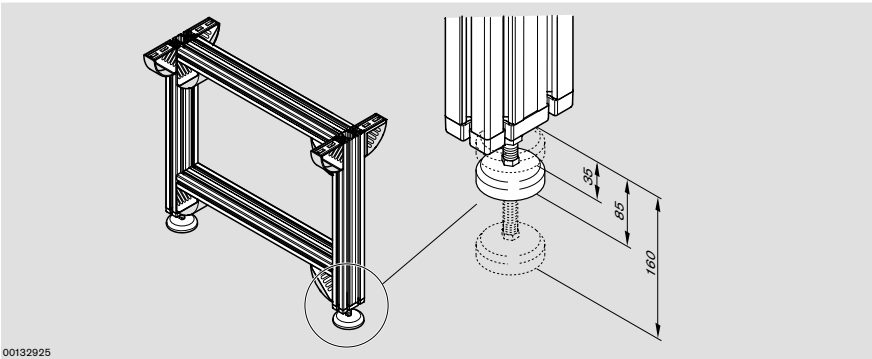
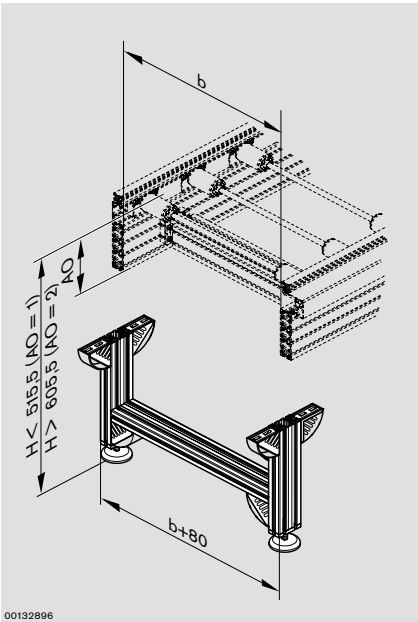
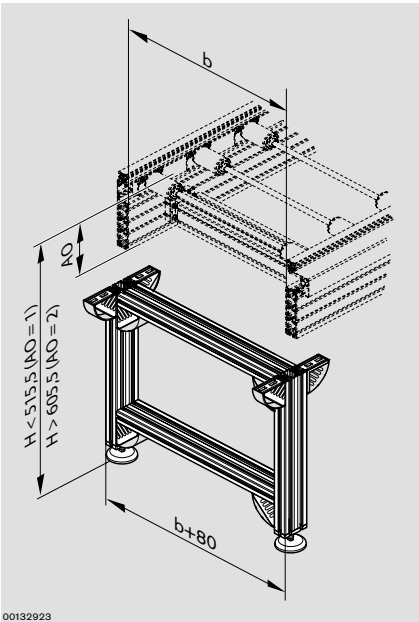
Scope of delivery:

Incl. height-adjustable bases, incl. fastening material to mount the leg set onto a conveyor section, drive unit, curve, diverter, or junction.

Optional accessories:

Cover caps for bracket

		No.
45x90, black ESD	100	3 842 548 865
90x90, black ESD	20	3 842 548 869



SZ 5 leg sets

AO	b (mm)	H (mm)	MT No.
1	455; 650; 845; 1040	385.5 – 2000	0; 1 3 842 996 330
2	455; 650; 845; 1040	475.5 – 2000	0; 1 AO = ... b = ... mm H = ... mm MT = ...

AO = installation location
1: ... 5/H
2: ... 5/XH
b = track width in direction of transport

H = transport height
MT = delivery condition
0: not assembled
1: assembled

Leg sets

SZ 5/U leg sets



Application:

- Leg set for multi-level sections

Version:

- Extruded aluminum profiles
- Height-adjustable bases
- Suitable for the construction of high-load conveyor sections in conjunction with the ST 5/... conveyor units

Note:

For transport heights > 1000 mm, we recommend that users compensate for horizontal braking forces with diagonal struts MGE catalog.

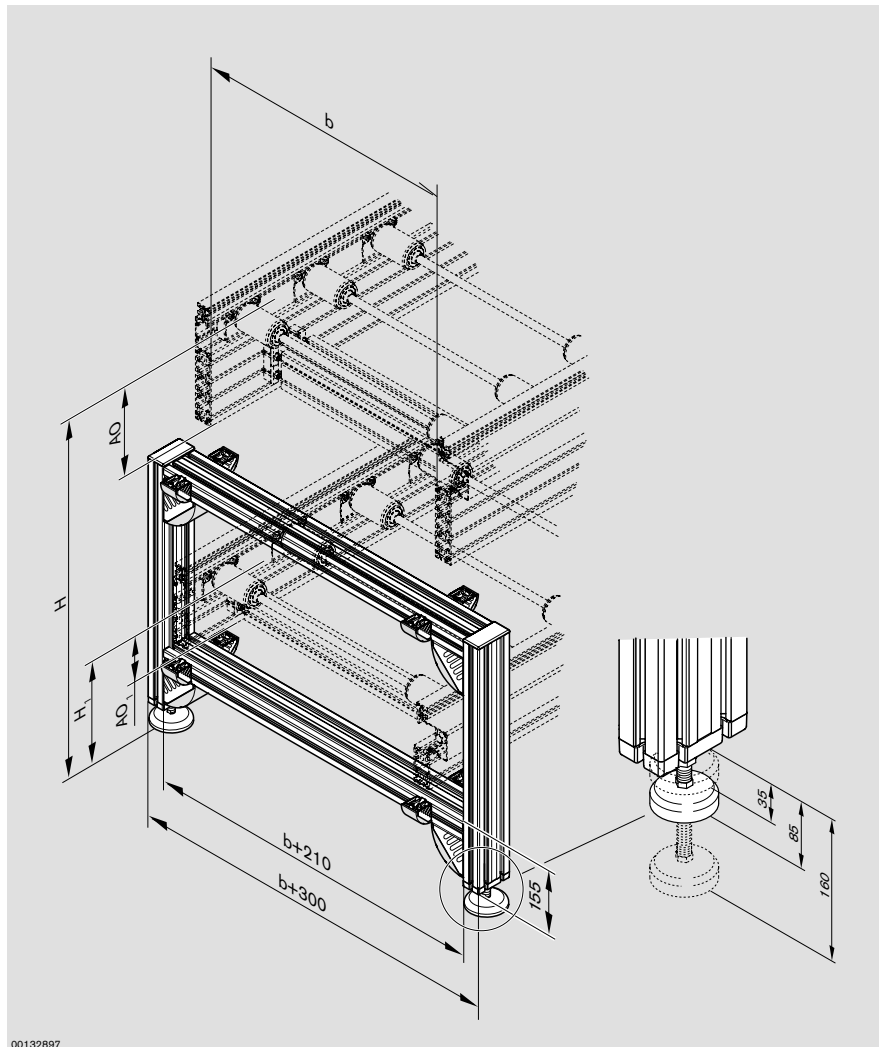
Scope of delivery:

Incl. height-adjustable bases, incl. fastening material to mount the leg set onto a conveyor section, drive unit, curve, diverter, or junction.

Optional accessories:

Cover caps for bracket

		No.
45x45, black ESD	100	3 842 548 863
90x90, black ESD	20	3 842 548 869



SZ 5/U leg sets

AO	b (mm)	H (mm)	AO ₁	H ₁ (mm)	MT	No.
1	455; 650; 845; 1040	733 – 2000	1	385.5 – H-346	0; 1	3 842 996 331
			2	385.5 – H-436		AO = ...
2	455; 650; 845; 1040	913 – 2000	1	475 – H-346	0; 1	b = ... mm
			2	475 – H-436		H = ... mm
						AO ₁ = ...
						H ₁ = ... mm
						MT = ...

AO = installation location AO₁ = installation location lower section b = track width in direction of transport MT = delivery condition
 1: ... 5/H 1: ST 5/H H = transport height 0: not assembled
 2: ... 5/XH 2: ST 5/XH H₁ = transport height lower section 1: assembled

Leg sets

SZ 5/OC leg sets



Application:

- Leg sets for Open Center sections

Version:

- Extruded aluminum profiles
- Height-adjustable bases
- Suitable for the construction of high-load conveyor sections in conjunction with the ST 5/OC... conveyor units
- Lowest possible transport level (with lowest possible foot setting of 35 mm): 335.5 mm

Note:

For transport heights >1000 mm, we recommend that users compensate for horizontal braking forces with diagonal bracing struts MGE catalog.

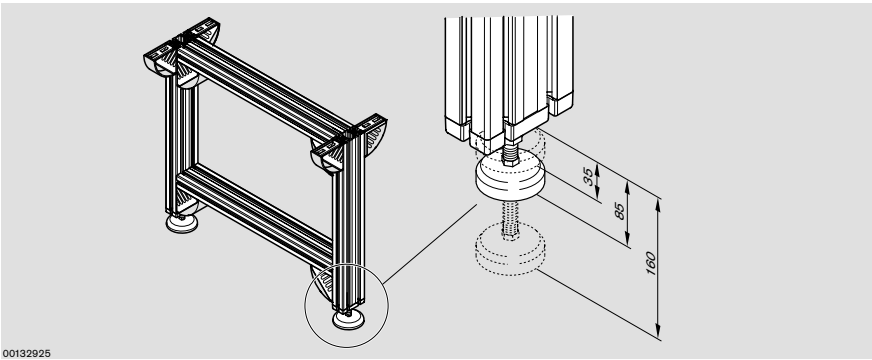
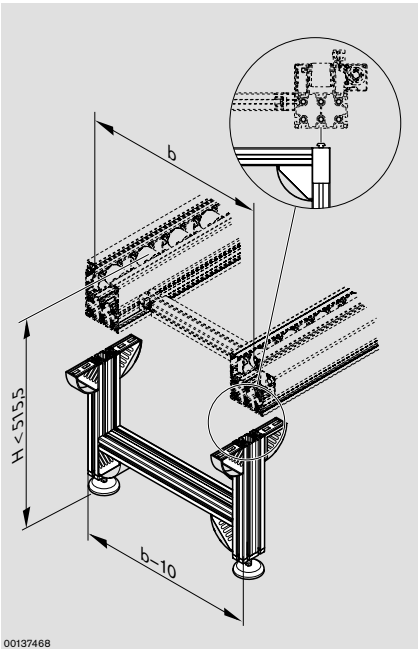
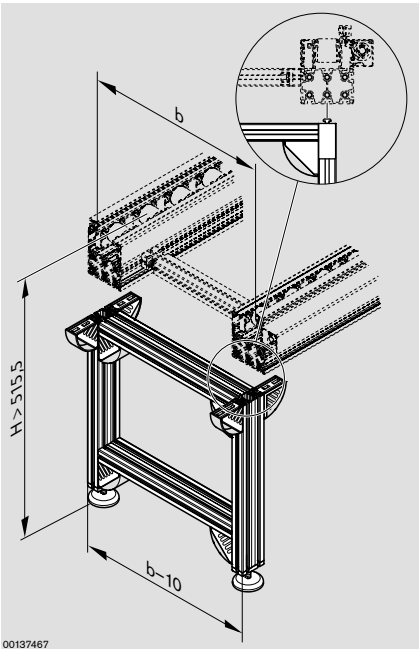
Scope of delivery:

Incl. height-adjustable bases, incl. fastening material to mount the leg set onto a conveyor section, drive unit, curve, diverter, or junction.

Optional accessories:

Cover caps for bracket

		No.
45x90, black ESD	100	3 842 548 865
90x90, black ESD	20	3 842 548 869



SZ 5/OC leg sets

b (mm)	H (mm)	MT	No.
455; 650; 845; 1040	385.5 – 2000	0; 1	3 842 996 332
			b = ... mm
			h _{SZ} = ... mm
			MT = ...

b = track width in direction of transport
H = transport height

MT = delivery condition
0: not assembled
1: assembled

Leg sets

Foundation brackets, dowels

Application:

Frames are fastened to the floor with the foundation bracket. The hole for the dowel can be bored without removing the foundation bracket.

Material:

- A: sheet steel, galvanized and black chrome-plated

Foundation bracket

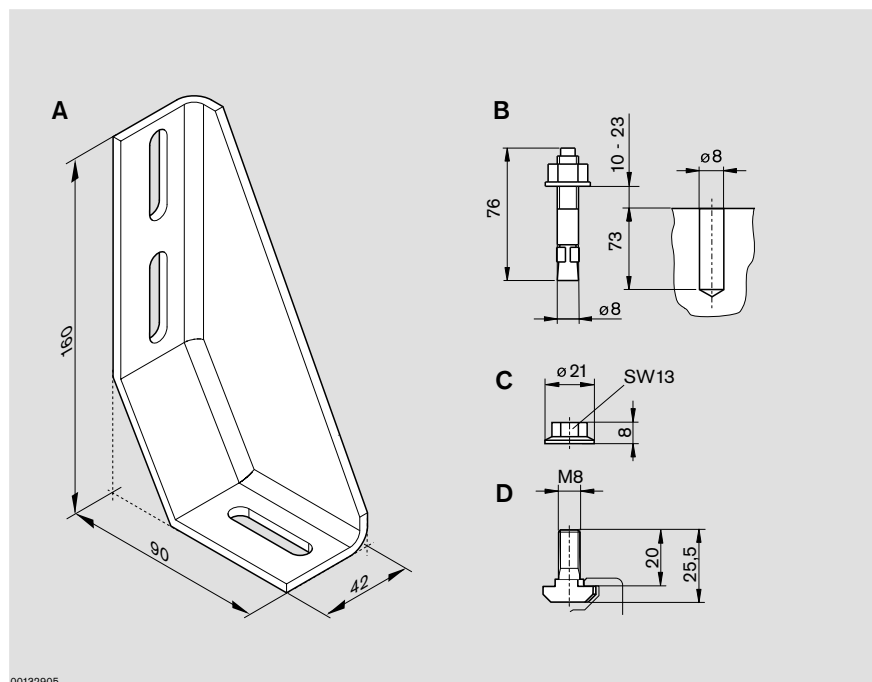
		No.
A	20	3 842 146 815

Dowel

		No.
B	100	3 842 526 560

T-bolt and flange nut

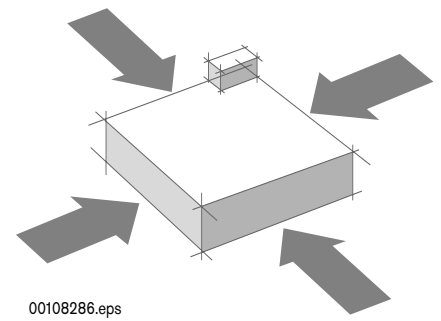
		No.
C	100	3 842 345 081
D	100	3 842 528 718



Leg sets

Positioning and orientation

Positioning and orientation



Design	 8-2
PE 5 positioning unit	 8-3
PE 5/T positioning unit	 8-4
Assembly kit for positioning unit	 8-5
Cover for lateral guide of PE 5 and PE 5/T positioning unit	 8-6
Protective sleeves for PE 5 and PE 5/T	 8-7

Positioning and orientation

Design

In order to process workpieces and maintain production tolerances, workpiece pallets must be stopped and positioned in the processing station.

In doing so, the workpiece pallets can be exactly positioned by up to ± 0.3 mm and the system can absorb vertical process forces of up to 4000 N.

Applications:

- For exact positioning and to lift the workpiece pallet from the conveyor transport surface:
PE 5  8-3.
- For a manual workstation if positioning accuracy requirements are low and there are no forces acting on the workpiece pallet, a VE 5 stop gate  9-7 may be sufficient.



00137420



00137418

Figures:

PE 5 positioning unit with protective covers and sleeves, installed with an assembly kit in an ST 5/H section.

Top figure: top position

Bottom figure: bottom position

Positioning and orientation

PE 5 positioning unit



Application:

positioning a workpiece pallet in a manual or automated processing station in the longitudinal conveyor with high positioning accuracy requirements (± 0.3 mm).

Version:

- Can be used with all WT 5 workpiece pallets
- Installation from above also possible
- Lift over transport level 5 mm
- Positioning accuracy: ± 0.3 mm
- Permissible vertical process force with center load: up to 4000 N^{2), 3)}
- Suitable for ST 5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
- Positioning units for ST 5/OC available on request

Scope of delivery:

Incl. fastening material for mounting the PE 5 in ST 5/XH conveyor sections

Delivery condition:

Assembled

Required accessories:

Assembly kit 3 842 996 185 is required if assembling in ST 5/H conveyor sections.

VE 5/D-1000 stop gate 9-9 or

VE 5/D-300 stop gate 9-8 or

VE 5/200 stop gate 9-7

SH 2/U-H 3 842 537 289 switch bracket

9-12 ¹⁾

SH 2/U-H 3 842 545 132 assembly kit

9-12

Optional accessories:

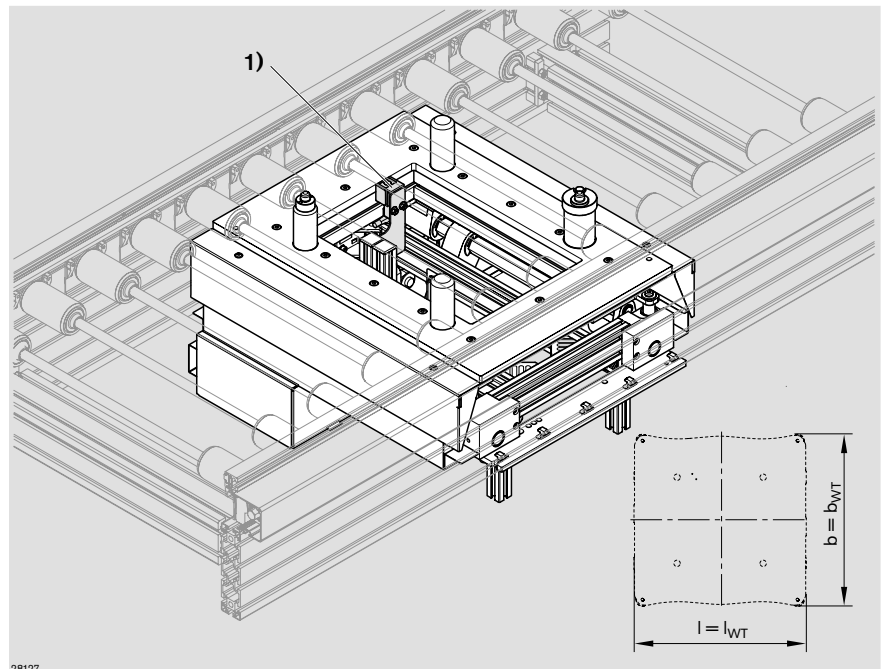
Cover for the lateral guide 8-6

Protective sleeves 8-7

¹⁾ Not for size $b = 455$ mm.

²⁾ If assembling in a ST 5/H section place legs directly in front of and behind the PE 5.

³⁾ Permissible vertical process force if assembled in the section. Higher process forces of up to 15000 N possible with direct support (on request).



PE 5 positioning unit

b (mm)	l_{WT} (mm)	SC No.
455	455	1; 2 3 842 998 786
455	650	1; 2 $b = \dots$ mm
650	650	1; 2 $l_{WT} = \dots$ mm
650	845	1; 2 SC = ...
845	845	1; 2
845	1040	1; 2

SC = protective casing

1: without protective casing

2: with protective casing

b = track width of the positioning unit in the direction of transport

l_{WT} = workpiece pallet length

PE 5 (top/bottom) positioning unit
position inquiry option on request

Description of further parameters 0-3



13-35

Positioning and orientation

PE 5/T positioning unit



Application:
positioning a workpiece pallet in a manual or automated processing station in the transverse conveyor with high positioning accuracy requirements (± 0.3 mm).

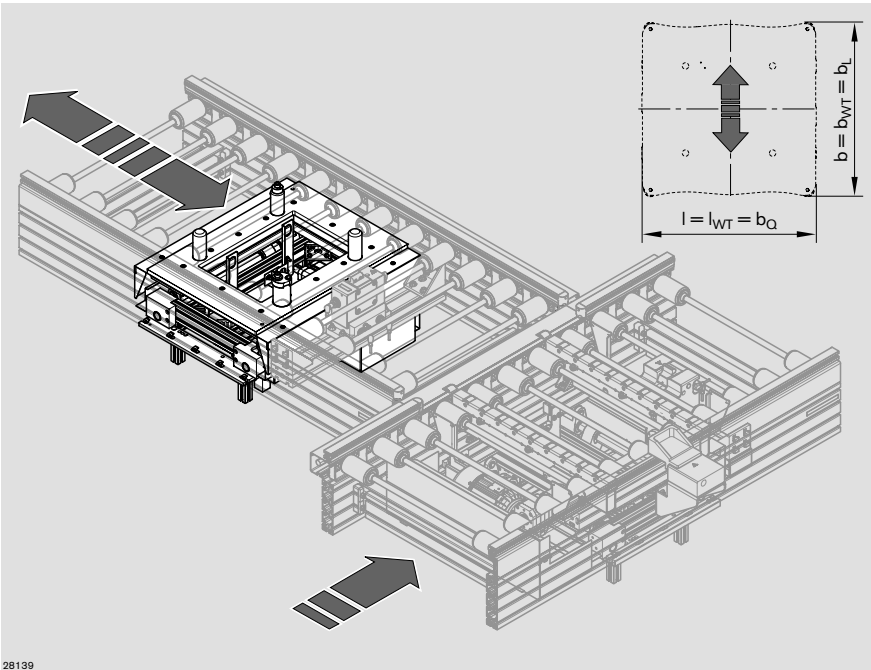
- Version:**
- Can be used with all WT 5 workpiece pallets
 - Installation from above also possible
 - Lift over transport level 5 mm
 - Positioning accuracy: ± 0.3 mm
 - Permissible vertical process force with center load: up to 4000 N²⁾, ³⁾
 - Suitable for ST5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
 - Positioning units for ST 5/OC available on request

Scope of delivery:
Incl. fastening material for mounting the PE 5/T in ST 5/XH conveyor sections, and stop set for VE 5/D-300 and VE 5/D-1000.

Delivery condition:
Assembled

Required accessories:
Assembly kit 3 842 996 185 is required if assembling in ST 5/H conveyor sections.
VE 5/D-300 stop gate 9-8 or
VE 5/200 stop gate 9-7 ¹⁾
SH 2/U-H 3 842 537 289 switch bracket 9-12 ¹⁾
SH 2/U-H 3 842 545 132 assembly kit 9-12

¹⁾ A position inquiry for the workpiece pallet on the PE is only possible through use of a VE 5/D-300 or VE 5/D-1000 stop gate.
²⁾ If assembling in a ST 5/H section, place legs directly in front of and behind the PE 5/T.
³⁾ Permissible vertical process force if assembled in the section. Higher process forces of up to 15000 N possible with direct support (on request).



PE 5/T positioning unit

b_L (mm)	b_Q (mm)	SC No.
455	455	1; 2 3 842 998 177
455	650	1; 2 $b_L = \dots$ mm
650	650	1; 2 $b_Q = \dots$ mm
650	845	1; 2
845	845	1; 2
845	1040	1; 2

SC = protective casing
1: without protective casing
2: with protective casing
 b_L = track width in direction of transport (longitudinal conveyor)
 b_Q = track width in direction of transport (transverse conveyor)

PE 5/T (top/bottom) positioning unit
position inquiry option on request

Description of further parameters 0-3

Positioning and orientation

Assembly kit for positioning unit

Application:

Mounting the PE 5 positioning unit in the ST 5/H conveyor unit  8-3

Version:

- Centering lugs for pre-positioning and fast assembly

Mounting location:

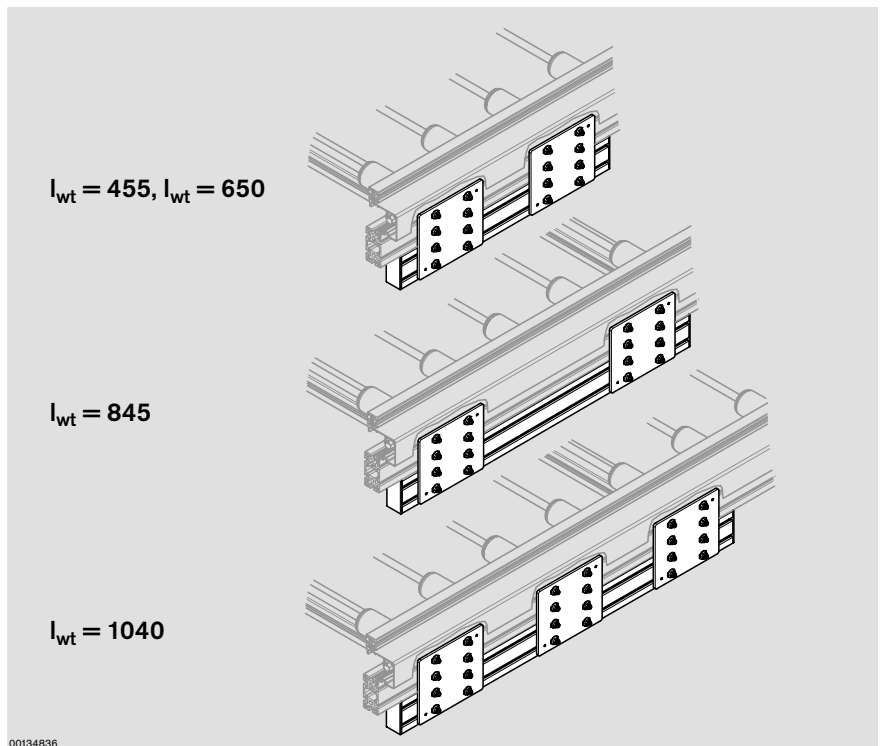
On the section profile

Scope of delivery:

2 profiles for height compensation
Incl. cover caps and fastening material for assembly.

Delivery condition:

Not assembled



00134836

Assembly kit for PE 5

I_{WT}	No.
455; 650; 845; 1040	3 842 996 185
$I_{WT} = \dots \text{ mm}$	

I_{WT} = workpiece pallet length

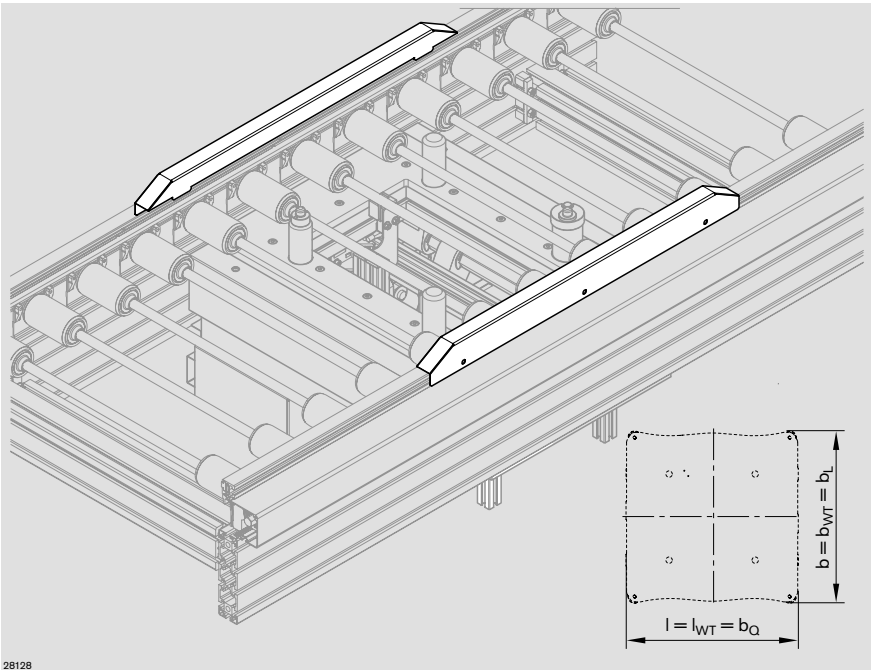
Positioning and orientation

Cover for lateral guide of PE 5 and PE 5/T positioning unit

Application:
 The lateral guide covers are provided on both sides in the vicinity of the PE 5 (8-3) and PE 5/T positioning unit (8-4) to increase safety.

Note:
 Do not walk on the protective covers.

Versions:
 Material: Steel, galvanized



Lateral guide covers for PE 5 and PE 5/T

PE 5	PE 5/T		No.
b_Q (mm)	b_L (mm)		
455	455	1	3 842 552 662
650	650	1	3 842 552 663
845	845	1	3 842 552 664
1040	1040	1	3 842 552 665

b_Q = track width in direction of transport (transverse conveyor)
 b_L = track width in direction of transport (longitudinal conveyor)

Required fastening materials:
 T-bolt and flange nut

		No.
C	100	3 842 345 081
D	100	3 842 528 718

Description of the T-bolt and flange nut
 7-7

Positioning and orientation

Protective sleeves for PE 5 and PE 5/T

Application:

Trap guard to clip in the openings in the protective covers over the lifting plungers of the PE 5. See the assembly instructions for the installation dimensions.

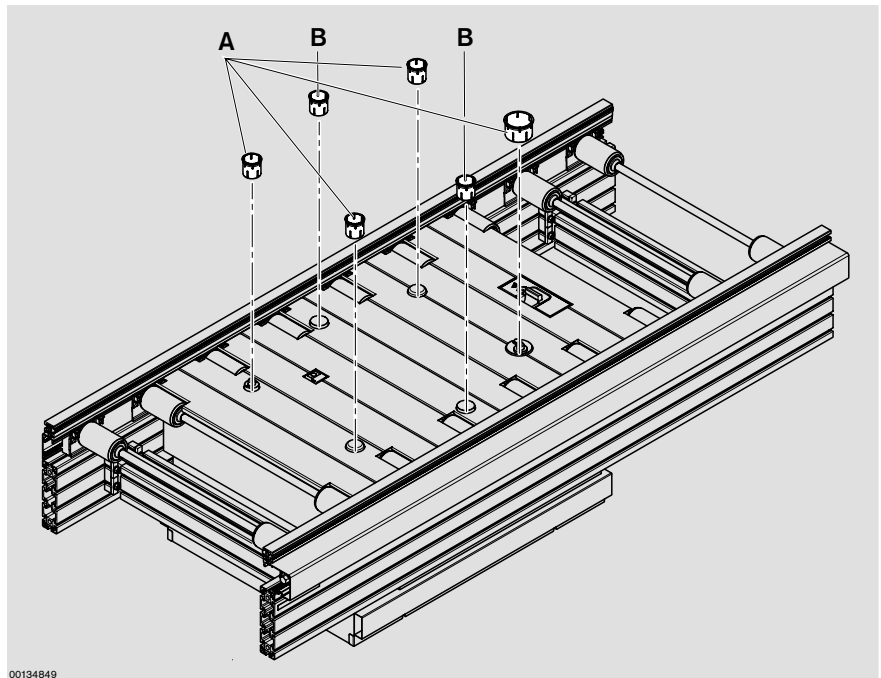
Note:

Do not walk on the protective covers.
Slots for add-on parts must be made by the customer, for details see assembly instructions.

Material: PA

Required accessories:

Protective covers for conveyor unit,  4-5



Protective sleeve sets required for PE 5 and PE 5/T

b (mm)	l_{WT} (mm)	 No. A	 No. B for PE 5	 No. B for PE 5/T
455	455	1x 3 842 545 965		
455	650	1x 3 842 545 965		
650	650	1x 3 842 545 965		
650	845	1x 3 842 545 965	+1x 3 842 545 966	+2x 3 842 545 966
845	845	1x 3 842 545 965	+3x 3 842 545 966	+3x 3 842 545 966
845	1040	1x 3 842 545 965	+3x 3 842 545 966	+3x 3 842 545 966

b = track width of the positioning unit in the direction of transport

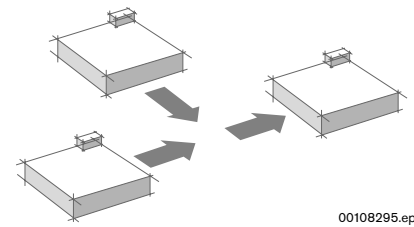
l_{WT} = workpiece pallet length

Positioning and orientation



Transportation control

Transportation control



Transportation control	9-2
Position of stop gate, switch bracket, and ID systems on workpiece pallet (in longitudinal conveyor)	9-3
Position of stop gate and switch bracket on workpiece pallet (in transverse conveyor)	9-5
VE 5/200, VE 5/OC-200 stop gates	9-7
VE 5/D-300, VE 5/OCD-300 stop gates	9-8
VE 5/D-1000, VE 5/OCD-1000 stop gates	9-9
Accessories, stop gates	9-10
Proximity switches	9-11
Accessories, proximity switches	9-12
Accessories, proximity switch in Open Center	9-13

Transportation control

Transportation control

The transportation control components are used to control the flow of workpiece pallets in the transfer system. The direction of travel of the workpiece pallet is decisive for proper function of the transportation control.

Transportation control includes:

- Stopping and separating workpiece pallets in the longitudinal conveyor  9-7, 9-8, 9-9
- Stopping workpiece pallets in the transverse conveyor. It is not possible to separate workpiece pallets in the transverse conveyor  9-7, 9-8, 9-9
- Querying the position of a workpiece pallet. A suitable clamping head for the proximity switch is required for this  9-10
- Controlling operation sequences
- Operation sequence diagrams  13-44 ff.

Stop gates

VE 5/... stop gates are used to separate (only possible in longitudinal conveyors) and stop workpiece pallets, e.g. in an automated station.

They are pneumatically operated. If no pressure is applied, the stop gate is moved into the locked position via a spring, thus substantially improving production reliability. Stop gates are available with and without shock absorbers.

Transportation control

Position of stop gate, switch bracket, and ID systems on workpiece pallet (in longitudinal conveyor)

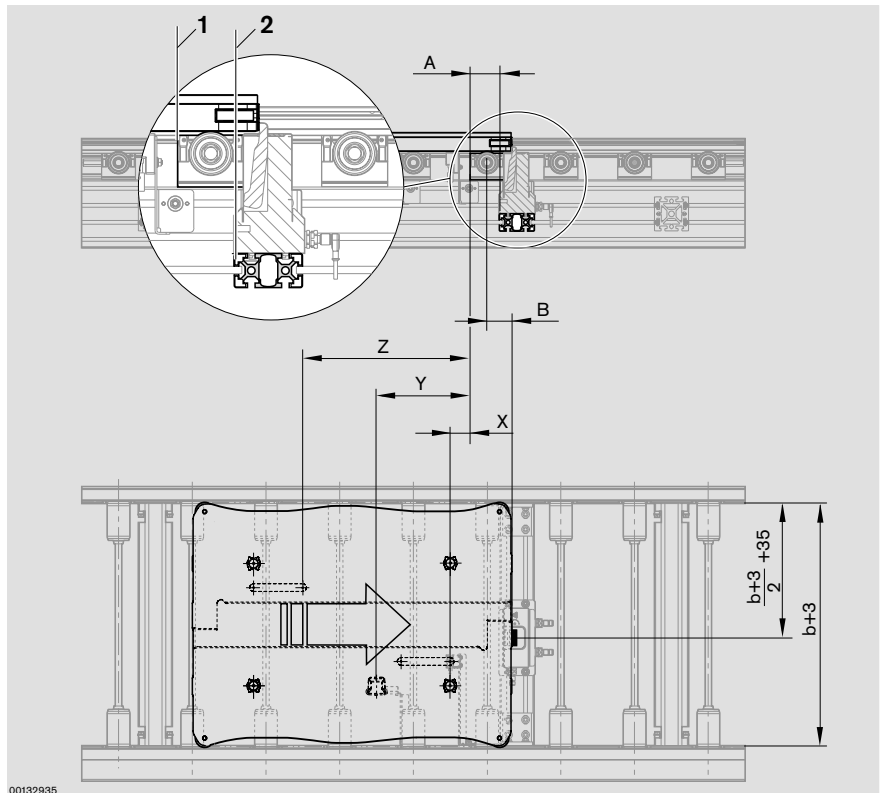
Stopping the workpiece pallet at the **front** of the longitudinal conveyor

Reference points for assembly (in the transport direction):

- Front edge of the bearing pedestal of a roller (1)
- Front edge of the support profile of the stop gate (2)
- Center axes of the
 - Proximity switch in the SH 2/UH
 - ID40/SLK-... read/write head
 - ID 200/A-... antenna
 - VE 5/... stop gate

Note:

The proximity switch and ID 40 and ID 200...-LF identification systems use the same frequency range. Maintain a minimum distance of 200 mm to prevent interference.



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b_{WT} (mm)	l_{WT} (mm)	p (mm)	SH 2/U-H		ID 40	ID 200	VE 5/200, VE 5/D-300		VE 5/D-1000	
			X (mm)	Z (mm)	Y (mm)	Y (mm)	A (mm)	B (mm)	A (mm)	B (mm)
455	455	130	85	117.5	150	150	46.5	32.5	43	32.5
455	650	130	(52.5) ¹⁾	247.5	122	122	79	65	75.5	65
455	650	195	(52.5) ¹⁾	247.5	113	113	79	65	75.5	65
650	650	130	(52.5) ¹⁾	247.5	117.5	117.5	79	65	75.5	65
650	650	195	(52.5) ¹⁾	247.5	117.5	117.5	79	65	75.5	65
650	845	130	52.5	497.5	247.5	247.5	79	65	75.5	65
650	845	195	52.5	442.5	247.5	247.5	79	65	75.5	65
650	845	260	52.5	497.5	247.5	247.5	79	65	75.5	65
845	845	130	52.5	497.5	247.5	247.5	79	65	75.5	65
845	845	195	52.5	442.5	247.5	247.5	79	65	75.5	65
845	845	260	52.5	497.5	247.5	247.5	79	65	75.5	65
845	1040	130	52.5	637.5	247.5	247.5	79	65	75.5	65
845	1040	195	52.5	637.5	247.5	247.5	79	65	75.5	65
845	1040	260	52.5	637.5	247.5	247.5	79	65	75.5	65
845	1040	325	52.5	637.5	247.5	247.5	79	65	75.5	65

¹⁾ SH 2/UH not possible in this position if using ID 40 or ID 200

Transportation control

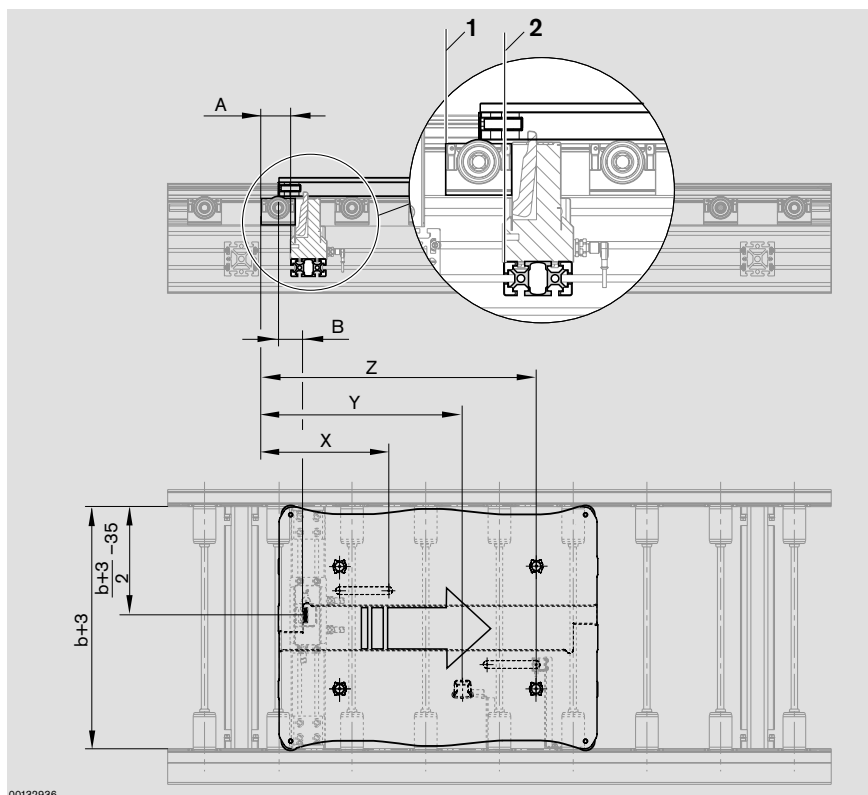
Stopping the workpiece pallet at the rear of the longitudinal conveyor

Reference points for assembly (in the transport direction):

- Front edge of the bearing pedestal of a roller (1)
- Front edge of the support profile of the stop gate (2)
- Center axes of the
 - Proximity switch in the SH 2/UH
 - ID40/SLK-... read/write head
 - ID 200/A-... antenna
 - VE 5/... stop gate

Note:

The proximity switch and ID 40 and ID 200...-LF identification systems use the same frequency range. Maintain a minimum distance of 200 mm to prevent interference.



b_{WT} (mm)	l_{WT} (mm)	p (mm)	SH 2/U-H		ID 40	ID 200	VE 5/200, VE 5/D-300		VE 5/D-1000	
			X (mm)	Z (mm)	Y (mm)	Y (mm)	A (mm)	B (mm)	A (mm)	B (mm)
455	455	130	337.5	272.5	240	240	46.5	32.5	43	32.5
455	650	130	(532.5) ¹⁾	337.5	473	473	79	65	75.5	65
455	650	195	(532.5) ¹⁾	337.5	473	473	79	65	75.5	65
650	650	130	(522) ¹⁾	282.5	467.5	467.5	79	65	75.5	65
650	650	195	(532.5) ¹⁾	337.5	467.5	467.5	79	65	75.5	65
650	845	130	727.5	282.5	532.5	532.5	79	65	75.5	65
650	845	195	727.5	337.5	532.5	532.5	79	65	75.5	65
650	845	260	727.5	282.5	532.5	532.5	79	65	75.5	65
845	845	130	727.5	337.5	532.5	532.5	79	65	75.5	65
845	845	195	727.5	282.5	532.5	532.5	79	65	75.5	65
845	845	260	727.5	282.5	532.5	532.5	79	65	75.5	65
845	1040	130	915	337.5	727.5	727.5	79	65	75.5	65
845	1040	195	922.5	282.5	727.5	727.5	79	65	75.5	65
845	1040	260	922.5	282.5	727.5	727.5	79	65	75.5	65
845	1040	325	922.5	337.5	727.5	727.5	79	65	75.5	65

¹⁾ SH 2/UH not possible in this position if using ID 40 or ID 200

Transportation control

Position of stop gate and switch bracket on workpiece pallet (in transverse conveyor)

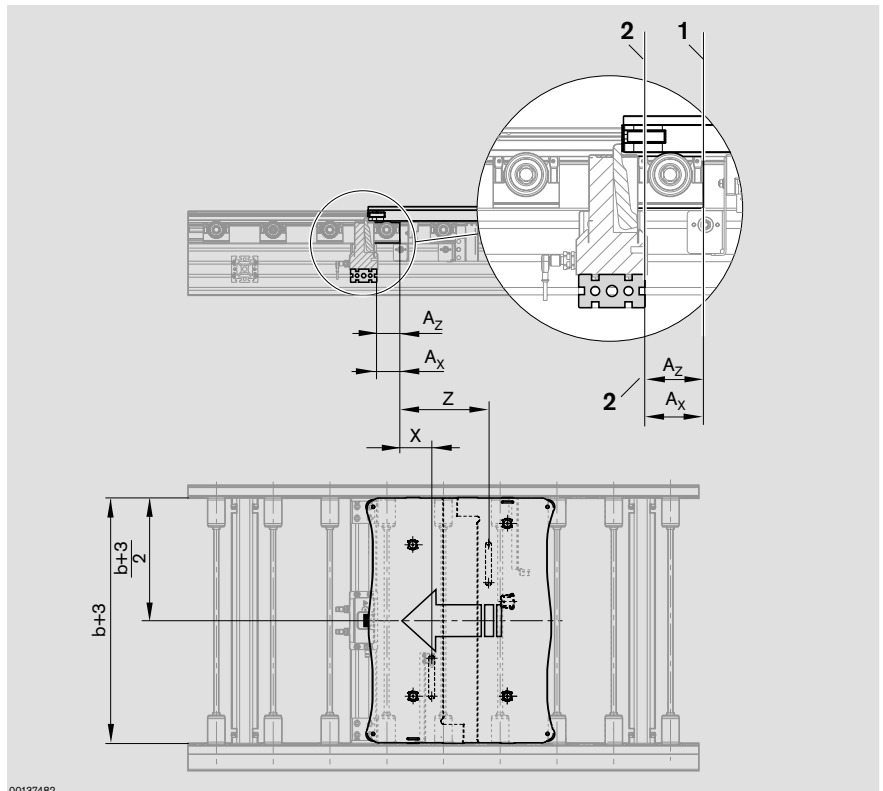
Stopping the WT in the transverse conveyor, **outfeed** to the left

Reference points for installation (in the transport direction):

- Front edge of the bearing pedestal of a roller (1)
- Front edge of the support profile of the stop gate (2)
- Center axis of the proximity switch in the SH 2/UH

Note:

A stop gate is required for each workpiece pallet in the transverse conveyor, as accumulated workpiece pallets cannot be separated.
ID 40 and ID 200 identification systems available on request.



b_{WT} (mm)	l_{WT} (mm)	p (mm)	SH 2/U-H X (mm)	VE 5/200 A_x (mm)	VE 5/D-300 A_x (mm)	VE 5/D-1000 A_x (mm)	SH 2/U-H Z (mm)	VE 5/200 A_z (mm)	VE 5/D-300 A_z (mm)	VE 5/D-1000 A_z (mm)
455	455	130	52.5	48.9	48.9	75.4	182.5	43.2	43.2	39.7
455	650	130	52.5	43.2	43.2	69.7	182.5	37.4	37.4	33.9
455	650	195	–	–	–	–	–	–	–	–
650	650	130	117.5	40.7	40.7	67.2	312.5	40.7	40.7	37.2
650	650	195	117.5	40.7	40.7	67.2	312.5	40.7	40.7	37.2
650	845	130	117.5	39.6	39.6	66.1	312.5	39.6	39.6	36.1
650	845	195	117.5	39.6	39.6	66.1	312.5	39.6	39.6	36.1
650	845	260	–	–	–	–	–	–	–	–
845	845	130	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	845	195	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	845	260	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	1040	130	117.5	25.1	25.1	51.6	507.5	25.1	25.1	21.6
845	1040	195	117.5	25.1	25.1	51.6	507.5	25.1	25.1	21.6
845	1040	260	117.5	42.1	42.1	68.6	507.5	25.1	25.1	21.6
845	1040	325	–	–	–	–	–	–	–	–

Transportation control

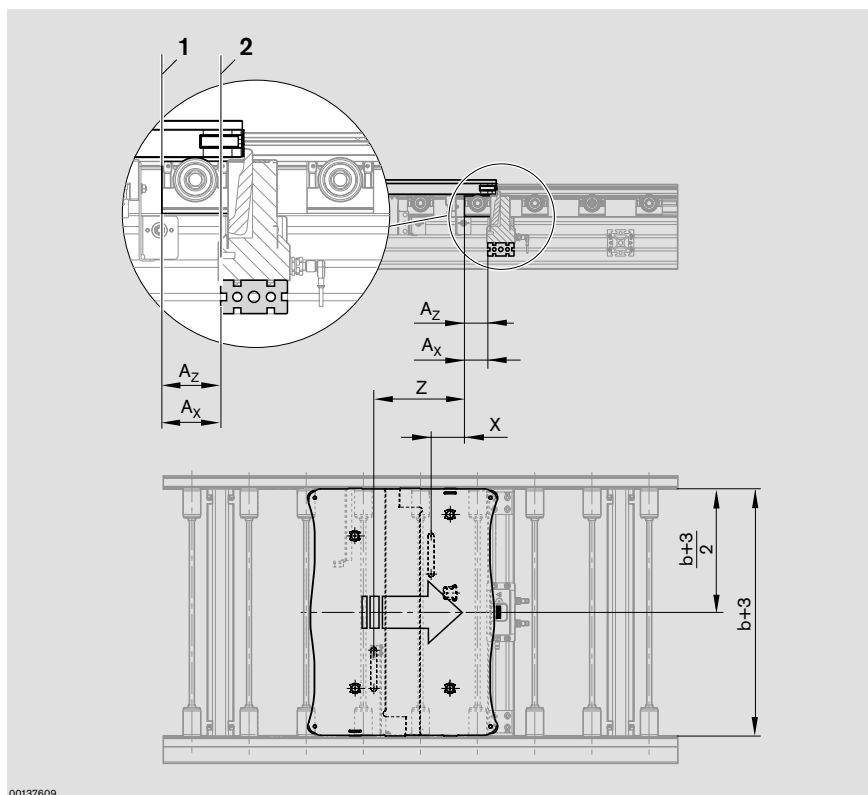
Stopping the WT in the transverse conveyor, **outfeed** to the right

Reference points for installation (in the transport direction):

- Front edge of the bearing pedestal of a roller (1)
- Front edge of the support profile of the stop gate (2)
- Center axis of the proximity switch in the SH 2/UH

Note:

A stop gate is required for each workpiece pallet in the transverse conveyor, as accumulated workpiece pallets cannot be separated.
ID 40 and ID 200 identification systems available on request.



b_{WT} (mm)	l_{WT} (mm)	p (mm)	SH 2/U-H X (mm)	VE 5/200 A_x (mm)	VE 5/D-300 A_x (mm)	VE 5/D-1000 A_x (mm)	SH 2/U-H Z (mm)	VE 5/200 A_z (mm)	VE 5/D-300 A_z (mm)	VE 5/D-1000 A_z (mm)
455	455	130	52.5	48.9	48.9	75.4	182.5	43.2	43.2	39.7
455	650	130	52.5	43.2	43.2	69.7	182.5	37.4	37.4	33.9
455	650	195	–	–	–	–	–	–	–	–
650	650	130	117.5	40.7	40.7	67.2	312.5	40.7	40.7	37.2
650	650	195	117.5	40.7	40.7	67.2	312.5	40.7	40.7	37.2
650	845	130	117.5	39.6	39.6	66.1	312.5	39.6	39.6	36.1
650	845	195	117.5	39.6	39.6	66.1	312.5	39.6	39.6	36.1
650	845	260	–	–	–	–	–	–	–	–
845	845	130	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	845	195	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	845	260	117.5	42.1	42.1	68.6	507.5	42.1	42.1	38.6
845	1040	130	117.5	25.1	25.1	51.6	507.5	25.1	25.1	21.6
845	1040	195	117.5	25.1	25.1	51.6	507.5	25.1	25.1	21.6
845	1040	260	117.5	42.1	42.1	68.6	507.5	25.1	25.1	21.6
845	1040	325	–	–	–	–	–	–	–	–

Transportation control

VE 5/200, VE 5/OC-200 stop gates



Application:

Stopping one or more accumulating workpiece pallets at the defined workpiece pallet stop surface.

Version:

- Pneumatic stop gate. If no pressure is applied, the stop gate is moved into the locked position via a spring and stops the workpiece pallet.

Delivery condition:

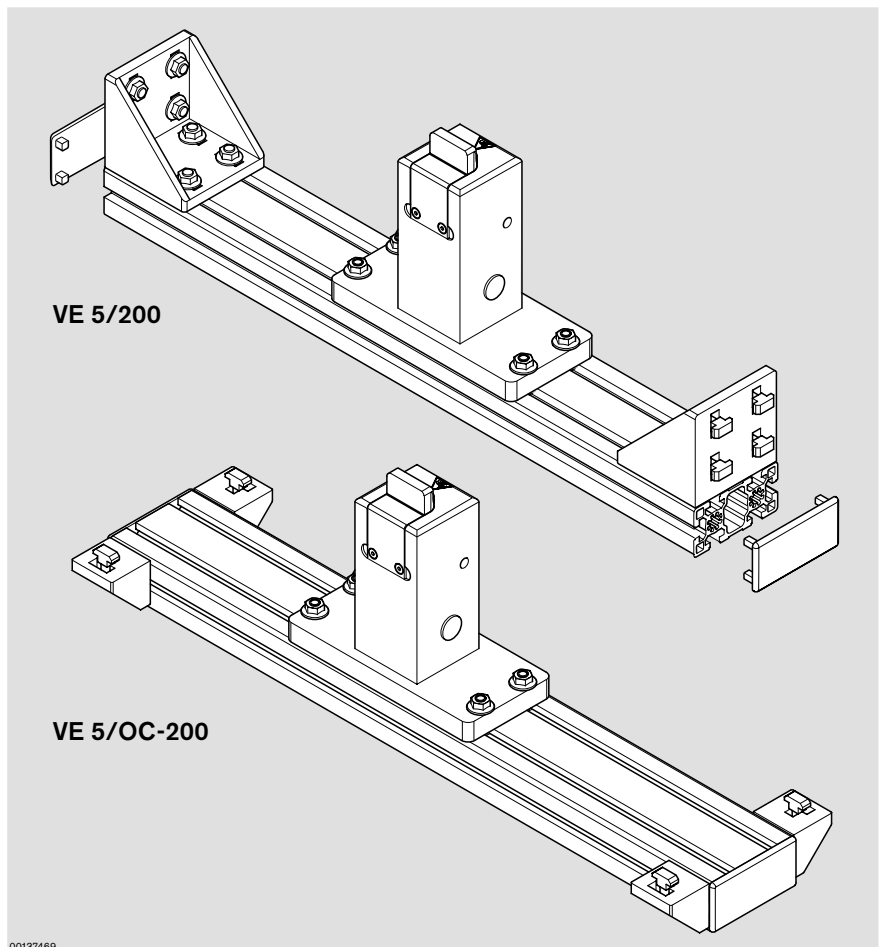
Not assembled

Scope of delivery:

Incl. fastening material for assembly on the conveyor section; pneumatic push-in connector, $\varnothing$ 6 mm.

Optional accessories:

- 1 proximity switch, 3 842 549 811 or 3 842 549 814, for position inquiry (engaged, top position/not engaged, bottom position) 9-11
- Clamping head for proximity switch 9-10



00137469

Permissible impact force per WT

WT mass (kg)	$v_N^{1)}$ (m/min)
200	2 – 9

¹⁾ Conveyor speed

VE 5/200 stop gates

b (mm)	No.
455; 650; 845; 1040	3 842 998 518
b = ... mm	

b = track width in direction of transport

VE 5/OC-200 stop gates

No.
3 842 998 577
b = ... mm

b = track width in direction of transport



13-39

Transportation control

VE 5/D-300, VE 5/OCD-300 stop gates



Application:

Damped stopping of one or more accumulating workpiece pallets at the defined workpiece pallet stop surfaces.

Version:

- Pneumatic stop gate with steplessly adjustable damping. If no pressure is applied, the stop gate is moved into the locked position via a spring and stops the workpiece pallet.
- Accumulation loads of up to 2250 kg permissible (conveyor speed 6 m/min)

Delivery condition:

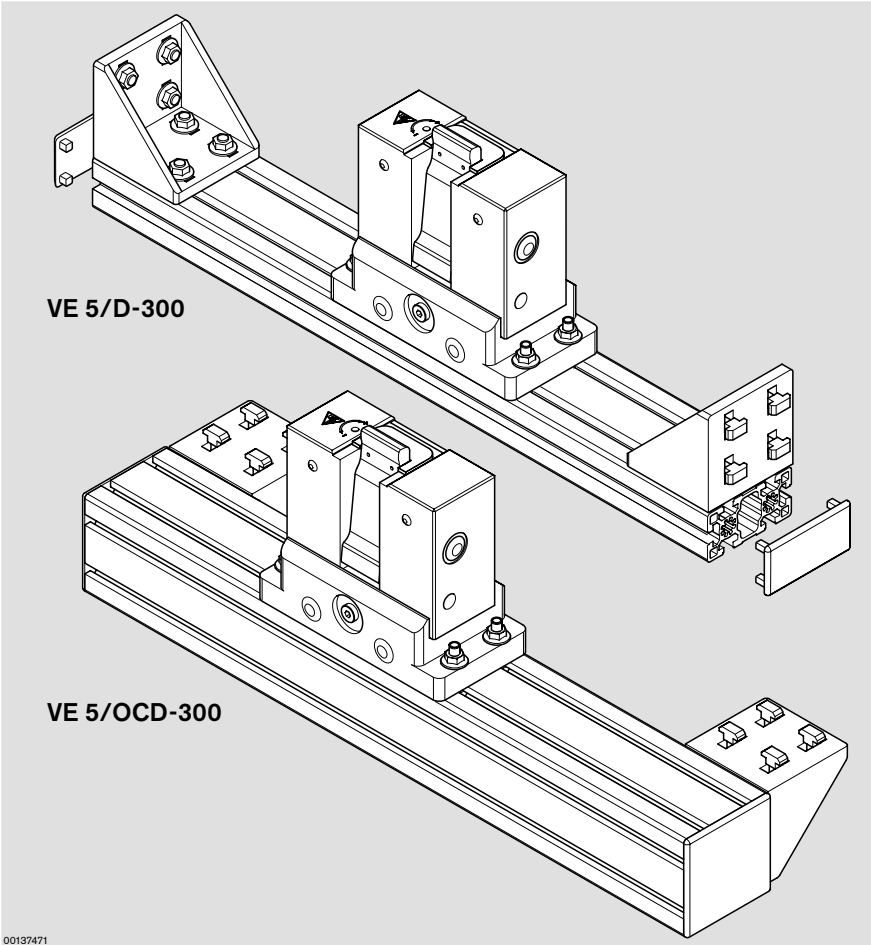
Not assembled

Scope of delivery:

Incl. fastening material for assembly on the conveyor section; pneumatic push-in connector, Ø 6 mm.

Optional accessories:

- 3 proximity switches, 3 842 549 811 or 3 842 549 814, for position inquiry in respect of
- Stop gate position inquiry (engaged, top position) 9-11
 - Stop gate position inquiry (not engaged, bottom position) 9-11
 - Damper position inquiry (stop blade retracted: yes/no) 9-11
 - Clamping head for proximity switch 9-10



Permissible impact force per WT

WT mass (kg)	v _N ¹⁾ (m/min)
max. 300	2 – 9
max. 260	2 – 12
max. 160	2 – 18

¹⁾ Conveyor speed

VE 5/D-300 stop gates

b (mm)	No.
455; 650; 845; 1040	3 842 998 517
b = ... mm	

b = track width in direction of transport

VE 5/OCD-300 stop gates

No.
3 842 998 578
b = ... mm

b = track width in direction of transport

Transportation control

VE 5/D-1000, VE 5/OCD-1000 stop gates



Application:

Oil-damped stopping of one or more accumulating workpiece pallets at the defined workpiece pallet stop surface.

Version:

- Pneumatic stop gate. If no pressure is applied, the stop gate is moved into the locked position via a spring and stops the workpiece pallet.
- Accumulation loads of up to 2250 kg permissible (conveyor speed 6 m/min)

Note:

Cannot be combined with ST 5/H-FR and ST 5/XH-FR if spacing $p = 130$.

Delivery condition:
Not assembled

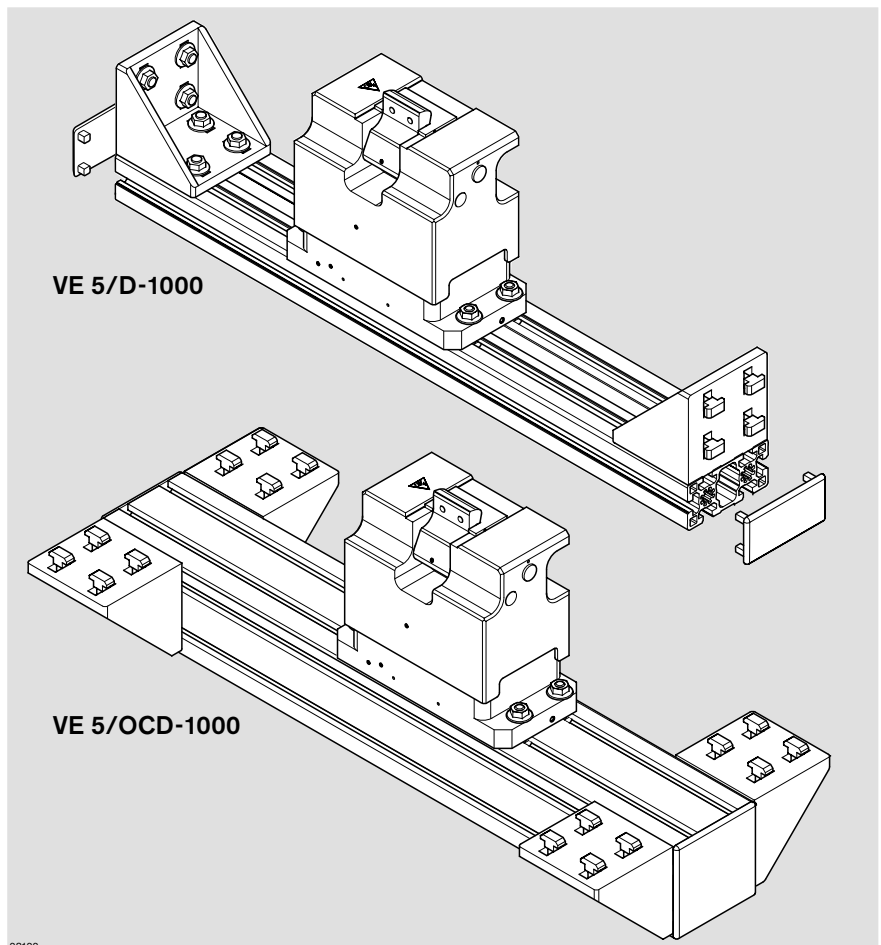
Scope of delivery:

Incl. fastening material for assembly on the conveyor section; pneumatic push-in connector, $\varnothing 6$ mm.

Optional accessories:

2 or 3 proximity switches, 3 842 549 811 or 3 842 549 814, for

- Stop gate position inquiry (engaged, top position) 9-11
- Stop gate position inquiry (not engaged, bottom position) 9-11
- Damper position inquiry (stop blade retracted: yes/no, only possible if $la = 2$) 9-11
- Clamping head for proximity switch 9-10



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Permissible impact force per WT

WT mass (kg)	$v_N^{1)}$ (m/min)
min. 50 max. 1000	2 – 9
min. 50 max. 900	2 – 12
min. 50 max. 700	2 – 18

¹⁾ Conveyor speed

VE 5/OCD-1000 stop gates

b No. (mm)
455; 650; 845; 1040 3 842 998 806
b = ... mm

VE 5/D-1000 stop gates

b No. (mm)
455; 650; 845; 1040 3 842 998 805
b = ... mm

b = track width in direction of transport



13-41

Transportation control

Accessories, stop gates

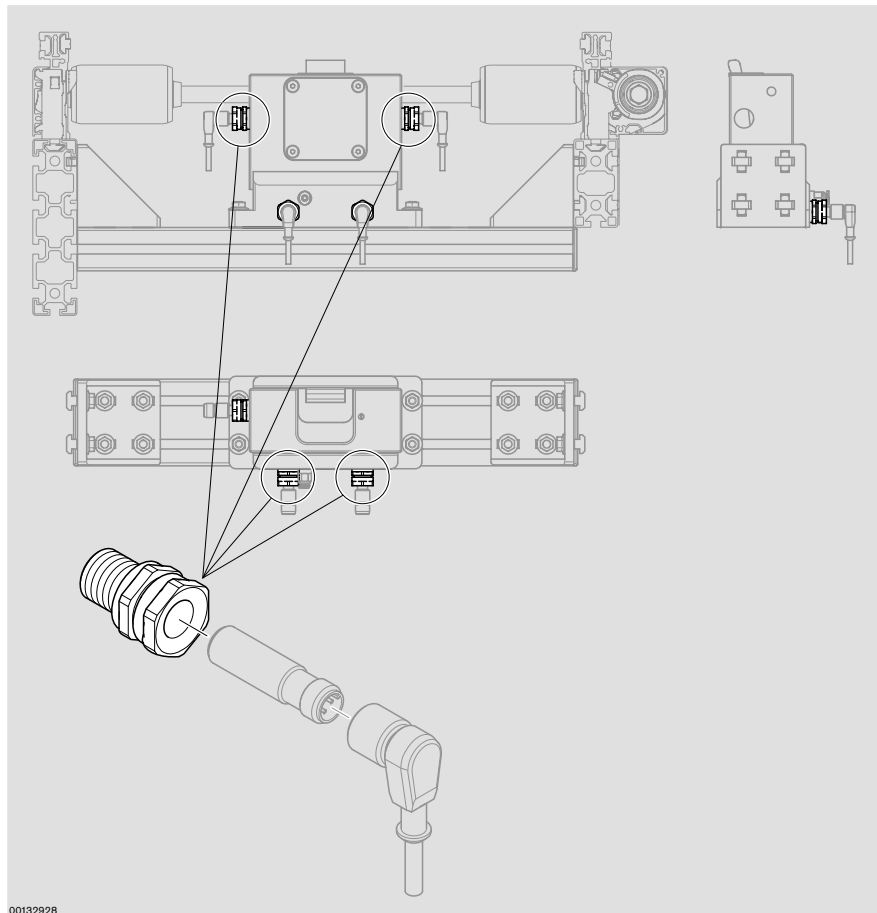
Clamping heads for proximity switches

Application:

Clamping head for proximity switch
Ø 12 mm, for screwing onto the stop gate.

Material:

brass, nickel-plated

**Clamping heads****No.****1****3 842 545 974**

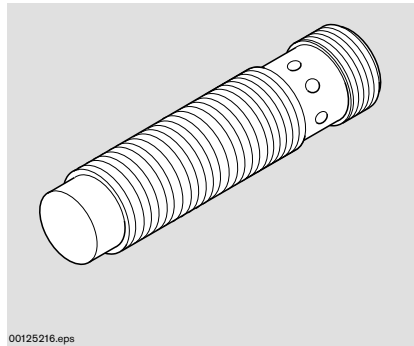
Transportation control

Proximity switches

M12 sensors

Application:

Recognition of the position of a workpiece pallet, position inquiry in respect of lift transverse units and positioning units.



Required accessories:

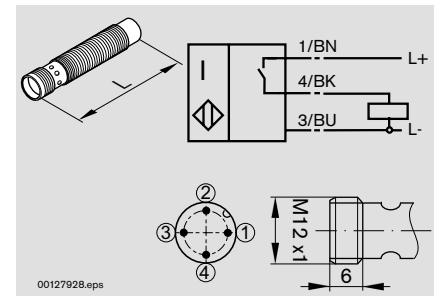
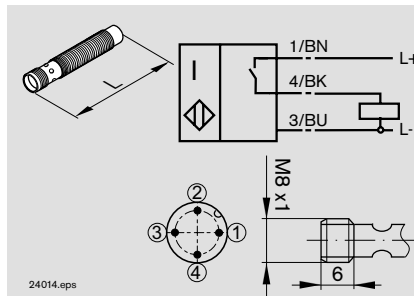
- SH 2/U-H switch brackets
- Assembly kit for switch brackets 9-12
- Clamping head for proximity switch 9-10

Version:

	3 842 549 811 ¹⁾	3 842 549 813 ²⁾	3 842 549 814 ¹⁾	3 842 537 995 ²⁾
Size	M12 x 44 mm	M12 x 44 mm	M12 x 45 mm	M12 x 50 mm
Nominal switching distance S_N	4 mm	8 mm	4 mm	7 mm
Switching frequency	2500 Hz	800 Hz	300 Hz	800 Hz
Operating current	200 mA	200 mA	200 mA	200 mA
Housing material	CuZn coated, LCP	CuZn coated, LCP	CuZn coated, LCP	CuZn coated, LCP
Ambient temperature	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C	-25 ... +70 °C
Protection class	IP 67	IP 67	IP 67	IP 67
Mech. installation	flush	not flush	flush	not flush
Plug connection	M8x1	M8x1	M12x1	M12x1
Function display	LED	LED	LED	LED
Switching output	PNP	PNP	PNP	PNP
Switching function	Contact (NO)	Contact (NO)	Contact (NO)	Contact (NO)
Operating voltage	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Certifications	CE, UL, CSA	CE, UL, CSA	CE, UL, CSA	CE, UL, CSA
Conformance	IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2	IEC 60947-5-2

M12x1 proximity switch

Plug connection	Length (mm)	No.
M8x1	44	3 842 549 811
	44	3 842 549 813
M12x1	45	3 842 549 814
	50	3 842 537 995



- 1) Not suitable for position inquiry in respect of lift transverse units.
2) Not suitable for position inquiry in respect of stop gates.

Transportation control

Accessories, proximity switches



SH 2/U-H switch bracket

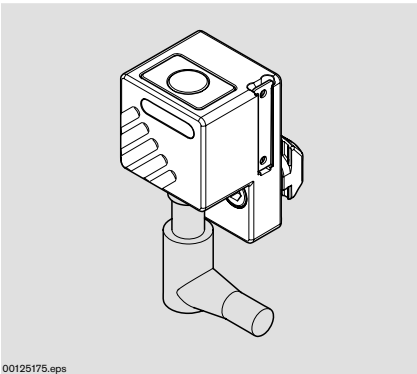
Application:
For fastening an M12x1 proximity switch for workpiece pallet position inquiry from below.
Especially sturdy metal version.

Version:
— Die-cast aluminum
— Integrated stop for 12 mm sensor

Mounting location:
On the assembly kit for the switch bracket

Scope of delivery:
Incl. fastening material for assembly

Required accessories:
— Assembly kit for SH 2/U-H switch bracket
— Proximity switch M12x1 with switching distance $S_N \geq 4\text{ mm}$, 9-11



SH 2/U-H switch brackets

No.
3 842 537 289



Assembly kit for SH 2/U-H switch bracket

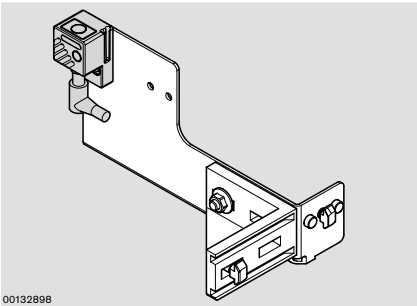
Application:
Holding plate to bring the switch bracket into the correct inquiry position.

Version:
Centering lugs for pre-positioning and fast assembly

Mounting location:
— 3 842 545 134: on ST 5/H, ST 5/XH conveyor unit
— 3 842 545 132: on the PE5 positioning unit and HQ 5 lift transverse unit; not required for $b = 455\text{ mm}$ (fitted to stop gate without assembly kit)

Scope of delivery:
— 3 842 545 132: Incl. fastening material for assembly
— 3 842 545 134: Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

Delivery condition:
Not assembled
Required accessories:
— SH 2/U-H switch bracket
— Proximity switch M12x1 with switching distance $S_N \geq 4\text{ mm}$, 9-11



SH 2/U-H assembly kit on ST 5/H, ST 5/XH conveyor unit

b (mm)	No.
455; 650; 845; 1045	3 842 545 134

b = track width in direction of transport

SH 2/U-H assembly kit on PE 5 positioning unit or HQ 5 lift transverse unit

No.
3 842 545 132

Transportation control

Accessories, proximity switch in Open Center



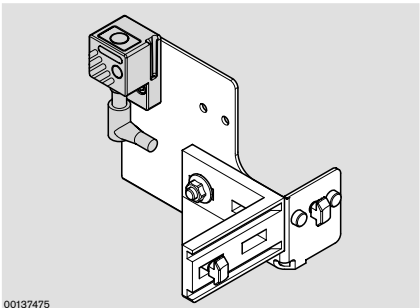
Assembly kit for SH 2/U-H switch bracket

Application:
Holding plate to bring the switch bracket into the correct inquiry position.

Version:
Centering lugs for pre-positioning and fast assembly

Mounting location:
— 3 842 545 533: on the section profile

- Scope of delivery:
- Incl. fastening material for assembly
- Delivery condition:
- Not assembled
- Required accessories:
- SH 2/U-H switch bracket
 - Proximity switch M12x1 with switching distance $S_N \geq 4\text{ mm}$, 9-11



SH 2/U-H assembly kit on ST 5/OC conveyor unit

b (mm)	No.
455; 650; 845	3 842 545 533

b = track width in direction of transport

Transportation control

Identification systems

Identification systems

Identification systems

  10-2

Assembly kits for identification systems in the longitudinal conveyor

  10-3

Assembly kits for identification systems in Open Center sections

  10-4

Kits for installation in WT 5 workpiece pallets

  10-5

Identification systems

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

- 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.

You can find our current range of identification and data tag systems in our RFID Systems catalog.

Required accessories:

- Assembly kit for identification system read/write heads  10-3



RFID Systems catalog

	No.
DE	3 842 541 003
EN	3 842 541 004
FR	3 842 541 005
IT	3 842 541 006

Identification systems

Assembly kits for identification systems in the longitudinal conveyor



Assembly kits for ID 40/ID 200 identification systems

Application:

For fastening the various read/write heads from the identification systems in the longitudinal conveyor

Note: ID 40/ID 200 identification systems in transverse conveyor on request.

Version:

- Centering lugs for pre-positioning and fast assembly

Mounting location:

On the section profile

Scope of delivery:

- 3 842 545 140: Incl. fastening material for assembly
- 3 842 545 142, 3 842 545 144: incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

Delivery condition:

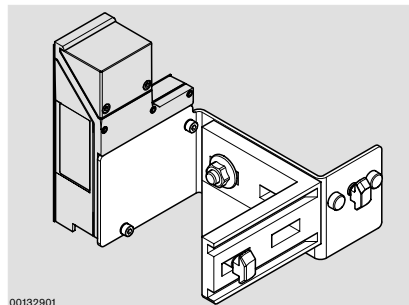
Not assembled

Required accessories:

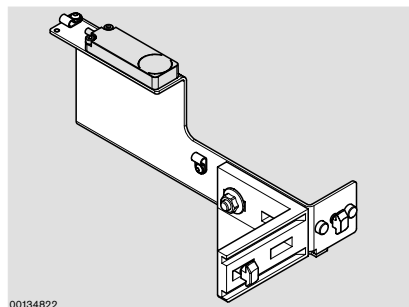
Respective read/write head  10-2

Note:

The proximity switch and ID 40 and ID 200...-LF identification systems use the same frequency range. Maintain a minimum distance of 200 mm to prevent interference.



00132901



00134822

Assembly kit for ID 40 identification system

b (mm)	No.
455	3 842 545 140
650; 845	3 842 545 142

b = track width in direction of transport

Assembly kit for ID 200 identification system, longitudinal conveyors

b (mm)	No.
455; 650; 845	3 842 545 144

b = track width in direction of transport

Identification systems

Assembly kits for identification systems in Open Center sections



Assembly kits for ID 40/ID 200 identification systems

Application:
For fastening the various read/write heads from the identification systems in the longitudinal conveyor

Note: ID 40/ID 200 identification systems in transverse conveyor on request.

Version:

- Centering lugs for pre-positioning and fast assembly

Mounting location:
On the section profile

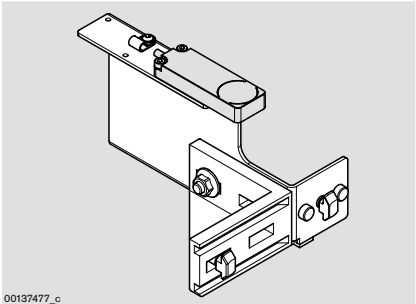
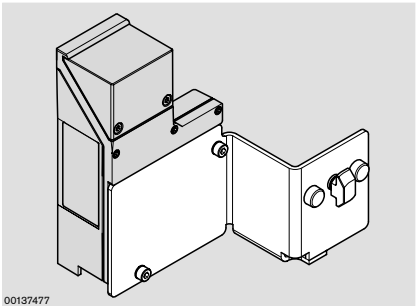
Scope of delivery:

- 3 842 545 535: Incl. fastening material for assembly
- 3 842 545 537, 3 842 545 539: incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

Delivery condition:
Not assembled

Required accessories:
Respective read/write head  10-2

Note:
The proximity switch and ID 40 and ID 200...-LF identification systems use the same frequency range. Maintain a minimum distance of 200 mm to prevent interference.



Assembly kit for ID 40 identification system

b (mm)	No.
455	3 842 545 535
650; 845	3 842 545 537

b = track width in direction of transport

Assembly kit for ID 200 identification system, longitudinal conveyors

b (mm)	No.
455; 650; 845	3 842 545 539

b = track width in direction of transport

Identification systems

Kits for installation in WT 5 workpiece pallets

Kits for installing the ID 40/ID 200 identification systems in the WT 5 workpiece pallet

Application:

For fastening the various data tags from the identification systems

Mounting location:

In WT 5 workpiece pallets.

Scope of delivery:

Incl. fastening material for mounting the kit.

Delivery condition:

Not assembled

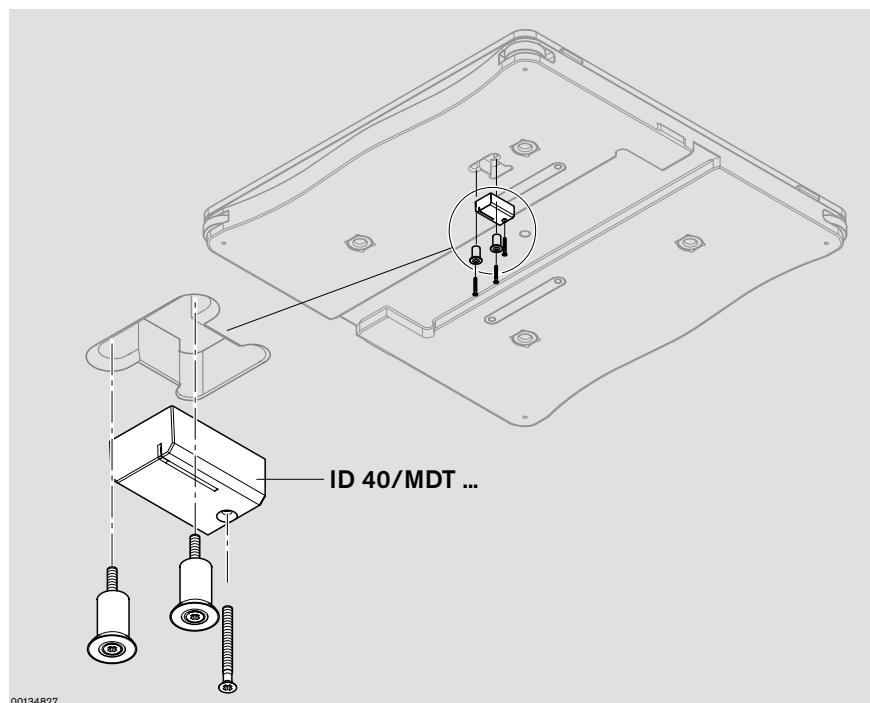
Required accessories:

Respective data tag  10-2

Kits for ID 40 identification systems

No.

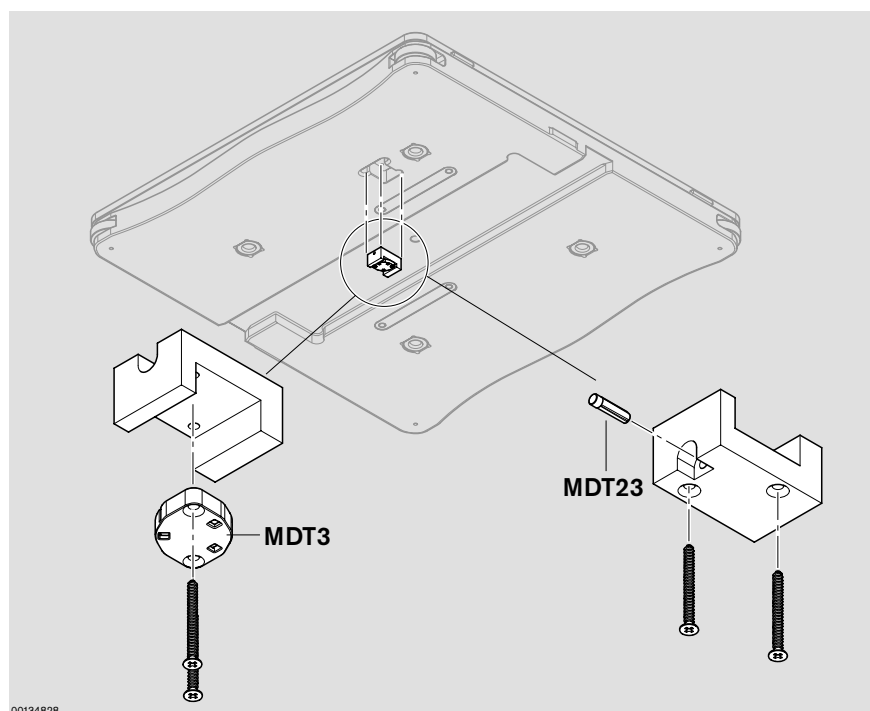
3 842 545 448



Kit for identification system
ID 200

No.

3 842 545 450



Identification systems

Tools

Tools

Tools	 11-2
Disassembly tool, spring tensioner	 11-2

Tools

Disassembly tool, spring tensioner

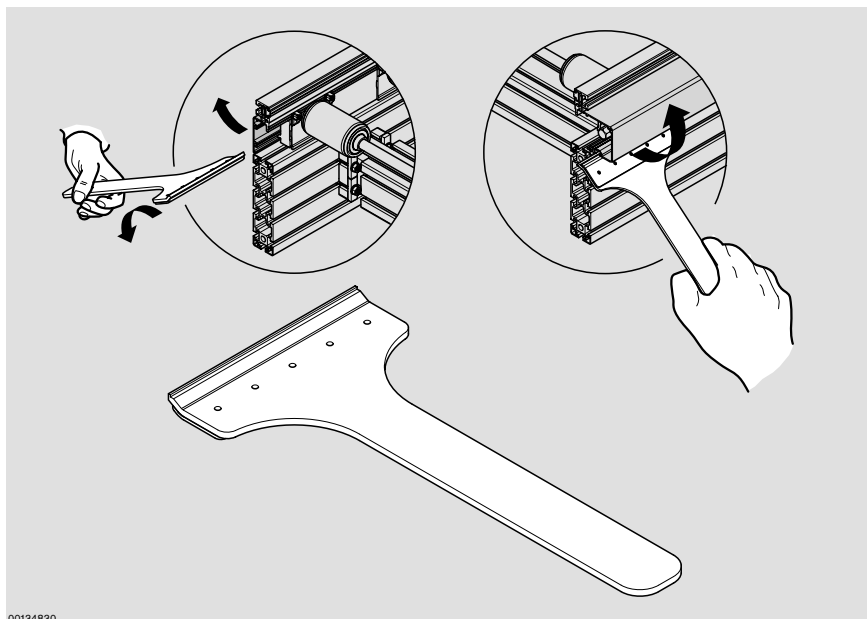
Disassembly tool

To gently remove the covers (on the king shaft and passive side).

Disassembly tool

No.

3 842 545 836

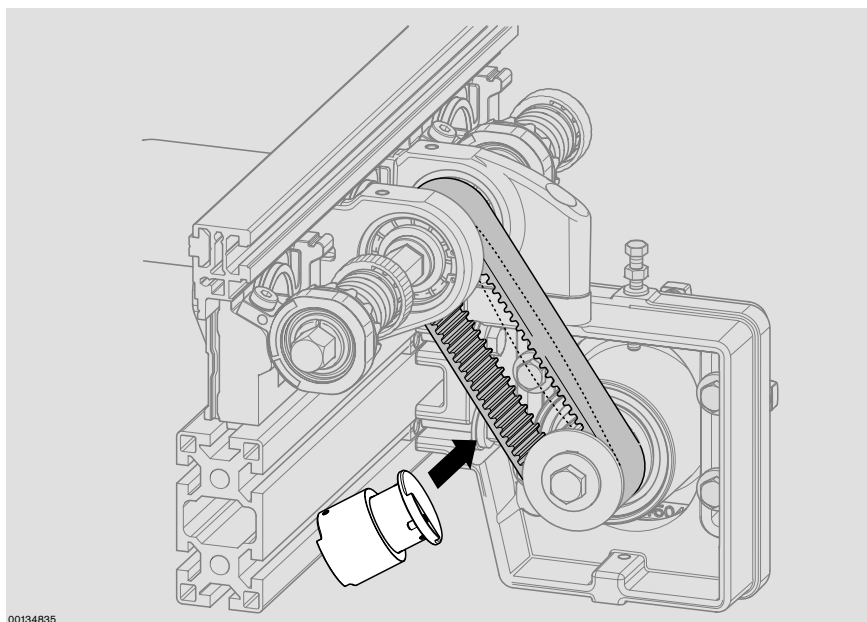
**Spring tensioner**

Only required when exchanging the toothed belt in the AS 5 drive unit. In the delivery condition, the toothed belt in the AS 5 drive unit has been tensioned at the factory.

Spring tensioner

No.

3 842 545 871



Planning

Planning

MTpro planning software

 12-2

Planning

MTpro planning software

MTpro is a software program used for planning assembly systems. It assists you from selection to configuration and the ordering of the Rexroth products.

The DVD includes:

Layout Designer for planning and designing complete frames and conveyor systems without a CAD system

- Simple design using the drag & drop and snap functions without a CAD system
- Design rules to support users in the creation of complete systems
- User library for saving and reusing your own modules and layouts
- Export of 3-D volume models into all common CAD systems
- Automatic order list generation of all small parts and accessories

Product and spare part information for the following product lines:

- MGE Basic Mechanical Elements
- MPS Manual Production Systems
- MIT Material and Information Flow Technology

Product configuration and calculation of order lists

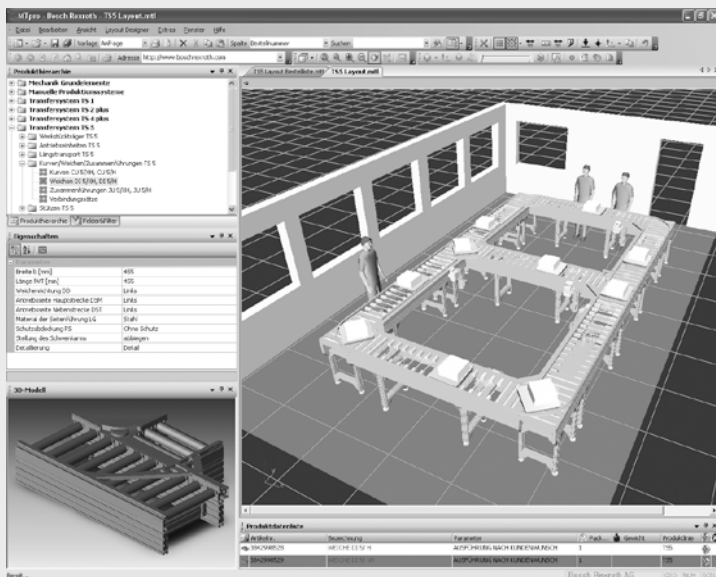
Generation of CAD models with direct interfaces to all common CAD systems

- Export of configured models into the most popular file formats
- Multifunctional drivers allow you to insert the configured CAD models with parts list information directly in your current drawing
- Edit the properties of CAD models you have already configured and inserted in your CAD drawing in supported CAD systems

System requirements:

- Windows from version 7 onwards
- Adobe Reader from version 10 onwards
- DVD-ROM drive
- at least 6 GB hard drive free storage capacity
- Internet access for the licensing of the layout designer and for automatic updates

The MTpro DVD-ROM can be ordered free-of-charge using number **3 842 539 057** from the usual Rexroth subsidiaries and partners, and at www.boschrexroth.com/mtpro.



Technical data

Technical data

System specifications	 13-2
Drive data	 13-6
Motor data	 13-7
Ordering parameters for SEW motors	 13-13
Conversion table for metric/imperial dimensions	 13-14
Dimensioned drawings	 13-15
Operation sequence diagrams	 13-44

Technical data

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, 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 proximity switches, 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 they guarantee special functional safety or if installing them at a later point would require too much effort.

The notes on the required flow control valves and check valves in the pneumatic switching plan (listed in the assembly and operation instructions) must be followed.

Notes

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 initially operating the system.

CE identification, responsibility

Components that fall under the EC Machinery Directive are delivered with the corresponding manufacturer's declaration. Overall responsibility for system safety (declaration of conformity, CE marking) lies with the system builder. The references in the assembly instructions and in the **Instructions for Employees on Safety – 3 842 527 147** must be followed.

Ambient conditions

Environmental conditions - climatic

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

Operating temperature

+5 to +40 °C

-5... +60 °C with 20% reduced load

Storage temperature

25 °C to +70 °C

Relative humidity

5 ... 85%, non-condensing.

Suitable for use in a dry room with air humidity ≤ 1%. Details provided on request

Air pressure

> 84 kPa appropriate for a height

< 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 mold, fungi, rodents, and other vermin.

Environmental conditions – physical

Do not install near sandy or dusty sources.

Do not install in areas that are regularly jarred by high forces caused by e.g. presses, heavy machinery, etc.

Environmental conditions – chemical

Do not install near industrial systems with chemical emissions.

Materials used

The materials used in the components are primarily:

- Non-rusting steel or steel protected against corrosion by a special surface,
- Brass,
- Cast or malleable aluminum alloy,
- Polyurethane, polyamide, some with additives to improve electrical and mechanical characteristics and UHMW polyethylene.
- NBR or Viton for elastic seals.

Cleanroom

Suitable for use in cleanrooms up to cleanroom class 6 (EN ISO 14644-1). Details provided on request.

Technical data

Media resistance

Resistant to many common media used in production 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 long-term contact with acidic or basic reacting materials.

Suitability for electrostatically sensitive areas

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

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...). 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 transferred by friction if they are carried over onto systems with rollers.

Such cases require special attention when planning the system and adjusting the maintenance intervals.

Environmental sustainability, recycling

The materials used are environmentally sustainable and may be recycled or reused (if components are converted or replaced). Recyclability is ensured by the selection of material and the possibility to take the components apart.

Pneumatic connection data

Oiled or non-oiled, filtered, dry compressed air.

Operating pressure: 6 bar

Performance data is for an operating pressure of 6 bar.

Maintenance

The TS components require very little maintenance. Maintenance instructions are included in the operating manual.

Technical data

Wear

Wear is caused by the basic principle of this system and cannot be avoided. Constructive measures and selection of the proper materials will help functional safety last for the lifetime of the system. 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, over night, on the weekend.
- Only select speeds that correspond with 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 as long as transport is not necessary.
- Especially important: Avoid contamination by abrasive media or reduce contamination through regular cleaning.

Load specifications

Permitted loads apply for conveyor sections only under the condition that workpiece pallets with the maximum permitted weight have accumulated. Accumulation operation is not permitted at curves, diverters, junctions, or the positioning unit.

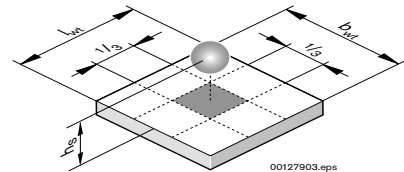
Wear and conveyor speed

Nominal data for the permitted workpiece pallet weight describe operation with standard speeds and normal operating conditions.

Wear on the workpiece pallet wear pads and the conveyor medium will not influence system function throughout the service life.

Loading the workpiece pallet, gravity center position

Concentric load with a low center of gravity is generally preferable. Incorrect load distribution with a high and/or eccentric gravity center on the workpiece pallet may have a negative influence on running and safety. Pay attention when arranging workpiece supports and workpieces on the pallet that the center of gravity of the loaded workpiece pallet is within the area $1/3$ of the length or width from the center of the workpiece pallet. The maximum height of the center of gravity over the conveying level should not exceed $1/2$ of the workpiece pallet length or width.



Technical data

**Loading the workpiece pallet,
combination of empty and loaded
Workpiece pallets**

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 dampened stop gates. Function is usually not limited if the weight ratio is 2:1 between heavy workpiece pallets (loaded with a workpiece) and light workpiece pallets (empty).

**Loading the workpiece pallet,
minimum weights**

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 (e.g. on a rocker), or if a lighter workpiece pallet does not run smoothly when changing directions. In such unusual cases, additional weight should be added when designing the workpiece pallet.

Overloading

Overloading the conveyor sections may damage the conveying medium and cause the motor and gears to fail. When an overload of the pneumatic components occurs, function cannot be guaranteed.

**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 settling periods or shock absorbers before the next movement.

Technical data

Drive data

Definition of the basic principles of motor specifications

The specified performances, torques and revolutions per minute are rounded values and apply to:

- operating time/day = 8 h (100% switched-on time)
- uniform operation (continual), no, or very light, impacts in a direction of rotation at 10 switching cycles/hour
- installation positions and designs described in the catalog
- maintenance-free gears with life-long lubrication,
- ambient operating temperature 0 ... 60 °C. Gear unit with life-long lubrication for ambient operating temperature ≤ 0 °C available on request
- Protection class IP 55
- $f_{\text{mains}} = 50$ Hz constant
- $T_U = 20$ °C for gears
 $T_U = 40$ °C for motors
- Installation altitude ≤ 1000 m above mean sea level
- Overloading the drive reduces its service life.
10% overloading: = 75% service life
20% overloading: = 50% service life
- The gear motor (GM = 1) corresponds to the operating mode S1 (continuous operation)

In the case of other operating conditions, the achievable values may differ from those stated.

In the case of extreme operating conditions, please consult your distribution partner.

Technical data

Motor data

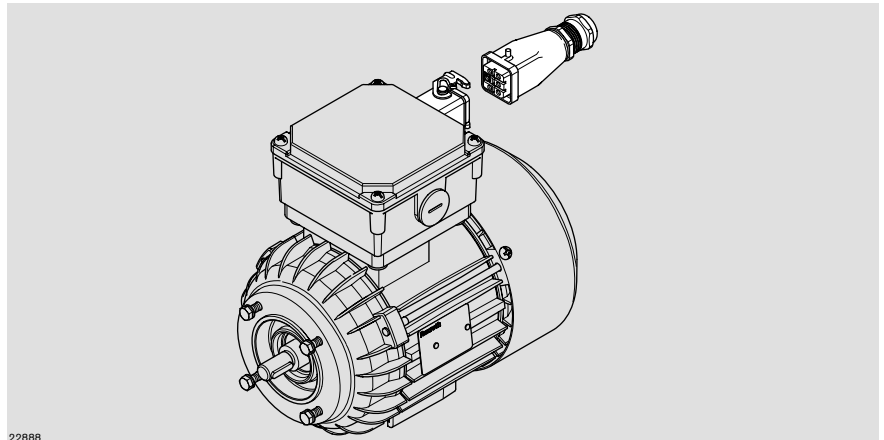
Electrical connection conditions

Connection to a 3-phase, five-wire system (L1, L2, L3, N, PE), a connection diagram is included in the terminal box.

All motors are equipped with a thermal contact*), which has to be connected to an overload switch-off.

Drive motors with frequency converters (FC) can only be operated with 380 V - 500 V voltage.

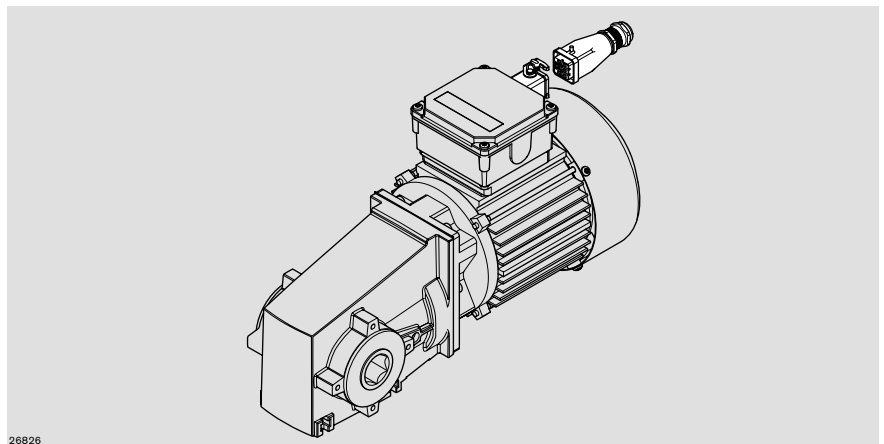
*) Bi-metal thermal contact, triggered at $150\text{ °C} \pm 5\text{ °C}$
Resistance thermal contact provided on request.



22888

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. 714



26826

Motor types with Index b:

Motor connection with plug (AT = S) and 3A metal industrial plug-in connector for motor types with Index b, e.g. B. 714b

Technical data

Motor data (GM = 1)

Transport and nominal speed v_N

The transport speed v_N is specified for the rated output and frequencies of 50 Hz or 60 Hz.

The actual values v vary depending on:

- Tolerance of the standard motors
- Performance range of the motors
- Load on the conveyor section

	400 V/50 Hz							400 V/60 Hz					
	v_N (m/min)	$v^{1)}$ (m/min)	i	$n1^{2)}$ (min)	$n2^{3)}$ (min)	$P^{4)}$ (W)	Type	$v^{1)}$ (m/min)	i	$n1^{2)}$ (min)	$n2^{3)}$ (min)	$P^{4)}$ (W)	Type
AS 5/XH	2	2.10	60.00	670	11	120	60/738b	2.53	60.00	804	13.4	120	60/738b
AS 5/H	4	4.21	60.00	1340	22	250	60/714b	3.20	60.00	1020	17.0	250	60/716b
AS 5/OC	6	5.39	47.88	1370	29	370	37/734b	6.47	47.88	1644	34.3	370	37/734b
	9	8.80	29.33	1370	47	370	29/734b	10.56	29.33	1644	56.1	370	29/734b
	12	11.06	23.33	1370	59	370	23/734b	13.28	23.33	1644	70.4	370	23/734b
	15	13.55	19.05	1370	72	370	19/734b	16.26	19.05	1644	86.3	370	19/734b
	18	16.59	15.56	1370	88	370	15/734b	19.15	15.56	1644	105.6	370	15/734b
HQ 5	6 (b = 455 mm)	6.01	30	1400	46.67	90	30/524	5.69	38	1680	44.21	100	38/524
	6 (b = 650/845 mm)	6.01	30	1400	46.67	180	30/624	5.41	40	1680	42	220	40/624
	9 (b = 455 mm)	9.02	20	1400	70	90	20/524	9.02	24	1680	70	100	24/524
	9 (b = 650/845 mm)	9.02	20	1400	70	180	20/624	8.66	25	1680	67.2	220	25/624
	12 (b = 455 mm)	12.02	15	1400	93.33	90	15/524	10.82	20	1680	84	100	20/524
	12 (b = 650/845 mm)	12.02	15	1400	93.33	180	15/634	10.82	20	1680	84	220	20/624

¹⁾ Transport speeds at other voltages/
frequencies provided on request.

²⁾ $n1$ = motor speed

³⁾ $n2$ = gear output speed

⁴⁾ Motor output

AS 5/XH, AS 5/H technical data:

Max. torque limit: 45 Nm (toothed belt) limit

Toothed belt drive gear ratio: 1:1

Flange $\varnothing$: 75 mm

Drive shaft: SW27

Conveyor roller $\varnothing$: 60 mm

Performance data

Notice: The data provided represents typical values. We reserve the right to make changes. See motor rating plate for binding data.

Voltage class		A		B		D	
Circuit type		Δ		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 ²⁾	IN (A)	IN (A)	IN (A)	IN (A)		cos ϕ	(50 Hz) P (kW)	(60 Hz) P (kW)
524	x	0.65	0.35	0.32	0.24		0.6	0.09	0.1
614b ¹⁾	–	–	–	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 ¹⁾	–	–	–	–	0.75		0.6	0.25	0.29
714b ¹⁾	–	1.75	1	0.8	–		0.64	0.25	0.3
716b ¹⁾	–	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 ¹⁾	–	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⁾	–	1.4	0.8	0.55	0.5	0.60 ...	0.63	0.12	0.14
744b ¹⁾	–	–	–	1.4	–		0.77	0.55	0.68
814b ¹⁾	–	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	0.8

¹⁾ suitable for continuous operation S1 and frequency converter

2) suitable for stop-start and continuous operation due to the nominal operating mode S3-70% (periodic intermittent operation) and frequency converter operation

Certification for the motor, cable and plug components:

IE3 motors: CE, cURUS, CCC
Motors with Index b: CE/CCC
(50 Hz), CE/cURUS (60 Hz)

3-phase motors

T_u (°C)	P_V / P_N
< 40	1 ¹⁾
45	0.95
50	0.90
55	0.85
60	0.8

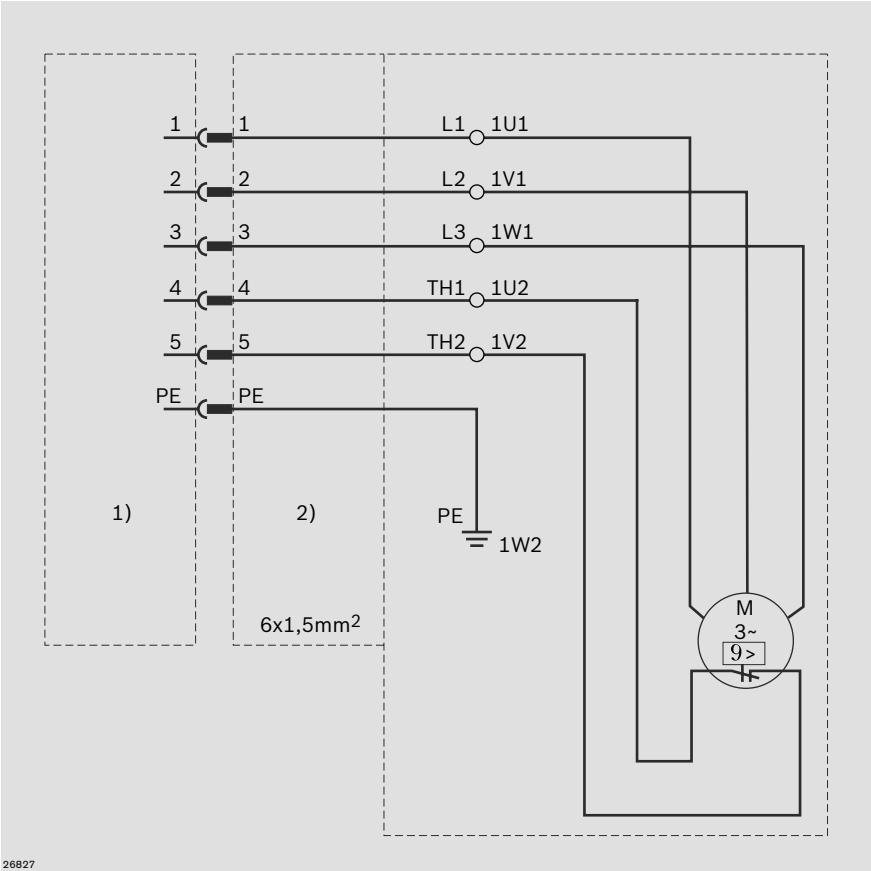
¹⁾ Rated motor power (0.37; 0.25; 0.12 kW)

Rated motor power

The ambient operating temperature T_u influences the rated power P_N of the gear motors.

Technical data

Motor connection with plug (AT = 1), circuit diagram



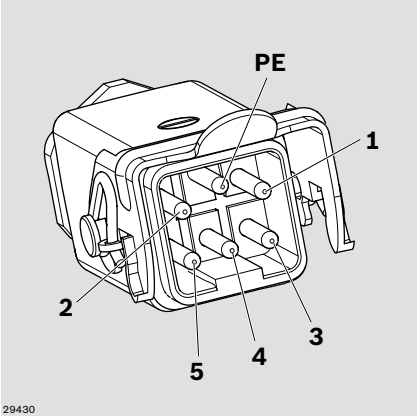
- 1) Connection cable side
- 2) Motor side

The plug connection consists of UL components.

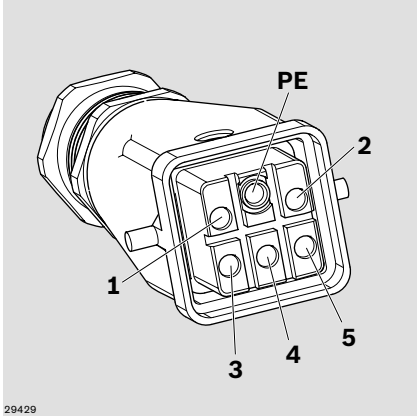
Connection list

Connection terminals	Pin no.	Code
U1	1	L1
V1	2	L2
W1	3	L3
TW1	4	Th1
TW2	5	Th2
	PE	PE

Motor side



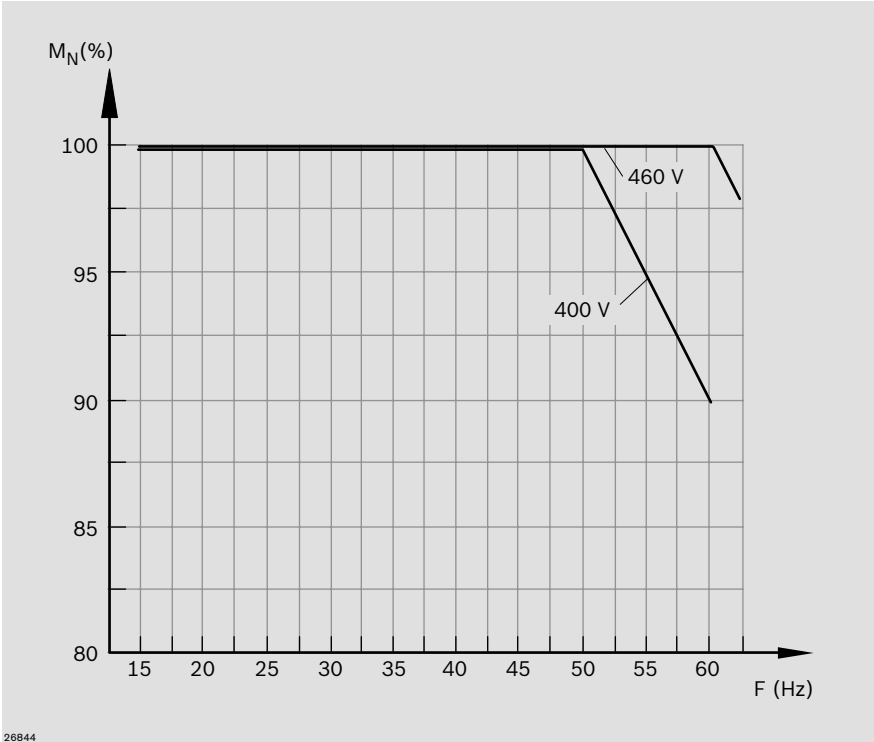
Connection cable side



Technical data

Drive spectrum of motors with frequency converters (FC)

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.



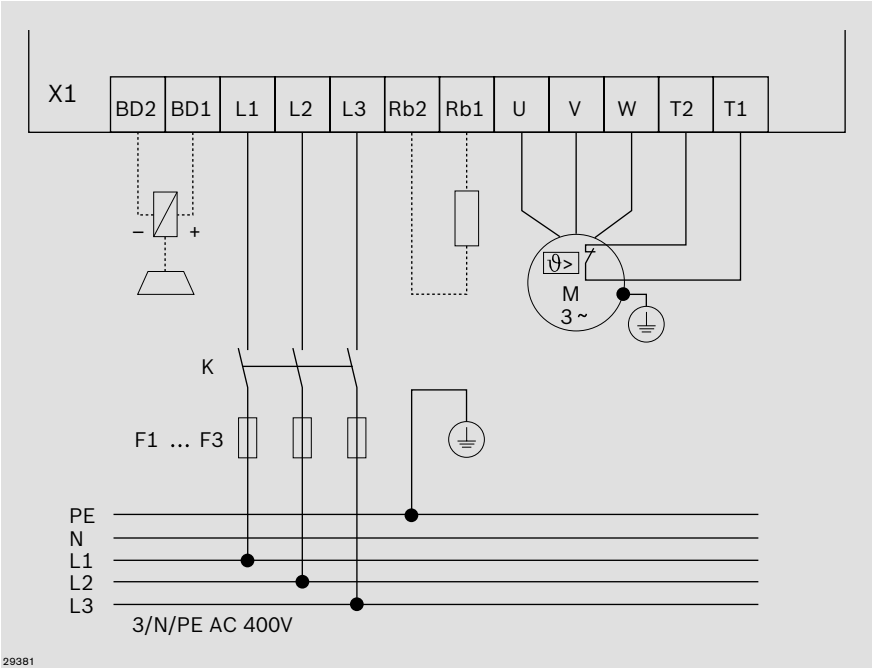
Motor base speed (m/min) at 50 Hz	Min (m/min)	Max (m/min)	Max (m/min) at max. 80% torque
4	2*	4.5	6
6	2*	6	8
9	3.5	10	13
12	4	13	17
15	5	15	20
18	6	18.5	25

* Additional measures may be necessary

Technical data

Frequency converter (FC) accessories

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).



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- Minimum wiring required for operation
- *)---- Additional wiring to change direction of rotation

Technical data

Ordering parameters for SEW motors

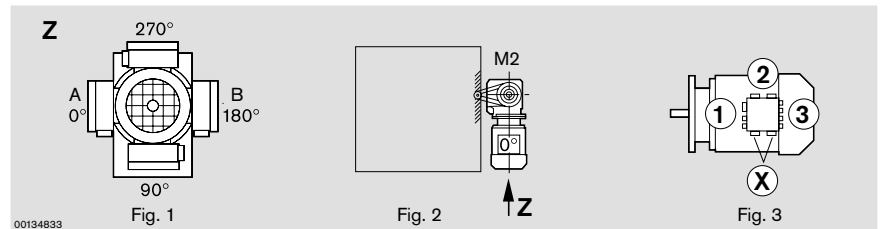
The following ordering information is required if using gear motors from SEW-Eurodrive GmbH & Co, Bruchsal:

- Motor type
- Ratio
- Motor mounting, mounting orientation
- Drive output position
- Terminal box position
- Cable entry (Fig. 3)
- Motor voltage/frequency *)
- Thermal class *)
- Motor protection class *)

*) www.seweurodrive.com

Motor mounting orientation, terminal box, cable entry (Fig. 3)

Motor mounting	Mounting orientation	Drive output	Terminal box
MA	(Fig. 2)	(Fig. 1)	(Fig. 1)
R	M2	B	0°
L	M2	A	180°



SEW motors motor data

v_N (m/min)	400 V/50 Hz							400 V/60 Hz						
	$v^{1)}$ (m/min)	i	$n1^{3)}$ (min)	$n2^{4)}$ (min)	M_N (Nm)	$P^{5)}$ (W)	Type SAF37...	$v^{1)}$ (m/min)	i	$n1^{3)}$ (min)	$n2^{4)}$ (min)	M_N (Nm)	$P^{5)}$ (W)	Type SAF37...
2	2.07	122.94	1320	11	91	180	DR63M4	2.07	144.4	1620	11	92	180	DR63M4
4	4.14	55.93	1300	22	81	250	DR63L4	4.14	71.44	1600	22	84	250	DR63L4
6	6.03	43.68	1380	32	81	370	DRS71S4	6.03	53.83	1700	32	80	370	DRS71S4
9	9.04	28.76	1380	48	75	370	DRS71S4	9.04	35.1	1700	48	75	370	DRS71S4
12	11.49	22.5	1380	61	73	550	DRS71M4	11.12	28.76	1690	59	75	550	DRS71M4
15	14.32	18.34	1380	76	52	550	DRS71M4	14.13	22.5	1690	75	73	550	DRS71M4
18	19.41	13.39	1380	103	49	550	DRS71M4	17.53	18.24	1690	93	52	550	DRS71M4
2 to 7 ²⁾	1.5-7.53	35.1	280-1400	8.0-40	78	370	DRS71S4MM03	1.5-7.53	35.1	280-1400	8.0-40	78	370	DRS71S4MM03
7 to 18 ²⁾	3.95-19.79	13.39	280-1400	21-105	49	550	DRS71M4MM05	3.95-19.79	13.39	280-1400	21-105	49	550	DRS71M4MM05

¹⁾ Transport speeds at other voltages/frequencies provided on request.

²⁾ Electronically controlled by a frequency converter (FC).

³⁾ $n1$ = motor speed

⁴⁾ $n2$ = gear output speed

⁵⁾ Motor output

AS 5/XH, AS 5/H technical data:

Max. torque limit: 45 Nm (toothed belt) limit

Toothed belt drive gear ratio: 1:1

Flange $\varnothing$: 120 mm

Drive shaft: SW27 on shaft $\varnothing$ 20

Conveyor roller $\varnothing$: 60 mm

Technical data

Conversion table for metric/imperial dimensions

Measurement	multiply	by	to get:
Linear	millimeters (mm)	0.03937	inches
	inches	25.4	millimeters (mm)
	kilometers (km)	0.6214	miles
	miles	1.6093	kilometers (km)
Area	millimeters ² (mm ²)	0.00155	inches ²
	inches ²	645.16	millimeters ² (mm ²)
Volume	centimeters ³ (cm ³)	0.06102	inches ³
	inches ³	16,387	centimeters ³ (cm ³)
	1 cm ³ = 1 milliliter (ml)		
	1000 ml = 1 liter		
Acceleration	meter/second ² (m/s ²)	39.37	inch/second ²
	inch/second ²	0.0254	meter/second ² (m/s ²)
Velocity	meter/second	3,281	feet/second
	feet/second	0.3048	meter/second
Mass	kilogram (kg)	2.2046	pounds
	pounds	0.4536	kilogram (kg)
Force	kilograms-f (kgf)	9,807	Newtons (N)
	Newtons (N)	0.10194	kilograms-f (kgf)
	pounds-f	4,448	Newtons (N)
Pressure	Newtons	0.2248	pounds-f
	bar	14.5	PSI
	PSI	0.069	bar
Torque	Newton meters (Nm)	8,851	pound-inches
	pound-inches	0.11298	Newton meters (Nm)
Moment of inertia	centimeters ⁴ (cm ⁴)	0.02403	inches ⁴
	inches ⁴	41,623	centimeters ⁴ (cm ⁴)
Power	kilowatts (kW)	1.34	horsepower (HP)
	horsepower (HP)	0.746	kilowatts (kW)
Energy	Joules (J)	0.7376	feet/pounds (ft/lbs)
	feet/pounds (ft/lbs)	1.3558	Joules (J)

Metric tap/drill specifications

Tap	Drill size
M4 × 0.7	3.3 mm
M5 × 0.8	4.2 mm
M6 × 1	5.0 mm
M8 × 1.25	6.8 mm
M12 × 1.75	10.2 mm
M16 × 2	14.0 mm

Temperature

Degrees Celsius

$$\frac{5 \times (\text{degrees Fahrenheit} - 32)}{9}$$

Degrees Fahrenheit

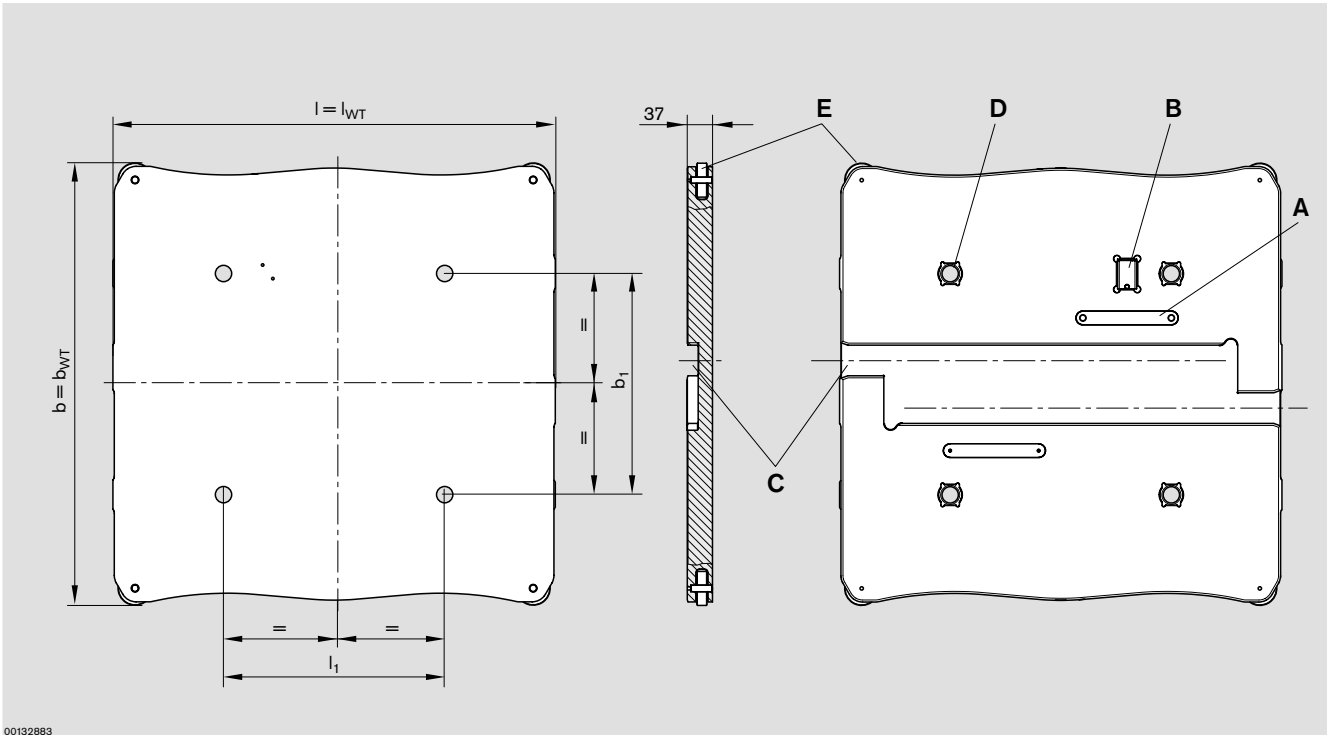
$$\frac{9 \times (\text{degrees Celsius}) + 32}{5}$$

Technical data

Dimensioned drawings

3D models can be found in the eShop or in MTpro 12-2

WT 5 workpiece pallets.



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- A Damping element
- B Holder for ID data tag
- C Stop gate feed-through
- D Mounting for positioning bushing
- E Guide rollers

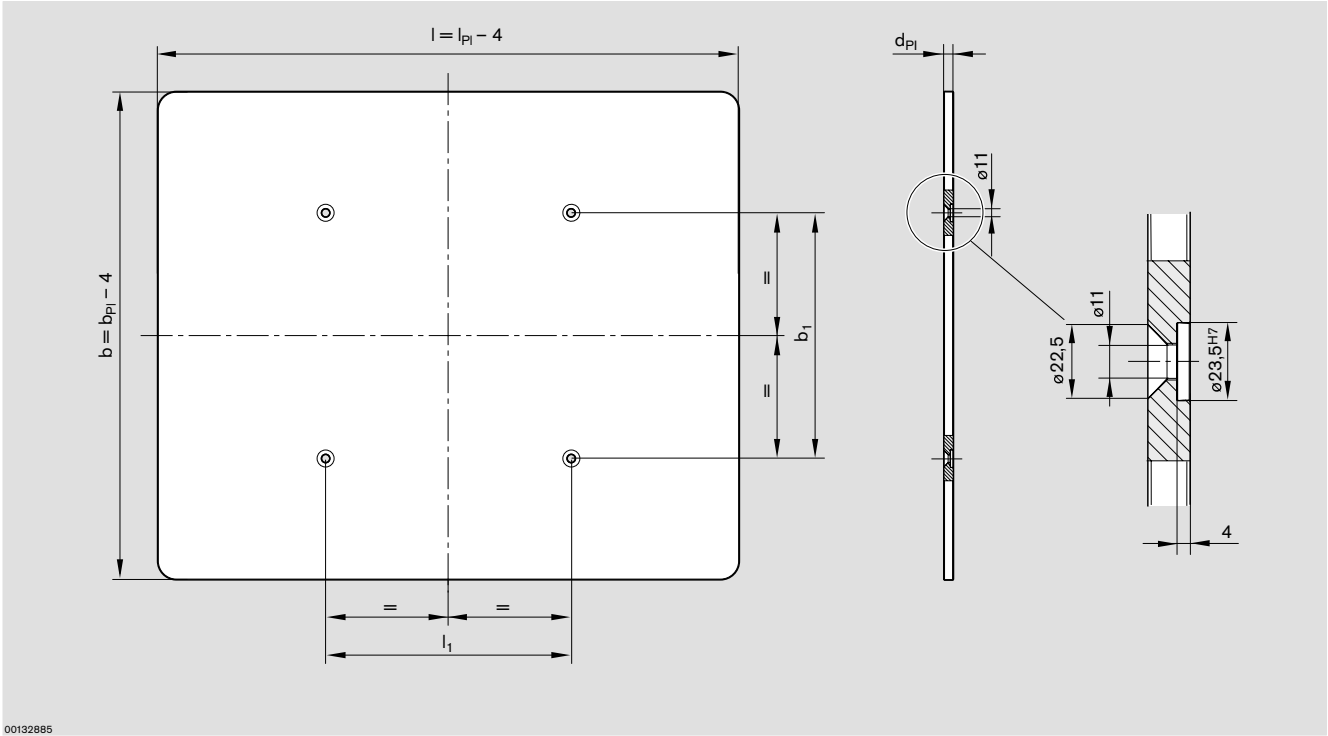
b_{WT} (mm)	l_{WT} (mm)	m_{WT} (kg)	F (kg)	b_1 (mm)	l_1 (mm)	No.
455	455	6.4	150	195	195	3 842 545 254
455	650	8.9	215	195	325	3 842 545 255
650	650	13.5	215	325	325	3 842 545 256
650	845	17.2	300	325	520	3 842 545 257
845	845	23.2	300	520	520	3 842 545 258
845	1040	27.2	300	520	715	3 842 545 259

m_{WT} = weight of the workpiece pallet itself
F = permissible workpiece pallet weight resting on the conveyor medium

Description of further parameters 0-3

Technical data

WT 5: carrying plate, variable dimensions



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$b_{WT} \times l_{WT}$ (mm)	b_{PL} (mm)	l_{PL} (mm)	d_{PL} (mm)	$\square^*$ (mm)	No.
455 x 455	$455 \leq b_{PL} \leq 650$	$455 \leq l_{PL} \leq 650$	12.7	0.6	3 842 998 562
455 x 650	$455 \leq b_{PL} \leq 650$	$650 \leq l_{PL} \leq 845$	12.7	0.8	3 842 998 564
650 x 650	$650 \leq b_{PL} \leq 845$	$650 \leq l_{PL} \leq 845$	12.7	0.8	3 842 998 566
650 x 845	$650 \leq b_{PL} \leq 845$	$845 \leq l_{PL} \leq 1040$	12.7	1.0	3 842 998 568
845 x 845	$845 \leq b_{PL} \leq 1040$	$845 \leq l_{PL} \leq 1040$	12.7	1.0	3 842 998 570
845 x 1040	$845 \leq b_{PL} \leq 1040$	$1040 \leq l_{PL} \leq 1250$	12.7	1.2	3 842 998 572

$b_{WT} \times l_{WT}$ (mm)	b_{PL} (mm)	l_{PL} (mm)	d_{PL} (mm)	$\square^*$ (mm)	No.
455 x 455	$455 \leq b_{PL} \leq 650$	$455 \leq l_{PL} \leq 650$	19.05	0.6	3 842 998 563
455 x 650	$455 \leq b_{PL} \leq 650$	$650 \leq l_{PL} \leq 845$	19.05	0.8	3 842 998 565
650 x 650	$650 \leq b_{PL} \leq 845$	$650 \leq l_{PL} \leq 845$	19.05	0.8	3 842 998 567
650 x 845	$650 \leq b_{PL} \leq 845$	$845 \leq l_{PL} \leq 1040$	19.05	1.0	3 842 998 569
845 x 845	$845 \leq b_{PL} \leq 1040$	$845 \leq l_{PL} \leq 1040$	19.05	1.0	3 842 998 571
845 x 1040	$845 \leq b_{PL} \leq 1040$	$1040 \leq l_{PL} \leq 1250$	19.05	1.2	3 842 998 573

d_{PL} = plate thickness

$\square^*$ = evenness

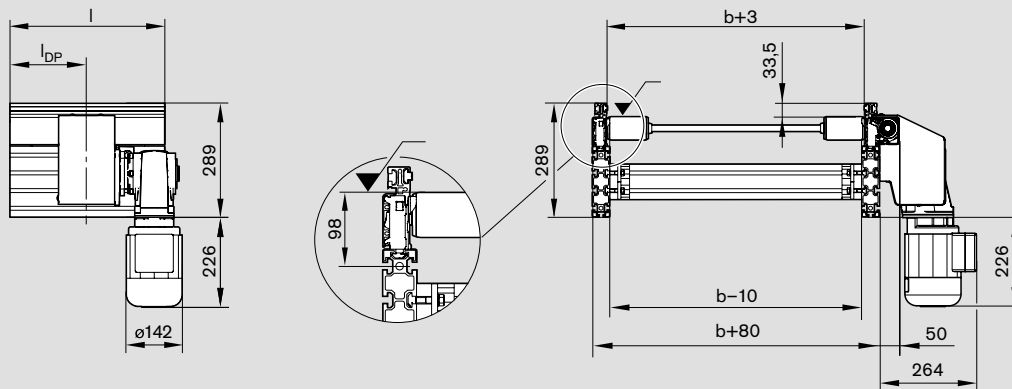
Description of further parameters 0-3

Formula for calculating the weight of a carrying plate:
 $m_{PL} \text{ (kg)} = (b_{PL} - 4) \text{ (mm)} \times (l_{PL} - 4) \text{ (mm)} \times d_{PL} \text{ (mm)} \times 0.0000027 \text{ (kg/mm}^3\text{)}$

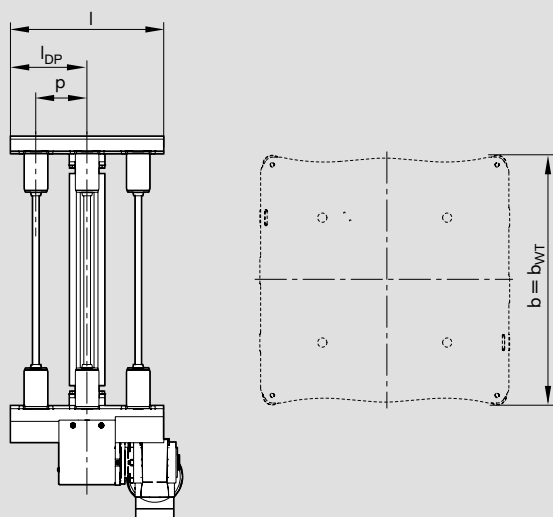
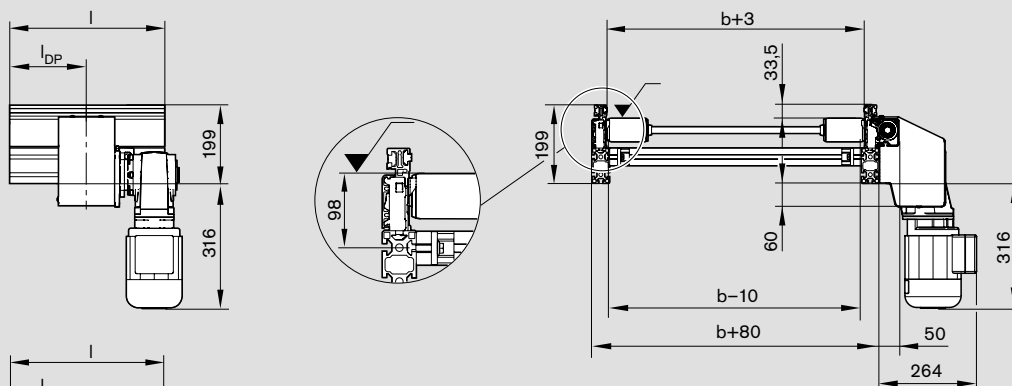
Technical data

Drive module AS 5/H, AS 5/XH, division $p = 130$ mm

AS 5/XH



AS 5/H



$$l = p \times n$$

$$l_{DP} = DP \times p - p/2$$

p = division
 n = number of rollers
 DP = drive position

Explanation of the parameters

3-4

AS 5/XH: 3 842 998 800

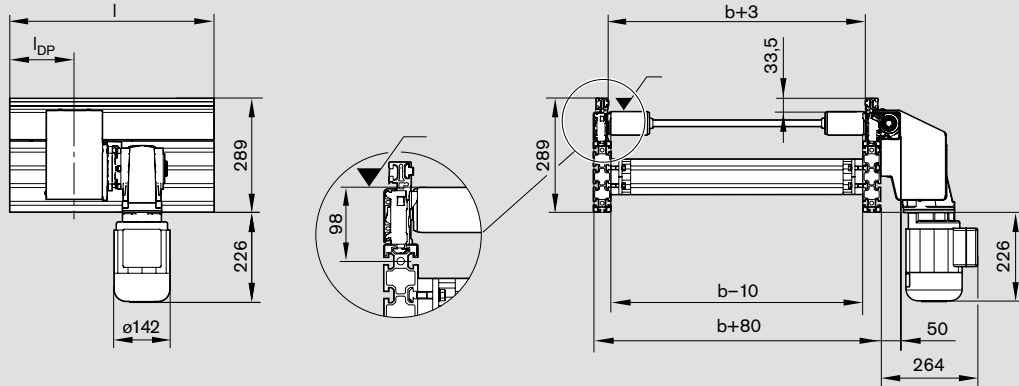
AS 5/H: 3 842 998 801

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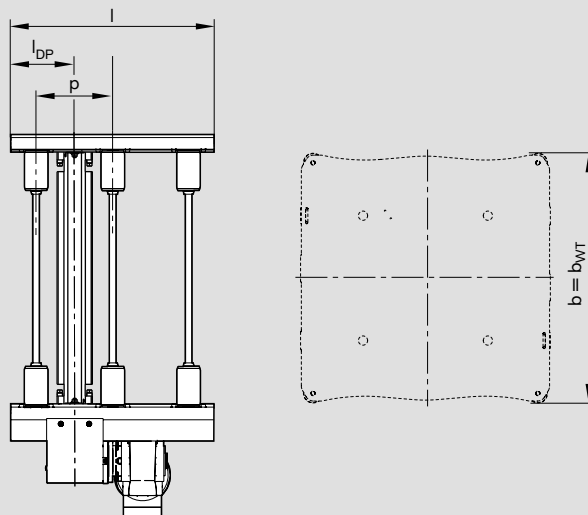
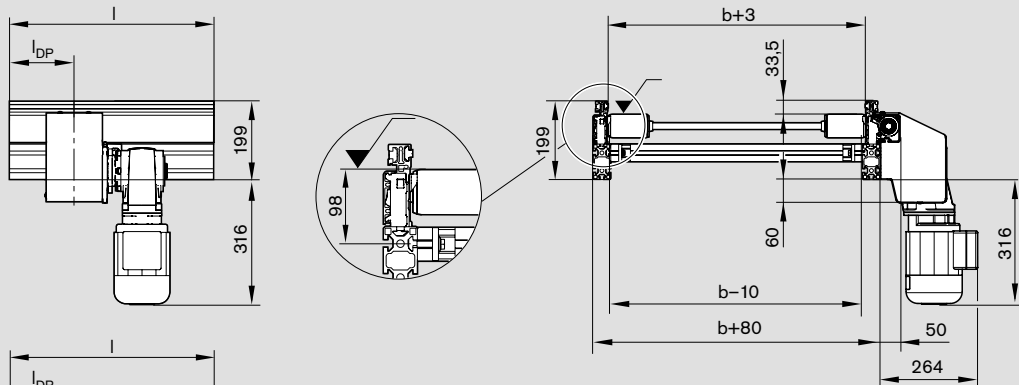
Technical data

Drive module AS 5/H, AS 5/XH, division $p = 195 \text{ mm}$; $p = 260 \text{ mm}$; $p = 325 \text{ mm}$

AS 5/XH



AS 5/H



$$l = p \times n$$

$$l_{DP} = DP \times p$$

p = division
 n = number of rollers
 DP = drive position

Explanation of the parameters
 3-4

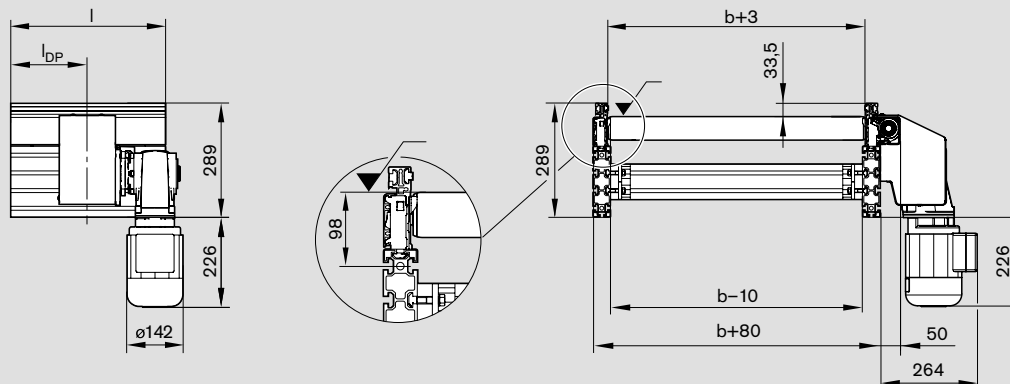
AS 5/XH: 3 842 998 800
 AS 5/H: 3 842 998 801

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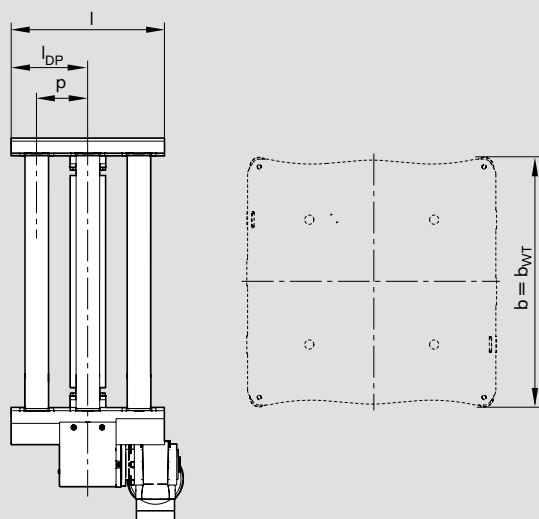
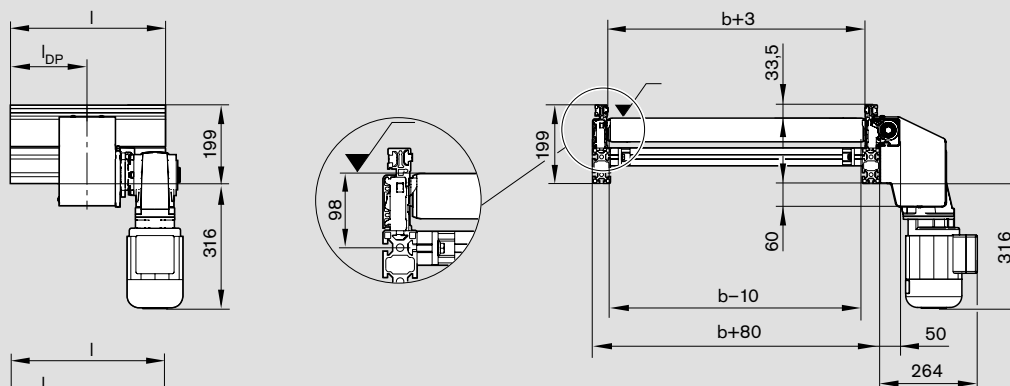
Technical data

Drive module AS 5/H-FR, AS 5/XH-FR, division $p = 130$ mm

AS 5/XH-FR



AS 5/H-FR



$$l = p \times n$$

$$l_{DP} = DP \times p - p/2$$

p = division
 n = number of rollers
 DP = drive position

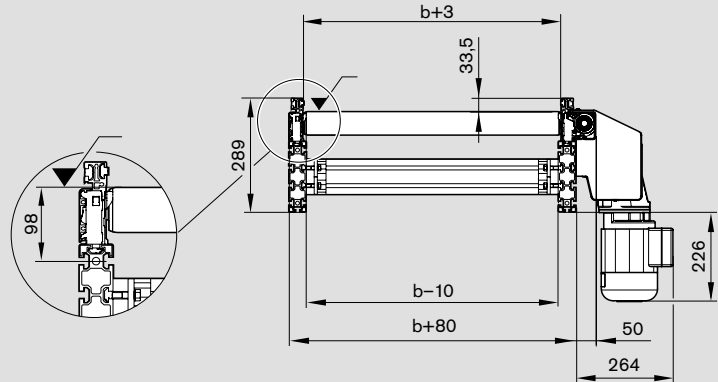
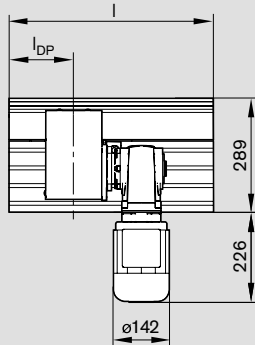
Explanation of the parameters
 3-6

AS 5/XH-FR: 3 842 998 802
 AS 5/H-FR: 3 842 998 803

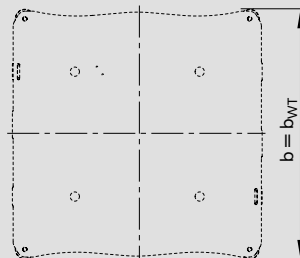
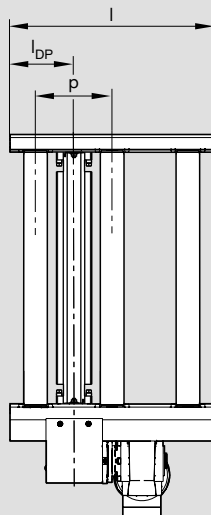
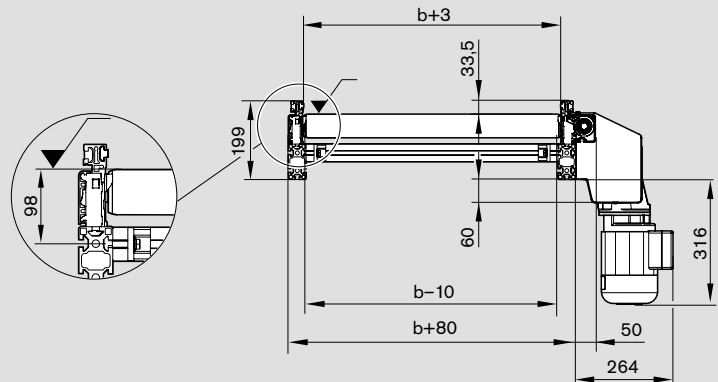
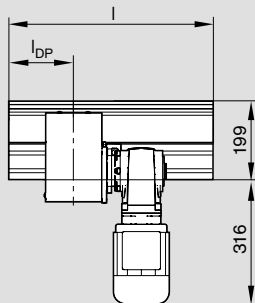
Technical data

Drive module AS 5/H-FR, AS 5/XH-FR, division $p = 195 \text{ mm}$; $p = 260 \text{ mm}$; $p = 325 \text{ mm}$

AS 5/XH-FR



AS 5/H-FR



$$l = p \times n$$

$$l_{DP} = DP \times p$$

p = division

n = number of rollers

DP = drive position

Explanation of the parameters

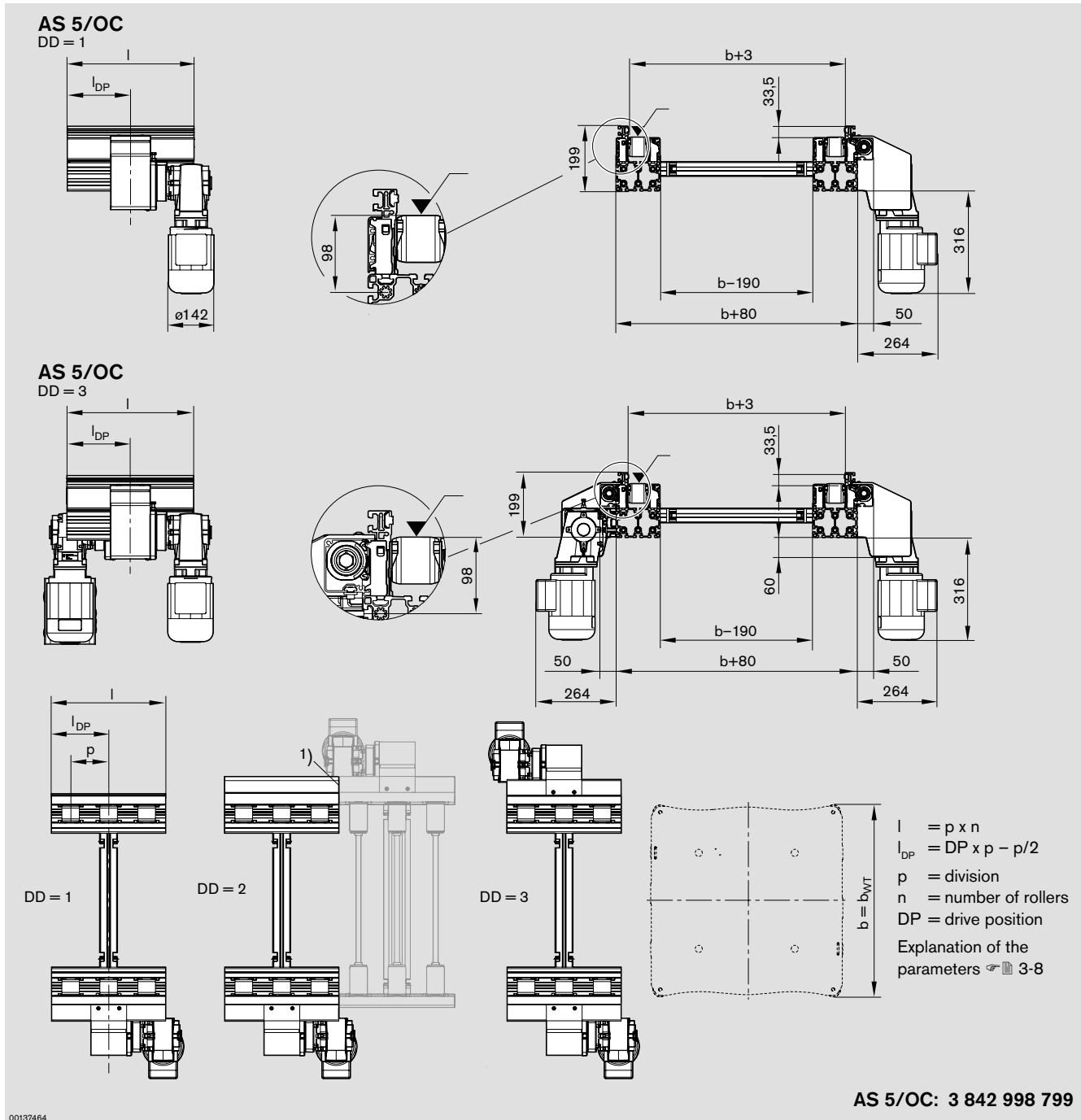
3-6

AS 5/XH-FR: 3 842 998 802

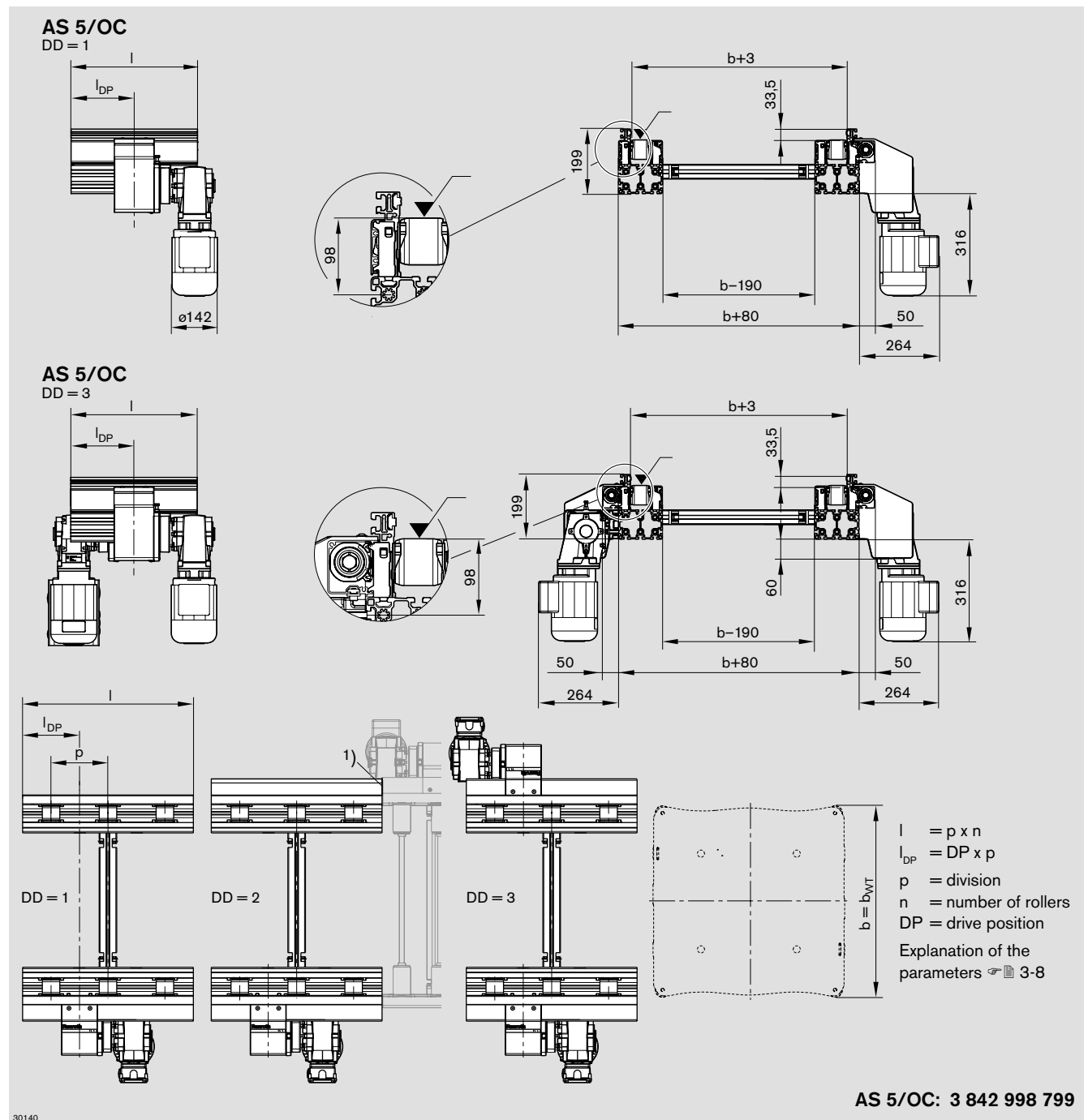
AS 5/H-FR: 3 842 998 803

28121

Technical data

Drive module AS 5/OC (Open Center), division $p = 130 \text{ mm}$

¹⁾ DD = 2: Join the drive side without the gear motor to a gear-driven section.

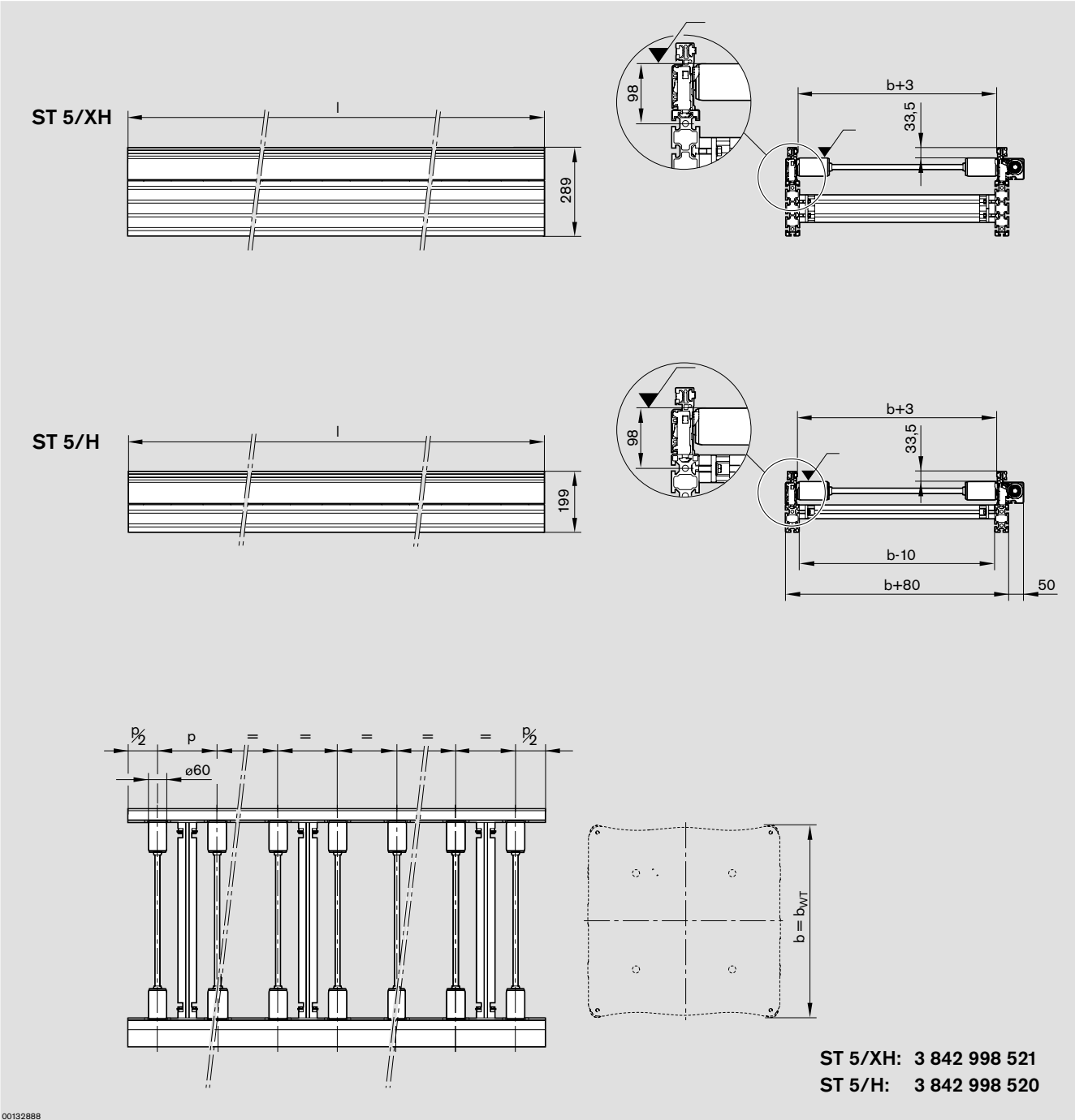
Technical data

Drive module AS 5/OC (Open Center), division $p = 195 \text{ mm}$; $p = 260 \text{ mm}$; $p = 325 \text{ mm}$ 

¹⁾ DD = 2: Join the drive side without the gear motor to a gear-driven section.

Technical data

ST 5/XH, ST 5/H conveyor unit

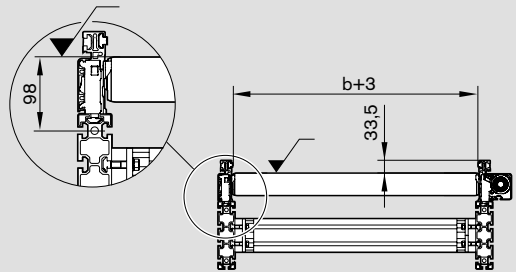
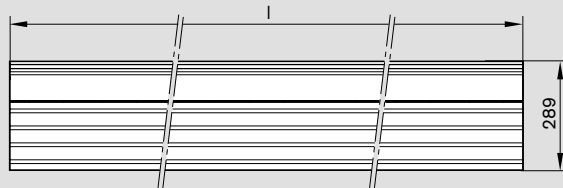


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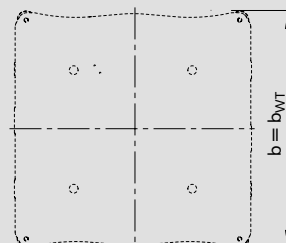
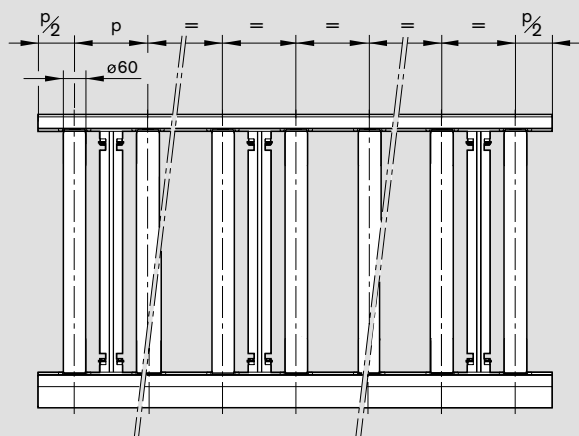
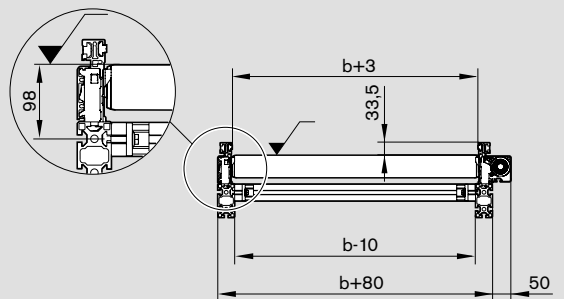
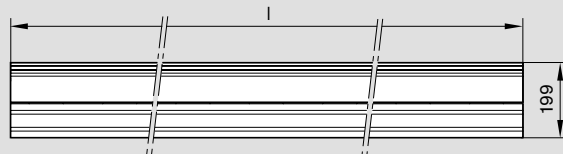
Technical data

ST 5/XH-FR, ST 5/H-FR conveyor unit

ST 5/XH-FR



ST 5/H-FR



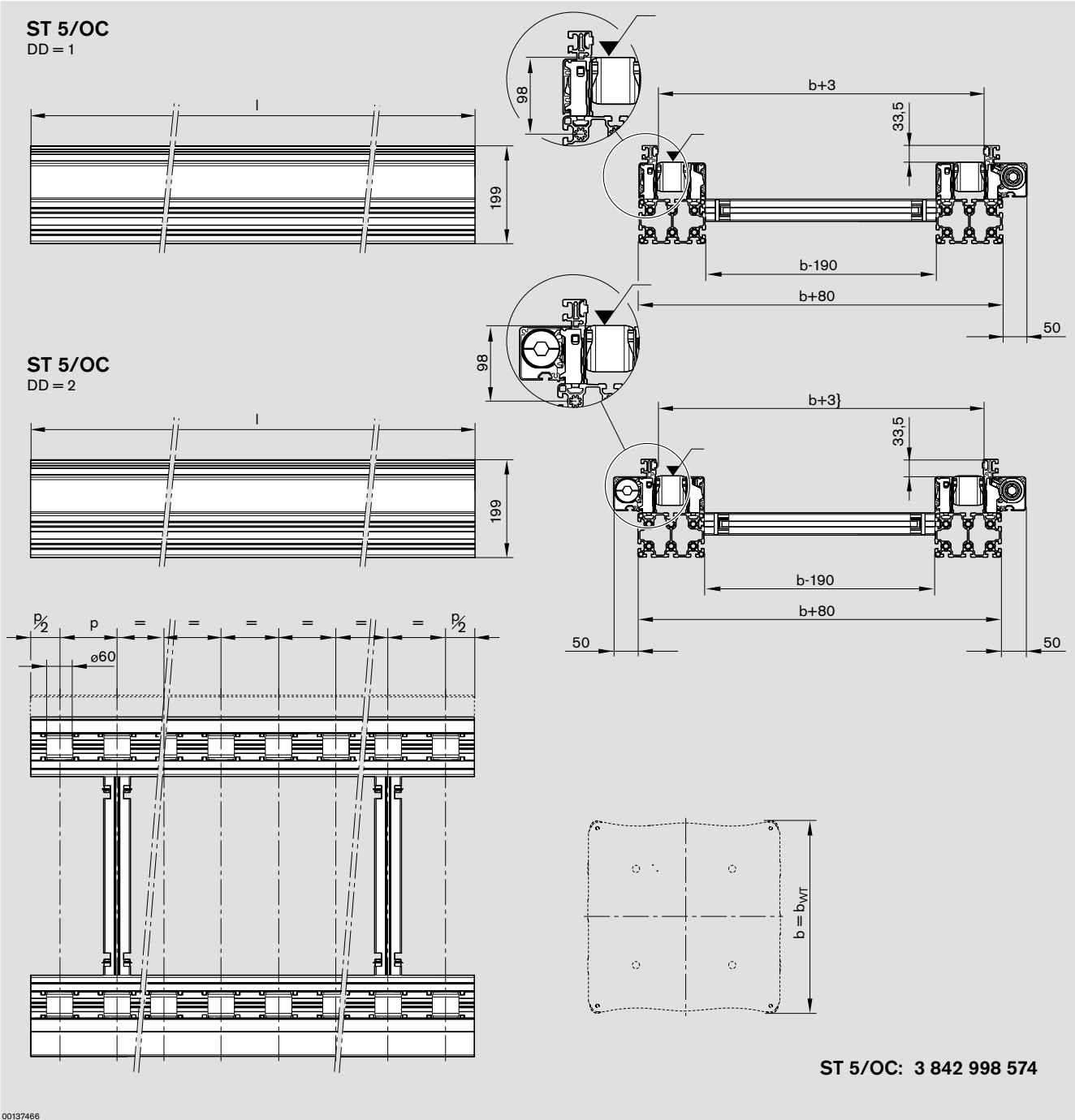
ST 5/XH-FR: 3 842 998 523

ST 5/H-FR: 3 842 998 522

00132889

Technical data

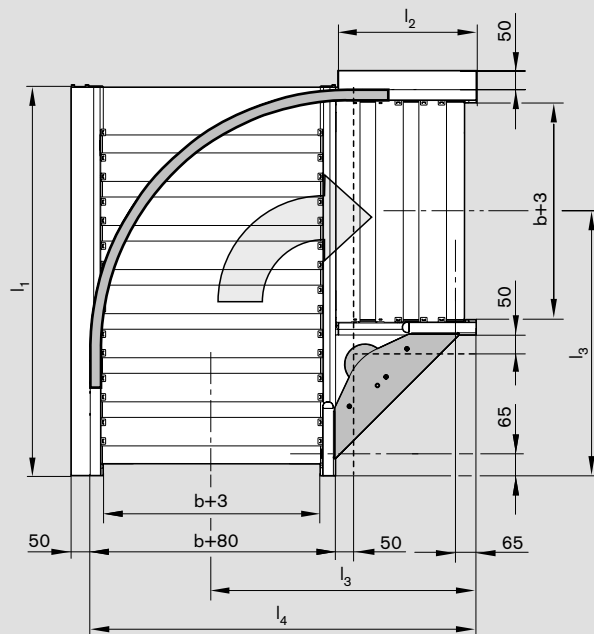
ST 5/OC (Open Center) conveyor unit



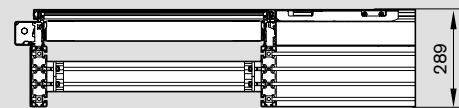
00137466

Technical data

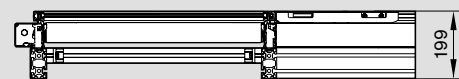
CU 5/H, CU5/XH curve



CU 5/XH



CU 5/H



CU 5/XH: 3 842 998 526

CU 5/H: 3 842 998 525

00132893

$b^{1)}$ (mm)	$l_{WT}^{2)}$ (mm)	N	$l_1^{3)}$ (mm)	$l_2^{4)}$ (mm)	$l_3^{5)}$ (mm)	l_4 (mm)
455	455; 650	10	921.5	382.5	650	917.5
650	650; 845	11	1149	415	780	1145
845	845; 1040	13	1376.5	447	910	1372.5

¹⁾ b = track width in direction of transport²⁾ l_{WT} = workpiece pallet length
(in direction of transport)³⁾ l_1 = length of main section⁴⁾ l_2 = length of secondary section⁵⁾ l_3 = length of secondary section up to
its center

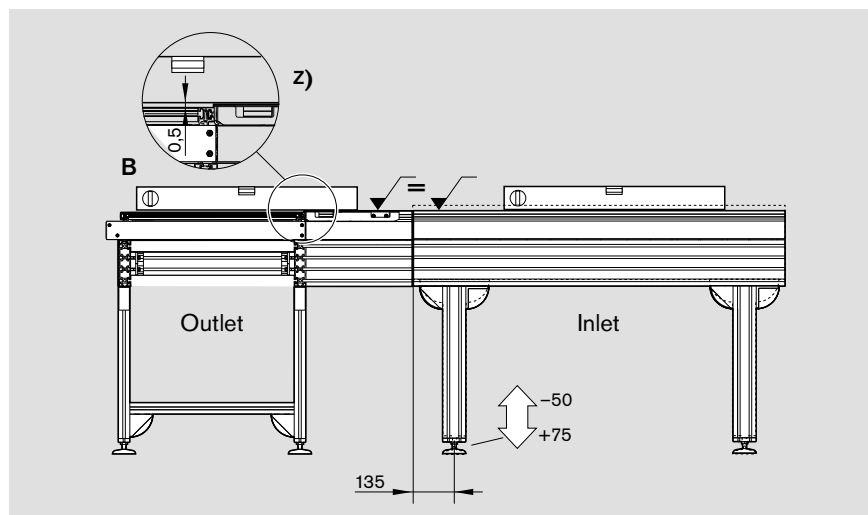
Main section

Description of further parameters 0-3

Technical data

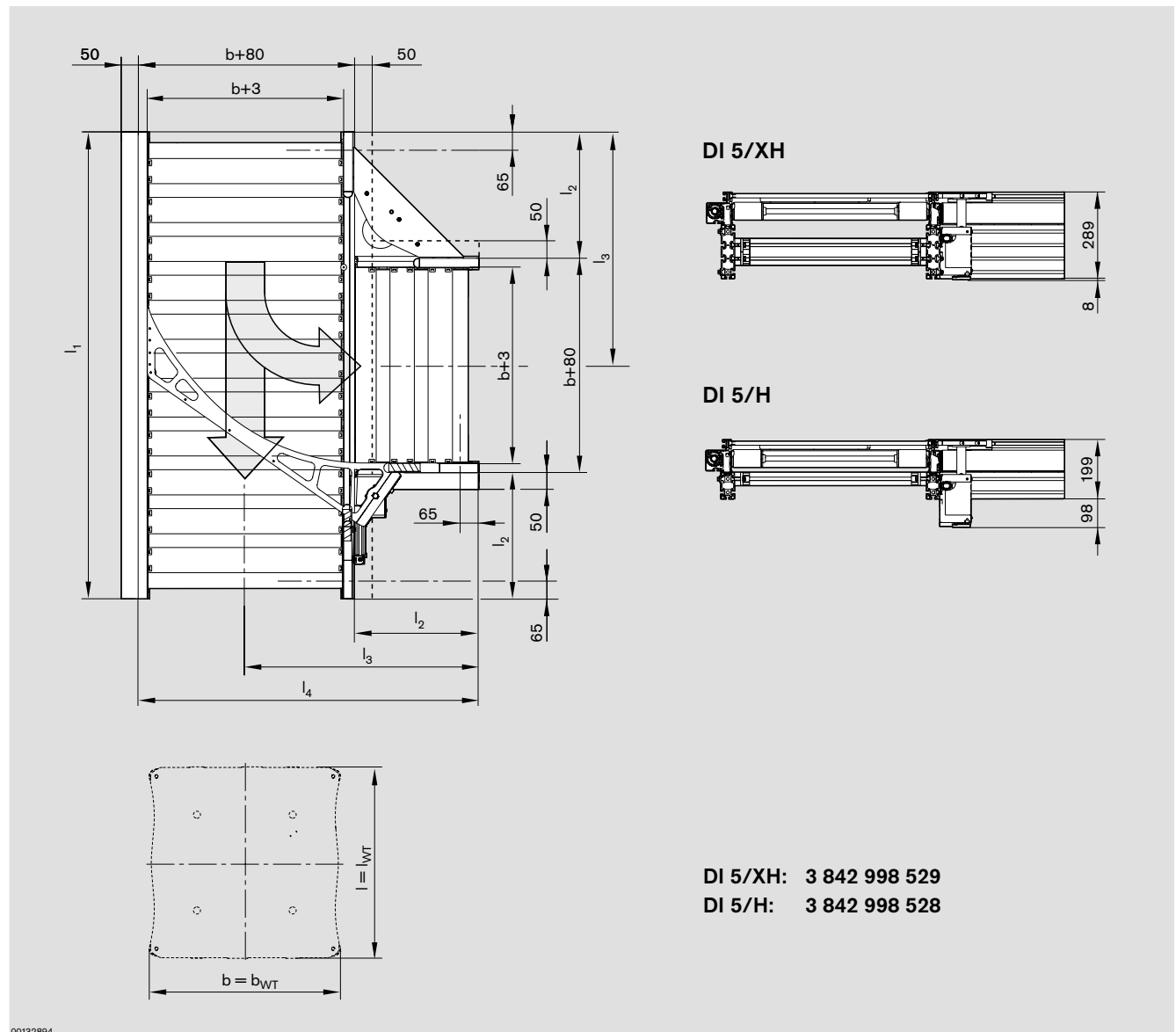
Note:

At curves, diverters and junctions, functional considerations mean that there is 0.5 mm difference between the transport height of the main and secondary section (inlet and outlet) (z)



Technical data

DI 5/H, DI 5/XH diverter



$b^{1)}$ (mm)	$l_{WT}^{2)}$ (mm)	N	$l_1^{3)}$ (mm)	$l_2^{4)}$ (mm)	$l_3^{5)}$ (mm)	l_4 (mm)
455	455; 650	13	1300	382.5	650	917.5
650	650; 845	15	1560	415	780	1145
845	845; 1040	17	1820	447	910	1372.5

¹⁾ b = track width in direction of transport

²⁾ l_{WT} = workpiece pallet length
(in direction of transport)

³⁾ l_1 = length of main section

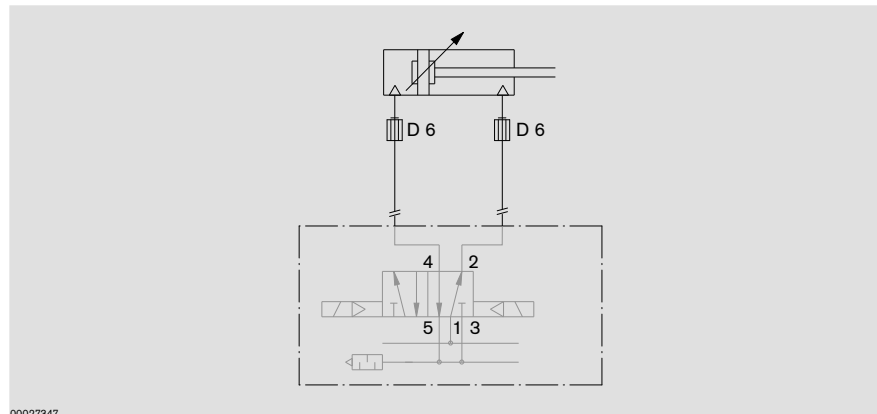
⁴⁾ l_2 = length of secondary section

⁵⁾ l_3 = length of secondary section up to
center of main section

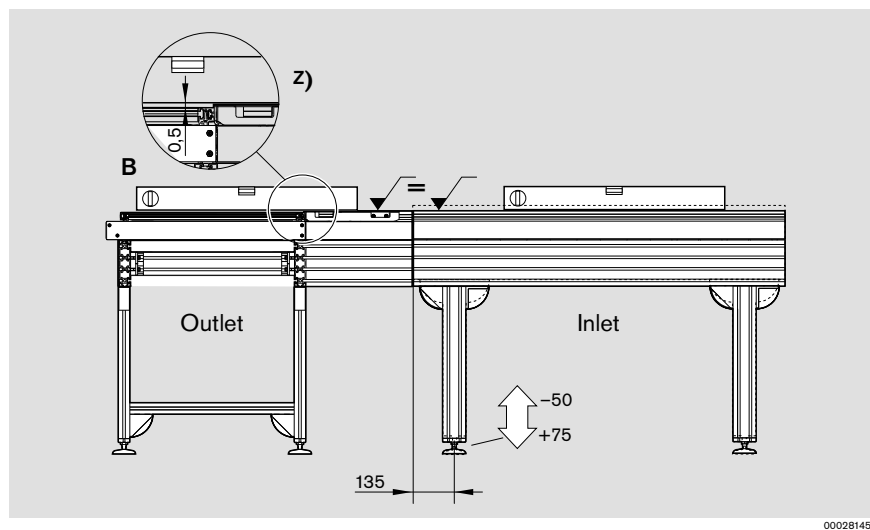
Description of further parameters 0-3

Technical data

Pneumatic diagram
of DI 5/H, DI 5/XH diverter

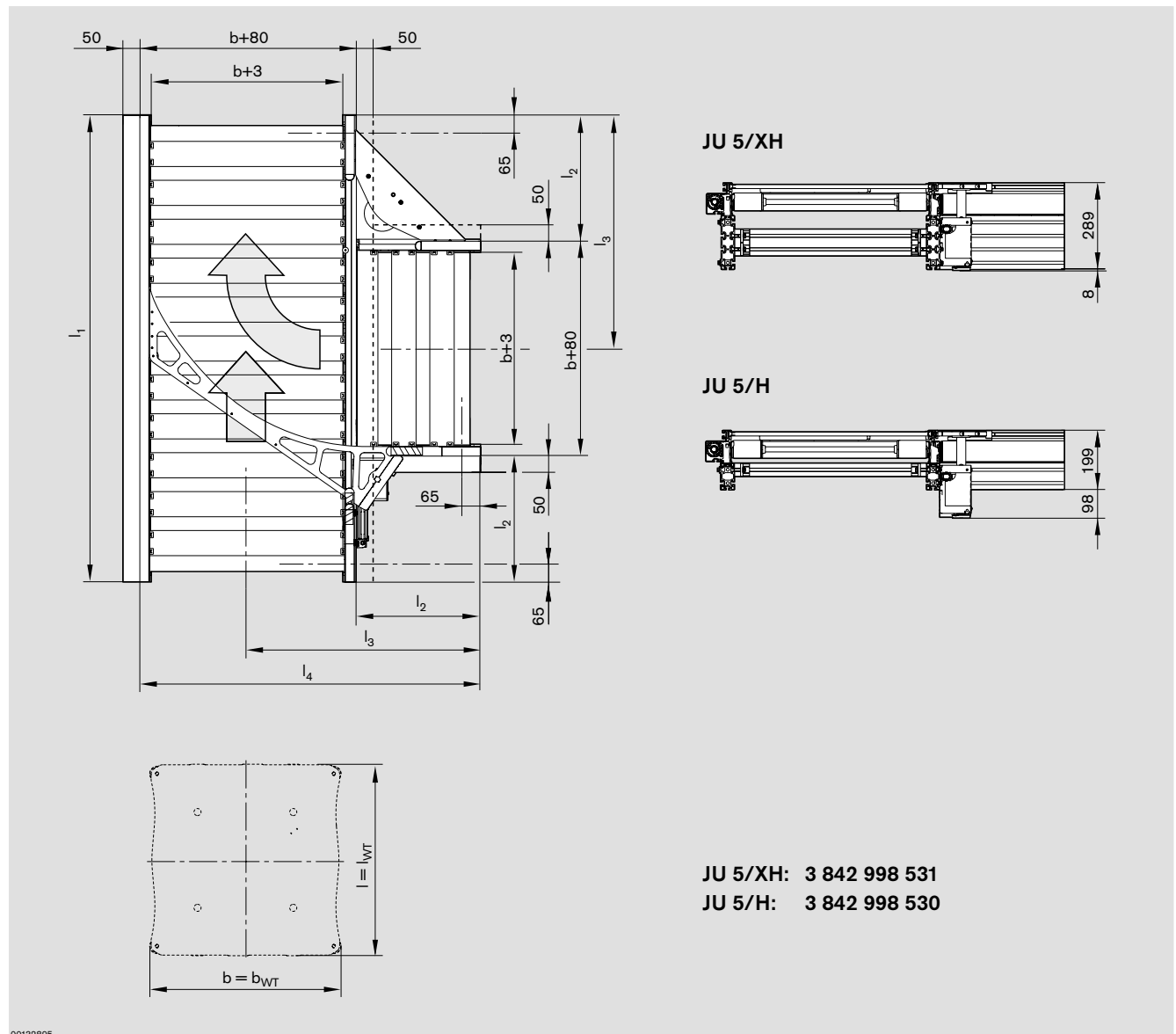
**Note:**

At curves, diverters and junctions, functional considerations mean that there is 0.5 mm difference between the transport height of the main and secondary section (inlet and outlet) (z))



Technical data

JU 5/H, JU 5/XH junction



$b^{1)}$ (mm)	$l_{WT}^{2)}$ (mm)	N	$l_1^{3)}$ (mm)	$l_2^{4)}$ (mm)	$l_3^{5)}$ (mm)	l_4 (mm)
455	455; 650	13	1300	382.5	650	917.5
650	650; 845	15	1560	415	780	1145
845	845; 1040	17	1820	447	910	1372.5

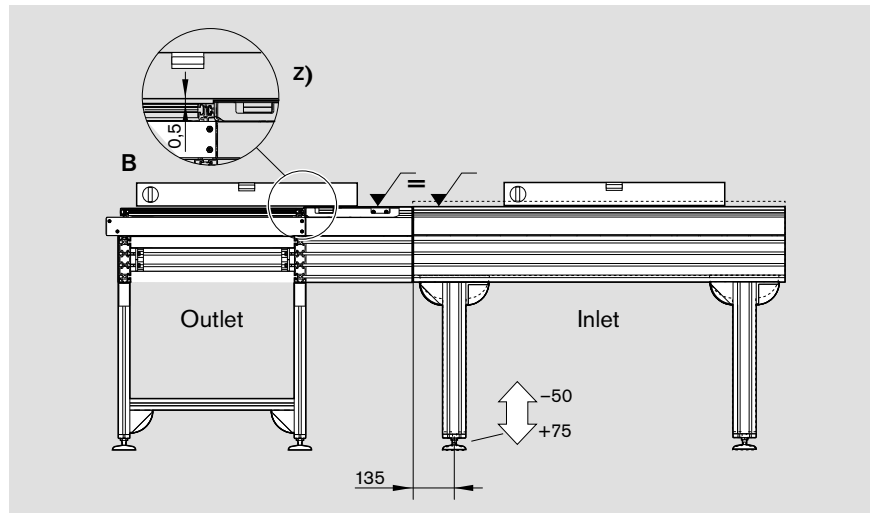
- ¹⁾ b = track width in direction of transport
²⁾ l_{WT} = workpiece pallet length (in direction of transport)
³⁾ l_1 = length of main section
⁴⁾ l_2 = length of secondary section
⁵⁾ l_3 = length of secondary section up to center of main section

Description of further parameters 0-3

Technical data

Note:

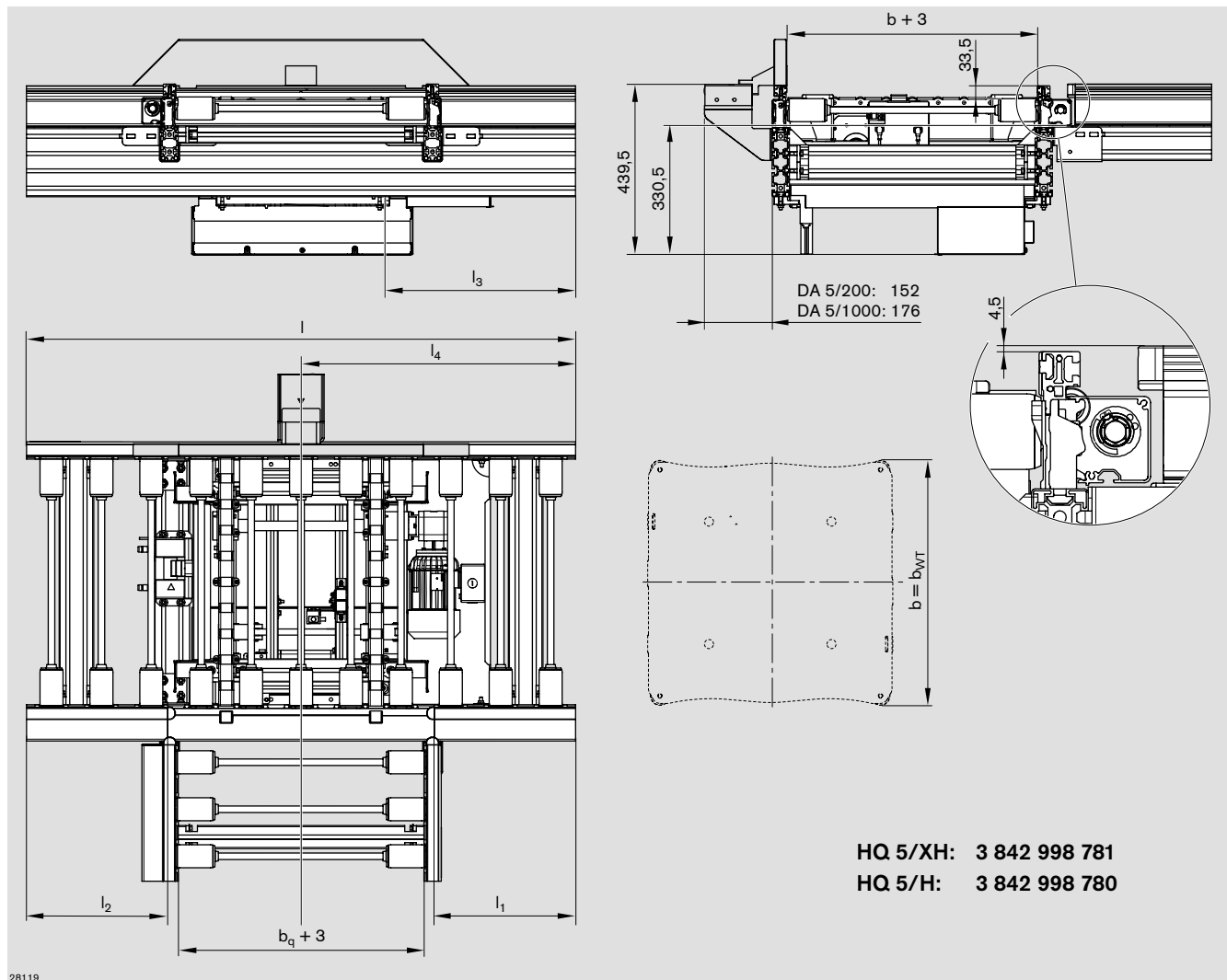
At curves, diverters and junctions, functional considerations mean that there is 0.5 mm difference between the transport height of the main and secondary section (inlet and outlet) (z))



00028145

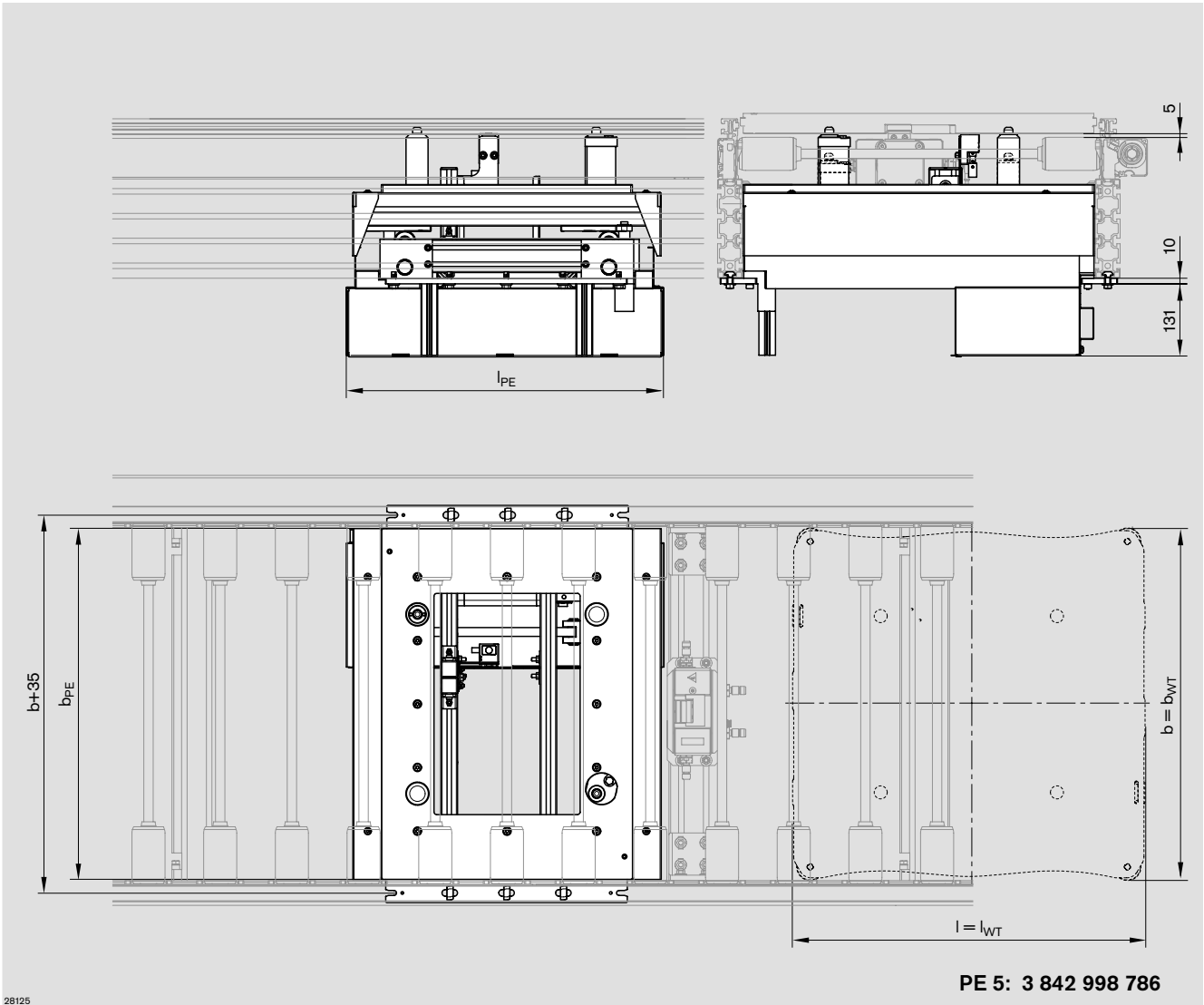
Technical data

HQ 5 lift transverse unit



Technical data

PE 5 positioning unit



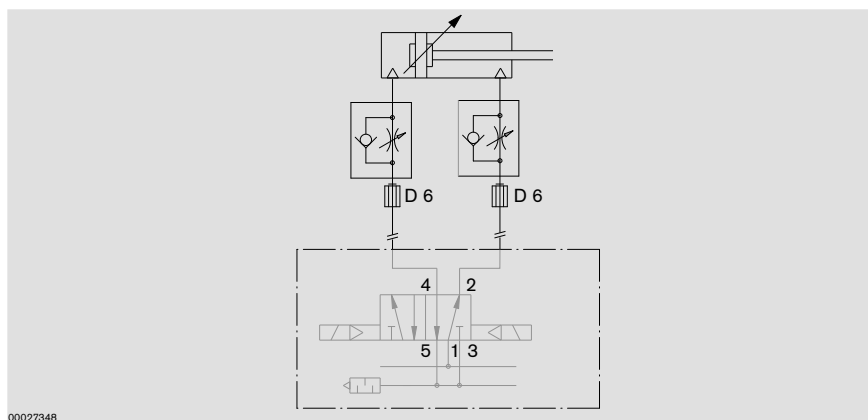
PE 5: 3 842 998 786

b_{WT} (mm)	l_{WT} (mm)	b_{PE} (mm)	l_{PE} (mm)
455	455	441	471
455	650	441	576
650	650	636	576
650	845	636	764
845	845	831	764
845	1040	831	966

Assembly kit for installing the PE 5 in the
ST 5/H: no. 3 842 996 185

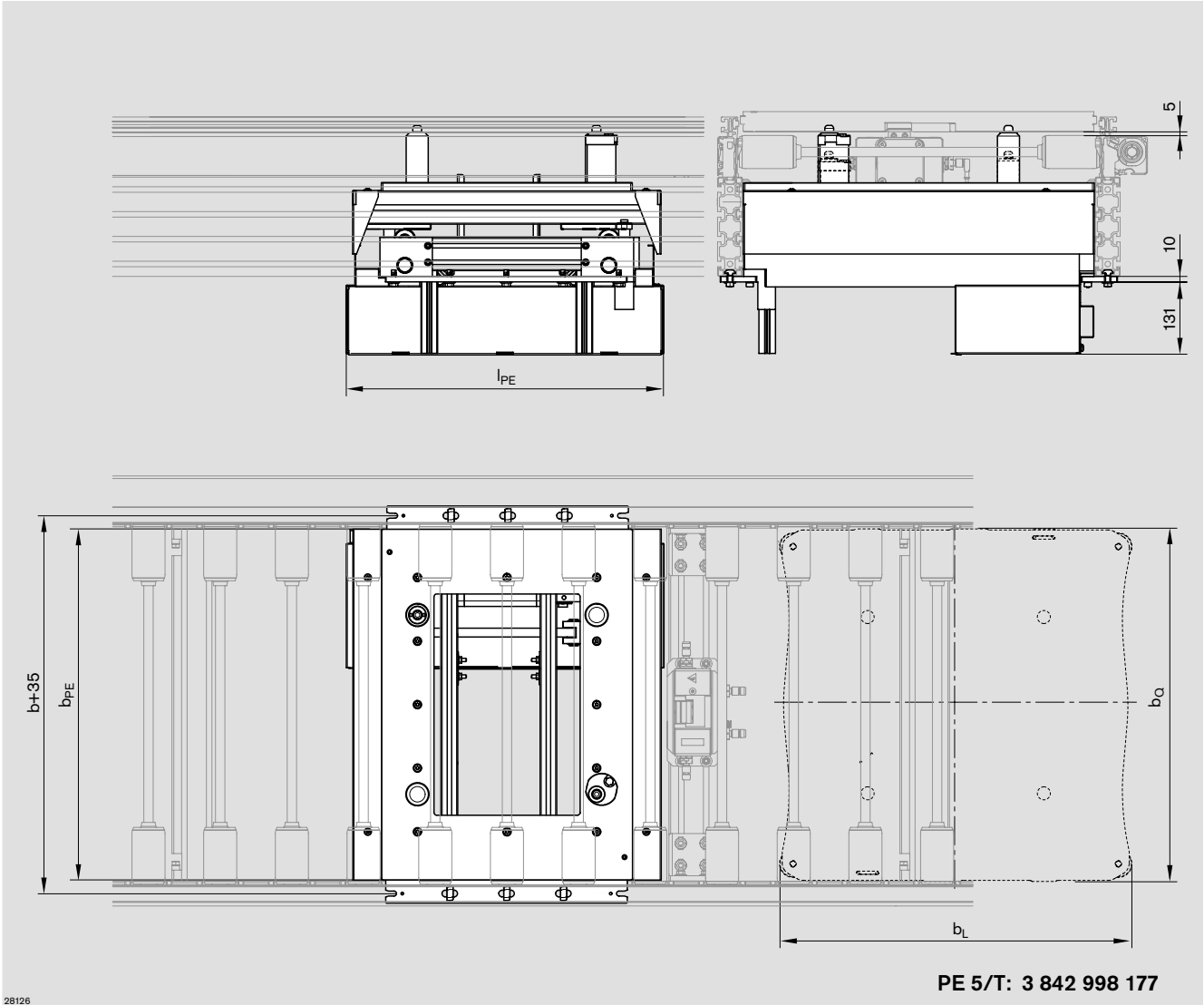
Description of parameters  8-3

Technical data

**Pneumatic diagram
for PE 5 positioning unit**

Technical data

PE 5/T positioning unit



PE 5/T: 3 842 998 177

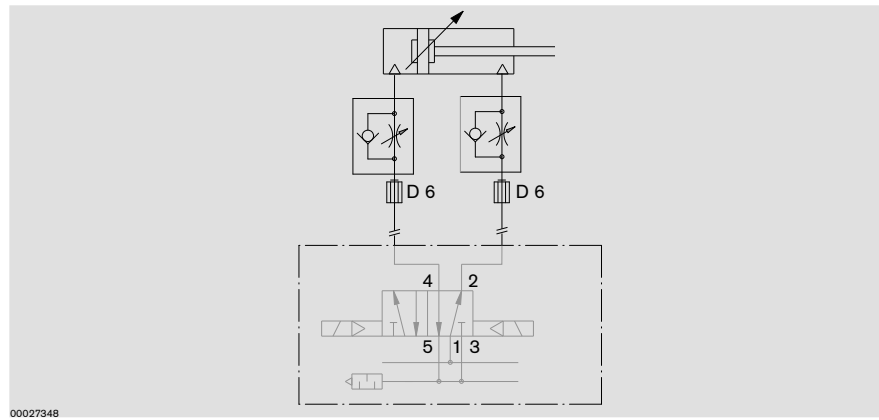
28126

b_L (mm)	b_Q (mm)	b_{PE} (mm)	l_{PE} (mm)
455	455; 650	441	471
650	650	636	576
650	845	636	576
845	845	831	764
845	1040	831	764

Assembly kit for installing the PE 5/T in the ST 5/H: no. 3 842 996 185

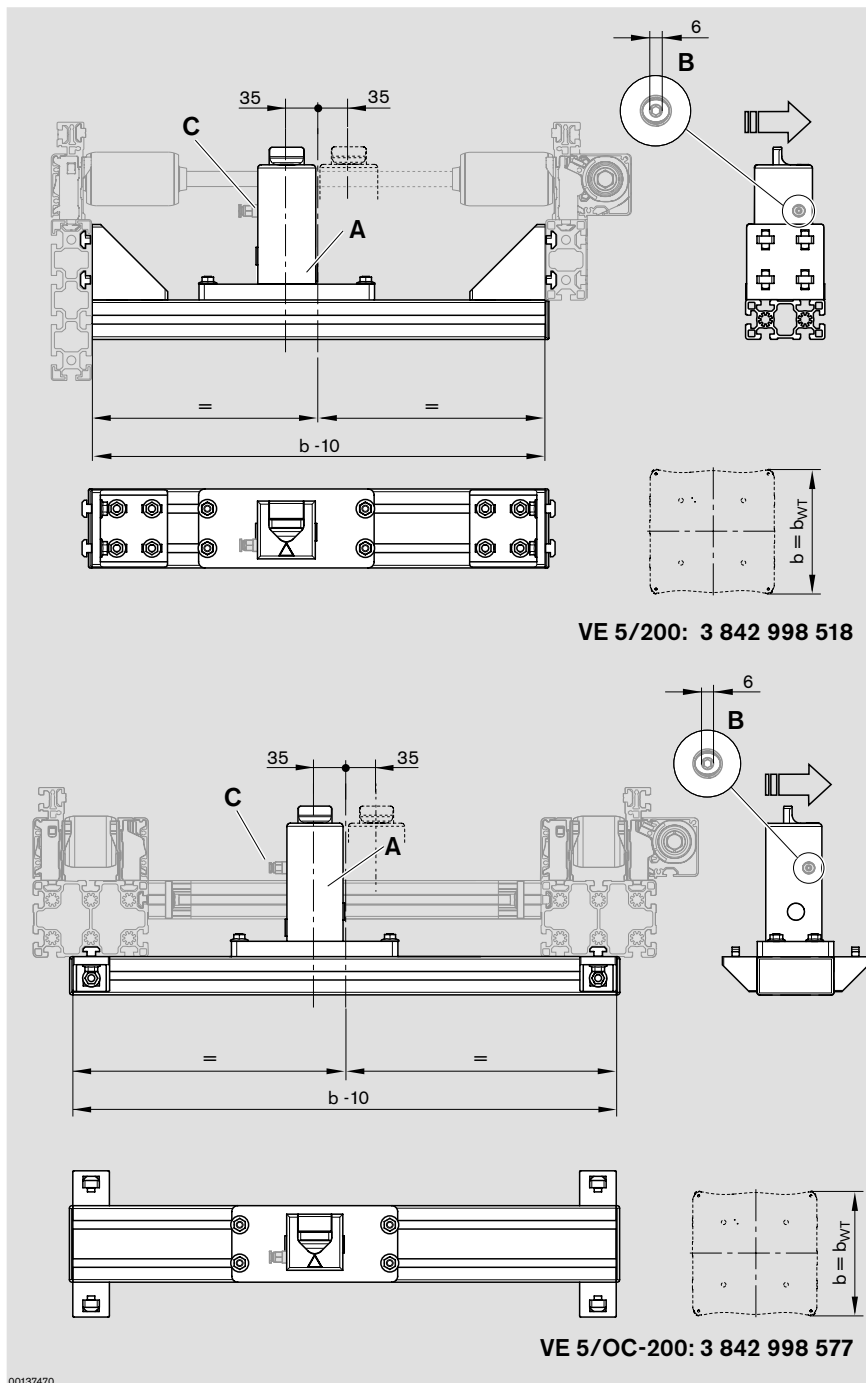
Description of parameters  8-4

Technical data

**Pneumatic diagram
for PE 5/T positioning unit**

Technical data

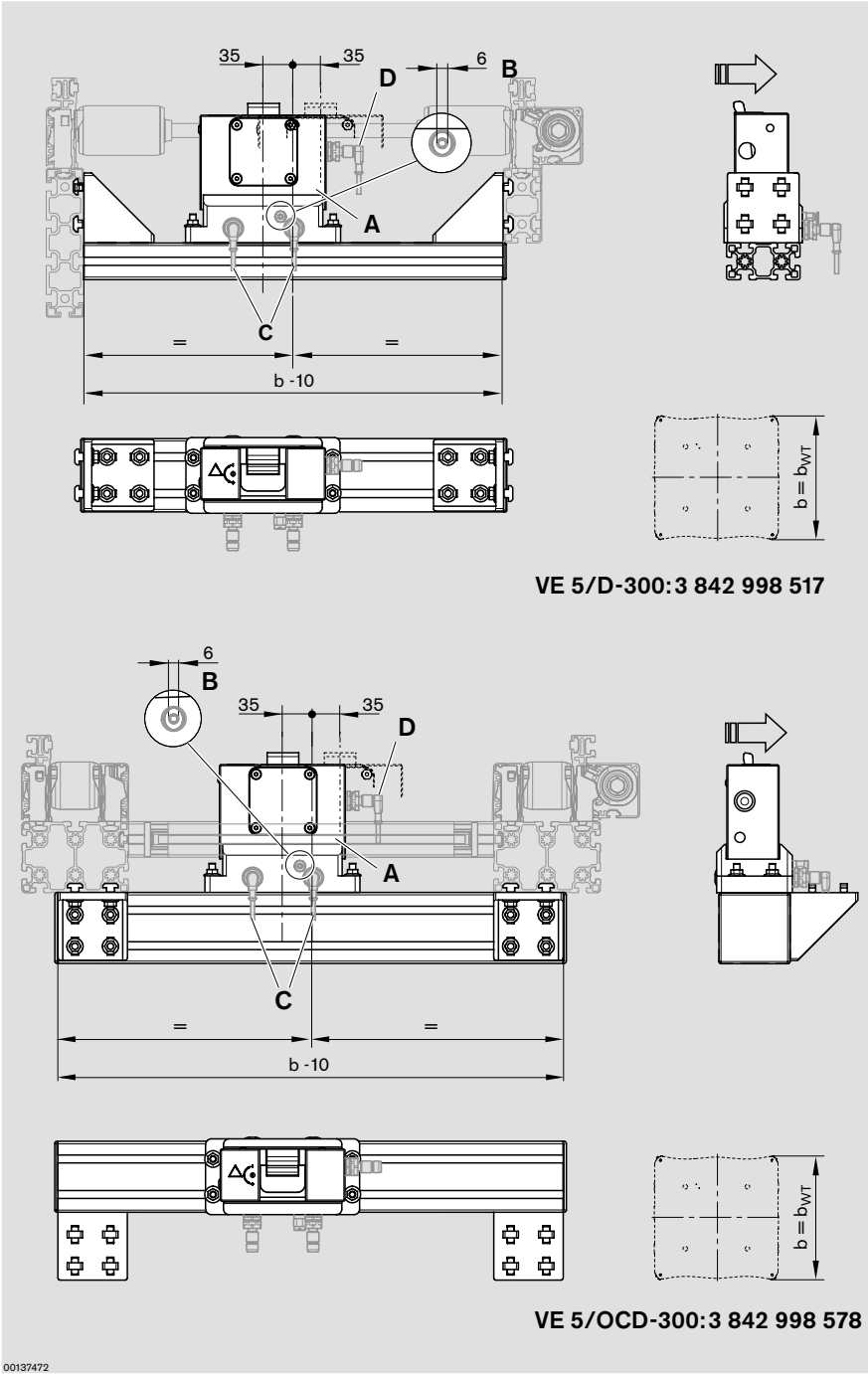
VE 5/200, VE 5/OC-200 stop gates



- A = stop gates
 B = 6 mm pneumatic push-in connector
 C = position inquiry VE stop blade up:
 yes/no

Technical data

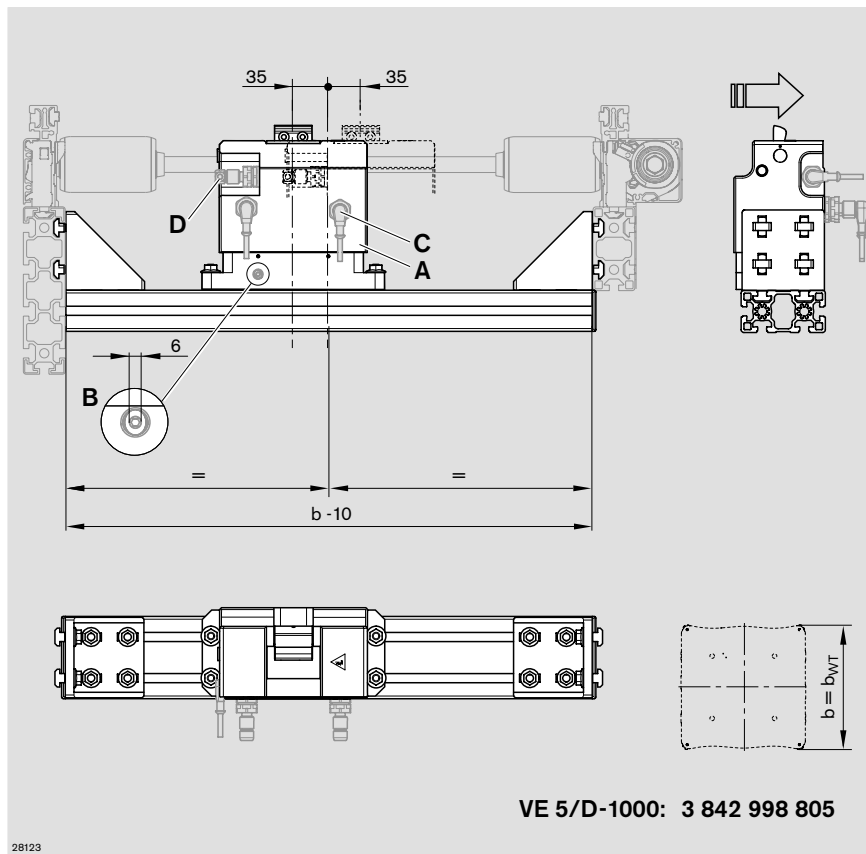
VE 5/D-300, VE 5/OCD-300 stop gate



00137472

Technical data

VE 5/D-1000 stop gates

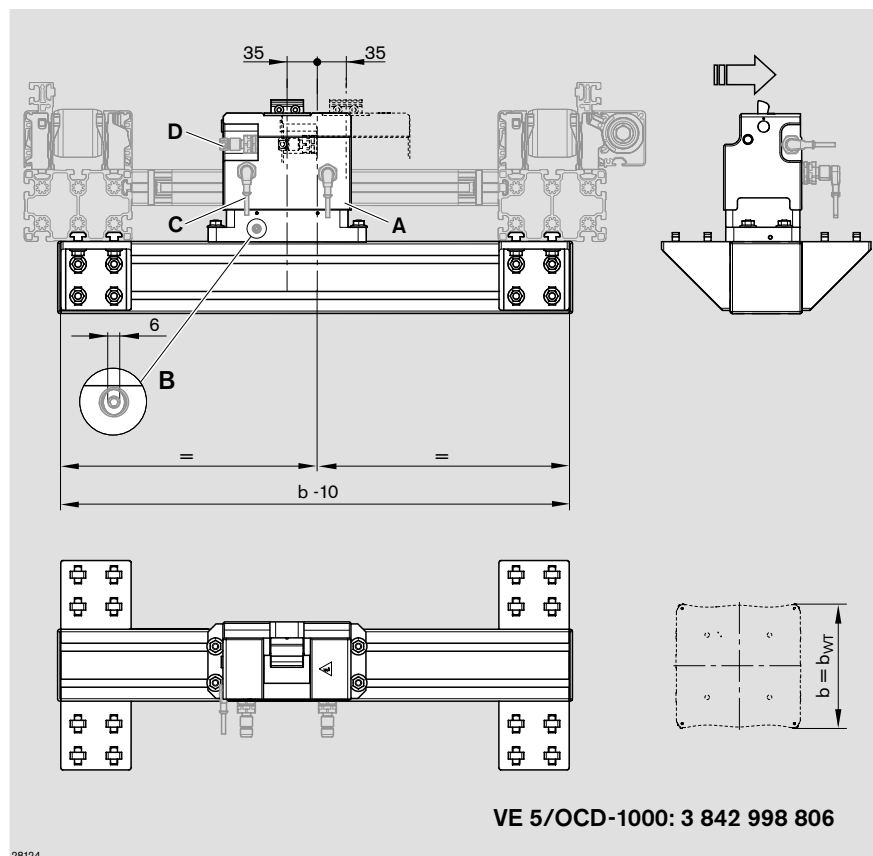


- A = stop gates
- B = 6 mm pneumatic push-in connector
- C = position inquiry VE stop blade:
up/down
- D = position inquiry VE stop blade, damper
retracted: yes/no



Technical data

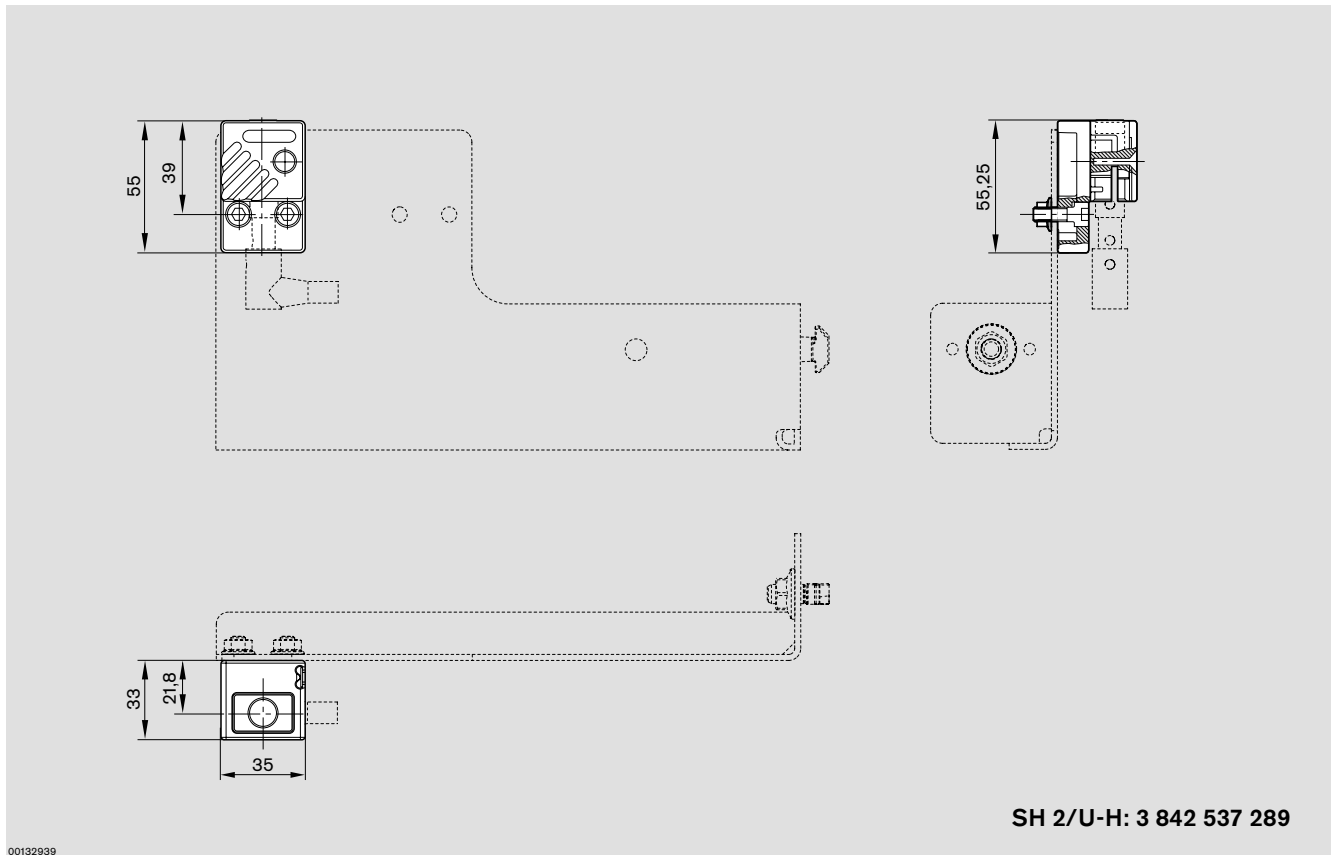
VE 5/OCD-1000 stop gates



28124

Technical data

SH 2/U-H switch brackets



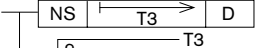
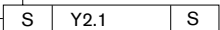
Operation sequence diagrams

The following pages contain the underlying operation sequence diagrams for transfer system control tasks shown in a standard format. Contrary to DIN IEC 61131-3, purpose designators are used in the action blocks and they are explained in the table opposite.

Simple VE 5 stop gates are used to stop the workpiece pallets. The position of the workpiece pallets is determined using separate proximity switches. In the case of applications which use stop gates with integrated proximity switches and the internal switching logic, the operation sequence diagrams are correspondingly simplified.

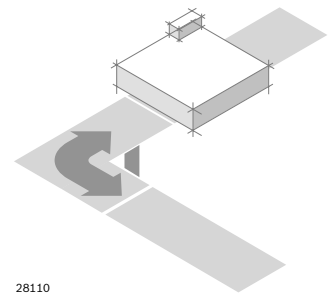
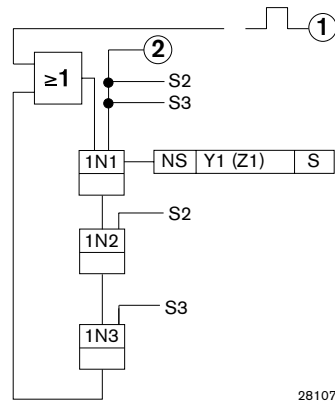
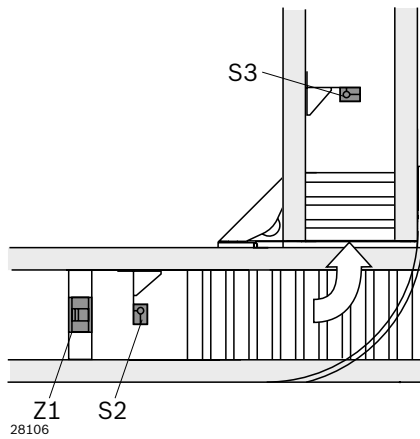
General abbreviations

- WT = workpiece pallet
- VE = stop gate
- S ... = signaler
- Y ... = valve
- Z ... = cylinder
- LT = longitudinal conveyor
(main section)
- QT = transverse conveyor
(secondary section)
- 1 = start pulse after end of start-up
- 2 = release cyclic travel

Action block	Explanation
	Storing
	Non-storing
	Set
	Reset
	Non-storing trigger of a time function (with runtime T), after which a switching function is triggered.
	

Technical data

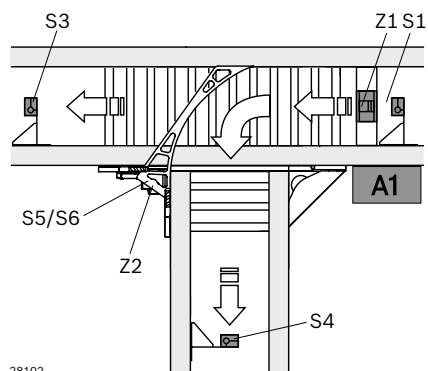
Curve CU



S2 = WT after VE
 S3 = WT after CU
 Y1 = open VE (Z1)

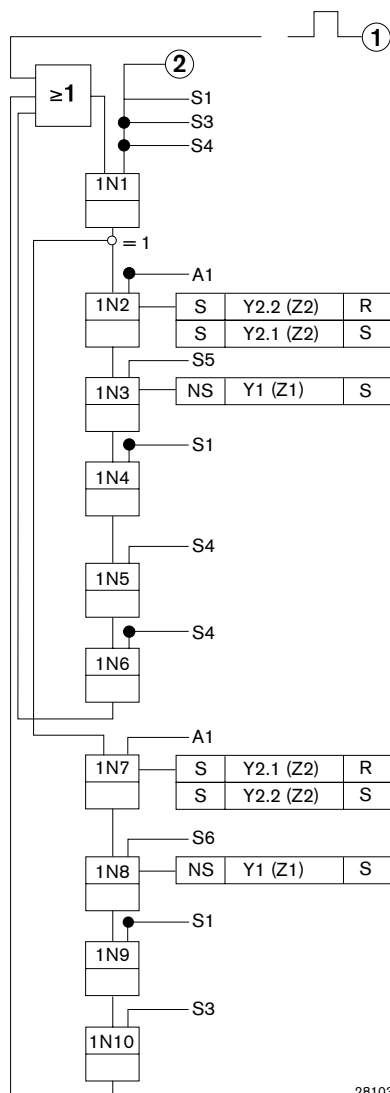
Technical data

DI diverter

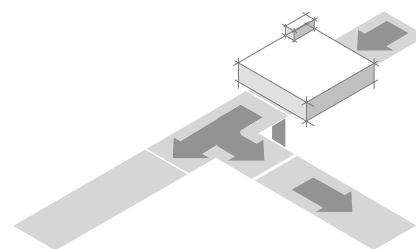


28102

- S1 = WT at VE (Z1)
 S3 = WT behind main section diverter
 S4 = WT behind secondary section diverter
 S5 = diverter open
 S6 = diverter shut
 Y2 = diverter (Z2)
 Y1 = diverter (Z1)
 A1 = identification system with straight ahead signal



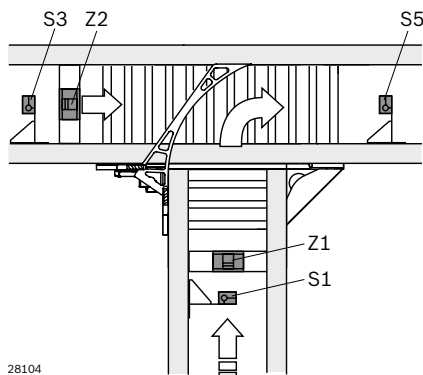
28103



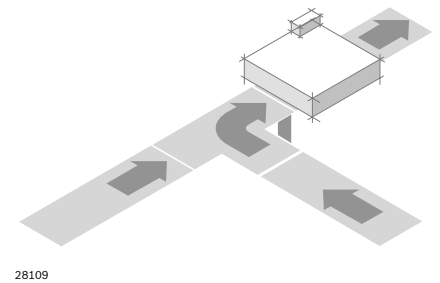
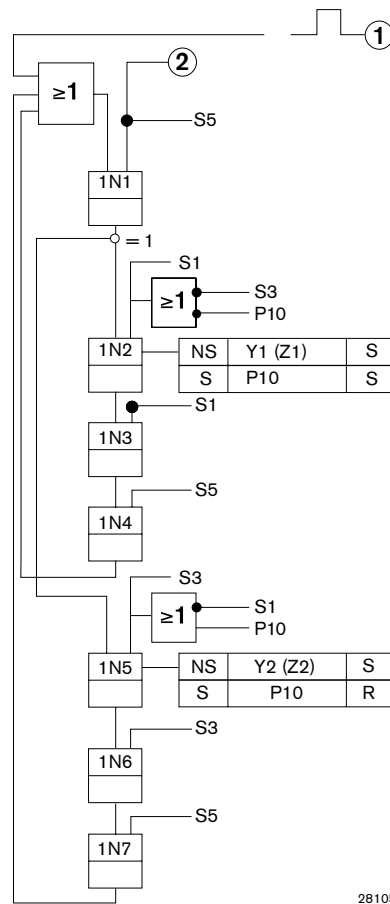
28108

Technical data

JU junction

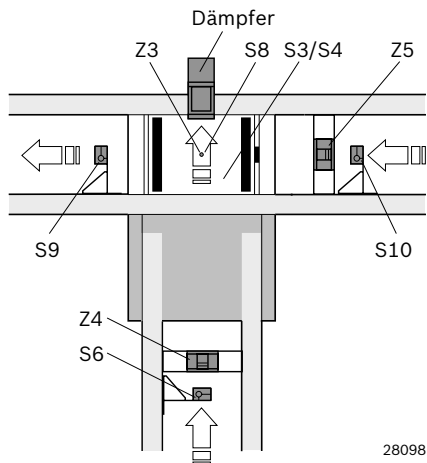


- S1 = WT at VE (Z1)
 S3 = WT at VE (Z2)
 Y1 = VE secondary section (Z1)
 Y2 = VE main section (Z2)
 P10 = main section priority



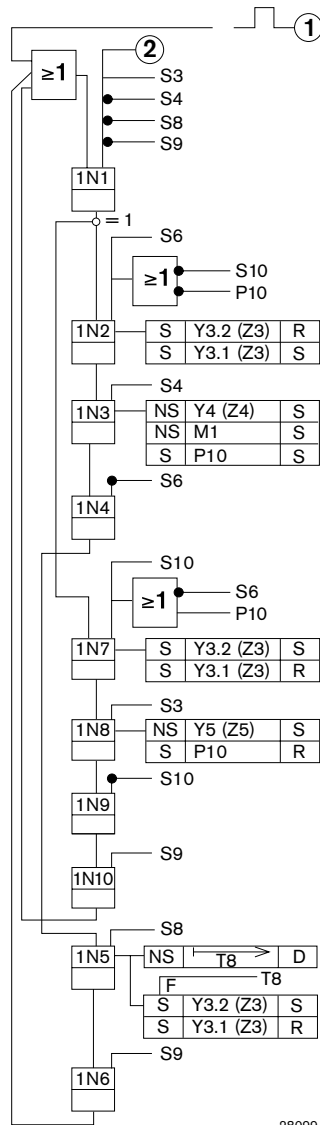
Technical data

HQ lift transverse unit (stop gate, infeeding)

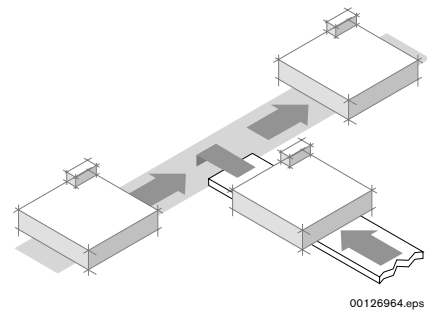


28098

- T8 = delay 100...200 ms
 S3 = lift end position, bottom
 S4 = lift end position, top
 S6 = WT in front of VE (Z4)
 S8 = WT at HQ
 S9 = main section 2 release
 S10 = WT in front of stop gate (Z5)
 Y3 = HQ lift cylinder (Z3)
 Y4 = VE secondary section (Z4) +
 DA main section (Z6)
 Y5 = VE main section (Z5)
 M1 = HQ motor
 P10 = main section priority



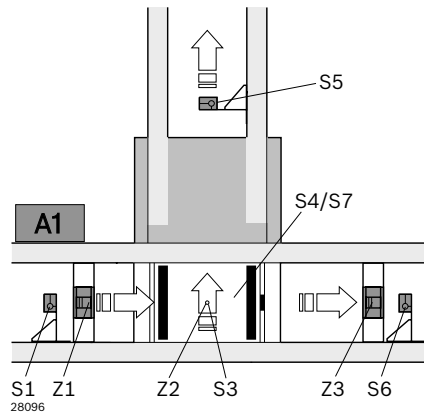
28099



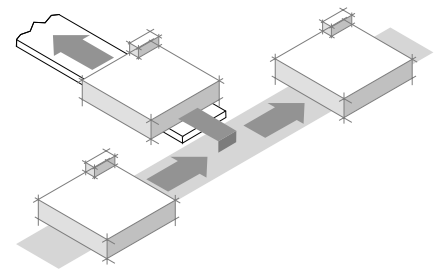
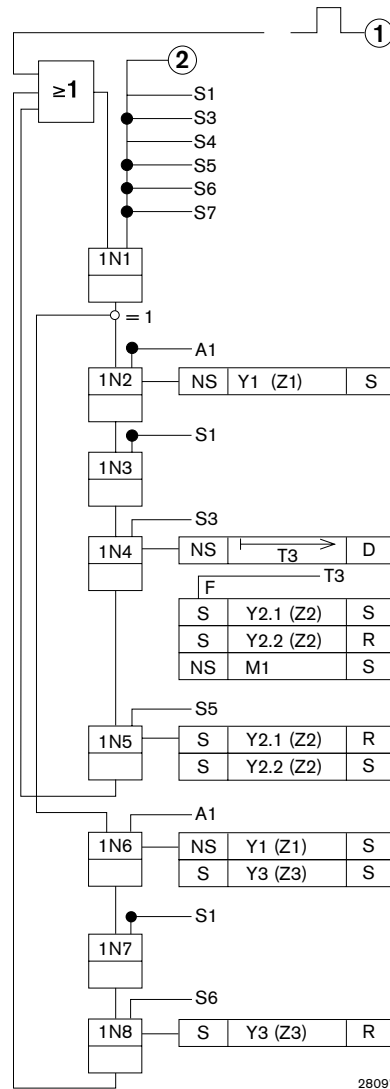
00126964.eps

Technical data

HQ lift transverse unit (stop gate, outfeeding)



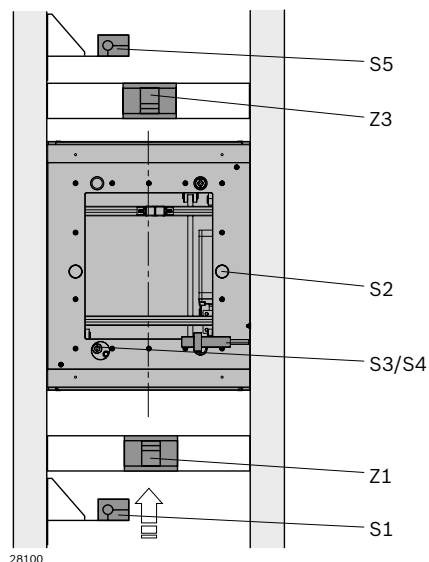
- T8 = delay 100...200 ms
 S4 = lift end position, bottom
 S7 = lift end position, top
 S1 = WT in front of VE (Z1)
 S3 = WT at HQ
 S5 = main section release
 S6 = WT after stop gate (Z3)
 Y2 = HQ lift cylinder (Z2)
 Y1 = VE main section (Z1)
 Y3 = VE main section (Z3)
 M1 = HQ motor
 A1 = identification system with straight ahead signal



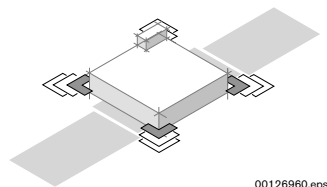
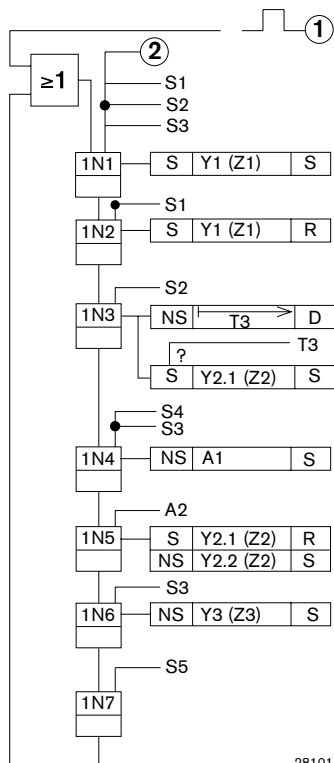
00126963.eps

Technical data

PE positioning unit



- S1 = WT in front of VE
 S2 = WT arrival
 S3 = lift end position, bottom
 S4 = lift end position, top
 S5 = WT after VE
 Y1 = open VE (Z1)
 Y2 = WT lift (Z2)
 Y3 = open VE (Z3)
 A1 = start processing
 A2 = end processing



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28101

Overview of part numbers

Overview of part numbers

Part number	Page	Part number	Page	Part number	Page
3 842 146 815	7-7	3 842 545 217	4-15	3 842 545 474	4-4
3 842 345 081	6-11, 7-7, 8-6	3 842 545 218	4-15	3 842 545 475	4-4
3 842 503 845	4-4, 4-8	3 842 545 248	4-13	3 842 545 476	4-4
3 842 511 783	4-4, 4-8, 4-11	3 842 545 254	2-4, 13-15	3 842 545 477	4-4
3 842 511 855	4-13	3 842 545 255	2-4, 13-15	3 842 545 482	4-5
3 842 516 214	4-11	3 842 545 256	2-4, 13-15	3 842 545 483	4-5
3 842 526 560	7-7	3 842 545 257	2-4, 13-15	3 842 545 484	4-5
3 842 527 147	13-2	3 842 545 258	2-4, 13-15	3 842 545 485	4-5
3 842 528 715	6-11, 8-6	3 842 545 259	2-4, 13-15	3 842 545 506	4-5
3 842 528 718	7-7	3 842 545 264	2-5	3 842 545 507	4-5
3 842 528 746	4-14	3 842 545 265	2-5	3 842 545 508	4-5
3 842 530 236	4-13	3 842 545 266	2-8, 13-16	3 842 545 533	9-13
3 842 537 289	9-12, 13-43	3 842 545 267	2-8, 13-16	3 842 545 535	10-4
3 842 537 995	9-11	3 842 545 268	2-8, 13-16	3 842 545 537	10-4
3 842 539 057	12-2	3 842 545 269	2-8, 13-16	3 842 545 539	10-4
3 842 541 003	10-2	3 842 545 270	2-8, 13-16	3 842 545 541	4-12
3 842 541 004	10-2	3 842 545 271	2-8, 13-16	3 842 545 542	4-12
3 842 541 005	10-2	3 842 545 276	4-4, 4-8	3 842 545 543	4-12
3 842 541 006	10-2	3 842 545 321	4-13	3 842 545 544	4-12
3 842 545 081	2-8, 13-16	3 842 545 354	4-15	3 842 545 545	4-12
3 842 545 084	2-8, 13-16	3 842 545 355	4-15	3 842 545 546	4-12
3 842 545 087	2-8, 13-16	3 842 545 360	4-5, 6-10	3 842 545 547	4-12
3 842 545 090	2-8, 13-16	3 842 545 361	4-5, 6-10	3 842 545 548	4-13
3 842 545 093	2-8, 13-16	3 842 545 362	4-5, 6-10	3 842 545 549	4-13
3 842 545 096	2-8, 13-16	3 842 545 363	4-5, 6-10	3 842 545 550	4-13
3 842 545 128	6-7	3 842 545 364	4-5	3 842 545 551	4-13
3 842 545 130	6-7	3 842 545 365	4-5	3 842 545 571	4-11
3 842 545 132	9-12	3 842 545 403	4-5, 6-10	3 842 545 572	4-11
3 842 545 134	9-12	3 842 545 404	4-5, 6-10	3 842 545 573	4-11, 4-13
3 842 545 140	10-3	3 842 545 405	4-5, 6-10	3 842 545 574	4-11, 4-13
3 842 545 142	10-3	3 842 545 406	4-9	3 842 545 575	4-11, 4-13
3 842 545 144	10-3	3 842 545 407	4-9	3 842 545 576	4-11, 4-13
3 842 545 150	4-13	3 842 545 408	4-9	3 842 545 577	4-13
3 842 545 151	4-13	3 842 545 409	4-9	3 842 545 578	4-13
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3 842 545 154	4-13	3 842 545 412	4-9	3 842 545 600	4-13
3 842 545 155	4-13	3 842 545 413	4-9	3 842 545 609	4-5, 6-10
3 842 545 156	4-13	3 842 545 414	4-9	3 842 545 610	4-9
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3 842 545 158	4-13	3 842 545 448	10-5	3 842 545 613	4-9
3 842 545 160	4-15	3 842 545 450	10-5	3 842 545 614	4-9
3 842 545 214	4-4, 4-8, 4-11	3 842 545 466	4-8	3 842 545 616	4-5
	4-12, 4-13	3 842 545 467	4-8	3 842 545 617	4-5
3 842 545 215	4-15	3 842 545 468	4-8	3 842 545 619	4-5
3 842 545 216	4-15	3 842 545 469	4-8	3 842 545 620	4-9

Overview of part numbers

Part number	Page	Part number	Page	Part number	Page
3 842 545 621	4-5	3 842 545 690	4-4	3 842 552 659	6-11
3 842 545 626	4-9	3 842 545 691	4-4	3 842 552 660	6-11
3 842 545 628	4-5	3 842 545 692	4-4	3 842 552 661	6-11
3 842 545 629	4-5	3 842 545 693	4-4	3 842 552 662	6-11, 8-6
3 842 545 630	4-9	3 842 545 694	4-4	3 842 552 663	6-11, 8-6
3 842 545 637	4-9	3 842 545 695	4-4	3 842 552 664	6-11, 8-6
3 842 545 638	4-5	3 842 545 696	4-4	3 842 552 665	6-11, 8-6
3 842 545 639	4-9	3 842 545 697	4-4	3 842 552 821	3-16
3 842 545 640	4-5	3 842 545 698	4-4	3 842 553 184	3-16
3 842 545 641	4-5	3 842 545 699	4-14	3 842 553 445	3-14
3 842 545 642	4-9	3 842 545 737	4-13	3 842 553 447	3-13
3 842 545 643	4-9	3 842 545 739	4-13	3 842 553 449	3-14
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3 842 545 648	4-15	3 842 545 742	4-13	3 842 553 452	3-14
3 842 545 659	4-8	3 842 545 745	4-13	3 842 553 453	3-14
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3 842 545 662	4-8	3 842 545 965	8-7	3 842 553 459	3-14
3 842 545 663	4-8	3 842 545 966	8-7	3 842 553 512	3-15
3 842 545 664	4-8	3 842 545 974	9-10	3 842 996 185	8-5
3 842 545 665	4-8	3 842 545 975	6-8	3 842 996 330	7-4
3 842 545 666	4-8	3 842 545 982	6-10	3 842 996 331	7-5
3 842 545 667	4-8	3 842 545 983	6-10	3 842 996 332	7-6
3 842 545 668	4-8	3 842 545 984	6-10	3 842 998 177	8-4, 13-37
3 842 545 669	4-8	3 842 545 985	6-10	3 842 998 517	6-6, 9-7, 13-40
3 842 545 670	4-8	3 842 545 986	6-10	3 842 998 518	6-6, 9-7, 13-39
3 842 545 671	4-8	3 842 545 987	6-10	3 842 998 520	4-3, 13-24
3 842 545 672	4-8	3 842 545 989	6-10	3 842 998 521	4-3, 13-24
3 842 545 673	4-8	3 842 545 990	6-10	3 842 998 522	4-7, 13-25
3 842 545 674	4-8	3 842 545 991	6-10	3 842 998 523	4-7, 13-25
3 842 545 675	4-8	3 842 545 992	6-10	3 842 998 525	5-4, 13-27
3 842 545 676	4-8	3 842 545 993	6-10	3 842 998 526	5-4, 13-27
3 842 545 677	4-8	3 842 545 994	6-10	3 842 998 528	5-6, 13-29
3 842 545 678	4-8	3 842 545 998	6-10	3 842 998 529	5-6, 13-29
3 842 545 679	4-4	3 842 548 863	7-5	3 842 998 530	5-8, 13-31
3 842 545 680	4-4	3 842 548 865	7-4, 7-6	3 842 998 531	5-8, 13-31
3 842 545 681	4-4	3 842 548 869	7-4, 7-5, 7-6	3 842 998 562	2-9, 13-17
3 842 545 682	4-4	3 842 549 670	4-13	3 842 998 563	2-9, 13-17
3 842 545 683	4-4	3 842 549 782	6-8	3 842 998 564	2-9, 13-17
3 842 545 684	4-4	3 842 549 783	6-8	3 842 998 565	2-9, 13-17
3 842 545 685	4-4	3 842 549 784	6-8	3 842 998 566	2-9, 13-17
3 842 545 686	4-4	3 842 549 811	9-11	3 842 998 567	2-9, 13-17
3 842 545 687	4-4	3 842 549 813	9-11	3 842 998 568	2-9, 13-17
3 842 545 688	4-4	3 842 549 814	9-11	3 842 998 569	2-9, 13-17
3 842 545 689	4-4	3 842 552 658	6-11	3 842 998 570	2-9, 13-17

Overview of part numbers

Part number	Page
3 842 998 571	2-9, 13-17
3 842 998 572	2-9, 13-17
3 842 998 573	2-9, 13-17
3 842 998 574	4-10, 13-26
3 842 998 577	9-7, 13-39
3 842 998 578	9-8, 13-40
3 842 998 604	6-9
3 842 998 605	6-9
3 842 998 780	6-4, 13-33
3 842 998 781	6-4, 13-33
3 842 998 786	8-3, 13-35
3 842 998 799	3-8, 13-22, 13-23
3 842 998 800	3-4, 13-18, 13-19
3 842 998 801	3-4, 13-18, 13-19
3 842 998 802	3-6, 13-20, 13-21
3 842 998 803	3-6, 13-20, 13-21
3 842 998 805	6-6, 9-9, 13-41
3 842 998 806	9-9, 13-42

Index

Index

A

Accessories	
– Proximity switch	9-11
– Stop gate	9-2
Assembly kits for identification systems	10-4

B

Base pallets	2-4
--------------	-----

C

Carrying plates	2-8, 2-9
Connection bridge	6-9
Connection kits	4-14
Conveyor units	
– ST 5/OC	4-10
– ST 5/XH-FR, ST 5/H-FR	4-7
– ST 5/XH, ST 5/H	4-3
Coupling	4-15
Curves	5-4
– CU 5/XH, CU 5/H	5-4

D

Damping elements	2-5
Disassembly tool	11-2
Diversers	
– DI 5/XH, DI 5/H	5-6
Dowel	7-7
Drive unit	3-1
AS 5/OC	3-8
– AS 5/XH, AS 5/H	3-4
– AS 5/XH-FR, AS 5/H-FR	3-6
– Drive layout	3-3
– Frequency converter (FU)	3-11

E

End plates	4-4, 4-8, 4-11
------------	----------------

F

Foundation bracket	7-7
Frequency converter	3-11
– Attachment kit	3-15
– Connection cable	3-15
– Connection unit	3-14

– Manual control unit	3-16
– Switch /potentiometer unit	3-16

H

HQ 5 lift transverse unit	6-4
– connection bridge	6-9
– connection kit	6-8
– Cover for lateral guide of HQ 5 lift transverse unit	6-11
– damper	6-7
– protective covers	6-10
– stop gate	6-6

I

Identification systems	10-1
Intermediate plates	4-15

J

Junctions	
– CU 5/XH, CU 5/H	5-8

L

Leg sets	7-1
– SZ 5	7-4
– SZ 5/U	7-5
Longitudinal conveyors	4-1
– connection kits	4-14
– protective covers	4-5, 4-9, 4-12
– ST 5/OC	4-10
– ST 5/XH-FR, ST 5/H-FR	4-7
– ST 5/XH, ST 5/H	4-3

M

motor connection	13-7, 13-10
Motor data	13-7, 13-8
MTpro	12-2

O

Operation sequence diagrams	13-44
Overview of transfer systems	1-3

P

PE 5 positioning unit	8-3
– Assembly kit	8-5

– Lateral guide cover	8-6
– Protective sleeves	8-7
PE 5/T positioning unit	8-4
– Assembly kit	8-5
– Lateral guide cover	8-6
– Protective sleeves	8-7
Positioning bushing kits	2-5
Profile connector	4-14
protective covers	
– for full rollers FR	4-9
– for HQ 5 lift transverse unit	6-10
– for split rollers	4-5
– for ST 5/OC	4-12
Proximity switches	9-11

S

Selection data	1-4
Spring tensioner	11-2
Stop gates	9-2
– VE 5/200	6-6
– VE 5/D-300	6-6, 9-8
– VE 5/D-1000	9-9
– VE 5/OC-200	9-7
– VE 5/OCD-300	9-8
– VE 5/OCD-1000	9-9
Switch bracket	
– SH 2/U-H	9-12
System specifications	13-2

T

Tools	11-1
Transverse conveyors	
– HQ 5 lift transverse unit	6-4
TS 5 features	1-2

W

Workpiece pallets	2-2
– base pallets	2-4
– carrying plates, standard sizes	2-8
– carrying plates, variable dimensions	2-9
– damping elements	2-5
– positioning bushing kit	2-5
Workpiece pallet selection	2-2

Notes

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Notes

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