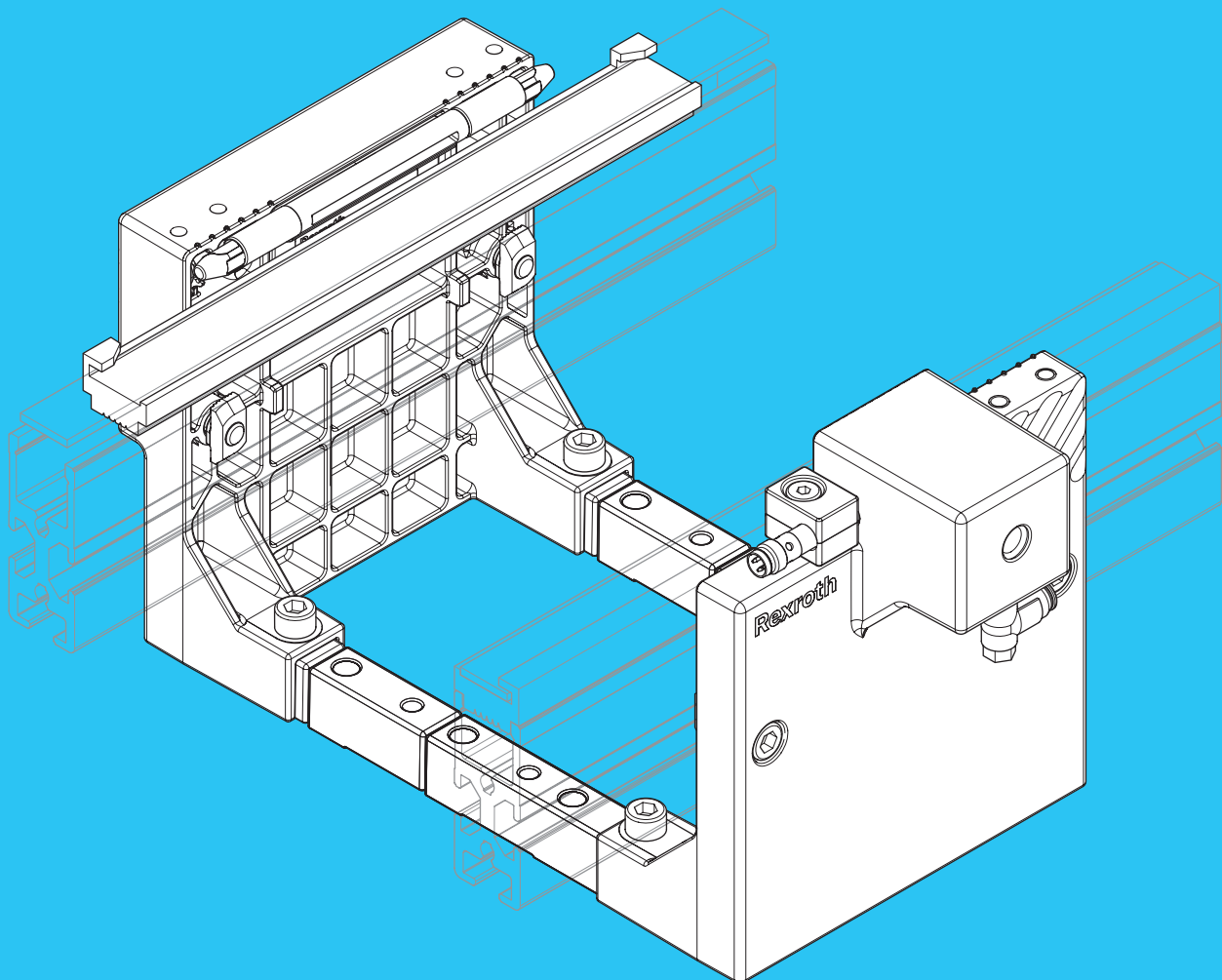


PE 1/P

Positioning unit



The information in this manual is for product description purposes only. Any information in this manual on how to use the product only constitute examples and recommendations. Catalog information is not binding. The information given does not exempt the user from the obligation of own judgment and verification. Our products are subject to natural wear and aging.

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An example configuration is shown on the title page. The delivered product may thus vary from the illustration.

The original assembly instructions are in German.

- DE Die vorliegende Montageanleitung ist in den hier angegebenen Sprachen verfügbar. Weitere Sprachen auf Anfrage. Als gedruckte Version oder als PDF-Datei zum Download aus dem Medienverzeichnis:
www.boschrexroth.com/mediaverzeichnis
Geben Sie in die Suchmaske (oben rechts, unter "**Suche**") **3 842 564 632** ein, dann klicken Sie auf "**►Suche**".
- EN The present assembly instructions are available in the languages shown here. Available in further languages upon request. As a printed version or as a PDF file for download from the Media Directory:
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In the search mask (upper right, at "**Search**"), enter **3 842 567 439** and then click on "**►Search**".
- FR Les présentes instructions de montage sont disponibles dans les langues spécifiées ici. Autres langues sur demande. Téléchargeables en version imprimée ou au format PDF depuis la médiathèque :
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- IT Le presenti istruzioni di montaggio sono disponibili nelle lingue qui indicate. Altre lingue a richiesta. Possono essere scaricate come versione stampata o file PDF dalla Media Directory:
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Insira a máscara de pesquisa (parte superior direita, em "**Search**") **3 842 567 443** e clique em "**►Search**".

3 842 564 632	print	media	Positioniereinheit PE 1/P	DE	Deutsch
3 842 567 439	print	media	Positioning unit PE 1/P	EN	English
3 842 567 440	print	media	Unité de positionnement PE 1/P	FR	Français
3 842 567 441	print	media	Unità di posizionamento PE 1/P	IT	Italiano
3 842 567 442	print	media	Unidad de posicionamiento PE 1/P	ES	Español
3 842 567 443	print	media	Unidade de posicionamento PE 1/P	PT	Português

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1 About this documentation

1.1 Validity of the documentation

This documentation applies to the following products:

- 3 842 998 963, PE 1/P positioning unit

This documentation is intended for fitters, operators, service engineers and system owners.

This documentation contains important information relating to the safe and proper assembly, transportation, commissioning, operation, use, maintenance and disassembly of the product, and on how to rectify simple faults yourself.

- ▶ Read this documentation in full and in particular section 2 "Safety instructions" and section 3 "General notes on property and product damage" before working with the belt section.

1.2 Required and supplementary documentation




- ▶ Only commission the product if the documentation marked with the book symbol  is available and you have understood and followed the instructions in it.

Table 1: Required and supplementary documentation

Title	Document number	Document type
 Employee safety training ¹⁾	3 842 527 147	
 TS 1 switch bracket SH 1/U, SH 1/S ¹⁾	3842539961	
MTpro ²⁾	3842539057	Spare parts list

¹⁾ Download at: www.boschrexroth.com/mediadirectory

²⁾ Download at: www.boschrexroth.com/mtpro

1.3 Presentation of information

Standardized safety instructions, symbols, terms and abbreviations are used so that you can use this documentation to work quickly and safely with your product. These are explained in the following sections to help you understand them better.

1.3.1 Safety instructions

This document includes safety instructions in section 2.6 "Product-specific safety instructions" and section 3 "General notes on property and product damage" as well as before a sequence of actions or before an instruction whenever there is a risk of injury or damage to property.




Be sure to observe all safety precautions.

Safety instructions are set out as follows:

 SIGNAL WORD
<p>Type and source of danger</p> <p>Consequences of non-compliance</p> <ul style="list-style-type: none"> ▶ Measures to prevent danger ▶ ...

- **Warning sign:** points out the danger
- **Signal word:** Indicates the severity of the danger
- **Type and source of danger:** Indicates the type and source of danger
- **Consequences:** Describes the consequences of non-compliance
- **Prevention:** States how the danger can be avoided


Table 2: Types of risk according to ANSI Z535.6-2006

Warning sign, signal word	Meaning
 DANGER	Indicates a hazardous situation that will result in serious injury or death if not avoided.
 WARNING	Indicates a hazardous situation that may result in serious injury or death if not avoided.
 CAUTION	Indicates a hazardous situation that may result in minor to moderate injury if not avoided.
NOTICE	Property damage: The product or the surrounding area could get damaged.

1.3.2 Symbols

The following symbols indicate important information that is not safety-relevant but increases the comprehensibility of the documentation.

Table 3: Meaning of the symbols

Symbol	Meaning
	If this information is not observed, the product cannot be used and/or operated as designed.
▶	Single, independent action
1. 2. 3.	Numbered steps: The numbers indicate that the action steps are subsequent.

1.3.3 Designations

This document uses the following designations:

Table 4: Designations

Designation	Meaning
PE 1/P	Positioning unit from the Rexroth TS 1 transfer system
WT 1	Workpiece pallet from the Rexroth TS 1 transfer system
ST 1	Section from the Rexroth TS 1 transfer system, consisting of: Section profile, cross connector, belt guide profile
SP 1	Section profile from the Rexroth TS 1 transfer system
QV 1	Cross connector from the Rexroth TS 1 transfer system
GP 1/...	Belt guide profile from the Rexroth TS 1 transfer system
SH 1/...	Switch bracket from the Rexroth TS 1 transfer system

2 Safety instructions

2.1 About this section

The product has been manufactured in accordance with the generally accepted rules of current technology. Nevertheless, there is a risk of personal injury and property damage if you do not read this section and follow the safety instructions in this document.

- ▶ Read this documentation carefully and completely before you start working with the product.
- ▶ Keep the documentation accessible to all users at all times.
- ▶ Always include them when giving the product to a third party.

2.2 Intended use

The product is a partly completed machinery.

You may use the product as follows:

- For installation in a Rexroth TS 1 transfer system
- For lifting out of the section and positioning Rexroth WT 1 workpiece pallets
- Maximum load/section load: See Technical data on page 30.
- Ambient conditions see page 30.

This product is intended only for professional use and not for private use.

The intended use also includes having read and understood these instructions, especially section 2 "Safety instructions".

2.3 Improper use

Any use other than that described in the section "Intended use" is considered improper and is not permitted.

Bosch Rexroth AG is not liable for any damage resulting from improper use. The user alone bears any risks associated with improper use.

The following foreseeable misuses also constitute improper use:

- Transporting goods other than those specified.
- Climbing onto the product.
 - Keep off the product.
- Private use.

2.4 Personnel qualifications

The activities described in this document require a basic knowledge of mechanical, electrical and pneumatic systems, as well as familiarity with the corresponding technical terms. Additional knowledge regarding the use of lifting gear and corresponding slings is required for transporting and handling the product.

To ensure safe use, these activities should therefore only be performed by qualified personnel or by an instructed person acting under the direction of such a person.

"Qualified personnel" refers to those who can recognize potential hazards and take appropriate safety measures based on their technical training, knowledge, experience, and understanding of the relevant regulations pertaining to the work being performed. Qualified personnel must comply with the relevant technical regulations and have the necessary expertise.

In the case of pneumatic products, for example, expertise means:

- The ability to read and fully understand pneumatic diagrams.
- Thorough understanding of the interactions between safety equipment in particular.
- Understanding the function and design of pneumatic components.



Bosch Rexroth offers training support for specialized fields. You can find an overview of the training content online at: <http://www.boschrexroth.de/didactic>

2.5 General safety instructions

- Observe the applicable accident prevention and environmental protection regulations.
- Observe the safety rules and regulations of the country in which the product is being used.
- Only use Rexroth products that are in proper working order.
- Heed all the notices on the product.
- Persons who assemble, operate, disassemble or maintain Rexroth products should not be under the influence of alcohol, drugs or medication that may affect their ability to respond.
- Use only original accessories and spare parts from Rexroth in order to prevent hazards to people due to unsuitable spare parts.
- Observe the technical data and ambient conditions specified in the product documentation.
- If unsuitable products are installed or used in safety-relevant applications, unexpected operating conditions may occur in the application which could result in injury or property damage. Products should only be used in safety-relevant applications that are expressly specified and approved in the product documentation, such as in explosion protection areas or in safety-related parts of a controller (functional safety).

- Only start up the product if it has been determined that the end product (for example, a machine or system) into which the Rexroth products have been installed complies with national provisions, safety regulations and application standards.

2.6 Product-specific safety instructions

The following safety information applies to sections 6 to 14.

- | | |
|----------------------------|---|
| General | <ul style="list-style-type: none"> • Do not attempt to modify the product. • Do not expose the product to any mechanical loads under any circumstances. Never use the product as a handhold or step. Do not place any objects on the product. • Always secure the product against tipping over. |
| During transport | <ul style="list-style-type: none"> • Observe the transport instructions on the packaging. |
| During installation | <ul style="list-style-type: none"> • Inspect the product for obvious transport damage. • Lay cables and lines so that they cannot be damaged and no one can trip over them. • Make sure the system component you are working on is depressurized and de-energized before assembling the product or inserting or removing plugs. • Ensure that the system component cannot be switched back on. • Before commissioning, make sure that all seals and plugs for the plug connectors are correctly installed and not damaged to prevent liquids and foreign bodies from entering the product. |
| During start-up | <ul style="list-style-type: none"> • Allow the product to acclimatize for a few hours prior to commissioning in order to prevent water condensation from forming in the housing. • Make sure that all electrical and pneumatic connections are either in use or covered. • Check the safety requirements according to DIN EN 619. • Only commission a product that has been completely installed. • Make sure that all the safety equipment which forms part of the product is present, has been properly installed, and is fully functional. Do not move, bypass or disable any safety equipment. • Do not reach into moving parts. • Check the product for malfunctions. |
| During operation | <ul style="list-style-type: none"> • Make sure that only authorized personnel perform the following tasks within the scope of the product's intended use: <ul style="list-style-type: none"> – Starting or operating the system or interfering with its normal operation. – Operating component or part adjusters. • Only allow people to be in the immediate vicinity of the product when it is operating if they are authorized by the owner to be there. This also applies when the product is idle. • Make sure that: <ul style="list-style-type: none"> – There are no obstacles preventing access to the EMERGENCY STOP controls. – All delivery points, workstations and passages are kept clear. |

- Do not use EMERGENCY STOP controls for routine stopping.
- Regularly check the EMERGENCY STOP controls to ensure that they are functioning properly.
- Following an EMERGENCY STOP or in the event of a fault or other irregularity, turn the product off and secure it against being switched back on.
- Do not reach into moving parts.
- An idle system is not necessarily a safe system, as stored energy can be released unintentionally or through improper maintenance procedures.

**EMERGENCY STOP,
malfunction**

- After an EMERGENCY STOP or a malfunction, only switch the system back on once you have established and rectified the cause of the fault.

**During maintenance
and servicing**

- Make sure that access to maintenance and inspection points is kept unobstructed.
- Perform the prescribed maintenance work at the intervals specified in section 10.3 "Maintenance".
- Make sure that no line connectors, connections or components are disconnected as long as the system is supplied with pressure and voltage. Secure the system against being switched back on.

During disposal

- Dispose of the product in accordance with the regulations in your country.

2.7 Personal protective equipment

- Appropriate protective clothing should be worn when handling/using the product (e.g. safety shoes, close-fitting clothing, a hair net for long, loose hair). As the system user or operator, you are personally responsible for ensuring the use of appropriate protective equipment when the product is being used. All component parts of the personal protective equipment must be free of damage.

2.8 Owner responsibilities

- Before the initial commissioning or re-commissioning of a conveyor system, carry out a risk assessment in accordance with DIN EN ISO 12100.
- Provide safety-related instructions to the operating personnel before the initial start-up or re-commissioning, and then at regular intervals.

3 General notes on property and product damage

The warranty only applies to the delivered configuration.

- The warranty is void in the event of incorrect assembly, commissioning and operation, as well as improper use and/or improper handling.
- The following safety information applies to sections 6 to 14.
- Prevent cleaning agents from getting into the system.
- Never use solvents or corrosive cleaning agents.
- Do not use a pressure washer for cleaning.

During cleaning

4 Scope of delivery

The scope of delivery includes the following:

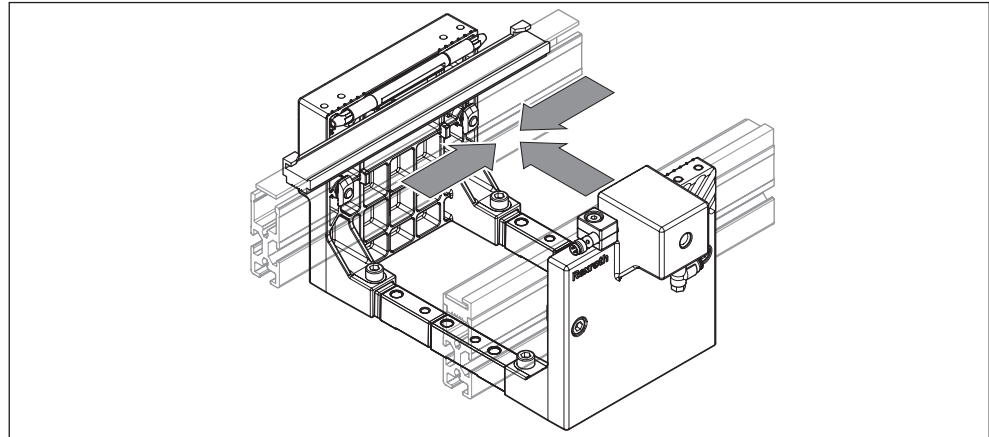
- 1 PE 1/P positioning unit
- 2 belt guide profiles (GP 1/G, GP 1/Z)
- 1 sensor
- 3 SH 1/U switch brackets
- 1 assembly instructions for "PE 1/P positioning unit".

4.1 Condition on delivery

- PE 1/P positioning unit mounted ready for installation.

5 About this product

5.1 Specifications



564 633-01

Fig. 1: Specifications of PE 1/P positioning unit

5.1.1 Use of PE 1/P positioning unit

- Installation in belt section BS 1, section ST1 or mounting on a table top.
- Lifting out of the section and positioning WT 1 workpiece pallets.

5.1.2 Version of PE 1/P positioning unit

- Positioning via positioning mandrel and floating guide rod on the side of the workpiece pallet.
- Positioning accuracy in x and y direction: ± 0.015 mm.
- Permissible vertical process force up to 100 N including workpiece pallet.
- The PE 1/P positioning unit also enables the workpiece pallet to be accessed from below.

5.2 Product description

- A:** Support plate with guide rod
- B:** Cylinder with positioning mandrel
- C:** For the connector, see Table 5
- D:** For the belt guide profile GP 1/G (belt)/ GP 1/Z (toothed belt), see Table 5
- E:** Switch bracket for the cylinder position query
- F:** Switch bracket for the workpiece pallet position query

Table 5: b, L₁, L₂

b (mm)	L ₁ (mm)	L ₂ (mm)
80	110	98
120	150	138
160	190	178

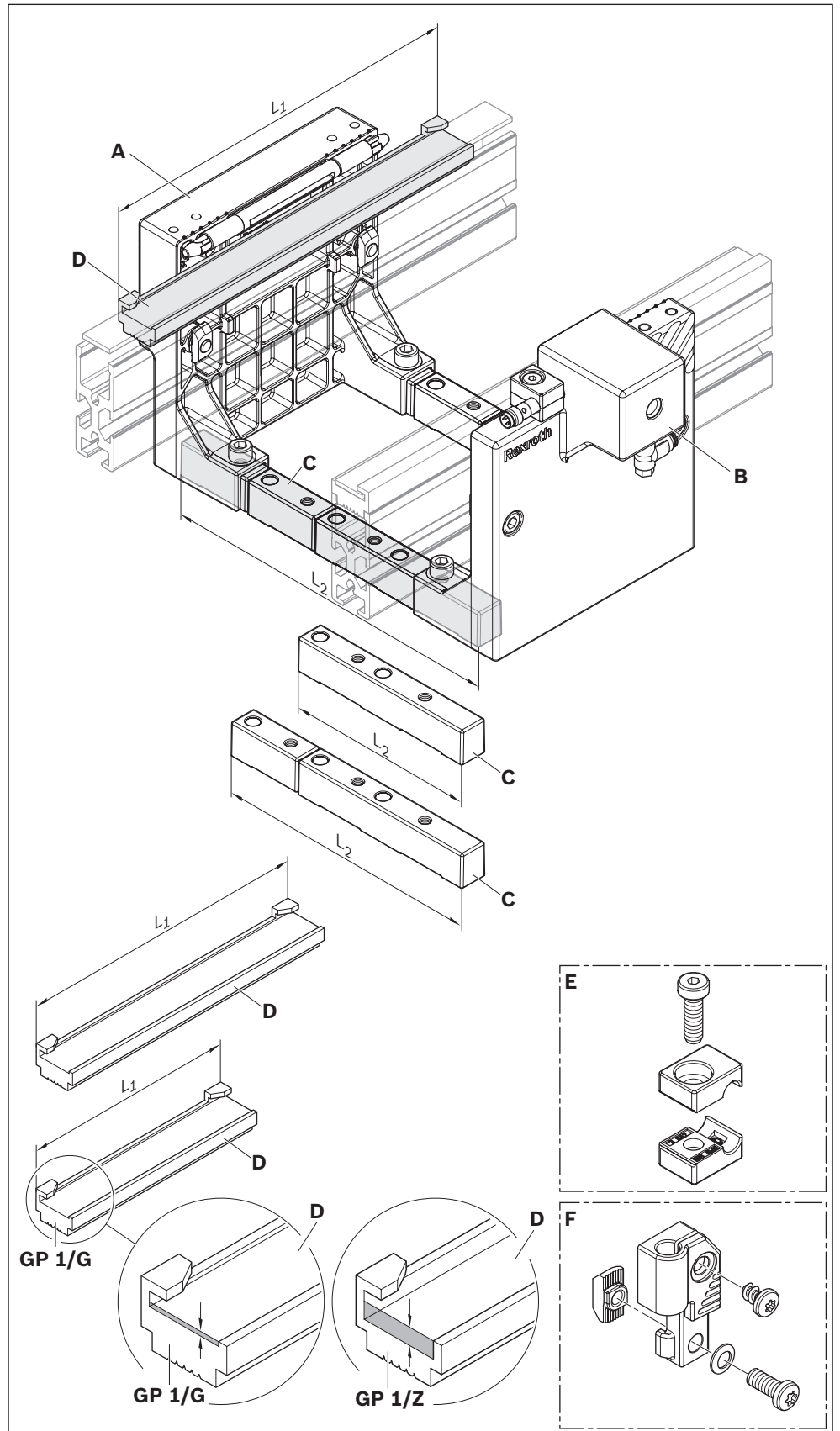


Fig. 2: PE 1/P positioning unit, GP 1/G: Belt, GP 1/Z: Toothed belt

5.3 Identification of the product

- A:** Material number (order number)
- B:** Designation
- C:** Information on the version and dimensions

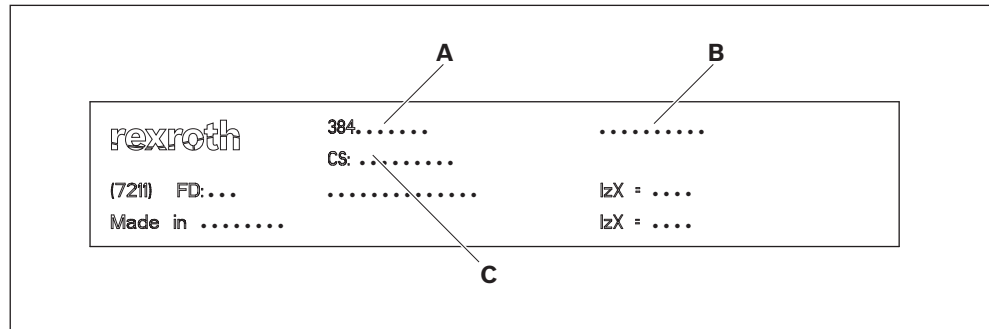



Fig. 3: Nameplate

564 633-03

6 Transport and storage

- Observe the transport instructions on the packaging.
- Transport weight: see delivery documents.
- Secure the product against tipping over!
- Always maintain ambient conditions during loading and transport, see page 30.

6.1 Transporting the product


WARNING

Suspended loads can fall!

Falling objects can result in severe injury (or even death).

- ▶ Use only slings with sufficiently high bearing loads (for product weight, see delivery documents).
- ▶ Make sure the lifting straps are correctly fastened before lifting the product!
- ▶ Secure the product against tipping over when lifting!
- ▶ Make sure that no one but the operator is in the hazard area during lifting and lowering!

6.2 Storing the product

- Only set the product down on a flat surface.
- Protect the product from mechanical stress.
- Protect the product from environmental influences, such as dirt and moisture.
- Observe the ambient conditions, see page 30.

7 Assembly

7.1 Unpacking

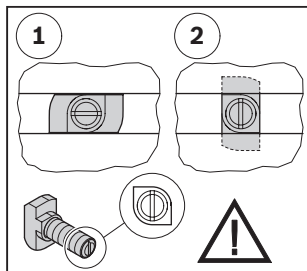
- Lift the product out of its packaging.
- Dispose of the packaging material in accordance with the applicable regulations in your country.

7.2 Installation requirements

- During installation, be sure to maintain the ambient conditions specified in the technical data (see page 30).

7.2.1 Installation position

- Install the product level and plumb, at right angles, and axially parallel. This ensures proper functioning and prevents premature wear.



7.2.2 Fastening with T-bolts

- Mount the transfer systems TS 1, TS *2plus*, TS *2pv*, TS *4plus*, TS 5 and the chain conveyor systems VarioFlow and VarioFlow S with T-bolt and flange nut.
- Make sure the T-bolt is in the correct position when inserting it into the slot and tightening it. The notch at the head of the bolt indicates the orientation of the T-bolt.
 - ▶ 1 = T-bolt insertion position in the slot.
 - ▶ 2 = T-bolt clamping position in the slot.
 - ▶ Maximum tightening torque: 25 Nm

7.3 Required tools

- Wrench SW13.
- Hex socket wrenches SW3, SW4, SW5.
- Torx keys, T20, T25
- Phillips screwdriver PZ2
- Hammer
- Spirit level

7.4 Symbols used

Table 6: Symbols used

	<p>Connection with T-bolt and flange nut. Make sure the T-bolt is in the correct position when inserting it into the slot and tightening it. The notch at the head of the screw indicates the orientation of the T-bolt. 1 = T-bolt insertion position in the slot. 2 = T-bolt clamping position in the slot. Maximum tightening torque: 25 Nm</p>
<p>SW13 $M_D = 20Nm$</p>	<p>Wrench SW = wrench size ... mm M_D = required tightening torque ... Nm</p>
<p>SW5 $M_D = 8Nm$</p>	<p>Hex socket wrench SW = wrench size ... mm M_D = required tightening torque ... Nm</p>
	<p>Screwdrivers for cross-head screws PZ ... = Pozidriv screw driver, size ... PH ... = Phillips screw driver, size ...</p>
<p>gleitmo 585 K Anti-Seize</p>	<p>Lubricate/lubricate with specific grease lubricant:</p> <ul style="list-style-type: none"> • gleitmo 585 K: gleitmo 585 K, www.fuchs-lubritech.com • Anti-Seize: Food Grade Anti-Seize/Loctite 8014, www.henkel.com
<p>Loctite 243 Loctite 601</p>	<p>Secure the screws with:</p> <ul style="list-style-type: none"> • Loctite 243: Medium strength (detachable), www.loctite.de • Loctite 601: High-strength screw retention (non-detachable), www.loctite.de
	<p>The marked parts are not required for the described assembly. Dispose of the parts or use them for other purposes.</p>
	<p>Graphical depiction of the installation steps. The numbers correspond to the sequence of installation steps, in accordance with the instructions in the accompanying text.</p>
	<p>Graphical depiction of the designation of components. The letters denote the components mentioned in the accompanying text.</p>

7.5 Assembling the product

7.5.1 Mount PE 1/P positioning unit on BS 1 or ST 1

1. Mark the installation location of the PE 1/P.
2. On the side with the guide rod, remove the belt guide profile (GP 1/G, GP 1/Z) from the section profile (ST 1 or BS 1). Disconnect a piece from the GP 1/G/GP 1/Z in the area of the PE 1/P and replace it with the supplied belt profile.

b (mm)	L (mm)
80	110
120	150
160	190

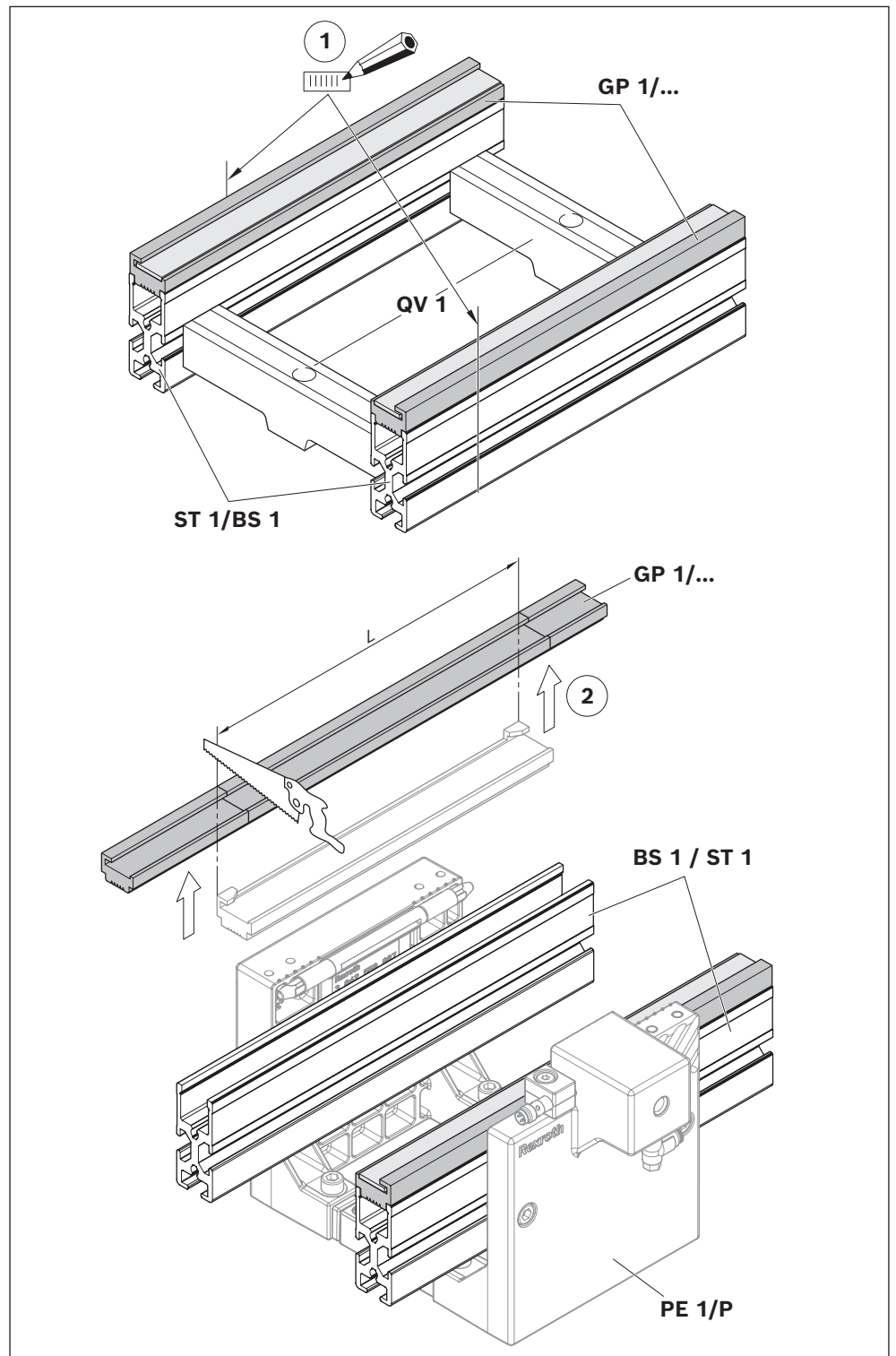


Fig. 4: Mount PE 1/P positioning unit on BS 1 or ST 1 (1/2)

564 633-04

3. Remove the mounting plate (A) from the connecting plate (B).
4. Install the PE 1/P in the side slot of the section profile. Only hand-tighten the screws.
5. Attach the mounting plate (A) to the connecting plate (B) and the lateral slot of the section profile.
6. Align the PE 1/P.
7. Tighten all screws.

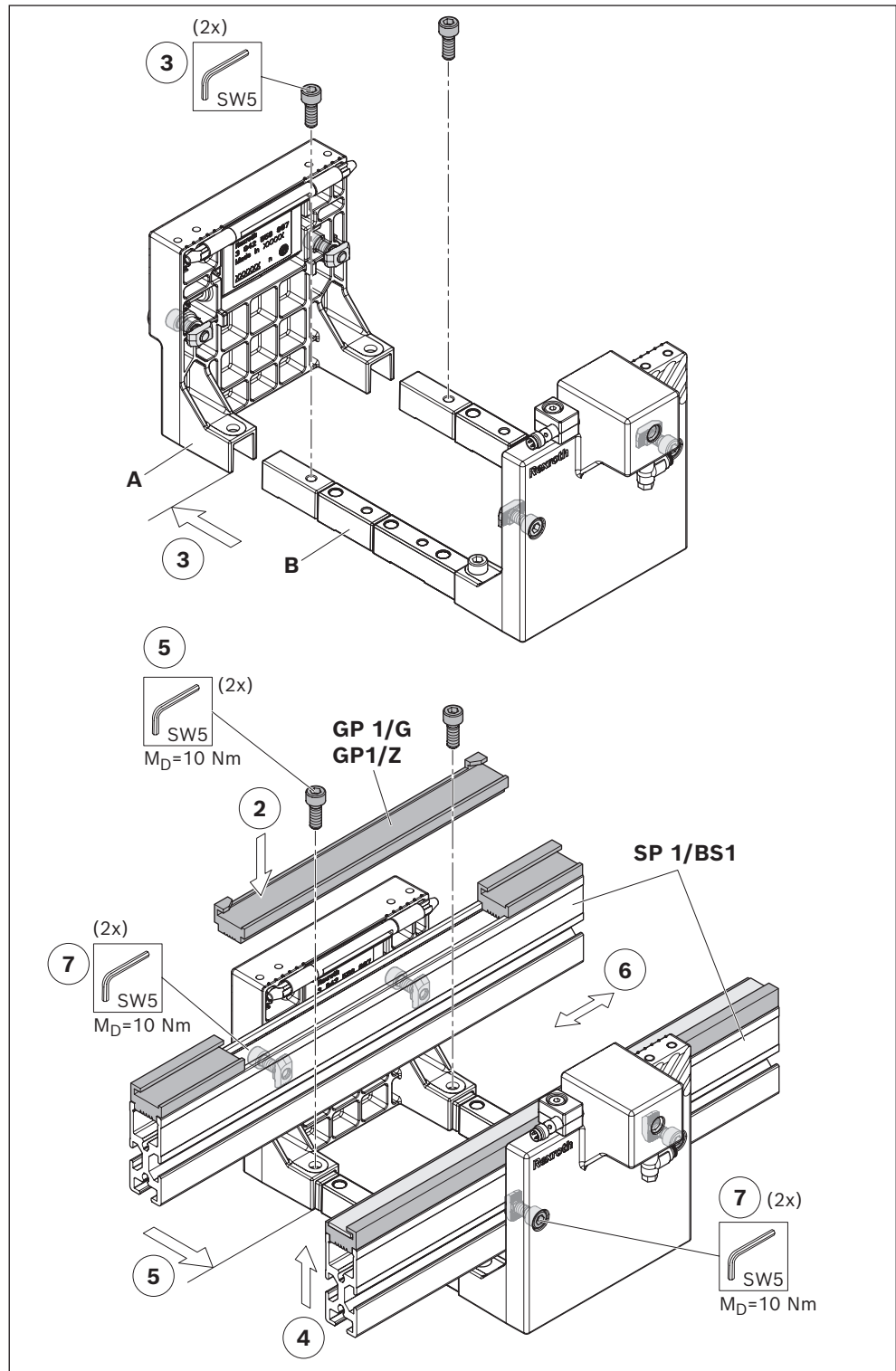


Fig. 5: Mount PE 1/P positioning unit on BS 1 or ST 1 (2/2)

564 633-05

7.5.2 Mount SH 1/U switch bracket and VE 1 stop gate

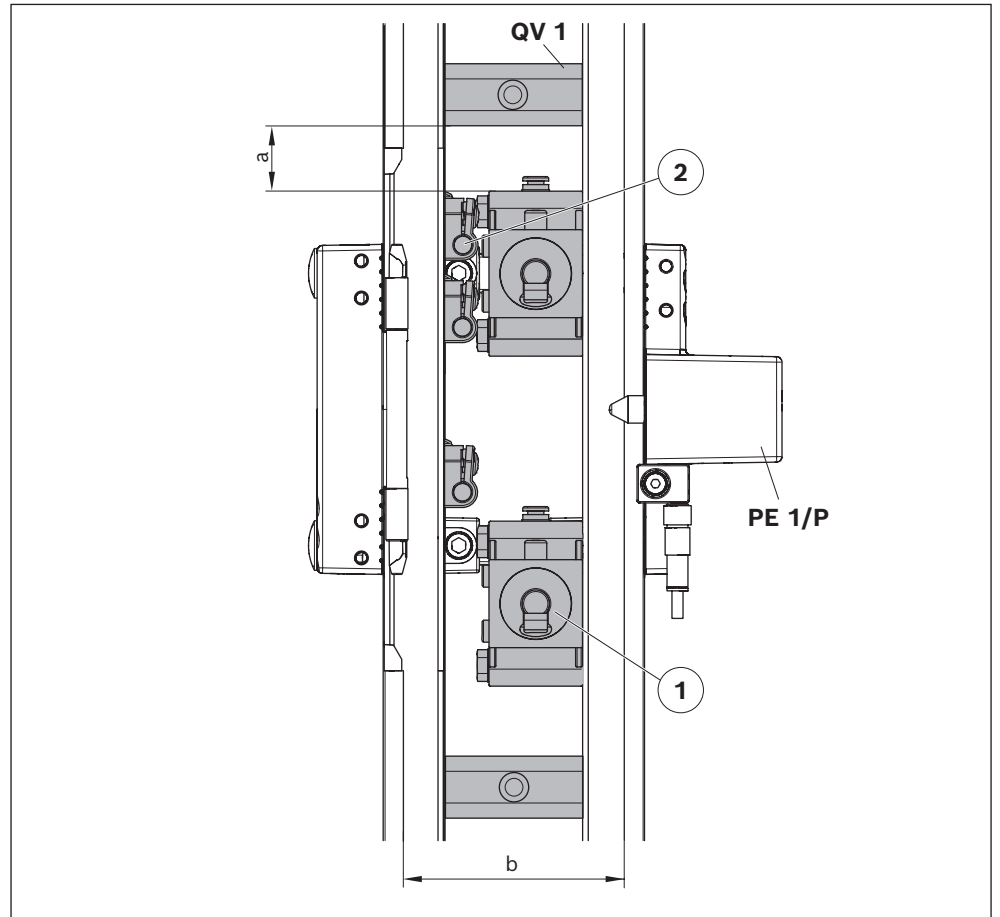
Pneumatically connect the PE 1/P. Position a workpiece pallet WT 1/... in the PE 1/P.

1. Install the VE 1 stop gates. Note dimension a (see table) and move the QV 1 cross connector if necessary.

b (mm)	a (mm)
80	10
120	30
160	50

2. Adjust and assemble the desired positions of the SH 1/U switch brackets for the WT position query.

Observe the assembly instructions 3 842 539 961, see table 1– "Required and supplementary documentation"



564 633-06

Fig. 6: Mount SH 1/U switch bracket and VE 1/... stop gate

7.5.3 Mount PE 1/P positioning unit on surface

For exact positioning, you can fix the PE 1/P on a work station or table top. Use the connecting plate of the PE 1/P as drilling template.

b (mm)	A (mm)	B (mm)
80	-	125
120	37.5	165
160	77.5	205

Note the mounting distance (a) between the QV 1 cross connector and PE 1/P:

b (mm)	a (mm)
80	10
120	30
160	50

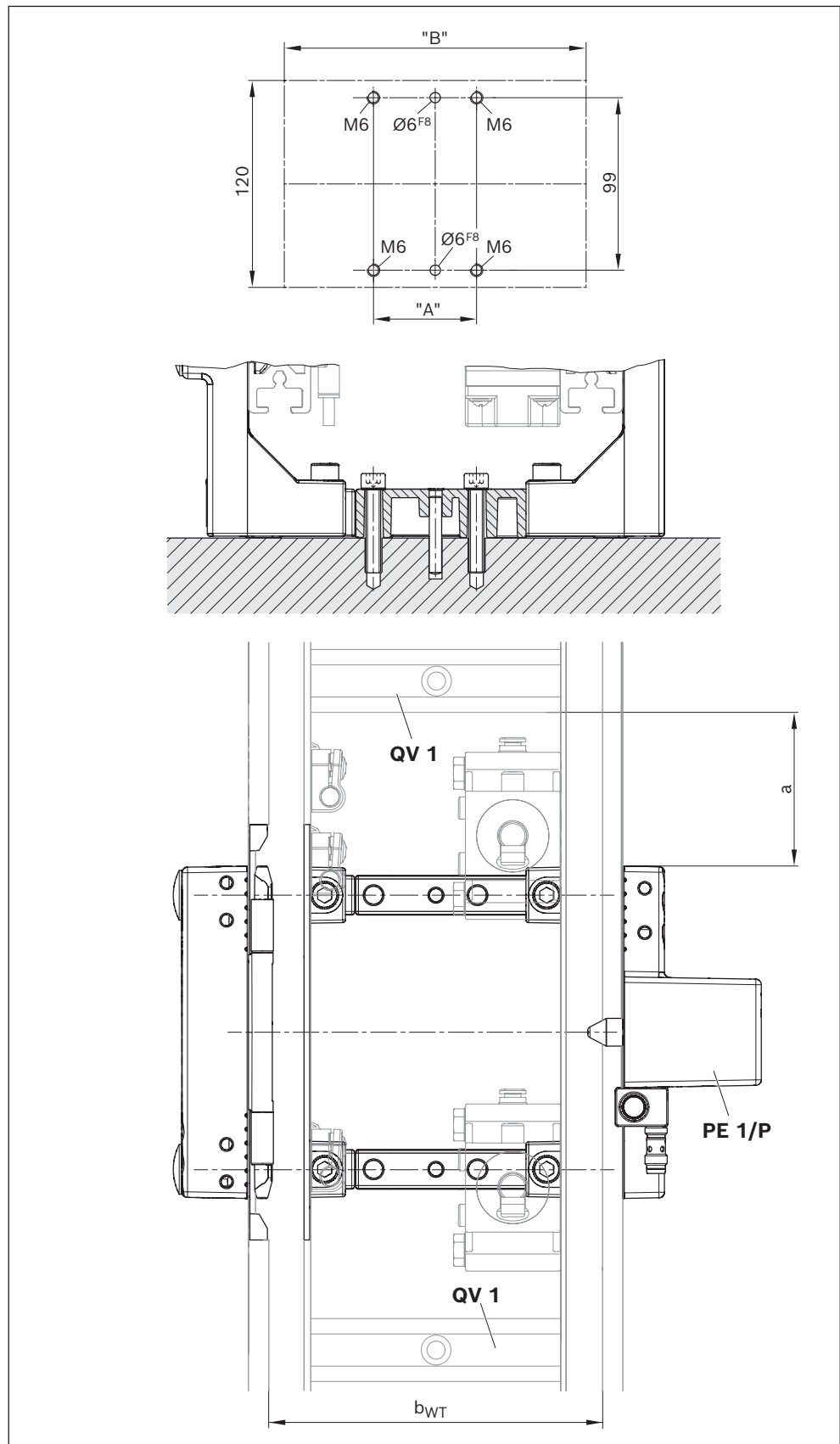


Fig. 7: Mount PE 1/P positioning unit on surface

564 633-07

7.5.4 Pneumatic connection of the product

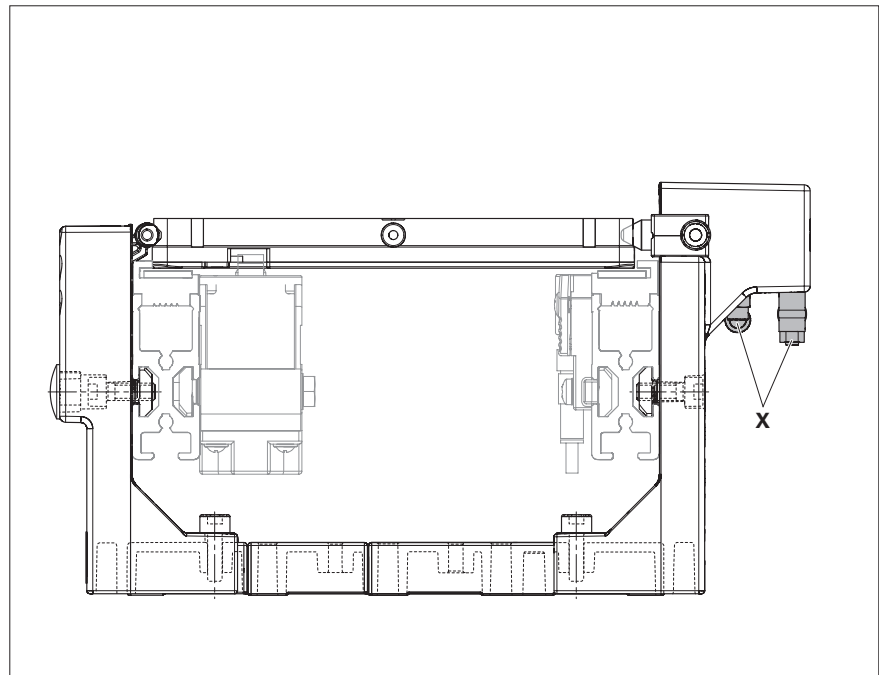
! WARNING

High pneumatic pressure!
 Risk of injury due to unforeseen movements, falling objects and whipping hoses.

- ▶ Switch off the compressed air supply to the relevant system component before assembling, disassembling or connecting the product to the pneumatic system.
- ▶ Secure the system against being unintentionally switched on again.

• For the compressed air and operating pressure specifications, see page 30.

▶ Connect the working lines of the associated directional control valve to the compressed air connections (X).



564 633-08

Fig. 8: Pneumatic connection

1) Not included in the scope of delivery.

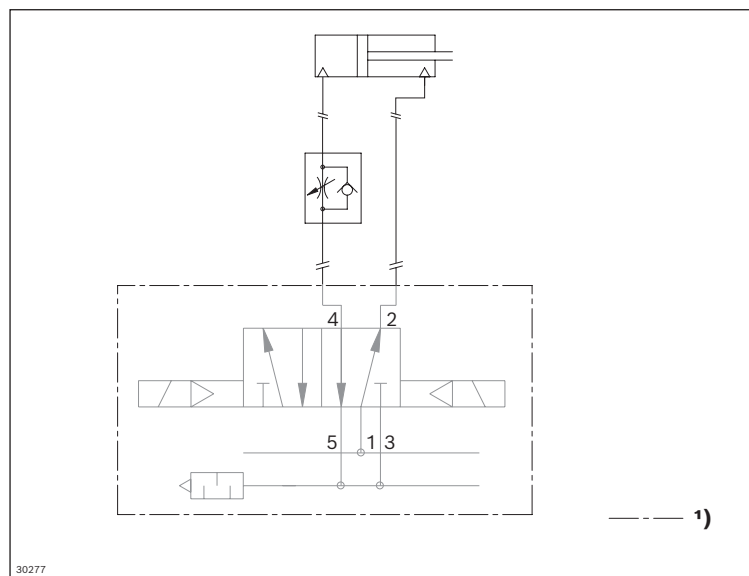


Fig. 9: Circuit diagram

ENGLISH

7.5.5 Electrical connection of the product

- Choose control and sensor elements in accordance with EN ISO 13849. Factor in the load being transported and the transport speed.
 - The motor may only be connected by qualified personnel!
 - Comply with VDE regulation VDE 0100 for Germany, or corresponding regulations in the country of use.
- Connect the sensor (Y) to the control. The switching distance is already set at delivery.

Connection diagram:

Voltage	12 – 30 V=
Switching current max.	100 mA
Brown	+ 24 V=
Blue	0 V
Black	Switching output

8 Commissioning

8.1 Initial commissioning

CAUTION

Sudden movements, falling workpiece pallets

Injuries caused by falling objects.

- Make sure that the product has been assembled properly by qualified personnel (see page 8) before starting it up.

NOTE

Malfunctions due to incorrect assembly and commissioning

The product can get damaged, shortening its service life.




- Commissioning requires basic mechanical, pneumatic and electrical knowledge.
- The product should only be commissioned by qualified personnel (see page 8).

- Before the initial commissioning or re-commissioning of a conveyor system, carry out a risk assessment in accordance with DIN EN ISO 12100.
- According to EU Machinery Directive 2006/42/EC, you must equip the transfer system with EMERGENCY STOP control devices.
- The surfaces of motors and gears can reach temperatures of over 65 °C under certain load and operating conditions. In these cases, you must comply with the respective applicable accident prevention regulations (UVV) by taking appropriate constructive measures (safety guards) or by affixing/displaying appropriate warning signs!

- Make sure that all electrical and pneumatic connections are either used or covered. Make sure that all bolted connections and plug-in connections are properly seated. All relevant protective covers must be fitted.
- Only inspect and adjust continuous conveyors that are in motion or operation when the protective equipment is in place.
- Observe EN ISO 13857 when you remove or replace safety guards and/or bypass safety equipment.
- Test runs with open paneling should only be performed by a person with appropriate knowledge and experience using tip switches, and if there is no possibility of interference from other switching devices.
- Only commission the product if all safety equipment has been installed in the system and is ready for use.
- Only commission a product that has been completely installed.

8.2 Residual risks

Table 7: Residual risks

Location	Situation	Hazard	Action
1 Housing; stop gate: Between component and workpiece pallet	Clamping of body parts when the workpiece pallet enters		Crushing The danger point must be removed structurally, e.g. by means of a barrier, depending on the speed and weight of the workpiece pallet. <ul style="list-style-type: none"> • Do not reach into the system while it is running.
2 Actuation tappet; stop rod: Between component and workpiece pallet	Trapping of limbs		Crushing <ul style="list-style-type: none"> • Do not reach into the system while it is running.
3 Conveyor medium: Between running conveyor medium and positioned workpiece pallet	Clothing or long hair Trapping of limbs		Crushing <ul style="list-style-type: none"> • Do not reach into the system while it is running. • Wear protective clothing.

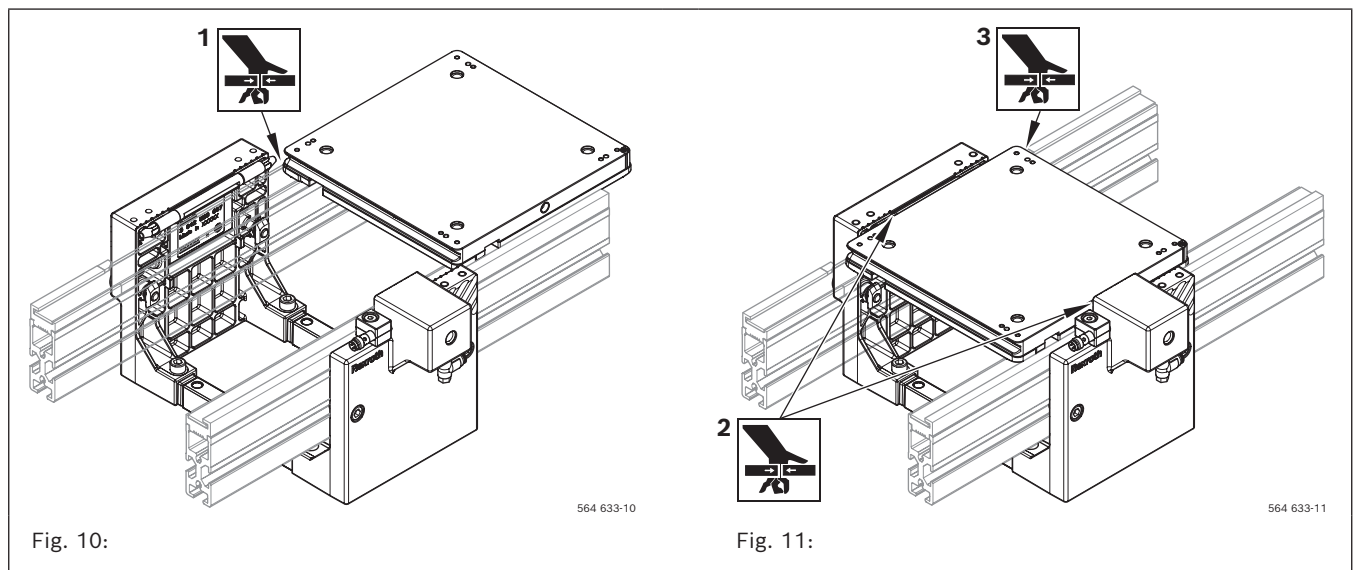


Fig. 10:

Fig. 11:

8.3 Re-commissioning after a standstill

Follow the steps outlined for the initial commissioning.

9 Operation

CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C

- ▶ Install appropriate guards.
- ▶ Let the unit cool down for at least 30 minutes before performing maintenance and/or repair work.

9.1 Information on operation

9.1.1 Wear

- Individual components are subject to unavoidable wear by their very nature. Constructive measures and the selection of materials help ensure functional safety over the full service life. However, wear is also dependent on the operating, maintenance and ambient conditions at the place of use (resistance, contamination).
- Overloading the conveyor sections can cause the conveyor medium to malfunction and lead to the premature breakdown of motors and gears.
- If pneumatically activated components are overloaded, it is not possible to guarantee their function.

9.1.2 Measures to reduce wear

The following obvious measures will reduce wear:

- Switch off the conveyor section during line downtime, e.g. during breaks, at night and on weekends.
- Do not select a higher speed for the conveyor section than that required for the corresponding function.
- Avoid contamination caused by abrasive media, reduce contamination by cleaning on a regular basis.

9.1.3 Loading the workpiece pallet

The modular units are designed and tested under the assumption that the workpiece pallets will not all have the same weight during one cycle on one conveyor section. Workpiece pallets are both loaded and unloaded.

Significantly different weights may require special measures to avoid malfunctions. This applies to:

- The permitted accumulation length before stop gates.
- Damper functionality.
- Dampened stop gates.

9.1.4 Environmental factors

- Our products are resistant to many media that are commonly found in manufacturing, such as water, mineral oil, grease and detergents. Contact your Rexroth representative if you have any doubts about resistance to specific chemicals, such as test oil, doped oils, aggressive cleaning agents, solvents or brake fluid.
 - Avoid prolonged contact with highly reactive acidic or alkaline materials.
 - Contamination can greatly increase wear – specifically from abrasive media from the surrounding area, such as sand and silicates, e.g. from construction as well as machining processes in the transfer system (e.g. welding beads, pumice powder, glass shards, chips, waste parts, etc.). Maintenance intervals should be significantly shortened under these circumstances.
 - Resistance to media and contamination does not mean that functional safety is guaranteed in every case.
 - Liquids that thicken as they evaporate and become highly viscous or adhesive (sticky) can lead to malfunctions.
 - If they get carried onto systems with rollers, media which have a lubricating effect can lead to a reduction in the drive power that is transmitted via friction.
- In such instances, special care must be taken when planning the system, and the maintenance intervals must be correspondingly shortened.

10 Maintenance and repair

WARNING

High electrical voltage!

Risk of severe injury or death from electric shock.

- ▶ Disconnect the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

High pneumatic pressure!

Risk of severe injury or death.

- ▶ Switch off the compressed air supply to the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

CAUTION

Hot electric motor surfaces during operation!

Risk of burns from touching hot surfaces above 65 °C

- ▶ Install appropriate guards.
- ▶ Let the unit cool down for at least 30 minutes before performing maintenance and/or repair work.

- Only inspect and adjust continuous conveyors that are in motion or operation when the protective equipment is in place.
- Observe DIN EN ISO 13857 when you remove or replace safety guards and/or bypass safety equipment.
- Test runs with open paneling should only be performed by a person with appropriate knowledge and experience using tip switches, and if there is no possibility of interference from other switching devices.

10.1 Cleaning and care

NOTE

Bearing failure

Applying grease-dissolving substances to the bearing points, e.g. during cleaning, leads to bearing failure. There is a risk of damage to property, and service life may be reduced.

- ▶ Keep degreasers or aggressive cleaning agents away from the bearings!
- ▶ Only clean the product with a damp cloth.

Failure of the toothed belt

Applying grease-dissolving substances to the toothed belt, e.g. when cleaning, leads to the failure of the toothed belt. There is a risk of damage to property.

- ▶ Keep degreasers or corrosive cleaning agents away from the toothed belt!
- ▶ Only clean the product with a damp cloth.

10.2 Inspection

Positioning cylinder

Check the pneumatic connections regularly for leaks.

10.3 Maintenance

Bearings

The bearings have lifelong lubrication and are maintenance-free under normal conditions of use.

Positioning cylinder

Clean and lubricate the positioning pin regularly.

10.4 Replacing wear parts

Required tools

- Hexagon socket wrench SW4.

10.4.1 Replacing the positioning cylinder

Change interval:
After 5 million cycles
to achieve maximum
positioning accuracy.

1. Disconnect the electrical and pneumatic connections.
2. Disassemble the switch bracket with sensor.
3. Disassemble the side plate with positioning cylinder, see Fig. 13.
4. Install the new side plate in reverse order.
5. Mount the switch bracket with sensor and connect the electrical and pneumatic connections.

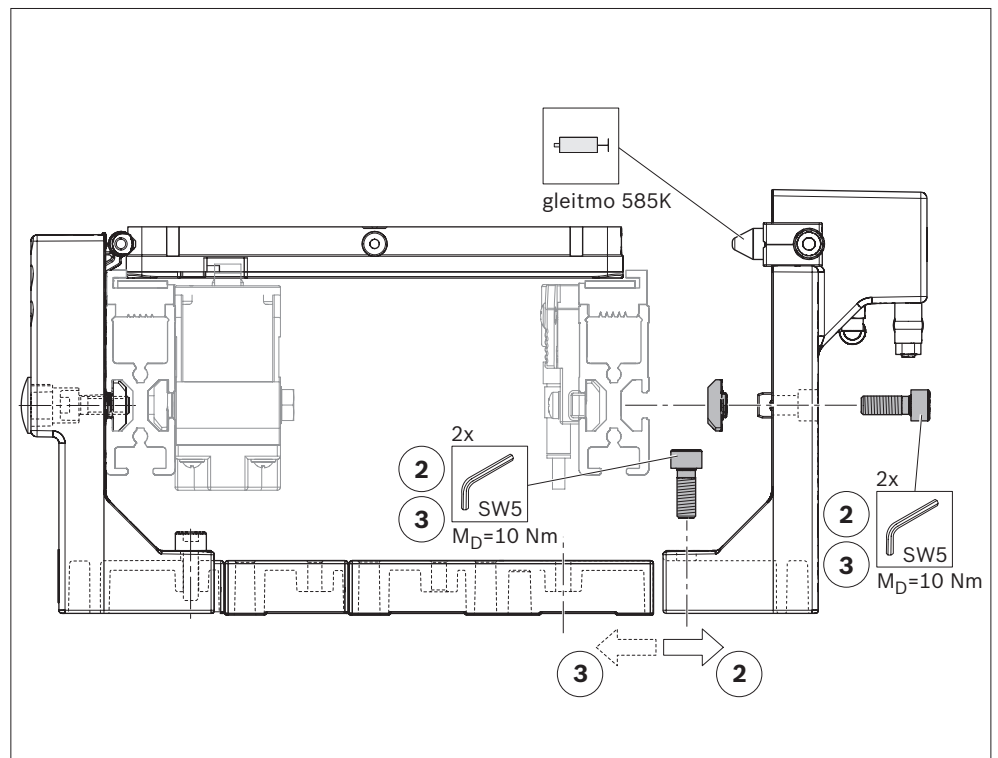


Fig. 12: Replacing the positioning cylinder

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10.5 Spare parts

For spare parts, see spare parts list MT_{pro}, 3 842 539 057.
Download at: www.boschrexroth.com/mtpro

11 Decommissioning

This product is a component which does not need to be decommissioned. Accordingly, this section has been left blank.

12 Disassembly and replacement

WARNING

High electrical voltage!

Risk of severe injury or death from electric shock.

- ▶ Disconnect the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

High pneumatic pressure!

Risk of severe injury or death.

- ▶ Switch off the compressed air supply to the relevant system component before performing any maintenance or repair work.
- ▶ Secure the system against being unintentionally switched on again.

Suspended loads can fall!

Falling objects can result in severe injury (or even death).

- ▶ Use only slings with sufficiently high bearing loads (for product weight see delivery documents).
- ▶ Make sure the lifting straps are correctly fastened before lifting the product!
- ▶ Secure the product against tipping over when lifting!
- ▶ Make sure that no one but the operator is in the hazard area during lifting and lowering!

12.1 Preparing the product for storage/later use

- Only set the product down on a flat surface.
- Protect the product from mechanical stress.
- Protect the product from environmental influences, such as dirt and moisture.
- Observe the ambient conditions, see page 30.
- For products with assembled motor: Support the product so that the motor is not placed under mechanical load.

13 Disposal

- 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.
- Careless disposal may lead to environmental contamination.
- Dispose of the product in accordance with the regulations in your country.

14 Upgrading and modification

- Do not modify the product.
- The Bosch Rexroth warranty only applies to the configuration as delivered, and to approved upgrades. The manufacturer will not accept any warranty claims for systems with unapproved modifications or upgrades.

15 Troubleshooting

- If you cannot correct a fault, please contact one of the addresses you can find at www.boschrexroth.com.

16 Technical data

- For dimensions, see sales catalog TS 1, 3842564632.
- Maximum load: 10.0 kg
- Noise emissions: < 70 dB (A)

16.1 Ambient conditions

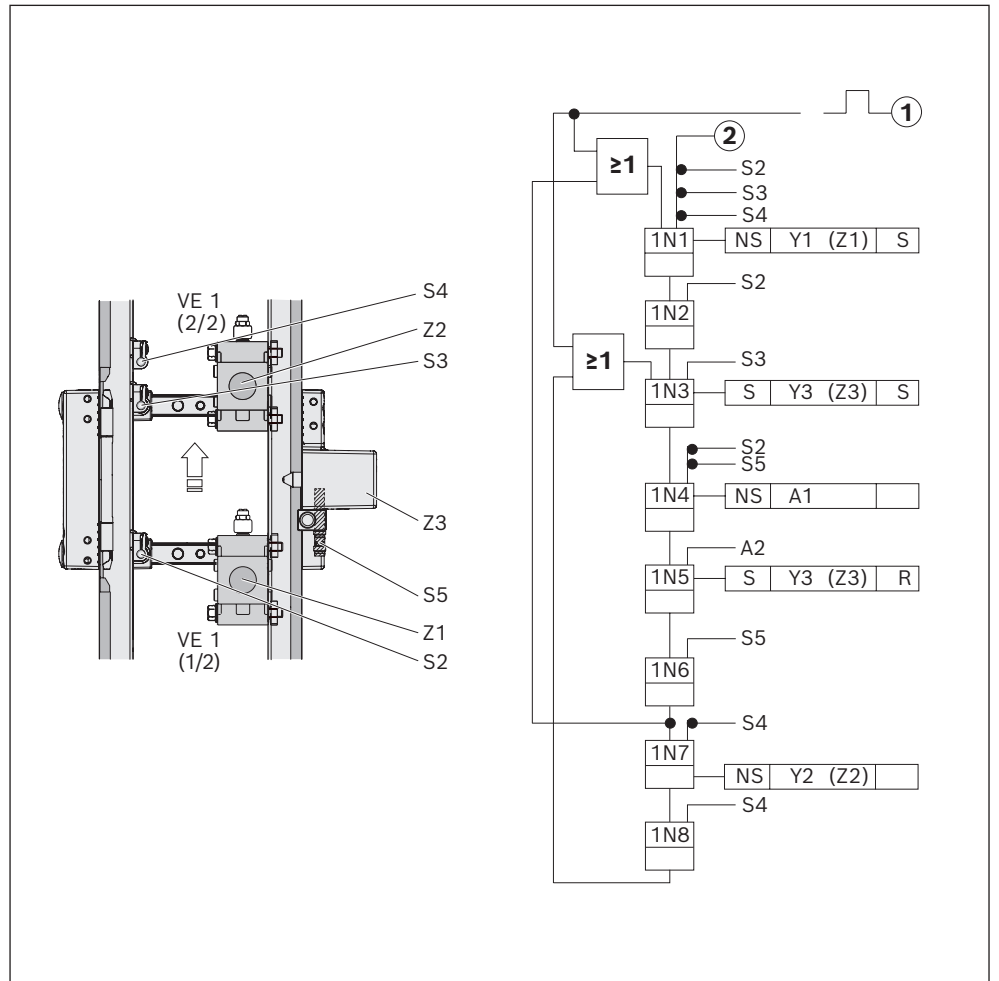
- The transfer systems have been designed for stationary use in a location that is protected from the elements.
- Operating temperature
 - +5 °C to +40 °C
 - 5 °C to +60 °C at 20 % reduced load
- Storage temperature –25 °C to +70 °C
- Relative humidity 5 % to 85 %, non-condensing
- Air pressure > 84 kPa, corresponds to an installation altitude < 1400 m above sea level
- Permissible load capacity of floor: 1000 kg/m²
- At installation altitudes > 1400 m, the load values of the electric drives are reduced by 15 %.
- The area should be kept free of mold, fungus, rodents and other vermin.
- Do not install or operate in the immediate vicinity of industrial equipment producing chemical emissions.
- Do not install or operate near sources of sand or dust.
- Do not install or operate in areas that are regularly subjected to high-energy forces caused, for example, by presses or heavy machinery.
- Resistant to many media that are commonly found in manufacturing, such as water, mineral oil, grease, and detergents. Contact your Rexroth representative if you have any doubts about resistance to specific chemicals, such as test oil, doped oils, corrosive detergents, solvents or brake fluid.
- Avoid prolonged contact with highly reactive acidic or alkaline materials.

16.2 Pneumatics

- Oiled or non-oiled, filtered, dry compressed air.
- Operating pressure 4 to 6 bar
- Solids
 - Particle size ≤ 5 μm (Class 6 as per ISO 8573-1:2010)
 - Particle quantity ≤ 5 mg/m³ (Class 6 as per ISO 8573-1:2010)
- Humidity – water content
 - Pressure dew point ¹⁾ ≤ +3 °C (Class 4 as per ISO 8573-1:2010)
- ¹⁾ The pressure dew point should be at least 15 °C below the ambient temperature.
- Oil content
 - Oil quantity ≤ 1 mg/m³ (Class 3 as per ISO 8573-1:2010)

16.3 Function plan

- WT Workpiece pallets
- VE Stop gate
- S... Signal transmitter
- Y... Valve
- Z... Cylinder
- 1N... Step chain
- ① Start pulse after end of start-up
- ② Enable cyclic travel
- A1 Enable edit workpiece
- A2 Acknowledge workpiece processed
- S2 WT arrival, WT to VE 2/2
- S3 WT in station, WT before VE 1/2
- S4 Station becomes free
- S5 WT fixed
- Y1 Open VE 2/2
- Y2 Open VE 1/2
- Y3.1/ WT mounting
- Y3.2



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Fig. 13: PE function plan

Action block	Explanation
S	Storing
NS	Non-storing
S	Set
R	Reset

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