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# Interroll 24 V Alignment Conveyor

**RM 8340**

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Introduction

Notes about working with the installation and operating instructions
The 24-V Alignment Conveyor RM 8340 is generally referred to as "module" in this document.

These installation and operating instructions contain important notes and information about the various operating phases of the module:
• Transport, assembly and startup
• Safe operation, required maintenance tasks, removal of any faults
• Spare parts, supplementary accessories

The installation and operating instructions describe the module at the time of its initial delivery after manufacturing.

In addition to this manual, special contractual agreements and technical documents apply to special versions of the module and its additional equipment.

To ensure trouble-free and safe operation as well as the settlement of possible warranty claims, always read these installation and operating instructions first and observe all the information contained herein.

Keep the installation and operating instructions close to the module.
Pass the installation and operating instructions on to any subsequent operator or occupant. Interroll does not accept any liability for faults or defects due to non-observance of these installation and operating instructions.

If you have any questions after reading the installation and operating instructions, please contact the Interroll customer service. Contact persons close to you can be found on the Internet under: www.interroll.com/contacts.
Warning notices in this document

The warning notices refer to risks which may arise while using the module. They are available in four danger levels identified by the signal word:

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Identifies a danger with high risk that can lead to death or serious injury if it is not avoided.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Identifies a danger with medium risk that can lead to death or serious injury if it is not avoided.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Identifies a danger with low risk that can lead to minor or medium injury if it is not avoided.</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Identifies a danger that can lead to property damages.</td>
</tr>
</tbody>
</table>

Symbols

This symbol marks useful and important information.

Requirement:

- This symbol represents a prerequisite to be met prior to assembly and maintenance work.
- This symbol marks the steps to be carried out.
Safety

State of the art
The module has been built to comply with the state of the art. Nevertheless, users may encounter hazards during its use.

Disregarding the notices in this manual may lead to serious injury.
- Carefully read the manual and follow its content.

Intended use
The module may only be used for industrial applications and in an industrial environment to convey roller conveyor-ready goods such as small packages, cartons or boxes.

The module is an incomplete machine and must be integrated into a complete system prior to operation.

Field of use
The module is dimensioned only for a certain field of use and may not be operated outside of these specific limits. For additional information, see the chapter "Technical data".

Any other use is considered inappropriate. Deviating operating conditions require additional clarifications, a special release of the module and new contractual agreements.

Changes to the module
Any modifications that affect the safety are not permitted.

Personnel qualification
Unqualified personnel cannot recognize risks and, as a result, is subject to greater dangers.

- Authorize only qualified personnel with the activities described in these installation and operating instructions.
- The operating company must ensure that the personnel follows locally applicable regulations and rules during their work with regard to safety and dangers.

The following target groups are addressed in these installation and operating instructions:

Operators
Operators have been instructed in the operation and cleaning of the module and follow the safety guidelines.

Service personnel
The service personnel features a technical training and performs the maintenance and repair tasks.

Electricians
Persons working on electrical installations must have the pertinent technical training.
Safety

Dangers

The following list informs you about the various types of danger or damage that may occur while working with the module.

Safety devices
- Perform any maintenance and repair work on the module only in de-energized state and ensure that it cannot be started accidentally.
- In the passage area of persons or if persons can reach between transported materials, additional protective measures may apply.
- Do not remove protective covers or housing.
- Regularly check the safety devices.

Electricity
- Reach into the module only if the module is de-energized.

Rotating parts
- Never wear loose clothing.
- Never wear jewelry, such as necklaces or bracelets.
- If you have long hair, always wear a hair net.

Parts lying around or falling off
- Remove equipment or material which is not required from the workspace.
- Wear safety shoes.
- Specify and monitor careful placement of the goods on the conveyor.

Risk of injury due to faults during operation
- Regularly check the module for visible damage.
- Immediately shut down the module and ensure that it cannot be started accidentally in case of:
  - fire vapors, unusual, noise, blocked or defective conveyor belt, defective supports, side guides or accessory devices, unauthorized removal of safety covers and with a defective suspension.
- Immediately determine the cause of the fault by qualified personnel.
- Immediately remove any escaping gear oil.
- Do not step on the module during operation.

Maintenance intervals
- Regularly perform maintenance and inspection work.
- Use only OEM spare parts.

Interfaces to other devices
New hazardous positions may occur while integrating the module into a complete system. These positions are not part of this manual and have to be analyzed during the assembly and startup of the complete system.
- When combining the module with other modules or machinery, check for new hazards before startup. In particular, observe the infeed point at the deflection shaft.
- Additional constructive measures may be required.
Operating modes

Normal mode
The module is installed at the customer in a complete system and operated as part of the system.

Special mode
Special operation refers to all operating modes which are required to guarantee and maintain regular operation.

<table>
<thead>
<tr>
<th>Special operating mode</th>
<th>Explanation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport/Storage</td>
<td>Loading and unloading, transport and storage</td>
<td>-</td>
</tr>
<tr>
<td>Assembly/Initial start-up</td>
<td>Installation at the end customer and performing the test run</td>
<td>-</td>
</tr>
<tr>
<td>Cleaning</td>
<td>External cleaning without removing protective devices</td>
<td>When de-energized</td>
</tr>
<tr>
<td>Maintenance/Repairs</td>
<td>Maintenance and inspection tasks</td>
<td>When de-energized</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Troubleshooting in the event of a fault</td>
<td>-</td>
</tr>
<tr>
<td>Fault elimination</td>
<td>Eliminating the fault</td>
<td>When de-energized</td>
</tr>
<tr>
<td>Shutdown</td>
<td>Removing from the complete system</td>
<td>When de-energized</td>
</tr>
<tr>
<td>Disposal</td>
<td>Removing from the complete system and disassembly</td>
<td>When de-energized</td>
</tr>
</tbody>
</table>
Product identification

Components

24 V Alignment Conveyor RM 8340

1  Reflector  8  Side cover
2  Side guide profile  9  RollerDrive
3  Drive belt  10  Carrying idler
4  Side plate with finger guard  11  Control
5  Side guide support  12  Head segment
6  Universal support  13  Side frame
7  Photo cell  14  End cap (of side frame)

Property
The 24 V alignment conveyor guides products diagonally to the transport direction to a side frame, and aligns them to the side guide if necessary. The components of the 24 V alignment conveyor RM 8340 can be used if needed to convert a straight roller conveyor into an alignment conveyor.

The 24 V alignment conveyor enables zero pressure accumulation transport of goods.
# Technical data

<table>
<thead>
<tr>
<th></th>
<th>Alignment Conveyor RM 8340</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max. load capacity</strong></td>
<td>50 kg/m</td>
</tr>
<tr>
<td><strong>Conveying speed</strong></td>
<td>0.1 to 1.0 m/s (at 35 kg)</td>
</tr>
<tr>
<td></td>
<td>0.1 to 0.8 m/s (at 50 kg)</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>+5 to +40 °C</td>
</tr>
<tr>
<td><strong>Roller type</strong></td>
<td>Interroll Series 3500</td>
</tr>
<tr>
<td><strong>Roller diameter</strong></td>
<td>50 mm</td>
</tr>
<tr>
<td><strong>Roller material</strong></td>
<td>Steel 1.5 mm, zinc-plated</td>
</tr>
<tr>
<td><strong>Roller material option</strong></td>
<td>Stainless steel</td>
</tr>
<tr>
<td><strong>Number of rollers max.</strong></td>
<td>6 (per 24 V drive)</td>
</tr>
<tr>
<td><strong>Number of zones per module (N)</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Rated voltage</strong></td>
<td>24 V</td>
</tr>
<tr>
<td><strong>Motor type</strong></td>
<td>Interroll RollerDrive EC310</td>
</tr>
<tr>
<td><strong>Drive medium</strong></td>
<td>PolyVee belts</td>
</tr>
<tr>
<td><strong>Torque transmission</strong></td>
<td>Roller-to-roller</td>
</tr>
<tr>
<td><strong>Control variants</strong></td>
<td>MultiControl</td>
</tr>
<tr>
<td><strong>Incline/decline</strong></td>
<td>Not suitable</td>
</tr>
<tr>
<td><strong>Side profile</strong></td>
<td>115 x 35 mm, without side guide</td>
</tr>
<tr>
<td><strong>Between frames</strong></td>
<td>420 to 1020 mm</td>
</tr>
<tr>
<td><strong>Module length (ML)</strong></td>
<td>ML = N x ZL, max. 5,300 mm</td>
</tr>
<tr>
<td><strong>Zone length (ZL)</strong></td>
<td>Number of rollers x P</td>
</tr>
<tr>
<td><strong>Roller pitch (P)</strong></td>
<td>60 mm</td>
</tr>
<tr>
<td><strong>Installation angle of rollers</strong></td>
<td>7°, 15.2°</td>
</tr>
<tr>
<td><strong>Side guide</strong></td>
<td>Fixed, flexible or rolling, left or right</td>
</tr>
<tr>
<td><strong>Side of electrical system</strong></td>
<td>Left or right</td>
</tr>
<tr>
<td><strong>Drive side</strong></td>
<td>Left or right</td>
</tr>
<tr>
<td><strong>Noise level</strong></td>
<td>Leq ≤ 70 dB(A)</td>
</tr>
</tbody>
</table>
Zones
A module is divided into zones. Every zone consists of several segments. The segments in the center of the module (slanted roller elements) consist of two side plates. One RollerDrive and five following carrying idlers are installed between the side plates. The RollerDrive drives the following carrying idlers via drive belt (PolyVee belt). The two segments at the beginning and end of the module (head segments) consist of four carrying idlers connected via drive belt (PolyVee belt). The rollers in a segment are arranged angled by 7° or 15.2°.

Since the segments typically consist of six rollers, the segments may be shorter than a piece of material. For this reason, several segments are combined into zones for transporting a material.

Control
Control card
Every module features at least one own control card or is connected to the control card of its adjacent module.

The 24 V alignment conveyor can be delivered with a decentral control logic.
No master control system is required for operating the complete conveyor system.

Fieldbus
The 24 V alignment conveyor features a fieldbus as an option, so that it can be completely controlled via a PLC (programmable logic controller).

Every module is wired with all required internal cables and can easily be installed on site. Communication cables are available as options, such as bus cables.

Scope of supply
The 24 V alignment conveyor is completely assembled and wired in its delivery state. The scope of supply includes:

- Rack, including side frames, cross ties, side covers
- RollerDrive
- Carrying idlers
- PolyVee belts
- Finger guards
- Power supply cable
- Control
- 1 x photo cell and reflector per zone
- Side guide profiles, assembled or not assembled

The scope of delivery does not include:

- Supports
- End caps
- Bus communication cable
**Nameplate**

Nameplate (with arrow in transport direction)

1. Arrow in transport direction
2. Type designation
4. Layout item no.
5. Year of construction
6. Company address
7. Weight in kg
8. Level

The information on the nameplate is used to identify the conveyor. The type designation is required to use the conveyor according to its intended use.

The nameplate is located at the end of the conveyor in the right side frame in transport direction.
Transport and storage

Transport

⚠️ WARNING

Risk of injury during transport

- Fix the module securely and slip-proof for the transport.
- Ensure that the lifting device (crane, fork lift, etc.) is rated for the weight of the module.
- Ensure that no persons are located under the suspended load while lifting and moving the module.

Additional information about the transport are located on an information sheet that accompanies the motor.

- Data about weight and requirements for loading capacity and lifting tackle are located on the information sheet.
- Remove any persons from the danger zone.
- Wear safety shoes.
- Check the correct fastening for the transport.

The load lifting points are marked on the packet. Individual modules must be gripped at the bottom profile edge at the ends. Gripping at the top edge is not allowed since it can lead to inaccuracies of the sensor.

Identification of load lifting points

After the delivery

- Inspect module for transport damages.
- Immediately notify the carrier and manufacturer in case of damages to avoid losing any claims for compensation.
Storage

⚠️ WARNING

Risk of injury due to improper storage

- Do not stack modules. Do not place any other objects on the module.
- Check module for stability.

- If the module is not immediately placed in operation, store it at a location protected against humidity and dust.
Installation

⚠️ WARNING

Risk of injury due to improper assembly

- Mechanical assembly tasks should be performed only by service personnel. Observe the safety information.
- Electrical assembly tasks should be performed only by authorized electricians. Observe the safety information.
- Carefully install all terminals and connections, such as cables, hoses and pipework, and check for correct fit.

The module is delivered to the location site as a pre-assembled unit and must be set up, connected and integrated into a system on site.

In principle, photo cell and reflector as well as the control are already pre-assembled and connected with each other. The side guides (universal support, side guide support and side guide profiles) are delivered, either assembled or unassembled, according to customer specifications.

The following steps are required for the installation and integration in a complete system:

- Installing supports, See "Installing supports", page 19
- Connecting the modules, See "Connecting the modules", page 20

If one of the following components is not yet installed, the respective steps must be performed:

- Installing the photo cell and reflector, See "Installing the photo cell and reflector", page 27
- Installing side guide profiles, See "Installing the side guide profiles", page 21
- Installing side cover and end caps, See "Installing side cover and end caps", page 29

The following steps are required for converting a straight roller conveyor into a slanted roller conveyor:

- Converting straight roller conveyor into slanted roller conveyor, See "Converting straight roller conveyor into alignment conveyor", page 30
To be observed during installation

**Torque**
When tightening screws and nuts, always observe the standard tightening torque, unless specifically indicated otherwise. Standard screw lockers should be replaced as needed.

**Grounding**
During the installation of the module, its grounding must be observed. Among other things, the profile connectors are used for this purpose. If no profile connector is used for connecting the modules, alternate measures must be taken.

**Orientation**
- Align the module at the height-adjustable feet of the support. The decisive item for aligning the modules is the roller top edge (for roller conveyors) or the belt top edge (for belt conveyors).
  - Secure the adjusted height. Use suitable tools for the alignment (spirit level or rotation laser).
- During the alignment of the module, ensure that no moving parts are touching.

**Connection**
- Connect the individual modules with each other using the profile connector.
- During the setup of the module, check the passageways for the personnel. Install transitions as necessary.

**Anchoring**
- Anchor or fasten the module torsion-free, e.g. to the floor or adjacent components.

**Integration into complete system**
- When integrating the module into the complete system, consider possible danger spots, particularly infeed locations and interfaces.
Installing supports

Support with two height-adjustable feet

1 Serrated flange bolts  2 Height-adjustable foot

⚠️ CAUTION
Risk of injury when lifting heavy loads

- During the installation and replacement of conveyor modules or heavy spare parts, work in pairs or use a suitable carriage.

The module sits on at least one support. Every support has two height-adjustable feet (2).

- Place the module on the support.
- Position the supports underneath the module.
- Fasten every support to the perforation profiles of the side frames with four serrated flange bolts (1) and nuts.

For further information about the adjustment options, see the installation instructions of the support.
Connecting the modules

1  Side cover
2  Screw
3  Profile connectors
4  Side frame

During the setup of the conveyor system, check the passageways for the personnel. Install transitions as necessary.

The individual modules of a complete conveyor system are screwed together using profile connectors (3): Use narrow profile connectors for connecting alignment conveyors. The profile connector guarantees an even divisioning of 30 mm across two profiles.

⚠️ CAUTION

Risk of crushing and injuries from cuts

- When integrating the module into a complete system, consider possible danger spots, particularly infeed locations and interfaces.
The roller top edge is decisive for the alignment of the modules. Suitable tools for the alignment are spirit level or rotation laser.

- Position the modules to be connected so that the side frames (4) are aligned.
- On the insides of the modules to be connected, place one profile connector (3) each at the side frames.
- Fasten profile connectors to the perforated profiles at the side frames using screws (2). Use four screws on each side for every module.
- Anchor or fasten the module torsion-free, e.g. to the floor or adjacent components.

**Installing the side guide profiles**

1 Side guide profile
2 Side guide support
3 Mounting bracket
4 Flexible universal support
5 Rigid universal support
The installation of the side guide profiles (1) is done in several steps:

- Attach rigid universal support (5) to side frames, See "Installing the rigid universal support", page 22.
- Attach flexible universal support (4) to side frames, See "Installing the flexible universal support", page 23.
- Place side guide support (2) on mounting bracket (3) of universal support.
- Fasten side guide profiles to side guide supports, See "Fastening the side guide profile on the universal support", page 25. If needed, it is also possible to attach two side guide profiles above each other.

### Installing the rigid universal support

1. Rigid universal support
2. Side guide support
3. Nuts
4. Hexagon head screws

The rigid universal support is installed on the perforated profile of the side frame from the top.

**Requirement:**
- The module is out of operation.
- Loosen the side cover at the module.
- Position the rigid universal support and place it on the perforated profile of the side frame.
- Fasten the rigid universal support with two hexagon head screws and two nuts.
- Reattach the side cover.
Installing the flexible universal support

1. Side guide profile
2. Side cover
3. Clamping plate
4. Side guide support
5. Mounting bracket
6. Hexagon head screws
7. Universal support cover

The flexible universal supports can be delivered pre-assembled upon request. In this case, the universal supports are turned to the conveyor center for the transport and still have to be positioned before startup depending on their use (for the installation of adjustable side guide, photo cell or reflector).
The flexible universal support is laterally inserted into the C-profile of the side frame and clamped in place.

Requirement:
- The module is out of operation.
  - Loosen side cover (2) from the side frame.
  - Swing up the cover (7) of the universal support.
  - Loosen hexagon head screws (6) in the universal support, but do not remove them.
  - Insert the clamping plate (3) into the side frame at the rear side of the universal support by slightly turning the support.
  - Position the universal support on the side frame and slightly tighten the two hexagon head screws at the desired location.
  - Align the mounting bracket (5).
  - Firmly tighten the hexagon head screws.
  - Swing up the cover (7) of the universal support until you hear it snap in.
  - Attach the side cover. Cut the side cover apart at the locations at which the universal support is installed and shorten it accordingly. Snap in the individual parts of the side cover on the right and left of the universal support.
Fastening the side guide profile on the universal support

1. Side guide profile
2. Side guide support
3. Hammer head bolt
4. Hexagon nut
5. Side guide support cover
6. Mounting bracket
7. Flexible universal support
Installation

Requirement:
- The module is out of operation.
- Push side guide support (2) onto one of the mounting brackets (6) of the universal support (7). If needed, break out the upper hole cover in the side guide support, e.g. to use two side guides above each other.
- Tip up the cover of the side guide support (5).
- Slightly loosen hexagon nut (4) in side guide support.
- Place side guide profile (1) at side guide support (2) and position it.
- Slightly turn the hammer head bolt (3) located in the side guide support and insert it into the side guide profile.
- Tighten the hexagon nut.
- The hammer head bolt is fixed. The side guide support sits firmly at the universal support.
- Close the cover of the side guide support and snap it in place.
Installing the photo cell and reflector

The photo cell and the reflector are each delivered as a finished unit:

- The photo cell is in the photo cell holder.
- The reflective tape is affixed to the reflector holder.

![Diagram of photo cell and reflector installation](image)

Photo cell and reflector must be installed exactly facing each other.

1. Reflector
2. Clamp
3. Mounting cam
4. Photo cell

The photo cell can be installed on the module at different points: On the side frame (sheet metal thickness $t = 2.5$ mm), on the assembly sheet metal ($t = 2.5$ mm) or on the side guide ($t = 4.5$ mm).

Requirement:

- The module is out of operation.

- Separate strap (2) as well as photo cell (4) and/or reflector (1) from the sprue clip.
- Professionally dispose of the sprue.
Installation

- Place the photo cell on the module at the desired location. Reverse the strap when installing it on a side guide.
- Place the strap (2) on the mounting cam (3) at the underside of the photo cell and snap it into place.

A setscrew in the foot of the photo cell holder is intended for the fine adjustment of the photo cell. Turning the setscrew in slightly raises the photo cell until it "sees" the reflector.

- Install the reflector opposite the photo cell.
- Analogous to the photo cell holder, place the strap (2) onto the mounting cams at the underside of the reflector and snap it into place.
- After installing the photo cell and reflector: Connect the photo cell to the control system of the module with a cable.
- Check whether both LEDs are lit.
- If the yellow LED flashes, position reflector and photo cell to each other.

<table>
<thead>
<tr>
<th>LED green</th>
<th>LED yellow</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Off</td>
<td>Photo cell is operational.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No signal from reflector.</td>
</tr>
<tr>
<td>On</td>
<td>On</td>
<td>Photo cell is correctly adjusted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Light beam is well reflected.</td>
</tr>
<tr>
<td>On</td>
<td>Flashing</td>
<td>Photo cell is operational.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weak signal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflector is dirty, damaged or not correctly adjusted.</td>
</tr>
</tbody>
</table>
Installing side cover and end caps

- Snap side cover (2) into the C-profile of the side frame.
- Push end caps (1) into the C-profile of the side frame.
Converting straight roller conveyor into alignment conveyor

To convert a straight roller conveyor into an alignment conveyor, the individual slanted roller elements and head segments are installed into an existing roller conveyor. The following steps are required for this purpose:

- Remove the rollers of the straight roller conveyor: Observe the operating instructions of the roller conveyor RM 8310 for this purpose.
- Replace profile connector, See "Replacing the profile connectors", page 30
- Remove cross ties, See "Remove the cross ties", page 32
- Apply the finger guard, See "Applying the finger guard", page 33
- Install the slanted rollers, See "Installing slanted roller element or head segment", page 35

Replacing the profile connectors

For a roller conveyor to be converted to an alignment conveyor, the profile connectors must be replaced.

Remove profile connectors
1 Profile connectors 3 Screw
2 Side frame 4 Side cover
Requirement:
- The module is out of operation.
- Remove the side cover (5).
- Unscrew the two ribbed screws (4) of the profile connectors (2) and remove the profile connector.

Place the new profile connector

<table>
<thead>
<tr>
<th></th>
<th>Profile connectors</th>
<th>3</th>
<th>Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Side frame</td>
<td>4</td>
<td>Side cover</td>
</tr>
</tbody>
</table>

- Place narrow profile connectors at the perforation profiles of the side frames (3) and fasten with ribbed screws. Use two screws (4) for every module.
If cross ties are attached to the respective module of the straight roller conveyor, they have to be removed. The removed cross ties are sequentially replaced with the slanted roller elements.

Requirement:
- The module is out of operation.
- Remove the side cover (1).
- Unscrew the screws (2) on both sides of the cross ties (3) and remove the cross ties.
- Install the slanted roller elements, See "Replacing slanted roller element or head segment", page 39.
- Remove the next cross ties.
Applying the finger guard

Every slanted roller element and head segment is fitted with a finger guard. The finger guard protects against injuries as well as damage to the belts.

Placing the finger guard at the slanted roller element

Place the finger guard (1) at the side plates (3) of the slanted roller element. Push the finger guard under the drive belts (2) in the process.

Align the elongated holes (4) of the finger guard at the elongated holes of the side plates (4).
### Placing the finger guard at the head segment

#### Head segment with finger guard

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Finger guard plate</td>
</tr>
<tr>
<td>2</td>
<td>Drive belt</td>
</tr>
<tr>
<td>3</td>
<td>Side plate</td>
</tr>
<tr>
<td>4</td>
<td>Elongated hole</td>
</tr>
</tbody>
</table>

- Place the finger guard (1) at the side plates (3) of the head segment. Push the finger guard under the drive belts (2) in the process.
- Align the elongated holes (4) of the finger guard at the elongated holes of the side plates (4).
Installing slanted roller element or head segment

The rollers are already delivered pre-assembled slanted between two side plates in each case as slanted roller element or head segment. The slanted roller elements or head segments are fastened with two screws to the side frame on each side.

- Raise the slanted roller element (6) or the head segment (2) from below to the height of the side frames (5) using a suitable lifting device.
- Fasten the slanted roller element or the head segment with fastening screws (3) and nuts (7) together with the finger guard to the lower row of elongated holes of the side frames.
- Plug the motor connecting cable of the RollerDrive onto the control system or extension cable.
- Attach the side cover (4).
Initial startup and operation

Initial startup

⚠️ WARNING
Risk of injuries due to incorrect handling
- Check electrical connections and protective devices.
- Remove the materials from the module.
- Remove unauthorized persons from the danger zone.
- Wear safety shoes and work clothing.

The module has been checked at the factory.

Operation

Before every operation start
- Check the module for visible damage. In particular, observe belt, guides and supports.
- Ensure that all safety devices operate flawlessly.
- Ensure that only authorized personnel is in the operating area of the module.
- Ensure that it is running freely and that no parts are jammed.
- Remove material or equipment which is not required from the workspace.
- Guide and monitor correct placement of the materials on the conveyor.

During operation

⚠️ WARNING
Danger from rotating parts
Crushing and serious injuries from parts of the body and clothing being pulled into the module!
- Do not remove the protective covers.
- Wear close-fitting clothing, avoid jewelry and bands/ribbons.
- If you have long hair, always wear a hair net.
- If materials are jammed between side guides, switch off the module and ensure that it cannot be started accidentally, then remove the fault.

Procedure in case of accident or fault
- Stop the module and ensure that it cannot be started accidentally.
- In case of an accident: Render first aid and make an emergency call if necessary.
- Inform qualified personnel.
- Have the fault removed by qualified personnel.
- Restart the module only after this has been approved by qualified personnel.
Cleaning

⚠️ WARNING
Risk of injuries due to incorrect handling

- Only perform cleaning work on the module after you have switched off the power.
  - Switch off the voltage supply and ensure that it cannot be started accidentally.
- Do not remove protective devices.
- Wear safety shoes and close-fitting work clothing.

- Clean belts only dry.
- For the remaining parts of the module, use only suitable cleaning agents (water-soluble, free of phosphate, silicone and potassium, non-acidic). Observe the manufacturer’s instructions.
maintenance and repair

observe the following for maintenance and repair

⚠️ warning

risk of crushing and injuries

- de-energize the module and ensure that it cannot be started accidentally.
- ensure that the personnel involved in maintenance and repair have secure footing and sufficient room to move.
- mechanical maintenance and repair work may only be performed by service personnel.
  - observe the safety information.
- electrical maintenance and repair work should be performed only by authorized electricians.
  - observe the safety information.
- observe the weight of the module (see nameplate); if necessary work in pairs.
- use suitable loading and lifting equipment. secure the module against falling or tipping.

when tightening screws and nuts, always observe the standard tightening torque, unless specifically indicated otherwise. standard screw lockers should be replaced as needed.

- always have work on electrical equipment carried out by authorized electricians.
- set up warning signs that indicate maintenance and repair work.
- block off the area around the module.
- inform persons who have to enter the blocked-off area about the risks.
Replacing slanted roller element or head segment

1 Finger guard  5 Side frame
2 Head segment  6 Slanted roller element
3 Fastening screw  7 Nut
4 Side cover

⚠️ CAUTION

Risk of crushing and electric shock

Installation and maintenance tasks on a conveyor system during its operation can lead to crushing and electric shock.

- De-energize the module and ensure that it cannot be started accidentally.
Removing the old slanted roller element or head segment

Requirement:
- The module is out of operation.
- Remove the side cover (4).
- Disconnect the motor connecting cable of the RollerDrive from the control system or extension cable.
- Support the slanted roller element (6) or the head segment (2) from below using a suitable lifting device.
- Loosen the fastening screws (3) of the slanted roller element or the head segment.
- Remove the slanted roller element or the head segment from the side frames (5).
- Remove the finger guard (1) of the slanted roller element or the head segment.

Installing new slanted roller element or head segment

- Attach the finger guard (1) of the slanted roller element (6) or the head segment (2).
- Raise the slanted roller element or the head segment from below to the height of the side frames (5) using a suitable lifting device.
- Fasten the slanted roller element or the head segment with fastening screws (3) and nuts (7) together with the finger guard to the side frames.
- Plug the motor connecting cable of the RollerDrive onto the control system or extension cable.
- Attach the side cover (4).
Replacing the carrying idler

1 Finger guard  4 Side plate
2 Drive belt 5 Carrying idler
3 Screw

⚠️ CAUTION
Risk of crushing and electric shock

Installation and maintenance tasks on a conveyor system during its operation can lead to crushing and electric shock.

- De-energize the module and ensure that it cannot be started accidentally.

Requirement:
- The module is out of operation.
- Removing slanted roller element or head segment, See "Replacing slanted roller element or head segment", page 39.
- Remove the finger guard (1) of the slanted roller element or the head segment.
- Loosen the screws (3) of the respective carrying idler (5) from the side plates (4).
- Slightly turn carrying idler horizontally.
- Remove drive belt (2) from carrying idler.
- Lift and remove the carrying idler.
- Insert new carrying idler.
- Pull the drive belt onto the carrying idler.
Fasten the carrying idler with screws onto the side plates.
Attach the finger guard at the slanted roller element or at the head segment.
Re-installing slanted roller element or head segment in the module, See "Replacing slanted roller element or head segment", page 39.

Replace RollerDrive

![Diagram of RollerDrive components]

1. Finger guard
2. Fastening screw
3. Drive belt
4. RollerDrive
5. Nut
6. Motor connecting cable
7. Side plate

⚠️ CAUTION

Risk of crushing and electric shock

Installation and maintenance tasks on a conveyor system during its operation can lead to crushing and electric shock.

- De-energize the module and ensure that it cannot be started accidentally.
Requirement:

- The module is out of operation.

- Removing slanted roller element or head segment, See "Replacing slanted roller element or head segment", page 39.
- Disconnect the motor connecting cable (6) of the RollerDrive (4) from the control board or extension cable.
- Loosen the nut (5) on the cable side of the RollerDrive.
- Remove the finger guard (1) of the slanted roller element or the head segment.
- Loosen the screw (2) of the RollerDrive from the side plate.
- Slightly turn RollerDrive horizontally.
- Remove drive belt (3) from RollerDrive.
- Lift and remove the RollerDrive.
- Insert new RollerDrive.
- Pull the drive belt onto the RollerDrive.
- Attach the RollerDrive to the side plate with a screw.
- On the cable side: Tighten ribbed nut with a torque wrench. Observe the maximum torque of 70 Nm.
- Attach the finger guard at the slanted roller element or at the head segment.
- Re-installing slanted roller element or head segment in the module, See "Replacing slanted roller element or head segment", page 39.
- Connect motor connecting cable of the RollerDrive at the control board or extension cable.
- Attach the side cover.
Replacing the drive belt

1 Finger guard
2 Screw
3 Drive belt
4 Roller
5 Side plate

⚠️ CAUTION
Risk of crushing and electric shock

Installation and maintenance tasks on a conveyor system during its operation can lead to crushing and electric shock.

- De-energize the module and ensure that it cannot be started accidentally.

Requirement:
- The module is out of operation and secured against inadvertent switch-on.
- Removing slanted roller element or head segment, See "Replacing slanted roller element or head segment", page 39.
- Remove the finger guard (1) of the slanted roller element or the head segment.
- Loosen the screws (2) of the respective rollers from the side plates.
Slightly turn rollers horizontally.
Remove drive belt (3) from the rollers.
Pull the new drive belt onto the rollers.
Fasten rollers with screws to the side plates (5).
Attach the finger guard at the slanted roller element or at the head segment.
Re-installing slanted roller element or head segment in the module, See "Replacing slanted roller element or head segment", page 39.
Replacing the photo cell

A setscrew in the foot of the photo cell holder is intended for the fine adjustment of the photo cell. Turning the setscrew in slightly raises the photo cell until it "sees" the reflector.

- Pull strap (1) off of the fastening cams (3) of the photo cell.
- Take old photo cell (2) out of side frame, mounting plate or side guide profile.
- Insert the new photo cell at the same point.
- Snap the strap fully into the mounting cams of the photo cell from below.
- Connect the photo cell to the control system of the module with a cable.
- Check whether both LEDs are lit.
- If the yellow LED flashes, position reflector and photo cell to each other.
## Maintenance and repair

<table>
<thead>
<tr>
<th>LED green</th>
<th>LED yellow</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Off</td>
<td>Photo cell is operational. No signal from reflector.</td>
</tr>
<tr>
<td>On</td>
<td>On</td>
<td>Photo cell is correctly adjusted. Light beam is well reflected.</td>
</tr>
<tr>
<td>On</td>
<td>Flashing</td>
<td>Photo cell is operational. Weak signal. Reflector is dirty, damaged or not correctly adjusted.</td>
</tr>
</tbody>
</table>
Replacing the reflector

Reflector and reflector holder are replaced together:

- Pull strap (2) off of the fastening cams (3) of the reflector.
- Remove old reflector (1).
- Place new reflector on the side frame, mounting plate or side guide at the desired location.
- Snap the strap fully into the mounting cams of the reflector from the underside.

Reflector with reflector holder

1. Reflector
2. Clamp
3. Mounting cam
Replacing the side guide profile

Flexible universal support with detailed view of side guide support at side guide profile

1  Side guide profile
2  Side guide support
3  Side guide support cover
4  Hexagon nut
5  Mounting bracket
6  Flexible universal support

Requirement:
- The module is out of operation.
- Open the cover of the side guide support (3) with a tool (e.g. screwdriver).
- Loosen the hammer nut (4) in the side guide support (2) to the point when the hammer head bolt can be removed from the side guide profile (1) by slightly turning it.
- Replace the side guide profile.
Reverting the side guide support

1 Side guide profile
2 Side guide support
3 Hammer head bolt
4 Hexagon nut
5 Side guide support cover
6 Mounting bracket
7 Flexible universal support

Requirement:
- The module is out of operation.
- Open the cover of the side guide support (5) with a tool (e.g. screwdriver).
- Loosen the hexagon nut (4).
Move the hammer head bolt (3) inside the side guide support to the horizontal position by turning it and pull it out of the side profile.

Pull the side guide support (2) off of the mounting bracket (6) of the universal support (7).

Loosen the hexagon nut at the new side guide support, but do not remove it. Create sufficient clearance so that the hammer head bolt can later be inserted into the side profile and the clamp can be pushed onto the mounting bracket.

Push the new side guide support onto the mounting bracket of the universal support. If needed, break out the upper hole cover.

Insert the hammer head bolt into the side profile by slightly turning it.

Tighten the hexagon nut.

The hammer head bolt is fixed. The side guide support sits firmly at the universal support.

Close the top cover and snap it in place.
Replacing the flexible universal support

1 Side guide profile  
2 Side cover  
3 Clamping plate  
4 Side guide support  
5 Mounting bracket  
6 Hex nuts  
7 Universal support cover

Requirement:
- The module is out of operation.
- Loosen side cover (2) from the side frame.
- Remove the side guide support (4). See "Replacing the side guide support", page 50.
- Open the cover of the universal support (7) with a tool (e.g. screwdriver) and swivel it down.
- Loosen the hexagon nuts (6), but do not remove them.
Maintenance and repair

- Slightly turn the clamping plate (3) with the complete universal support and remove it from the C-profile of the side frame.
- Loosen the hexagon head screws at the new universal support, but do not remove it.
- Insert the clamping plate into the side frame by slightly turning the complete universal support.
- Position the universal support on the side frame and slightly tighten the hexagon nuts at the desired location.
- Install the side guide support, replace the side guide support See "Replacing the side guide support", page 50.
- Align the angles of the mounting brackets (5).
- Firmly tighten the hexagon nuts.
- Swing up the cover of the universal support until you hear it snap in.

Replacing the side cover

- Carefully pry out the side cover (2) out of the side profile at one end using a tool (e.g. screwdriver).
- Starting at this point, loosen the complete side cover from the side profile.
- Snap new side cover into the C-profile of the side frame.
Replacing the end cap

- Remove end caps (1) from the side frame using a tool (e.g. screwdriver).
- Push the new end caps into the C-profile of the side frame.
Maintenance intervals

If maintenance is not performed according to schedule, it may lead to damages and failures. If maintenance intervals are not followed, the warranty will be void.

All bearings of the module feature a life-time lubrication and are maintenance-free within the operating parameters.

**Maintenance and inspection list**

<table>
<thead>
<tr>
<th>Component</th>
<th>Interval</th>
<th>Tasks/check</th>
<th>Work to be performed</th>
<th>Performed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete module</td>
<td>Weekly</td>
<td>General visual and acoustic remote check</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete module</td>
<td>Annually</td>
<td>Check screw connections</td>
<td>Tighten to applicable standard as required</td>
<td></td>
</tr>
<tr>
<td>RollerDrive</td>
<td>Every 6 months</td>
<td>Check temperature*</td>
<td>Replace as required</td>
<td></td>
</tr>
<tr>
<td>RollerDrive</td>
<td>Every 6 months</td>
<td>Check for noise</td>
<td>Replace as required</td>
<td></td>
</tr>
<tr>
<td>RollerDrive</td>
<td>Every 6 months</td>
<td>Check for damages</td>
<td>Replace as required</td>
<td></td>
</tr>
<tr>
<td>RollerDrive</td>
<td>Every 6 months</td>
<td>Ensure that axle is secured in the transport frame</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrying idlers / drive belt</td>
<td>Every 6 months</td>
<td>Check running behavior and tension of drive belts</td>
<td>Replace as required</td>
<td></td>
</tr>
<tr>
<td>Carrying idlers / drive belt</td>
<td>Every 6 months</td>
<td>Check for wear / damages</td>
<td>Replace as required</td>
<td></td>
</tr>
<tr>
<td>Carrying idlers / drive belt</td>
<td>Every 6 months</td>
<td>Check for cleanliness</td>
<td>Clean as required</td>
<td></td>
</tr>
</tbody>
</table>

* For permissible temperatures, see the operating manual of the motor.
Troubleshooting

In case of a fault

⚠️ DANGER

Danger - electrocution

- Only perform maintenance and repair work after you have switched off the power.
- Faults on electrical equipment may be removed only by a trained electrician!

Requirement:

- The danger spots on the module are covered by protective plates and other protective devices.

- Immediately de-energize the complete conveyor system and ensure that it cannot be started accidentally.

- Remove material and blocking objects.

- Before switching it on again, ensure that no persons are at risk.

- Professionally dispose of any gear oil that as leaked out. Have the motor replaced by qualified personnel if necessary.

## Troubleshooting

<table>
<thead>
<tr>
<th>Fault</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport process cannot be started and motor does not start up</td>
<td>Main switch and/or control system switched off (is LED lit on DriveControl?)</td>
<td>- Check switch position, switch on main switch and/or key switch of the control system as required</td>
</tr>
<tr>
<td></td>
<td>Supply line damaged</td>
<td>- Check supply line</td>
</tr>
<tr>
<td>Transport shows jerky movements</td>
<td>Foreign objects in roller area</td>
<td>- Remove foreign objects</td>
</tr>
<tr>
<td>Materials are not being transported</td>
<td>Drive belt torn</td>
<td>- Replacing the drive belt</td>
</tr>
<tr>
<td></td>
<td>Control board defective</td>
<td>- Replace control board</td>
</tr>
<tr>
<td></td>
<td>RollerDrive defective</td>
<td>- Replace RollerDrive</td>
</tr>
<tr>
<td></td>
<td>Motor plug connection interrupted</td>
<td>- Check motor plug connection, replace as required</td>
</tr>
<tr>
<td></td>
<td>Drive belt tension too low</td>
<td>- Replacing the drive belt</td>
</tr>
<tr>
<td>Zone starts up sporadically (10-second cycle)</td>
<td>Supply voltage out of range</td>
<td>- Adjust voltage at power supply (24 V to 26 V)</td>
</tr>
</tbody>
</table>
Spare and wear parts

All spare and wear parts are available from Interroll. Maintenance and repair work may be performed only by qualified personnel. Interroll offers training sessions about required maintenance and repair tasks upon request.

Ordering information

Ordering spare and wear parts requires the exact identification of the module, Nameplate.

The following information is required for an order:

- Machine number
- Type
- Item number of spare parts list
- Designation
- Comment

For additional information about the spare parts portfolio, please contact your supplier.
Spare part drawing RM 8340

RM 8340 spare parts list
S = spare part, W = wear part, T = tool

Type: 8340

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Designation</th>
<th>Comment</th>
<th>S/W/T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RollerDrive (drive roller)</td>
<td>EC 310</td>
<td>S</td>
</tr>
<tr>
<td>2</td>
<td>Carrying idler</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>Drive belt (roller-to-roller)</td>
<td>PolyVee</td>
<td>W</td>
</tr>
<tr>
<td>4</td>
<td>Control</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>5</td>
<td>Photo cell incl. holder</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>6</td>
<td>Reflector incl. holder</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>7</td>
<td>Side guide profile</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>8</td>
<td>Side guide support</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>9</td>
<td>Universal support</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>10</td>
<td>Side cover</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>11</td>
<td>End cap (side frame)</td>
<td></td>
<td>S</td>
</tr>
<tr>
<td>12</td>
<td>End cap (side guide)</td>
<td></td>
<td>S</td>
</tr>
</tbody>
</table>
Decommissioning and disposal

- When disposing the motor oil, observe the disposal documents of the motor manufacturer.
- The packaging must be recycled to provide environmental relief.

Environmental protection regulations

For all work on and with the module, the legal regulations concerning waste avoidance and proper disposal and recycling must be followed.

**NOTICE**

Substances with a water hazard class, such as greases and oils, hydraulic oils, coolants or cleaning agents with solvents may not be allowed to come into contact with the ground or reach the sewer system!

- Store, transport, catch and dispose these substances in suitable containers!
- Observe the notices on the supply containers.
- Observe any additional national regulations.
Installation declaration

In accordance with the EC Machinery Directive 2006/42/EC, Appendix II 1 B.

The manufacturer:
Interroll Automation GmbH
Dietmar-Hopp-Straße 3
D-74889 Sinsheim, Germany

herewith declares that the conveyor module described below is an incomplete machine in accordance with the EU Machinery Directive:

• 24 V Alignment Conveyor RM 8340

Important Note! The incomplete machine may only be put into operation if it has been determined that the overall machine/system, into which the incomplete machine is to be installed, meets the requirements of this directive.

The following safety requirements as stated in Appendix I have been applied:
• 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8, 1.4.1, 1.5.4, 1.5.8, 1.5.9, 1.6.1, 1.6.4, 1.7.4

The special technical documents mentioned in Appendix VII B have been prepared and will be sent to the responsible authority if necessary. The transmission is done electronically.

Responsible for EC documentation: Interroll Automation GmbH, Dietmar-Hopp-Straße 3, D-74889 Sinsheim, Germany

Applicable EC Directives:
• EC Machinery Directive 2006/42/EC, Appendix II 1A
• EC EMC Directive 2014/30/EC
• EC Low Voltage Directive 2014/35/EC

Applicable harmonized standards:
• EN ISO 12100:2011-03 "Safety of machinery - Basic concepts - risk assessment and reduction"
• EN ISO 13857:2008-06 "Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs"
• EN 349:2008-09 "Safety of machinery - Minimum gaps to avoid crushing of parts of the human body"
• EN 60204-1:2007-06 "Safety of machinery - Electrical equipment of machines - Part 1: General requirements"

Sinsheim, dated

Robert Lugauer
(Manager)