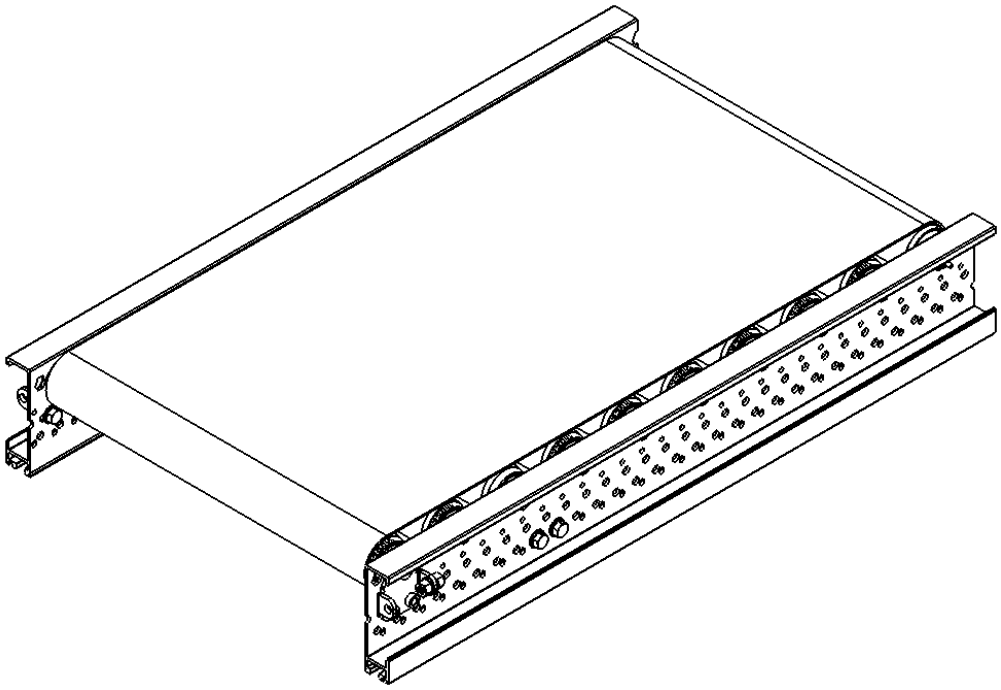
swisslog

Assembly Instructions

ERS 56, 57 RollerDrive Belt Conveyor



Content:

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Content

1 General Safety Instruction

1.1

This documentation is aimed at users with the following knowledge and skills:

- Advanced knowledge of mechanical engineering
- Advanced knowledge of electrical engineering

1.2 Presentation of warnings and notes

	**Caution** For your personal safety please precisely observe the working and operating procedures
	**Warning** Observe all instructions and procedures, in order to maintain your plant in working condition.
	**Note** In order to keep the machine in working order, observe precisely all technical requirements for appropriate handling of the machine.
	**Additional information** Helps you to make optimum use of all the functions on your machine.

1.3 Requirements and Conditions

⚠ CAUTION	**Supplement to the documentation** - Generally applicable and local rules for accident prevention. - Law on staff protection. - Regulations on the protection of the environment.
NOTE	**Qualification of staff** - You have the required training. - You are thoroughly familiar with the use of the plant. - You are familiar with the documentation contents.
⚠ CAUTION	**Safe operation** - There are no persons or obstacles in the danger areas. - Shut down operation at once when there is a threat of danger. - Regular inspection and maintenance keeps your plant ready for use. - Immediately rectify any defects or damage which occurs. - Ensure all use is for the purpose intended. - Protective equipment is fitted professionally and is fully functional. - Safety and danger notices must be fully legible.
i	**Explanation of terminology** Maintenance: Measures for upkeep and repairs of the projected status and also determining and assessing the actual status of the technical devices of a system. The measures comprise: - Inspection - Servicing - Repairs
⚠ CAUTION	**Safe maintenance** - Access to the plant is forbidden for all unauthorized persons. - You are thoroughly aware of all sources of danger. - You have switched off the main switch and secured it against being switched on again. - You access the plant only at those points designed for access. - Never ignore or fail to use safety equipment. - Always observe the safety notices.

⚠ WARNING	**Correct maintenance** - Appropriately trained maintenance staff. - You are familiar with the maintenance measures. - You have completed the tests required within the time period laid down. - You use suitable tools. - Immediately rectify any defects or damage which occurs.

1.3.1 Special safety devices

⚠ CAUTION	**Protective measures** - Machine movements are dangerous. - Danger areas of this kind are to be separated from the rest of the plant by protective screens, Plexiglas barriers, etc. and marked with safety warning notices.
i	**Further safety devices** - See documentation on electrical system, controls.

1.3.2 Intended use and misuse

Intended use

⚠ WARNING	**Products to be transported** - You must not exceed the maximum load capacity.
⚠ CAUTION	**Products to be transported** - The load must not project more than the amount foreseen above the carrier, in order to avoid tipping, catching or falling. - The carrier must be in a satisfactory condition.
⚠ CAUTION	**Plant** - You must observe the generally valid safety notices. - You must observe the maintenance regulations.

Misuse

⚠ CAUTION	**Not permitted is** The transport of: - Explosives, highly inflammable or radioactive materials. - Fluids not in closed barrels. - Materials to which special hygienic regulations apply. - Parts with high electrical potential and magnetic fields. - Live animals. - The removal of or ignoring of safety equipment. - The ignoring of safety notices.

1.3.3 Special Regulations

These regulations apply when working with the ERS RollerDrive Belt Conveyor.

⚠ WARNING	**Clothing & Appearance** - Wear suitable work clothes and Personal Protection Equipment (no loose hanging clothes, safety shoes, gloves, etc.). - Tie up long hair or wear a cap or hairnet. - Remove jewellery (necklaces, rings, bracelets, watches, etc.).

1.4 Risks

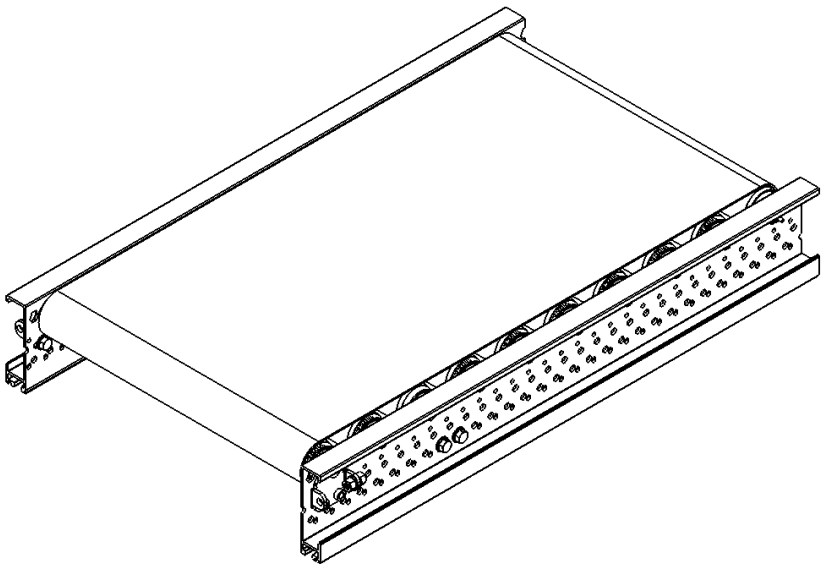
Danger	Cause	Avoidance
Permanent injury to the area of the spine Permanent injury to the area of the wrist	Excessive bodily strain during manual lifting of the products	Do not manually lift the product Use appropriate lifting equipment
Serious injury to hands	Clamping of hands between moving objects Catching of clothing / jewellery in moving machine parts during maintenance / operation	Do not touch the product when connected to a power source Observe the general safety notices Approved working clothes Remove jewellery
Serious injury to head	Catching of hair in moving machine parts during maintenance / operation	In case of long hair, bind them together or wear a hairnet or cap
Serious injury to body parts	Falling of products during manual removal e.g. after a failure of the machine controls	Use of safety straps Do not lift products exceeding specified weight limits Use of protective gloves with grip coating
Serious injury to body parts	Falling of products from conveyor	If conveyor is placed overhead, make sure to place protection against falling products around the conveyor Place side guard Provide a stop at the end of each conveyor

Danger	Cause	Avoidance
Serious injury to body parts	During set up, sharp edges of the frame are accessible	Wear protective gloves during handling of the conveyor Wear protective gloves during set up of the conveyor Place cover caps after set up and installation of the conveyor

2 Product Information

2.1 ERS RollerDrive Belt Conveyor system

The ERS RollerDrive Belt Conveyor is used to transport products. The ERS RollerDrive Belt Conveyor provides a low noise, high volume solution. The throughput of the ERS RollerDrive Belt Conveyor depends on the weight and dimensions of the transported products. The ERS RollerDrive Belt Conveyor is available with low and high side profiles



The ERS RollerDrive Belt Conveyor series differs in the sensor configuration:

Type	Sensor configuration
ERS 56 RollerDrive Conveyor Belt	No Sensor – ECUBE
ERS 57 RollerDrive Conveyor Belt	MotionLink / ConveyLink

2.2 ERS 56, 57 RollerDrive Belt Conveyor

The ERS RollerDrive Belt Conveyor is used to transport products in a straight line. The ERS RollerDrive Belt Conveyor provides a low noise, high volume solution. The throughput of the depends on the weight and dimensions of the transported products.

2.3 ERS Support

The ERS RollerDrive Belt Conveyor System needs to be supported by a suitable supporting system in at least every 1.5 m distance. The supporting system has to be mounted with M8 hammerhead bolts onto the side profiles of the ERS RollerDrive Belt Conveyor System.

2.3.1 ERS 60 Support

The ERS 60 Support could be used to support a ERS RollerDrive Belt Conveyor system and is placed underneath a roller conveyor and is bolted onto the ground.

2.4 ERS Sensor and Reflector

The ERS Sensor is a photocell based sensor used to detect an object or to control a zone of a ERS 57 RollerDrive Belt Conveyor Module. The sensor can be integrated in High Profile Conveyors Modules or added to the Low Profile Conveyors Modules with a dedicated mounting brackets.

2.5 ERS Side Guide

The ERS Side Guide is used to guide conveyed objects on the ERS RollerDrive Belt Conveyor Modules. The guide can be integrated on the Low Profile Conveyor Modules using the dedicated mounting brackets. There are two types of brackets; a fixed guide bracket and an adjustable guide bracket.

2.6 ERS Side Cover Profile

The ERS Side Covers profiles are used to cover the sides of the ERS RollerDrive Conveyor Module profiles.

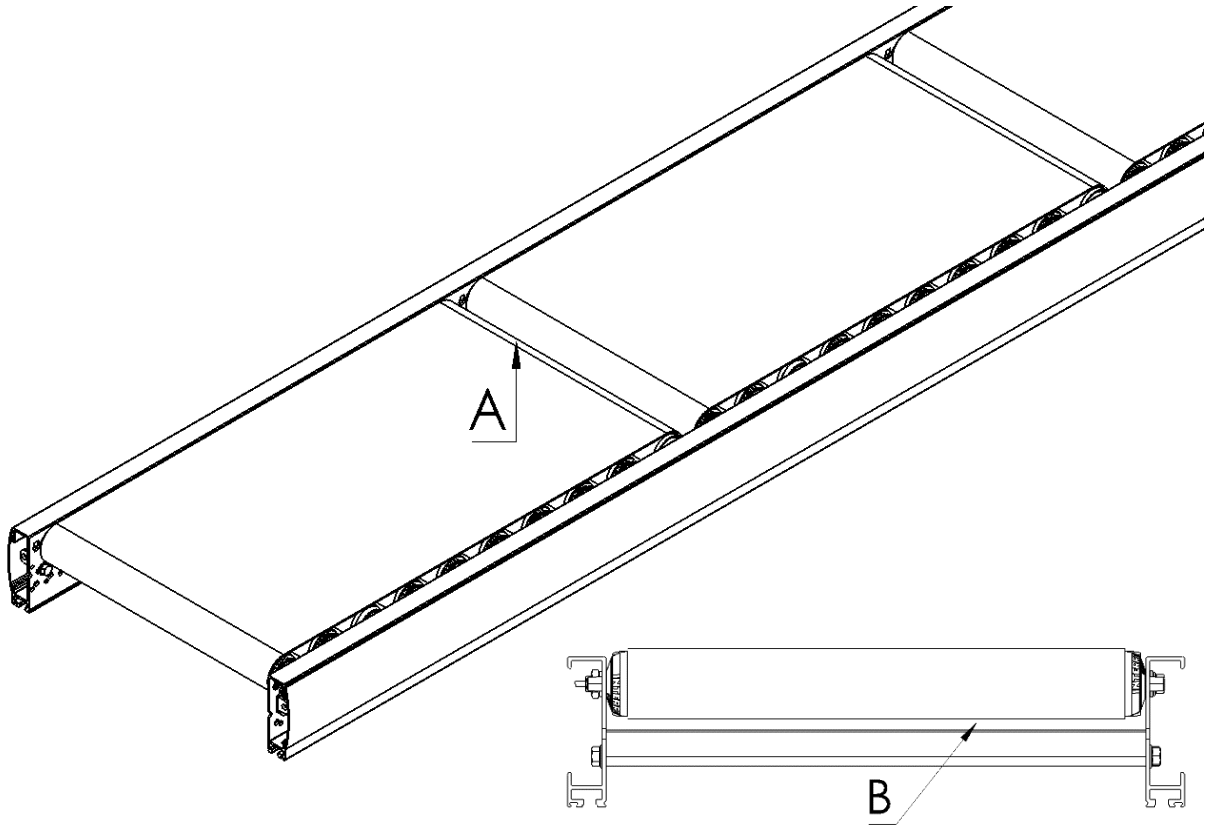
2.7 ERS Cover Caps

The ERS Cover Caps are used to cover the edges on the front and back side of the ERS RollerDrive Conveyor Module profiles. The ERS Cover Caps are available for high and low profiles.

3 Safety

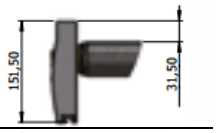
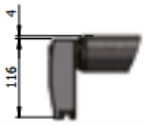
3.1 Dangerous areas

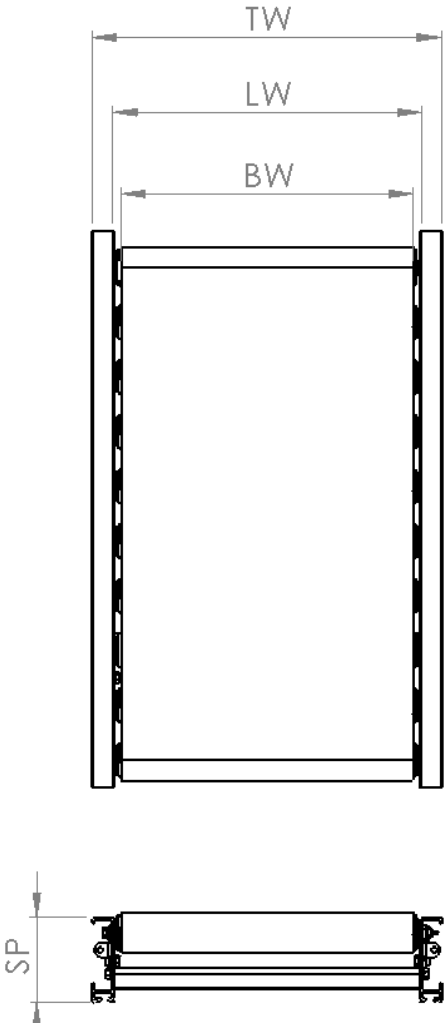
⚠ WARNING	Dangerous areas - Do not touch the ERS RollerDrive Belt Conveyor when connected to the power source - Never reach to or near any dangerous areas - Dangerous areas regarding the ERS RollerDrive Belt Conveyor are: A Between the conveyors, when combining multiple conveyors, always use the same running direction B Between the belt and support beam, underneath the conveyer

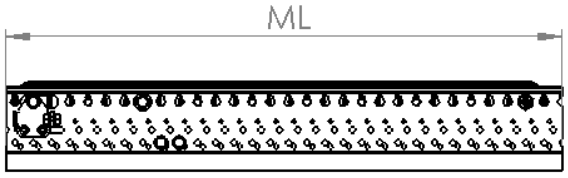


4 Technical data

4.1 ERS 56, 57 RollerDrive Belt Conveyor

General technical data	
Max. load capacity	50 kg/m
Inclined / Declined	Max. 15°
Ambient temperature	+5°C to +50°C
Conveyor speed	0.16 to 0.98 m/s
Belt material	
Belt material	PVC black
Specs	See attachment: Belt Specs
Drive	
Rated voltage	24 V DC
Max. electrical power per zone	0.04 kW (0.05 kW in boost mode)
Drive medium	Roller
Side profile	
H profile (high)	151.5 mm high 31.5 mm from top edge of the roller 
L profile (low)	Maximum sideways shift 116 mm high 4 mm from top edge of the roller 
Combinations (left/right)	
Dimensions	
LW dimension	420/520/620/820 mm
ML Max. module length	3000 mm
TW Module width	LW + 60 mm
BW Belt width	LW -/- 60 mm
SP Side profile	116 mm





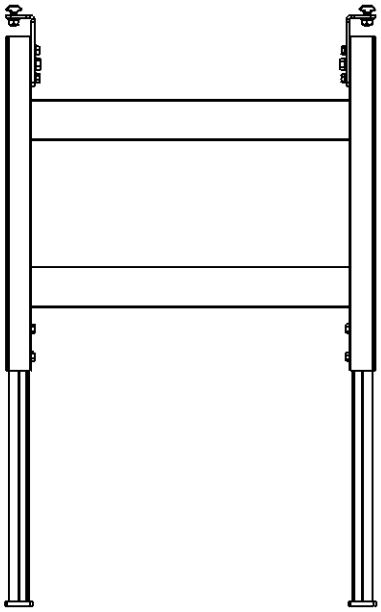
4.2 ERS Support

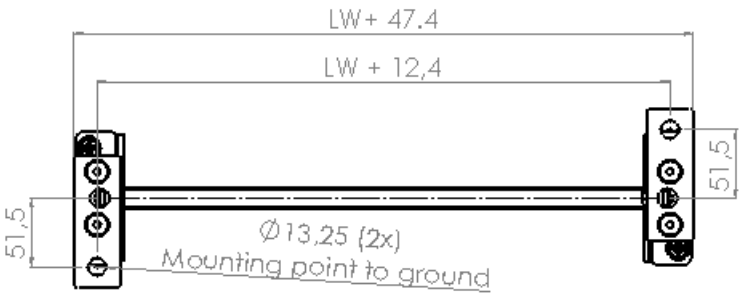
i	For further information, see the ERS 69 Supports - Assembly Instructions.

General requirements	
Max. horizontal load capacity	Depends on the conveyor type and load
Max. vertical load capacity	Depends on the conveyor type and load
Max. pitch	1500 mm

4.2.1 ERS 60 Support

General technical data	
Max. load capacity	200 kg
Number of cross-members	1 with 350 to 800 mm top edge of roller
	2 with 800 to 1400 mm top edge of roller
	3 with 1400 to 2000 mm top edge of roller
Dimensions	
LW dimension	420/520/620/820 mm
Height to top side of rollers	362 to 2000 mm

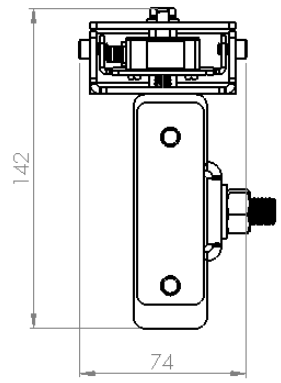




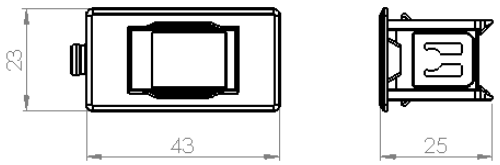
4.3 ERS Sensor and Reflector

General technical data	
Operating range	0.02 ... 4.5 m, With reflector TK(S) 100x100
Light source	LED, RED
Supply voltage	10 ... 30 V, DC
Open-circuit current	0 ... 20 mA
Weight (sensor only)	20 g
Operation temperature	-40 ... 60˚C
Bracket	
Weight	660 g
Clip	
Weight	3 g

Sensor Bracket



Sensor Clip

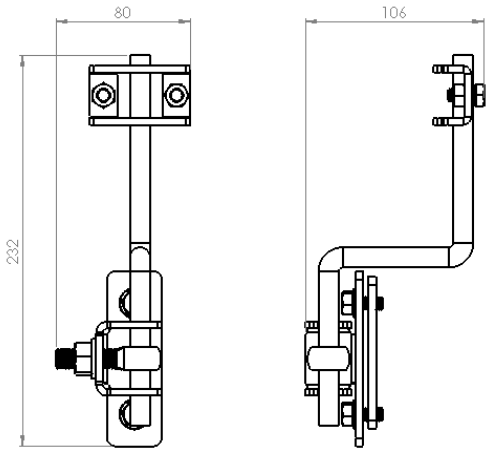


i	More variations available, please refer to the Additional Parts Assembly Instruction.

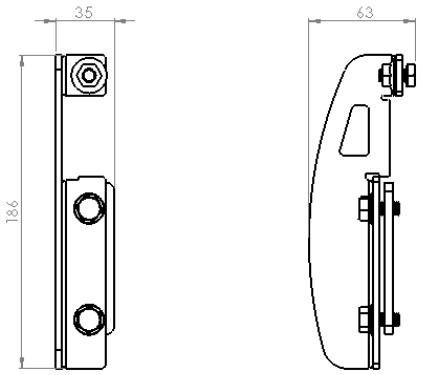
4.4 ERS Side Guide

General technical data	
Adjustable Guide Bracket	
Roller conveyor profile	Low
Adjustability range (height)	50 mm
Adjustability range (track width)	50 mm
Suitable for curved conveyor track	Yes
Number of brackets in curve track	90° = 7 / 60° = 5 / 45° = 5 / 30° = 4
Number of brackets straight track	Every 0.5 m
Weight	660 g
Fixed Guide Bracket	
Roller conveyor profile	Low
Suitable for curved conveyor track	No
Number of brackets straight track	Every 0.5 m
Weight	430 g
Guides	
Side Guide Profile order length	**5600 mm**
Weight	1940 g
Guide Wear Strip order length	**3000 mm**
Weight	650 g

Adjustable Guide Bracket



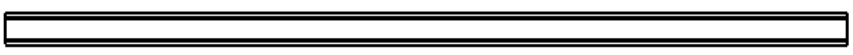
Fixed Guide Bracket



Side Guide Profile

Guide End

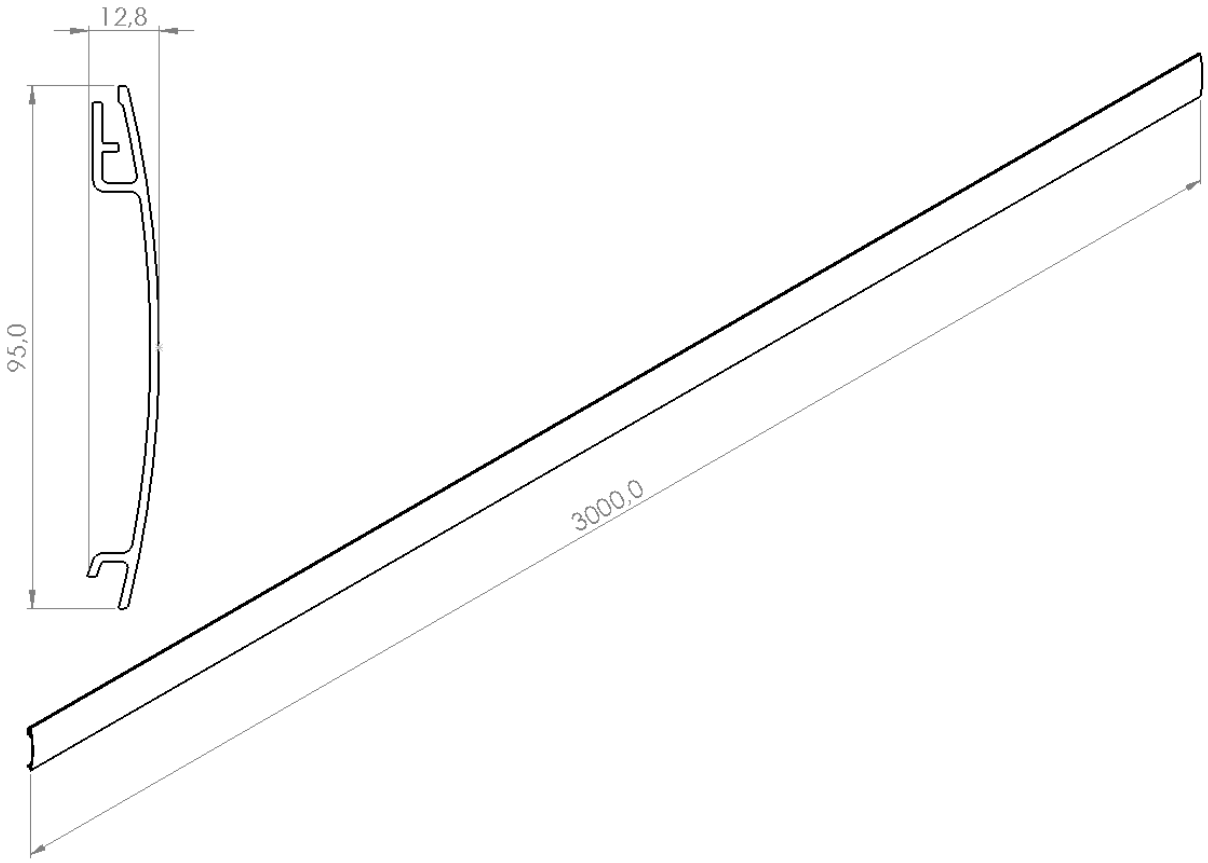
Guide Wear Strip



i	More variations available, please refer to the Additional Parts Assembly Instruction.

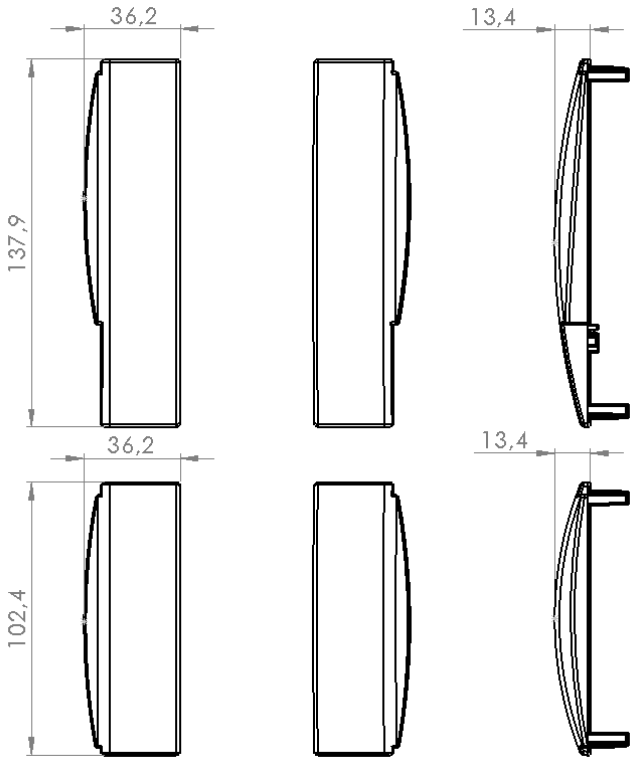
4.6 ERS Side Cover Profile

General technical data	
Dimensions	
Side Cover Profile order length	3000 mm
Weight	826 g



4.7 ERS Cover Caps

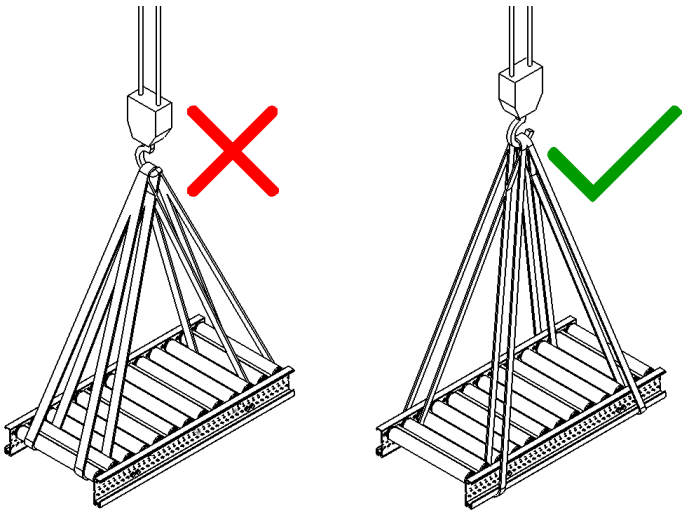
General technical data	
Dimensions	
High profile Cover Cap weight	16 g
Low profile Cover Cap weight	12 g



5 Transportation

5.1 Transportation

⚠ CAUTION	**Transportation** - Only qualified and authorized personnel should transport the packaged ERS RollerDrive Belt Conveyor. - If packaged contents are unstable, unload the package unit by unit and not by truck. - When unpacked only transport single modules, unless they are already coupled before transportation by the supplier. - Wear protective clothing, gloves and shoes during handling of the conveyor. Sharp edges are exposed. - Be aware that the center of gravity is not always in the middle of the Conveyor Module.



6 Assembly and installation

WARNING	**Installation**
	
	- As the ERS RollerDrive Belt Conveyor is a partial system of an overall installation, you need to perform a risk analysis of the entire installation.
	- Identify the protective measures required concerning risks related to local conditions at the site and to usage.
	- Define a safety zone in the working area.
	- Secure the zone and set up proper signaling and appropriate protection
	- For assembling modules at special heights, refer to safety rules concerning working on heights.
	- Never climb or walk on top of the ERS RollerDrive Belt Conveyor.
	- During assembly wear appropriate Personal Protective Equipment.
	
	- Always provide a control circuit with at least:
	  - Main switch
	  - Start–Stop function,
	  - Emergency stop
	- The control circuit has to be made according to EN-IEC 60204-1
	- The emergency stop system has to be made according to EN-ISO13850

6.1 General Information

6.1.1 Assembly rules

The assembly method provided by Swisslog Technology Center Netherlands is a guide line in how to assemble the different modules. Always adapt the provided assembly method to the national and local safety rules and requirements.

The delivery of the ERS RollerDrive Belt Conveyor will always be pre-assembled.

i	**Edited components** If any changes are made to the components or their location in the lanes, then Swisslog Technology Center Netherlands is no longer responsible for the product, as this represents unintended use of the ERS RollerDrive Belt Conveyor.

6.1.2 Qualified Personnel

Assembly and installation of the ERS RollerDrive Belt Conveyor can only be done by properly instructed personnel. This personnel must be under the supervision of a manager who is technically competent and trained concerning the following:

- The products and their use.
- The dangers inherent in the assembly of heavy components.
- The risks related to incorrect assembly.
- The adjustments required for correct operation of the ERS RollerDrive Belt Conveyor.

6.1.3 General Rules

Before starting the assembly take account for the following:

- Comply with the designed layout.
- Before starting assembly, clean the work site to create a safe environment.
- If other systems connect to the ERS RollerDrive Belt Conveyor, use the same reference points to level the systems.
- Before unpacking the shipped ERS RollerDrive Belt Conveyor, check the stability before remove packaging.
- Make sure you do not damage the ERS RollerDrive Belt Conveyor.
- After assembly and before testing clean the work environment. Do not leave any spare parts or tools in the work site and surrounding areas.

6.1.4 Assembly

The ERS RollerDrive Belt Conveyors, are always delivered completely assembled (up to 3 meters in length). The final assembly on site should only consist out of the following:

1. Mounting Support Stands or Support.
2. Coupling of Modules.
3. Wiring Drive (Control) Units.

⚠ CAUTION	**Mounting** Always mount support stand or similar to the ground or another solid part of a construction.
⚠ CAUTION	**Coupling** Before coupling the different sections always place the sections on a support stand or Support. Never couple sections without proper support. Do not transport sections when connected, this could possibly cause failures.
i	**Wiring** For wiring instructions check manufactures website or check the dealer section on our website for applicable user manuals.

6.1.5 Start-up checks

⚠ CAUTION	**Visual safety check** - When connecting the ERS RollerDrive Belt Conveyor to another machine or system perform a risk analysis of the entire installation. - Check the installed modules for damage. - Check the working area for foreign material in the working area. - Check that all signage is in place (max. load capacity and restriction for use).
⚠ WARNING	**Safety check** - Check all personnel are properly instructed before working with or near the ERS RollerDrive Belt Conveyor. - Check for visible damage on the ERS RollerDrive Belt Conveyor. - Check for foreign material preventing correct operation.

6.1.6 Operation

⚠ WARNING	**In operation** Close down a system or ERS RollerDrive Belt Conveyor Module if any of the following occurs: - Suspicious noise from any of the component. - A visibly worn or damaged component. - Damage to structural components such as frame and support.

6.1.7 In case of an accident

1. Stop the ERS RollerDrive Belt Conveyor.
2. Secure the area and set up appropriate signage.
3. In the event of an accident: provide first aid and call the emergency services.
4. Inform qualified personnel.
5. Have the system repaired by qualified maintenance personnel.
6. Do not use the ERS RollerDrive Belt Conveyor until authorized by qualified maintenance personnel.

6.2 ERS 60 Support

6.2.1 Mounting/ dismounting of the ERS 60 Support

The ERS RollerDrive Belt Conveyor modules has to be mounted on support stands or Foots. Foots are attached with four M8 hammerhead bolts and torque nuts onto the side profiles of the module.

Step 1 Hoist and hang a belt conveyor module above the ground, 100 mm higher than the foot height, using appropriate lifting equipment.

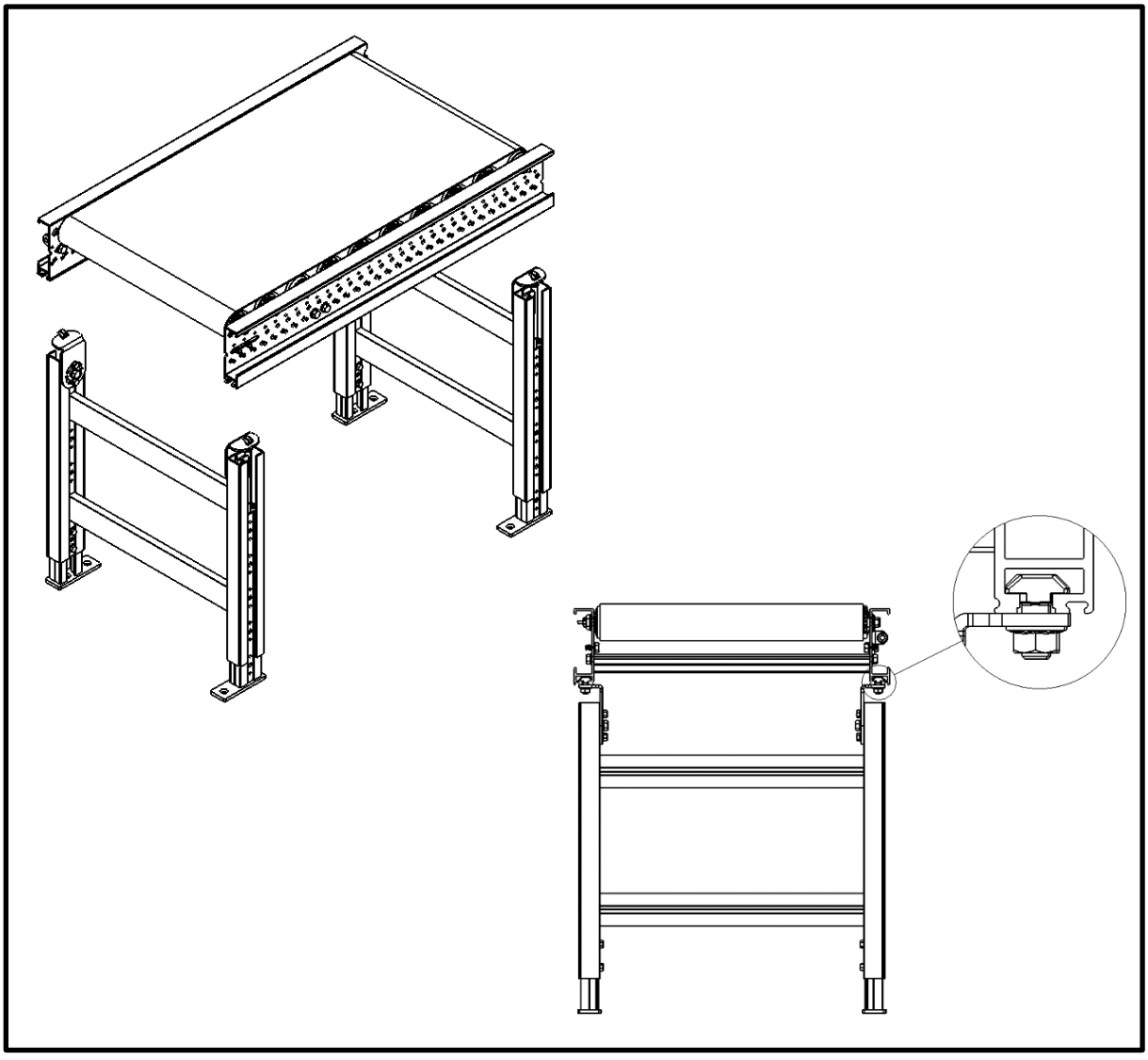
Step 2 Slide two foots provided with M8 hammerhead bolts into each side of the belt conveyor module.

Step 3 Slide the foots to the desired place.

Step 4 Place the M8 torque nuts onto the hammerhead bolts and tighten them.

Step 5 Lower the belt conveyor module onto the ground.

For dismounting the Foots, repeat the steps above in reverse order.



6.3 ERS Sensor and Reflector

6.3.1 Mounting/ dismounting the ERS Sensor and Reflector – Sensor Clip

A high profile ERS 57 RollerDrive Belt Conveyor Module is equipped with dedicated mounting holes for the Sensorclip.

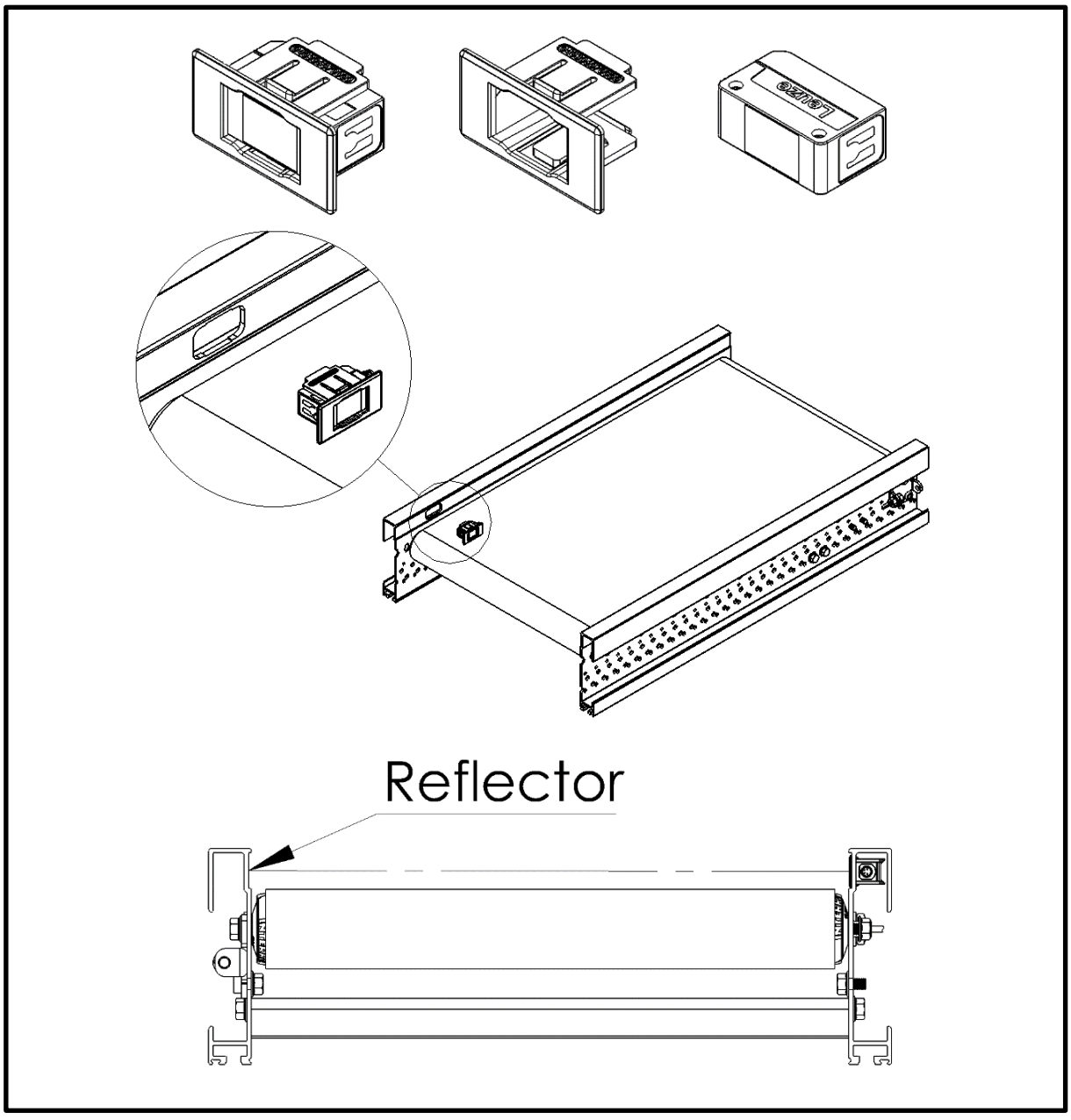
Step 1 Place the ERS Sensor in the Sensorclip as shown in the illustration

Step 2 Determine the desired position of the sensor.

Step 3 Push-click the clip with sensor in the corresponding hole.

Step 4 Place the reflector in line with the sensor on the opposite side of the roller conveyor.

For dismounting the Sensor and Reflector, repeat the steps above in reverse order.



6.3.2 Mounting/ dismounting the ERS Sensor and Reflector – Sensor Bracket

A low profile ERS 57 RollerDrive Belt Conveyor requires brackets for the mounting of ERS Sensors and Reflectors.

Step 1 Loosen the two M8 Bolts.

Step 2 Determine the desired position of the Sensor.

Step 3 Place the bracket on the roller conveyor as shown in the illustration below.

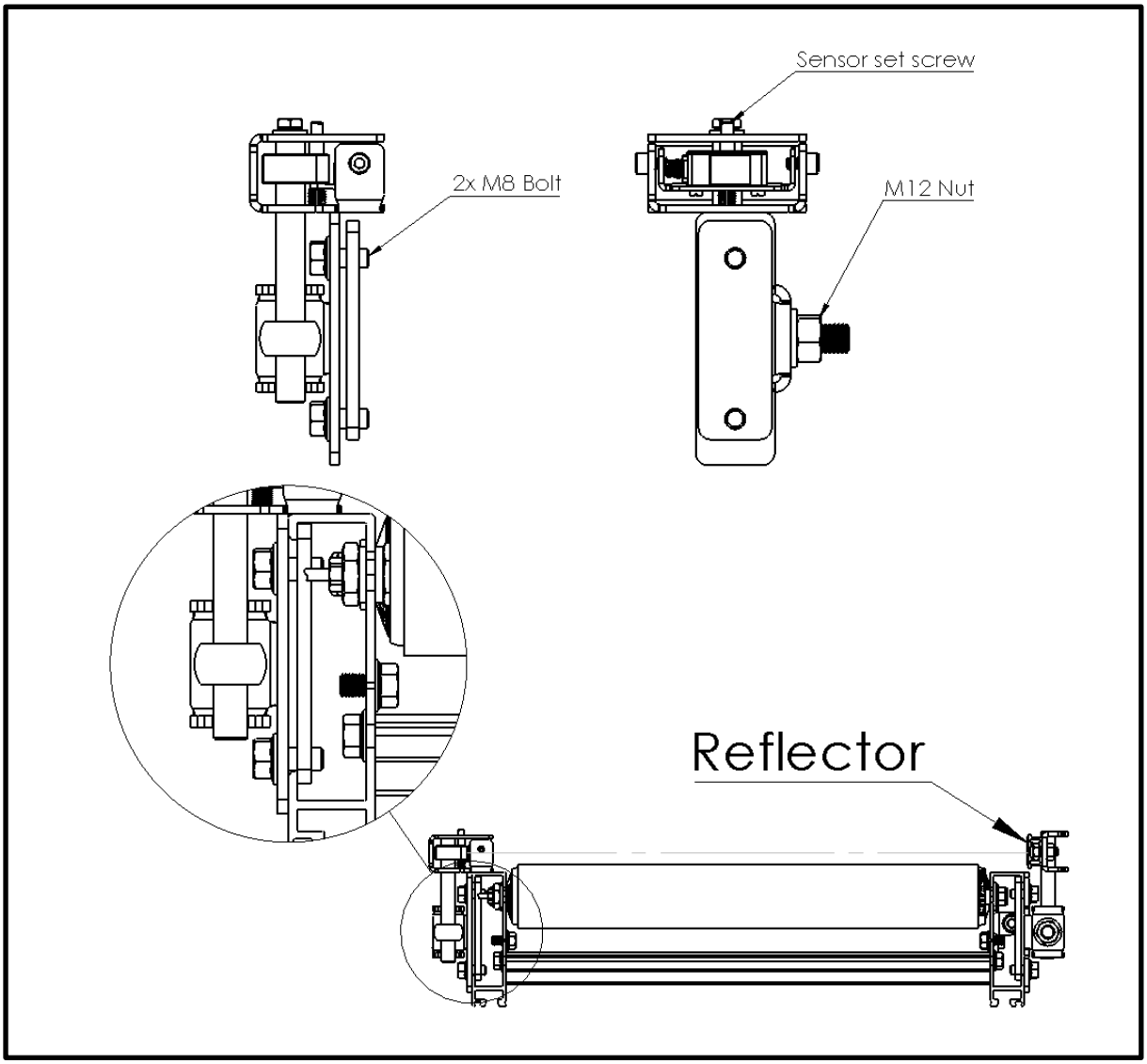
Step 3 Clamp the bracket to the Straight Module by tightening the M8 Bolts.

Step 4 Optional: Adjust the height and rotation by loosening the M12 nut.

Step 5 Optional: Adjust the orientation of the sensor with the Sensor set screw.

Step 6 For mounting the Reflector bracket repeat the steps above. Place the reflector in line with the sensor on the opposite side of the roller conveyor.

For dismounting the Sensor or Reflector, repeat the steps above in reverse order.



6.4 ERS Side Guides

6.4.1 Mounting/ dismounting the ERS Side Guide – Fixed Bracket Type

The ERS Side Guide Fixed Bracket is mounted on the low profile ERS RollerDrive Belt Conveyor. The Side Guide Profile and the Guide Wear Strip should be cut to the desired length with a proper cutting tool. The Guide Wear Strip should be 50 mm longer then the Side Gide Profile to properly assemble the Guide Ends.

Step 1 Define the required amount of brackets (can be found in the product description).

Step 2 Loosen the M8 Bolts of the fixed bracket(s).

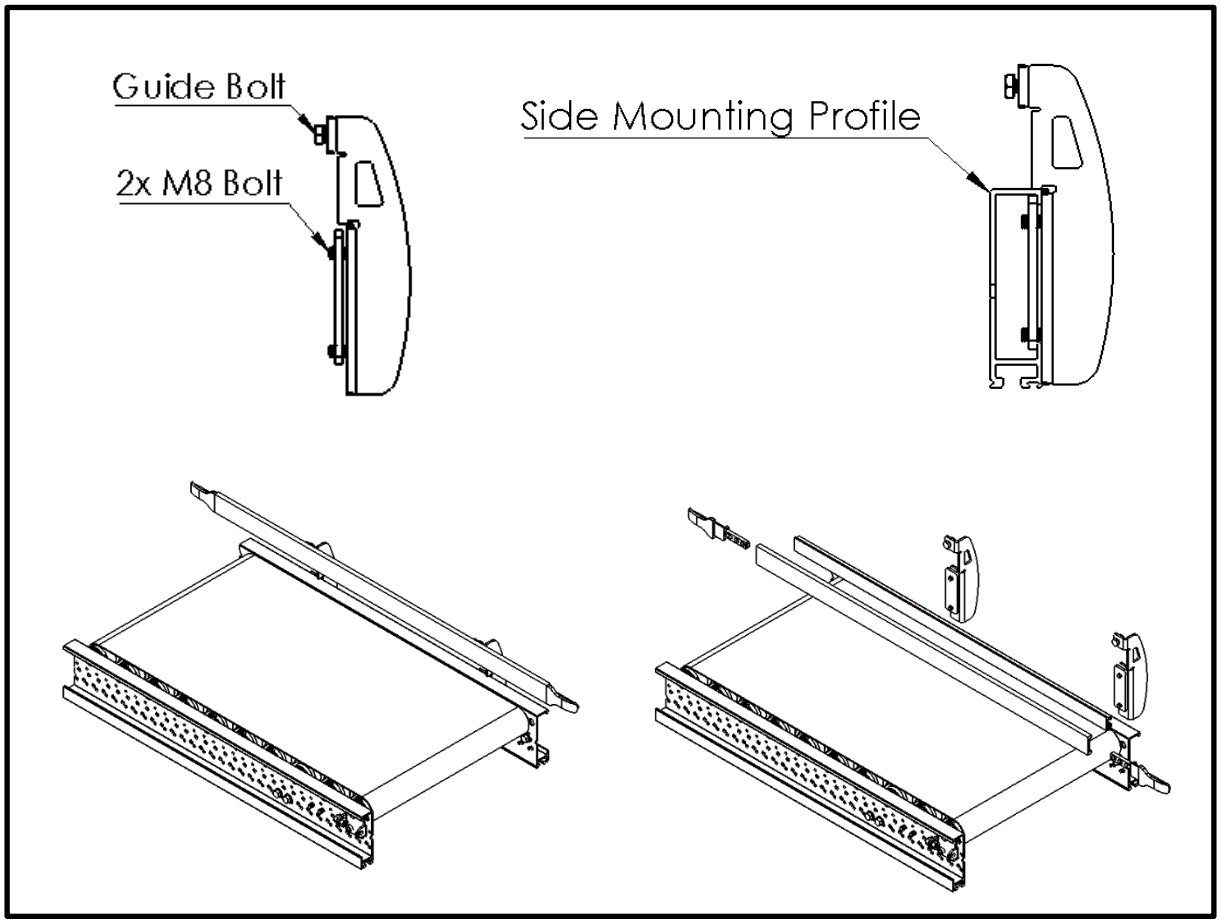
Step 3 Place the bracket(s) on the side mounting profile and tighten the M8 Bolts.

Step 4 Slide the Side Guide Profile over the Guide Bolt and tighten it.

Step 5 Slide the Guide Wear Strip over the Side Guide Profile.

Step 6 Push and click the Guide End on both sides of the Side Guide.

For dismounting the ERS Side Guide, repeat the steps above in reverse order.



6.4.2 Mounting/ dismounting the ERS Side Guide – Adjustable Bracket Type

The ERS Side Guide Adjustable Bracket is mounted on the ERS RollerDrive Belt Conveyor Modules. The Side Guide Profile and the Guide Wear Strip should be cut to the desired length with a proper cutting tool. The Guide Wear Strip should be 50 mm longer then the Side Gide Profile to properly assemble the Guide Ends.

Step 1 Define the required amount brackets (can be found in the product description).

Step 2 Loosen the M8 Bolts of the adjustable bracket(s).

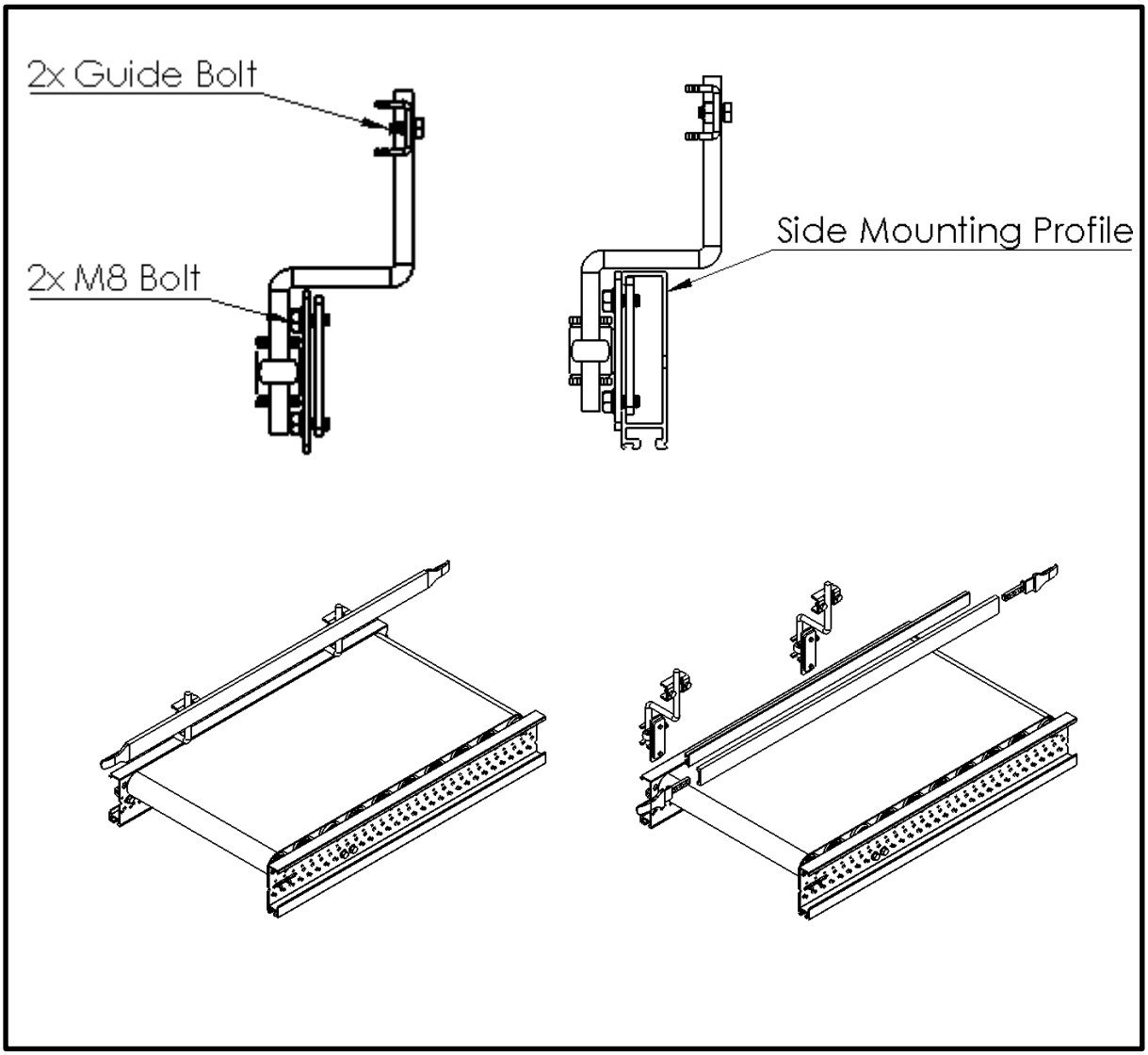
Step 3 Place the bracket(s) on the side mounting profile and tighten the M8 Bolts.

Step 4 Slide the Side Guide Profile over the two Guide Bolts and tighten them.

Step 5 Slide the Guide Wear Strip over the Side Guide Profile.

Step 6 Push and click the Guide End on both sides of the Side Guide.

For dismounting the ERS Side Guide, repeat the steps above in reverse order.



6.5 ERS Side Cover Profile

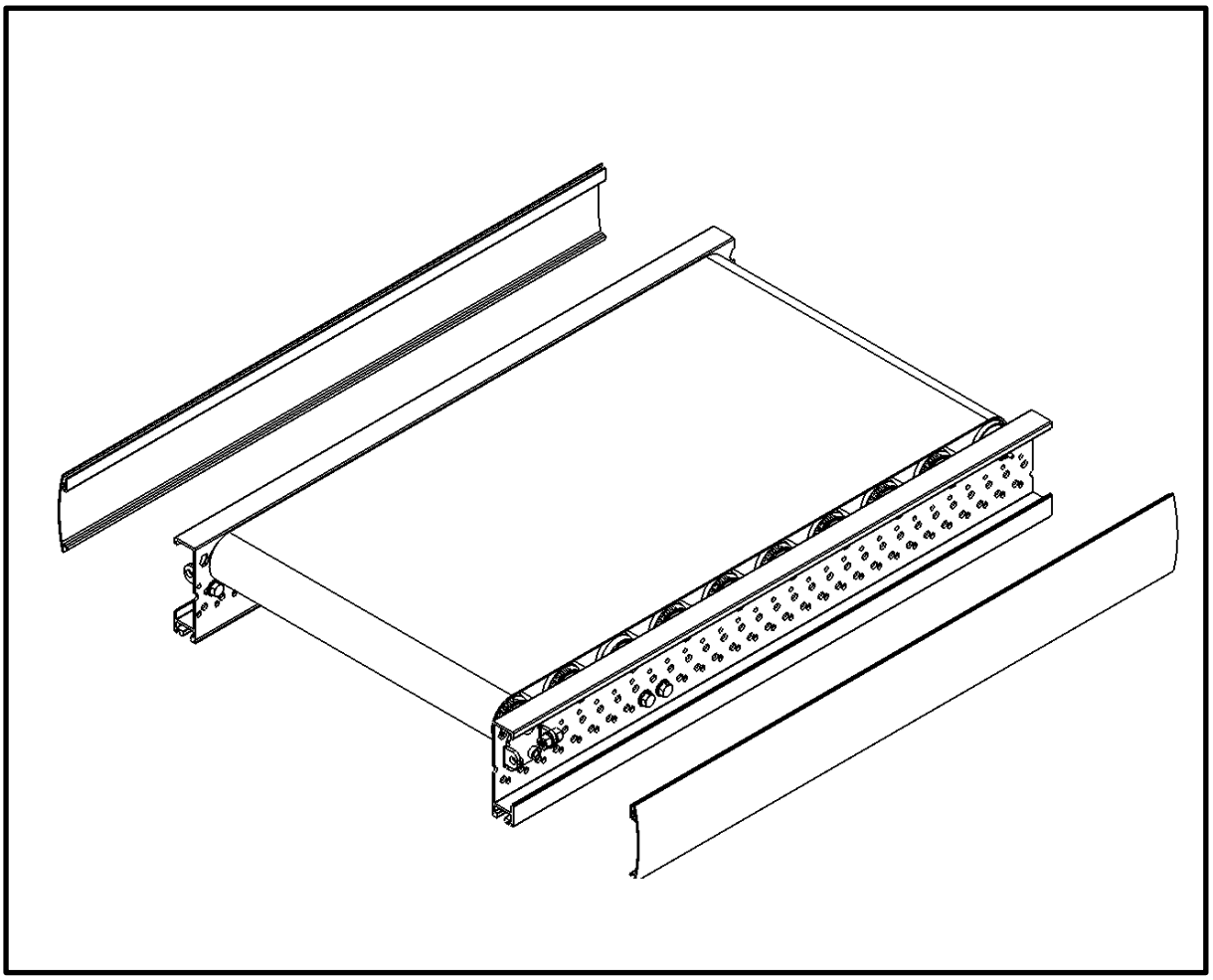
6.5.1 Mounting/ dismounting the ERS Side Cover Profile

The ERS Side cover Profiles are mounted on the ERS RollerDrive Belt Conveyor side profiles. The ERS Side Cover Profile should be cut to the desired length with a proper cutting tool.

Step 1 Define the required length of the ERS Side Cover Profile and cut the profile to the desired length.

Step 2 Slide or push in the ERS Side cover Profile.

For dismounting the ERS Side Cover Profile and ERS Cover Caps, repeat the steps above in reverse order.



7 Cleaning, Maintenance and Replacements

Make sure the ERS RollerDrive Belt Conveyor Module is disconnected from the power source when carrying out cleaning, maintenance or replacements.

7.1 General information

7.1.1 Cleaning Information

NOTE	**Products** - Do not use abrasive products, pressurized jets or products which may cause oxidization or damage the equipment. - Clean the ERS RollerDrive Belt Conveyor using a dry cloth.

7.1.2 Maintenance Information

⚠ CAUTION	**Safety** - Make sure maintenance is carried out by qualified personnel who are familiar with the proper procedures and instructions. - Secure the working area and shut down the machinery and apply appropriate signage. Make sure nobody can start up the machinery during maintenance. - Wear Personal Protective Equipment. - When in doubt contact the supplier or manufacturer of the parts. - Make sure the complete system is disconnected from the power source when carrying out cleaning, maintenance or replacements.
i	**Third party spare parts** Some parts are used from third parties, mostly electronics. In case of the ERS RollerDrive Belt Conveyor this can be: - Drive rollers - Zone Controllers - Inductive Sensors - Geared Drives The third parties deliver these parts with stand-alone user manuals. Please check the appendix or visit the manufacturer's website for additional maintenance and mounting information.

7.1.3 Maintenance intervals

defines the maintenance intervals according to the **operating hours**. During these periods, the ERS RollerDrive Belt Conveyor has to be disconnected from the electrical network, cleaned, and investigated for wear. Faults observed during the inspections and unforeseen changes must be corrected immediately.

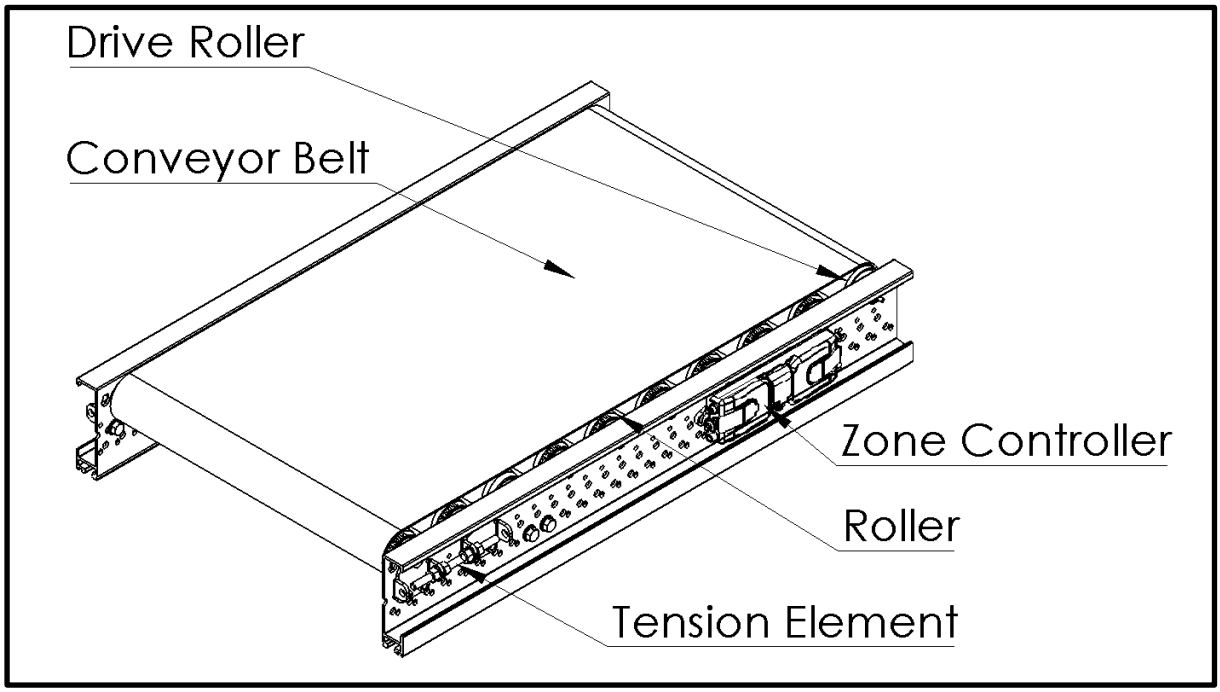
The maintenance activities are to be performed as listed.

Working period In hours per day	**Interval** In months
0-8	3
8-16	2
16-24	1

If maintenance is not performed as scheduled, damage can occur. If maintenance intervals are not complied with, guarantee expires.

7.2 ERS 56, 57 RollerDrive Belt Conveyor

7.2.1 Maintenance



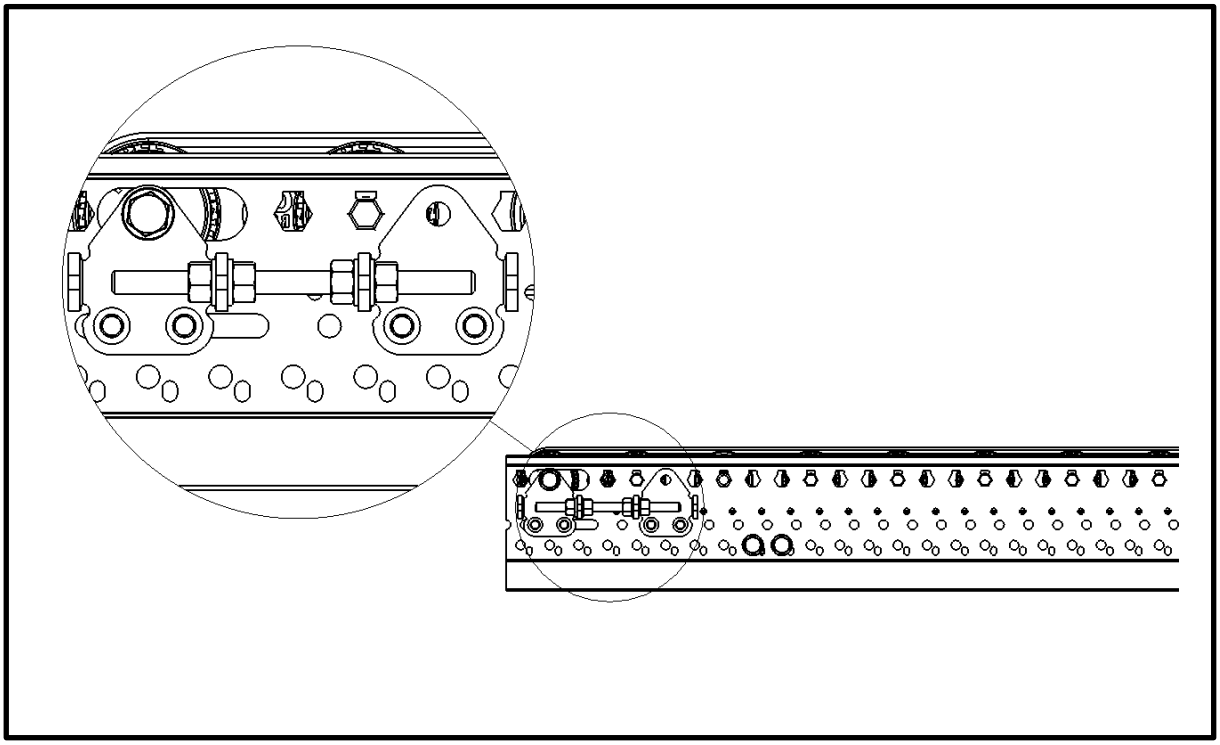
	Part	Inspection	Result	Action
1.	Drive Roller	Mounting check	Mounting bolt too loose	Tighten
		Acoustic check	Noise	Replace Drive Roller/ Geared Drive
		Visual check	Damaged Roller	Replace Drive Roller/ Geared Drive
			Damaged Motor Cable	Replace Drive Roller/ Geared Drive
2.	Zone Controller	Visual Check	Contamination	Clean
			Cables not connected	Reconnect cables
			No Power	Check Power Supply
			Damaged	Replace Zone Controller
3.	Conveyor Belt	Visual check	Damaged	Replace Transport Belt
4.	Roller	Acoustic check	Noise	Replace Roller
		Visual check	Damaged Roller	Replace Roller
5.	Tension Element	Visual check	Damaged	Replace Tension Element

7.2.1.1 Adjust Tension of Transport Belt

⚠ CAUTION	Make sure the Module is disconnected from the power source when carrying out cleaning, maintenance or replacements.

Step 1.

Increase or decrease the tension of the belt by tightening or loosening the M8 nuts of the tension mechanism shown below, make sure the transport belt is tensioned to 0.25 - 0.30 %. Please advise appendix “Belt tensioning guide” for tensioning of the belt.



7.2.2 Replacements

7.2.2.1 Transport Belt Replacement

⚠ CAUTION	Make sure the Module is disconnected from the power source when carrying out cleaning, maintenance or replacements.

Step 1.

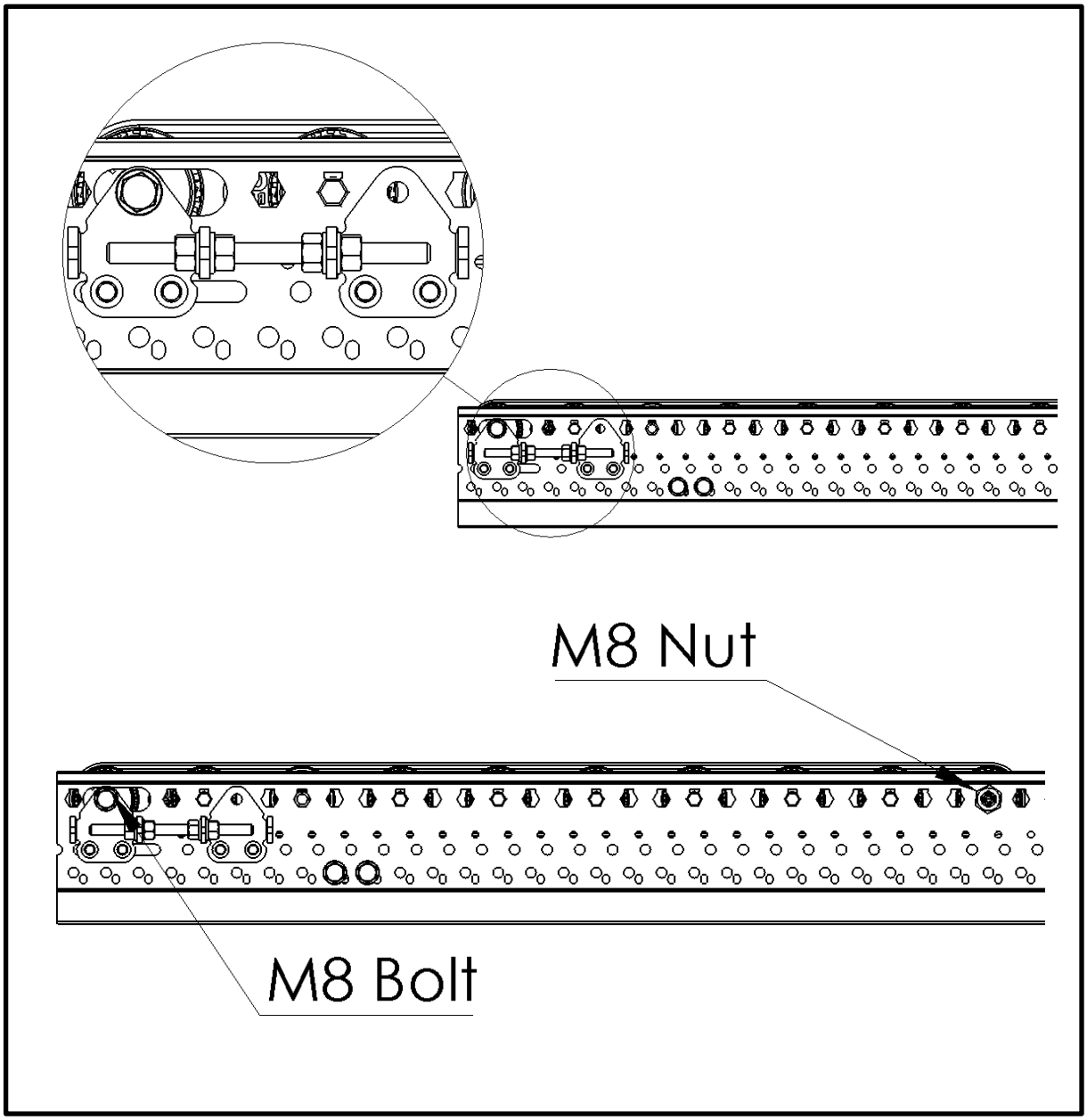
Release the tension of the belt by loosening the M8 nuts of the tension mechanism shown below.

Step 2.

Remove the M8 Bolt and Nut, holding the tension and the Drive Roller.

Step 3.

Push in the hexagonal heads on one end of the rollers and remove the side profile of the ERS RollerDrive Belt Conveyor Module.

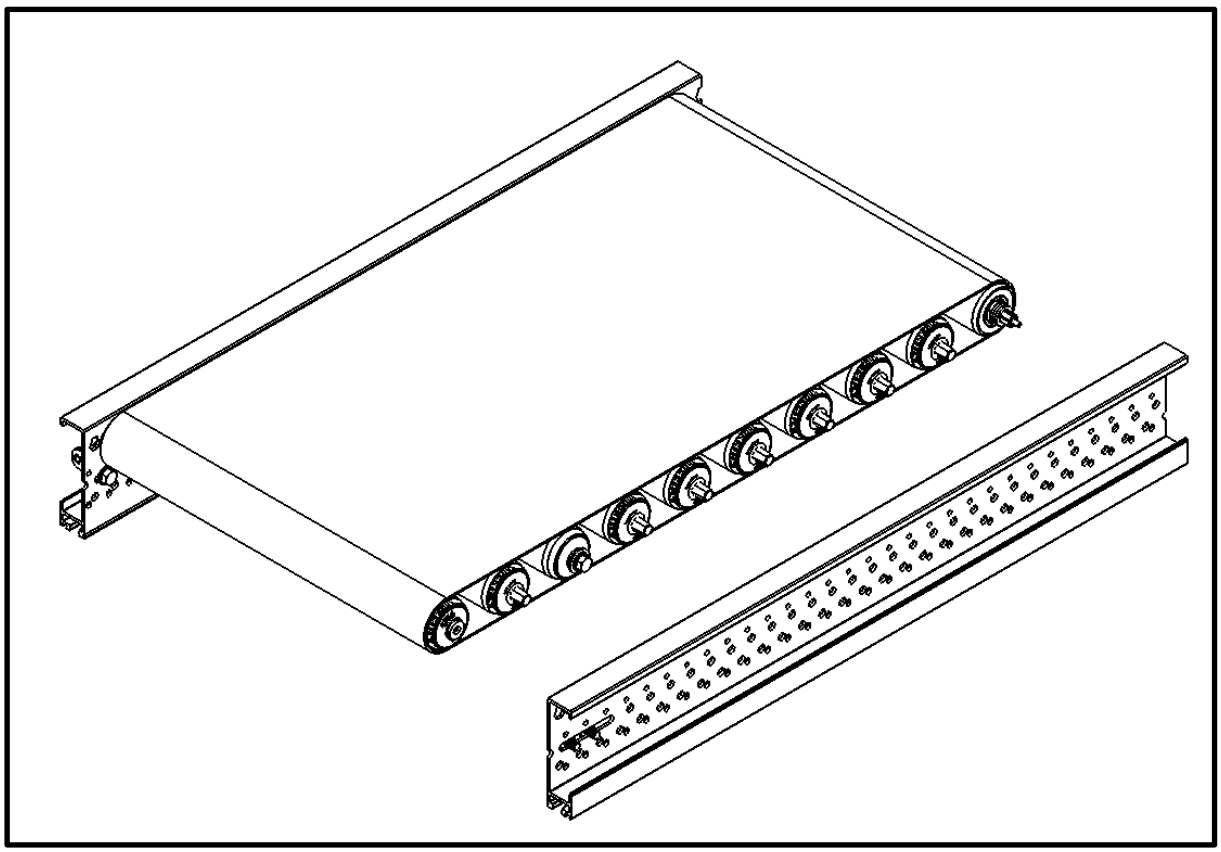


Step 4.

Remove the Transport Belt.

Step 5.

Replacing the Transport Belt could be done by repeating the steps in reverse order, make sure the transport belt is tensioned to 0.25 - 0.30 %. Please advise appendix “Belt tensioning guide” for tensioning of the belt..



7.2.2.2 Transport Roller Replacement

⚠ CAUTION	Make sure the Module is disconnected from the power source when carrying out cleaning, maintenance or replacements.

Step 1.

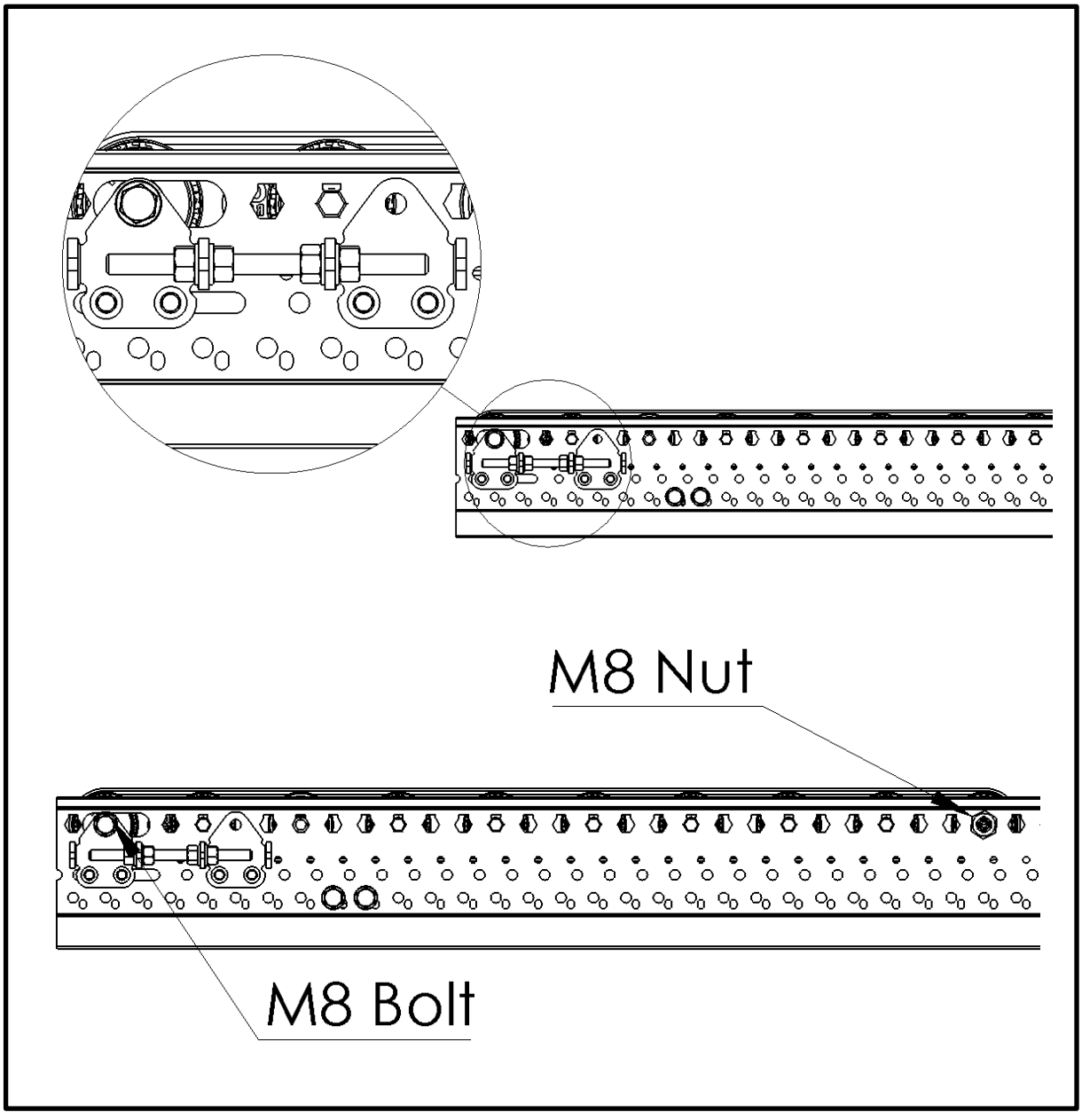
Release the tension of the belt by loosening the M8 nuts of the tension mechanism shown below.

Step 2.

Remove the M8 Bolt and Nut, holding the tension and the Drive Roller.

Step 3.

Push in the hexagonal heads on one end of the rollers and remove the side profile of the ERS RollerDrive Belt Conveyor Module

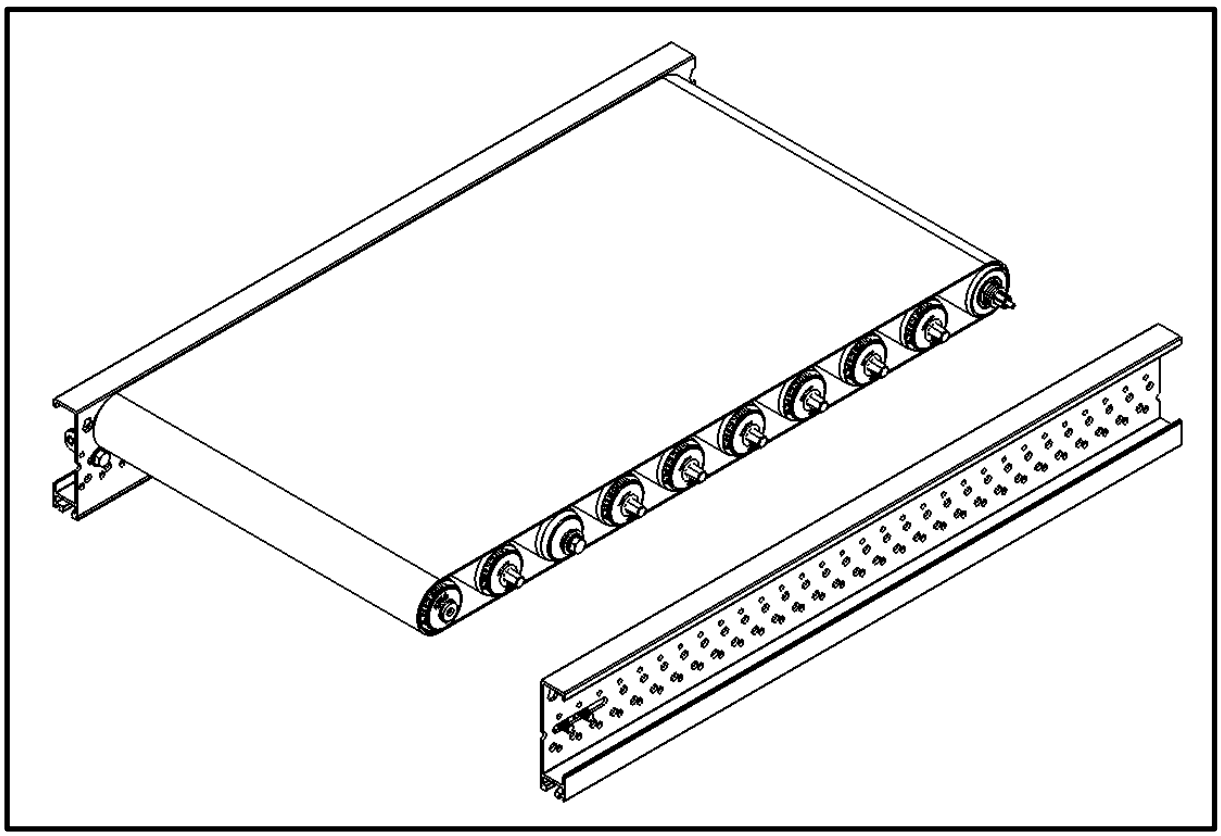


Step 4.

Remove the Roller y pushing in the hexagonal head on the other end of the roller.

Step 5.

Replacing the Roller could be done by repeating the steps in reverse order, make sure the transport belt is tensioned to 0.25 - 0.30 %. Please advise appendix “Belt tensioning guide” for tensioning of the belt.



7.2.2.3 Zone Controller Replacement

⚠ CAUTION	Make sure the Module is disconnected from the power source when carrying out cleaning, maintenance or replacements.

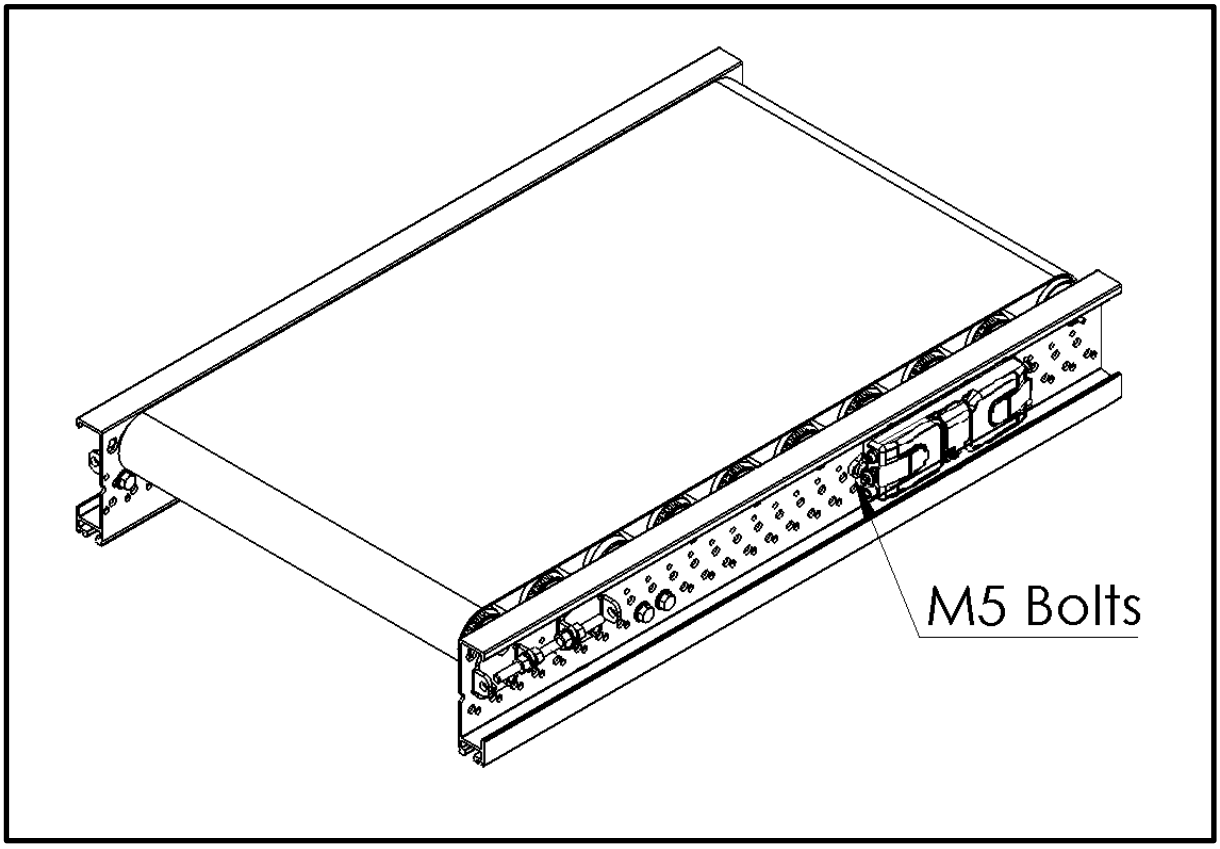
Step 1.
Remove all the cables connected to the Zone Controller.

Step 2.
Remove the two M5 bolts holding the Zone Controller.

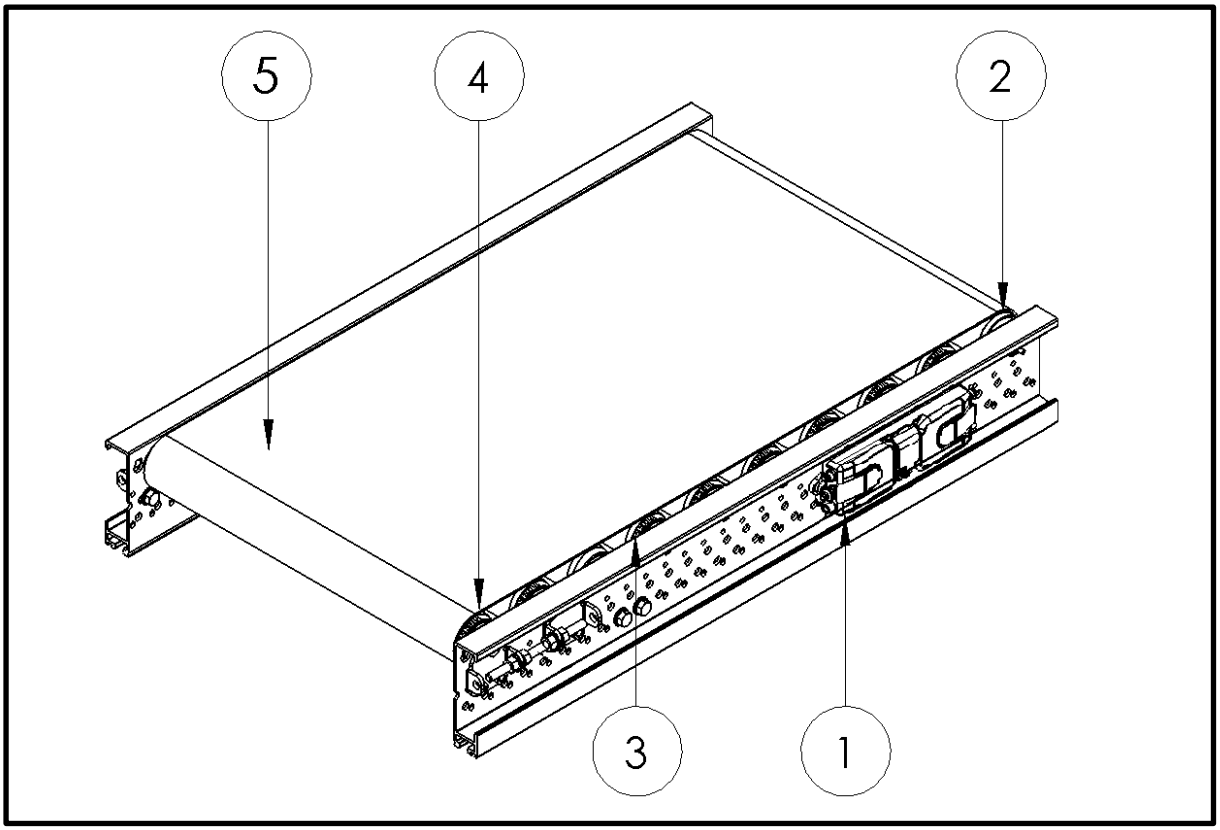
Step 3.
Remove the Zone Controller from the ERS 57 RollerDrive Belt Conveyor Module.

Step 4.
Replacing the Zone Controller could be done by repeating the steps in reverse order.

In case of doubt on the connection of the Zone Controller, advice the user manual of the Zone Controller.



7.2.3 Spare parts

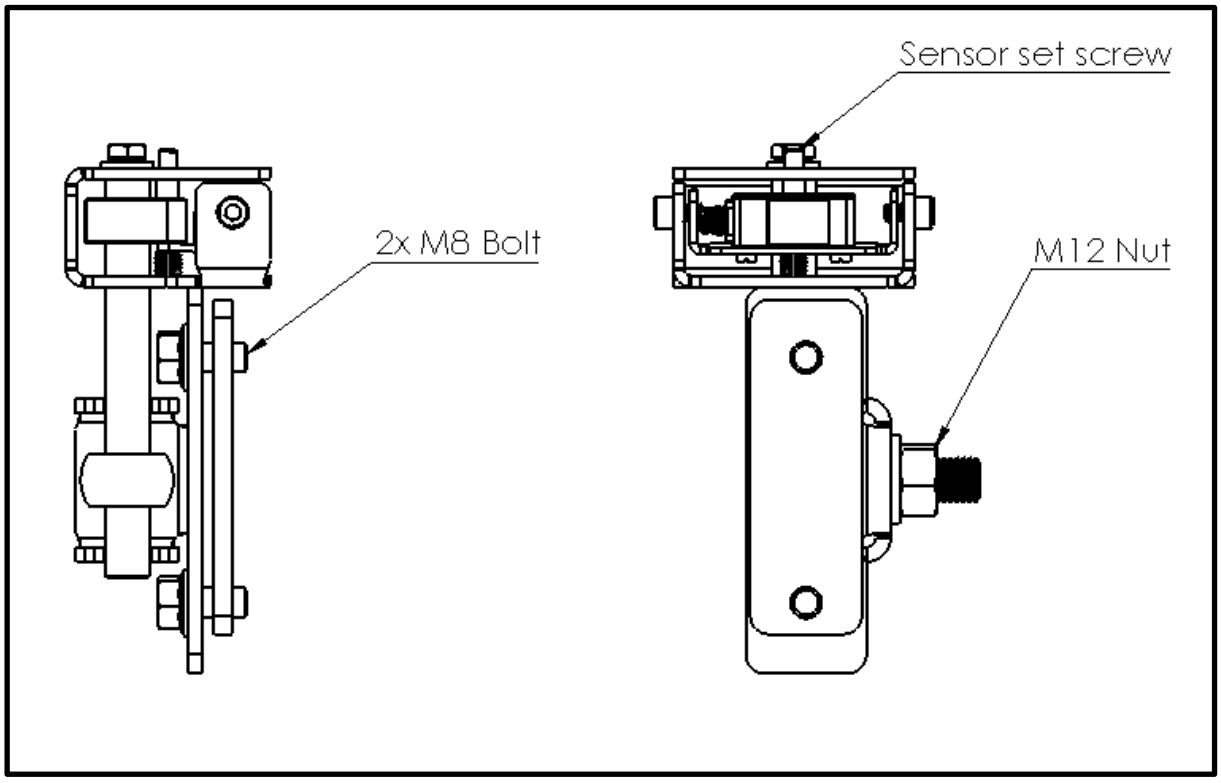


POS.	ART. NUMBER	WIDTH(LW)	COMMENT
1	ERS040305010004	-	Zone Controller Profinet
	ERS040305010006	-	Zone Controller EtherCAT
	ERS040305010002	-	Zone Controller Zone Control
2	ERS04030102x420	420	Drive Roller *
	ERS04030102x520	520	Drive Roller *
	ERS04030102x620	620	Drive Roller *
	ERS04030102x820	820	Drive Roller *
3	ERS040308010420	420	Roller
	ERS040308010520	520	Roller
	ERS040308010620	620	Roller
	ERS040308010820	820	Roller
4	ERS040308180420	420	Tension Roller
	ERS040308180520	520	Tension Roller
	ERS040308180620	620	Tension Roller
	ERS040308180820	820	Tension Roller
5	Belt Conveyor Specific	-	Transport Belt, Contact Swisslog Technology Center Netherlands

*						
	v: 0,98 m/s	x= 2	v: 0,44 m/s	x= 5	v: 0,16 m/s	x= 8
	v: 0,78 m/s	x= 3	v: 0,33 m/s	x= 6		
	v: 0,65 m/s	x= 4	v: 0,25 m/s	x= 7		

7.3 ERS Sensor and Reflector

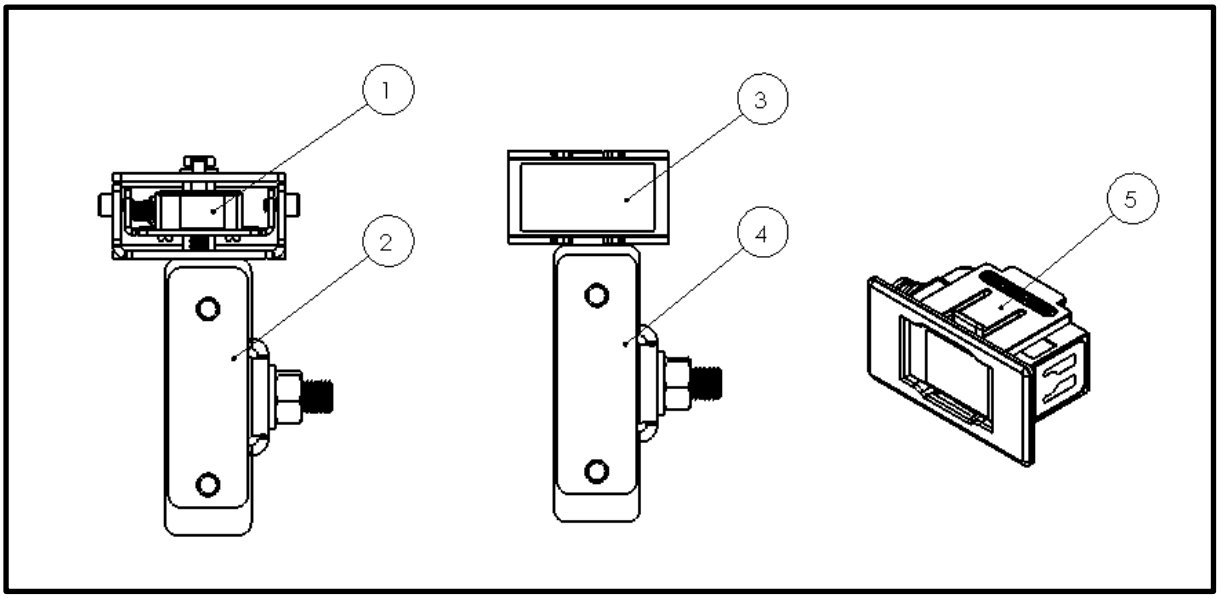
7.3.1 Maintenance



	Part	Inspection	Result	Action
1.	Sensor	Visual check	LED not burning	Check / Replace Wiring Check Power Supply Replace Sensor
2.	Bracket	Visual Check	Misalignment Disjointed	Adjust height Adjust orientation Tighten joint M8 Bolts

7.3.2 Spare parts

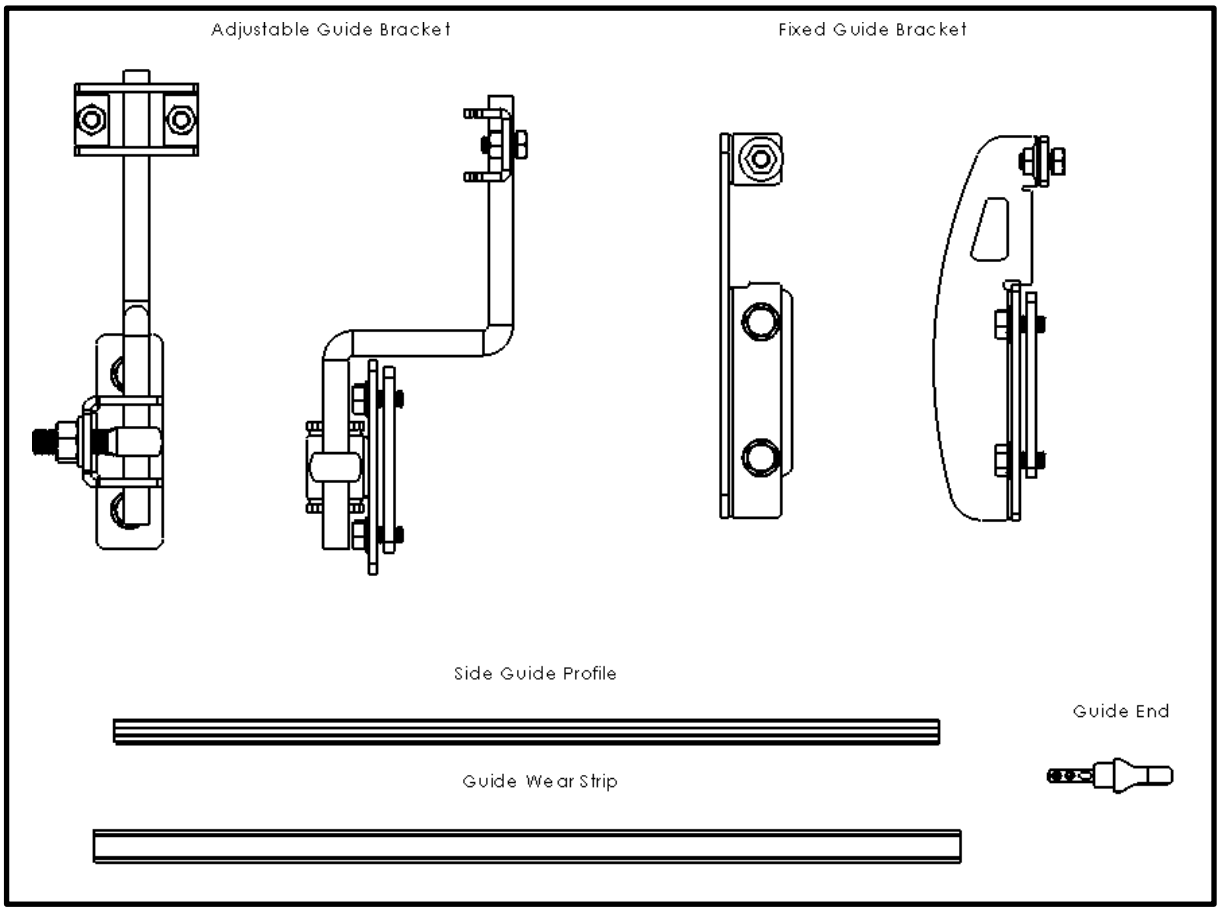
7.3.2.1 ERS Sensor and Reflector



POS.	ART. NUMBER	WIDTH(LW)	COMMENT
1	ERS040310010003	-	Sensor, Leuze PRK5/4P-M8
2	ERS040311020000	-	Sensor Bracket
3	ERS040310010001	-	Reflector
4	ERS040311020001	-	Reflector Bracket
5	ERS090315000000	-	Sensor Clip

7.4 ERS Side Guide

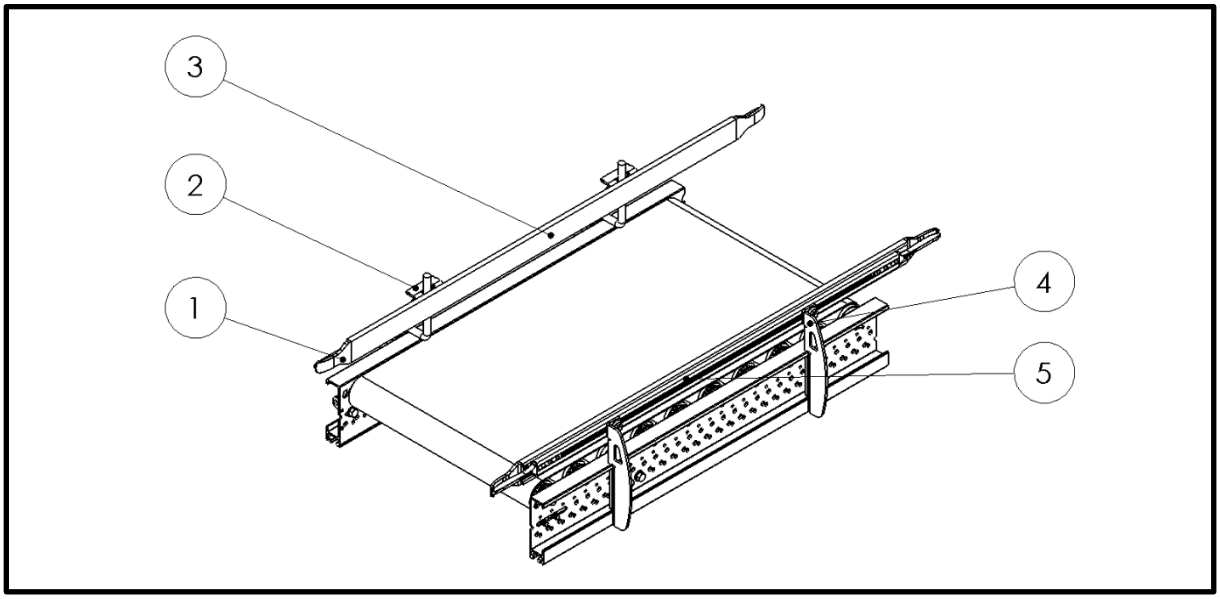
7.4.1 Maintenance



	Part	Inspection	Result	Action
1.	Fixed Guide Bracket	Visual Check	Disjointed	Tighten joint M8 Bolts Replace Bracket
2.	Adjustable Guide Bracket	Visual Check	Misalignment Disjointed	Adjust height Adjust orientation Tighten joint M8 Bolts Replace Bracket
3.	Side Guide Profile	Visual Check	Cracks/ Broken	Replace Side Guide Profile
4.	Guide Wear Strip	Visual Check	Cracks/ Broken	Replace Guide Wear Strip
5.	Guide End	Visual Check	Cracks/ Broken	Replace Guide End

7.4.2 Spare parts

7.4.2.1 ERS Side Guide

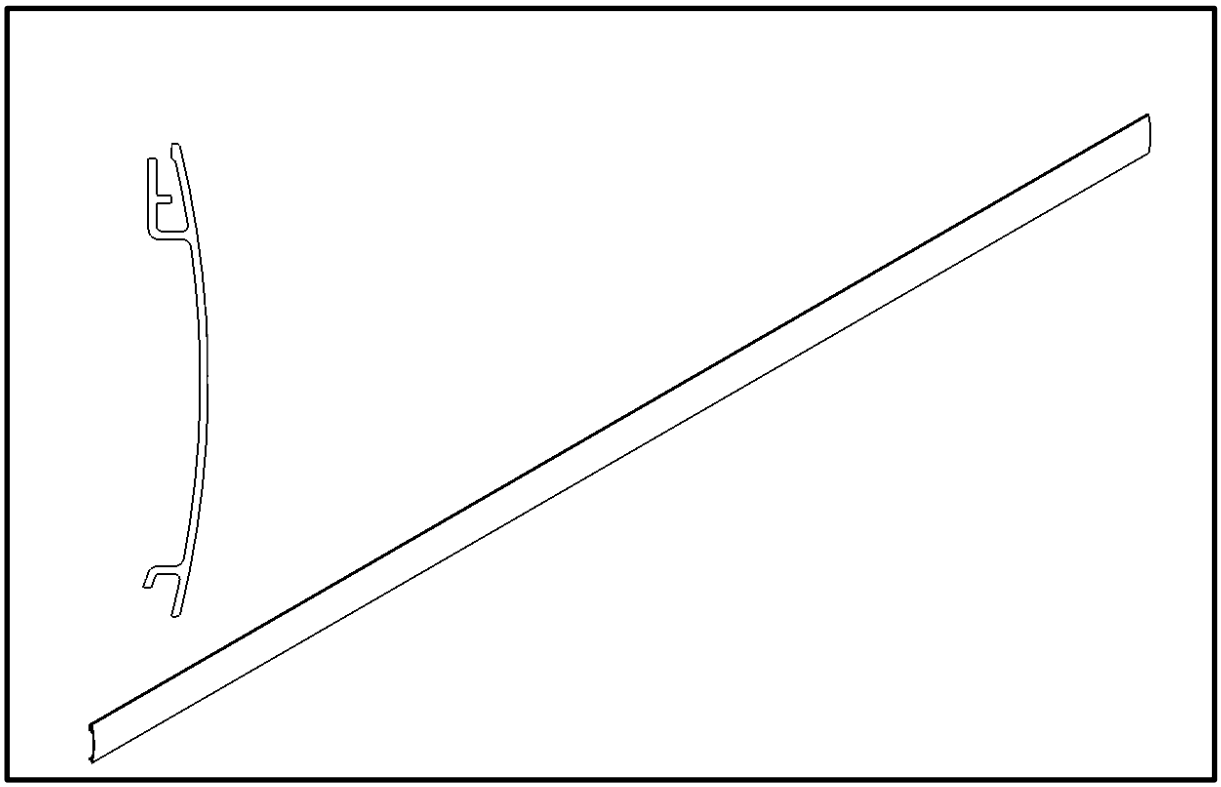


POS.	ART. NUMBER	WIDTH(LW)	COMMENT
1	ETS040809050000	-	Guide End
2	ERS040311000002	-	Adjustable Guide Bracket
3	ECP040103000000	-	Guide Wear Strip (3000 mm)
4	ERS040311010000	-	Fixed Guide Bracket
5	ETS040809000000	-	Side Guide Profile (5600 mm)

7.5 ERS Side Cover Profile

7.5.1 Spare parts

7.5.1.1 ERS Side Cover Profile



POS.	ART. NUMBER	WIDTH(LW)	COMMENT
1	040307000002	-	ERS Side Cover Profile (3000 mm)

7.6 Troubleshooting

Failure	Cause	Correction
Product flow is wrong	Product turns	Install side profile
	Product runs to one side	Check horizontal alignment of the ERS RollerDrive Belt Conveyor Module
Product does not move	Drive Roller does not turn	Check Failure: 'Driver Roller does not turn'
	The Roller bearings are damaged/ broken	Replace Roller
Drive Roller does not turn	The load on the Drive Roller is too high, which causes overheating of the Drive Roller	Lower load per drive roller
Drive Roller does not turn Zone Controller is not working properly	The Drive Roller or the power cable is damaged	Replace Drive Roller
	Zone Controller in failure	Check Failure: 'Zone Controller is not working properly'
	No power supply	Check 24V power supply
Product does not stop	Wrong position of the Inductive Sensors	Reposition the Inductive Sensors to their correct positions
Zone Controller shows failure (Check user manual)	Zone Controller is defective because of damaging or triggering of the internal fuse	Replace Zone Controller
	Overheating of the motor	A low RPM causes a decrease in torque, causing possible overheating

8 Storage and disposal

8.1 Storage

⚠ WARNING	**Storage** - Store the ERS roller driven belt conveyor indoors. - Never store the ERS roller driven belt conveyor outdoors, in a dusty or in a humid environment. - Do not add additional loads unto the packaged ERS RollerDrive Belt Conveyor.

8.2 Disposal

NOTE	**Disposal** When the ERS roller driven belt conveyor module reaches the end of its useful life, it can be removed from the system and dismantled and the materials can be disposed of properly by type. For the correct proposal please check your local waste disposal regulations!

9 Appendix

Attachments:

- Belt Specs
- Belt alignment and tensioning guide
- Declaration of Incorporation of partly completed machinery

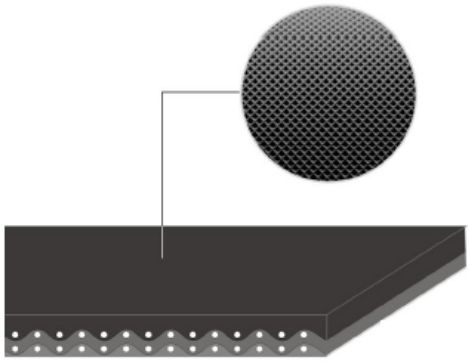
Manuals:

- Zone Controller, Profinet
- Zone Controller, EtherCAT
- Zone Controller, Zone Controll.
- Drive Roller, Interrol RollerDrive EC310
- Photoelectric Sensor, Leuze PRK5/4P-M8
- QuickMove 3.0 Product specification (Wiring diagrams)
- QuickMove 3.1: Hardware Description (incl. wiring)

Belt Specs

Conveyor and process belt

2M5 U0-V5 PN FR



COMPOSITION

Conveying surface	Material	PVC 40 Sh.A (±5)
	Thickness	0.60 mm *0.024 in.*
	Surface pattern	PN
	Colour	Anthracite
	Coefficient of friction	HF
Textile carcass	Material	Polyester (PET)
	Plies no.	2
	Weft type	Rigid
Driving surface	Material	Fabric with polyurethane (TPU) impregnation
	Thickness	--- mm --- *in.*
	Surface pattern	Fabric
	Colour	Grey

TECHNICAL SPECIFICATIONS

Total thickness	1.90 mm	*0.07*	*in.*
Weight	2.10 kg/m²	*0.43*	*lbs./sq.ft*
Elongation at 1%	6 N/mm	*34.0*	*lbs./in.*
Max. admissible pull	12 N/mm	*68.5*	*lbs./in.*
Temperature resistance (1) min.	-10 °C	*14*	*°F*
Temperature resistance (1) max.	60 °C	*140*	*°F*

(1) Use of the belt with limit values may reduce its life.

Minimum radius / diameter (2)

Knife edge minimum radius	no		
Bending roller min. diameter	40 mm	*1.57*	*in.*
Counter-bending roller min. diameter	60 mm	*2.36*	*in.*

(2) The above mentioned values depend on the type of CHIORINO joint recommende

Coefficient of friction on driving surface

Raw steel sheet	0.20 [-]
Laminated plastic/wood	0.25 [-]
Steel roller	0.20 [-]
Rubberized roller	0.30 [-]

Max. production width 2000 mm *79 in.*

SUITABLE FOR

Packaging
Airports
Materials handling
Postal automation

FEATURES

Humidity influence	no
Suitable to metal detector	yes
Permanent antistatic dynamically (UNI EN ISO 21179)	yes
Static conductivity (UNI EN ISO 284)	no
Conveying on skid bed	yes
Conveying on rollers	yes
Conveying on skid bed on top and return	no
Troughed conveying	no
Swan neck conveying	no
Inclined conveying	yes
Accumulators belts	no
Curved conveyor	no
Chemical resistances link	9

COMPLIANCES

REACH EC 1907/2006 Regulation and Amendments
Flame Retardant UNI EN ISO 340
Flame Retardant UL94HB Horizontal Burning

Conveyor and process belts

2M5 U0-U2 A

COMPOSITION

Conveying surface	Material	Polyurethane (TPU)
	Thickness	0.20 mm 0.008 in.
	Surface pattern	Smooth
	Colour	Green
	Coefficient of friction	LF
Textile carcass	Material	Polyester (PET)
	Plies no.	2
	Weft type	Rigid
Driving surface	Material	Fabric with polyurethane (TPU) impregnation
	Thickness	--- mm --- in.
	Surface pattern	Fabric
	Colour	Grey

TECHNICAL SPECIFICATIONS

Total thickness	1.20 mm	0.05 in.	
Weight	1.40 kg/m²	0.29 lbs./sq.ft	
Elongation at 1%	6 N/mm	34.0 lbs./in.	
Max. admissible pull	12 N/mm	69.0 lbs./in.	
Temperature resistance (1)	min. -20 °C	-4 °F	
	max. 100 °C	212 °F	

(1) Use of the belt with limit values may reduce its life.

Minimum radius / diameter (2)

Knife edge minimum radius	4 mm	0,16 in.
Bending roller min. diameter	8 mm	0.31 in.
Counter-bending roller min. diameter	16 mm	0.63 in.

(2) The above mentioned values depend on the type of CHIORINO joint recommende

Coefficient of friction on driving surface

Raw steel sheet	0.20 [-]
Laminated plastic/wood	0.25 [-]
Steel roller	0.20 [-]
Rubberized roller	0.30 [-]

Max. production width 2000 mm 79 in.

SUITABLE FOR

Packaging
Materials handling
Postal automation
Steel blankets magnetic elevators

FEATURES

Humidity influence	no
Suitable to metal detector	no
Permanent antistatic dynamically (UNI EN ISO 21179)	yes
Static conductivity (UNI EN ISO 284)	no
Conveying on skid bed	yes
Conveying on rollers	yes
Conveying on skid bed on top and return	no
Troughed conveying	no
Swan neck conveying	yes
Inclined conveying	no
Accumulators belts	yes
Curved conveyor	no
Chemical resistances link	5

COMPLIANCES

REACH EC 1907/2006 Regulation and Amendments
EC 1935/2004 Regulation and Amendments
EC 2023/2006 Regulation and Amendments
EU 10/2011, 2017/752 Regulation and Amendments
FDA (Food and Drug Administration)

Belt tensioning guide

Task	Procedure
Belt Tensioning	Make sure the transport belt is tensioned to 0.25 - 0.30 % Adjust the tension by adjusting the Tensioners The Tensioners could be adjusted by tightening or loosening the tension nuts. The correct tension could be achieved by marking a section of 1000 mm on the loosened belt, the correct tension is reached when this section measures 1003 mm under tension.

Declaration of Incorporation of partly completed machinery

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Original Declaration of Incorporation

Declaration of Incorporation

according to EC Machinery Directive 2006/42/EC, Annex II B

The manufacturer / company placing the product on the market:
Swisslog GmbH, Martin-Schmeißer-Weg 6-8, 44227 Dortmund, Germany

hereby declares that the product:

General designation	**QuickMove**
Model/type designation	**ERS 56, 57, 24 Volt roller driven belt conveyor modules**
Unique identification number	

conforms to the requirements of EC Machinery Directive 2006/42/EC listed in Appendix 1 of this declaration. Furthermore, conformity with the following additional directives is declared:

EU EMC Directive 2014/30/EU
--

EU RoHS Directive 2011/65/EU
--

The following harmonized standards and, where appropriate, additional standards were applied:

- **EN 619:2002+A1:2010**
- **EN 619:2019**
- **EN IEC 60204-1:2019**
- **EN ISO 12100:2010**

Furthermore, we declare that the relevant technical documentation described in Annex VII, part B, has been prepared for this partly completed machinery. We undertake to transmit, in response to a duly reasoned request by the authorities responsible for market surveillance, the relevant technical documentation.

Authorized representative for the compilation of the technical documentation:
KUKA Aktiengesellschaft, CLD-PC, Zugspitzstrasse 140, 86165 Augsburg, Germany

The putting into service of the partly completed machinery is not allowed until the partly completed machinery has been incorporated into machinery, or has been assembled with other parts to form machinery, and this machinery complies with the terms of the EC Machinery Directive, and the EC declaration of conformity is present in accordance with Annex II A.

Dortmund, 10/23/2020

Heino Heitplatz, Head of LGCTC

Björn Eisbach, Product Manager LGCTC

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Appendix 1

List of essential requirements complied with in accordance with Annex I, Directive 2006/42/EC

General designation	**QuickMove**
Model/type designation	**ERS 56, 57, 24 Volt roller driven belt conveyor modules modules**
Unique identification number	

Section	Requirements	Complied with for the scope of the partly completed machinery	To be complied with by the system integrator for the final machinery	Not relevant
1.1.	GENERAL			
1.1.1.	Definitions	☒	☐	☐
1.1.2.	Principles of safety integration	☒	☐	☐
1.1.3.	Materials and products	☐	☐	☒
1.1.4.	Lighting	☐	☐	☒
1.1.5.	Design of machinery to facilitate its handling	☒	☐	☐
1.1.6.	Ergonomics	☐	☒	☐
1.1.7.	Operating positions	☐	☐	☒
1.1.8.	Seating	☐	☐	☒
1.2.	CONTROL SYSTEMS			
1.2.1.	Safety and reliability of control systems	☒	☐	☐
1.2.2.	Control devices	☐	☒	☐
1.2.3.	Starting	☒	☒	☐
1.2.4.1.	Normal stop	☐	☒	☐
1.2.4.2.	Operational stop	☐	☒	☐
1.2.4.3.	Stopping the machine in an emergency	☐	☒	☐
1.2.4.4.	Assembly of machinery	☐	☒	☐
1.2.5.	Selection of control or operating modes	☐	☒	☐
1.2.6.	Failure of the power supply	☒	☒	☐
1.3.	PROTECTION AGAINST MECHANICAL HAZARDS			
1.3.1.	Risk of loss of stability	☒	☒	☐
1.3.2.	Risk of break-up during operation	☒	☐	☐
1.3.3.	Risks due to falling or ejected objects	☒	☐	☐
1.3.4.	Risks due to surfaces, edges or angles	☒	☒	☐
1.3.5.	Risks related to combined machinery	☐	☐	☒
1.3.6.	Risks related to variations in operating conditions	☐	☐	☒
1.3.7.	Risks related to moving parts	☒	☐	☐
1.3.8.	Choice of protection against risks arising from moving parts	☐	☒	☐
1.3.8.1.	Moving transmission parts	☐	☒	☐
1.3.8.2.	Moving parts involved in the process	☐	☒	☐
1.3.9.	Risks of uncontrolled movements	☒	☐	☐
1.4.	REQUIRED CHARACTERISTICS OF GUARDS AND PROTECTIVE DEVICES			
1.4.1.	General requirements	☐	☐	☒
1.4.2.	Special requirements for guards	☐	☐	☒
1.4.2.1.	Fixed guards	☐	☐	☒
1.4.2.2.	Interlocking movable guards	☐	☐	☒
1.4.2.3.	Adjustable guards restricting access	☐	☐	☒
1.4.3.	Special requirements for protective devices	☐	☐	☒

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		Complied with for the scope of the partly completed machinery	To be complied with by the system integrator for the final machinery	Not relevant
Section	**Requirements**			
1.5.	RISKS DUE TO OTHER HAZARDS			
1.5.1.	Electricity supply	☒	☐	☐
1.5.2.	Static electricity	☐	☒	☐
1.5.3.	Energy supply other than electricity	☐	☐	☒
1.5.4.	Assembly error	☒	☐	☐
1.5.5.	Extreme temperatures	☐	☐	☒
1.5.6.	Fire	☒	☐	☐
1.5.7.	Explosion	☐	☐	☒
1.5.8.	Noise	☒	☒	☐
1.5.9.	Vibrations	☐	☐	☒
1.5.10.	Radiation	☐	☐	☒
1.5.11.	External radiation	☐	☐	☒
1.5.12.	Laser radiation	☐	☐	☒
1.5.13.	Emissions of hazardous materials and substances	☐	☐	☒
1.5.14.	Risk of being trapped in a machine	☐	☐	☒
1.5.15.	Risk of slipping, tripping or falling	☐	☐	☒
1.5.16.	Lightning	☐	☐	☒
1.6.	MAINTENANCE			
1.6.1.	Machinery maintenance	☒	☒	☐
1.6.2.	Access to operating positions and servicing points	☐	☒	☐
1.6.3.	Isolation of energy sources	☐	☒	☐
1.6.4.	Operator intervention	☐	☒	☐
1.6.5.	Cleaning of internal parts	☐	☐	☒
1.7.	INFORMATION			
1.7.1.	Information and warnings on the machinery	☒	☒	☐
1.7.1.1.	Information and information devices	☐	☒	☐
1.7.1.2.	Warning devices	☐	☒	☐
1.7.2.	Warning of residual risks	☒	☒	☐
1.7.3.	Marking of machinery	☒	☐	☐
1.7.4.	Instructions	☒	☒	☐
1.7.4.1.	General principles for the drafting of instructions	☒	☒	☐
1.7.4.2.	Contents of the instructions	☒	☐	☐
1.7.4.3.	Sales literature	☒	☐	☐
2.	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR CERTAIN CATEGORIES OF MACHINERY			
2.1.	Foodstuffs machinery and machinery for cosmetics of pharmaceutical products	☐	☐	☒
2.2.	Portable hand-held and/or hand-guided machinery	☐	☐	☒
2.3.	Machinery for working wood and material with similar physical characteristics	☐	☐	☒
2.4.	Machinery for pesticide application	☐	☐	☒
3.	Supplementary essential health and safety requirements to offset hazards due to the mobility of machinery	☐	☐	☒
4.	Supplementary essential health and safety requirements to offset hazards due to lifting operations	☐	☐	☒
5.	Supplementary essential health and safety requirements for machinery intended for underground work	☐	☐	☒
6.	Supplementary essential health and safety requirements for machinery presenting particular hazards due to the lifting of persons	☐	☐	☒

swisslog

Appendix 2

Information pertaining to the assembly instructions described in Annex VI, Directive 2006/42/EC

General designation	**QuickMove**
Model/type designation	**ERS 56, 57, 24 Volt roller driven belt conveyor modules**
Unique identification number	

The assembly instructions provide the person incorporating the partly completed machinery described above into machinery, or assembling it with other parts to form the final machinery, with the necessary information, relating in particular to the safety-relevant interfaces, for correct assembly without endangering the health and safety of persons.

In addition to these assembly instructions, the relevant European Directives and national regulations must be taken into account.

The complete compliance documentation to be provided by the manufacturer consists of
- the present document "Declaration of Incorporation",
- all accompanying documents in printed form.