Mounting Kit SG2 Swing Gate

Valid for the following type:
R980 999 283

Assembly Instructions
R980500398 (2017-08)
The following information only describes the product. Any information on how to use the product is only an example and a recommendation. Catalog information is not binding. The information given does not release the user from the obligation of own judgment and verification. Our products are subject to a natural process of 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.

EN These assembly instructions are only available in English. They come in a hard copy (print) or a PDF file (media) that can be downloaded at: www.boschrexroth.com/mediadirectory

Enter R980500398 in the search mask (at the top right, under "Search"), then click "Search".

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1 About this documentation

1.1 Validity of the documentation
This documentation applies to the following products:
• RA60156855 mounting kit SG 2 Swing Gate

This manual is intended for engineers, operators, service engineers and system end users.
This document contains important information to install, transport, commission, operate, use, maintain, and dismantle the product safely and correctly and on simple troubleshooting.
▶ Read this manual completely, especially chapter 2 “Safety” and Chapter 3, “General notes for property damage and product damage” before working with the product.

1.2 Required and supplementary documentation
▶ Only operate when you are in possession of the documentation marked with the book symbol 📚 and you have understood and observed this.

Table 1: Required and supplementary documentation

<table>
<thead>
<tr>
<th>Title</th>
<th>Document number</th>
<th>Document type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety-related information for staff</td>
<td>3 842 527 147</td>
<td>Safety Manual</td>
</tr>
<tr>
<td>MTpro Spare Parts</td>
<td>3 842 539 057</td>
<td>DVD</td>
</tr>
<tr>
<td>BS-2 Transverse Conveyor</td>
<td>3 842 518 577</td>
<td>Assembly Manual</td>
</tr>
<tr>
<td>BS-2/C,R Transverse Conveyor</td>
<td>3 842 358 724</td>
<td>Assembly Manual</td>
</tr>
</tbody>
</table>

1.3 Presentation of information
In order for you to work with your product quickly and safely using this documentation, safety symbols, terms and abbreviations are used in a uniform manner. These are explained in the following sections to help you understand them better.

1.3.1 Safety instructions
In this documentation, safety instructions are given in chapter 2.6 “Specific product precautions” and chapter 3 “General notes on property and product damage”, and before a course of action or a required action, in which there is a risk of personal injury or property damage. The measures described to avoid these hazards must be observed.
Safety instructions are structured as follows:

<table>
<thead>
<tr>
<th>SIGNAL WORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type and source of danger!</td>
</tr>
<tr>
<td>Consequences resulting from non-compliance</td>
</tr>
<tr>
<td>▶ Measures to prevent hazards</td>
</tr>
<tr>
<td>▶ ...</td>
</tr>
</tbody>
</table>

- **Warning sign:** draws attention to the danger
- **Signal word:** indicates the severity of the danger
- **Type and source of danger:** indicates the type and source of the danger
- **Consequences:** describes the consequences resulting from non-compliance
- **Precaution:** explains how to avoid the hazard

### Table 2: Risk classes according to ANSI Z535.6-2006

<table>
<thead>
<tr>
<th>Warning sign, signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Indicates a hazardous situation which will result in death or serious injury if not avoided.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Indicates a hazardous situation which can result in death or serious injury if not avoided.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>Indicates a hazardous situation which can result in minor or moderate injury if not avoided.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>Damage to property: The product or the surrounding environment can be damaged.</td>
</tr>
</tbody>
</table>

### 1.3.2 Symbols

The following icons indicate information which is not relevant to safety, however, it makes the documentation easier to comprehend.

### Table 3: Meaning of the icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔄</td>
<td>Single, non-related actions</td>
</tr>
<tr>
<td>1.</td>
<td>Numbered instructions</td>
</tr>
<tr>
<td>2.</td>
<td>The numerals indicate that the actions are in chronological order.</td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>
1.3.3 Designations
In this documentation, the following designations are used:

Table 4: Designations

<table>
<thead>
<tr>
<th>Designation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG2</td>
<td>Mounting Kit Swing Gate</td>
</tr>
<tr>
<td>BS2/...</td>
<td>Transverse Conveyor</td>
</tr>
<tr>
<td>SZ2</td>
<td>Leg Set</td>
</tr>
<tr>
<td>WT2</td>
<td>Workpiece carrier</td>
</tr>
<tr>
<td>UM2</td>
<td>Return Unit</td>
</tr>
<tr>
<td>AS2</td>
<td>Drive Module</td>
</tr>
</tbody>
</table>

2 Safety instructions

2.1 About this chapter
The product was manufactured in accordance with generally accepted engineering standards. Nevertheless, there is a risk of personal injury and property damage if you do not observe this chapter and the safety instructions in this document.

- Read this manual thoroughly and completely before you start working with the product.
- Keep the documentation accessible to all users at all times.
- When passing on the product to a third party, make sure that it is always accompanied by the necessary documentation.

2.2 Intended use
The product is an incomplete machine.
You may use the product as follows:
• For installation in a Rexroth TS 2plus transfer system, in conjunction with a BS2/... transverse conveyor.
• For the maximum load / line load see Technical data on page 31.
• For the environmental conditions see page 31.

The product is strictly intended for professional use and not for private use. The intended use also implies that you have read and understood this documentation, especially chapter 2 “Safety”.
2.3 Improper use
Any other use than that which is described as the intended use is improper and not permitted.
Bosch Rexroth Corporation is not liable for damage resulting from improper use. The risks associated with improper use lie solely with the user.
The following also fall under the category of improper use:
• Transporting other transport materials than those which are specified.
• The transport of persons on the product or the cargo.
• Persons climbing onto the product
  – the product is not accessible.
• Private use.

2.4 Personnel qualifications
The activities described in this documentation require basic knowledge of mechanical, electrical and pneumatic systems, as well as knowledge of the appropriate technical terms. Additional knowledge in dealing with a hoist and the associated slings are required for transport and handling of the product. In order to ensure safe use, these activities may only be carried out by authorized personnel or an instructed person under the supervision of a qualified person.
An expert is someone who can evaluate the work assigned to them due to their professional training, knowledge and experience as well as knowledge of the relevant provisions, recognize potential hazards and take appropriate safety measures.
Qualified personnel must comply with the relevant technical regulations and have the necessary expertise.

Bosch Rexroth offers training to support activities in specific areas. You can find an overview of the training content online at http://www.boschrexroth.de/didactic

2.5 General safety instructions
• Observe the current regulations for accident prevention and environmental protection.
• Observe the safety rules and regulations of the country in which the product is used / applied.
• Only use Rexroth products which are in technically perfect condition.
• Follow all instructions printed on the product.
• Persons who install, operate, disassemble or service Rexroth products may not be under the influence of alcohol, drugs or medications that affect their responsiveness.
• Use only original accessories and spare parts from Rexroth to prevent hazards to persons due to improper spare parts.
• Observe the ambient conditions specified in the product documentation and technical data.
• You may operate the product only when it was found that the final product (such as a machine or system), in which the Rexroth products are installed, is in accordance with the respective national provisions, safety regulations and the standards for the application.
2.6 Product-specific safety instructions

**General**
- You may not alter the product design principle.
- Do not put the product unduly under mechanical strain under any circumstances.
  Never use the product as a step. Do not place objects on it.
- The product must always be prevented from tipping over.
- Pay attention to the transport instructions on the packaging.
- Inspect the product for visible transport damage.
- Lay the cables and wires so that they are not damaged and no one can trip over them.
- Always switch the relevant system component to a pressure-free and tension-free state before installing the product or connecting or disconnecting plugs.
- Secure the component against reconnection.
- Before beginning, make sure that all gaskets and seals of the connectors are installed properly and are not damaged to prevent fluids and debris from entering the product.
- Allow the product to acclimatize for a few hours prior to first-time operation, otherwise condensation can form inside the housing.
- Make sure that all electrical and pneumatic connections are in use or closed.
- Check the security requirements according to DIN EN 619.
- Only start up a fully assembled product.
- Make sure that all pertinent product safety devices are on hand, properly installed and fully functional. You must not change the position of, circumvent or disable safety devices.
- Do not touch any moving parts.
- Inspect the product for malfunctioning.
- Make sure that only authorized personnel
  – start, operate or modify the functional sequence in the context of the intended use of the product
  – or make adjustments to components or parts.
- Only allow persons authorized by the operator access to the direct operating zone of the system. This also applies to periods when the product is not in operation.
- Make sure that:
  – the access to EMERGENCY STOP devices is free from obstructions,
  – all feeding points, workplaces and passageways are kept clear.
- Do not use the EMERGENCY STOP devices for normal stopping action.
- Regularly check the correct operation of the EMERGENCY STOP devices.
- In the event of an error or other irregularities, after an EMERGENCY STOP turn the product off and secure it against restarting.
- Do not touch any moving parts.
- A resting system is not a safe system because stored energy can be released unintentionally or due to improper maintenance work.

**During transport**

**During installation**

**During startup**

**While running**

**EMERGENCY STOP fault**

- Start the system again after an EMERGENCY STOP or malfunction only after you have identified the cause of and have eliminated the fault.
• Make sure that the access to maintenance and inspection points are free of obstacles.
• Perform the prescribed maintenance work at the intervals prescribed in chapter 10.2 “Maintenance”.
• Make sure that no lines, connections and components are loose while the system is under pressure and tension. Secure the system against restarting.
• Dispose of the product in accordance with the national laws of your country.

2.7 Personal protective equipment
• Appropriate protective clothing is to be worn when handling the product (e.g. safety shoes, close-fitting clothing, a hair net for long, loose hair).

As an operator or end user, you are responsible for wearing appropriate protective equipment when handling the product.

All parts of your personal protective equipment must be intact.

2.8 Responsibilities of the end user
• Before first use or re-commissioning of a conveyor system, run a risk assessment in accordance with DIN EN ISO 12100.
• Before initial commissioning ensure that there are no protruding or sharp-edged parts that may endanger personnel working or moving in the area.
• Provide safety-related instructions to the operating personnel before first use or re-commissioning, and then in regular intervals.

3 General information regarding damage to property and the product

The warranty only applies to the delivered configuration.
• The warranty is void in case of faulty installation, commissioning and operation, as well as improper use and / or improper handling.

While cleaning
• Avoid the penetration of detergent into the system.
• Never use solvents or aggressive cleaning agents.
• When cleaning, do not use high-pressure washers.
4 Delivery contents

The following is included in the delivery:

- 1 mounting kit SG2 Swing Gate
- 1 set of instructions “Mounting Kit SG2 Swing Gate”

4.1 Delivery state

- Mounting kit, unassembled. Components and assemblies may appear slightly different depending on ordered configuration.

A: Mainline Hinge Frame
B: Pivoting Frame
C: Caster Mounting Bracket
D: Caster
E: Rest End Pivot Assembly
F: Rest End Base Assembly
G: Lockplate Assembly

Fig. 1: Delivery contents
4.2 Required Accessories
• 1 belt section BS2/…,

4.3 Optional Accessories
• Proximity switch to prevent flow into open gate

5 About this product

5.1 Performance description

Fig. 2: Performance description Swing Gate

5.1.1 Application of Swing Gate
• The mounting kit which connects to a BS2/… transverse conveyor will horizontally swing the BS2/…, providing free passage when in an open position.

5.1.2 Design of Swing Gate
• Mounting kit for belt sections
  – BS2, b = 320mm to b = 1200mm.
  – BS2, BS2/C-100, BS2/C-250, BS2/R-300, BS2/R-700
  – Width (B) 320 through 480, allowable BS length range: 1500, 2000, or 2500
  – Width (B) 560 through 1200, allowable BS length range: 2000, 2500
• Height (H) from 580 mm to 1500 mm
• Mechanical unlocking
• Safety switch in off position
5.2 Product description

1. Assembled hinged base unit (A) mounts to downstream (return end) conveyor leg set. It attaches to drive end of BS2/... transverse conveyor. Castors provide opening and closing rotation to the BS2/... transverse conveyor.

2. Assembled rest end base unit (B) attaches to return end of BS2/... transverse conveyor. Castors provide opening and closing rotation to the BS2/... transverse conveyor.

3. Locking plate with proximity bracket (C) mounts to upstream (drive end) conveyor leg set and engages cam on end of rest unit (D) to mechanically lock BS2/... transverse conveyor in fixed position.

Fig. 3: Basic components

B>480mm Shown
Width of the passageway

Refer to dimensions shown and configure the mainline conveyors to the appropriate over all opening before attempting installation of the SG2 Swing Gate.

**Please note:**
Be sure leg sets are located the specific distances shown from the end of the drive and return units.

<table>
<thead>
<tr>
<th>BWT</th>
<th>Conveyor Gap A (Based on Conveyor Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L = 1500</td>
</tr>
<tr>
<td>320</td>
<td>70</td>
</tr>
<tr>
<td>400</td>
<td>75</td>
</tr>
<tr>
<td>480</td>
<td>100</td>
</tr>
<tr>
<td>560</td>
<td>100</td>
</tr>
<tr>
<td>640</td>
<td>120</td>
</tr>
<tr>
<td>720</td>
<td>146</td>
</tr>
<tr>
<td>800</td>
<td>175</td>
</tr>
<tr>
<td>880</td>
<td>205</td>
</tr>
<tr>
<td>960</td>
<td>240</td>
</tr>
<tr>
<td>1040</td>
<td>280</td>
</tr>
<tr>
<td>1120</td>
<td>320</td>
</tr>
<tr>
<td>1200</td>
<td>365</td>
</tr>
</tbody>
</table>

\[(55 + L + A) = \text{Over All Length of Opening}\]
Please note:
Observe pallet flow (black arrow) when installing the Swing Gate. The hinge end will always be attached to the motor/gearbox end of the BS2/... transverse conveyor.

The SG2 is available in two basic configurations:
• Option S=R: Right side hinge provides opening motion from the right conveyor rail.
• Option S=L: Left side hinge provides opening motion from the left conveyor rail.

Please note:
In some cases mid-mounted motor will have to be relocated to opposite side of BS2/... transverse conveyor.

5.2.1 Mounting Possibilities

Fig. 5: Mounting possibilities
5.3 Identification of the product

![Name plate](image)

6 Transportation and storage

- Pay attention to the transport instructions on the packaging.
- Shipping weight: see delivery documents
- The product must always be prevented from tipping over!
- The ambient conditions must be controlled when storing and transporting; see page 31.

6.1 Transporting the product

**WARNING**

Raised loads can fall down!
Serious injury (or death) can occur if the product falls down.
- Use only slings with sufficiently high load capacity (for product weight see shipping documents).
- Check if the carrying straps are attached properly before lifting the product!
- The product must always be prevented from tipping over when lifting!
- During raising and lowering pay attention that nobody other than the operator is in the danger zone!

6.2 Storing the product

- Only set the product down onto a level surface.
- Protect the product from mechanical influences.
- Protect the product from environmental influences such as dirt and moisture.
- Pay attention to the ambient conditions, see page 31.
- Support the product so that hanging-mounted engines will not be burdened.
7 Installation

7.1 Unpacking the product

- Lift the product from its packaging.
- Dispose of the packaging material in accordance with the national laws of your country.

7.2 Installation conditions

- During installation the ambient conditions specified in the technical data (see page 31) must be maintained.

7.2.1 Installation position

- Install the product at right angles and parallel to the axis. This ensures proper functioning and prevents premature wear and tear.

7.2.2 Fixing with T-head bolts

- Mount the transfer systems TS 1, TS 2plus, TS 2pv, TS 4plus, TS 5 and the chain conveyor system VarioFlowplus with T-head bolt and collar nut.
- When inserting and tightening, make sure the T-head is in the correct position in the collar nut. The notch at the end of the screw indicates the position of the T-head.
  - 1 = insertion position of the T-head bolt into the nut
  - 2 = clamping position of the T-head bolt into the nut
  - Tightening torque 25 Nm

7.3 Required tools

- Hex key SW13
- Hex socket head cap screw SW3, SW4, SW5
- Internal Torx screw key T30, T50
- Phillips screwdriver PH2
- Hammer
- Spirit level
7.4 Symbols used

**Table 5: Symbols used**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Hex key](SW13) | Hex key  
\[M_D = 20\text{Nm}\]  
\[M_D = \text{necessary tightening torque...Nm}\] |
| ![Hex socket head cap screw key](SW5) | Hex socket head cap screw key  
\[M_D = 8\text{Nm}\]  
\[M_D = \text{necessary tightening torque...Nm}\] |
| ![Screwdrivers](PH3, PZ2) | Screwdrivers for cross-head screws  
PZ ... = Pozidriv screwdriver, size ...  
PH ... = Phillips screwdriver, size ... |
| ![Lubricate](gleitmo 585 K, Anti-Seize) | Lubricate / Lubricate with specific grease:  
• gleitmo 585 K: gleitmo 585 K, www.fuchs-lubritech.com  
• Anti-Seize: Food Grade Anti-Seize/Loctite 8014, www.henkel.com |
| ![Loctite](Loctite 243, Loctite 601) | Secure the screws with:  
• Loctite 243: medium strength (detachable), www.loctite.de  
• Loctite 601: high-strength screw retention (non-detachable), www.loctite.de |
| ![Recycle](Recycle) | The marked parts are not required for the assembly described. Dispose of the parts or use them for other purposes. |
| ![Assembly sequence](1, 2, 3) | Graphical depiction of assembly sequence.  
The numbers correspond to the sequence of assembly, in accordance with the instructions of the accompanying text. |
| ![Components](A, B, C, X) | Graphical depiction of components.  
The letters denote the components mentioned in the accompanying text. |
| ![Detail view](Detail view) | Detail view from a different direction, for example, on the back or bottom of the product. |
7.5 Installing the Swing Gate components

7.5.1 Attaching hinged end components

Please note:
In some cases the following components may already be assembled. If so skip ahead to the next applicable step.

Attach the following components to the downstream end of mainline conveyor (return end).

1. Attach a castor (A) to mounting bracket (B) with a locknut.
2. Attach castor and bracket assembly to pivoting frame (C) with two T-bolts and flangenuts.
3. Repeat steps 1 and 2 on the other side of frame (C).
4. Measure length of leg set at mainline end ($H_2$) and adjust both mounting brackets (B) with castors to the same length ($H_2$).
5. Connect hinge frame (D) to pivoting frame (C) with two T-bolts and flange nuts at (F, E).
6. Remove gusset covers at (G, H) and attach the assembled hinged base unit to the mainline leg set.
7. Attach hinge brace (I) to mainline leg set with with T-nuts and cap screws (J, K).

Fig. 7: Assembly of hinge and pivot frames
Check to be sure pivoting frame and hinge are parallel and lined up to the mainline conveyor. The pivoting frame and hinge should also be perpendicular to the leg set at (A).

**To Adjust:**
1. Loosen the mounting hardware (B).
2. Move bracket (C) in the direction of arrows to line up the components as shown.
3. Tighten mounting hardware (D).
4. Use locking handles (E) to lock the hinge.

Attach the following components to the upstream end of mainline conveyor (drive end).

1. Verify drive unit leg set is located 280mm from end of drive (A).
2. On lockplate assembly (B) remove gusset covers. Use T-bolts and flange nuts (D, E) to attach assembly (B) to mainline leg set.
3. Adjust location of lockplate to 262mm (C) below conveyor rail.
4. If not already installed, mount proximity bracket (F) to lockplate assembly (B) with cap screws.

---

**7.5.2 Adjusting the hinge end**

![Fig. 8: Adjustment of pivot hinge](image)

**7.5.3 Attaching rest end components**

![Fig. 9: Installing lock plate assembly to mainline](image)
Please note:
In some cases the following components may already be assembled. If so skip ahead to the next applicable step.

Attach the following components on the upstream end of mainline conveyor (drive end).

1. Attach a castor (A) to mounting bracket (B) with a locknut.
2. Attach castor and bracket assembly to rest end pivot (D) with two T-bolts and flangenuts.
3. Repeat steps 1 and 2 on the other side of frame (D).
4. Measure length of leg set at mainline end (H² INSET #1) and adjust both mounting brackets with castors (B) to the same length (H²).
5. Connect pivot joint (C) to frame at (E) with flat head screws and T-nuts. On frames B=480mm and larger refer to INSET #2 and connect directly to cross connector (E) on leg set.
6. Adjust pivot joint so that it is 236mm to centerline of pivot (INSET #1).
7. Position locking cam (F) into the locking indent in the lock plate assembly. If necessary, clamp the pivot joint (C) in place to keep the rest end assembly stable.

Fig. 10: Assembly of rest end frame

7.5.4 Assembly of rest end components
CAUTION:
Because of the weight of the BS2/... transverse conveyor (not included) and swing gate, it is recommended to use a sling hoist or two people to perform the following steps:

Please note: Your application may look slightly different than the illustration depending on the configuration but the installation procedure is the same.

1. Remove cover caps from gussets at (B, C, D, E).
2. Align mounting T-bolts at (B, C, D, E, F, G,) to be parallel to the mainline.
3. Carefully lower transverse conveyor (A) onto mounting hardware at (B, C, D, E, F, G,).
4. Adjust position of transverse conveyor to the dimensions shown.
5. Tighten all T-bolts (B, C, D, E, F, G,) securing transverse conveyor (A) to hinge end and rest end.
6. Replace cover caps removed earlier.

7.6 Attaching BS2/... Transverse Conveyor to Swing Gate

Fig. 11: Installing BS2/... transverse conveyor

*See Chart on Page 13 for Dimension (A)
Check to be sure BS2/... transverse conveyor on rest end is parallel and in-line with mainline conveyor.

**To Adjust:**
1. Remove cover caps from gussets at (A, B).
2. Loosen flange nuts at (A, B) that attach cam assembly to 45 x 45 profile (C).
3. With cam (E) positioned in indent of lock plate (D) move cam assembly in direction of arrows to align the transverse conveyor to the mainline conveyor.
4. Tighten mounting flange nuts at (A, B) and replace cover caps.

**Please note:**
To level the BS2/... transverse conveyor with mainline conveyor, loosen the flange nuts at (F) and adjust leg sets in direction of arrow until level. Re-tighten hardware.

Assembly of the swing gate is complete. Refer to electrical cable routing and operation instructions for proper test and operation of the swing gate.
7.7 Electric Cable Routing

Please note:
Due to the swing gate movement it is recommended to use High Flex power cable (A) and run it along the top profiles of the hinge.

WARNING:
Follow instructions in the assembly manual included with the delivery of BS2/... transverse conveyor to make approved electrical connection to the drive motor.

Fig. 13: Electric cable routing
8 Starting up

8.1 First-time operation

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unforeseen movements, falling workpiece carrier</td>
</tr>
<tr>
<td>Injury caused by falling objects.</td>
</tr>
<tr>
<td>▶ Make sure that the product has been installed correctly by qualified personnel (see page 7) before starting it up.</td>
</tr>
<tr>
<td>▶ Guide the Swing Gate by the handles throughout the entire opening or closing process.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malfunctions due to incorrect installation and startup</td>
</tr>
<tr>
<td>The product can be damaged; the service life may be adversely affected.</td>
</tr>
<tr>
<td>▶ Starting up requires basic mechanical, pneumatic and electrical knowledge.</td>
</tr>
<tr>
<td>▶ The product may only be operated by qualified personnel (see page 7).</td>
</tr>
</tbody>
</table>

• Before first use or re-commissioning, check that the Swing Gate is operating safely, especially the force feedback that occurs during opening and closing.
• Before first use or re-commissioning of a conveyor system, run 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 devices.
• The surfaces of engines and gearboxes can reach temperatures of over 65°C/149°F under certain load and operating conditions. In these cases, you must comply with the appropriate design measures (protective measures) or the corresponding warnings of the applicable accident prevention regulations!
• Make sure that all electrical and pneumatic connections are in use or closed. Check that all screws and plugs are securely fastened. All relevant protective covers must be installed.
• Continuous conveyors which are in motion or in operation may only be inspected and adjusted once all required safeguards are in place.
• Note EN ISO 13857 when you remove or replace safeguards and / or nullify a safety guideline.
• Test runs with open panels are only allowed if they are carried out by a competent person using tip switches and no interference through other switching elements exists.
• Only start up the product when all safety devices of the system are installed and are operational.
• Only start up a fully assembled product.
8.2 Further risks

Table 6: Further risks

<table>
<thead>
<tr>
<th>Place</th>
<th>Situation</th>
<th>Danger</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belt or chain entry point</td>
<td>Pieces of clothing or long hair can be pulled in</td>
<td>Crushing, pulling out of hair</td>
</tr>
<tr>
<td>2</td>
<td>Cross connector, drive shaft In between component and workpiece carrier</td>
<td>Body parts can become caught</td>
<td>Danger of cutting</td>
</tr>
<tr>
<td>3</td>
<td>Conveyor: between running conveyor and stationary workpiece carrier (e.g. during separation)</td>
<td>Body parts can become caught</td>
<td>Crush injury</td>
</tr>
<tr>
<td>4</td>
<td>In between one workpiece carrier and another</td>
<td>Crush injury to body parts</td>
<td>Crush injury</td>
</tr>
</tbody>
</table>
### Table 7: Further risks

<table>
<thead>
<tr>
<th>Place</th>
<th>Situation</th>
<th>Danger</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>End of the conveyor drive</td>
<td>Crush injury</td>
<td>A constructive solution is required, e.g. by means of a stopper.</td>
</tr>
<tr>
<td>6</td>
<td>Open Swing Gate</td>
<td>Crush injury</td>
<td>A design solution is required, e.g. by means of a separator.</td>
</tr>
<tr>
<td>7</td>
<td>Open Swing Gate</td>
<td>Crush injury</td>
<td>Only qualified personnel are permitted to stand in the work and traffic area. Check the locking mechanism periodically and adjust as required.</td>
</tr>
</tbody>
</table>

### 8.3 Re-commissioning after a standstill period

- Follow the steps for first-time operation.
9 Operation

**CAUTION**

*Hot surfaces of the electric motors in operation!*
Burns can result from the > 65°C/149°F surfaces.
- Provide for appropriate guard devices.
- Let the unit cool down at least 30 minutes before performing maintenance and/or repair work.
- Guide the Swing Gate by the **handles** throughout the entire opening or closing process.

9.1 Opening and Closing

**To Open:**
Use handle (A) or (B) and rotate swing gate cam over detent on locking plate. Continue to open as required for pass through.

**Please note:**
Do not attempt to rotate past maximum open position or damage to mainline or BS2/... transverse conveyor may occur (C).

**To Close:**
Use handle (A) or (B) and rotate swing gate to closed position. Be sure locking cam on end of swing gate is in locked position before resuming operation of the conveyor.

![Swing Gate operation diagram](image)

**Fig. 14: Swing Gate operation**
10 Maintenance and repair

**WARNING**

*High electrical voltage!*  
Risk of serious injury and even death from electrical shock.  
- Disconnect the relevant system component before you perform maintenance and repair work.  
- Secure the system against unintentional restarting.

*High pneumatic pressure!*  
Risk of serious injury and even death.  
- Disconnect the relevant system component from the pneumatic pressure source before you perform maintenance and repair work.  
- Secure the system against unintentional restarting.

**CAUTION**

*Hot surfaces of the electric motors in operation!*  
Burns can result from the > 65°C/149°F surfaces.  
- Provide for appropriate guard devices.  
- Let the unit cool down at least 30 minutes before performing maintenance and/or repair work.

- Continuous conveyors which are in motion or in operation may only be inspected and adjusted once all required safeguards are in place.  
- Note EN ISO 13857 when you remove or replace safeguards and/or nullify a safety guideline.  
- Test runs with open panels are only allowed if they are carried out by a competent person using tip switches and no interference through other switching elements exists.

10.1 Cleaning and care

**NOTICE**

*Failure of the bearings*  
Applying grease-dissolving substances to the bearing points, e.g. when cleaning, leads to the failure of the bearings. There is a risk of damage to property, and the service life may be reduced.  
- Keep degreasers or aggressive cleaning away from the bearings!  
- Clean the product only with a damp cloth.

10.2 Maintenance

This is a maintenance-free product.

10.3 Replacement of worn parts

There are no wear items in the SG2 Swing Gate that will need replacement.
10.4 Spare parts
For a list of spare parts, contact the AT Technical Services Dept. 800-32-BOSCH.

11 Decommissioning
The product is a component that does not need to be taken out of service. Therefore, the chapter in these instructions contains no information on the topic.

12 Disassembly and replacement

⚠️ WARNING

High electrical voltage!
Risk of serious injury and even death from electrical shock.
- Disconnect the relevant system component before you perform maintenance and repair work.
- Secure the system against unintentional restarting.

High pneumatic pressure!
Risk of serious injury and even death.
- Disconnect the relevant system component from the pneumatic pressure source before you perform maintenance and repair work.
- Secure the system against unintentional restarting.

Raised loads can fall down!
Serious injury (or death) can occur if the product falls down.
- Use only slings with sufficiently high load capacity (for product weight see shipping documents).
- Check if the carrying straps are attached properly before lifting the product!
- The product must always be prevented from tipping over when lifting!
- During raising and lowering pay attention that nobody other than the operator is in the danger zone!

12.1 Preparing the product for storage/re-use
- Only set the product down onto a level surface.
- Protect the product from mechanical influences.
- Protect the product from environmental influences such as dirt and moisture.
- Pay attention to the ambient conditions, see page 31.
- For products with mounted motor, support the product so that hanging-mounted motors will not be burdened.
13 Disposal

- The materials used are environmentally friendly.
- The possibility of reproduction or re-use (possibly after reconditioning and replacement of components) is provided for. Recyclability is ensured by the selection of materials and dismantling capacity.
- Careless disposal of the product may cause pollution.
- Dispose of the product in accordance with the national laws of your country.

14 Extension and modification

- You may not modify the product.
- The Bosch Rexroth manufacturer’s warranty only applies to the delivered configuration and extensions that were included in the configuration. After a renovation or extension beyond the structural modifications or extensions described here, the warranty will become null and void.

15 Troubleshooting

- If you are unable to fix the error, you should contact us at one of the contact addresses which you can find at www.boschrexroth.com.
16 Technical data

- For dimensions, see sales catalog TS 2plus, R 999 000 396.
- Maximum load: varies per BS2/... transverse conveyor selected (toothed belt, flat-top chain, roller chain)
- Maximum line load: 1.0 kg/cm with BS2/... transverse conveyor
- Acoustic emission: < 70 dB (A)

16.1 Ambient conditions

- The transfer systems are designed for stationary use in weather-protected areas.
- Working temperature: +5°C/41°F to +40°C/104°F
  -5°C/41°F to +60°C/140°F at 20% reduced load
- Storage temperature: -25°C/77°F to +70°C/158°F
- Relative humidity: 5% to 85%, non-condensing
- Permissible load capacity of floor: 1000kg/m²
- At altitudes > 1400m, the load values of the electric drives are reduced by 15%.
- Avoid molds, fungi and rodents, and other pests.
- Installation and operation in the immediate vicinity of industrial equipment with chemical emissions is not permitted.
- Do not install and operate in the vicinity of sand or dust sources.
- Do not install and operate in areas which are regularly jarred by high forces caused by presses or heavy machinery, for example.
- Resistant to many conventional substances used in the manufacturing sector, such as water, oil, grease, and detergents. If you are unsure about resistance against certain chemicals such as test oil, doped oils, aggressive detergents, solvents, or brake fluid, we recommend that you consult with your specialized Rexroth representative.
- Prolonged contact with highly acidic or alkaline reacting substances must be avoided.

16.2 Pneumatics

- Operation of the SG2 Swing Gate does not require compressed air.