TS 5 Transfer System
## TS 5 system overview

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<tr>
<td>Longitudinal conveyor</td>
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*see Bosch Rexroth AG, 3 842 540 380 (2017-07)*
Parameters

Recurring parameters:

- **b** width (track width in direction of transport)
- **l** length graduated according to the roller dimensions
  \( l = p \times N \) (stored default values)
- **p** Roller spacing (pitch)
  - 130 mm; 195 mm; 260 mm; 325 mm
- **N** number of rollers, multiplier for length \( l = p \times N \)
  - Pricing factor in the price list
- **L** Lateral guide material
  - 1: steel; 2: plastic; 3: aluminum
- **B** Bevel wheel material
  - 1: steel; 2: plastic; 3: aluminum
- **TR** Roller material
  - 1: steel, galvanized; 2: steel, nitrocarburized
- **b_{WT}** workpiece pallet width, note the interdependencies for \( p \) and \( b_{WT} \!
- **l_{WT}** workpiece pallet length, note the interdependencies for \( p \) and \( l_{WT} \!
- **bx** Variable width details for different components
- **lx** Variable length details for different components
- **n1** Motor speed
- **n2** Gear output speed
- **P/P_n** Motor power/rated motor power

Specific parameters:

- **f/U** Frequency/voltage
- **AT** Motor connection
  - K: with terminal box; S: with cable/plug
- **DP** Drive position
- **DP_r** drive position, right (only for Open Center drive unit)
- **DP_l** drive position, left (only for Open Center drive unit)
- **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
  - 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 Ø20)
- **MA** Motor mounting: L: left; R: right
- **v_n** nominal speed (m/min)
- **CD** curve direction / diverter direction
  - 1: left; 2: right
- **DSM** King shaft installation on main section
  - 1: left; 2: right
- **DST** King shaft installation on secondary section
  - 1: left; 2: right
- **JD** Junction direction
  - 1: left; 2: right
- **SC** Protective covers / protective casing (see product pages)
  - 1: without protective covers/protective casing;
  - 2: with protective covers/protective casing
- **b_{L} (b_{WT})** track width in direction of transport (longitudinal conveyor)
- **b_{O} (l_{WT})** track width in direction of transport (transverse conveyor)
- **OFD** direction of the outfeed (see product pages)
- **AO/AO_{I}** Installation location/installation location lower section
  - 1: ST 5/H; 2: ST 5/XH
- **AO** = 1: Main section (stop gate is 35 mm eccentric)
  = 2: Transverse section (stop gate is in the center, only applies for transverse section HQ 5)
- **MT** Condition on delivery
  - 0: assembled; 1: not assembled
- **H/H1** Transport height/transport height lower section
- **b_{PL}** Ordered width of the carrying plate
- **l_{PL}** Ordered length of the carrying plate
- **d_{PL}** Plate thickness
- **m_{GT} / m_{GT_{max}}** WT total mass/permissible WT total mass
- **m_{WT}** Workpiece pallet mass

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Symbols

Product features:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of profile T-slot</td>
<td>(for fixtures on the profile T-slot)</td>
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<tr>
<td>Energy efficiency</td>
<td></td>
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</table>

<table>
<thead>
<tr>
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<th>3 842 998 786</th>
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<tbody>
<tr>
<td>b = … mm</td>
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<tr>
<td>l = … mm</td>
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<tr>
<td>SC = …</td>
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</table>

Indicate the desired parameters on the order

Potential applications:

<table>
<thead>
<tr>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable for use in ESD sensitive areas</td>
<td>A contact with your Rexroth representative is recommended</td>
</tr>
<tr>
<td>Suitable for use in clean rooms</td>
<td></td>
</tr>
<tr>
<td>Suitable for use in dry rooms</td>
<td></td>
</tr>
<tr>
<td>Suitable for use in oily environments</td>
<td></td>
</tr>
</tbody>
</table>

Ordering information:

Explanation

Packing unit = minimum order quantity (here 20 units)

Example: Packing unit contains 20 units, material number 3 842 548 865, i.e. the order quantity must at least equal the specified quantity or a multiple of it; differing quantities will be rounded up

Order examples:

Order 1x 3 842 548 865 = delivery 1x minimum order quantity 3 842 548 865 = 20 items

Order 35x 3 842 548 865 = delivery 2x minimum order quantity 3 842 548 865 = 40 items
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<td>2</td>
</tr>
<tr>
<td>Drive unit</td>
<td>3</td>
</tr>
<tr>
<td>Longitudinal conveyor</td>
<td>4</td>
</tr>
<tr>
<td>Curves/diverters/junctions</td>
<td>5</td>
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<tr>
<td>Transverse conveyor</td>
<td>6</td>
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<tr>
<td>Leg sets</td>
<td>7</td>
</tr>
<tr>
<td>Positioning and orientation</td>
<td>8</td>
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<td>9</td>
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<tr>
<td>Identification systems</td>
<td>10</td>
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<tr>
<td>Tools</td>
<td>11</td>
</tr>
<tr>
<td>MTpro planning software</td>
<td>12</td>
</tr>
<tr>
<td>Technical data</td>
<td>13</td>
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<tr>
<td>Material Number Overview</td>
<td>14</td>
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TS 5 transfer system

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TS 5 – the roller conveyor in a class by itself

The TS 5 transfer system transports loads of up to 400 kg and more. 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 installation offers you considerable advantages compared to the usual chain drives:

▶ Low maintenance
▶ 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
In contrast to a chain-driven conveyor system, the TS 5 with its king shaft installation 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 availability of the system thanks to the low-maintenance drive concept of the king shaft. 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.

New features

New assemblies
With new assemblies, we increase flexibility in terms of individual planning.

These include:
▶ AB 5 drive kit (p. 3-20)
▶ Three-way diverter DI 5/…-3W (p. 5-18)
▶ Lift transverse unit HQ 5 (p. 5-18)
▶ PE 5 positioning unit... (p. 8-3)
▶ VE 5/…-301 stop gates (p. 9-9)
To ensure the most economical operation possible, an assembly line requires precise forward planning. Later conversions must be as simple and cost-effective to execute as possible in order to be able to respond to future market requirements. The key factors when selecting a suitable transfer system are the weight and quality of the workpieces to be conveyed as well as the particular production environment.

The flexible modular TS 5 transfer system from Rexroth covers a very wide range of requirements: With the wide range of mutually compatible units and macro modules permit a large variety of layouts with manual and automatic processing stations to be created. Solutions for maximum positioning accuracy or for especially heavy workpieces can be implemented easily using standard components. The future-proof TS 5 transfer systems are designed for high availability, even under the harshest conditions.
The TS 1 transfer system is specifically tailored to small, lightweight products and assemblies, which require high positioning accuracy and repeatability.

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

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

The TS 1 transfer system is specifically tailored to small, lightweight products and assemblies, which require high positioning accuracy and repeatability.
Available workpiece pallet (WT) dimensions

Workpiece pallets with system widths of 455 … 1 040 mm allow adjustment to the respective workpiece geometry as needed. If necessary, a number of workpieces can be accommodated on a single workpiece pallet (WT).

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
- Workpiece pallet load (workpiece, pick-up, 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.
Materials used, resistance to media

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

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

**Operating temperature**

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

**Storage temperature**

- -25 °C ... +70 °C

**Relative humidity**

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

**Air pressure**

- > 84 kPa as appropriate

Installation altitude < 1400 m above mean sea level.

Load values are reduced by 15% when the system is set up at a location that is over 1,400 m above sea level.

**Environmental conditions – biological**

Avoid molds, fungi, rodents, and other vermin.

**Environmental conditions – chemical**

Do not set up near industrial systems with chemical emissions.

**Environmental conditions – physical**

Do not set up in areas that are regularly jarred by high forces caused by e.g. presses, heavy machinery, etc.
Use in oily environments

Almost all of the TS 5 components are suitable for use in oily environments. The transfer system has a high resistance to many oils commonly found in manufacturing. In case of doubt regarding resistance to test oils and doped oils, we recommend you contact your Rexroth specialist.

Suitability for electrostatically sensitive areas

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

Use in dry rooms

TS 5 has been tested and approved with all conveyor media for use in dry rooms with a relative humidity of 1 ... 2%, e.g. for the production of Li-Ion battery cells. Your Rexroth representative will be pleased to advise you about this.

Use in clean rooms

Almost all the components have been approved by the IPA(*) for use in clean rooms and for clean room class 8 according to DIN EN ISO 14644-1. Please note that some clean room-compatible components have been specially modified. Please contact your Rexroth representative if you require clean room components.

(*) Fraunhofer Institute for Manufacturing Engineering and Automation, Stuttgart, Germany
Energy efficiency – a key factor for corporate success

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

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

1. **Efficient system layout**
   To achieve high energy efficiency, the system must be examined as a whole as early as in the planning phase. The TS 5 modular system offers numerous modules, all of which enable you to implement a transfer system tailored precisely to the particular application. This effectively prevents over-dimensioning and high energy losses from the outset.

2. **Energy-efficient modules**
   The TS 5 modules are equipped with particularly energy-efficient drives. The efficiency of most of the motors already exceed future requirements. The interplay of friction-optimized materials, e.g. on slide rails, friction-minimizing gear oils and numerous further design details ensures perfect coordination in the overall system.

3. **Energy use on demand**
   Minimal energy consumption requires the ability to be able to switch off system components on demand. The majority of motors in the TS 5 system are designed for start-stop operation and frequency converter operation.

4. **Worldwide approval**
   For international use, most of the motors feature CE, cURus and CCC approvals.
1-10  **TS 5 4.0 | TS 5 transfer system**

Energy efficiency – Rexroth 4EE
Workpiece pallet

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<td>2-10</td>
</tr>
<tr>
<td>Carrying plates, variable dimensions</td>
<td>2-13</td>
</tr>
</tbody>
</table>
Workpiece pallet selection

Versions

The workpiece pallet is a modular system consisting of a base pallet and carrying plate. The positioning bushings (see page 2-6) and an attachment kit (see page 2-6) comprising sensor plates, damping elements and rollers with pins are available separately.

- Workpiece pallets available in 6 standard sizes, see page 2-4
- Side rollers reduce friction, particularly in curves, diverters, and junctions
- Aluminum carrying plates available in 2 thicknesses (see page 2-10) and with variable dimensions (see page 2-13).
  The carrying plate may extend over the front and rear of the base pallet.

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. This information can be evaluated on-site and also 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.
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

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.

Generally we recommend that:
- the load should be positioned in the center of the workpiece pallet
- the center of gravity should not exceed a height $h_s$ of $1/3 b_{WT}$ (with $b_{WT} \leq l_{WT}$).

Limits with junctions and diverters, see page 5-17 and 5-22
Base pallets

Use:
- 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
- Optimized contours for easier movement through curves
- Stop gate stop on interior and exterior of the workpiece pallet surface (in the longitudinal conveyor direction)
- Can be combined with mobile data tags from the ID 40 and ID 200 identification systems, see RFID systems catalog

Condition on delivery:
- Not assembled, attachment kit available, without carrying plate

Required accessories:
- Attachment kit incl. rollers, roller pins, damping elements and sensor plates, see page 2-6

Material:
- PE UHMW, ESD-capable

Recommended accessories:
- Positioning bushing kit, see page 2-6
- Carrying plate, see page 2-10; 2-13
**Ordering information**

<table>
<thead>
<tr>
<th>$b_{WT}$ (mm)</th>
<th>$l_{WT}$ (mm)</th>
<th>$m_{WT}$ (kg)</th>
<th>$b_1$ (mm)</th>
<th>$l_1$ (mm)</th>
<th>Material number</th>
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<tbody>
<tr>
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<td>455</td>
<td>6.4</td>
<td>195</td>
<td>195</td>
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<td>195</td>
<td>325</td>
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<td>650</td>
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<td>520</td>
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<td>27.2</td>
<td>520</td>
<td>715</td>
<td>3 842 545 095</td>
</tr>
</tbody>
</table>

$m_{WT}$ = weight of the workpiece pallet itself

Description of further parameters, see page 0-3

**Dimensions**

**WT 5 workpiece pallet**

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

3D models can be found in the eShop or in MTpro see page 12-3
Accessories

Attachment kit

Use:
- Attachment kit for mounting the workpiece pallet

Version:
- 4 rollers for lateral guides
- 4 roller pins for adjusting the rollers
- 2 sensor plates for damping inductive sensors
- 4 damping elements help to avoid noise and damage when workpiece pallets run into each other.

Material:
- PUR, POM

<table>
<thead>
<tr>
<th>Attachment kit</th>
<th>( b_{\text{WT}} ) (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>455</td>
<td>3 842 554 931</td>
</tr>
<tr>
<td></td>
<td>650; 845</td>
<td>3 842 554 932</td>
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</tbody>
</table>

Positioning bushing kit

Use:
- For fixing the carrying plate on the base pallet
- 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

<table>
<thead>
<tr>
<th>Positioning bushing kit</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set</td>
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<td></td>
<td>3 842 545 264</td>
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</tbody>
</table>
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.

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.

**Note:**
For curves, junctions and diverters, alternative load limits must be observed.
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

<table>
<thead>
<tr>
<th>$b_{WT}$ (mm)</th>
<th>$l_{WT}$ (mm)</th>
<th>$p$ (mm)</th>
<th>$m_{Gzul, \text{Longitudinal conveyor}}$ (kg)</th>
<th>$m_{Gzul, \text{Transverse conveyor}}$ (kg)</th>
<th>$m_{WT1}$ (kg)</th>
<th>$m_{WT2}$ (kg)</th>
<th>$m_{WT3}$ (kg)</th>
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<td>455</td>
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</tr>
<tr>
<td>845</td>
<td>845</td>
<td>130</td>
<td>200</td>
<td>200</td>
<td>48.0</td>
<td>60.0</td>
<td>23.8</td>
</tr>
<tr>
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<td>845</td>
<td>195</td>
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<td>200</td>
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<td>60.0</td>
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<td>195</td>
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<td>200</td>
<td>57.6</td>
<td>72.4</td>
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<td>325</td>
<td>200</td>
<td>150</td>
<td>57.6</td>
<td>72.4</td>
<td>27.7</td>
</tr>
</tbody>
</table>

$p$ = Roller spacing (pitch)

$m_{Gzul}$ = Permissible WT total mass

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

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

$m_{WT3}$ = mass of workpiece pallet, fully installed without carrying plate

(mass of base plate)
Carrying plates, standard sizes

Use:
- 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, see page 2-6
### Ordering information

<table>
<thead>
<tr>
<th>$b_{WT}$ (mm)</th>
<th>$l_{WT}$ (mm)</th>
<th>$d_{PL}$ (mm)</th>
<th>$*_{\circ}$ (mm)</th>
<th>$m_{PL}$ (kg)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>12.7</td>
<td>0.6</td>
<td>6.6</td>
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<tr>
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<td>21.3</td>
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<td>1.0</td>
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<td>1.0</td>
<td>36.2</td>
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<td>19.05</td>
<td>1.2</td>
<td>44.6</td>
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</tr>
</tbody>
</table>

- $b_{WT}$ = width of workpiece pallet
- $l_{WT}$ = length of workpiece pallet
- $d_{PL}$ = plate thickness
- $*_{\circ}$ = evenness
- $m_{PL}$ = plate weight
### Dimensions

**WT 5: carrying plate, standard sizes**

```
b = b_p1 - 4
l = l_p1 - 4
b_1
==
d
==
ø23,5 H7
ø11
ø11
ø22,5
```

---

**Bosch Rexroth AG, 3 842 540 380 (2017-07)**
Carrying plates, variable dimensions

Use:
- 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, see page 2-6.
**Carrying plates in various dimensions, adapted to the base pallets \( b_{WT} \times l_{WT} \)**

<table>
<thead>
<tr>
<th>( b_{WT} \times l_{WT} ) (mm)</th>
<th>( b_{PL} ) (mm)</th>
<th>( l_{PL} ) (mm)</th>
<th>( d_{PL} ) (mm)</th>
<th>( * )</th>
<th>( b_{l} ) (mm)</th>
<th>( l_{l} ) (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455 x 455</td>
<td>455 ≤ ( b_{PL} ) ≤ 650</td>
<td>455 ≤ ( l_{PL} ) ≤ 650</td>
<td>12.7</td>
<td>0.6</td>
<td>195</td>
<td>195</td>
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<td>455 ≤ ( b_{PL} ) ≤ 650</td>
<td>650 ≤ ( l_{PL} ) ≤ 845</td>
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<td>0.8</td>
<td>195</td>
<td>195</td>
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<td>12.7</td>
<td>0.8</td>
<td>195</td>
<td>195</td>
<td>3 842 998 566</td>
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<td>650 x 845</td>
<td>650 ≤ ( b_{PL} ) ≤ 845</td>
<td>845 ≤ ( l_{PL} ) ≤ 1040</td>
<td>12.7</td>
<td>1.0</td>
<td>195</td>
<td>195</td>
<td>3 842 998 568</td>
</tr>
<tr>
<td>845 x 845</td>
<td>845 ≤ ( b_{PL} ) ≤ 1040</td>
<td>845 ≤ ( l_{PL} ) ≤ 1040</td>
<td>12.7</td>
<td>1.0</td>
<td>195</td>
<td>195</td>
<td>3 842 998 570</td>
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<tr>
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</tr>
<tr>
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<td>455 ≤ ( b_{PL} ) ≤ 650</td>
<td>455 ≤ ( l_{PL} ) ≤ 650</td>
<td>19.05</td>
<td>0.6</td>
<td>195</td>
<td>195</td>
<td>3 842 998 563</td>
</tr>
<tr>
<td>455 x 650</td>
<td>455 ≤ ( b_{PL} ) ≤ 650</td>
<td>650 ≤ ( l_{PL} ) ≤ 845</td>
<td>19.05</td>
<td>0.8</td>
<td>195</td>
<td>195</td>
<td>3 842 998 565</td>
</tr>
<tr>
<td>650 x 650</td>
<td>650 ≤ ( b_{PL} ) ≤ 845</td>
<td>650 ≤ ( l_{PL} ) ≤ 845</td>
<td>19.05</td>
<td>0.8</td>
<td>195</td>
<td>195</td>
<td>3 842 998 567</td>
</tr>
<tr>
<td>650 x 845</td>
<td>650 ≤ ( b_{PL} ) ≤ 845</td>
<td>845 ≤ ( l_{PL} ) ≤ 1040</td>
<td>19.05</td>
<td>1.0</td>
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<td>195</td>
<td>3 842 998 569</td>
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<tr>
<td>845 x 845</td>
<td>845 ≤ ( b_{PL} ) ≤ 1040</td>
<td>845 ≤ ( l_{PL} ) ≤ 1040</td>
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<td>3 842 998 571</td>
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<tr>
<td>845 x 1040</td>
<td>845 ≤ ( b_{PL} ) ≤ 1040</td>
<td>1040 ≤ ( l_{PL} ) ≤ 1250</td>
<td>19.05</td>
<td>1.2</td>
<td>195</td>
<td>195</td>
<td>3 842 998 573</td>
</tr>
</tbody>
</table>

- \( b_{WT} \times l_{WT} \) = base pallet dimensions
- \( b_{PL} \) = carrying plate width \((b_{real}) + 4\) mm = ordered width
- \( l_{PL} \) = carrying plate length \((l_{real}) + 4\) mm = ordered length
- \( d_{PL} \) = plate thickness
- \( * \) = evenness

Description of further parameters, see page 0-3

**Formula for calculating the weight of a carrying plate:**

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

**Order examples:**

- **Standard plate without cut-out for damping element:**
  - \( b_{PL} = b_{WT} = 455 \text{ mm} \);
  - \( l_{PL} = l_{WT} = 455 \text{ mm} \)
  - Delivery dimensions: 451 mm x 451 mm

- **\( b_{PL} = b_{WT} = 650 \text{ mm} \):**
  - \( l_{PL} = l_{WT} = 650 \text{ mm} \)
  - Delivery dimensions: 646 mm x 646 mm

- **\( b_{PL} = b_{WT} = 845 \text{ mm} \):**
  - \( l_{PL} = l_{WT} = 845 \text{ mm} \)
  - Delivery dimensions: 841 mm x 841 mm

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Dimensions

WT 5: carrying plate, variable dimensions

Formula for calculating the weight of a carrying plate:

\[ m_{PL} (\text{kg}) = (b_{PL} - 4) \text{ (mm)} \times (l_{PL} - 4) \text{ (mm)} \times d_{PL} \text{ (mm)} \times 0.0000027 \text{ (kg/mm}^3\text{)} \]
2-16  **TS 5 4.0** | Workpiece pallets
Carrying plates, variable dimensions
Drive unit

Design

Drive layout

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

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

Drive units AS 5/OC (Open Center)

Drive options for an Open Center section

AB 5 drive kit

Frequency converter (FU)

Frequency converter (FU) accessories
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, see page 7-1
- Connection kit, see page 4-25

Note:
The AB 5 drive kit (see page 3-20) is available for implementing a face-side drive.
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 or by the drive kit via a king shaft. A friction clutch on each roller prevents blocking of the drive.

The maximum transferable total torque 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 pitch $p = 130$ 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:**
$45$ Nm – $12$ Nm (for curve) = $33$ Nm remaining for the straight section

$33$ Nm ÷ $0.5$ Nm = $66$ rollers

$66 \times 130$ mm = $8580$ 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 30% accumulation operation the section length is reduced to: $66.5$ Nm x $30\% = 19.95$ Nm < $21$ Nm. In this case, only one drive would be needed.

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:**
$45$ Nm – $12$ Nm (diverter) – $12$ Nm (curve) = $21$ Nm remaining for the straight section

$20000$ mm – $1560$ mm (diverter) – $1149$ mm (curve) = $17291$ mm straight section

Values taken from the following tables:
Diverter, page 5-8 and curve, page 5-4

$17291$ mm ÷ $130$ mm = $133$ rollers

$133 \times 0.5$ Nm = $66.5$ Nm

$66.5$ Nm > $21$ 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: $66.5$ Nm x $30\% = 19.95$ Nm < $21$ Nm. In this case, only one drive would be needed.
AS 5/XH, AS 5/H drive units (with split rollers)

Use:
To drive
➤ ST 5/... conveyor units
➤ CU 5/... curves
➤ DI 5/... diverters
➤ JU 5/... junctions
➤ HQ 5/... lift transverse unit

Version:
➤ Reversible operation possible
➤ Accumulation operation possible
➤ Motor connection with cable/plug (AT = S) or terminal box (AT = K)
➤ Freely selectable motor position and length
➤ Gear motor can be mounted on both sides on the transmission drive (MA = R and MA = L)
➤ Viewing window for checking the toothed belt
➤ Due to the simple and space-saving disassembly of the cover, adjacent components/machines can be positioned at a distance of 20 mm from the AS 5
➤ Frequency converter, optional, see page 3-25

Condition on delivery:
➤ Ready-to-install, gear motor enclosed separately
➤ Mounting option for the gear motor on the right/left possible, see page 3-2
Drive unit | TS 5 4.0

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

Ordering information

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l_w (mm)</th>
<th>p (mm)</th>
<th>l (mm)</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>GM</th>
<th>TR</th>
<th>DP</th>
<th>AT</th>
<th>MA</th>
<th>Material number</th>
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</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
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<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2</td>
<td>1; 2; 3 ... 31</td>
<td>K; S</td>
<td>R; L</td>
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<td>R; L</td>
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<td>390 ... 4160</td>
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<td>1; 2; 3</td>
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<td>0; 1; 2</td>
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<td>1; 2; 3 ... 31</td>
<td>K; S</td>
<td>R; L</td>
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<td>650; 845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
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<td>1; 2</td>
<td>1; 2; 3 ... 20</td>
<td>K; S</td>
<td>R; L</td>
<td>p = ... mm, see page 3-8</td>
</tr>
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<td>260</td>
<td>780 ... 4160</td>
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<td>1; 2; 3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2</td>
<td>1; 2; 3 ... 15</td>
<td>K; S</td>
<td>R; L</td>
<td>l = ... mm</td>
</tr>
<tr>
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<td>845; 1040</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
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<td>1; 2; 3 ... 31</td>
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<td>R; L</td>
<td>LG = ...</td>
</tr>
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<td>845; 1040</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
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<td>K; S</td>
<td>R; L</td>
<td>BG = ...</td>
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<td>845; 1040</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2</td>
<td>1; 2; 3 ... 15</td>
<td>K; S</td>
<td>R; L</td>
<td>TR = ...</td>
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<tr>
<td>845</td>
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<td>325</td>
<td>975 ... 3900</td>
<td>3; 4; 5 ... 12</td>
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<td>K; S</td>
<td>R; L</td>
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<td>1; 2</td>
<td>1; 2; 3 ... 31</td>
<td>K; S</td>
<td>R; L</td>
<td>U = ... V, see page 13-9</td>
</tr>
<tr>
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<td>845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2</td>
<td>1; 2; 3 ... 20</td>
<td>K; S</td>
<td>R; L</td>
<td>f = ... Hz, see page 13-9</td>
</tr>
</tbody>
</table>

b = width (track width in direction of transport)
l_w = Length of workpiece pallet
p = Roller spacing (pitch)
l = Length graduated according to the roller dimensions (l = p × N)
N = number of rollers, multiplier for length (l = p × N), pricing factor in the price list.
LG = Lateral guide material
1: steel
2: plastic
3: aluminum
BG = Bevel wheel material
1: plastic
2: sintered metal
GM = Gear motor
0: without (SW27 interface)
1: with SW27 gear motor
2: without (interface to SEW connection, round shaft Ø 20)
TR = Roller material
1: steel, galvanized
2: steel, nitrocarburized
DP = Drive position

v_n = nominal speed (m/min);
2*: 4; 6; 9; 12; 15; 18
= 0 (without gear motor)
AT = Motor connection
K: with terminal box
S: with cable/plug
MA = Motor mounting
R: Right
L: Left

* Additional measures may be necessary
Dimensions

Drive module AS 5/XH, AS 5/H, pitch \( p = 130 \) mm

\[
\begin{align*}
\text{AS 5/XH} & \quad l = p \times n \\
\text{AS 5/H} & \quad l_{DP} = DP \times p - p/2
\end{align*}
\]

Note: In this depiction, the terminal box can collide with the leg sets. It protrudes into the section.

\( p \) = roller spacing (pitch)
\( n \) = number of rollers
\( DP \) = drive position

Description of parameters, see page 3-5
Dimensions
Drive module AS 5/XH, AS 5/H, pitch \( p = 195 \text{ mm}; p = 260 \text{ mm}; p = 325 \text{ mm} \)

<table>
<thead>
<tr>
<th>AS 5/XH</th>
<th>( l )</th>
<th>( l_{DP} )</th>
<th>( l_p )</th>
<th>( b + 3 )</th>
<th>( b - 10 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA = L</td>
<td>168,5</td>
<td>239,5</td>
<td>98</td>
<td>195,5</td>
<td>60</td>
</tr>
<tr>
<td>MA = R</td>
<td>199</td>
<td>316</td>
<td>98</td>
<td>195,5</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AS 5/H</th>
<th>( l )</th>
<th>( l_{DP} )</th>
<th>( l_p )</th>
<th>( b + 3 )</th>
<th>( b - 10 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA = L</td>
<td>168,5</td>
<td>239,5</td>
<td>98</td>
<td>195,5</td>
<td>60</td>
</tr>
<tr>
<td>MA = R</td>
<td>199</td>
<td>316</td>
<td>98</td>
<td>195,5</td>
<td>60</td>
</tr>
</tbody>
</table>

\( l = p \times n \)
\( l_{DP} = DP \times p \)
\( n = \) number of rollers
\( DP = \) drive position

AS 5/XH: 3 842 998 837
AS 5/H: 3 842 998 838

Description of parameters, see page 3-5
Pitch \( p \) and drive position \( DP \)

\( p = 130 \text{ mm} \)

\( DP \) is the roller to which the transmission drive is fitted. This roller is not driven.

\( p = 195 \text{ mm}; \ p = 260 \text{ mm}; \ p = 325 \text{ mm} \)

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

### Possible drive positions \( DP \) with pitch \( p \)

<table>
<thead>
<tr>
<th>( p ) (mm)</th>
<th>MA</th>
<th>( DP )</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>R; L</td>
<td>1 ... 31</td>
</tr>
</tbody>
</table>

Note:
Only if \( p = 130 \text{ mm} \): Roller corresponding to \( DP \) is not driven. Gear motor can be mounted on both sides.

Permissible position \( l_{OP} \) (mm) after start of section:
\[
l_{OP} = DP \times p - \frac{p}{2}
\]

Example for \( p = 130 \text{ mm} \) and \( DP = 10 \):
\[
l_{OP} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm}
\]

Description of further parameters, see page 3-5
AS 5/XH-FR, AS 5/H-FR drive units (with full rollers)

Use:
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:
- Reversible operation possible
- Accumulation operation possible
- Motor connection with cable/plug (AT = S) or terminal box (AT = K)
- Freely selectable motor position and length
- Gear motor can be mounted on both sides on the transmission drive (MA = R and MA = L)
- Viewing window for checking the toothed belt
- Due to the simple and space-saving disassembly of the cover, adjacent components/machines can be positioned at a distance of 20 mm from the AS 5
- Frequency converter, optional, see page 3-25

Note:
To transport workpieces without workpiece pallets.
Use plastic lateral guides to ensure the workpiece is not damaged!
### Ordering information

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

<table>
<thead>
<tr>
<th>b</th>
<th>l&lt;sub&gt;wt&lt;/sub&gt;</th>
<th>p</th>
<th>l</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>GM</th>
<th>TR</th>
<th>DP</th>
<th>AT</th>
<th>MA</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>130</td>
<td>390</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td>3842 998 839 (AS 5/XH-FR)</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>195</td>
<td>585</td>
<td>4095</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td>3842 998 840 (AS 5/H-FR)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>130</td>
<td>390</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>195</td>
<td>585</td>
<td>4095</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
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</tr>
<tr>
<td>650</td>
<td>845</td>
<td>260</td>
<td>780</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
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<tr>
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<td>845; 1040</td>
<td>130</td>
<td>390</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
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<td>1; 2; 3; 4; 5; 6</td>
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<tr>
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<td>845; 1040</td>
<td>195</td>
<td>585</td>
<td>4095</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>1040</td>
<td>325</td>
<td>975</td>
<td>3900</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>130</td>
<td>390</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
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</tr>
<tr>
<td>1040</td>
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<td>195</td>
<td>585</td>
<td>4095</td>
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<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td></td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>260</td>
<td>780</td>
<td>4160</td>
<td>3; 4; 5; 6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0; 1</td>
<td>2</td>
<td>1; 2; 3; 4; 5; 6</td>
<td></td>
</tr>
</tbody>
</table>

- **b** = width (track width in direction of transport)
- **l<sub>wt</sub>** = Length of workpiece pallet
- **p** = Roller spacing (pitch)
- **l** = Length graduated according to the roller dimensions (l = p × N)
- **N** = number of rollers, multiplier for length (l = p × N), pricing factor in the price list.
- **LG** = Lateral guide material
  1. steel
  2. plastic
  3. aluminum
- **BG** = Bevel wheel material
  1. plastic
  2. sintered metal
- **GM** = Gear motor
  0: without (SW27 interface)
  1: with SW27 gear motor
  2: without (interface to SEW connection, round shaft Ø 20)
- **TR** = Roller material
  1. steel, galvanized
  2. steel, nitrocarburized
- **DP** = Drive position
  1. AT = Motor connection
     - K: with terminal box
     - S: with cable/plug
  2. MA = Motor mounting
     - R: Right
     - L: Left

*Additional measures may be necessary*
Dimensions

Drive module AS 5/XH-FR, AS 5/H-FR, pitch \( p = 130 \) mm

1) Note: In this depiction, the terminal box can collide with the leg sets. It protrudes into the section.

\[
\begin{align*}
\text{l} &= p \times n \\
\text{l}_{\text{DP}} &= \text{DP} \times p - p/2 \\
p &= \text{roller spacing (pitch)} \\
n &= \text{number of rollers} \\
\text{DP} &= \text{drive position}
\end{align*}
\]

Description of parameters, see page 3-5
Dimensions

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

---

\( l = p \times n \)

\( l_{DP} = DP \times p \)

\( p \) = roller spacing (pitch)

\( n \) = number of rollers

\( DP \) = drive position

Description of parameters, see page 3-5

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Pitch 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.

<table>
<thead>
<tr>
<th>p (mm)</th>
<th>MA</th>
<th>DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>R; L</td>
<td>1 ... 31</td>
</tr>
</tbody>
</table>

Note:
Only if p = 130 mm: Roller corresponding to DP is not driven. Gear motor can be mounted on both sides.

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

Example for \( p = 130 \text{ mm} \) and \( DP = 10 \):
\[ l_{op} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm} \]

Description of further parameters, see page 3-10
Drive units AS 5/OC (Open Center)

Use:
To drive
▶ ST 5/OC... conveyor units

Version:
▶ Reversible operation possible
▶ Accumulation operation possible
▶ Motor connection with cable/plug (AT = S) or terminal box (AT = K)
▶ Freely selectable motor position and length
▶ Gear motor can be mounted on both sides on the transmission drive (MA = R and MA = L)
▶ Viewing window for checking the toothed belt
▶ Due to the simple and space-saving disassembly of the cover, adjacent components/machines can be positioned at a distance of 20 mm from the AS 5
▶ Frequency converter, optional, see page 3-25

Note:
Please take account of the load center of gravity when selecting the drive, see page 3-19

Condition on delivery:
▶ Ready-to-install, gear motor enclosed separately
▶ Mounting option for the gear motor on the right/left possible, see page 3-2
### Ordering information

**Drive units AS 5/OC**

- **b** = width (track width in direction of transport)
- **p** = Roller spacing (pitch)
- **l** = Length graduated according to the roller dimensions (l = p × N)
- **N** = number of rollers, multiplier for length (l = p × N), pricing factor in the price list.
- **LG** = Lateral guide material
  1. steel
  2. plastic
  3. aluminum
- **BG** = Bevel wheel material
  1. plastic
  2. sintered metal
- **GM** = Gear motor
  0: without (SW27 interface)
  1: with SW27 gear motor
  2: without (interface to SEW connection, round shaft Ø 20)
- **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
- **TR** = Roller material
  1. steel, galvanized
  2. steel, nitrocarburized
- **DP/DP₁** = Drive position
- **vₙ** = nominal speed (m/min);
  2*: 4; 6; 9; 12; 15; 18
- **AT** = Motor connection
  K: with terminal box
  S: with cable/plug
- **MA** = Motor mounting
  R: Right
  L: Left

### AS 5/OC drive units

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>p (mm)</th>
<th>l (mm)</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>GM</th>
<th>DD</th>
<th>TR</th>
<th>DP/DP₁</th>
<th>AT</th>
<th>MA</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 31</td>
<td>K</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 30</td>
<td>K</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 31</td>
<td>K</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 20</td>
<td>K</td>
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<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 15</td>
<td>K</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 31</td>
<td>K</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 20</td>
<td>K</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 15</td>
<td>K</td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>325</td>
<td>975 ... 3900</td>
<td>3; 4; 5 ... 12</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 11</td>
<td>K</td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 31</td>
<td>K</td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 20</td>
<td>K</td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2</td>
<td>3</td>
<td>1; 2</td>
<td>0; 1; 2</td>
<td>1; 2; 3</td>
<td>1</td>
<td>2; 3 ... 15</td>
<td>K</td>
</tr>
</tbody>
</table>

* Additional measures may be necessary
Dimensions

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

\[
\begin{align*}
\text{Dimensions} & \\
\text{Drive module AS 5/OC (Open Center), pitch } p = 130 \text{ mm} & \\
\end{align*}
\]

Description of parameters, see page 3-15
Dimensions

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

\[ l = p \times n \]

\[ l_{DP} = DP \times p \]

\( p \) = roller spacing (pitch)

\( n \) = number of rollers

\( DP \) = drive position

Description of parameters, see page 3-15

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

<table>
<thead>
<tr>
<th>p (mm)</th>
<th>MA</th>
<th>DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>R; L</td>
<td>1 ... 31</td>
</tr>
</tbody>
</table>

**Note:**

- Only if p = 130 mm: Roller corresponding to DP is not driven.
- Gear motor can be mounted on both sides.

**Permissible position** \( l_{dp} \) (mm) after start of section:

\[
l_{dp} = DP \times p - p/2
\]

**Example for p = 130 mm and DP = 10:**

\[
l_{dp} = 10 \times 130 \text{ mm} - 65 \text{ mm} = 1235 \text{ mm}
\]

**Description of further parameters,** see page 3-15

---

**Possible drive positions DP with pitch p**

<table>
<thead>
<tr>
<th>p (mm)</th>
<th>MA</th>
<th>DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>195</td>
<td>R; L</td>
<td>1 ... 20</td>
</tr>
<tr>
<td>260</td>
<td>R; L</td>
<td>1 ... 15</td>
</tr>
<tr>
<td>325</td>
<td>R; L</td>
<td>1 ... 11</td>
</tr>
</tbody>
</table>

**Permissible position** \( l_{dp} \) (mm) after start of section:

\[
l_{dp} = DP \times p
\]

**Example for p = 260 mm and DP = 5:**

\[
l_{dp} = 5 \times 260 \text{ mm} = 1300 \text{ mm}
\]
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.

### Drive options for an Open Center section

**Load position centered on WT**

<table>
<thead>
<tr>
<th>( b_{WT} \times l_{WT} ) (mm)</th>
<th>( m_{WT_{max}} ) (kg)</th>
<th>DD =</th>
<th>( b_{WT} \times l_{WT} ) (mm)</th>
<th>( m_{WT_{max}} ) (kg)</th>
<th>DD =</th>
</tr>
</thead>
<tbody>
<tr>
<td>455 x 455</td>
<td>150</td>
<td>1(^2)</td>
<td>455 x 455</td>
<td>100</td>
<td>1(^2)</td>
</tr>
<tr>
<td>455 x 650</td>
<td>250</td>
<td>1(^2)</td>
<td>455 x 650</td>
<td>160</td>
<td>1(^2)</td>
</tr>
<tr>
<td>650 x 650</td>
<td>250</td>
<td>1(^2)</td>
<td>650 x 650</td>
<td>160</td>
<td>1(^2)</td>
</tr>
<tr>
<td>650 x 845</td>
<td>300</td>
<td>1(^2)</td>
<td>650 x 845</td>
<td>200</td>
<td>1(^2)</td>
</tr>
<tr>
<td>845 x 845</td>
<td>300</td>
<td>1(^2)</td>
<td>845 x 845</td>
<td>200</td>
<td>1(^2)</td>
</tr>
<tr>
<td>845 x 1040</td>
<td>300</td>
<td>1(^2)</td>
<td>845 x 1040</td>
<td>200</td>
<td>1(^2)</td>
</tr>
</tbody>
</table>

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

### Load position off-center and within the permissible load area

<table>
<thead>
<tr>
<th>( b_{WT} \times l_{WT} ) (mm)</th>
<th>( m_{WT_{max}} ) (kg)</th>
<th>DD =</th>
<th>( b_{WT} \times l_{WT} ) (mm)</th>
<th>( m_{WT_{max}} ) (kg)</th>
<th>DD =</th>
</tr>
</thead>
<tbody>
<tr>
<td>455 x 455</td>
<td>100</td>
<td>1(^2)</td>
<td>455 x 455</td>
<td>150</td>
<td>x(^3)</td>
</tr>
<tr>
<td>455 x 650</td>
<td>160</td>
<td>1(^2)</td>
<td>650 x 650</td>
<td>250</td>
<td>x(^3)</td>
</tr>
<tr>
<td>650 x 845</td>
<td>200</td>
<td>1(^2)</td>
<td>845 x 845</td>
<td>300</td>
<td>x(^3)</td>
</tr>
<tr>
<td>845 x 1040</td>
<td>200</td>
<td>1(^2)</td>
<td>845 x 1040</td>
<td>300</td>
<td>x(^3)</td>
</tr>
</tbody>
</table>

\(^2\) drive on one side sufficient (DD = 1) 
\(^3\) drive on both sides required (DD = 2 or DD = 3)
AB 5 drive kit

Use:
For face-side driving of
▶ ST 5/... conveyor units
▶ Adaptation of the sheet metal parts is required, adapter may be required for hexagonal shaft

Version:
▶ Suitable for reversible operation (max. 20 Nm)
▶ With a Lenze gear motor (GM = 1) or with interface for installing a SEW gear motor (GM = 2)
▶ Motor connection with cable/plug (AT = S) or terminal box (AT = K)
▶ Frequency converter, optional, see page 3-25

Note:
▶ Maximum length of the driven total section at p = 130 and 45 Nm motor output = 19.5 m (longer sections on request)
▶ Suitable for driving two connected curves
▶ Assembly in curves, diverters, junctions and lift transverse units on request

Material:
▶ Flange (Lenze): aluminum
▶ Flange (SEW): steel
▶ Bracket: aluminum
▶ Motor flange: die-cast aluminum
▶ Shaft: brass
▶ Coupling: cast steel; brass

Condition on delivery:
▶ Not assembled, incl. fastening material and flange
▶ Mounting option for the gear motor at the top/horizontally/bottom possible, see page 3-2
Ordering information

**AB 5 drive kit**

<table>
<thead>
<tr>
<th>Material number</th>
<th>3 842 998 842</th>
</tr>
</thead>
<tbody>
<tr>
<td>( v_n ) (m/min) Nominal speed</td>
<td>2*; 4; 6; 9; 12; 15; 18</td>
</tr>
<tr>
<td>U (V) Voltage</td>
<td>see motor data, p. 13-9</td>
</tr>
<tr>
<td>f (Hz) Frequency</td>
<td>see motor data, p. 13-9</td>
</tr>
<tr>
<td>GM Gear motor</td>
<td>0; 1; 2</td>
</tr>
<tr>
<td>0: without (SW27 interface)</td>
<td>1: with SW27 gear motor</td>
</tr>
<tr>
<td>2: without (interface to SEW connection, round shaft Ø 20)</td>
<td></td>
</tr>
<tr>
<td>AT Motor connection</td>
<td>K; S</td>
</tr>
<tr>
<td>K: with terminal box</td>
<td>S: with cable/plug</td>
</tr>
<tr>
<td>p (mm) Roller spacing (pitch)</td>
<td>130; 195; 260; 325</td>
</tr>
<tr>
<td>MA Motor mounting</td>
<td>R; L</td>
</tr>
<tr>
<td>R: Right</td>
<td>L: Left</td>
</tr>
</tbody>
</table>

* Additional measures may be necessary

Description of further parameters, see page 0-3
Dimensions
AB 5 drive kit

Description of parameters, see page 3-21

l = p x n
p = roller spacing (pitch)
n = number of rollers
Dimensions
AB 5 drive kit

\[ l = p \times n \]

- \( p \): roller spacing (pitch)
- \( n \): number of rollers

Description of parameters, see page 3-21
Roller spacing (pitch)

\[ p = 130 \text{ mm} \]

\[ p = 195 \text{ mm}; p = 260 \text{ mm}; p = 325 \text{ mm} \]
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 ±10% ... 460 V/480 V ±10%)
- Speed ($v_n$) depending on the base speed of the gear motor used

Permissible speed range: 2 ... 21 m/min

Complete frequency converter (FU) consisting of the modules
- Frequency converter power unit
- Communication module
- Connection unit
- Attachment kit
- Optional: Connection cable for the plug-in connection to the gear motor (AT = S)

The individual modules can be ordered separately and are easy to connect using the supplied screws. For the internal and external voltage supply, the modules must be wired by the user.

Required accessories:
- Manual control unit, see page 3-29
- Switch/potentiometer unit, see page 3-29
Complete frequency converter consisting of the modules
- Frequency converter power unit (A)
- Communication module (B)
- Connection unit (C)
- Attachment kit (D)
- Optional: Connection cable (E) for the plug-in connection to the gear motor (AT = S)

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

Power unit: 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

Product designation | Material number
--- | ---
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) By accepting a resulting loss of power, a higher bandwidth can be covered (see page 13-11)

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

*Additional measures may be necessary

Communication module (B)

▶ To control the frequency converter
▶ Cable connection options

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

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard I/O</td>
<td>3 842 553 449</td>
</tr>
<tr>
<td>AS-i</td>
<td>3 842 553 453</td>
</tr>
<tr>
<td>CANopen</td>
<td>3 842 553 454</td>
</tr>
<tr>
<td>EtherNet/IP</td>
<td>3 842 553 451</td>
</tr>
<tr>
<td>EtherCAT</td>
<td>3 842 553 459</td>
</tr>
<tr>
<td>PROFINET</td>
<td>3 842 553 452</td>
</tr>
<tr>
<td>PROFIBUS</td>
<td>3 842 553 450</td>
</tr>
</tbody>
</table>
## Connection unit (C)
- Power grid connection options

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection unit</td>
<td>3 842 553 445</td>
</tr>
</tbody>
</table>

## 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)

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment kit</td>
<td>3 842 553 457</td>
</tr>
</tbody>
</table>

## Connection cable (E)
- For connecting the gear motor with the frequency converter (length: 1 m)

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection cable</td>
<td>3 842 553 512</td>
</tr>
</tbody>
</table>
Frequency converter (FU) 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
- Steplessly regulate the transport speed
- Transfer parameter sets to other basic devices

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual control unit</td>
<td>3 842 552 821</td>
</tr>
</tbody>
</table>

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 roller conveyor is running is checked prior to commissioning.

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch/potentiometer unit</td>
<td>3 842 553 184</td>
</tr>
</tbody>
</table>

Scope of delivery:
**A, B:** Incl. 2.5 m connection cable
Drive unit
Frequency converter (FU) accessories
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveyor unit selection</td>
<td>4-2</td>
</tr>
<tr>
<td>ST 5/XH, ST 5/H conveyor units (with split rollers)</td>
<td>4-3</td>
</tr>
<tr>
<td>End plates for ST 5/XH, ST 5/H</td>
<td>4-6</td>
</tr>
<tr>
<td>Protective covers for ST 5/XH, ST 5/H</td>
<td>4-8</td>
</tr>
<tr>
<td>ST 5/XH-FR, ST 5/H-FR conveyor units (with full rollers)</td>
<td>4-10</td>
</tr>
<tr>
<td>End plates for ST 5/XH-FR, ST 5/H-FR</td>
<td>4-13</td>
</tr>
<tr>
<td>Protective covers for ST 5/XH-FR, ST 5/H-FR</td>
<td>4-15</td>
</tr>
<tr>
<td>ST 5/OC (Open Center) conveyor units</td>
<td>4-17</td>
</tr>
<tr>
<td>End plates for ST 5/OC</td>
<td>4-20</td>
</tr>
<tr>
<td>Protective covers for ST 5/OC</td>
<td>4-22</td>
</tr>
<tr>
<td>Cover for OC/XH, OC/H transition</td>
<td>4-23</td>
</tr>
<tr>
<td>Connection kits</td>
<td>4-25</td>
</tr>
</tbody>
</table>
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

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

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

The carrying force per roller is 50 kg. The workpiece pallet must always be on at least 3 rollers. The resulting load limits are shown in the graphic (see page 2-8).

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 workpiece pallet is only conveyed on a straight section, it can be any length; observe the permissible section load and roller load.

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 due to insufficient space.

Required accessories:
- AS 5/... drive unit, see page 3-2
- SZ 5/... leg sets, see page 7-2
- Connection kits, see page 4-25

Conveyor unit load carrying capacity

Permissible section load with a leg distance $\leq 2$ 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.

![Chart showing maximum permissible load carrying capacity](chart.png)

$m_G$ = WT total mass
$\scriptstyle p$ = roller spacing
ST 5/XH, ST 5/H conveyor units (with split rollers)

Use:
▶ The conveyor unit is a ready-for-operation module used to transport workpiece pallets

Version:
▶ Reversible operation possible
▶ Accumulation operation possible
▶ 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

Note:
Other roller spacings available on request.

Condition on delivery:
▶ Ready-to-install.
### Ordering information

**ST 5/XH, ST 5/H conveyor units**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l&lt;sub&gt;WT&lt;/sub&gt; (mm)</th>
<th>p (mm)</th>
<th>l (mm)</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>TR</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 521 (ST 5/XH)</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 520 (ST 5/H)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>650 650; 845</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>650 845; 1040</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>845 845; 1040</td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>325</td>
<td>975 ... 3900</td>
<td>3; 4; 5 ... 12</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>845 1040</td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1040 845</td>
</tr>
<tr>
<td>1040</td>
<td>1040</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1040 1040</td>
</tr>
</tbody>
</table>

- **b** = width (track width in direction of transport)
- **l<sub>WT</sub>** = workpiece pallet length, note the interdependencies for p and l<sub>WT</sub>!
- **p** = Roller spacing (pitch)
- **l** = Length graduated according to the roller dimensions (l = p \times N)
- **N** = number of rollers, multiplier for length (l = p \times N), pricing factor in the price list.
- **LG** = Lateral guide material
  - 1: steel
  - 2: plastic
  - 3: aluminum
- **BG** = Bevel wheel material
  - 1: plastic
  - 2: sintered metal
- **TR** = Roller material
  - 1: galvanized steel
  - 2: steel, nitrocarburized

---

**Bosch Rexroth AG, 3 842 540 380 (2017-07)**
Dimensions
ST 5/XH, ST 5/H conveyor unit

ST 5/XH: 3 842 998 521
ST 5/H: 3 842 998 520
End plates for ST 5/XH, ST 5/H

**Use:**
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:**
- galvanized steel
### End plates

- End plate, left drive side (D)
- End plate, right drive side (E)

<table>
<thead>
<tr>
<th>b</th>
<th>p</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>130</td>
<td>3 842 545 679</td>
</tr>
<tr>
<td>455</td>
<td>195</td>
<td>3 842 545 680</td>
</tr>
<tr>
<td>650</td>
<td>130</td>
<td>3 842 545 681</td>
</tr>
<tr>
<td>650</td>
<td>195</td>
<td>3 842 545 682</td>
</tr>
<tr>
<td>650</td>
<td>260</td>
<td>3 842 545 683</td>
</tr>
<tr>
<td>845</td>
<td>130</td>
<td>3 842 545 684</td>
</tr>
<tr>
<td>845</td>
<td>195</td>
<td>3 842 545 685</td>
</tr>
<tr>
<td>845</td>
<td>260</td>
<td>3 842 545 686</td>
</tr>
<tr>
<td>845</td>
<td>325</td>
<td>3 842 545 687</td>
</tr>
<tr>
<td>1040</td>
<td>130</td>
<td>3 842 545 476</td>
</tr>
<tr>
<td>1040</td>
<td>195</td>
<td>3 842 545 477</td>
</tr>
<tr>
<td>1040</td>
<td>260</td>
<td>3 842 545 688</td>
</tr>
</tbody>
</table>

### Lateral guide cover

- Lateral guide protective cover (F), 2 required
- Screw DIN 7500-EEM5X16-8.8 (G), 4 required for each end plate, 2 for each lateral guide cover The screws must be sourced by the customer.

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 3 842 545 276</td>
</tr>
</tbody>
</table>

### Spring element

- Spring element (H), 2 required for each end plate

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 3 842 545 214</td>
</tr>
</tbody>
</table>

### Cover caps

- Cover cap for the open profile ends (J), 2 required for each section end

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 3 842 503 845</td>
</tr>
<tr>
<td>ST 5/H (45x90) 20 3 842 511 783</td>
</tr>
</tbody>
</table>

1) b = Track width in direction of transport
2) p = roller spacing
Protective covers for ST 5/XH, ST 5/H

- Section center protective cover (A)
- Protective covers for transition between curve (diverter, junction) / conveyor unit (B)
- Protective covers for transition between conveyor unit/ conveyor unit with different rollers (C)
- Spring element (H), 4 required for each protective cover, see page 4-9

The different dimensions of the protective covers can be found on page 4-9.
### Protective covers for center (A) and transitions (B, C)

<table>
<thead>
<tr>
<th></th>
<th>b&lt;sup&gt;1&lt;/sup&gt;</th>
<th>p&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>455</td>
<td>130</td>
<td>3 842 545 404</td>
</tr>
<tr>
<td></td>
<td>455</td>
<td>195</td>
<td>3 842 545 609</td>
</tr>
<tr>
<td></td>
<td>650</td>
<td>130</td>
<td>3 842 545 405</td>
</tr>
<tr>
<td></td>
<td>650</td>
<td>195</td>
<td>3 842 545 360</td>
</tr>
<tr>
<td></td>
<td>650</td>
<td>260</td>
<td>3 842 545 612</td>
</tr>
<tr>
<td></td>
<td>845</td>
<td>130</td>
<td>3 842 545 361</td>
</tr>
<tr>
<td></td>
<td>845</td>
<td>195</td>
<td>3 842 545 362</td>
</tr>
<tr>
<td></td>
<td>845</td>
<td>260</td>
<td>3 842 545 363</td>
</tr>
<tr>
<td></td>
<td>845</td>
<td>325</td>
<td>3 842 545 403</td>
</tr>
<tr>
<td></td>
<td>1040</td>
<td>130</td>
<td>3 842 545 638</td>
</tr>
<tr>
<td></td>
<td>1040</td>
<td>195</td>
<td>3 842 545 641</td>
</tr>
<tr>
<td></td>
<td>1040</td>
<td>260</td>
<td>3 842 545 365</td>
</tr>
</tbody>
</table>

**Note:**
- b<sup>1</sup> = Track width in direction of transport
- p<sup>2</sup> = roller spacing (pitch); p<sub>1</sub>/p<sub>2</sub> and p<sub>2</sub>/p<sub>3</sub>
- ▶ = transition between different roller spacing dimensions

### Spring element

- Spring element (H), 2 required for each end plate

<table>
<thead>
<tr>
<th></th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>50 3 842 545 214</td>
</tr>
</tbody>
</table>

**Note:**
- ▶ = roller spacing (pitch); p<sub>1</sub>/p<sub>2</sub> and p<sub>2</sub>/p<sub>3</sub>
- ▶ = transition between different roller spacing dimensions
**ST 5/XH-FR, ST 5/H-FR conveyor units (with full rollers)**

**Use:**
- 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 workpiece pallets is limited, see page 4-2.
Other roller spacings available on request.

**Version:**
- Reversible operation possible
- Accumulation operation possible
- 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

**Condition on delivery:**
- Ready-to-install.
### Ordering information

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

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l&lt;sub&gt;WT&lt;/sub&gt; (mm)</th>
<th>p (mm)</th>
<th>l (mm)</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>TR</th>
<th>Material number</th>
</tr>
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<tr>
<td>455</td>
<td>455; 650</td>
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<td>3; 4; 5 ... 32</td>
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<td>1; 2</td>
<td>1; 2</td>
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<tr>
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<td>455; 650</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 522 (ST 5/H-FR)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>130</td>
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<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
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<tr>
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<td>650; 845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>p = ... mm</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>l = ... mm</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>LG = ...</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
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<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>BG = ...</td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>325</td>
<td>975 ... 3900</td>
<td>3; 4; 5 ... 12</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>TR = ...</td>
</tr>
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<td>845</td>
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<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
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</tr>
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<td>845</td>
<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
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<td>1; 2</td>
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</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td></td>
</tr>
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</table>

- **b** = width (track width in direction of transport)
- **l<sub>WT</sub>** = workpiece pallet length, note the interdependencies for p and l<sub>WT</sub>
- **p** = Roller spacing (pitch)
- **l** = Length graduated according to the roller dimensions (l = p × N)
- **N** = number of rollers, multiplier for length (l = p × N), pricing factor in the price list.
- **LG** = Lateral guide material
  1: steel
  2: plastic
  3: aluminum
- **BG** = Bevel wheel material
  1: plastic
  2: sintered metal
- **TR** = Roller material
  1: steel, galvanized
  2: steel, nitrocarburized
Dimensions
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
End plates for ST 5/XH-FR, ST 5/H-FR

Use:
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.

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

Material:
- galvanized steel
Ordering information

End plates

- End plate, left drive side (D)
- End plate, right drive side (E)

<table>
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<th>p(^{2}) (mm)</th>
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<td>3 842 545 467</td>
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<td>3 842 545 678</td>
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</table>

Lateral guide cover

- Lateral guide protective cover (F), 2 required
- Screw DIN 7500-EEMSX16-8.8 (G), 4 required for each end plate, 2 for each lateral guide cover

The screws must be sourced by the customer.

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Spring element

- Spring element (H), 2 required for each end plate

<table>
<thead>
<tr>
<th>Material number</th>
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</table>

Cover caps

- Cover cap for the open profile ends (J), 2 required for each section end

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<tr>
<td>3 842 511 783</td>
</tr>
</tbody>
</table>

\(^{1}\) b = Track width in direction of transport
\(^{2}\) p = roller spacing
Protective covers for ST 5/XH-FR, ST 5/H-FR

- Section center protective cover (A)
- Protective covers for transition between curve (diverter, junction) / conveyor unit (B)
- Protective covers for transition between conveyor unit / conveyor unit with different rollers (C)
- Spring element (H), 4 required for each protective cover, see page 4-16

The different dimensions of the protective covers can be found on page 4-16.
### Protective covers for center (A) and transitions (B, C)

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<td>845</td>
<td>130</td>
<td>3 842 545 410</td>
<td></td>
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<td>260</td>
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<table>
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<th>p (mm)</th>
<th>Material number</th>
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<td>130/195</td>
<td>3 842 545 407</td>
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<td>650</td>
<td>130/195</td>
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<tr>
<td>650</td>
<td>130/260</td>
<td>3 842 545 410</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>130/130</td>
<td>3 842 545 411</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>130/195</td>
<td>3 842 545 412</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>130/260</td>
<td>3 842 545 413</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>130/325</td>
<td>3 842 545 414</td>
<td></td>
</tr>
<tr>
<td>1040</td>
<td>130/130</td>
<td>3 842 545 415</td>
<td></td>
</tr>
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<td>1040</td>
<td>130/195</td>
<td>3 842 545 416</td>
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<td>130/260</td>
<td>3 842 545 417</td>
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<td>130/325</td>
<td>3 842 545 418</td>
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<table>
<thead>
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<th>C</th>
<th>b (mm)</th>
<th>p (mm)</th>
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<td>130/195</td>
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<td>1040</td>
<td>195/260</td>
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1) **b** = Track width in direction of transport
2) **p** = roller spacing (pitch); p1/p2 and p2/p3 = transition between different roller spacing dimensions

### Spring element

- Spring element (H), 2 required for each end plate

<table>
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<tbody>
<tr>
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</table>
ST 5/OC (Open Center) conveyor units

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

Version:
▶ Reversible operation possible
▶ Accumulation operation possible
▶ 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

Condition on delivery:
▶ Ready-to-install.
### Ordering information

#### ST 5/OC (Open Center) conveyor units

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l&lt;sub&gt;WT&lt;/sub&gt; (mm)</th>
<th>p (mm)</th>
<th>l (mm)</th>
<th>N</th>
<th>LG</th>
<th>BG</th>
<th>TR</th>
<th>DD</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>130</td>
<td>390 ... 4160</td>
<td>3; 4; 5 ... 32</td>
<td>1; 2; 3</td>
<td>1; 2</td>
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<td>1; 2</td>
<td>3 842 998 574 (ST 5/OC)</td>
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<tr>
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<td>195</td>
<td>585 ... 4095</td>
<td>3; 4; 5 ... 21</td>
<td>1; 2; 3</td>
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</tr>
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<td>390 ... 4160</td>
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</tr>
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<td>650; 845</td>
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</tr>
<tr>
<td>650</td>
<td>845</td>
<td>260</td>
<td>780 ... 4160</td>
<td>3; 4; 5 ... 16</td>
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<td>845</td>
<td>845; 1040</td>
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<tr>
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</table>

- **b** = width (track width in direction of transport)
- **l<sub>WT</sub>** = workpiece pallet length, note the interdependencies for p and l<sub>WT</sub>!
- **p** = Roller spacing (pitch)
- **l** = Length graduated according to the roller dimensions (l = p × N)
- **N** = number of rollers, multiplier for length (l = p × N), pricing factor in the price list.
- **LG** = Lateral guide material
- **BG** = Bevel wheel material
- **TR** = Roller material
- **DD** = drive
  1. steel
  2. plastic
  3. aluminum
  1. plastic
  2. sintered metal
  1. galvanized steel
  2. steel, nitrocarburized
  1. on one side
  2. on two sides
Dimensions
ST 5/OC (Open Center) conveyor unit

ST 5/OC
DD = 1

ST 5/OC
DD = 2

ST 5/OC: 3 842 998 574
End plates for ST 5/OC

Use:
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.

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

Material:
- galvanized steel
**Ordering information**

**End plates (C)**
- End plate for drive side (E), left/right
- End plate for passive side (F), left/right
- Screw DIN 7500-EEM5X16-8.8 (G), 4 required for each end plate. The screws must be sourced by the customer.

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1) \( p = \) roller spacing

**Spring element (H)**
- Spring element, 2 required for each end plate

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<td>20</td>
</tr>
<tr>
<td>L</td>
<td>20</td>
</tr>
</tbody>
</table>

**End caps (K, L)**
- Cover cap for the open profile ends, 2 required for each section end
Protective covers for ST 5/OC

- Section center protective cover (A)
- Protective covers for transition between conveyor unit/conveyor unit with the same or different rollers (B)
- Spring element (H), 4 required for each protective cover

### Ordering information

#### Protective covers for center (A) and transitions (B)

<table>
<thead>
<tr>
<th>p (^1) (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 130</td>
<td>3 842 545 541</td>
</tr>
<tr>
<td>195</td>
<td>3 842 545 543</td>
</tr>
<tr>
<td>260</td>
<td>3 842 545 545</td>
</tr>
<tr>
<td>325</td>
<td>3 842 545 547</td>
</tr>
</tbody>
</table>

1) \(p\) = roller spacing (pitch); \(p_1/p_2\) = transition between different roller spacing dimensions

#### Protective covers for center (A) and transitions (B)

<table>
<thead>
<tr>
<th>p1/p2 (^1) (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>B 130/130</td>
<td>3 842 545 541</td>
</tr>
<tr>
<td>130/195</td>
<td>3 842 545 542</td>
</tr>
<tr>
<td>195/195</td>
<td>3 842 545 543</td>
</tr>
<tr>
<td>195/260</td>
<td>3 842 545 544</td>
</tr>
<tr>
<td>260/260</td>
<td>3 842 545 545</td>
</tr>
<tr>
<td>260/325</td>
<td>3 842 545 546</td>
</tr>
<tr>
<td>325/325</td>
<td>3 842 545 547</td>
</tr>
</tbody>
</table>

1) \(p\) = roller spacing (pitch); \(p_1/p_2\) = transition between different roller spacing dimensions

#### Spring element

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>H 50</td>
</tr>
</tbody>
</table>
Cover for OC/XH, OC/H transition

- Protective cover (C)
- Cover for split rollers (D1)
- Cover for full rollers (D2)
- Spring element (H)
- End plate for open profile ends (I)
- Screw DIN7500-EEM5X16-8.8 (J), 2 required for each lateral guide cover
- Screw (K), 1 required for each end plate
- Cover cap for the open profile ends (L)

The different dimensions of the protective covers can be found on page 4-24.
### Ordering information

![Diagram of conveyor system]

#### Cover

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>b(^1) = Track width in direction of transport</td>
<td>3 842 545 150</td>
</tr>
<tr>
<td></td>
<td>p(^1) = roller spacing (pitch); p(^1)/p(^2) = transition between different roller spacing dimensions</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>130</td>
<td>3 842 545 150</td>
</tr>
<tr>
<td>455</td>
<td>195</td>
<td>3 842 545 151</td>
</tr>
<tr>
<td>650</td>
<td>130</td>
<td>3 842 545 152</td>
</tr>
<tr>
<td>650</td>
<td>195</td>
<td>3 842 545 153</td>
</tr>
<tr>
<td>650</td>
<td>260</td>
<td>3 842 545 739</td>
</tr>
<tr>
<td>845</td>
<td>130</td>
<td>3 842 545 154</td>
</tr>
<tr>
<td>845</td>
<td>195</td>
<td>3 842 545 155</td>
</tr>
<tr>
<td>845</td>
<td>260</td>
<td>3 842 545 740</td>
</tr>
<tr>
<td>845</td>
<td>325</td>
<td>3 842 545 741</td>
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<tr>
<td>1040</td>
<td>130</td>
<td>3 842 545 156</td>
</tr>
<tr>
<td>1040</td>
<td>195</td>
<td>3 842 545 157</td>
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<tr>
<td>1040</td>
<td>260</td>
<td>3 842 545 742</td>
</tr>
<tr>
<td>1040</td>
<td>325</td>
<td>3 842 545 745</td>
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</tbody>
</table>

#### Spring element

<table>
<thead>
<tr>
<th></th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
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</table>

#### Screw

<table>
<thead>
<tr>
<th></th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>100</td>
</tr>
</tbody>
</table>

#### End cap

<table>
<thead>
<tr>
<th></th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>20</td>
</tr>
</tbody>
</table>

---

4-24  TS 5 4.0 | Longitudinal conveyor
Protective covers for ST 5/OC
Bosch Rexroth AG, 3 842 540 380 (2017-07)
Connection kits

Use:
To connect two TS 5 modules, you will need:
▶ 4 profile connectors for section profiles (A)
▶ 2 profile connectors for lateral guide (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
▶ The profile ends are connected to each other using profile connectors.

Material:
▶ Galvanized steel

Scope of delivery:
▶ Profile connector, screws

Profile connector for section profile

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
</tbody>
</table>

Profile connectors for lateral guides

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
</tr>
</tbody>
</table>
Intermediate plates for module transitions
- The modules (conveyor sections, drives, curves, diverters) are separated using intermediate plates with the respective roller dimension $p$.

Material:
- galvanized steel

<table>
<thead>
<tr>
<th>Material</th>
<th>$p1/p2^{1)}$ (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>10 130/130</td>
<td>3 842 545 215</td>
</tr>
<tr>
<td></td>
<td>10 130/195</td>
<td>3 842 545 354</td>
</tr>
<tr>
<td></td>
<td>10 130/260</td>
<td>3 842 545 216</td>
</tr>
<tr>
<td></td>
<td>10 130/325</td>
<td>3 842 545 355</td>
</tr>
<tr>
<td></td>
<td>10 195/195</td>
<td>3 842 545 216</td>
</tr>
<tr>
<td></td>
<td>10 195/260</td>
<td>3 842 545 355</td>
</tr>
<tr>
<td></td>
<td>10 260/260</td>
<td>3 842 545 217</td>
</tr>
<tr>
<td></td>
<td>10 260/325</td>
<td>3 842 545 648</td>
</tr>
<tr>
<td></td>
<td>10 325/325</td>
<td>3 842 545 218</td>
</tr>
</tbody>
</table>

$^{1)}$ Roller spacing of the respective modules

Coupling
- For connecting the king shaft. Compensates for alignment errors and concentricity tolerances.

Material:
- galvanized steel
- brass

Scope of delivery:
- Couplings, screws

<table>
<thead>
<tr>
<th>Coupling</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>3 842 545 160</td>
</tr>
</tbody>
</table>
Curves/diverters/junctions

<table>
<thead>
<tr>
<th>Design</th>
<th>5-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU 5/XH, CU 5/H curves</td>
<td>5-4</td>
</tr>
<tr>
<td>DI 5/XH, DI 5/H diverters</td>
<td>5-8</td>
</tr>
<tr>
<td>JU 5/XH, JU 5/H junctions</td>
<td>5-13</td>
</tr>
<tr>
<td>Limits for the permissible gravity center position for junctions and diverters</td>
<td>5-17</td>
</tr>
<tr>
<td>Three-way diverter DI 5/XH-3W, DI 5/H-3W</td>
<td>5-18</td>
</tr>
<tr>
<td>Limits for the permissible gravity center position for the three-way diverter</td>
<td>5-22</td>
</tr>
</tbody>
</table>
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 loads

<table>
<thead>
<tr>
<th>$m_0$ (kg)</th>
<th>$v_n$ (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 260</td>
<td>12</td>
</tr>
<tr>
<td>max. 300</td>
<td>9</td>
</tr>
</tbody>
</table>

$m_0 = \text{total mass of workpiece pallet}$

Higher weights available on request. Can be adapted to different transport speeds.

**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) ($Z$).
Arrangement of curves, diverters, and junctions

CD = 2
CD = 1
CD = 2
CD = 2

JD = 2
JD = 2
CD = 1
CD = 1

DD = 2
CD = 2
DD = 2
CD = 1

TS 5 4.0 Design
3 842 540 380 (2017-07), Bosch Rexroth AG
CU 5/XH, CU 5/H curves

Use:
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 loads, see page 5-6

Version:
- Reversible operation possible
- Accumulation operation not permitted
- 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
- $m_0$ up to 300 kg (where $v = 9$ m/min)

Condition on delivery:
- Ready-to-install.
Optional:
- assembled protective covers
- (protective covers cannot be ordered separately)
### Ordering information

![Diagram](image.png)

**CU 5/XH, CU 5/H curves**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>( l_{\text{WT}} ) (mm)</th>
<th>N</th>
<th>LG</th>
<th>CD (^1)</th>
<th>DSM (^2)</th>
<th>DST (^3)</th>
<th>TR</th>
<th>SC (^4)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>10</td>
<td>1; 2, 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 526 (CU 5/XH)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>11</td>
<td>1; 2, 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 525 (CU 5/H)</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>13</td>
<td>1; 2, 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>( b = \ldots \text{mm} )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( l_{\text{WT}} = \ldots \text{mm} )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( N = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( LG = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( CD = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( DSM = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( DST = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( TR = \ldots )</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( SC = \ldots )</td>
</tr>
</tbody>
</table>

\(^1\) 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, see page 0-3  
Ordering examples, see page 5-6
Order examples

Permissible loads

<table>
<thead>
<tr>
<th>( m_0 ) (kg)</th>
<th>( v_n ) (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 260</td>
<td>12</td>
</tr>
<tr>
<td>max. 300</td>
<td>9</td>
</tr>
</tbody>
</table>

\( m_0 \) = total mass of workpiece pallet

Higher weights available on request.
Can be adapted to different transport speeds.
Curves/diverters/junctions | TS 5 4.0
CU 5/XH, CU 5/H curves

Dimensions
CU 5/H, CU 5/XH curve

CU 5/XH

CU 5/H

<table>
<thead>
<tr>
<th>b₁</th>
<th>l₁</th>
<th>N</th>
<th>l₂</th>
<th>l₃</th>
<th>l₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>10</td>
<td>921.5</td>
<td>382.5</td>
<td>650</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>11</td>
<td>1149</td>
<td>415</td>
<td>780</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>13</td>
<td>1376.5</td>
<td>447</td>
<td>910</td>
</tr>
</tbody>
</table>

1) b = track width in direction of transport
2) lₐ = workpiece pallet length (in direction of transport)
3) lₐ = length of main section
4) l₂ = length of secondary section
5) l₃ = length of secondary section up to center of main section

Description of further parameters, see page 0-3
DI 5/XH, DI 5/H diverters

Use:
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 ... 6 bar).

Note:
The diverter is not suitable for accumulation operation. Permissible loads, see page 5-10

Version:
▶ Reversible operation possible
▶ Accumulation operation not permitted
▶ 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
▶ $m_a$ up to 300 kg (where $v = 9 \text{ m/min}$)
▶ Pneumatic push-in fitting: 6 mm

Condition on delivery:
▶ Ready-to-install.

Optional:
▶ Protective covers mounted (protective covers cannot be ordered separately)
Ordering information

**DI 5/XH, DI 5/H diverters**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>( l_{wt} ) (mm)</th>
<th>N</th>
<th>LG</th>
<th>DD(^1)</th>
<th>DSM(^2)</th>
<th>DST(^3)</th>
<th>TR</th>
<th>SC(^4)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>13</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 529 (DI 5/XH)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>15</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 528 (DI 5/H)</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>17</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 529 (DI 5/XH)</td>
</tr>
</tbody>
</table>

\( b = \ldots \text{mm} \)
\( l_{wt} = \ldots \text{mm} \)
\( N = \ldots \)
\( LG = \ldots \)
\( DD = \ldots \)
\( DSM = \ldots \)
\( DST = \ldots \)
\( TR = \ldots \)
\( SC = \ldots \)

\(^1\) 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, see page 0-3
Ordering examples, see page 5-10
Order examples

<table>
<thead>
<tr>
<th>Drive side</th>
<th>DD</th>
<th>DSM</th>
<th>DST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive side</th>
<th>DD</th>
<th>DSM</th>
<th>DST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

1) Drive side

**Permissible loads**

\[
\begin{array}{cc}
\text{m}_\text{c} (\text{kg}) & \text{v}_\text{n} (\text{m/min}) \\
\text{max. 260} & 12 \\
\text{max. 300} & 9 \\
\end{array}
\]

\(m_\text{c}\) = total mass of workpiece pallet

Higher weights available on request.
Can be adapted to different transport speeds.
Diverter arm position inquiry on request.
### Dimensions

**DI 5/H, DI 5/XH diverter**

<table>
<thead>
<tr>
<th>b</th>
<th>l&lt;sub&gt;WT&lt;/sub&gt;</th>
<th>N</th>
<th>l&lt;sub&gt;3&lt;/sub&gt;</th>
<th>l&lt;sub&gt;2&lt;/sub&gt;</th>
<th>l&lt;sub&gt;3&lt;/sub&gt; up to center of main section</th>
<th>l&lt;sub&gt;4&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>13</td>
<td>1300</td>
<td>382.5</td>
<td>650</td>
<td>917.5</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>15</td>
<td>1560</td>
<td>415</td>
<td>780</td>
<td>1145</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>17</td>
<td>1820</td>
<td>447</td>
<td>910</td>
<td>1372.5</td>
</tr>
</tbody>
</table>

1) b = track width in direction of transport  
2) l<sub>WT</sub> = workpiece pallet length (in direction of transport)  
3) l<sub>1</sub> = length of main section  
4) l<sub>2</sub> = length of secondary section  
5) l<sub>3</sub> = length of secondary section up to center of main section

Description of further parameters, see page 0-3
5-12  **TS 5 4.0** | Curves/diverters/junctions
DI 5/XH, DI 5/H diverters

Circuit diagram
DI 5/H, DI 5/XH diverter
JU 5/XH, JU 5/H junctions

**Use:**
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 loads, see page 5-15

**Version:**
- Reversible operation not permitted
- Accumulation operation not permitted
- 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
- $m_a$ up to 300 kg (where $v = 9$ m/min)

**Condition on delivery:**
- Ready-to-install.

Optional:
- Protective covers mounted (protective covers cannot be ordered separately)
### Ordering information

![Diagram of JU 5/XH, JU 5/H junctions]

### JU 5/XH, JU 5/H junctions

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>(l_{\text{WT}}) (mm)</th>
<th>N</th>
<th>JD(^1)</th>
<th>DSM(^2)</th>
<th>DST(^3)</th>
<th>TR</th>
<th>SC(^4)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
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<td>13</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 531 (JU 5/XH)</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>15</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 530 (JU 5/H)</td>
</tr>
<tr>
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<td>845; 1040</td>
<td>17</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 531 (JU 5/XH)</td>
</tr>
</tbody>
</table>

\(b = \ldots \text{mm}\)  
\(l_{\text{WT}} = \ldots \text{mm}\)  
\(N = \ldots\)  
\(JD = \ldots\)  
\(DSM = \ldots\)  
\(DST = \ldots\)  
\(TR = \ldots\)  
\(SC = \ldots\)  

1\(^{\text{st}}\) JD = Junction direction  
1: left  
2: right  

2\(^{\text{nd}}\) DSM = King shaft installation on main section  
1: left  
2: right  

3\(^{\text{rd}}\) DST = King shaft installation on secondary section  
1: left  
2: right  

4\(^{\text{th}}\) SC = Protective covers  
1: without protective covers  
2: with protective covers

---

Description of further parameters, see page 0-3  
Ordering examples, see page 5-15

---

*Bosch Rexroth AG, 3 842 540 380 (2017-07)*
Order examples

Permissible loads

<table>
<thead>
<tr>
<th>$m_g$ (kg)</th>
<th>$v_n$ (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 260</td>
<td>12</td>
</tr>
<tr>
<td>max. 300</td>
<td>9</td>
</tr>
</tbody>
</table>

$m_g$ = total mass of workpiece pallet

Higher weights available on request.
Can be adapted to different transport speeds.

1) Drive side
### Dimensions

**JU 5/H, JU 5/XH junction**

**Diagram:**

- **JU 5/XH**
  - Dimensions:
    - $b = \text{track width in direction of transport}$
    - $l_1 = \text{length of main section}$
    - $l_2 = \text{length of secondary section}$
    - $l_3 = \text{length of secondary section up to center of main section}$
  - Parameters:
    - $b_1 = 455$ mm
    - $b_2 = 650$ mm
    - $l_1 = 1300$ mm
    - $l_2 = 382.5$ mm
    - $l_3 = 650$ mm
    - $l_4 = 917.5$ mm

- **JU 5/H**
  - Similar to JU 5/XH with different dimensions.

**Table:**

<table>
<thead>
<tr>
<th>b(^1) (mm)</th>
<th>$l_1$(^2) (mm)</th>
<th>N</th>
<th>$l_2$(^3) (mm)</th>
<th>$l_3$(^4) (mm)</th>
<th>$l_4$(^5) (mm)</th>
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<tr>
<td>650</td>
<td>650; 845</td>
<td>15</td>
<td>1560</td>
<td>415</td>
<td>780</td>
<td>1145</td>
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<td>845</td>
<td>845; 1040</td>
<td>17</td>
<td>1820</td>
<td>447</td>
<td>910</td>
<td>1372.5</td>
</tr>
</tbody>
</table>

\(^1\) b = \text{track width in direction of transport}
\(^2\) $l_1$\(_{WT}\) = \text{workpiece pallet length (in direction of transport)}
\(^3\) $l_2$ = \text{length of main section}
\(^4\) $l_3$ = \text{length of secondary section}
\(^5\) $l_4$ = \text{length of secondary section up to center of main section}

Description of further parameters, see page 0-3

---

**Bosch Rexroth AG, 3 842 540 380 (2017-07)**
Limits for the permissible gravity center position for junctions and diverters

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, see page 2-3
Three-way diverter DI 5/XH-3W, DI 5/H-3W

**Use:**
The three-way diverter is a ready-for-operation module for branching off workpiece pallets in two directions or combining from two directions. 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 ... 6 bar).

**Note:**
The three-way diverter is not suitable for accumulation operation.
Permissible loads, see page 5-20

**Version:**
- Reversible operation possible
- Accumulation operation not permitted
- 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
- $m_\Delta$ up to 300 kg (where $v = 9$ m/min)
- Pneumatic push-in fitting: 6 mm

**Condition on delivery:**
- Ready-to-install.
Optional:
- Protective covers mounted (protective covers cannot be ordered separately)
### Ordering information

**DI 5/XH, DI 5/H diverters**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>( l_{WT} ) (mm)</th>
<th>N</th>
<th>LG</th>
<th>DSM (^1)</th>
<th>DST (^2)</th>
<th>TR</th>
<th>SC (^3)</th>
<th>Material number</th>
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</thead>
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<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 807 (DI 5/XH-3W)</td>
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<td>650; 845</td>
<td>15</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 808 (DI 5/H-3W)</td>
</tr>
<tr>
<td>845</td>
<td>845; 1040</td>
<td>17</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) DSM = King shaft installation on main section
1: left
2: right

\(^2\) DST = King shaft installation on secondary section
1: left
2: right

\(^3\) SC = protective covers
1: without protective covers
2: with protective covers

---

Description of further parameters, see page 0-3
Ordering examples, see page 5-20
**Order examples**

```
1) Drive side

**Permissible loads**

<table>
<thead>
<tr>
<th></th>
<th>( m_g ) (kg)</th>
<th>( v_N ) (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max.</td>
<td>260</td>
<td>12</td>
</tr>
<tr>
<td>max.</td>
<td>300</td>
<td>9</td>
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</tbody>
</table>

\( m_g \) = total mass of workpiece pallet

Higher weights available on request.
Can be adapted to different transport speeds.
Diverter arm position inquiry on request.
### Dimensions

Diverter DI 5/XH-3W, DI 5/H-3W

<table>
<thead>
<tr>
<th>b</th>
<th>l WT</th>
<th>N</th>
<th>l1</th>
<th>l2</th>
<th>l3</th>
<th>l4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(mm)</td>
<td>(mm)</td>
<td></td>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
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<td>13</td>
<td>1300</td>
<td>382.5</td>
<td>650</td>
<td>917.5</td>
</tr>
<tr>
<td>650</td>
<td>650; 845</td>
<td>15</td>
<td>1560</td>
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<td>780</td>
<td>1145</td>
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<tr>
<td>845</td>
<td>845; 1040</td>
<td>17</td>
<td>1820</td>
<td>447</td>
<td>910</td>
<td>1372.5</td>
</tr>
</tbody>
</table>

1) b = track width in direction of transport
2) l WT = workpiece pallet length (in direction of transport)
3) l1 = length of main section
4) l2 = length of secondary section
5) l3 = length of secondary section up to center of main section

Description of further parameters, see page 0-3
Limits for the permissible gravity center position for the three-way diverter

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, see page 2-3

**Note:**
With \( b_{\text{WT}} = 650 \text{ mm} \) and load center 1/6, eccentric, \( m_g = \text{max.} \ 200 \text{ kg} \)
## Transverse conveyor

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>6-2</td>
</tr>
<tr>
<td>HQ 5 lift transverse unit</td>
<td>6-4</td>
</tr>
<tr>
<td>Damper DA 5/200, damper DA 5/1000</td>
<td>6-11</td>
</tr>
<tr>
<td>Connection kit for connecting the transverse section</td>
<td>6-13</td>
</tr>
<tr>
<td>Connection bridge</td>
<td>6-15</td>
</tr>
<tr>
<td>HQ 5 lift transverse unit protective covers</td>
<td>6-17</td>
</tr>
<tr>
<td>Cover for lateral guide of HQ 5 lift transverse unit</td>
<td>6-19</td>
</tr>
</tbody>
</table>
Transverse conveyors are used to branch workpiece 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/divers/junctions is only possible in a longitudinal direction (see arrow on workpiece pallet)!
- Accumulation is not permitted on HQ 5

HQ 5 infeeding and outfeeding options.
- Outfeeding to both sides
- Infeeding from just one side, see page 6-11
- Connection of the transverse section (standard section) in a circuit with 4 lift transverse units, see page 6-15
- Connection of the transverse section (2x connection bridge + standard section) with parallel use of lift transverse unit and curve/diverter/junction, see page 6-15
- Rotation of the workpiece pallet by 90° with the combination of lift transverse unit and curve/diverter
- Infeeding and outfeeding to dead end section
- Dead end section with stop gate as end stop
Transverse conveyor sections include the following components:

- Lift transverse unit HQ 5, see page 6-4
- Connection kit for connecting the transverse section, see page 6-13
- VE 5/D-300, VE 5/D-301 or VE 5/D-1000 stop gate to stop the workpiece pallet when outfeeding, see page 6-9
- Connection bridge (see page 6-15) to compensate for length with parallel use of lift transverse unit and curve/diverter/junction
- DA 5/... damper to stop the workpiece pallet when infeeding, see page 6-11
- Sensor 3 842 555 421 to query the position of the workpiece pallet, see page 9-16
- Stop gate, if required, to pre-stop the workpiece pallet, see page 9-6
Use:
The HQ 5 lift transverse unit is a ready-for-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
▶ Compressed air connection 5 ... 6 bar
▶ Pneumatic push-in fitting: 6 mm

Scope of delivery:
▶ Incl. ST 5/XH or ST 5/H conveyor unit, dimensions, see page 4-4

Required accessories:
▶ Stop gate VE 5/200, VE 5/D-300, VE 5/D-301 or VE 5/D-1000, see page 6-9
▶ SH 2/U-H 3 842 537 289 switch bracket, see page 9-18
▶ Clamping holder for sensor, see page 9-15

Condition on delivery:
▶ Fully assembled

Recommended accessories:
▶ Protective covers, see page 6-19
▶ For position inquiry WT sensor 3 842 555 421, see page 9-16
### HQ 5 lift transverse unit

**Material number**

<table>
<thead>
<tr>
<th>$b_L$ (mm)</th>
<th>$b_Q$ (mm)</th>
<th>$p$ (mm)</th>
<th>$v_n$ (m/min)</th>
<th>SC</th>
<th>DSM</th>
<th>OFD</th>
<th>TR</th>
<th>U, f</th>
<th>AT</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>130</td>
<td>6; 9; 12</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>3 842 998 855 (HQ 5/XH)</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>130; 195</td>
<td>6; 9; 12</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>3 842 998 854 (HQ 5/H)</td>
</tr>
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<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>(b_L = \ldots \text{mm})</td>
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<tr>
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<td>845</td>
<td>130; 195; 260</td>
<td>6; 9; 12</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>(b_Q = \ldots \text{mm})</td>
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<td>130; 195; 260</td>
<td>6; 9; 12</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>(p = \ldots \text{mm})</td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>130; 195; 260; 325</td>
<td>6; 9; 12</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 3</td>
<td>1; 2</td>
<td>K; S</td>
<td>(v_n = \ldots \text{m/min})</td>
</tr>
</tbody>
</table>

**Ordering examples**

- 3 842 998 855 (HQ 5/XH)
- 3 842 998 854 (HQ 5/H)

### Parameters

- $b_L$ = track width in direction of transport (longitudinal conveyor)
- $b_Q$ = track width in direction of transport (transverse conveyor)
- $p$ = Roller spacing (pitch)
- $v_n$ = Nominal speed
  - $U = 0, v_n > 0$: with gear, without motor
  - $v_n = 0$: without motor and gear

### Glossary

- **SC** = Housing element
  - 1: without protective casing
  - 2: with protective casing
- **DSM** = King shaft installation on main section
  - 1: left
  - 2: right
- **OFD** = Direction of the outfeed
  - 1: left
  - 2: right
  - 3: left and right
- **U, f** = Motor connection
  - K: with terminal box
  - S: with cable/plug
- **AT** = Motor connection
  - HQ 5 lift transverse unit position inquiry (top/bottom) on request

Description of further parameters, see page 0-3
Ordering examples, see page 6-6
Order examples for the king shaft installation and direction of the outfeed
Size shown
b = 650 x 650 mm

If infeeding in the main section takes place, the VE 5/... can be installed in the HQ as an alternative to the damper.
In this case, the workpiece pallet is stopped in the center of the HQ and can then continue in any direction.
### Dimensions

**HQ 5 lift transverse unit**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>(l_{wr} ) (mm)</th>
<th>p (mm)</th>
<th>L (mm)</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
<th>L5 (mm)</th>
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<td>1271.3</td>
<td>975.0</td>
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</table>

Description of parameters, see page 0-3
Circuit diagram
HQ 5 lift transverse unit

Use:
▶ For non-damped (VE 5/200) or damped (VE 5/D-300, VE 5/D-301 and VE 5/D-1000) stopping of accumulating workpiece pallets for outfeeding, see page 9-3, 9-6, 9-12

Version:
▶ Pneumatic stop gate. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.
▶ Compressed air connection 5 ... 6 bar
▶ Further technical details, see page 9-3

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

Condition on delivery:
▶ Not assembled

Recommended accessories:
▶ Sensor 3 842 549 811 or 3 842 537 814, see page 9-16
▶ Sensor for VE 5/D-301 3 842 551 761, see page 9-16
▶ Clamping holder for sensor, see page 9-15
### Ordering information

**VE 5/200 stop gates**

<table>
<thead>
<tr>
<th>b (b_L) (mm)</th>
<th>Material number</th>
<th>b_L = ... mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1040</td>
<td>3 842 998 518</td>
<td>track width in direction of transport (longitudinal conveyor)</td>
</tr>
</tbody>
</table>

**VE 5/D-300 stop gate**

<table>
<thead>
<tr>
<th>b (b_L) (mm)</th>
<th>Material number</th>
<th>b_L = ... mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1040</td>
<td>3 842 998 517</td>
<td>track width in direction of transport (longitudinal conveyor)</td>
</tr>
</tbody>
</table>

**VE 5/D-301 stop gate**

<table>
<thead>
<tr>
<th>b (b_L) (mm)</th>
<th>Material number</th>
<th>b_L = ... mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1040</td>
<td>3 842 998 079</td>
<td>track width in direction of transport (longitudinal conveyor)</td>
</tr>
</tbody>
</table>

**VE 5/D-1000 stop gate**

<table>
<thead>
<tr>
<th>b (b_L) (mm)</th>
<th>Material number</th>
<th>b_L = ... mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1040</td>
<td>3 842 998 805</td>
<td>track width in direction of transport (longitudinal conveyor)</td>
</tr>
</tbody>
</table>

#### Permissible impact force per WT

<table>
<thead>
<tr>
<th>m_wT (kg)</th>
<th>v_n (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 300</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>max. 260</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>max. 160</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

1) Conveyor speed
Damper DA 5/200, damper DA 5/1000

Use:
▶ 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.
▶ Compressed air connection 5 ... 6 bar

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 carrying plates.

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

Condition on delivery:
▶ Not assembled

Recommended accessories:
▶ Cover for the lateral guide, see page 6-19f
**Ordering information**

**DA 5/200 damper**

<table>
<thead>
<tr>
<th>Material number</th>
<th>Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 128</td>
<td>3 842 540 380</td>
</tr>
</tbody>
</table>

**Permissible impact force per WT**

<table>
<thead>
<tr>
<th>$m_{WT}$ (kg)</th>
<th>$v_n$ ($\text{m/min}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 280</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>max. 240</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>max. 140</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

1) Conveyor speed

**DA 5/1000 damper**

<table>
<thead>
<tr>
<th>Material number</th>
<th>Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 130</td>
<td></td>
</tr>
</tbody>
</table>

**Permissible impact force per WT**

<table>
<thead>
<tr>
<th>$m_{WT}$ (kg)</th>
<th>$v_n$ ($\text{m/min}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>min. 50 max. 1100</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>min. 50 max. 1000</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>min. 50 max. 800</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

1) Conveyor speed

**Dimensions DA 5/200**

- 246.5
- 132.5
- 72
- 51
- 45
- 38.5
- 24

**Dimensions DA 5/1000**

- 246.5
- 132.5
- 80
- 45
- 38.5
- 21

- 120
- 90
- 55
- 214.5
Connection kit for connecting the transverse section

**Use:**
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 page 6-15).
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

**Condition on delivery:**
- Not assembled
## Ordering information

### Connection kit for connecting the transverse section

<table>
<thead>
<tr>
<th>Material number</th>
<th>Set</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 5/H, ST 5/XH</td>
<td>3 842 549 782</td>
<td></td>
</tr>
<tr>
<td>ST 5/OC DD = 2</td>
<td>3 842 549 783</td>
<td></td>
</tr>
<tr>
<td>ST 5/OC DD = 1</td>
<td>3 842 549 784</td>
<td></td>
</tr>
</tbody>
</table>

### Guide kit

<table>
<thead>
<tr>
<th>Material number</th>
<th>Set</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3 842 545 975</td>
<td></td>
</tr>
</tbody>
</table>

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

---

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Connection bridge

Use:
- 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

Condition on delivery:
- Ready-to-install.

Required accessories:
- Connection kit for connecting the transverse section, see page 6-13

Material:
- Roller: galvanized steel
### Ordering information

#### Connection bridge

<table>
<thead>
<tr>
<th>$b_0^{(1)}$ (mm)</th>
<th>$b_1^{(2)}$ (mm)</th>
<th>LG$^{(3)}$</th>
<th>BG$^{(4)}$</th>
<th>DST$^{(5)}$</th>
<th>SC$^{(6)}$</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 605 (ST 5/XH)</td>
</tr>
<tr>
<td>650</td>
<td>455; 650</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td>3 842 998 604 (ST 5/H)</td>
</tr>
<tr>
<td>845</td>
<td>650; 845</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>1040</td>
<td>845</td>
<td>1; 2; 3</td>
<td>1; 2</td>
<td>1; 2</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

$DST = 1$; $SC = ...$

1) Drive side

1) $b_0$ = width of transverse section
2) $b_1$ = Width of workpiece pallet
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

---

Description of further parameters, see page 0-3
Ordering examples, see page 6-6

---

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Use:
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, E) 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:
▶ galvanized steel
## Ordering information

Required protective covers for HQ 5

<table>
<thead>
<tr>
<th>b_L (mm)</th>
<th>b_Q (mm)</th>
<th>p (mm)</th>
<th>n</th>
<th>Material number A</th>
<th>n</th>
<th>Material number B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>130</td>
<td>8x</td>
<td>3 842 545 404</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>130</td>
<td>9x</td>
<td>3 842 545 404</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>195</td>
<td>6x</td>
<td>3 842 545 609</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>130</td>
<td>9x</td>
<td>3 842 545 405</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>195</td>
<td>6x</td>
<td>3 842 545 405</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>130</td>
<td>11x</td>
<td>3 842 545 405</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>195</td>
<td>7x</td>
<td>3 842 545 360</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>260</td>
<td>5x</td>
<td>3 842 545 612</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>130</td>
<td>11x</td>
<td>3 842 545 361</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>195</td>
<td>7x</td>
<td>3 842 545 362</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>260</td>
<td>5x</td>
<td>3 842 545 363</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>130</td>
<td>12x</td>
<td>3 842 545 361</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>195</td>
<td>8x</td>
<td>3 842 545 362</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>260</td>
<td>6x</td>
<td>3 842 545 363</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1040</td>
<td>325</td>
<td>4x</td>
<td>3 842 545 403</td>
<td>1x</td>
<td>3 842 545 966</td>
<td></td>
</tr>
</tbody>
</table>

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

2x Delivered pre-assembled
Cover for lateral guide of HQ 5 lift transverse unit

Use:
- Covers must be provided for the lateral guide in the vicinity of the HQ 5 lift transverse unit (see page 6-4) to increase safety.

Note:
Do not walk on the protective covers.

Versions:
- Covers with (A) a slot for DA 5/... dampers
- Covers without (B) a slot for DA 5/... dampers

Required accessories:
- T-bolt, see page 6-20
- Flange nut, see page 6-20

Material:
- galvanized steel
Covers for lateral guide of HQ 5

<table>
<thead>
<tr>
<th>( b_\omega ) (mm)</th>
<th>Material number</th>
</tr>
</thead>
</table>
| A  
455                 | 3 842 552 658   |
| 650                 | 3 842 552 659   |
| 845                 | 3 842 552 660   |
| 1040                | 3 842 552 661   |
| B  
455                 | 3 842 552 662   |
| 650                 | 3 842 552 663   |
| 845                 | 3 842 552 664   |
| 1040                | 3 842 552 665   |

\( b_\omega \) = track width in direction of transport (transverse conveyor)

Required fastening materials:

<table>
<thead>
<tr>
<th>Material</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange nut</td>
<td>100 3 842 345 081</td>
</tr>
<tr>
<td>T-bolt</td>
<td>100 3 842 528 718</td>
</tr>
</tbody>
</table>

Description of the T-bolt and flange nut, see page 7-10
## Legs

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>7-2</td>
</tr>
<tr>
<td>SZ 5 leg set</td>
<td>7-4</td>
</tr>
<tr>
<td>SZ 5/U leg set</td>
<td>7-6</td>
</tr>
<tr>
<td>SZ 5/OC leg set</td>
<td>7-8</td>
</tr>
<tr>
<td>Foundation brackets, dowels</td>
<td>7-10</td>
</tr>
</tbody>
</table>
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 2,000 mm must be maintained per workpiece pallet.

The engagement depth of the leveling feet must be at least 30 mm for all 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.

**Recommended accessories:**
Leg sets can be anchored to the floor using foundation brackets 3 842 146 815 and dowels 3 842 526 560, see page 7-10
SZ 5 leg set

Use:
▶ 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 > 1,000 mm, we recommend that users compensate for horizontal braking forces with diagonal bracing struts, see MGE catalog.

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

Recommended accessories:
Cover caps for bracket

<table>
<thead>
<tr>
<th>Material number</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>45x90, black ESD</td>
<td>3 842 548 865</td>
</tr>
<tr>
<td>90x90, black ESD</td>
<td>3 842 548 869</td>
</tr>
</tbody>
</table>

Condition on delivery:
▶ Assembled (MT = 1)
▶ Not assembled (MT = 0)
Ordering information

<table>
<thead>
<tr>
<th>AO</th>
<th>b (mm)</th>
<th>H (mm)</th>
<th>MT</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>455; 650; 845; 1,040</td>
<td>385.5</td>
<td>2,000</td>
<td>0; 1 3 842 996 330</td>
</tr>
</tbody>
</table>
| 2  | 455; 650; 845; 1,040 | 475.5 | 2,000 | 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  = Transportation height

MT = Condition on delivery
0: not assembled
1: assembled
SZ 5/U leg set

Use:
▶ 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 > 1,000 mm, we recommend that users compensate for horizontal braking forces with diagonal bracing struts, see MGE catalog.

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

Recommended accessories:

<table>
<thead>
<tr>
<th>Cover caps for bracket</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>45x45, black ESD 100</td>
<td>3 842 548 863</td>
</tr>
<tr>
<td>90x90, black ESD 20</td>
<td>3 842 548 869</td>
</tr>
</tbody>
</table>

Condition on delivery:
▶ Assembled (MT = 1)
▶ Not assembled (MT = 0)
## Ordering information

### SZ 5/U leg set

<table>
<thead>
<tr>
<th>AO</th>
<th>b (mm)</th>
<th>H (mm)</th>
<th>AO₁</th>
<th>H₁ (mm)</th>
<th>MT</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>455; 650; 845; 1,040</td>
<td>719.5 ... 2,000</td>
<td>1</td>
<td>385.5 ... H-334</td>
<td>0; 1</td>
<td>3 842 996 331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>475.5 ... H-334</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>455; 650; 845; 1,040</td>
<td>899.5 ... 2,000</td>
<td>1</td>
<td>385.5 ... H-424</td>
<td>0; 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>475.5 ... H-424</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AO = Installation location
AO₁ = Installation location lower section
b = Track width in direction of transport
H = Transportation height
H₁ = Transport height lower section
MT = Condition on delivery
1: ... 5/H
2: ... 5/XH
1: ST 5/H
2: ST 5/XH
0: not assembled
1: assembled

3 842 540 380 (2017-07), Bosch Rexroth AG
SZ 5/OC leg set

Use:
▶ Leg set 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 > 1,000 mm, we recommend that users compensate for horizontal braking forces with diagonal bracing struts, see MGE catalog.

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

Condition on delivery:
▶ Assembled (MT = 1)
▶ Not assembled (MT = 0)

Recommended accessories:

<table>
<thead>
<tr>
<th>Cover caps for bracket</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 x 90, black ESD</td>
<td>3842548865</td>
</tr>
<tr>
<td>90 x 90, black ESD</td>
<td>3842548869</td>
</tr>
</tbody>
</table>

Bosch Rexroth AG, 3 842 540 380 (2017-07)
### Ordering information

#### SZ 5/OC leg set

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>H (mm)</th>
<th>MT</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>385.5 ... 2,000</td>
<td>0; 1</td>
<td>3 842 996 332</td>
</tr>
</tbody>
</table>

- **b** = Track width in direction of transport
- **H** = Transportation height
- **MT** = Condition on delivery
  - 0: not assembled
  - 1: assembled

---

**Legs | TS 5 4.0**

SZ 5/OC leg set

3 842 540 380 (2017-07), Bosch Rexroth AG
Foundation brackets, dowels

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

Material:
- Foundation bracket: Sheet steel, galvanized and transparent chrome-plated

Ordering information

<table>
<thead>
<tr>
<th>Product designation</th>
<th>L (mm)</th>
<th>l₁ (mm)</th>
<th>l₂ (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundation bracket</td>
<td>160</td>
<td>31</td>
<td>91</td>
<td>20</td>
</tr>
</tbody>
</table>
## Legs | TS 5 4.0  7-11
Foundation brackets, dowels

### Product Data

<table>
<thead>
<tr>
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<th>D (mm)</th>
<th>L (mm)</th>
<th>l₁ (mm)</th>
<th>l₂max (mm)</th>
<th>Material number</th>
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</thead>
<tbody>
<tr>
<td>Dowel</td>
<td>8</td>
<td>80</td>
<td>65</td>
<td>15</td>
<td>3 842 526 560</td>
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<table>
<thead>
<tr>
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<th>Material number</th>
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</thead>
<tbody>
<tr>
<td>Flange nut</td>
<td>3 842 345 081</td>
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<table>
<thead>
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<th>M b (mm)</th>
<th>l (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-bolt</td>
<td>M8x25</td>
<td>19</td>
<td>3 842 528 718</td>
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</table>
Legs
Foundation brackets, dowels
Positioning and orientation

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>8-2</td>
</tr>
<tr>
<td>PE 5 positioning unit</td>
<td>8-3</td>
</tr>
<tr>
<td>PE 5/T positioning unit</td>
<td>8-7</td>
</tr>
<tr>
<td>PE 5/L positioning unit</td>
<td>8-11</td>
</tr>
<tr>
<td>PE 5/L-T positioning unit</td>
<td>8-15</td>
</tr>
<tr>
<td>PE 5/OC positioning unit</td>
<td>8-19</td>
</tr>
<tr>
<td>PE 5/OC-T positioning unit</td>
<td>8-23</td>
</tr>
<tr>
<td>Assembly kit for PE 5 and PE 5/T</td>
<td>8-27</td>
</tr>
<tr>
<td>Protective sleeves for PE 5, PE 5/T, PE 5/L and PE 5/L-T</td>
<td>8-29</td>
</tr>
<tr>
<td>Cover of lateral guide for positioning units</td>
<td>8-31</td>
</tr>
<tr>
<td>Protective covers for PE 5/OC and PE 5/OC-T</td>
<td>8-32</td>
</tr>
</tbody>
</table>
Design

In order to process and maintain manufacturing 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 4,000 N.

Applications:
- For exact positioning and to lift the workpiece pallet from the conveyor transport surface: PE 5, see page 8-3
- A VE 5 stop gate, see page 9-3, is sufficient for use with a manual workplace that has low requirements for positioning accuracy and if no forces act upon the workpiece pallet

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
Use:
- 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 4,000 N\(^2\), \(^3\)
- Suitable for ST 5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

Scope of delivery:
- Incl. fastening material for mounting the PE 5 in ST 5/XH conveyor sections

Required accessories:
- Assembly kit 3 842 996 185 is required for assembly in ST 5/H conveyor sections, see page 8-27
- SH 2/U-H 3 842 537 289 switch bracket, see page 9-18\(^1\)
- SH 2/U-H 3 842 545 132 assembly kit, see page 9-20

Condition on delivery:
- Fully assembled

Recommended accessories:
- Cover for the lateral guide, see page 8-31
- Protective sleeves, see page 8-29

\(^2\) 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 15,000 N possible with direct support (on request).

\(^1\) Not for size b = 455 mm.
### Ordering information

![Diagram](image)

#### PE 5 positioning unit

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l(_{WT}) (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2</td>
<td>3 842 998 786</td>
</tr>
<tr>
<td>455</td>
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<td>650</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

- **SC** = Housing element
  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, see page 0-3

---

1) Not for size b = 455 mm
## Dimensions

### PE 5 positioning unit

<table>
<thead>
<tr>
<th>$b_{WT}$ (mm)</th>
<th>$l_{WT}$ (mm)</th>
<th>$b_{PE}$ (mm)</th>
<th>$l_{PE}$ (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>441</td>
<td>471</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
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<td>576</td>
</tr>
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<td>650</td>
<td>650</td>
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</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>831</td>
<td>966</td>
</tr>
</tbody>
</table>

Assembly kit for installing the PE 5 in the ST 5/H: Material number 3 842 996 185, see page 8-27

$b_{WT}$ = width of workpiece pallet

$l_{WT}$ = length of workpiece pallet

$b_{PE}$ = positioning unit width

$l_{PE}$ = positioning unit length
Circuit diagram
PE 5 positioning unit
PE 5/T positioning unit

Use:
- 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 4,000 N[^2][^3]
- Suitable for ST5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

[^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 15,000 N possible with direct support (on request).

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

Required accessories:
- Assembly kit 3 842 996 185 is required if assembling in ST 5/H conveyor sections, see page 8-27

[^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.

Condition on delivery:
- Fully assembled

Recommended accessories:
- Cover for the lateral guide, see page 8-31
- Protective sleeves, see page 8-29
Ordering information

PE 5/T positioning unit

<table>
<thead>
<tr>
<th>b_L (mm)</th>
<th>b_Q (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2</td>
<td>3 842 998 177</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>1; 2</td>
<td>b_L = ... mm</td>
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<tr>
<td>650</td>
<td>650</td>
<td>1; 2</td>
<td>b_Q = ... mm</td>
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<tr>
<td>650</td>
<td>845</td>
<td>1; 2</td>
<td>SC = ...</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

SC = Housing element
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, see page 0-3
Dimensions

PE 5/T positioning unit

<table>
<thead>
<tr>
<th>b_L (mm)</th>
<th>b_Q (mm)</th>
<th>b_PE (mm)</th>
<th>l_PE (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>441</td>
<td>471</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>636</td>
<td>576</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
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<td>576</td>
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<tr>
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<tr>
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<td>1,040</td>
<td>831</td>
<td>764</td>
</tr>
</tbody>
</table>

Assembly kit for installing the PE 5/T in the ST 5/H: Material number 3 842 996 185, see page 8-27

b_L = track width in direction of transport (longitudinal conveyor)
b_Q = track width in direction of transport (transverse conveyor)
b_PE = positioning unit width
l_PE = positioning unit length
Circuit diagram
PE 5/T positioning unit

Bosch Rexroth AG, 3 842 540 380 (2017-07)
PE 5/L positioning unit

Use:
▶ 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 only possible from above
▶ Lift over transport level: 5 mm
▶ Positioning accuracy: ±0.3 mm
▶ Permissible vertical process force with center load: up to 3,500 N
▶ Suitable for ST 5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
▶ Compressed air connection 5 ... 6 bar
▶ Pneumatic push-in fitting: 6 mm

Scope of delivery:
▶ Incl. fastening material for mounting the PE 5/L in ST 5/XH conveyor sections

Required accessories:
▶ SH 2/U-H 3 842 537 289 switch bracket, see page 9-18

Condition on delivery:
▶ Fully assembled

Recommended accessories:
▶ Cover for the lateral guide, see page 8-31
▶ Protective sleeves, see page 8-29

2) If assembling in a ST 5/H section place legs directly in front of and behind the PE 5/L.
3) Permissible vertical process force if assembled in the section. Higher process forces of up to 15,000 N possible with direct support (on request).
Ordering information

PE 5/L positioning unit

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l\textsubscript{WT} (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2</td>
<td>3 842 998 048</td>
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<td>1; 2</td>
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</tr>
<tr>
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<td>650</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

SC = Housing element
1: without protective casing
2: with protective casing

b = Track width of the positioning unit in the direction of transport
l\textsubscript{WT} = Workpiece pallet length

Description of further parameters, see page 0-3
## Dimensions

### PE 5/L positioning unit

<table>
<thead>
<tr>
<th>$b_{WT}$ (mm)</th>
<th>$l_{WT}$ (mm)</th>
<th>$b_{PE}$ (mm)</th>
<th>$l_{PE}$ (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>441</td>
<td>471</td>
</tr>
<tr>
<td>455</td>
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</tr>
<tr>
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<td>764</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>831</td>
<td>966</td>
</tr>
</tbody>
</table>

$b_{WT}$ = width of workpiece pallet  
$l_{WT}$ = length of workpiece pallet  
$b_{PE}$ = positioning unit width  
$l_{PE}$ = positioning unit length
Circuit diagram
PE 5/L positioning unit
PE 5/L-T positioning unit

Use:
- 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 only possible from above
- Lift over transport level: 5 mm
- Positioning accuracy: ±0.3 mm
- Permissible vertical process force with center load: up to 3,500 N \(^{2,3} \) incl. WT
- Suitable for ST5/H and ST 5/XH (not ST 5/H-FR or ST 5/XH-FR)
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

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

Required accessories:
- VE 5/D-300 stop gate, page 9-6, VE 5/D-301, page 9-9, VE 5/1000 stop gate, page 9-12 or VE 5/200, stop gate, page 9-3\(^{1}\)
- SH 2/U-H 3 842 537 289 switch bracket, see page. 9-18

Condition on delivery:
- Fully assembled

Recommended accessories:
- Cover for the lateral guide, see page 8-31
- Protective sleeves, see page 8-29

\(^{2}\) If assembling in a ST 5/H section place legs directly in front of and behind the PE 5/L-T.

\(^{3}\) Permissible vertical process force if assembled in the section. Higher process forces of up to 15,000 N possible with direct support (on request).

\(^{1}\) 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.
## Ordering information

### PE 5/L-T positioning unit

<table>
<thead>
<tr>
<th>$b_L$ (mm)</th>
<th>$b_Q$ (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3 842 998 049</td>
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<tr>
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<td>$b_L = \ldots$ mm</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>1; 2</td>
<td>$b_Q = \ldots$ mm</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>1; 2</td>
<td>SC = \ldots</td>
</tr>
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<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

SC = Housing element  
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)

Description of further parameters, see page 0-3
Dimensions

PE 5/L-T positioning unit

<table>
<thead>
<tr>
<th>b_L (mm)</th>
<th>b_o (mm)</th>
<th>b_PE (mm)</th>
<th>l_PE (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>441</td>
<td>471</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>636</td>
<td>576</td>
</tr>
<tr>
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<td>845</td>
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<td>764</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>831</td>
<td>764</td>
</tr>
</tbody>
</table>

b_L = track width in direction of transport (longitudinal conveyor)
b_o = track width in direction of transport (transverse conveyor)
b_PE = positioning unit width
l_PE = positioning unit length
Circuit diagram
PE 5/L:T positioning unit
PE 5/OC positioning unit

Use:
- 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 below
- Lift over transport level: 5 mm
- Positioning accuracy: ±0.3 mm
- Permissible vertical process force with center load: up to 4,000 N\(^1\)
- Suitable for ST 5/OC
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

\(^1\) Permissible vertical process force if assembled in the section. Higher process forces of up to 15,000 N possible with direct support (on request).

Scope of delivery:
- Incl. fastening material for mounting the PE 5/OC in ST 5/OC conveyor sections

Required accessories:
- VE 5/OCD-1000 stop gate, P. 9-12, VE 5/OCD-300 stop gate, P. 9-6, VE 5/OCD-301 stop gate, P. 9-9, or VE 5/OC-200 stop gate, P. 9-3
- SH 2/U-H 3 842 537 289 switch bracket, see page. 9-18
- SH 2/U-H 3 842 545 132 assembly kit, see page 9-20
- Protective sleeves and protective cover, see pages 8-32

Condition on delivery:
- Fully assembled

Recommended accessories:
- Cover for the lateral guide, see page 8-31
- Protective cover, see page 8-32
Ordering information

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l_{WT} (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2</td>
<td>3 842 998 178</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>1; 2</td>
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<td>650</td>
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<td>1; 2</td>
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</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1; 2</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td></td>
</tr>
</tbody>
</table>

SC = Housing element
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/OC (top/bottom) positioning unit position inquiry option on request

Description of further parameters, see page 0-3
Dimensions

PE 5/OC positioning unit

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l_{WT} (mm)</th>
<th>b_{PE} (mm)</th>
<th>l_{PE} (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>259</td>
<td>471; 576</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>454</td>
<td>576</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
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<td>764</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>649</td>
<td>764</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>649</td>
<td>996</td>
</tr>
</tbody>
</table>

b_{WT} = width of workpiece pallet
l_{WT} = length of workpiece pallet
b_{PE} = positioning unit width
l_{PE} = positioning unit length
Circuit diagram
PE 5/OC positioning unit
PE 5/OC-T positioning unit

Use:
- 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 below
- Lift over transport level: 5 mm
- Positioning accuracy: ±0.3 mm
- Permissible vertical process force with center load: up to 4,000 N
- Suitable for ST 5/OC
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

3) Permissible vertical process force if assembled in the section. Higher process forces of up to 15,000 N possible with direct support (on request).

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

Required accessories:
- VE 5/OCD-1000 stop gate, P. 9-12, VE 5/OCD-300 stop gate, P. 9-6, VE 5/OCD-301 stop gate, P. 9-9, or VE 5/OC-200 stop gate, P. 9-3)
- Protective sleeves and protective cover, see page 8-32

Condition on delivery:
- Fully assembled

Recommended accessories:
- Cover for the lateral guide, see page 8-31
- Protective cover, see page 8-32

A position inquiry for the workpiece pallet on the PE is only possible through use of a VE 5/OCD-300 or VE 5/OCD-1000 stop gate.
### Ordering information

#### PE 5/OC-T positioning unit

<table>
<thead>
<tr>
<th>$b_L$ (mm)</th>
<th>$b_Q$ (mm)</th>
<th>SC</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1; 2</td>
<td>3 842 998 804</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>1; 2</td>
<td>$b_L = \ldots$ mm</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>1; 2</td>
<td>$b_Q = \ldots$ mm</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>1; 2</td>
<td>SC = \ldots mm</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1; 2</td>
<td>3 842 540 380</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1; 2</td>
<td>3 842 998 804</td>
</tr>
</tbody>
</table>

SC = Housing element  
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/OC-T (top/bottom) positioning unit position inquiry option on request

Description of further parameters, see page 0-3
Dimensions
PE 5/OC-T positioning unit

<table>
<thead>
<tr>
<th>$b_l$ (mm)</th>
<th>$b_o$ (mm)</th>
<th>$b_{PE}$ (mm)</th>
<th>$l_{PE}$ (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455; 650</td>
<td>259; 454</td>
<td>471</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>454</td>
<td>576</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>649</td>
<td>576</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>649</td>
<td>764</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>844</td>
<td>764</td>
</tr>
</tbody>
</table>

$b_l$ = track width in direction of transport (longitudinal conveyor)
$b_o$ = track width in direction of transport (transverse conveyor)
$b_{PE}$ = positioning unit width
$l_{PE}$ = positioning unit length
Circuit diagram
PE 5/OC-T positioning unit
Assembly kit for PE 5 and PE 5/T

Use:
- Mounting the PE 5 and PE 5/T positioning unit in the ST 5/H conveyor unit, see page 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.

Condition on delivery:
- Not assembled
Ordering information

<table>
<thead>
<tr>
<th>$l_{WT}$</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 996 185</td>
</tr>
</tbody>
</table>

$l_{WT} = \ldots \text{mm}$

$l_{WT}$ = workpiece pallet length
Protective sleeves for PE 5, PE 5/T, PE 5/L and PE 5/L-T

Use:
▶ Trap guard to clip in the openings in the protective covers over the lifting plungers of the PE 5, PE 5/T, PE 5/L and PE 5/L-T. Refer to 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.

Required accessories:
▶ Protective covers for conveyor unit, see page 4-8

Material:
▶ PA
### Required protective sleeve sets for PE 5, PE 5/T, PE 5/L and PE 5/L-T

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>l_{WT} (mm)</th>
<th>Material number</th>
<th>Material number</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td>1x 3 842 545 965</td>
<td></td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td>1x 3 842 545 965</td>
<td></td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>1x 3 842 545 965</td>
<td></td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td>1x 3 842 545 965</td>
<td>+1x 3 842 545 966</td>
<td>+2x 3 842 545 966</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1x 3 842 545 965</td>
<td>+3x 3 842 545 966</td>
<td>+3x 3 842 545 966</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td>1x 3 842 545 965</td>
<td>+3x 3 842 545 966</td>
<td>+3x 3 842 545 966</td>
</tr>
</tbody>
</table>

- **b** = track width of the positioning unit in the direction of transport
- **l_{WT}** = length of workpiece pallet

---

**Ordering information**

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Use:
- The lateral guide covers are provided on both sides in the vicinity of the PE 5 (see page 8-3), PE 5/T (see page 8-7), PE 5/OC (see page 8-19) and PE 5/OC-T (see page 8-23) positioning unit to increase safety.

Note:
Do not walk on the protective covers.

Material:
- galvanized steel

Ordering information

Covers of lateral guide for positioning units

<table>
<thead>
<tr>
<th>PE 5, PE 5/OC</th>
<th>PE 5/T, PE 5/OC-T</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>b₀ (mm)</td>
<td>b₁ (mm)</td>
<td>3 842 552 662</td>
</tr>
<tr>
<td>455</td>
<td>455</td>
<td>1</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td>1</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td>1</td>
</tr>
<tr>
<td>1,040</td>
<td>1,040</td>
<td>1</td>
</tr>
</tbody>
</table>

b₀ = track width in direction of transport (transverse conveyor)
b₁ = track width in direction of transport (longitudinal conveyor)

Required fastening materials:
T-bolt and flange nut

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 100</td>
</tr>
<tr>
<td>D 100</td>
</tr>
</tbody>
</table>

3 842 540 380 (2017-07), Bosch Rexroth AG
Use:
▶ Safety guard above the lifting plungers for the PE 5/OC and PE 5/OC-T. Refer to the assembly instructions for the installation dimensions.

Note:
Do not walk on the protective covers.

Scope of delivery:
▶ Incl. protective sleeves (A and B) and fastening material

Material:
▶ Cover: aluminum
▶ Protective sleeves: PA

Condition on delivery:
▶ Not assembled
Positioning and orientation | TS 5 4.0  8-33
Protective covers for PE 5/OC and PE 5/OC-T

Ordering information

Necessary protective covers including protective sleeves (A and B) for PE 5/OC and PE 5/OC-T

<table>
<thead>
<tr>
<th>b</th>
<th>l_{WT}</th>
<th>b_L</th>
<th>b_Q</th>
<th>PE 5/OC with VE 5/OC-200, VE 5/OCD-300, VE 5/OCD 301 or VE 5/OCD-1000</th>
<th>PE 5/OC-T with VE 5/OC-200, VE 5/OCD-300, VE 5/OCD 301 or VE 5/OCD-1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>455</td>
<td></td>
<td></td>
<td>3 842 554 557</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td></td>
<td></td>
<td>3 842 554 558</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td></td>
<td></td>
<td>3 842 554 559</td>
<td></td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td></td>
<td></td>
<td>3 842 554 560</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td></td>
<td></td>
<td>3 842 554 561</td>
<td></td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td></td>
<td></td>
<td>3 842 554 562</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td>455</td>
<td></td>
<td></td>
<td></td>
<td>3 842 554 569</td>
</tr>
<tr>
<td>455</td>
<td>650</td>
<td></td>
<td></td>
<td></td>
<td>3 842 554 570</td>
</tr>
<tr>
<td>650</td>
<td>650</td>
<td></td>
<td></td>
<td></td>
<td>3 842 554 571</td>
</tr>
<tr>
<td>650</td>
<td>845</td>
<td></td>
<td></td>
<td></td>
<td>3 842 554 573</td>
</tr>
<tr>
<td>845</td>
<td>845</td>
<td></td>
<td></td>
<td></td>
<td>3 842 554 574</td>
</tr>
<tr>
<td>845</td>
<td>1,040</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b = track width of the positioning unit in the direction of transport
l_{WT} = workpiece pallet length
b_L = track width in direction of transport (longitudinal conveyor)
b_Q = track width in direction of transport (transverse conveyor)
Positioning and orientation

Protective covers for PE 5/OC and PE 5/OC-T
Transportation control

Transportation control

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

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

VE 5/D-301, VE 5/OCD-301 stop gates

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

Clamping holder for sensors

M12 sensors with M12x1 or M8x1 push-in fitting

Accessories, sensor

Accessories, sensor in Open Center

Assembly kit for SH 2/U-H switch bracket
Transportation control

The modular units for transportation control are used to control the flow of the workpiece pallets on 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, see page 9-3, 9-6, 9-9, 9-12
- Stopping workpiece pallets in the transverse conveyor. It is not possible to separate workpiece pallets in the transverse conveyor, see page 9-3, 9-6, 9-9, 9-12
- Querying the position of a workpiece pallet. A suitable clamping holder for sensors is required for this, see page 9-16
- Controlling operation sequences
- Function plans, see page 13-16 ff.

Stop gate

VE 5/... stop gates are used to separate (only possible in longitudinal conveyors) and stop workpiece pallets, e.g. in an automated station. Actuation is performed pneumatically. In a pressure free state, the stop gate is held in the blocking position by a spring and thus contributes significantly to production safety. Stop gates are available with and without shock absorbers.
VE 5/200, VE 5/OC-200 stop gates

Use:
- Stopping one or more accumulating workpiece pallets at the defined workpiece pallet stop surface

Version:
- Pneumatic stop gate. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

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

Recommended accessories:
- 1 sensor, 3 842 549 811 or 3 842 549 814, for position inquiry (engaged, top position/not engaged, bottom position), see page 9-16
- Clamping holder for sensor, see page 9-15

Condition on delivery:
- Not assembled
TS 5 4.0 | Transportation control
VE 5/200, VE 5/OC-200 stop gates

Ordering information

VE 5/200 stop gates

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 998 518</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

VE 5/OC-200 stop gates

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 998 577</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

Permissible impact force per WT

<table>
<thead>
<tr>
<th>m&lt;sub&gt;WT&lt;/sub&gt; (kg)</th>
<th>v&lt;sub&gt;b&lt;/sub&gt; (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>2 ... 9</td>
</tr>
</tbody>
</table>

<sup>1)</sup> Conveyor speed
Dimensions
VE 5/200, VE 5/OC-200 stop gates

A = Stop gate
B = 6 mm pneumatic push-in connector
C = position inquiry VE stop blade up: yes/no
VE 5/D-300, VE 5/OCD-300 stop gates

**Use:**
- Damped stopping of one or more accumulating workpiece pallets at the defined workpiece pallet stop surface

**Version:**
- Pneumatic stop gate with steplessly adjustable damping. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.
- Compressed air connection 5 ... 6 bar
- Pneumatic push-in fitting: 6 mm

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

**Recommended accessories:**
3 sensors, 3 842 549 811 or 3 842 549 814, for position inquiry in respect of
- stop gate position inquiry (engaged, top position), see page 9-16
- Stop gate position inquiry (not engaged, bottom position), see page 9-16
- Damper position inquiry (stop blade retracted: yes/no), see page 9-16
- Clamping holder for sensor, see page 9-15
- Trap guard, see page 9-7

**Condition on delivery:**
- Not assembled
Ordering information

VE 5/D-300 stop gate

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 998 517</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

VE 5/OCD-300 stop gates

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 998 578</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

Permissible impact force per WT

<table>
<thead>
<tr>
<th>(m_{WT}) (kg)</th>
<th>(v_n)(^1) (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 300</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>max. 260</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>max. 160</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

\(^1\) Conveyor speed

Trap guard

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 552 672</td>
</tr>
</tbody>
</table>
Dimensions

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

A = Stop gate
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
VE 5/D-301, VE 5/OCD-301 stop gates

Use:
▶ Damped stopping of one or more accumulating work-piece pallets at the defined workpiece pallet stop surface

Version:
▶ Pneumatic stop gate with steplessly adjustable damping. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.
▶ Compressed air connection 5 ... 6 bar
▶ Pneumatic push-in fitting: 6 mm

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

Recommended accessories:
Sensor 3 842 551 761 for
▶ position inquiry top/bottom on request see page 9-16
▶ Damper position inquiry (stop blade retracted), sensor M8, see page 9-16

Condition on delivery:
▶ Not assembled
VE 5/D-301 stop gate

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>AO</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>1; 2</td>
<td>3 842 998 079</td>
</tr>
</tbody>
</table>

b = track width in direction of transport
AO = 1: Main section (stop gate is 35 mm eccentric)
AO = 2: Transverse section (stop gate is in the center, only applies for transverse section HQ 5)

VE 5/OCD-301 stop gates

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 998 080</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

Permissible impact force per WT

<table>
<thead>
<tr>
<th>m&lt;sub&gt;WT&lt;/sub&gt; (kg)</th>
<th>v&lt;sub&gt;v&lt;/sub&gt; (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. 300</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>max. 260</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>max. 160</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

<sup>1</sup> Conveyor speed
Dimensions
VE 5/D-301, VE 5/OCD-301 stop gates

VE 5/D-301: 3 842 998 079

VE 5/OCD-301: 3 842 998 080

A = Stop gate
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
VE 5/D-1000, VE 5/OCD-1000 stop gates

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

Version:
▶ Pneumatic stop gate. When the pressure is released the stop gate is closed by a spring and the workpiece pallet is stopped.
▶ Compressed air connection 5 ... 6 bar
▶ Pneumatic push-in fitting: 6 mm

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

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

Recommended accessories:
2 or 3 sensors 3 842 549 811 or 3 842 549 814 for
▶ stop gate position inquiry (engaged, top position), see page 9-16
▶ Stop gate position inquiry (not engaged, bottom position), see page 9-16
▶ Damper position inquiry (stop blade retracted: yes/no), see page 9-16
▶ Clamping holder for sensor, see page 9-15
▶ Trap guard, see page 9-13

Condition on delivery:
▶ Not assembled
Ordering information

**VE 5/D-1000 stop gate**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 998 805</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

**VE 5/OCD-1000 stop gates**

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 998 806</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

**Permissible impact force per WT**

<table>
<thead>
<tr>
<th>m&lt;sub&gt;WT&lt;/sub&gt; (kg)</th>
<th>v&lt;sub&gt;v&lt;/sub&gt;&lt;sup&gt;1)&lt;/sup&gt; (m/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>min. 50 max. 1,000</td>
<td>2 ... 9</td>
</tr>
<tr>
<td>min. 50 max. 900</td>
<td>2 ... 12</td>
</tr>
<tr>
<td>min. 50 max. 700</td>
<td>2 ... 18</td>
</tr>
</tbody>
</table>

<sup>1)</sup> Conveyor speed

**Trap guard**

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 552 672</td>
</tr>
</tbody>
</table>
Dimensions
VE 5/D-1000, VE 5/OCD-1000 stop gates

A = Stop gate
B = 6 mm pneumatic push-in connector
C = position inquiry VE stop blade: top/bottom
D = position inquiry VE stop blade, damper retracted: yes/no
Clamping holder for sensors

Use:
- Clamping holder for sensor Ø 12 mm, for screwing onto the stop gate

Material:
- brass, nickel-plated

Clamping holder

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 974</td>
</tr>
</tbody>
</table>
M12 sensors with M12x1 or M8x1 push-in fitting

Use:
- Detection of the position of a workpiece pallet, position inquiry in respect of lift transverse units and positioning units.

Use:
- Detection 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 bracket, see page 9-18
- Assembly kit for switch bracket, see page 9-20
- Clamping holder for sensor, see page 9-15

Version:

<table>
<thead>
<tr>
<th>Size</th>
<th>3 842 549 811&lt;sup&gt;1)&lt;/sup&gt;</th>
<th>3 842 549 813&lt;sup&gt;2)&lt;/sup&gt;</th>
<th>3 842 551 761&lt;sup&gt;1)&lt;/sup&gt;</th>
<th>3 842 549 814&lt;sup&gt;1)&lt;/sup&gt;</th>
<th>3 842 537 995&lt;sup&gt;2)&lt;/sup&gt;</th>
<th>3 842 555 421&lt;sup&gt;2)&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal switching distance $S_n$</td>
<td>M12 x 44 mm</td>
<td>M12 x 44 mm</td>
<td>M12 x 30 mm</td>
<td>M12 x 45 mm</td>
<td>M12 x 45 mm</td>
<td>M12 x 60 mm</td>
</tr>
<tr>
<td>4 mm</td>
<td>8 mm</td>
<td>2 mm</td>
<td>4 mm</td>
<td>7 mm</td>
<td>10 mm</td>
<td></td>
</tr>
<tr>
<td>Switching frequency</td>
<td>2,500 Hz</td>
<td>800 Hz</td>
<td>1,500 Hz</td>
<td>300 Hz</td>
<td>500 Hz</td>
<td>600 Hz</td>
</tr>
<tr>
<td>Operating current</td>
<td>200 mA</td>
<td>200 mA</td>
<td>200 mA</td>
<td>200 mA</td>
<td>200 mA</td>
<td>200 mA</td>
</tr>
<tr>
<td>Housing material</td>
<td>CuZn coated, LCP</td>
<td>CuZn coated, LCP</td>
<td>CuZn coated, LCP</td>
<td>CuZn coated, LCP</td>
<td>CuZn coated, LCP</td>
<td>CuZn coated, LCP</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 ... +70 °C</td>
<td>-25 ... +70 °C</td>
<td>-25 ... +70 °C</td>
<td>-25 ... +70 °C</td>
<td>-25 ... +70 °C</td>
<td>-25 ... +85 °C</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 67</td>
<td>IP 67</td>
<td>IP 68</td>
<td>IP 67</td>
<td>IP 67</td>
<td>IP 68</td>
</tr>
<tr>
<td>Mech. installation</td>
<td>Flush</td>
<td>Not flush</td>
<td>Flush</td>
<td>Flush</td>
<td>Not flush</td>
<td>Not flush</td>
</tr>
<tr>
<td>Plug connection</td>
<td>M8x1</td>
<td>M8x1</td>
<td>M8x1</td>
<td>M12x1</td>
<td>M12x1</td>
<td>M12x1</td>
</tr>
<tr>
<td>Function display</td>
<td>LED</td>
<td>LED</td>
<td>LED</td>
<td>LED</td>
<td>LED</td>
<td>LED</td>
</tr>
<tr>
<td>Switching output</td>
<td>PNP</td>
<td>PNP</td>
<td>PNP</td>
<td>PNP</td>
<td>PNP</td>
<td>PNP</td>
</tr>
<tr>
<td>Switching function</td>
<td>Normally open (NO)</td>
<td>Normally open (NO)</td>
<td>Normally open (NO)</td>
<td>Normally open (NO)</td>
<td>Normally open (NO)</td>
<td>Normally open (NO)</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>10...30 VDC</td>
<td>10...30 VDC</td>
<td>10...30 VDC</td>
<td>10...30 VDC</td>
<td>10...30 VDC</td>
<td>10...30 VDC</td>
</tr>
<tr>
<td>Approvals</td>
<td>CE, UL, CSA</td>
<td>CE, UL, CSA</td>
<td>CE, cULus</td>
<td>CE, UL, CSA</td>
<td>CE, UL, CSA</td>
<td>CE, cULus, EAC</td>
</tr>
</tbody>
</table>

<sup>1)</sup> Not suitable for position inquiry in respect of lift transverse units.

<sup>2)</sup> Not suitable for position inquiry in respect of stop gates.
Ordering information

Circuit diagram M8x1

Sensor M12

<table>
<thead>
<tr>
<th>Plug connection</th>
<th>Length (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8x1</td>
<td>44</td>
<td>3 842 549 811</td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>3 842 549 813</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>3 842 551 761</td>
</tr>
<tr>
<td>M12x1</td>
<td>45</td>
<td>3 842 549 814</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>3 842 537 995</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>3 842 555 421</td>
</tr>
</tbody>
</table>

Ordering information

Circuit diagram M12x1
Accessories, sensor

SH 2/U-H switch bracket

Use:
- Fastening for a M12x1 sensor for workpiece pallet position sensing from below.
- Especially sturdy metal design

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
- M12x1 sensor with $S_n \geq 4$ mm rated sensing range, see p. 9-16

Ordering information

<table>
<thead>
<tr>
<th>SH 2/U-H switch bracket</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 842 537 289</td>
</tr>
</tbody>
</table>

Bosch Rexroth AG, 3 842 540 380 (2017-07)
Dimensions
SH 2/U-H switch bracket

SH 2/U-H: 3 842 537 289
Assembly kit for SH 2/U-H switch bracket

**Use:**
- Holding plate to bring the switch bracket into the correct inquiry position

**Version:**
- Centering lugs for pre-positioning and fast assembly

**Condition on delivery:**
- Not assembled

**Required accessories:**
- SH 2/U-H switch bracket
- M12x1 sensor with $S_n \geq 4$ mm rated sensing range, see p. 9-16

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

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845; 1,040</td>
<td>3 842 545 134</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

**Mounting location:**
- 3 842 545 134: on ST 5/H, ST 5/XH conveyor unit

**Scope of delivery:**
- Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

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

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 132</td>
</tr>
</tbody>
</table>

**Mounting location:**
- on the PE 5 positioning unit and HQ 5 lift transverse unit; not required for $b = 455$ mm (fitted to stop gate without assembly kit)

**Scope of delivery:**
- Incl. fastening material for assembly
Accessories, sensor in Open Center Assembly kit for SH 2/U-H switch bracket

**Use:**
- Holding plate to bring the switch bracket into the correct inquiry position

**Version:**
- Centering lugs for pre-positioning and fast assembly

**Mounting location:**
- on the section profile

**Scope of delivery:**
- Incl. fastening material for assembly

**Condition on delivery:**
- Not assembled

**Required accessories:**
- SH 2/U-H switch bracket
- M12x1 sensor with $S_n \geq 4$ mm rated sensing range, see p. 9-16

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

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845</td>
<td>3 842 545 533</td>
</tr>
</tbody>
</table>

$b = \text{track width in direction of transport}$
Accessories, sensor in Open Center Assembly kit for SH 2/U-H switch bracket
Identification systems

Identification systems

Assembly kits for ID 40/ID 200 identification systems in longitudinal conveyors

Assembly kits for ID 40/ID 200 identification systems in Open Center sections

Kits for installation in WT 5 workpiece pallets
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 the RFID systems catalog.

**Required accessories:**
▶ Communication module ID 200/C..., see catalog for RFID systems
▶ Antenna ID 200/A..., see catalog for RFID systems
▶ Mobile data tag MDT...H, see catalog for RFID systems
  For ID 200, only MDT 3/2K-H (3 842 410 102) possible
▶ Cable, see catalog for RFID systems
▶ Assembly kit for identification system read/write heads, see page 10-3
Assembly kits for ID 40/ID 200 identification systems in longitudinal conveyors

Use:
▷ 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

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

Condition on delivery:
▷ Not assembled

Required accessories:
▷ Communication module ID 200/C..., see catalog for RFID systems
▷ Antenna ID 200/A..., see catalog for RFID systems
▷ Mobile data tag MDT...H, see catalog for RFID systems
  For ID 200, only MDT 3/2K-H (3 842 410 102) possible
▷ Cable, see catalog for RFID systems
Ordering information

Assembly kit for ID 40 identification system

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>3 842 545 140</td>
</tr>
<tr>
<td>650; 845</td>
<td>3 842 545 142</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

Scope of delivery:
- 3 842 545 140: Incl. fastening material for assembly
- 3 842 545 142: Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

Ordering information

Assembly kit for ID 200 identification system, longitudinal conveyor

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845</td>
<td>3 842 545 144</td>
</tr>
</tbody>
</table>

b = track width in direction of transport

Scope of delivery:
- Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.
Assembly kits for ID 40/ID 200 identification systems in Open Center sections

Use:
- 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

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

Condition on delivery:
- Not assembled

Required accessories:
- For relevant read/write head, see RFID systems catalog, page 10-2
Assembly kit for ID 40 identification system

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455</td>
<td>3 842 545 535</td>
</tr>
<tr>
<td>650; 845</td>
<td>3 842 545 537</td>
</tr>
</tbody>
</table>

Scope of delivery:
- 3 842 545 535: Incl. fastening material for assembly
- 3 842 545 537: Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.

Assembly kit for ID 200 identification system, longitudinal conveyor

<table>
<thead>
<tr>
<th>b (mm)</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>455; 650; 845</td>
<td>3 842 545 539</td>
</tr>
</tbody>
</table>

Scope of delivery:
- 3 842 545 539: Incl. fastening material for assembly and a 45x90 bracket for reinforcement as needed.
Kits for installation in WT 5 workpiece pallets

Use:
- Kits for installing the different data tags (ID 40/ID 200 identification systems) in the WT 5 workpiece pallet

Mounting location:
- On WT 5 workpiece pallet

Scope of delivery:
- Incl. fastening material for mounting the kit.

Required accessories:
- For relevant data tag, see RFID systems catalog, page 10-2

Condition on delivery:
- Not assembled
Kit for ID 40 identification systems

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 448</td>
</tr>
</tbody>
</table>

Kit for ID 200 identification systems

<table>
<thead>
<tr>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 842 545 450</td>
</tr>
</tbody>
</table>

Ordering information

Material number

3 842 545 448
<table>
<thead>
<tr>
<th>Tools</th>
<th>TS 5 4.0</th>
<th>11-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chain breaker</td>
<td>11-2</td>
</tr>
<tr>
<td></td>
<td>Spring tensioner</td>
<td>11-3</td>
</tr>
</tbody>
</table>
Chain breaker

**Use:**
- To gently remove the covers (on the king shaft and passive side).

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chain breaker</td>
<td>3 842 545 836</td>
</tr>
</tbody>
</table>
Spring tensioner

Use:
▶ 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.

<table>
<thead>
<tr>
<th>Product designation</th>
<th>Material number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring tensioner</td>
<td>3 842 545 871</td>
</tr>
</tbody>
</table>
Chain breaker
MTpro – planning software
MTpro – planning software

MTpro is a software program used for planning assembly systems. It assists you from selection to configuration and ordering of the Rexroth products. The program offers the following functions and full content in seven languages (en/de/fr/es/it/ja/zh):

**Layout Designer for planning and designing complete frames and conveyor systems**
- Simple design using the drag & drop and snap functions without a CAD system
- Design logic for automatic configuration and assembly adaptation
- Automatic order list generation of all small parts and accessories
- Export of 3D volume models
- Library for saving and reusing your own modules and layouts

**Product information**
- Technical data
- Catalog data sheets
- Assembly instructions
- Spare parts lists and drawings

**Configuration and calculation**
- Product configuration and generation of ordering information
- Issuing of order lists in user-specific presentations
- Direct connection to Rexroth eShop
- Quick & Easy profile configuration and drafting
- Other design and calculation programs

**CAD library**
- Configurable CAD models
- Memories in standard formats
- Direct integration into all common CAD systems

**System requirements**
- Windows from version 7 onwards
- DVD-ROM drive
- At least 6 GB of free disk space hard disk space
- Adobe Reader from version 10 onwards
- Internet access for layout designer licensing and automatic updates
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 sensors, pneumatic valves, and electrical and pneumatic installation material that are necessary for operation are usually not included in the scope of delivery. These parts are only preassembled if they guarantee special functional safety or if installing them at a later point would require too much effort. Please note the references for the required flow control valves and check valves in the pneumatic switching plan (listed in the assembly and operation instructions) must be followed.

Note

Examples

Installation references, pneumatic switching plans and typical function processes are described in the catalogs and assembly instructions. These must be followed when setting up and starting the initial operation of the system.

CE identification, responsibility

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

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 alloys,
- Polyurethane, polyamide, in some cases with additives to improve electrical and mechanical characteristics, and UHMW polyethylene,
- NBR or Viton for elastic seals.

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 prolonged contact with highly reactive acidic or alkaline materials.

Contamination

Wear may increase dramatically if the system is contaminated, particularly with abrasive media from the surrounding area such as sand and silicates from construction, but also due to processes running on the transfer system (e.g. welding beads, pumice dust, glass shards, shavings, or lost parts, etc.). In such cases, maintenance intervals must be substantially shortened. Such cases require special attention when planning the system and adjusting the maintenance intervals.

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.

**Environmental sustainability, recycling**

The materials used are environmentally friendly. They can be recycled or reused (components may have to be processed and replaced). Recyclability is ensured by the selection of materials and the ability to take the components apart.

**Pneumatic connection data**

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

**Wear**

Wear is caused by the basic principle of this system and cannot be avoided. Design measures and appropriate materials help ensure functional safety over the life of the product. However, wear depends on the operating, maintenance, and ambient conditions of the system and the location (resistance, contamination).

**Measures to reduce wear**

The following measures reduce wear and the friction caused by it:

- Switch off conveyor sections when the system is not running, e.g. during breaks, overnight, on the weekend.
- 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.
- Very 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.

Loading the workpiece pallet, combination of empty and loaded workpiece pallet

When setting up and testing the modular units, the workpieces pallets should not all have the same weight on the conveyor sections, i.e. full and empty pallets should all come through the circuit. Extreme differences in weight may require special measures to avoid functional disruptions. This applies, e.g. to the permitted accumulation length before stop gates, for the function of dampers and 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 light 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 line can cause the conveyor medium to fail and motors and gears to fail prematurely. When overloading of 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 damping periods or shock absorbers before the next movement.
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 ≤ 1,000 m above mean sea level
- Overloading the drive reduces its service life.
  10% overloading: ≈ 75% service life
  20% overloading: ≈ 50% service life

In the case of other operating conditions, the achievable values may differ from those stated.
In the case of extreme operating conditions, please consult your distribution partner.
Motor data

**Electrical connection requirements:**
Connection to a 3-phase, 5-wire system (L1, L2, L3, N, PE), a connection plan is included in the terminal box. All motors are equipped with a thermal contact*, which has to be connected to an overload switch-off.

*) Bi-metal thermal contact, triggered at 150 °C ±5 °C
Resistance thermal contact provided on request.

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

All of the motors comply with protection type IP 55.

Motor connection with plug (AT = S) and 3A metal industrial plug-in connector for motor types without Index b, e.g. 714

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

<table>
<thead>
<tr>
<th>Motor data (GM = 1)</th>
<th>400 V/50 Hz</th>
<th>400 V/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$v_n$ (m/min)</td>
<td>$v_1$ (m/min)</td>
</tr>
<tr>
<td>AS 5/XH</td>
<td>2</td>
<td>2.10</td>
</tr>
<tr>
<td>AS 5/H</td>
<td>4</td>
<td>4.21</td>
</tr>
<tr>
<td>AS 5/OC</td>
<td>6</td>
<td>5.39</td>
</tr>
<tr>
<td>HQ 5 (b = 455 mm)</td>
<td>9</td>
<td>8.80</td>
</tr>
<tr>
<td>HQ 5 (b = 650/845 mm)</td>
<td>12</td>
<td>11.06</td>
</tr>
<tr>
<td>HQ 5 (b = 650/845 mm)</td>
<td>15</td>
<td>13.55</td>
</tr>
<tr>
<td>HQ 5 (b = 650/845 mm)</td>
<td>18</td>
<td>16.59</td>
</tr>
<tr>
<td>HQ 5 (b = 455 mm)</td>
<td>12</td>
<td>12.02</td>
</tr>
</tbody>
</table>

1) Transport speeds at other voltages/frequencies provided on request.
2) $n_1$ = motor speed
3) $n_2$ = gear output speed
4) Motor output

Country applicability

<table>
<thead>
<tr>
<th>Region</th>
<th>Europe</th>
<th>Switzerland</th>
<th>USA</th>
<th>Canada</th>
<th>Brazil</th>
<th>Australia</th>
<th>New Zealand</th>
<th>South Korea</th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line voltage (3x....)</td>
<td>400 V</td>
<td>400 V</td>
<td>480 V</td>
<td>480 V</td>
<td>220 V</td>
<td>400 V</td>
<td>400 V</td>
<td>220 V</td>
<td>380 V</td>
<td>415 V</td>
</tr>
<tr>
<td>±10%</td>
<td>±10%</td>
<td>±10%</td>
<td>±10%</td>
<td>±10%</td>
<td>±5%</td>
<td>±5%</td>
<td>±5%</td>
<td>±5%</td>
<td>±5%</td>
<td>±5%</td>
</tr>
<tr>
<td>Line frequency</td>
<td>50 Hz</td>
<td>50 Hz</td>
<td>60 Hz</td>
<td>60 Hz</td>
<td>60 Hz</td>
<td>50 Hz</td>
<td>50 Hz</td>
<td>60 Hz</td>
<td>50 Hz</td>
<td>50 Hz</td>
</tr>
</tbody>
</table>

1) ±460 V / 60 Hz
2) ±400 V / 50 Hz
3) ±400 V / 60 Hz
Motor data

Performance data

Note: The data is typical values. We reserve the right to make changes. See motor type plate for official data. Please note the country assignment.

<table>
<thead>
<tr>
<th>Voltage class</th>
<th>A</th>
<th>A</th>
<th>B</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit</td>
<td>∆</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Voltage U at f = 50 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 V ±10%</td>
<td>400 V ±10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 V ±10%</td>
<td>400 V +10...-12%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage U at f = 60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>220 V ±10%</td>
<td>400 V ±10%</td>
<td>460 V ±10%</td>
<td>575 V ±10%</td>
<td></td>
</tr>
<tr>
<td>220 V ±10%</td>
<td>400 V ±10%</td>
<td>460 V +10...-12%</td>
<td>575 V ±10%</td>
<td></td>
</tr>
</tbody>
</table>

Motor type IE3 I

<table>
<thead>
<tr>
<th>Motor type</th>
<th>I_n (A)</th>
<th>I_n (A)</th>
<th>I_n (A)</th>
<th>I_n (A)</th>
<th>cos ϕ (50 Hz)</th>
<th>Power output for</th>
</tr>
</thead>
<tbody>
<tr>
<td>524 x</td>
<td>0.65</td>
<td>0.35</td>
<td>0.32</td>
<td>0.24</td>
<td>0.6</td>
<td>0.09</td>
</tr>
<tr>
<td>614b –</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.49</td>
<td>–</td>
<td>0.56</td>
</tr>
<tr>
<td>624 x</td>
<td>1.15</td>
<td>0.65</td>
<td>0.55</td>
<td>0.45</td>
<td>0.66</td>
<td>0.18</td>
</tr>
<tr>
<td>634 x</td>
<td>1.65</td>
<td>0.9</td>
<td>0.85</td>
<td>0.65</td>
<td>0.6</td>
<td>0.25</td>
</tr>
<tr>
<td>644b –</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.75</td>
<td>0.6</td>
<td>0.25</td>
</tr>
<tr>
<td>714b –</td>
<td>1.75</td>
<td>1</td>
<td>0.8</td>
<td>–</td>
<td>0.64</td>
<td>0.25</td>
</tr>
<tr>
<td>716 –</td>
<td>1.45</td>
<td>0.85</td>
<td>0.6</td>
<td>0.55</td>
<td>0.66 ... 0.68</td>
<td>0.18</td>
</tr>
<tr>
<td>716 x</td>
<td>1.3</td>
<td>0.75</td>
<td>0.6</td>
<td>0.62</td>
<td>0.68</td>
<td>0.18</td>
</tr>
<tr>
<td>734 –</td>
<td>2.3</td>
<td>1.35</td>
<td>0.95</td>
<td>0.95</td>
<td>0.72 ... 0.77</td>
<td>0.37</td>
</tr>
<tr>
<td>734 x</td>
<td>1.9</td>
<td>1.05</td>
<td>0.95</td>
<td>0.72</td>
<td>0.74</td>
<td>0.37</td>
</tr>
<tr>
<td>734 a</td>
<td>2.5</td>
<td>1.4</td>
<td>1.3</td>
<td>1</td>
<td>0.66</td>
<td>0.45</td>
</tr>
<tr>
<td>738b –</td>
<td>1.4</td>
<td>0.8</td>
<td>0.55</td>
<td>0.5</td>
<td>0.60 ... 0.63</td>
<td>0.12</td>
</tr>
<tr>
<td>744b –</td>
<td>–</td>
<td>–</td>
<td>1.4</td>
<td>–</td>
<td>0.77</td>
<td>0.55</td>
</tr>
<tr>
<td>814b –</td>
<td>3</td>
<td>1.75</td>
<td>–</td>
<td>1.27</td>
<td>0.68 ... 0.69</td>
<td>0.55</td>
</tr>
<tr>
<td>814 x</td>
<td>3.1</td>
<td>1.7</td>
<td>1.45</td>
<td>1.1</td>
<td>0.69</td>
<td>0.55</td>
</tr>
<tr>
<td>824 x</td>
<td>4.1</td>
<td>2.25</td>
<td>2</td>
<td>1.6</td>
<td>0.66</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Suitable for continuous operation, start-stop operation with an operating time of up to 70% and frequency converter operation.

Certification for the motor, cable and plug components:

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

3-phase motors

<table>
<thead>
<tr>
<th>T_u (°C)</th>
<th>P_r / P_n</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 40</td>
<td>1^1</td>
</tr>
<tr>
<td>45</td>
<td>0.95</td>
</tr>
<tr>
<td>50</td>
<td>0.90</td>
</tr>
<tr>
<td>55</td>
<td>0.85</td>
</tr>
<tr>
<td>60</td>
<td>0.8</td>
</tr>
</tbody>
</table>

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

Rated motor power

The ambient operating temperature T_u influences the rated power P_n of the gear motors.
Motor connection

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

1) Connection cable side
2) Motor side

The plug connection consists of UL components.

Connection list

<table>
<thead>
<tr>
<th>Connection terminals, motor 3~</th>
<th>Pin no.</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>1</td>
<td>L1</td>
</tr>
<tr>
<td>V1</td>
<td>2</td>
<td>L2</td>
</tr>
<tr>
<td>W1</td>
<td>3</td>
<td>L3</td>
</tr>
<tr>
<td>TW1</td>
<td>4</td>
<td>Th1</td>
</tr>
<tr>
<td>TW2</td>
<td>5</td>
<td>Th2</td>
</tr>
<tr>
<td>PE</td>
<td></td>
<td>PE</td>
</tr>
</tbody>
</table>

Motor side

Connection cable side
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. With rotating field frequencies of > 50 Hz, higher speeds can also be achieved with corresponding performance losses. In the 20 ... 50 Hz range, the full torque is available.

---

### Drive range of the motors with frequency converters (FU)

<table>
<thead>
<tr>
<th>F (Hz)</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mₜₜ(%)</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>100</td>
<td>80</td>
<td>85</td>
<td>90</td>
<td>100</td>
<td>95</td>
<td>90</td>
</tr>
</tbody>
</table>

#### Base speed of motor (m/min) at 50 Hz

<table>
<thead>
<tr>
<th>Base speed of motor (m/min)</th>
<th>Min¹)</th>
<th>Max²)</th>
<th>Max (m/min) at max. 80% torque</th>
<th>Max (m/min) at max. 80% torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>5¹)</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>10²)</td>
<td>4</td>
<td>12</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>15</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>16</td>
<td>6</td>
<td>19</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>25</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>27</td>
<td>9</td>
<td>32</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>33</td>
<td>11</td>
<td>39</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>40</td>
<td>13</td>
<td>48</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>50</td>
<td>16</td>
<td>60</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

¹) Min corresponds to approx. 16 Hz supply frequency
²) Max corresponds to approx. 60 Hz supply frequency
³) At 460 V/60 Hz max (m/min) 20% higher
**Frequency converter (FU) accessories**

In order to operate a drive with a frequency converter (FU), the user needs to work out the minimum wiring for the internal and external voltage supply (see terminal assignment plan left).
Ordering parameters for SEW motors

The following ordering information is required if using gear motors from SEW-Eurodrive GmbH & Co, Bruchsal:
- Motor type
- Ratio
- Installation position
- Position of drive output
- Position of terminal box
- Cable entry (Fig. 4)

SEW motors motor data

<table>
<thead>
<tr>
<th>vₙ (m/min)</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/50 Hz</th>
<th>Type</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/60 Hz</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2.07 122.94</td>
<td>1,320</td>
<td>11</td>
<td>91</td>
<td>180</td>
<td>DR63M4</td>
<td></td>
<td>2.07 144.4</td>
<td>1,620</td>
<td>11</td>
<td>92</td>
<td>180</td>
<td>DR63M4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4.14 55.93</td>
<td>1,300</td>
<td>22</td>
<td>81</td>
<td>250</td>
<td>DR63L4</td>
<td></td>
<td>4.14 71.44</td>
<td>1,600</td>
<td>22</td>
<td>84</td>
<td>250</td>
<td>DR63L4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6.03 43.68</td>
<td>1,380</td>
<td>32</td>
<td>81</td>
<td>370</td>
<td>DRS71S4</td>
<td></td>
<td>6.03 53.83</td>
<td>1,700</td>
<td>32</td>
<td>80</td>
<td>370</td>
<td>DRS71S4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9.04 28.76</td>
<td>1,380</td>
<td>48</td>
<td>75</td>
<td>370</td>
<td>DRS71S4</td>
<td></td>
<td>9.04 35.1</td>
<td>1,700</td>
<td>48</td>
<td>75</td>
<td>370</td>
<td>DRS71S4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11.49 22.5</td>
<td>1,380</td>
<td>61</td>
<td>73</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
<td>11.12 28.76</td>
<td>1,690</td>
<td>59</td>
<td>75</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>14.32 18.34</td>
<td>1,380</td>
<td>76</td>
<td>52</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
<td>14.13 22.5</td>
<td>1,690</td>
<td>75</td>
<td>73</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>19.41 13.39</td>
<td>1,380</td>
<td>103</td>
<td>49</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
<td>17.53 18.24</td>
<td>1,690</td>
<td>93</td>
<td>52</td>
<td>550</td>
<td>DRS71M4</td>
<td></td>
</tr>
</tbody>
</table>

2 to 7⁽⁷⁾ 1.5-7.53 35.1 280-1,400 8.0-40 78 370 DRS71S4MM03 1.5-7.53 35.1 280-1,400 8.0-40 78 370 DRS71S4MM03

7 to 18⁽⁷⁾ 3.95-19.79 13.39 280-1,400 21-105 49 550 DRS71M4MM05 3.95-19.79 13.39 280-1,400 21-105 49 550 DRS71M4MM05

Motor data SEW motors for HQ 5: b = 455

<table>
<thead>
<tr>
<th>vₙ (m/min)</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>Mₐ⁽⁴⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/50 Hz</th>
<th>Type</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>Mₐ⁽⁴⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/60 Hz</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6.09 27.50</td>
<td>1,300</td>
<td>47</td>
<td>12.0</td>
<td>90</td>
<td>DT56M4</td>
<td>6.34 32.50</td>
<td>1,600</td>
<td>49</td>
<td>12.0</td>
<td>90</td>
<td>DT56M4</td>
<td>6.34 32.50</td>
<td>1,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>8.59 19.50</td>
<td>1,300</td>
<td>67</td>
<td>9.4</td>
<td>90</td>
<td>DT56M4</td>
<td>8.41 24.50</td>
<td>1,600</td>
<td>65</td>
<td>9.4</td>
<td>90</td>
<td>DT56M4</td>
<td>8.41 24.50</td>
<td>1,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11.69 14.33</td>
<td>1,300</td>
<td>91</td>
<td>7.6</td>
<td>90</td>
<td>DT56M4</td>
<td>12.49 16.50</td>
<td>1,600</td>
<td>97</td>
<td>7.6</td>
<td>90</td>
<td>DT56M4</td>
<td>12.49 16.50</td>
<td>1,600</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Motor data SEW motors for HQ 5: b = 650/845

<table>
<thead>
<tr>
<th>vₙ (m/min)</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>Mₐ⁽⁴⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/50 Hz</th>
<th>Type</th>
<th>v⁽¹⁾ (m/min)</th>
<th>i (rpm)</th>
<th>n₁⁽²⁾ (rpm)</th>
<th>n₂⁽³⁾ (Nm)</th>
<th>Mₐ⁽⁴⁾ (Nm)</th>
<th>P⁽⁵⁾ (W)</th>
<th>400 V/60 Hz</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6.18 27.50</td>
<td>1,320</td>
<td>48</td>
<td>24.0</td>
<td>180</td>
<td>DR63M4</td>
<td>6.42 32.50</td>
<td>1,620</td>
<td>50</td>
<td>24.0</td>
<td>180</td>
<td>DR63M4</td>
<td>6.42 32.50</td>
<td>1,620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>8.72 19.50</td>
<td>1,320</td>
<td>68</td>
<td>19.0</td>
<td>180</td>
<td>DR63M4</td>
<td>8.52 24.50</td>
<td>1,620</td>
<td>66</td>
<td>19.0</td>
<td>180</td>
<td>DR63M4</td>
<td>8.52 24.50</td>
<td>1,620</td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>11.86 14.33</td>
<td>1,320</td>
<td>92</td>
<td>15.0</td>
<td>180</td>
<td>DR63M4</td>
<td>12.49 16.50</td>
<td>1,600</td>
<td>97</td>
<td>15.0</td>
<td>250</td>
<td>DR63L4</td>
<td>12.49 16.50</td>
<td>1,600</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹⁾ Transport speeds at other voltages/frequencies provided on request.
²⁾ Electronically controlled by a frequency converter (FU).
³⁾ n₁ = motor speed
⁴⁾ n₂ = gear output speed
⁵⁾ Motor output
 الفقرות לספרון

1)  
2)  
3)  
4)  
5)  

AS 5/XH, AS 5/H technical data:
Max. torque limit: 45 Nm (toothed belt) limit
Toothed belt drive gear ratio: 1:1
Flange ø: 120 mm
Drive shaft: SW27 on shaft ø 20
Conveyor roller ø: 60 mm

1)  
2)  
3)  
4)  
5)  

www.seweurodrive.com
### Motor mounting orientation, terminal box, cable entry

<table>
<thead>
<tr>
<th>Motor mounting</th>
<th>Installation position</th>
<th>Drive output</th>
<th>Terminal box</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>M2 (M1)</td>
<td>B</td>
<td>0°</td>
</tr>
<tr>
<td>L</td>
<td>M2 (M1)</td>
<td>A</td>
<td>180°</td>
</tr>
</tbody>
</table>

#### Position of terminal box

**Fig. 1**

![Fig. 1](image1)

**Fig. 2**

![Fig. 2](image2)

**Fig. 3**

![Fig. 3](image3)

**Fig. 4**

![Fig. 4](image4)
# Conversion table for metric/imperial dimensions

## Technical data | TS 5 4.0

### Conversion table for metric/imperial dimensions

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Multiply</th>
<th>by</th>
<th>to get:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>millimeters (mm)</td>
<td>0.03937</td>
<td>inches</td>
</tr>
<tr>
<td></td>
<td>inches</td>
<td>25.4</td>
<td>millimeters (mm)</td>
</tr>
<tr>
<td></td>
<td>kilometers (km)</td>
<td>0.6214</td>
<td>miles</td>
</tr>
<tr>
<td></td>
<td>miles</td>
<td>1.6093</td>
<td>kilometers (km)</td>
</tr>
<tr>
<td>Area</td>
<td>millimeters² (mm²)</td>
<td>0.00155</td>
<td>inches²</td>
</tr>
<tr>
<td></td>
<td>inches²</td>
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### Metric Tap/Drill Specifications

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<th>Tap</th>
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<td>M4 × 0.7</td>
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<tr>
<td>M5 × 0.8</td>
<td>4.2 mm</td>
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<tr>
<td>M6 × 1</td>
<td>5.0 mm</td>
</tr>
<tr>
<td>M8 × 1.25</td>
<td>6.8 mm</td>
</tr>
<tr>
<td>M12 × 1.75</td>
<td>10.2 mm</td>
</tr>
<tr>
<td>M16 × 2</td>
<td>14.0 mm</td>
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</table>

### Temperature

#### Degrees Celsius

\[ 5 \times (\text{degrees Fahrenheit} - 32) \]

#### Degrees Fahrenheit

\[ 9 \times (\text{degrees Celsius}) + 32 \]
Function plans

On the following pages, you can find proven fundamental function plans for control tasks in transfer systems.

Contrary to DIN IEC 61131-3, qualifiers are used in the action blocks, which are explained in the table below.

<table>
<thead>
<tr>
<th>Action block</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>S</td>
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<td>NS</td>
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<td>S</td>
<td>Set</td>
</tr>
<tr>
<td>R</td>
<td>Reset</td>
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<tr>
<td>NS T3 D</td>
<td>Non-storing triggering of a time function (with cycle time T). After it has been concluded, a switch function is triggered.</td>
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</table>

Simple VE 5 stop gates are used to stop workpiece pallets. The position of the workpiece pallets is queried with separate sensors.

The function plans are simplified accordingly if using stop gates with integrated sensors and internal switching logic.

General abbreviations

- WT = Workpiece pallet
- VE = Stop gate
- S... = Signaling device
- Y... = Valve
- Z... = Cylinder
- LT = Longitudinal conveyor (main section)
- QT = Transverse conveyor (adjacent section)
- HQ = Lift transverse unit
- DA = Damper
- 1 = Start pulse after end of start-up
- 2 = Release cyclic travel
Function plans

Curve CU

S2 = WT after VE
S3 = WT after CU
Y1 = Open VE (Z1)
Function plans

 DI diverter

S1 = WT at VE (Z1)
S3 = WT behind main section diverter
S4 = WT behind secondary section diverter
S5 = Diverter open
S6 = Diverter closed
Y2 = Diverter (Z2)
Y1 = Stop gate (Z1)
A1 = Identification system with straight-ahead signal
Function plans

### JU junction

S1 = WT at VE (Z1)

S3 = WT at VE (Z2)

Y1 = Adjacent section VE (Z1)

Y2 = VE main section (Z2)

P10 = Priority main section
Function plans

HQ lift transverse unit (stop gate, infeeding)

T8 = Delaying time 100...200 ms
S3 = Lift end position at bottom
S4 = Lift end position at top
S6 = WT before VE (Z4)
S8 = WT on HQ
S9 = Enable main section 2
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 = Priority main section
Function plans

HQ lift transverse unit (separating, outfeeding)

T8 = Delaying time 100...200 ms
S4 = Lift end position at bottom
S7 = Lift end position at top
S1 = WT before VE (Z1)
S3 = WT on HQ
S5 = Enable main section
S6 = WT after stop gate (Z3)

Y2 = HQ lift cylinder (Z2)
Y1 = Main section VE (Z1)
Y3 = VE main section (Z3)
M1 = HQ motor
A1 = Identification system with straight ahead signal
**Function plans**

**PE positioning unit**

S1 = WT before VE  
S2 = WT arrival  
S3 = End position of lift bottom  
S4 = End position of lift top  
S5 = WT after VE  
Y1 = Open VE (Z1)  
Y2 = WT lift (Z2)  
Y3 = Open VE (Z3)  
A1 = Start of processing  
A2 = End of processing
Function plans

Three-way diverter

S5 = Diverter closed
S6 = Diverter open
S7 = Top
S8 = Bottom
S9 = Top
S10 = Bottom
A1/A2 = 0 = branch
1 = straight on

A3 = 0 = right
1 = left

Y1, Y5, Y6 = Stop gate (Z1, Z5, Z6)
Y2.1 = Open
Y2.2 = Closed
Y3.1 = Top
Y3.2 = Bottom
Y4.1 = Top
Y4.2 = Bottom

M1 = 0 = right
1 = left
M2 = 0 = bottom
1 = top
S5 = Diverter closed
S6 = Diverter open
S7 = Top
S8 = Bottom
S9 = Top
S10 = Bottom
A1/A2 = 0 = branch
1 = straight on
A3 = 0 = right
1 = left
Y1, Y5, Y6 = Stop gate (Z1, Z5, Z6)
Y2.1 = Open
Y2.2 = Closed
Y3.1 = Top
Y3.2 = Bottom
Y4.1 = Top
Y4.2 = Bottom
M1 = 0 = right
1 = left
M2 = 0 = bottom
1 = top
* Optional kit
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Bosch Rexroth AG
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The data specified above only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.