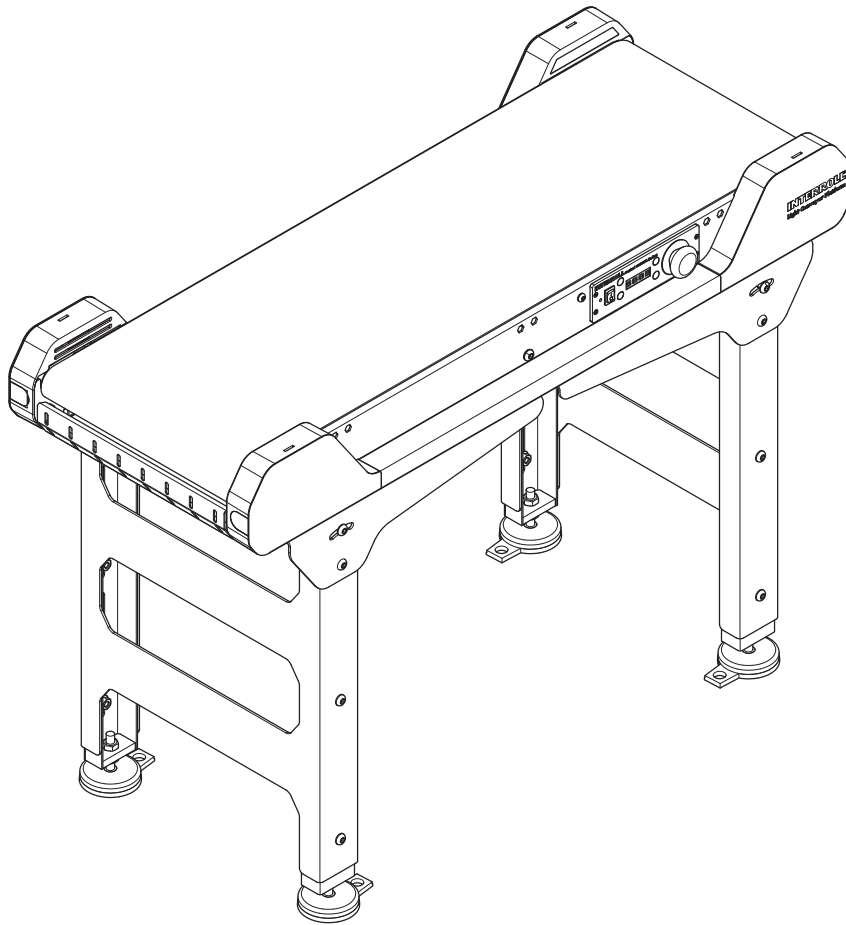


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Installation and Operating Instructions

Interroll Light Conveyor Platform

LCP Straight Conveyor

LCP Transfer Conveyor

with 400-V Control

Manufacturer's address

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Contents

We strive for the information presented to be correct, up to date and complete. We have carefully developed the contents of this document. Nevertheless, errors and changes are expressly subject to change.

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Table of contents

Introduction.....	6
Notes about working with the installation and operating instructions.....	6
Contents of these installation and operating instructions.....	6
Integrated part of the product.....	6
Installation and operating instructions are part of the module.....	6
Warning notices in this document.....	7
Symbols.....	7
Safety	8
General safety instructions.....	8
Intended use.....	8
Unintended use.....	9
Personnel qualification.....	9
Operators.....	9
Service personnel.....	9
Qualified electricians.....	9
Dangers.....	10
Bodily injury.....	10
Electricity.....	10
Rotating parts.....	10
Accidental motor start.....	10
Working environment.....	10
Faults during operation.....	10
Maintenance.....	10
Interfaces to other devices.....	11
Operating modes.....	12
Normal mode.....	12
Special mode.....	12
Product identification	13
Straight Conveyor.....	13
Components.....	13
Features.....	13
Technical data.....	14
Electrical data.....	15
Transfer Conveyor.....	16
Components.....	16
Features.....	16
Technical data.....	17
Electrical data.....	18
Control Unit.....	19
Product description.....	19
Display information and parameter settings.....	22
Scope of delivery.....	24
Technical data.....	24
Type plate of conveyor.....	26



Interroll Straight Conveyor and Transfer Conveyor

Table of contents

Type plate of control.....	27
Product identification	28
Scope of delivery	28
Transport and storage	29
Transport.....	29
After delivery.....	29
Storage.....	30
Assembly and installation	31
Warnings for assembly and installation.....	31
Torque.....	32
Grounding.....	32
Orientation.....	32
Connection	32
Anchoring	32
Integrating the module into a complete system.....	33
Conveyor assembly and connecting.....	33
Tools	33
Installing supports.....	33
Straight to straight, straight to incline/decline, transfer to straight.....	37
Straight to transfer (90° turn)	38
LCP Control connections and settings	40
Power input	40
Power output.....	41
Motor output	41
Digital interface	42
Minimum circuitry	43
Electrical installation	47
Installing side guides.....	48
Adjustable side guides	48
Fixed side guides	50
Installing the photo cell and reflector	51
Power supply	52
Installing bridge for straight conveyor	53
Transfer Conveyor.....	54
Installing corner roller and bridge for transfer conveyor	54
Initial startup and operation.....	56
Initial startup.....	56
Checks before initial startup.....	56
Stand-alone mode (Main Control and Local Control)	56
PLC mode (Digital Control and Network Control)	56
Operation	57
Inspection prior to each operation.....	57
During operation	57
Procedure in case of accident or fault	59

Interroll Straight Conveyor and Transfer Conveyor

Table of contents

Cleaning	60
Maintenance and repair	61
Observe the following for maintenance and repair	61
Adjusting tension and tracking the belt	63
Replacing the belt	64
Belt types	65
Replacing the photo cell and reflector	67
Replacing the photo cell	67
Replacing the reflector.....	68
Replacing the idler pulley or belt drive.....	69
Replacing the support roller.....	71
Replacing the control	72
Maintenance intervals.....	73
Maintenance and inspection list.....	73
Troubleshooting	74
Spare and wear parts	75
Ordering information.....	75
Straight Conveyor.....	76
Spare part designation.....	76
Spare parts list.....	77
Accessories.....	78
Transfer Conveyor.....	80
Spare part designation.....	80
Spare parts list.....	81
Accessories.....	82
Decommissioning and disposal	84
Shutdown	84
Disposal.....	84
Appendix	86
Warranty for Interroll belt drives and conveyor systems.....	86
Restrictions.....	86
Exceptions.....	86
Installation declaration	87

Introduction

Notes about working with the installation and operating instructions

The LCP Straight and Transfer Conveyors with LCP Control are generally referred to as "module" in this document.

The LCP Control with emergency button (CO6601) is referred to as "Main Control" in this document.

The LCP Control without emergency button (Local Control CO6602, Digital Control CO6603, Network Control CO6604) is referred to as "Auxiliary Control" in this document.

Throughout these instructions, the term "LCP Control" is used in the singular. Unless otherwise specified, the information in these installation and operating instructions refers to all variants. Due to the safety function, the control with emergency stop button is referred to as "Main Control" in these operating instructions and the Local Control without emergency stop button as "Auxiliary Control". The control logic for Main Control and Local Control for working in stand-alone mode is the same. The Digital Control can be controlled by the PLC via digital I/Os and the Network Control can be controlled by the PLC via the network.

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 these installation and operating instructions, 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 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 Interroll customer service. Contact persons near you can be found on the Internet under: www.interroll.com/contact.

**Contents of these
installation and operating
instructions**

**Integrated part of the
product**

**Installation and operating
instructions are part of the
module**

Interroll Straight Conveyor and Transfer Conveyor

Introduction

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:

Signal word	Meaning
DANGER	Identifies a danger with high risk that will result in death or serious injury if it is not avoided.
WARNING	Identifies a danger with medium risk that could result in death or serious injury if it is not avoided.
CAUTION	Identifies a danger with low risk that may result in minor or medium injury if it is not avoided.
NOTICE	Identifies a danger that results in property damages.

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

General safety instructions

The module is designed according to the state of the art and is reliable in operation, once distributed. However, risks may still arise:

- Danger of death or risk of physical injury to the user or bystanders.
- Adverse effects on the module and other negative consequences.



Disregarding the notices in these installation and operating instructions may cause life-threatening injury.

- ▶ Always read the entire installation and operating instructions with the safety instructions before starting to work with the module and follow the notices.
- ▶ Only instructed and qualified persons may work with the module.
- ▶ Always keep these installation and operating instructions on hand when working on the module so that you can consult them quickly if required.
- ▶ Always comply with relevant national safety regulations.
- ▶ If you have any questions after reading these installation and operating instructions, feel free to contact Interroll customer service: www.interroll.com/contact

Intended use

The module is designed to be installed and may only be used in an industrial environment for industrial purposes within the performance limits stated in the technical specifications. The belt conveyor is supplied as a complete modular unit and equipped with an Interroll 80S-SMP belt drive – tested and ready to be connected and operated. The LCP Control must be integrated into an LCP conveyor unit or conveyor system before initial startup. Only indoor use is allowed.

Any other use is not permitted. Operating conditions that deviate from those specified require new contractual agreements.

Interroll Straight Conveyor and Transfer Conveyor

Safety

Unintended use

Use of the module is only allowed in the areas described under product information.

Any modifications that affect the safety of the product are not permitted. Any use beyond the intended use is considered unintended, unless such use has been authorized by Interroll Joki A/S where applicable.

The module may not be used to transport persons, animals or bulk goods.

The equipment must not be installed in areas in which substances could form explosive atmospheres/dust atmospheres or for use in the medical/pharmaceutical sector.

It is considered unintended use to install the equipment in exposed spaces that are open to potentially adverse weather conditions, or in areas in which the technology would suffer from the prevailing climactic conditions and could potentially malfunction as a result.

The module is not intended for use by private end users.

The equipment must not be used in a residential environment without further examination and without the use of EMC protective measures that have been adapted accordingly. It must not be used as a safety-relevant component or for performing safety-relevant functions.

Personnel qualification

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

- ▶ Authorize only qualified personnel to perform the activities described in these instructions.
- ▶ The operating company must ensure that personnel follow locally applicable regulations and rules about safety and hazards while working.

The following target groups are addressed in these instructions:

Operators

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

Service personnel

Service engineers have a specialist technical education or have successfully completed a training course from the manufacturer. They carry out repair and maintenance work.

Qualified electricians

Qualified electricians have a specialist technical education. Moreover, due to their knowledge and experience as well as knowledge of applicable regulations, they are able to appropriately carry out work on electrical equipment. They are able to identify hazards independently and can prevent electrical damage to persons and property.

In principle, all work on electrical equipment must only be performed by a qualified electrician.

Interroll Straight Conveyor and Transfer Conveyor

Safety

Dangers



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

Bodily injury

- ▶ Maintenance or repair work must only be carried out by authorized and qualified persons in accordance with applicable regulations.
- ▶ Before turning on the module, ensure that no unauthorized persons are near the conveyor.

Electricity

- ▶ Only perform installation and maintenance work after you have disconnected the main power supply. Be aware that by switching power off via the power button at the control, power is not switched-off completely. Ensure that the belt drive cannot be turned on accidentally.
- ▶ Do not remove protective covers or housings.

Rotating parts

- ▶ Do not insert fingers between the drum motor and belt or other moving parts of the module.
- ▶ Do not remove motor and roller side covers.
- ▶ If you have long hair, tie up hair and always wear a hair net.
- ▶ Never wear loose clothing.
- ▶ Remove jewelry such as bracelets or wristbands.

Accidental motor start

- ▶ Take care during installation, maintenance work and cleaning or in the event of a drum motor fault: The drum motor could start up unintentionally.

Working environment

- ▶ Remove equipment or material that is not required from the workspace.
- ▶ Wear safety shoes.
- ▶ Clearly specify and monitor the way goods are placed on the conveyor.
- ▶ Establish a safety zone where goods can fall down.
- ▶ Do not touch the conveyor while it is running.

Faults during operation

- ▶ Regularly check the conveyor and control for visible damage.
- ▶ In case of fumes, unusual noise or blocked or damaged goods, defective supports, side guides or accessories, stop the module at once and ensure that it cannot be started accidentally.
- ▶ Contact qualified personnel immediately to find the source of the fault.
- ▶ Clean up any leaked motor oil immediately.
- ▶ During operation, do not step on the module.

Maintenance

- ▶ Carry out maintenance and inspections regularly.
- ▶ Only use Interroll original spare parts.
- ▶ Never open the LCP control unit.

Interroll Straight Conveyor and Transfer Conveyor

Safety

Interfaces to other devices

When installing the module into a system (e.g. with other modules) or installing the control unit into a module, potential hazards may occur. These hazard points are located, among other things:

- between two straight conveyors. A bridge covers the hazard location. This bridge must be installed prior.
- in the area of transition to the Transfer Conveyor. A bridge covers the hazard location. This bridge must be installed prior to operating the module.
- at the end of a conveyor in the area of the idler pulley. An end plate covers the hazard location. This plate must be installed prior to operating the module.
- in the belt drive area. The belt drive is covered by the belt and plastic covers. The belt and covers must be installed prior to operating the module.

Nevertheless, additional hazard zones may occur. These are not described in these instructions and must be analyzed during the design, installation and startup of the corresponding system.

1. After installing the conveyor in a conveyor system or similar equipment or following the integration of the control unit into a conveyor, check the entire system for any new potentially dangerous conditions prior to turning on the equipment, especially at the end roller and at the idler pulley, where cuts and crushing may occur.
2. If necessary, implement further constructional measures.



Interroll Straight Conveyor and Transfer Conveyor

Safety

Operating modes

Normal mode

Operating mode when installed as a conveyor in a conveyor system.

Operating mode when installed as a control at the end customer as a conveyor component in a complete system.

Special mode

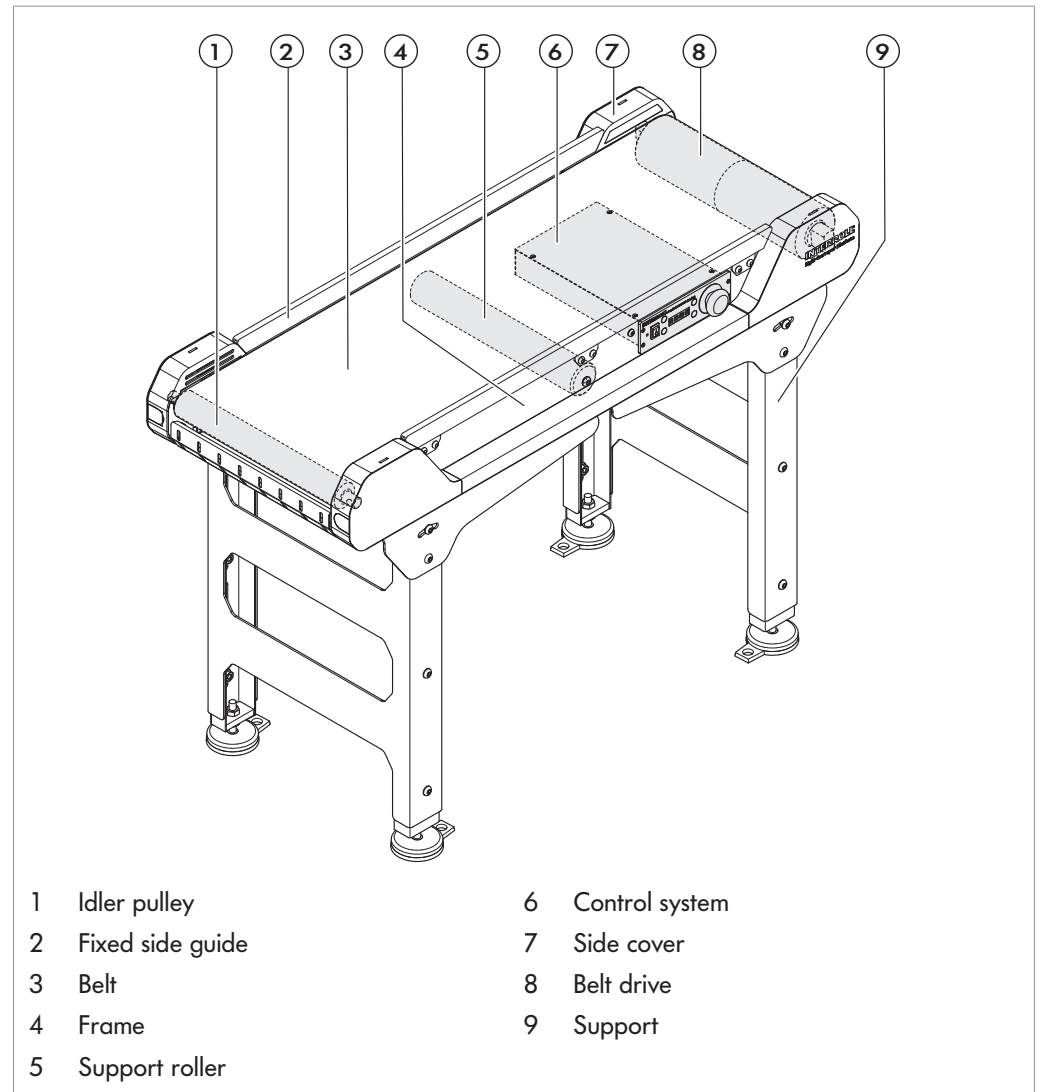
Special mode refers to all operating modes that are required to guarantee and maintain regular operation.

Special operating mode	Explanation	Comment for conveyor	Comment for control
Transport/storage	Loading and unloading, transport and storage	-	-
Assembly/initial startup	Installation at the end customer and performing the test run	-	Disconnect main power supply
Cleaning	External cleaning without removing protective devices	Disconnect main power supply	Disconnect main power supply
Maintenance/repairs	Maintenance and inspection tasks	Disconnect main power supply	Disconnect main power supply
Troubleshooting	Troubleshooting in the event of a fault	-	Disconnect main power supply
Fault elimination	Eliminating the fault	Disconnect main power supply	-
Decommissioning	Removal from the complete system	Disconnect main power supply	Disconnect main power supply
Disposal	Removal from the complete system and disassembly	Disconnect main power supply	-

Product identification

Straight Conveyor

Components



Features

The Straight Conveyor is part of the Interroll LCP drive system to convey goods in light industrial applications. The conveyor system includes the patented **quick tension/release idler system** for easy installation and change of the conveyor belt and other parts.

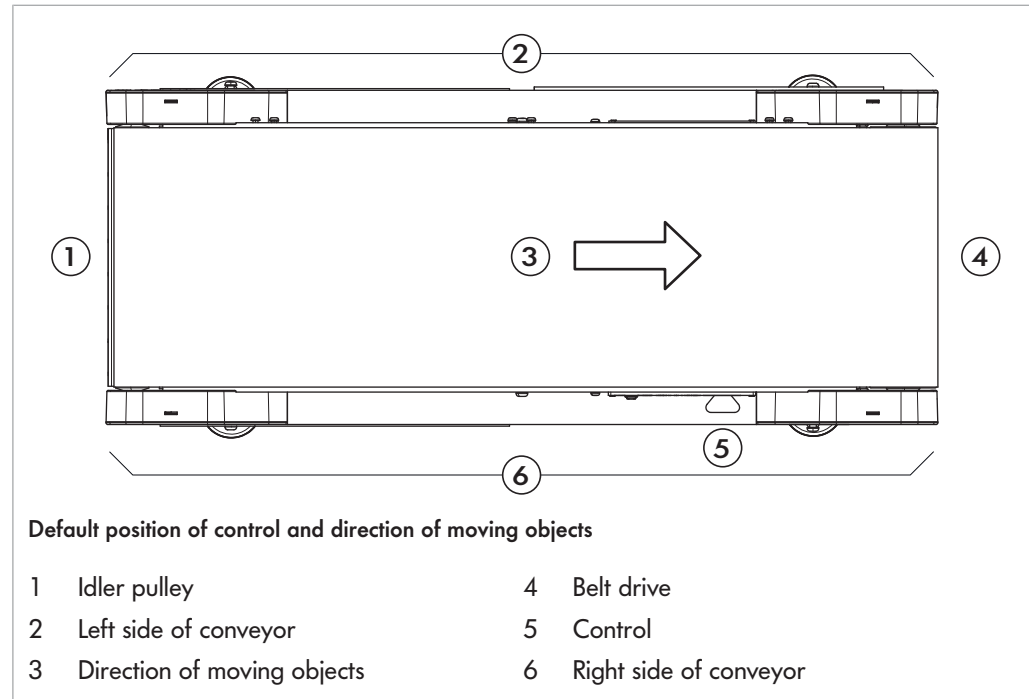
The Interroll LCP Straight Conveyor is available in a combination of three widths and three lengths. It is pre-installed and designed to drive in the direction of the drum motor.

By default, the control will be on the right side in the direction of the moving objects.

The base frame of the conveyor consists of steel profiles with adjustable feet. As a result, the transfer dimensions to adjacent modules are variably adjustable and the module can be adjusted for uneven floors.

Interroll Straight Conveyor and Transfer Conveyor

Product identification



Technical data

Straight Conveyor

General technical data

Design	The conveyors are designed based on Interroll light industrial conveyor systems with their overall profiles and an enhanced new design that includes covers and well-integrated control. LCP consists of straight, incline, decline and transfer conveyors.
Load capacity	Small: 0 to 25 kg (0.11 to 0.92 m/s) Large: 25 to 50 kg (0.11 to 0.40 m/s)
Dimensions of conveyed goods	VDA boxes, plastic bags <ul style="list-style-type: none"> • min. 80 x 80 x 20 mm • max. 600 x 600 x 600 mm
Conveyor belt speed	see "80SMP Belt Drives for LCP Straight Conveyor", page 15
Conveyor size	Module length CL: 1,000 / 2,000 / 3,000 mm Rated width BF: 320 / 420 / 620 mm
Min. height	620 mm (650 mm with feet)
Max. height	1,700 mm *
Incline/decline	Max. 18°
Ambient temperature	Operation: +5 to +40 °C
Humidity	93 %
Degree of cleanliness	Operating environment: IP22
Noise level	Leq < 60 db(A)

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Straight Conveyor	
Belt drive and idler pulley	
Drive voltage	3 x 400 V/50 Hz 3 x 460 V/60 Hz
Speed	Belt drive speed is typically 5 % lower than belt speed
Power	85 - 120 W
Ø Belt drive	80 mm
Ø Idler pulley	40 mm
Ø Support roller	50 mm
Materials	
Frame	2 mm hot-dipped coated galvanized steel
Support legs	3 mm powder coated steel
Side covers	Polymer
Cable channel covers	Polymer
Safety end covers	1.5 mm galvanized steel
Belt drive	Shell: tube with surface protection End housings and shaft caps: aluminum
Idler pulley	Shell and shaft: uncoated steel End caps and end housings: techno polymer
Belt	Standard belt for straight conveyor: NHM-8EKBV, see "Belt types", page 65 Belt for incline/decline conveyor: NSL-7EEBV, see "Belt types", page 65 Other belt types available on request.

* Pay attention to compliance with regulations for higher use.

Electrical data

Rated velocity v_{belt} * [m/s]	0.11	0.13	0.16	0.17	0.19	0.23	0.25	0.28	0.40	0.63	0.76	0.92
Max. load on conveyor** [kg]												
Straight	50	50	50	50	50	50	50	50	50	25	25	25
Incline/decline 18°	50	50	50	50	50	50	50	30	30	25	25	25

80SMP Belt Drives for LCP Straight Conveyor

* V_{belt} speed calculated with 2 mm thick belt; will change with other types of belts.

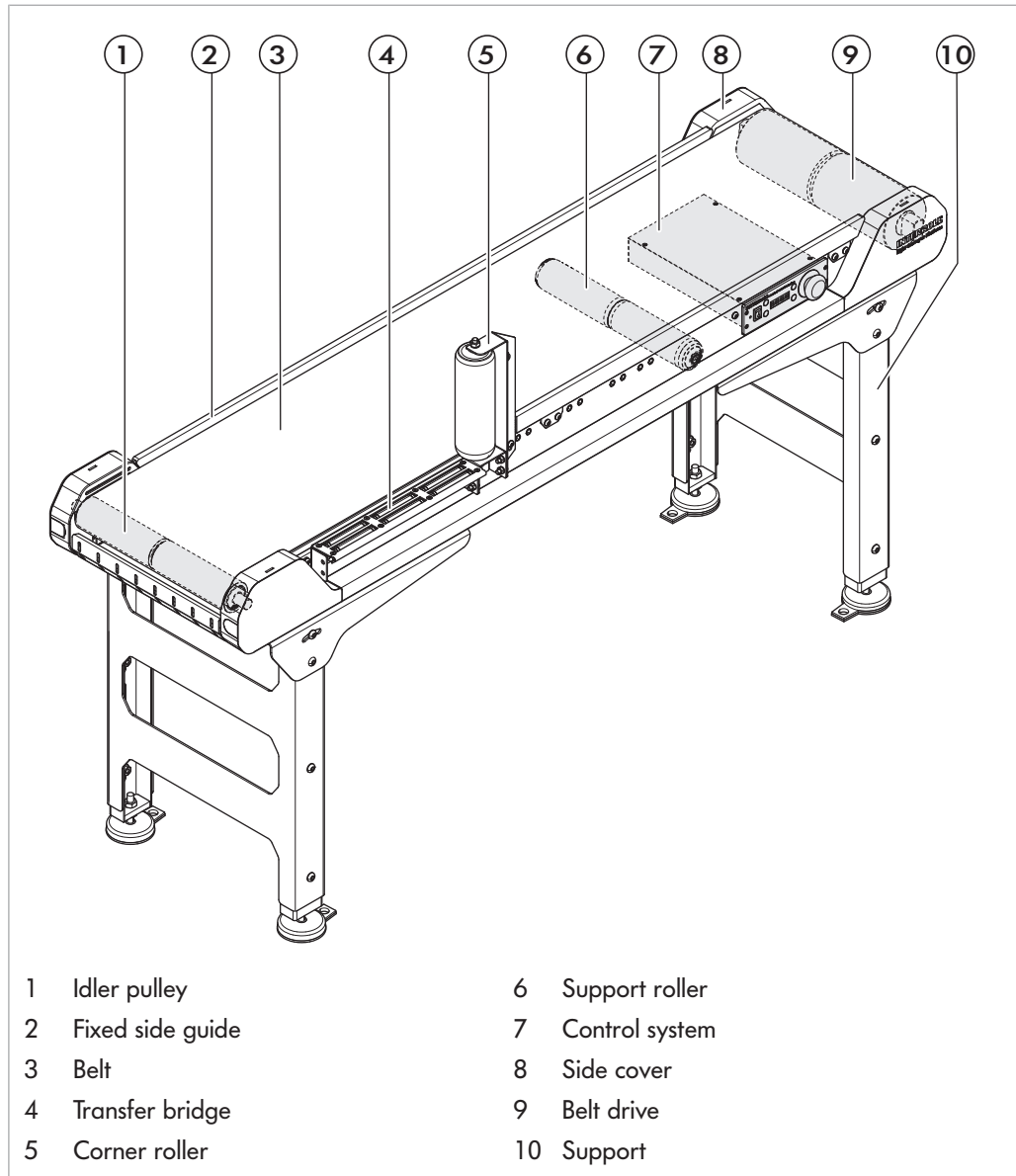
** Max. load on straight conveyor is "expected"; test must confirm these data.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Transfer Conveyor

Components



Features

The Transfer Conveyor is part of the Interroll LCP drive system to convey goods in light industrial applications. The conveyor system includes the patented **quick tension/release idler system** for easy installation and change of the conveyor belt and other parts.

The Interroll LCP Transfer Conveyor is available in a combination of three widths and one length. It is pre-installed to drive in the direction of the drum motor.

By default, the control will be on the right side in the direction of the moving objects.

The base frame of the conveyor consists of steel profiles with adjustable feet. As a result, the transfer dimensions to adjacent modules are variably adjustable and the module can be adjusted for uneven floors.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Technical data

Transfer Conveyor	
General technical data	
Design	The transfer conveyor is designed to transfer the goods to a vertical straight conveyor. The belt has a special rubber driver, special slider bed and rollers to suit this purpose.
Load capacity	Small: 0 to 25 kg (0.12 to 1.03 m/s) Large: 25 to 50 kg (0.12 to 0.28 m/s)
Dimensions of conveyed goods	VDA boxes, plastic bags <ul style="list-style-type: none"> • min. 80 x 80 x 20 mm • max. 600 x 600 x 600 mm
Conveyor belt speed	see "80SMP Belt Drives for LCP Transfer Conveyor", page 18
Conveyor size	Module length CL: 1,500 mm Rated width BF: 320 / 420 / 620 mm
Min. height	620 mm
Max. height	1,700 mm *
Incline/decline	0°
Ambient temperature	Operation: +5 to +40 °C
Humidity	93 %
Degree of cleanliness	Operating environment: IP22
Noise level	Leq < 60 db(A)
Belt drive and idler pulley	
Drive voltage	3 x 400 V/50 Hz 3 x 460 V/60 Hz
Speed	Belt drive speed is typically 5 % lower than belt speed
Power	85 -120 W
Ø Belt drive	90 mm
Ø Idler pulley	50 mm
Ø Support roller	50 mm

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Transfer Conveyor	
Materials	
Frame	2 mm hot-dipped coated galvanized steel
Support legs	3 mm powder coated steel
Side covers	Polymer
Cable channel covers	Polymer
Safety end covers	1.5 mm galvanized steel
Belt drive	Shell: tube with rubber lagging End housings and shaft caps: aluminum
Idler pulley	Shell: galvanized End housings and end caps: techno polymer
Belt	Belt for transfer conveyor: NNT-10ENBU, see "Belt types", page 65 Other belt types available on request.

* Pay attention to compliance with regulations for higher use.

Electrical data

Rated velocity v_{belt} * [m/s]	0.12	0.14	0.18	0.19	0.21	0.26	0.28	0.32	0.45	0.71	0.85	1.03
Max. load on transfer** [kg]	50	50	50	50	50	50	50	50	50	25	25	25

80SMP Belt Drives for LCP Transfer Conveyor

* V_{belt} speed calculated with 2 mm thick belt; will change with other types of belts.

** Max. load on transfer conveyor is "expected"; test must confirm these data.

The belt drives for the transfer conveyors are manufactured with 5 mm thick rubber insulation with a center V-groove to adapt to the belt profile. This thickness causes higher belt speed.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Control Unit

Product description

The LCP Control is part of Interroll's light conveyor platform. This is a control system for LCP belt conveyors that takes over the control and direction of rotation of an Interroll 80SMP belt drive motor. It has 4 product variants: Main Control, Local Control, Digital Control and Network Control. The Local Control CO6602 can only work together with Main Control CO6601 and is supplied with the Main Control. Other controls can be used directly as motor controls.

Variants	Main	Local	Digital	Network
Product model	CO6601	CO6602	CO6603	CO6604
Main power switch	x			
Emergency stop button	x			
Works in stand-alone mode	x	x		
Integrated safety function	x	x		
Works in PLC mode via digital I/O			x	
Works in PLC mode via Fieldbus (e.g. ProfiNet)				x

The LCP Control has two operating modes: stand-alone mode and PLC mode. In stand-alone mode, the control drives the motor and operates on its own with integrated logic control. In PLC mode, the control is controlled by a PLC. There are two ways to work with the PLC: use direct digital I/O with Digital Control CO6603 or use Network Control CO6604, which is controlled directly by the PLC via PROFINET, Ethernet/IP or EtherCAT. In PLC mode, the safety function with emergency stop is not available.

Stand-alone mode

In this operating mode, only Main Control CO6601 and Local Control CO6602 can be used and no higher-level control system (PLC) is required.

The Main Control CO6601 has an integrated safety function and the control power supply can be daisy-chained with a maximum of three LCP Local Controls CO6602. In an emergency, the LCP Main Control can switch off the power supply to the motors of all stand-alone LCP conveyors in a row and will show an error message on the display.



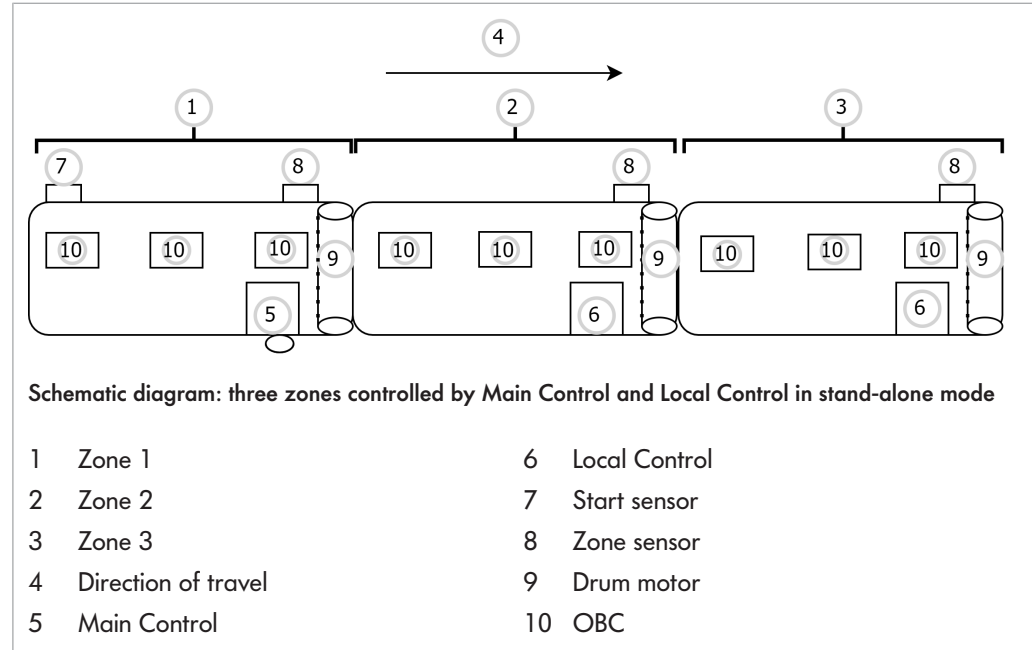
Be aware that in stand-alone mode, the LCP can perform the safety function only for itself - external devices, such as robots or PLC-controlled conveyors, must be protected separately.

The control logic is already programmed for each LCP belt conveyor. An LCP belt conveyor consists of an 80SMP belt drive, friction belt, galvanized steel frame and support, Main Control or Local Control, zone sensor and optional start sensor.

The Main and Local controls with pre-programmed logic can perform zero pressure accumulation conveying, which means that the conveyed goods do not touch each other while being transported between individual conveyors.

Interroll Straight Conveyor and Transfer Conveyor

Product identification



The start sensor in zone 1 has detected an OBC (**O**bject **B**eing **C**onveyed); the Main Control in zone 1 sends a request to zone 2 to ask whether the OBC can continue to be conveyed. If the zone sensor of zone 2 also detects an OBC, the Local Control in zone 2 does not send a release signal to Main Control until the zone sensor of zone 2 is free. In this illustration, there are only three conveyors. Conveyor 3 is the last conveyor for this application, and if the zone sensor of conveyor 3 detects an OBC, it will not send a release signal to conveyor 2. If the OBC on conveyor 3 is removed, e.g. by machine or by hand, conveyor 3 runs automatically until it detects the next OBC.

Once an OBC has left the sensor of a zone, the motor in this zone continues to run for an additional 20 seconds (default setting). After 20 seconds, the motor stops if no new OBC is detected. This feature provides the following benefits: saves energy by switching off the motor if no other OBCs have to be transported, avoids unnecessary start/stop operations if there are no gaps between the OBCs.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

PLC mode

In PLC mode, the complete control logic of the conveyor is left to the higher-level control (PLC). The PLC can control the LCP Control via the digital I/O or via a network. Digital Control CO6603 and Network Control CO6604 are the motor controls for PLC.

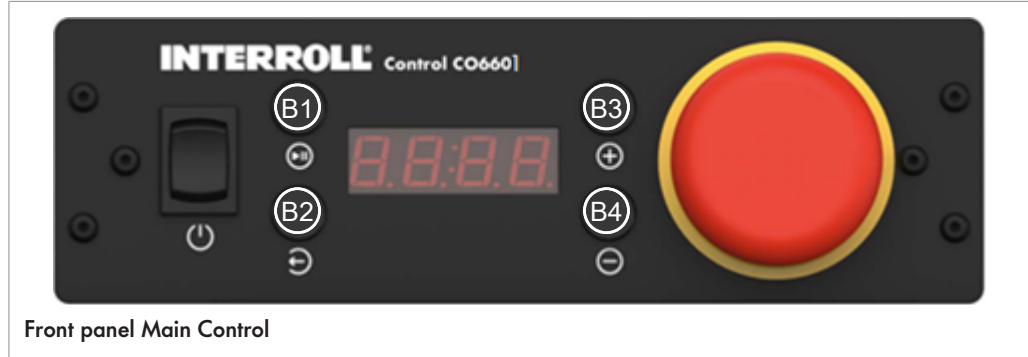
LCP control features	Main	Local	Digital	Network
Main switch	x			
Emergency stop button	x			
Additional emergency input signal	x			
Emergency output signal	x	x		
Transmission of the power supply to other devices	x	x	x	x
Electrically isolated digital I/Os			x	x
Start sensor can be evaluated	x		x	x
Zone sensor can be evaluated	x	x	x	x
Motor soft start	x	x	x	x
Motor overload protection	x	x	x	x
Motor overheating protection	x	x	x	x

- Daisy chaining the main power supply
- The signals from two sensors (start and zone sensors) can be evaluated
- The control signals can either be processed in PNP mode, or in NPN mode and light mode only.
- Feeding of OBCs into the start zone can be controlled by a start sensor or by an external start signal.
- Set the timeout to 0 ms and the motor can run continuously.
- Manual start or stop of the motor is only possible in stand-alone mode.
- Manual change of motor direction is only possible in stand-alone mode.
- The emergency stop function is only available in stand-alone mode.
- Electrically isolated digital I/Os for Digital Control and Network Control.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Display information and parameter settings

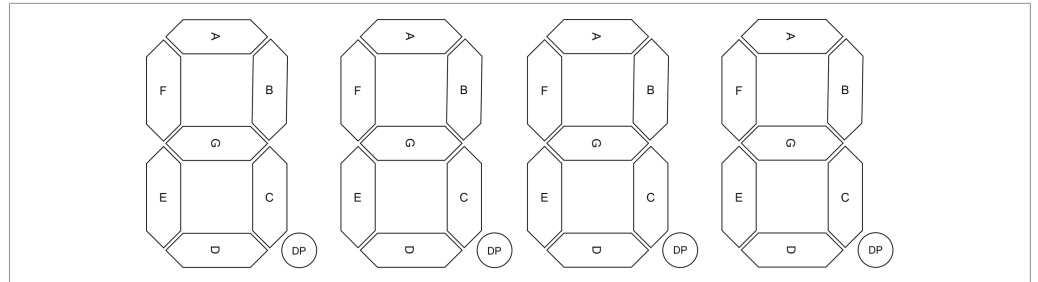


	Stand by	Stand-alone mode	PLC mode	Settings
B1	Initiate start sequence	Manual start/stop	–	–
B2	–	Enter settings	Enter settings	Enter
B3	–	Hold for reverse direction	–	Next (or value up)
B4	–	–	–	Back (or value down) Default settings (hold for 5 seconds while in menu)

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Default view



1A	Indicator for Sensor 1
4A	Indicator for Sensor 2
1DP	Indicator for IN START LOAD
4DP	Indicator for IN START RELEASE
2DP	Indicator for PLC Mode
2G / 3G / 2D / 3D	Blinking indicates conveyor is running

Error codes

E001	Emergency (button or signal)
E002	Motor control error <ul style="list-style-type: none"> Excessive current detected
E004	Safety controller error <ul style="list-style-type: none"> No current on any phase Internal fuse tripped
E008	Thermo switch error
E016	Startup safety circuit test failed
Else	Unexpected firmware error

If Digital Control CO6603 displays this error code "E001", the ext. 24 V power supply is not available.

Error reset: If the control is in an error state, it can be reset manually. Holding B1 for 3 seconds will reset the control to stand by.

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Settings

- SEN (Sensor type)
 - 0 = PNP (default)
 - 1 = NPN
- TO (Run timeout for stand-alone mode)
 - 1-9,999 sec (default 20)
- Ru (Ramp up time)
 - 0-9,900 ms (100 steps – default 500)
- Rd (Ramp down time)
 - 0-9,900 ms (100 steps – default 0)
- FV (Firmware version)
 - read only

Scope of delivery

The scope of delivery of the LCP 400-V Control contains the following components:

- LCP 400-V Control
- Four screws for fastening the LCP 400-V Control

Technical data

Model	Main Control CO6601	Local Control CO6602	Digital Control CO6603	Network Control CO6604
Function				
Description	Power motor control with integrated safety system for stand-alone solutions	Motor control with internal network	Power motor control with digital I/O for PLC solutions	Power motor control with network communication for PLC solutions
Power				
Input voltage	380 - 480 V AC	-	380 - 480 V AC	380 - 480 V AC
Input frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Input phases	3	-	3	3
Max. power consumption	150 - 880 W **	150 - 660 W	150 - 1,320 W	150 - 1,320 W
Max. current consumption	0.5 - 2 A	0.5 - 2 A	0.5 - 3 A	0.5 - 3 A
Main fuses	3,15 A (glass fuse)	-	3,15 A (glass fuse)	-
Motor fuses	2 A (manual reset)	2 A (manual reset)	2 A (manual reset)	2 A (manual reset)
Motor voltage supply	380 - 480 V AC	-	380 - 480 V AC	380 - 480 V AC
Motor frequency	50/60 Hz	50/60 Hz	50/60Hz	50/60 Hz
Motor phases	3	-	3	3
Motor max. power output	120 W	-	120 W	120 W
Softstart ramp	Yes	Yes	Yes	Yes
Output voltage	380 - 480 V AC	-	380 - 480 V AC	380 - 480 V AC

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Model	Main Control CO6601	Local Control CO6602	Digital Control CO6603	Network Control CO6604
Output frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Output phases	3	-	3	3
Safety				
Integrated safety system	Yes	No	No	No
Safety sensor input	Yes	No	No	No
Loop for external safety system	Yes	Yes	No	No
Signals				
Photo sensor input S1	PNP/NPN	No	PNP/NPN	PNP/NPN
Photo sensor input S2	PNP/NPN	PNP/NPN	PNP/NPN	PNP/NPN
Signal input	Yes	Yes	Yes	Yes
Signal output	Yes	Yes	Yes	Yes
Digital I/O	Yes	No	Yes	Yes
Network bus *	No	No	No	Yes
Environment				
Operating temperature	0 - +40 °C	0 - +40 °C	0 - +40 °C	0 - +40 °C
Max. relative humidity while operating	93 %	93 %	93 %	93 %
IP Class	IP22	IP22	IP22	IP22
CE approval	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes
Dimensions				
Weight	1,320 g	1,320 g	1,320 g	1,320 g
Width	177 mm	177 mm	177 mm	177 mm
Height	53 mm	53 mm	53 mm	53 mm
Depth	265 mm	265 mm	265 mm	265 mm

* Bus standard: ProfiNet, EtherNet/IP, EtherCat

** The maximum power consumption of 880 W refers to 1 Main Control and 3 Local Controls.

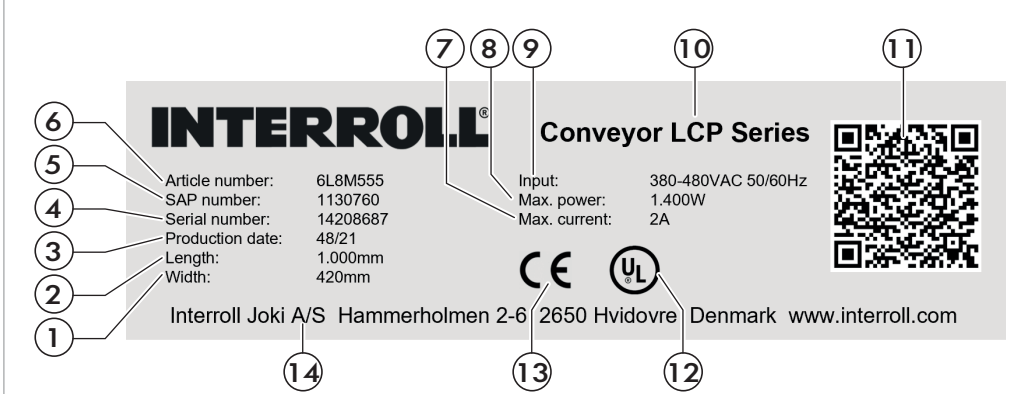
Interroll Straight Conveyor and Transfer Conveyor

Product identification

Type plate of conveyor

The specifications on the type plate of the belt drive are used to identify the motor. The plate is located opposite the control.

It also includes a QR code that can be scanned to get more information about the conveyor from the Interroll website.



The diagram shows a nameplate for an Interroll Conveyor LCP Series. The nameplate contains the following information:

- 1**: Width LW or BF
- 2**: Length CL
- 3**: Production week and year
- 4**: Serial number
- 5**: SAP number
- 6**: Article number
- 7**: Rated current/blocked motor current
- 8**: Max. power
- 9**: Rated power - rated voltage and frequency
- 10**: Conveyor type
- 11**: QR code
- 12**: UL mark
- 13**: CE mark
- 14**: Manufacturer

The nameplate text includes:

INTERROLL® Conveyor LCP Series

Article number: 6L8M555
 SAP number: 1130760
 Serial number: 14208687
 Production date: 48/21
 Length: 1.000mm
 Width: 420mm

Input: 380-480VAC 50/60Hz
 Max. power: 1.400W
 Max. current: 2A

CE UL

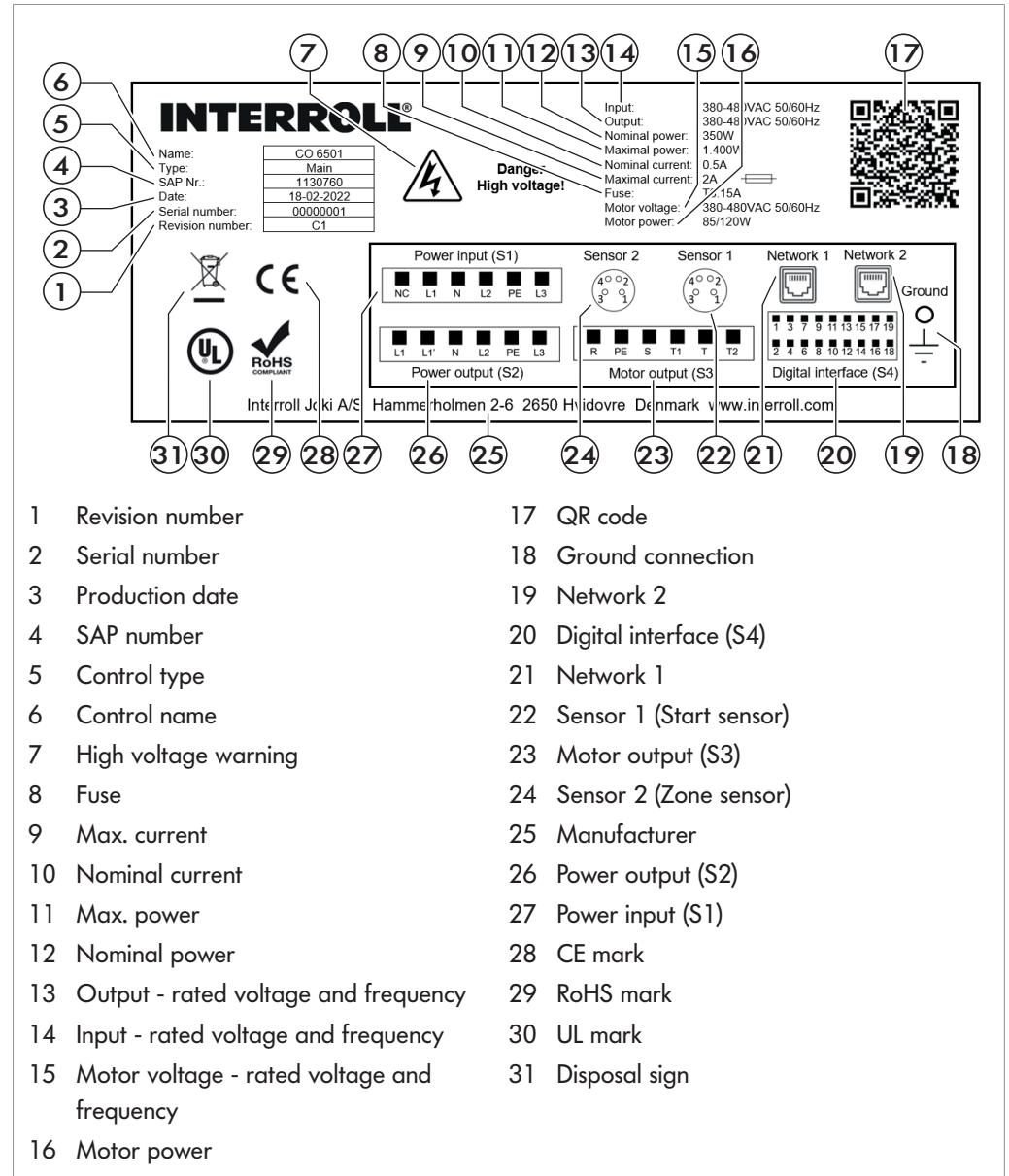
Interroll Joki A/S Hammerholmen 2-6 2650 Hvidovre Denmark www.interroll.com

Interroll Straight Conveyor and Transfer Conveyor

Product identification

Type plate of control

The information on the type plate is used to identify the control.



Interroll Straight Conveyor and Transfer Conveyor

Product identification

Product identification

To identify a conveyor, the following information is required.

L	C	6	x	x	x
①	②	③	④		⑤
1	Light industrial				
2	Conveyor			Straight Incline Decline Transfer	
3	Information for Denmark			Interroll Joki A/S	
4	Motor voltage			4 = 400 V	
5	Type			10 = Straight/incline/decline 20 = Transfer	

Scope of delivery

The 400-V belt conveyor is delivered completely assembled and wired. The scope of delivery includes:

- Fully assembled conveyor with belt drive and belt
- Frame, including side covers and cable channel
- Wiring harness (power supply and communication)
- Control system ordered (master conveyor includes Main Control, slave conveyor includes Local Control)
- Photo cell and reflector (1 set each per zone)
- Fixed side guides with side guide brackets
- Corner roller and transfer bridge (only delivered with transfer conveyor)

The scope of delivery does not include:

- Supports
- Bridge for straight conveyor
- Adjustable side guides with universal supports and side guide brackets
- Bus (communication) cables

Transport and storage

Transport

DANGER



Risk of death due to damage to the housing!

- ▶ Check each LCP Control after transport for visible damage.
 - ▶ If any damage has been identified, photograph the damaged parts.
 - ▶ If there has been damage during transport, inform the shipping agent or Interroll immediately to ensure that you do not lose any potential claims for damages.
-

CAUTION



Improper transport poses a risk of injury.

- ▶ Transport-related tasks should only be carried out by qualified and authorized persons.
 - ▶ Wear safety shoes.
 - ▶ Make sure that the module is fastened properly before transport.
-

Please note the following:

- ▶ Do not stack pallets on top of one another. Use suitable intermediate layers.
 - ▶ Ensure that there are no persons in the hazard zone.
 - ▶ Prior to transport, check whether the LCP control is correctly attached.
 - ▶ Ensure that the lifting and transporting device (industrial truck, forklift, etc.) is rated for the weight of the module.
-

NOTICE

Risk of damage to the module due to improper transport

- ▶ Avoid strong impacts during transport.
 - ▶ Do not transfer the module between warm and cold environments. This may cause water condensation and may damage the belt drive and control.
-

After delivery

- ▶ Check each conveyor for damage after transport.
- ▶ In the event of damage, take photos of the damaged parts.
- ▶ Report any damage during transport immediately to the transport company and Interroll to maintain the warranty.

Interroll Straight Conveyor and Transfer Conveyor

Transport and storage

Storage

CAUTION



Risk of injury due to improper storage

- ▶ Do not place other objects on the module.
 - ▶ Check the stability of the module.
 - ▶ Ensure proper fastening.
 - ▶ Ensure that the LCP Control is stored safely.
-
- ▶ Store the module in a clean, dry and enclosed area between +15 and +30 °C and protect it against humidity and moisture.
 - ▶ For storage periods of more than three months, rotate the shaft periodically to prevent deterioration of the shaft seals.
 - ▶ Check each module for damage after storage.
 - ▶ Do not stack pallets on top of one another.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

The module is delivered to the installation 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 are already pre-assembled and connected. The side guides (universal support, side guide brackets and side guide profiles) are delivered assembled.

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

- Install photo cell and reflector,
see *"Installing the photo cell and reflector"*, page 51
- Install side guide profiles,
see *"Installing side guides"*, page 48

Warnings for assembly and installation

The individual module is supplied fully pre-assembled to the installation site and must be connected to the other conveyors and integrated in the system.

The module is a subcomponent. The customer must ensure that the module is sufficiently covered and that the entire system conforms to CE regulations.

DANGER



Risk of death due to damage to the housing!

- ▶ Check each LCP Control after transport for visible damage.
 - ▶ If any damage has been identified, photograph the damaged parts.
 - ▶ If there has been damage during transport, inform the shipping agent or Interroll immediately to ensure that you do not lose any potential claims for damages.
-

DANGER



Risk of death due to live cable ends!

- ▶ Electrical installation should only be carried out by qualified electricians.
 - ▶ Disconnect the unit from the power supply.
 - ▶ Observe the minimum bending radii of the cables, hoses and wires. Observe correct protection of the cable.
 - ▶ Always check cables and assemblies for damage prior to installation.
 - ▶ Refer to the drum motor label for connection values.
 - ▶ Connect the motor in accordance with EN-IEC 60204-1. Refer to the drum motor manual for wiring information. If the conveyor is supplied with an individual plug, also refer to the plug installation guide.
 - ▶ Connect the conveyor frame to ground.
-

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

WARNING

Risk of injury due to incorrect assembly!



- ▶ Assembly must be carried out by qualified persons in accordance with the safety instructions.
 - ▶ Ensure that nothing (e.g. a tracking profile attached to the belt) can rub against the conveyor. During alignment, ensure that a minimum distance of 5 mm is observed under all operating conditions.
 - ▶ After installation, check that passageways are clear of obstacles. If necessary, set up walkways.
 - ▶ When integrating the conveyor into a system, consider possible hazard zones, especially in places where cuts and crushing may occur.
 - ▶ Ensure that the conveyor is sufficiently covered.
 - ▶ Make sure that there is a safety zone at both ends of the conveyor where operating personnel or other persons do not have access (drop-down zone).
-

NOTICE

An improper approach to installing the Interroll LCP control unit can cause property damage or reduce the service life of the LCP control unit.

- ▶ To preserve the interior of the LCP control unit, do not allow the LCP control unit to fall or be used improperly.
 - ▶ Do not install the LCP control unit above heat sources and ensure that natural air circulation is maintained around the LCP control unit.
 - ▶ Do not drill any additional mounting holes into the housing and do not enlarge existing holes.
-

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 using the height-adjustable feet of the support. The belt top edge is the relevant height for aligning the modules. Use suitable tools for the alignment (spirit level or rotation laser).
- ▶ Fix the adjusted height.
- ▶ 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 to adjacent components.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Integrating the module into a complete system

- ▶ When integrating the module into the complete system, consider possible hazard points, particularly infeed locations and interfaces.
- ▶ Set the module in its desired place. Use a spirit level for this task.
- ▶ Align the module and ensure there is no contact between moving parts. Belt tracking can be affected if the module is incorrectly aligned.



Power is supplied to the module either via a CEE plug or direct installation in a control panel.

Conveyor assembly and connecting

The LCP is a scalable platform, which can consist of straight and transfer conveyors. The straight conveyors can be built of 3 different widths and 3 different lengths. The transfer conveyors can be built at 3 different widths at a fixed length. The conveyors can have incline and/or decline angles up to 18 degrees. Conveyors in the platform are connected to each other with plug-in cables.

All conveyors are delivered fully assembled with controls and the fixed side guides. Customers need to attach the supports to the conveyor, if the conveyor is ordered with supports.



- ▶ Anchor the system, if the floor is uneven (more than 3° incline or decline) .

Conveyors are mechanically connected by a connecting bracket that ensures correct distance and the alignment of the conveyors. The connecting brackets are mounted on the legs.

The following types of connecting brackets are possible:

- A - straight to straight, incline/decline to straight, transfer to straight
- B - straight to transfer (90° turn)

Tools



Interroll delivers a set of tools that should be used for the best result when assembling the conveyor. However, other tools are also required from the customer. Interroll recommends a set of tools that the customer should have before starting to assemble the LCP.

Included tools in the LCP delivery:

- TX45 key L-shaped

Tools required from the customer:

- Screw driver with exchangeable bits
 - Hex 2, 4 and 5 mm bits
- 13 and 17 mm spanners
- Spirit level

Installing supports

There are three different types of supports, which permit different heights (see table below). They can be used for inclines and declines at angles of 0 to 18°.

Each support consists of an upper leg for the specific conveyor width, two brackets, two lower legs and two feet.

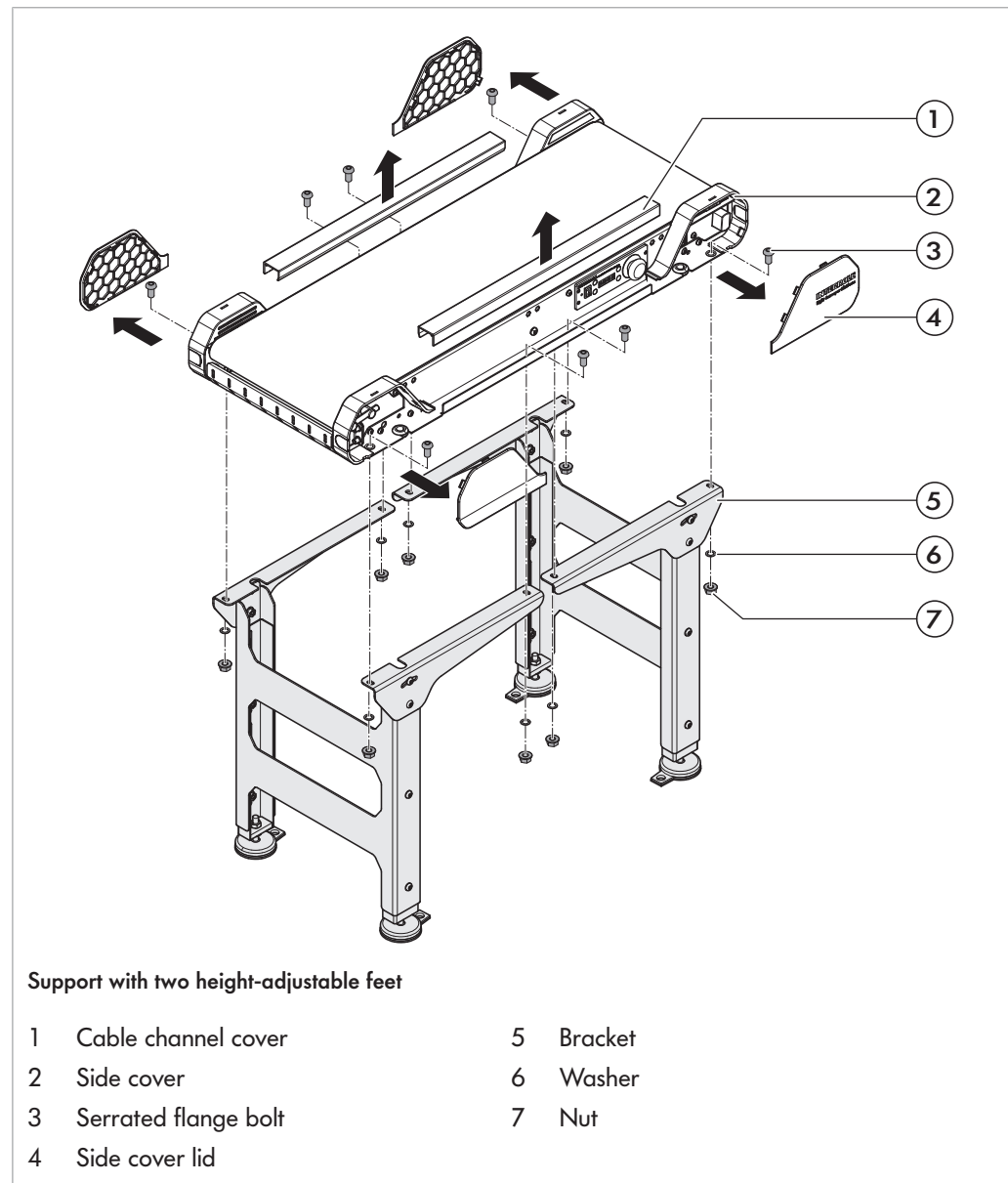
Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation



Note the maximum permitted height of 1,700 mm in regards to regulations for emergency functionality. A height of more than 1,700 mm is only permitted in consultation with the manufacturer and in compliance with local rules and regulations.

Type of supports [mm]	Min. height [mm]	Max. height [mm]
Low	640	800
Medium	801	1,100
High	1,101	1,700



Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

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 lifting equipment.
-

The module sits on at least one support. Each support has two height-adjustable legs.



Requirement:

- The module is shut down.
 - ▶ Remove the side cover lids (4) from the side covers (2) and remove the cable channel covers (1) to access the screws.
 - ▶ Place the module on the support.
 - ▶ Position the supports underneath the module.
 - ▶ Fasten each support to the perforated profiles of the side cover (2) with four serrated flange bolts (3), washers (6) and nuts (7).
 - ▶ Attach the side cover lids and cable channel covers.

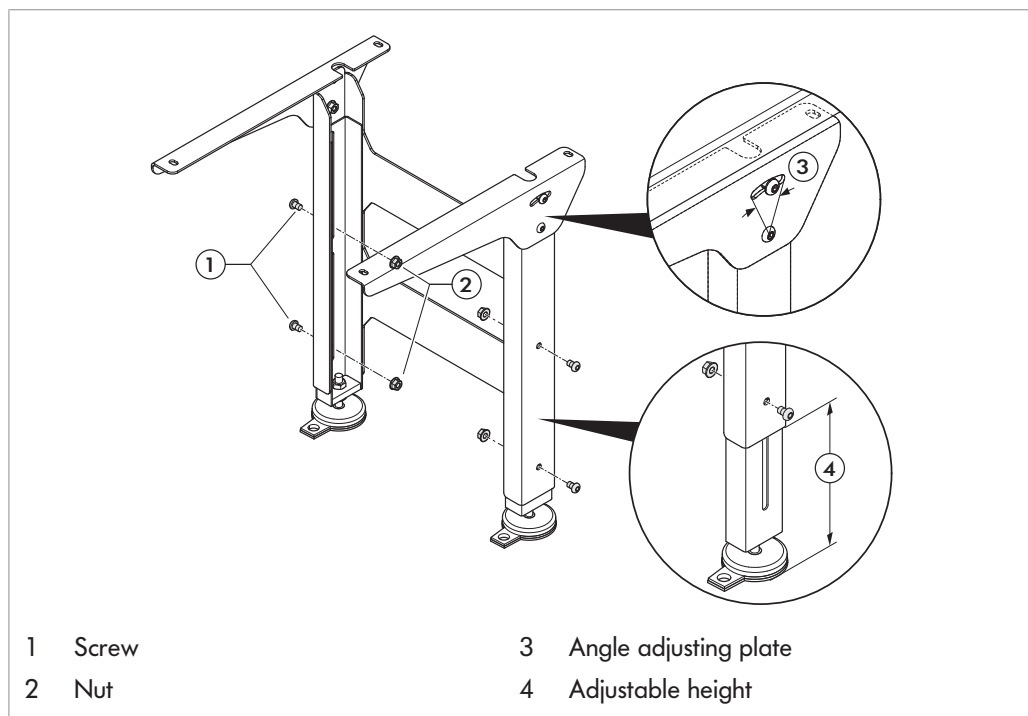
Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Incline and decline conveyors

-  For incline and decline conveyors, Interroll recommends a low center of gravity for the conveyed goods.
-  The inclination affects the friction of the belt. For incline and decline conveyors, choose a suitable belt type. The special material increases the friction of the belt. This will ensure that the goods will not slide back because of gravity.

The belt types data sheet is provided by our belt supplier, and we are using different types of belts for incline and decline conveyors and for the transfer conveyor (see "Belt types", page 65).



- ▶ Use the angle adjusting plate (3) to achieve the desired angle. **NOTICE! Max. allowed angle is 18° for incline and decline conveyors.**
- ▶ Use the screws (1) to adjust the desired height. **NOTICE! (4) = desired height – 610 mm (straight conveyor), (4) = desired height – 621 mm (transfer conveyor).**

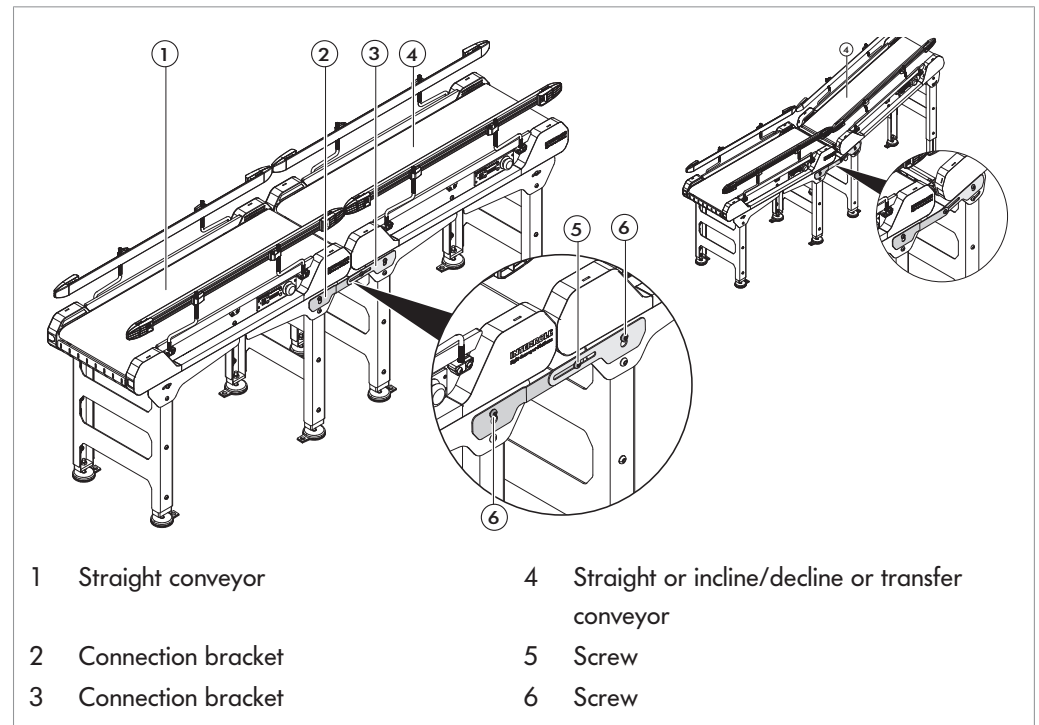
For more information about adjustment options, see the installation instructions of the support.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

**Straight to straight,
straight to incline/decline,
transfer to straight**

The connection brackets are placed between conveyors to ensure the correct distance between the conveyors. These brackets are used between a straight and another straight conveyor or between a straight and an incline or decline conveyor or between transfer and straight conveyor. The brackets compensate for the height difference that arises from the larger diameter of the transfer belt drive or the incline/decline angle.



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

⚠ 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 belt top edge is decisive for the alignment of the modules. Suitable tools for the alignment are spirit level or rotation laser.

- ▶ Position the conveyors (1, 4) to be connected so that the side guides are aligned. **NOTICE!** **The straight conveyor should be slightly higher as the transfer conveyor to reach the alignment of the modules.**
- ▶ Slightly loosen the screws (6) of the supports, use the holes in the brackets to position the connection bracket (2) behind the screw (6) at the support of the straight conveyor and connection bracket (3) behind the screw (6) at the support of the other straight or incline/decline or transfer conveyor (4).

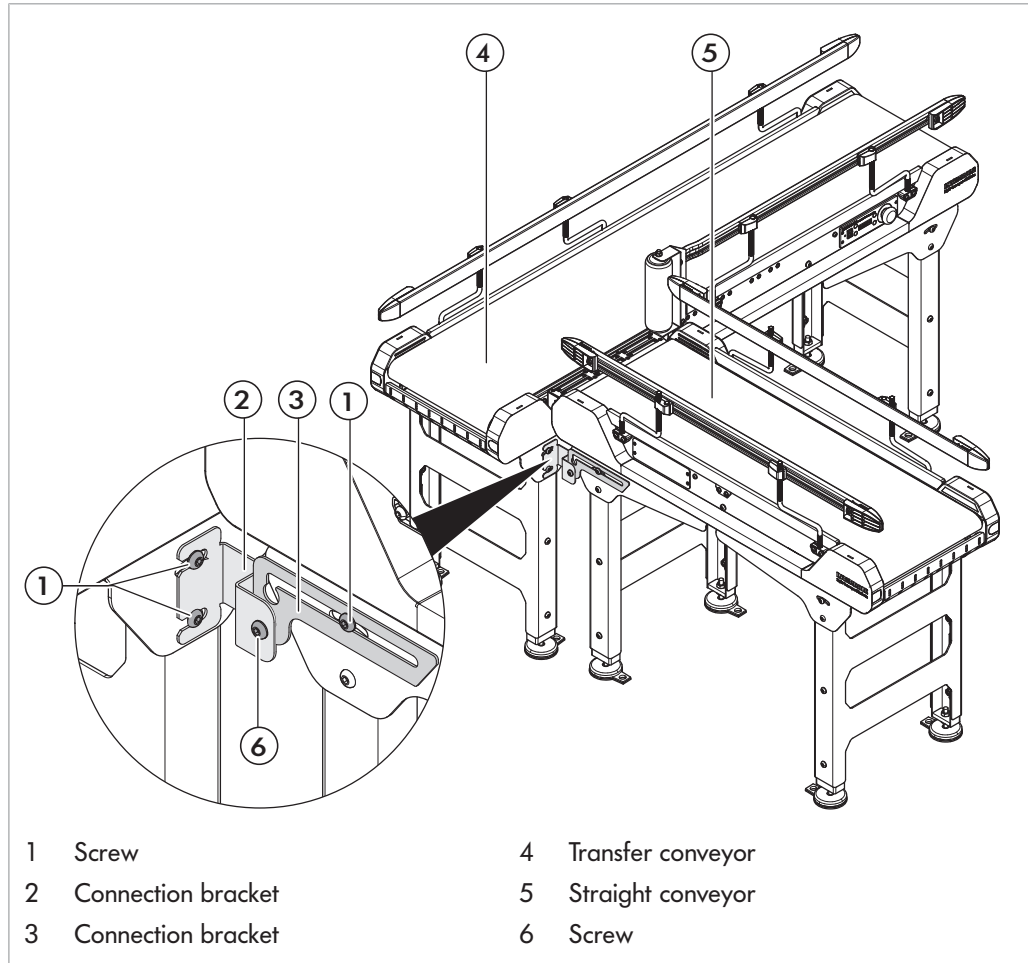
Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

- ▶ Tighten the screw (5) to fasten the connection brackets (2, 3) to each other.
- ▶ Tighten the screws (6) to fasten the connection brackets to the supports.
- ▶ Fasten the module torsion-free, e.g., by anchoring it to the floor or to adjacent components.

Straight to transfer (90° turn)

The connection brackets are placed between the straight and transfer conveyors to ensure the correct distance. The shape of the bracket compensates for the height difference that arises from the larger diameter of the transfer belt drive.



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

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

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 belt top edge is decisive for the alignment of the modules. Suitable tools for the alignment are spirit level or rotation laser.

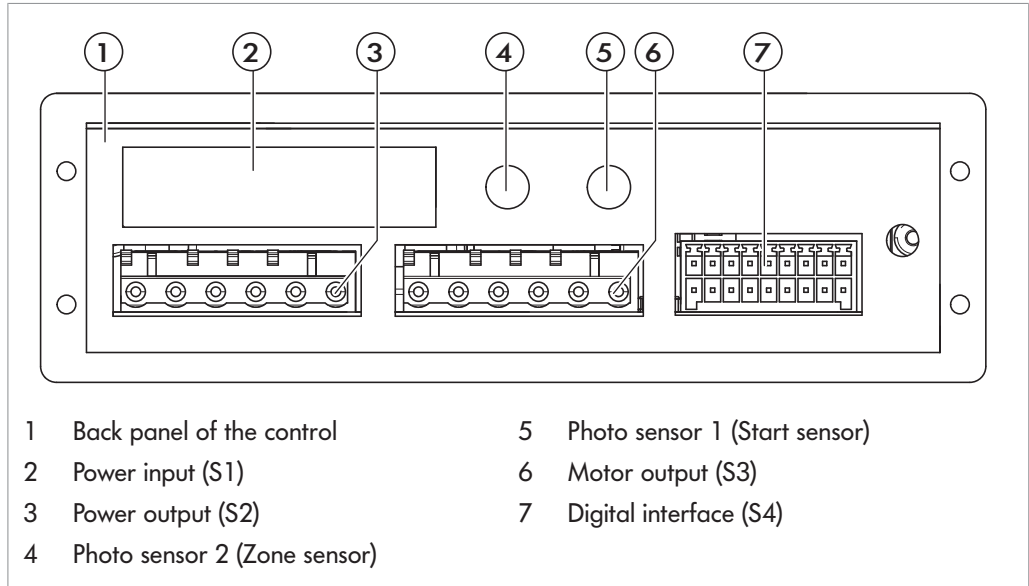
- ▶ Position the conveyor (4, 5) to be connected at a 90° angle, so that the straight conveyor (5) rests on the bridge of the transfer conveyor (4). **NOTICE! The straight conveyor should be slightly higher to achieve alignment of the modules.**
- ▶ Between the outsides of the segments to be connected, place the connection bracket (2) at the support of the transfer conveyor (4).
- ▶ Slightly loosen the screws (1) of the supports, position the connection brackets (2, 3) behind the screws (1). Use the hole in the connection bracket (3) to place it at the support.
- ▶ Tighten the screw (6) to fasten the connection brackets (2, 3) to each other.
- ▶ Tighten the screws (1) to fasten the connection brackets (2, 3) to the supports.
- ▶ Fasten the module torsion-free, e.g., by anchoring it to the floor or to adjacent components.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

LCP Control connections and settings

Pin assignment



Power input



Pin 1 of LCP Main Control CO6601, Digital Control CO6603 and Network Control CO6604 does not need to be connected. Inside the control, L1 has already been connected to L1'. Only Local Control CO6602 needs to have pin 1 connected to L1'.



Network configuration: TT network, TN-C-S network.

1	2	3	4	5	6
---	---	---	---	---	---

Pin assignment power input (S1)

Pin	Main Control	Local Control	Digital Control	Network Control
1	NC	L1'	NC	NC
2	L1	L1	L1	L1
3	N	N	N	N
4	L2	L2	L2	L2
5	PE	PE	PE	PE
6	L3	L3	L3	L3

Power supply input 400 V AC or 480 V AC (UL)

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Power output



Max. 3 Local Controls CO6602 can be powered by a single CO6601 Main Control. Max. 4 Digital Controls CO6603 or Network Controls CO6604 can be connected in series and use a single power supply.

1	2	3	4	5	6
---	---	---	---	---	---

Pin assignment power output (S2)

Pin	Main Control	Local Control	Digital Control	Network Control
1	L1'	L1'	NC	NC
2	L1	L1	L1	L1
3	N	N	N	N
4	L2	L2	L2	L2
5	PE	PE	PE	PE
6	L3	L3	L3	L3

Power supply input 400 V AC or 480 V AC (UL)

Motor output

1	2	3	4	5	6
---	---	---	---	---	---

Pin assignment motor output (S3)

Pin	Main Control	Local Control	Digital Control	Network Control
1	R	R	R	R
2	PE	PE	PE	PE
3	S	S	S	S
4	T1	T1	T1	T1
5	T	T	T	T
6	T2	T2	T2	T2

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Digital interface

1	3	5	7	9	11	13	15	17
2	4	6	8	10	12	14	16	18

Pin assignment digital I/O (S4)

Pin	Function	Main Control	Local Control	Digital Control	Network Control
1	24 V	24 V output		Ext. 24 V input*	
2	IN PLC Mode	<ul style="list-style-type: none"> "0" means stand-alone mode "1" means PLC mode 			
3	IN Start Load	<ul style="list-style-type: none"> "0" means no start command "1" means start command 		<ul style="list-style-type: none"> "0" means stop the motor "1" means start the motor 	
4	IN Start Release	The signal comes from the next module and sends the release signal.			Not in use.
5	IN Direction	<ul style="list-style-type: none"> "0" means counterclockwise** "1" means clockwise** 			
6	IN Emergency 1	Emergency signal input for emergency stop			Not in use.
7	IN Emergency 2	Not in use.			
8	OUT Sensor 1	Sensor 1 signal output			
9	OUT Emergency	The status of the emergency is shown in this output.			Not in use.
10	OUT Error	<ul style="list-style-type: none"> Output voltage "high" means no error Output voltage "low" means error 			
11	OUT Digital Output	In stand-alone mode, sends the release signal to the previous module.			Not in use.
		<ul style="list-style-type: none"> "0" means no release "1" means release 			
12	OUT Sensor 2	Sensor 2 signal output			
13	OUT Ground	Reference potential			
14	IN Ground				
15	IN START	This signal is for evaluating emergency signals			
16	IN Reserve	Not in use.			
17	OUT START	This signal is for evaluating emergency signals			Not in use.
18	OUT Reserve	Not in use.			

* Permissible voltage range for external 24 V is 19 to 28 Volt, current consumption less than 50 mA.

** Refers to the direction of rotation of the belt drive, seen from the cable end.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation



The safety function with emergency stop is active only in stand-alone mode.

Pins 15 and 17 are only used for CO6601 and CO6602 in stand-alone mode to obtain a clean starting routine in a multi-cluster line.

After all conveyers have been powered up, the operator can activate the entire line by pressing a button on any control. The activation sequence sets the OUT START to high and checks if the signal is looped back to IN START. If the sequence is successful, the entire line is ready for operation.

Behavior

- If IN START is low, the control is in standby mode
- If IN START is high, the control works normally
- OUT START equals IN START

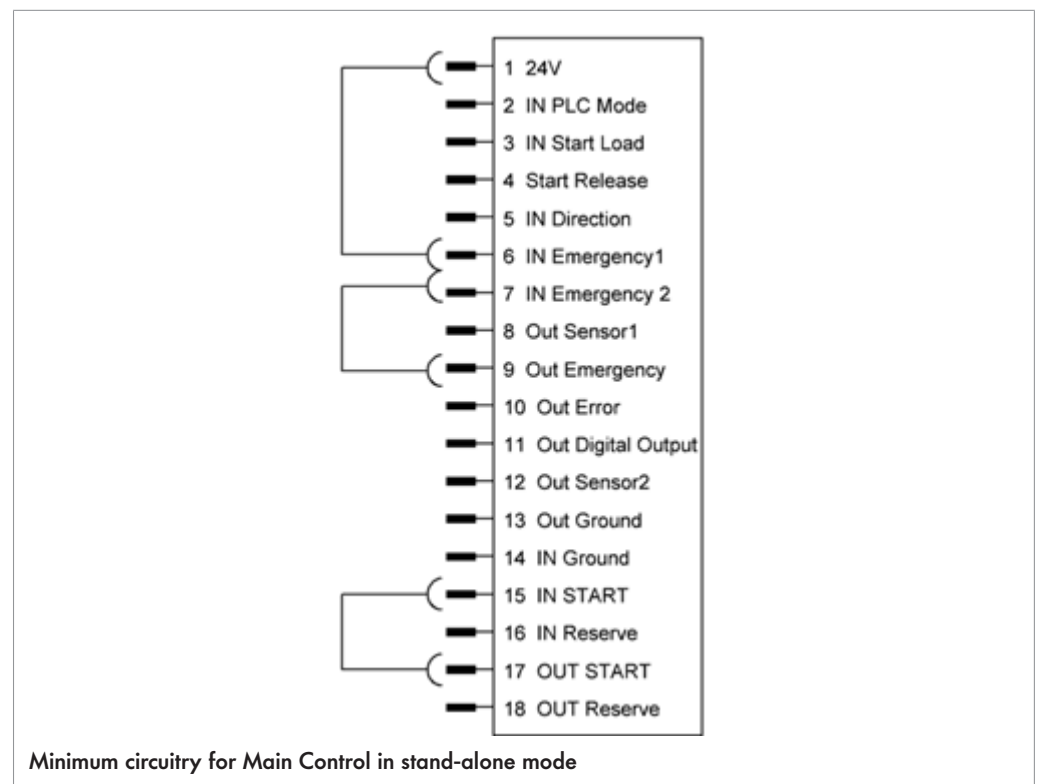
Standby mode

- Standby indication on display ("- - -")
- No functionality and safety circuit blocks all 3 phases
- Pressing B1 (or any button) starts the activation sequence to check if the START signal is looped back during a defined period

Requirements

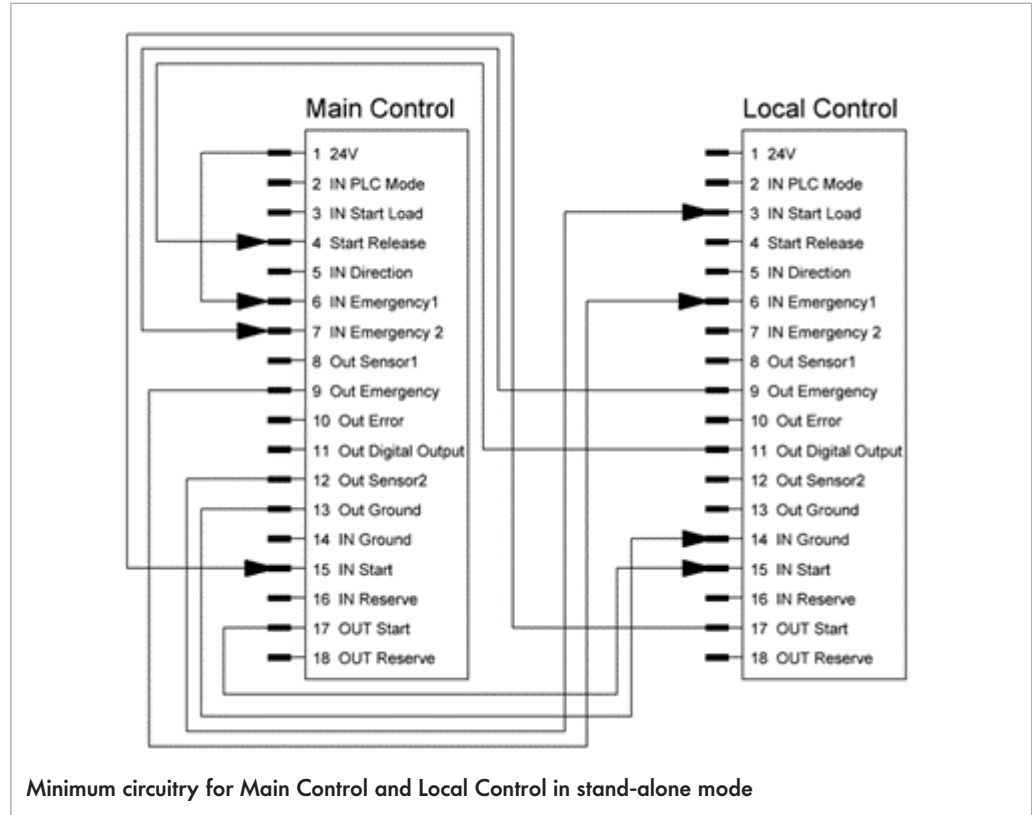
- In a multi-cluster line, the start I/O needs to be daisy chained and looped back (like the emergency signal, including the slaves)
- In a single cluster, the start I/O needs to be bridged

Minimum circuitry



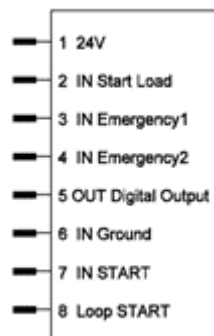
Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

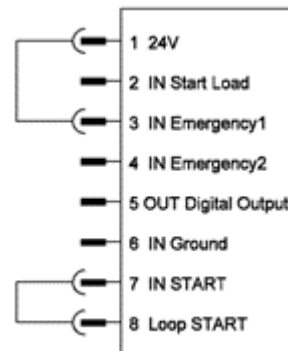


The LCP conveyor supplies pre-assembled connectors for stand-alone operation to offer a plug&play solution directly between two conveyors.

The Main LCP conveyor comes as standard with connectors to loop the logic signals. If used in a cluster, remove the end connectors and place the "upstream connector end" on the first conveyor's upstream logic cable. Place the "downstream connector end" on the last conveyor's downstream logic cable.



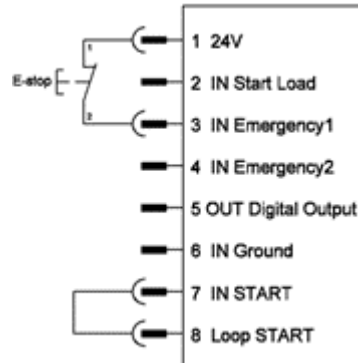
Upstream communication connector: male connector to front conveyor



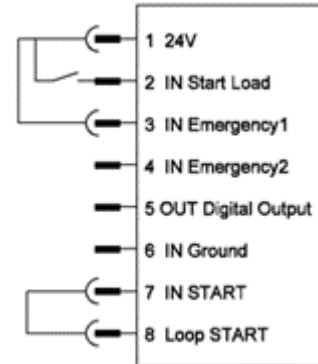
Minimum circuitry for the first conveyor

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

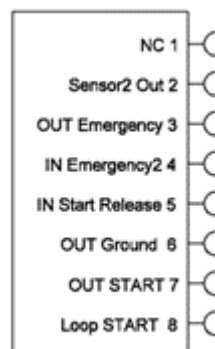


Minimum circuitry for the external emergency stop switch

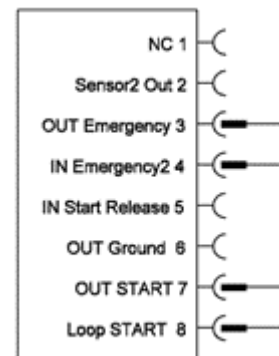


Minimum circuitry for the external start signal for the first conveyor

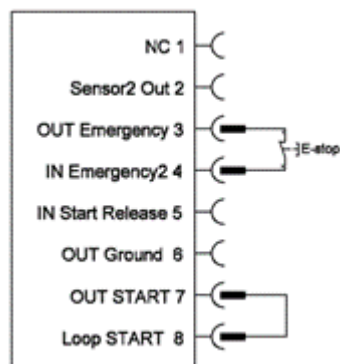
If there is no return conveyor, use the minimum circuitry to enable the safety function.



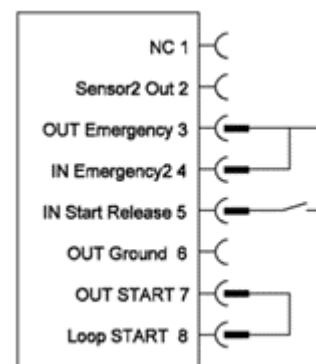
Downstream communication connector: female connector to return conveyor



Minimum circuitry for the last conveyor



Minimum circuitry for the external emergency stop switch



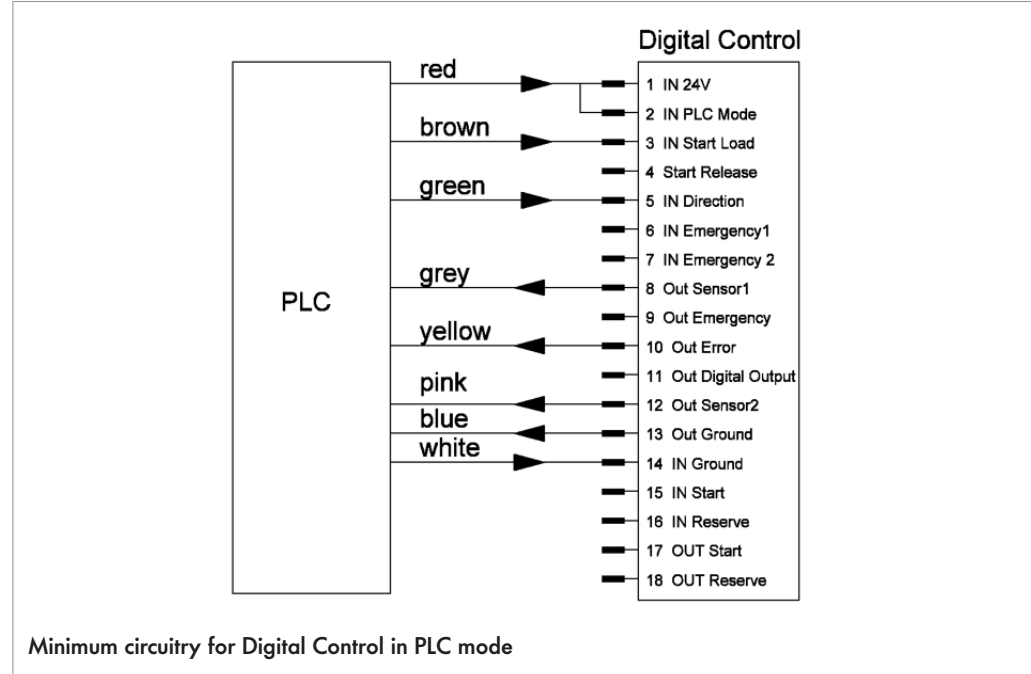
Minimum circuitry for the external start signal for the last conveyor

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation



For Digital Control CO6603 it is important that pin 2 is connected to ext. 24 V, otherwise the Digital Control remains in stand-by mode and is not ready for PLC operation.



Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Electrical installation

DANGER

Risk of death due to electric shock



- ▶ Check each LCP control unit before assembly for visible damage.
 - ▶ Do not mount damaged LCP control units!
 - ▶ In case of damage, inform the supplier or Interroll immediately.
 - ▶ Electrical installation work must only be carried out by a qualified electrician.
 - ▶ Before installing, removing or connecting the Interroll LCP control unit, disconnect the module from the main power supply by pulling out the power plug and ensure that it cannot be unintentionally switched on again.
 - ▶ Do not switch on the operating voltage until all cables have been connected and the cover has been installed on the LCP control unit.
-

NOTICE

Damage to the LCP control unit

- ▶ For the supply cable to the LCP control unit, only use cables that are adequately dimensioned for the specific operating conditions, particularly with regard to cross-section and insulation.
 - ▶ Ensure that no dust or dirt deposits can penetrate into the housing when it is opened.
 - ▶ Ensure that all connected components are correctly grounded.
-

NOTICE

Professional installation!

- ▶ Before you can start connecting the cables, the device must be mounted on the intended mounting surface!
 - ▶ The cables must be routed and secured in such a way that the cable glands or the electrical connection points are not mechanically stressed!
 - ▶ Use bundled conductors. These can be clamped directly without using ferrules.
-

Safety information for connector

The MCS – MULTI CONNECTION SYSTEM includes connectors that cannot break in accordance with DIN EN 61984. When used as intended, these connectors must not be connected/disconnected when live or under load. The circuit design should ensure header pins that can be touched are not live when unmated.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Installing side guides

There are two different types of side guides that keep the conveying goods on the conveyor during transport.

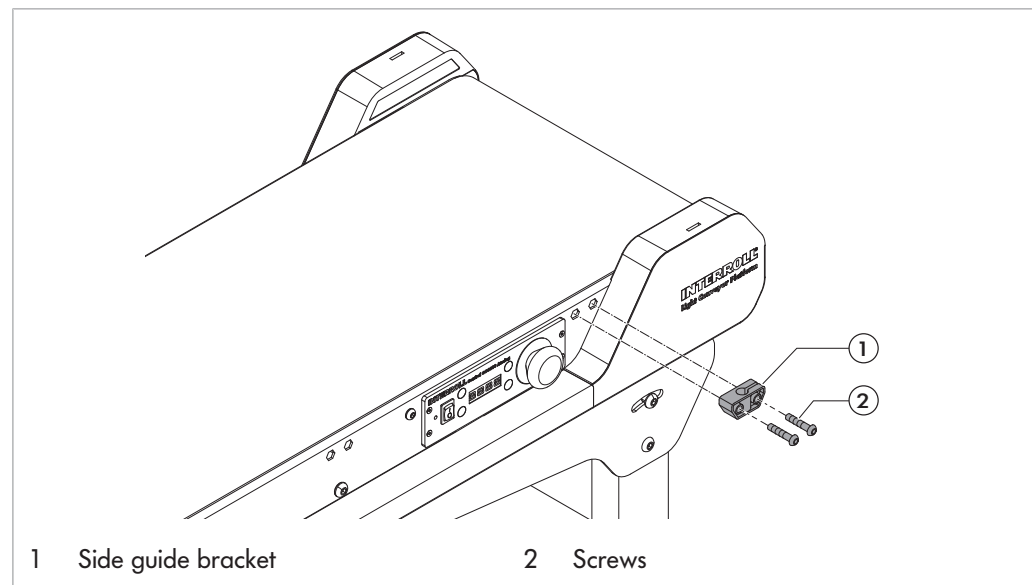
The number of brackets needed to fasten the side guides depends on the conveyor length.

LCP conveyors can have adjustable side guides. The side guides are adjustable in vertical and horizontal direction. They keep the goods on the belt. The side guides are mounted on the frame with adjustable side guide brackets.

The side guides can be attached to each other using a side guide holder. This holder is optional and can be ordered separately.

The fixed side guides are mounted on the frame with fixed side guide brackets. The guides are fixed to the width of the conveyor and have a fixed height of 30 mm.

Adjustable side guides



Requirement:

- The module is shut down.
- ▶ Fasten the brackets on the frame of the conveyor in the corresponding mounting holes.



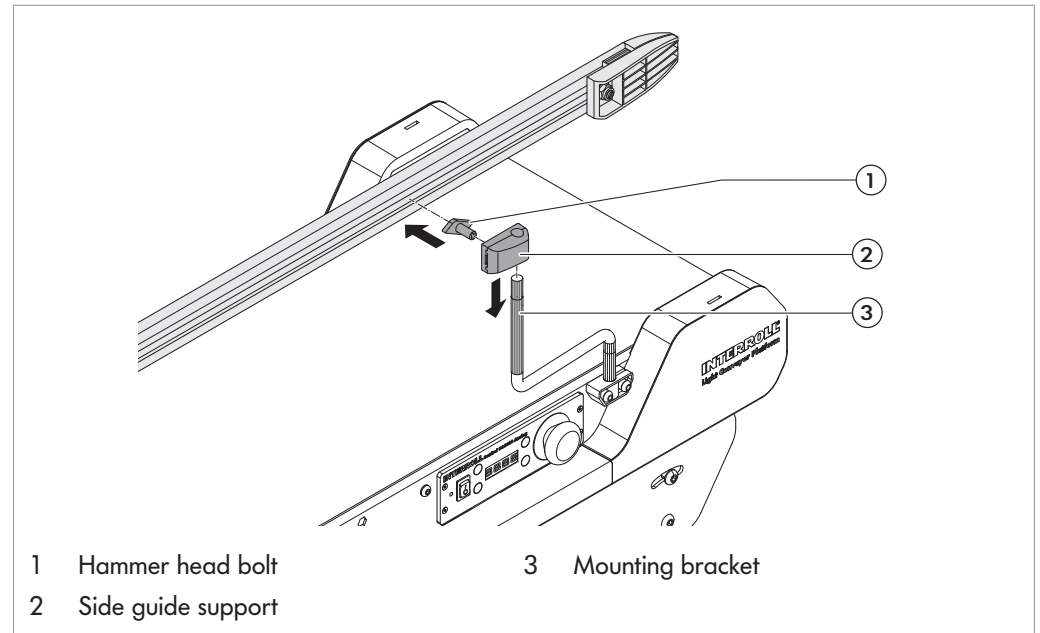
The bracket hole closer to the track is used to attach the side guide arm to the frame and to hold the bracket itself.

- ▶ Mount the mounting bracket in the side guide bracket.
- ▶ Make sure that the screw closer to the track is not completely screwed in to make it easier to adjust the side guide as desired.
- ▶ Once the side guide has been adjusted as desired, fully tighten the screw.

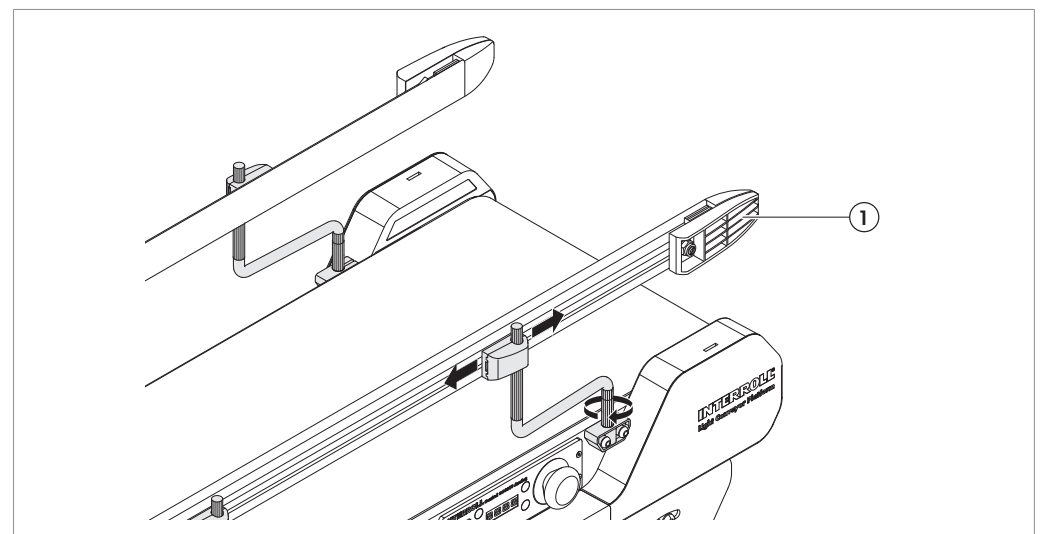
The mounting bracket is mounted to the side guide using a side guide support. This side guide support ensures that the side guide can be adjusted flexibly while the support slides on the side guide as the mounting bracket moves in or out.

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation



- ▶ Push side guide support (2) onto one of the mounting brackets (3).
- ▶ Tip up the cover of the side guide support (2).
- ▶ Slightly loosen hexagon nut inside the side guide support.
- ▶ Place side guide profile at side guide support (2) and position it.
- ▶ Slightly turn the hammer head bolt (1) located in the side guide support (2) and insert it into the side guide profile.
- ▶ Tighten the hexagon nut.

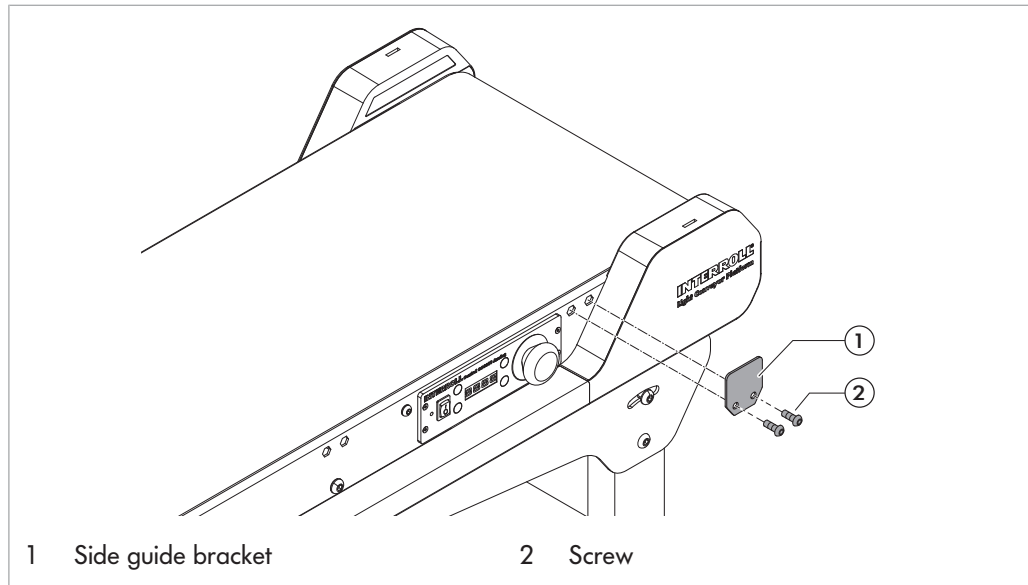


- ▶ To adjust the position of the side guide, move the mounting bracket as shown by the bottom arrow.
- ▶ The side guide support must slide in or out as shown by the arrows pointing in opposite directions.

Interroll Straight Conveyor and Transfer Conveyor

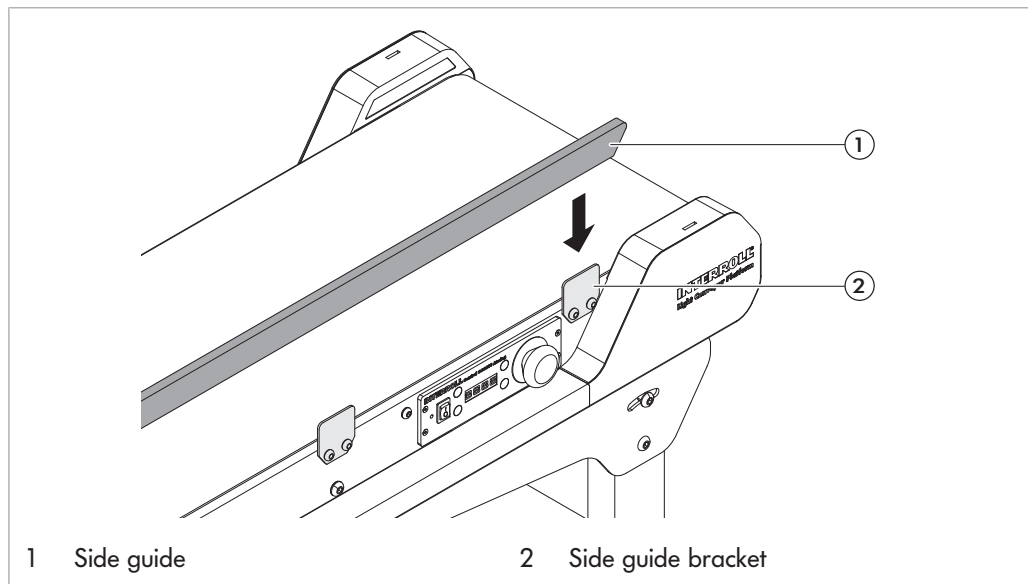
Assembly and installation

Fixed side guides



Requirement:

- The module is shut down.
- ▶ Fasten the brackets (1) with the screws (2) to the frame of the conveyor in the corresponding mounting holes.



- ▶ Position the fixed side guide (1) through its slots on the brackets (2).

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Installing the photo cell and reflector



⚠ CAUTION

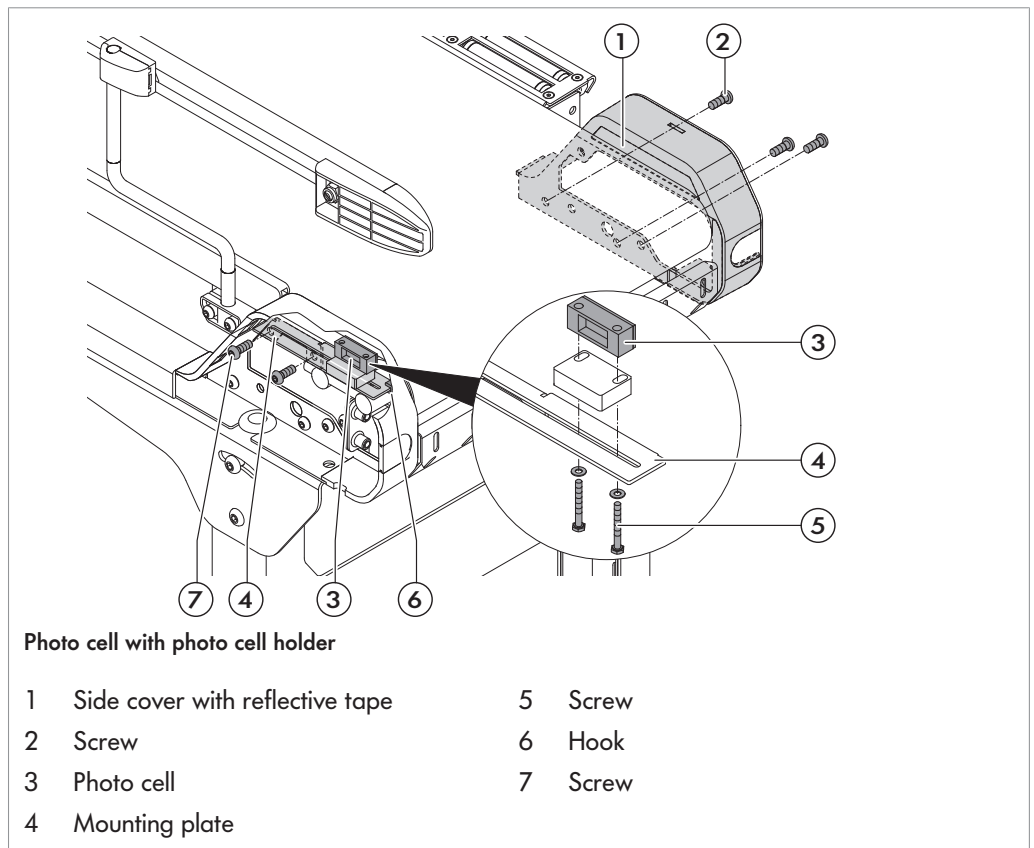
Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.

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

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



Requirement:

- The module is shut down.
 - ▶ Remove the side cover lids on both sides of the conveyor.
 - ▶ Unscrew the screws (7) of the mounting plate (4) and remove the plate from the frame.
 - ▶ Place the photo cell (3) on the mounting plate (4), tighten the screws (5) only slightly.
 - ▶ Place the mounting plate (4) into the hook (6) and tighten the screws (7).

Interroll Straight Conveyor and Transfer Conveyor

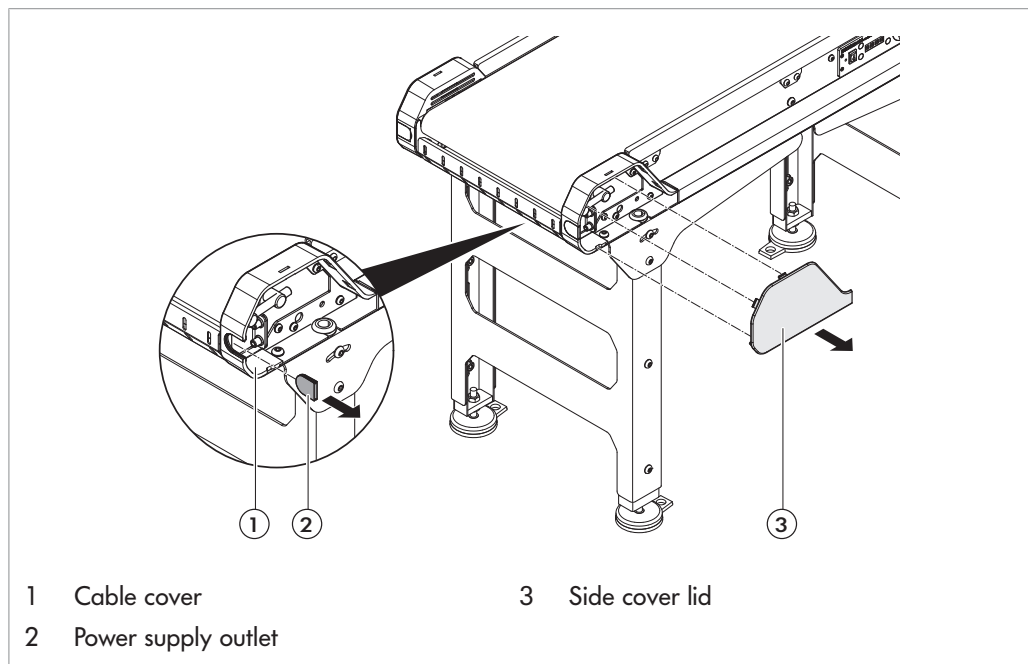
Assembly and installation

- ▶ Slide the camera back and forth to find the right position until it "sees" the reflector. Fully tighten the screws (5).
- ▶ Unscrew the screws (2) of the side cover (1) and remove it from the frame.
- ▶ Install the side cover with the reflector opposite (1) the photo cell (3). Fasten the screws (2).
- ▶ 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 relative to each other.
- ▶ Attach both side cover lids.

LED green	LED yellow	Meaning
On	Off	Photo cell is operational. No signal from reflector.
On	On	Photo cell is correctly adjusted. Light beam is well reflected.
On	Flashing	Photo cell is operational. Weak signal. Reflector is dirty, damaged or not correctly adjusted.

Power supply

Power supply cables are pulled out through the power supply outlet.



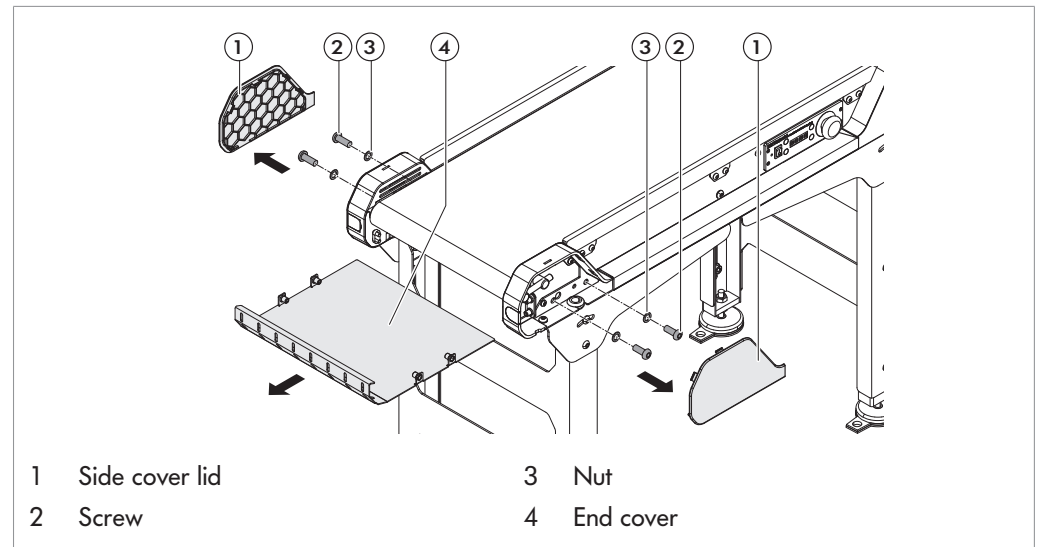
- ▶ Remove the side cover lid (3).
- ▶ Remove the cover (1) of the power supply outlet (2).
- ▶ Pull the cables through the opening.
- ▶ Attach the side cover lid (3).

Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

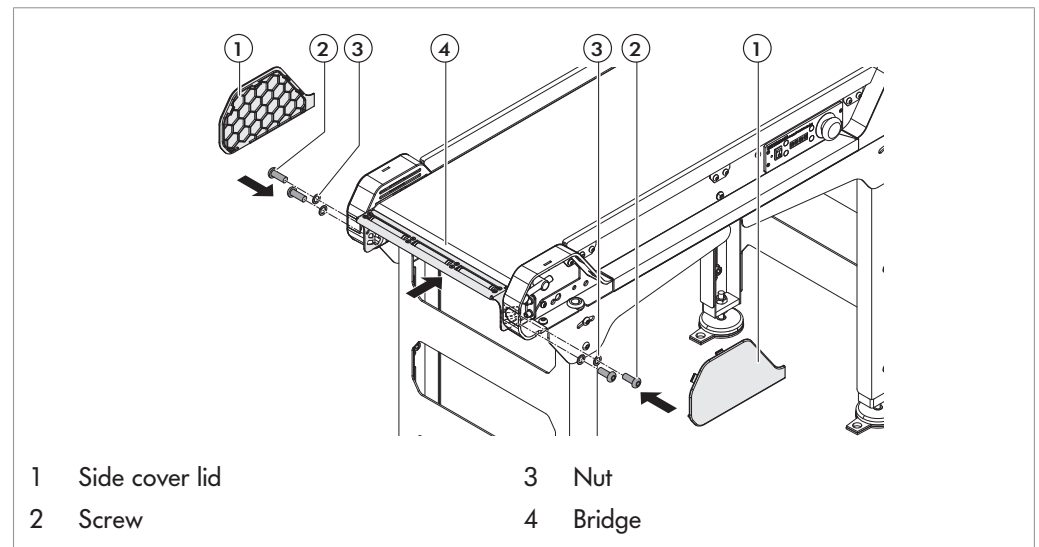
Installing bridge for straight conveyor

The LCP platform is delivered with Ø40 rollers, which create a small transfer gap between the conveyors. The bridge for conveyors allows for reducing the gap between the conveyors to transfer smaller items. The bridge can be ordered separately and delivered mounted on the conveyor.



Requirement:

- The module is shut down.
- ▶ Remove the side cover lids (1) from the side cover.
- ▶ Unscrew the screws (2) to remove the end cover (4).



- ▶ Position the bridge (4) behind the conveyor.
- ▶ Fasten the bridge to the bracket in the side cover with two serrated flange bolts (2) and nuts each.
- ▶ Attach the side cover lids (1).

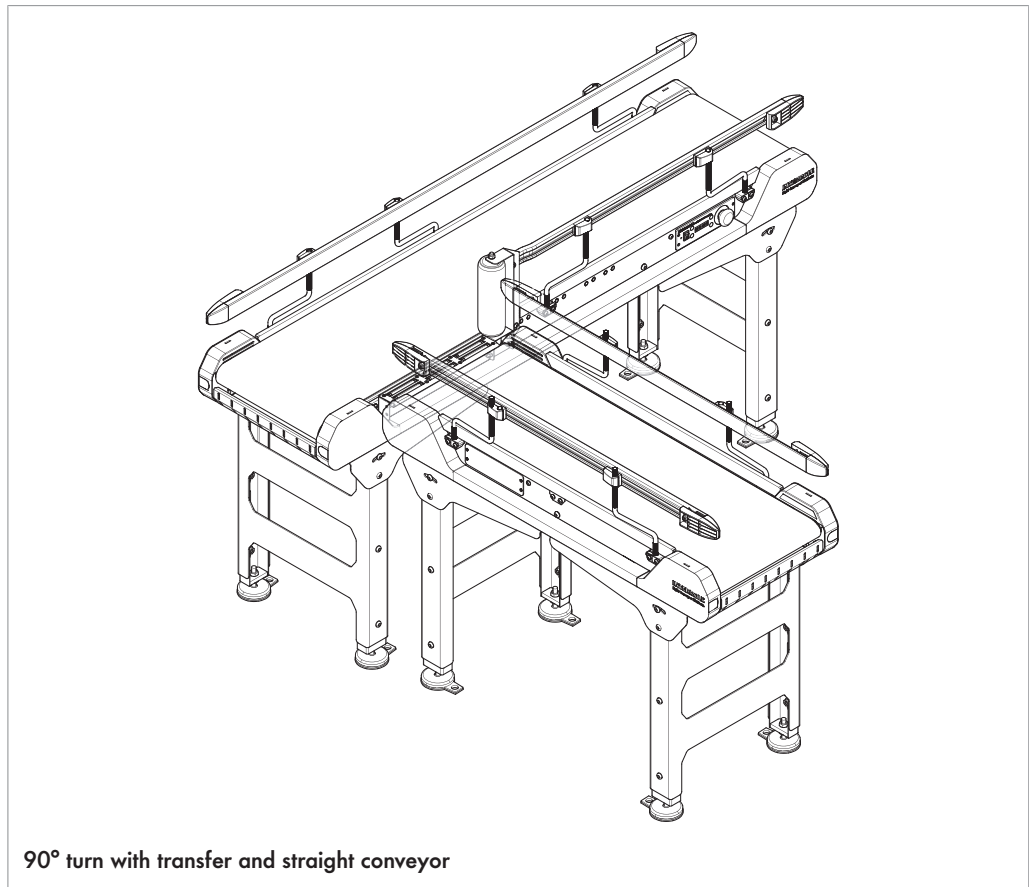
Interroll Straight Conveyor and Transfer Conveyor

Assembly and installation

Transfer Conveyor

The transfer conveyor is supplied with a belt that stops goods from tracking out of their path, a corner roller and a bridge customized for that conveyor. The bridge and roller need to be mounted on the transfer conveyor by the customer. They help to guide conveying goods in the new direction (90° turn) and ensure conveying of smaller items.

When integrating the transfer conveyor with other LCP straight conveyors, the straight conveyor should be slightly higher. As with all other LCP conveyors, the transfer conveyor can be delivered with or without side guides. The controller is fully assembled.



Installing corner roller and bridge for transfer conveyor

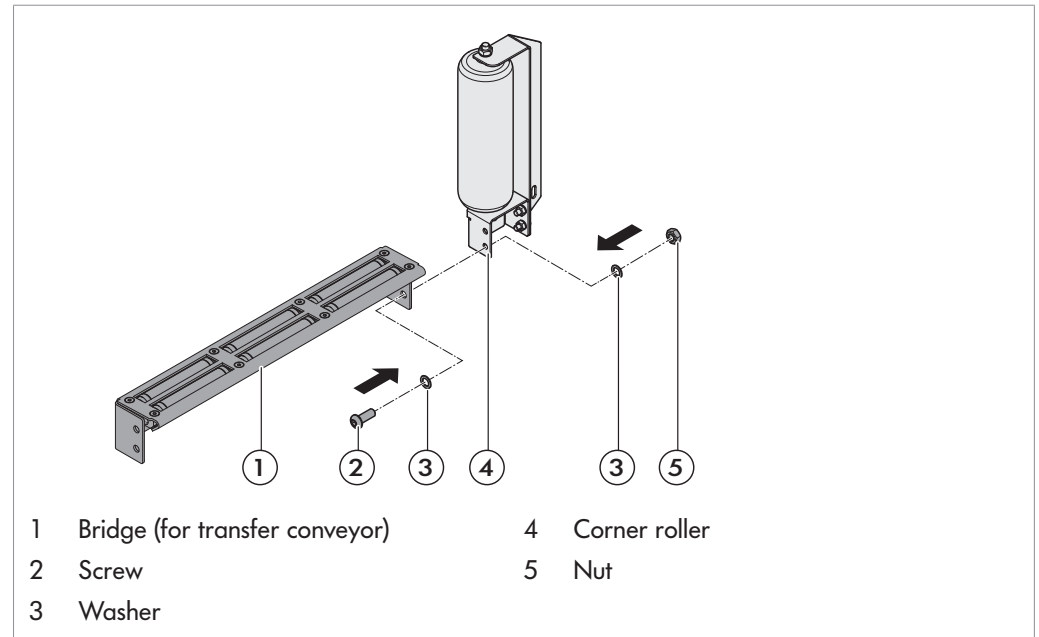
The corner roller works as a guide for conveying goods when the goods are delivered from the previous conveyor. The roller is delivered pre-assembled as shown in the image along with 6 x M6 screws that are needed to mount the roller and bridge on the conveyor.

The bridge for the transfer conveyor helps guide goods to the new direction on the transfer conveyor. It is mounted on the side to allow a 90° turn to another conveyor.

Corner roller and bridge are included in the transfer conveyor scope of delivery.

Interroll Straight Conveyor and Transfer Conveyor

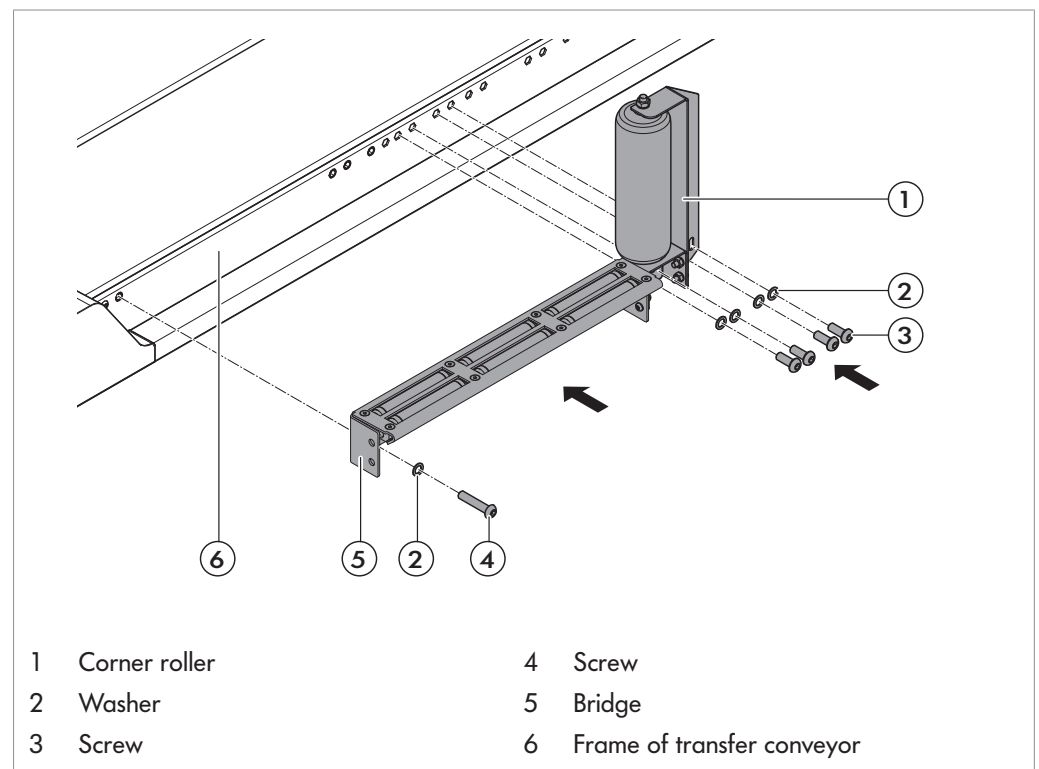
Assembly and installation



Requirement:

- The module is shut down.

► Mount the roller (4) with the screws (2, 2x), washers (3) and nuts (5) on the bridge (1).



► Mount the assembly (1, 5) on the frame (6) on the left side with the screw (4, 1x) and washer, and on the right side with screws (3, 4x) and washers.

Initial startup and operation

Initial startup

WARNING

Risk of injury due to incorrect handling!



- ▶ Check electrical connections and protective equipment.
 - ▶ If the module is supplied with an individual plug cable for the belt drive, check the plug installation guide supplied with the module.
 - ▶ Remove items that do not belong to the device from the module and belt.
 - ▶ Ensure that unauthorized persons are not in the hazard zones.
 - ▶ Wear safety shoes and suitable work clothes.
-

- ▶ Do not operate the module before it has been correctly installed and connected to the power supply, with all rotating parts equipped with or protected by original safety devices.

Checks before initial startup

The module has been factory tested. The belt adjustment and belt tension are factory set and normally do not have to be changed. However, before initial startup of the module, the following procedures must be carried out:

- ▶ If faults occur during initial startup, stop the module and adjust the belt setting (see "*Adjusting tension and tracking the belt*", page 63).
- ▶ Check the direction of travel prior to initial startup. If necessary, correct the direction.



The standard direction of belt travel is when the belt drive is pulling the belt and not pushing it. Pushing the belt is allowed, but belt tracking may be more difficult.

If the idler pulley is blocked in the direction of travel, the idler and tension system may pop up and belt tension may be lost. A change in belt tension is an indication that something is blocking the idler pulley.

- ▶ Ensure that the LCP Control has been correctly fastened to the profile and that all screws have been correctly tightened.
- ▶ Ensure that there are no additional hazard zones caused by interfaces to other components.
- ▶ Ensure that the wiring is in accordance with the specifications and legal requirements.
- ▶ Check all protective devices.
- ▶ Ensure that no people are in hazard zones near the conveyor.

Stand-alone mode (Main Control and Local Control)

After turning on the main switch, the control in stand-alone mode is in standby mode, the emergency stop function is not activated.

- ▶ Push the start key B1 on one of the controls, the controls are ready for operation.

PLC mode (Digital Control and Network Control)

The Digital Control and Network Control operate immediately when the main power supply and external 24 V power supply are turned on.

Interroll Straight Conveyor and Transfer Conveyor

Initial startup and operation

Operation

Inspection prior to each operation

- ▶ Check the module for visible damage. Pay special attention to belt, guides and supports.
- ▶ Check the belt drive for visible damage.
- ▶ Check all protective devices.
- ▶ Ensure that no objects are in contact with rotating or moving parts.
- ▶ Ensure that no people are in hazard zones near the conveyor.
- ▶ Ensure that the belt drive can move freely.
- ▶ Ensure that all safety equipment is functioning correctly.
- ▶ Make sure that only authorized persons are in the working area of the module.
- ▶ Remove equipment or material that is not required from the workspace.
- ▶ Provide instructions for correct loading of the module and monitor their implementation.

During operation

WARNING

Rotating parts

Crushing and serious injury due to being caught and pulled into the module.

- ▶ Do not remove the protective covers.
- ▶ If you have long hair, tie up hair and always wear a hair net.
- ▶ If goods become trapped in the side guides, disconnect the module from the main power supply by pulling out the power plug and ensure that it cannot be started accidentally, then eliminate the fault.
- ▶ If the idler pulley becomes blocked, switch off the module immediately.



WARNING

Danger from entering the module or transporting persons on the module

Serious injuries from slipping, stumbling, falling.

- ▶ Never cross or enter the conveyor module.
 - ▶ Never ride along on the moving module.
 - ▶ Attach warning signs in the hazard zones.
 - ▶ Use suitable walkways to cross the conveyor module.
-

Interroll Straight Conveyor and Transfer Conveyor

Initial startup and operation

WARNING

Conveying heavy loads



Crushing and injuries

- ▶ Ensure that the load does not exceed 50 kg.
 - ▶ Perform an additional risk assessment to ensure that the max. static force for stopping of 150 N is not exceeded.
 - ▶ Ensure that no one reaches under the side guide to touch the belt (when using only flexible side guides).
 - ▶ If necessary, implement further constructional measures.
-

CAUTION

Accidental start-up of the belt drive!



Danger of crushing of limbs and damage to goods!

- ▶ Ensure that no unauthorized persons are near the conveyor before switching on the operating voltage.
-

CAUTION

Conveyed goods with sharp edges



Risk of injuries

- ▶ Transport only loads with permissible weights.
 - ▶ Perform an additional risk assessment for conveyed goods with sharp edges.
 - ▶ Reduce the speed accordingly.
-

CAUTION

Danger from shearing between product and universal support of side guide



- ▶ Do not reach in from the side.
 - ▶ Take additional protective measures.
-

Interroll Straight Conveyor and Transfer Conveyor

Initial startup and operation

Stand-alone mode

CAUTION

Manually changing the motor rotation can cause the OBC to fall out of the conveyor.

The LCP Main Conveyor starts running when the start sensor detects an OBC or receives an external start signal.

The LCP Local Conveyor starts running when the sensor of the previous conveying zone detects an OBC and the next zone sends a release signal.

To manually start/stop the motor or change the direction of rotation:

- ▶ Press the B1 key to start the motor manually.
- ▶ By pressing the B1 key again, the motor can be stopped manually.
- ▶ The motor can only change the direction of rotation if you keep the B3 key pressed.

PLC mode

The LCP Digital Control or Network Control starts running if the PLC sends a start signal.

Procedure in case of accident or fault



WARNING

Risk of injury due to incorrect procedure

- ▶ Troubleshooting must only be carried out by authorized, qualified personnel.
 - ▶ Troubleshooting must only be carried out when the system has been disconnected from the LCP control unit.
 - ▶ Disconnect the LCP control unit from the main power supply by pulling out the power plug and ensure that it cannot be unintentionally switched on again.
-

- ▶ In case of an accident: Provide first aid and call for emergency assistance.
- ▶ Inform responsible persons.
- ▶ Have the fault repaired by qualified persons.
- ▶ Restart the device only after approval by qualified persons.

Cleaning

WARNING



Risk of injury due to incorrect handling

- ▶ Ensure that the LCP control unit for the module has been turned off before cleaning it. Disconnect the LCP control unit from the main power supply and ensure that it cannot be connected accidentally.
 - ▶ Do not remove protective devices.
 - ▶ Wear safety shoes and close-fitting work clothing.
-

NOTICE

Risk of damage to the module due to improper cleaning

- ▶ Observe the protection class IP 22.
-

Cleaning the LCP conveyor

- ▶ Only clean the belt dry.
- ▶ Only use suitable cleaning agents.
- ▶ Clean panels on the underside with compressed air.

Cleaning the LCP control

- ▶ Remove any foreign objects and coarse impurities from the surface of the housing.
- ▶ Minor impurities can be removed using a cloth.
- ▶ Do not use any sharp-edged tools to clean the LCP control unit.

Maintenance and repair

WARNING

Risk of injury due to incorrect procedure



- ▶ Maintenance and cleaning work must only be carried out by authorized, qualified personnel.
 - ▶ Maintenance and cleaning work must only be carried out when the system has been disconnected from the 400-V power supply.
 - ▶ Disconnect the LCP control unit from the main power supply by pulling out the power plug and ensure that it cannot be unintentionally switched on again.
 - ▶ Place signs to indicate that maintenance or cleaning work is being carried out.
-

Observe the following for maintenance and repair

DANGER

Risk of death due to high voltage



- ▶ Switch off and disconnect the LCP control unit from the main power supply by pulling out the power plug and ensure that the device cannot be started accidentally.
 - ▶ Work on electrical appliances should only be carried out by authorized and qualified electricians.
 - ▶ Display signs warning of maintenance and repair work when carrying out tasks.
 - ▶ Close off the area around the module.
 - ▶ Inform people entering the closed off area of the risks.
-

WARNING

Risk of crushing and injuries

- ▶ Ensure that the personnel involved in maintenance and repair have secure footing and sufficient room to move.
 - ▶ Mechanical maintenance and repair work should be performed only 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 type plate), if necessary, work in pairs.
 - ▶ Use suitable loading and lifting equipment. Secure the module against falling or tipping.
-

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

The LCP control unit itself requires no maintenance.

- ▶ Check connections and fastening regularly (visual inspection).
- ▶ Check that all components are generally intact (visual inspection).

A check of the insulation can be carried out if necessary. The housing must be cleaned if necessary.

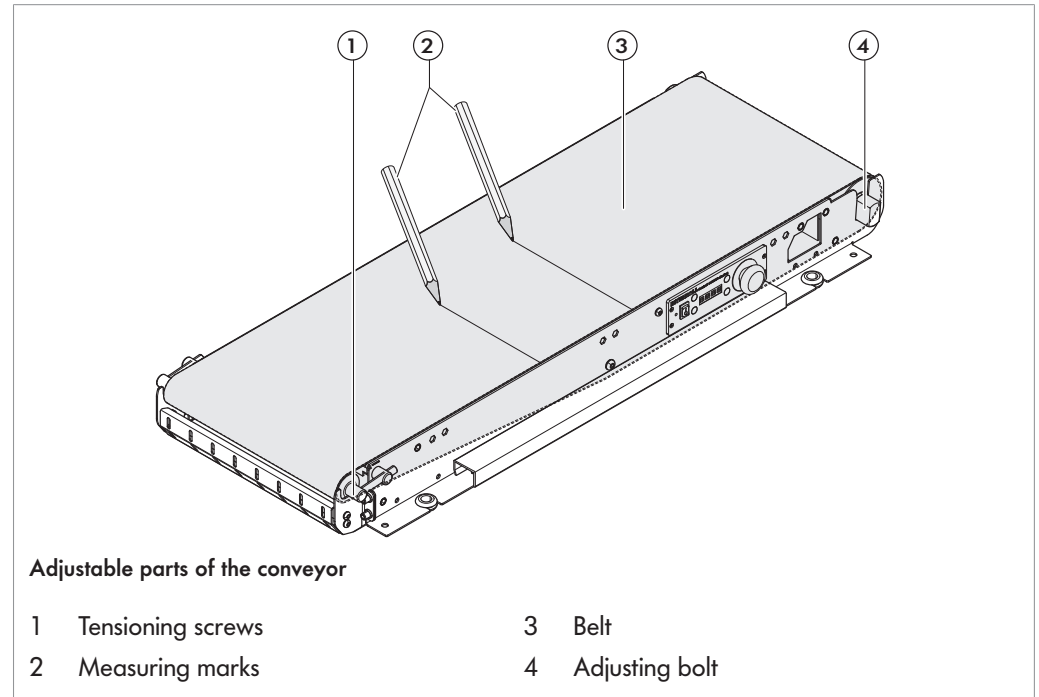


Do not attempt to open the LCP control unit (except for the terminal compartment).

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Adjusting tension and tracking the belt



NOTICE

Risk of damaged belts and bearings due to high belt tension

- ▶ Ensure that the tension is set correctly based on the weight of the conveyed goods. The higher the weight, the higher the tension.
 - ▶ Belt tension should not exceed 0.4% of elongation. The typical value is between 0.2 to 0.4%.
-
- ▶ To adjust the belt tension, use a belt tension measuring device, or mark two measuring marks (2) or removable tape on the belt, e.g. at a distance of 1,000 mm, when the belt is slackened.
 - ▶ Tension the belt by turning the tensioning screws evenly until the elongation is 0.2 to 0.4%. In this example, until the distance between the measuring points is 1,002 to 1,004 mm.
 - ▶ Move the tensioning screws (1) and idler pulley above the center, only adjust the screws manually.
 - ▶ Push the idler pulley back down below the center (the tensioning screws (1) must touch the frame).
 - ▶ Be careful not to get pinched between the tensioning screw and the frame.
 - ▶ For easy tracking of the belt, use the adjusting bolt (4) at the drum motor shaft cap.
 - ▶ If the belt tends to run towards the adjusting bolt side, turn the bolt (4) slightly. If it runs towards the opposite side, loosen the bolt slightly (half turn of bolt).
 - ▶ If tracking is difficult, it may help to stop the module. Loosen the idler quick tension/release system, manually re-center the belt on the idler pulley/drum motor, and restart the device.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Replacing the belt

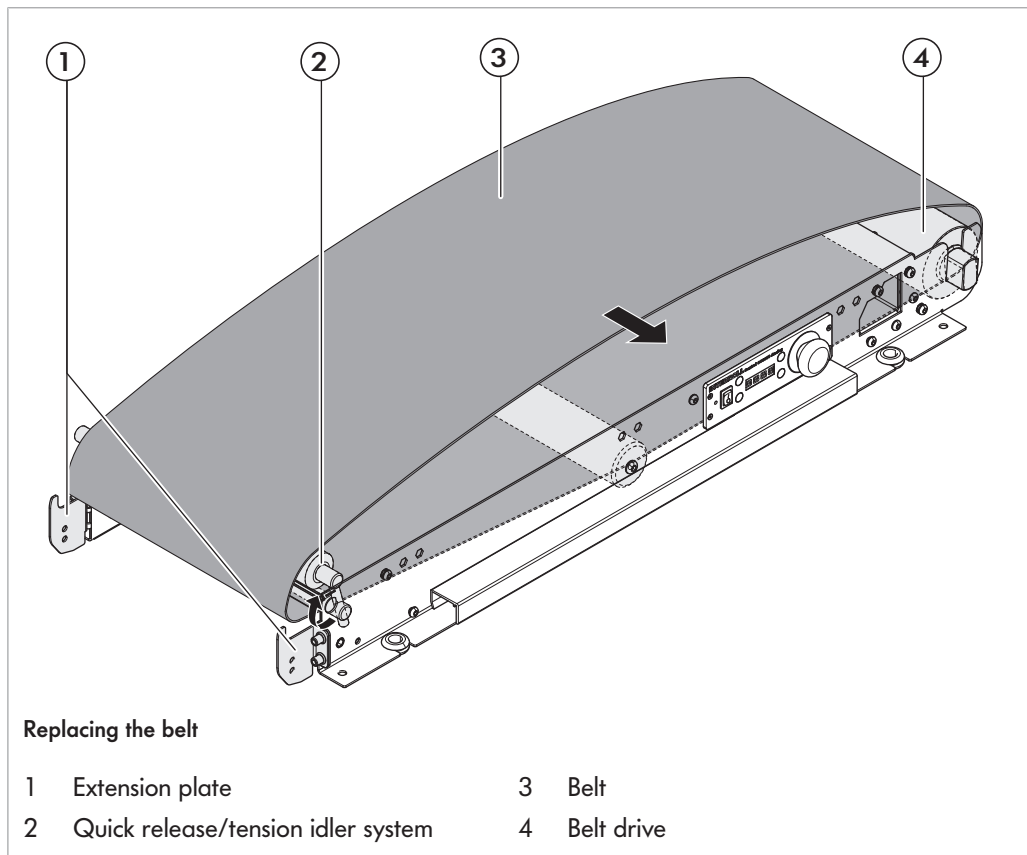


⚠ CAUTION

Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.



NOTICE

Risk of property damage and scratched belt caused by sharp edges

- ▶ Move the belt carefully and only when fully slackened.
- ▶ Make sure that the frame extension plates are removed on the side where the belt is removed.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Requirement:

- ☑ The module is shut down.
 - ▶ Remove the side covers.
 - ▶ Remove the end covers.
 - ▶ Release the quick release/tension idler system (2).
 - ▶ Remove the extension plates (1).
 - ▶ Lift the belt drive (4) out of the module frame slots.
 - ▶ Pull the belt (3) out of the frame.
 - ▶ Ensure that the slider bed is clean.
 - ▶ Insert the new belt.
 - ▶ Reassemble the conveyor in reverse order.
 - ▶ Adjust tension with the 2 tensioning screws and track the belt by adjusting the screw at the drive shaft cap.
 - ▶ Perform a test run with at least four complete belt turns.

Belt types

The belt types delivered with each conveyor are as follows, unless agreed upon otherwise:

Conveyor	Belt type
Straight	Standard belt type NHM-8EKBV
Incline	Special belt type NSL-7EEBV
Decline	
Transfer	Special belt type NNT-10ENBU



There are different types of belts. A selection is listed in the table below. Information on other belt types can be requested directly from Interroll.

Model	NHM-8EKBV 11 Standard	ENI-5EE ESD	NNT-10ENBU Low friction	UM100SC-B 18 Cut - Oil - Hot	NSL-7EEBV Grip
Main industry	<ul style="list-style-type: none"> • Materials handling 	<ul style="list-style-type: none"> • Electronics • Paper manufacturing • Paper printing • Plastics 	<ul style="list-style-type: none"> • Distribution centers • General conveying 	<ul style="list-style-type: none"> • Electronics • Airport • Automotive • Metal components • Plastics 	<ul style="list-style-type: none"> • Distribution centers • General conveying
Applications	<ul style="list-style-type: none"> • Check-out belt • Line belt • Power turn belt 	<ul style="list-style-type: none"> • Accumulation belt • Infeed belt • Inspection belt • Processing belt • Transfer belt 	<ul style="list-style-type: none"> • Accumulation belt • Merge belt • Packaging belt • Transfer belt 	<ul style="list-style-type: none"> • Accumulation belt • Blanking belt • Infeed belt • Diverting belt • Light package handling • Magnetic conveyor belt 	<ul style="list-style-type: none"> • Acceleration belt • Decline/Incline belt • Feeder belt • Inserting belt • Sorting belt

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Model	NHM-8EKBV 11 Standard	ENI-5EE ESD	NNT-10ENBU Low friction	UM100SC-B 18 Cut - Oil - Hot	NSL-7EEBV Grip
Features	<ul style="list-style-type: none"> Flexibility Antistatic 	<ul style="list-style-type: none"> Highly abrasion resistant Antistatic Cut resistant 	<ul style="list-style-type: none"> Abrasion resistant Antistatic Low friction Low noise 	<ul style="list-style-type: none"> Chemical resistant Oil & water resistant Cut & wear resistant Impact resistant 	<ul style="list-style-type: none"> Antistatic High coefficient of friction
Construction / design					
Conveying side material	Polyvinyl chloride (PVC)	Polyurethane X-linked	Polyester (PET)	Polyester (PET) fleece	Polyvinyl chloride (PVC)
Conveying side color	Black	Black	Black	Black	Grey
Number of fabrics	2	2	2	1	2
Pulley side material	Polyester (PET)	Polyurethane X-linked	Polyester (PET)	Polyester (PET) fleece	Polyester (PET)
Characteristics					
Antistatically equipped	Yes	Yes - EN 12882	Yes	Yes - EN 12882	Yes
Flammability	No prevention property	No prevention property	Classified according to UL 94HB (USA)	No prevention property	Classified according to UL 94HB (USA)
Technical data					
Thickness	1.9 mm	1.2 mm	2.1 mm	2.5 mm	2.5 mm
Mass	2.1 kg/m ²	1.2 kg/m ²	2.3 kg/m ²	1.9 kg/m ²	2.7 kg/m ²
k1% static	8 N/mm	6.0 N/mm	9.5 N/mm	20 N/mm	10 N/mm
k1% relaxed	6 N/mm	4.2 N/mm	6 N/mm	7.7 N/mm	6.5 N/mm
Operating temperature	-10 to 70 °C	-30 to 80 °C	-20 to 80 °C	-10 to 80 °C	-10 to 60 °C
Joining method					
Low noise application	No	No	Yes	Yes	Yes
Suitable for metal detector	Yes	No	No	No	Yes

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Replacing the photo cell and reflector

Replacing the photo cell



⚠ CAUTION

Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.

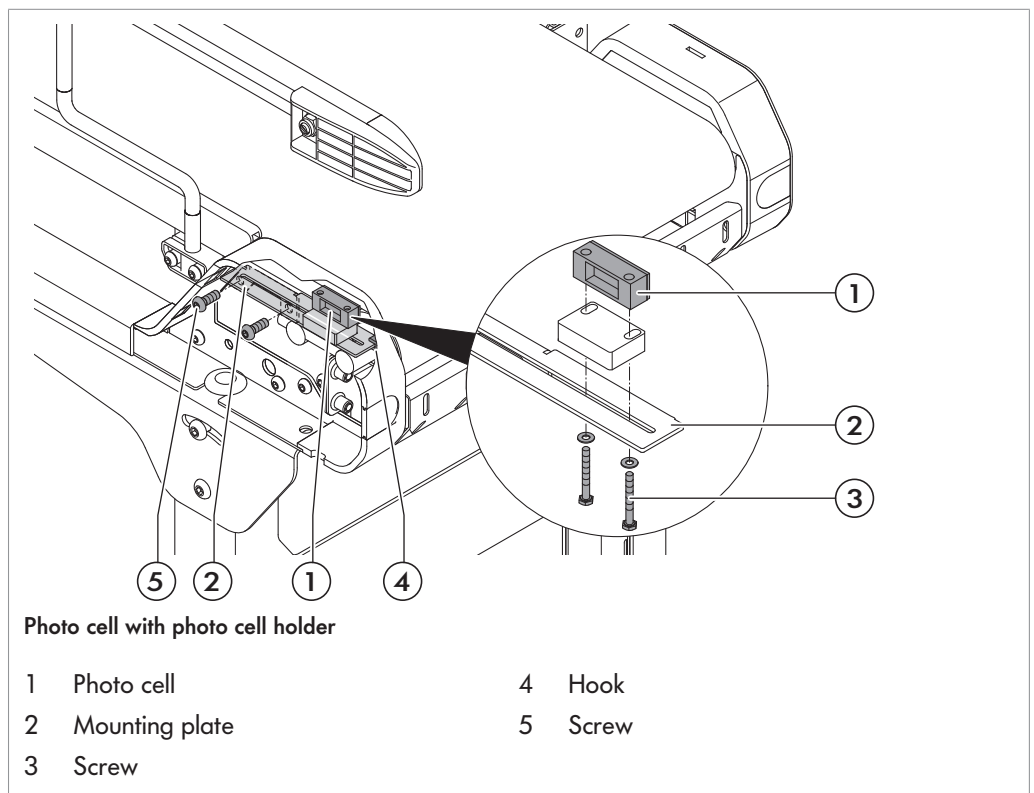


Photo cell and photo cell holder are replaced together:

Requirement:

- The module is shut down.
 - ▶ Remove the side cover lid.
 - ▶ Unscrew the screws (5) of the mounting plate (2) and remove the plate from the frame.
 - ▶ Unscrew the screws (3) of the photo cell (1) and remove the cell from the mounting plate (2).
 - ▶ Place new photo cell (1) on the mounting plate (2), tighten the screws (3) only slightly.
 - ▶ Place the mounting plate (2) into the hook (4) and tighten the screws (5).
 - ▶ Connect the photo cell to the control system of the module with a cable.
 - ▶ Slide the camera back and forth to find the right position until it "sees" the reflector. Fully tighten the screws (3).

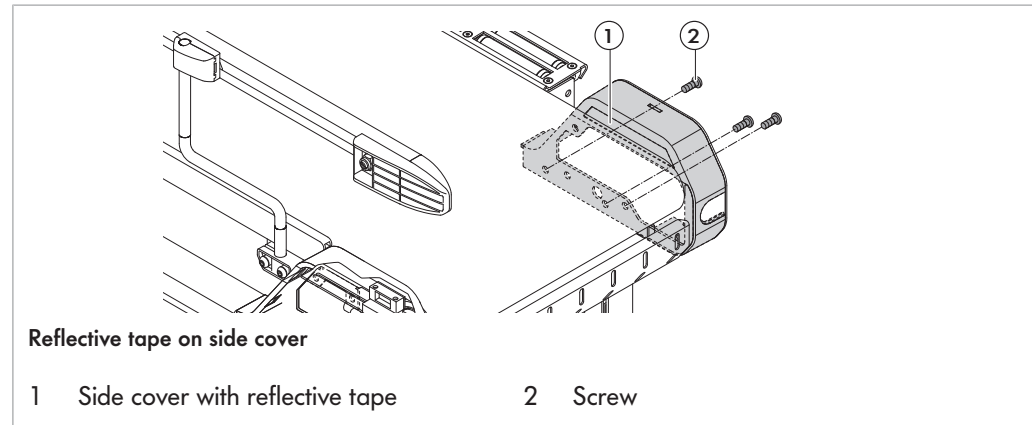
Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

- ▶ Check whether both LEDs are lit.
- ▶ If the yellow LED flashes, position reflector and photo cell relative to each other.
- ▶ Attach the side cover lid.

LED green	LED yellow	Meaning
On	Off	Photo cell is operational. No signal from reflector.
On	On	Photo cell is correctly adjusted. Light beam is well reflected.
On	Flashing	Photo cell is operational. Weak signal. Reflector is dirty, damaged or not correctly adjusted.

Replacing the reflector



Side cover and reflective tape are replaced together:

Requirement:

- The module is shut down.
- ▶ Remove the side cover lid.
- ▶ Unscrew the screws (2) and remove the old side cover (1) from the frame.
- ▶ Place the new side cover (1) on the frame and tighten the screws (2).
- ▶ Attach the side cover lid.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Replacing the idler pulley or belt drive

⚠ WARNING

Risk of crushing and injuries

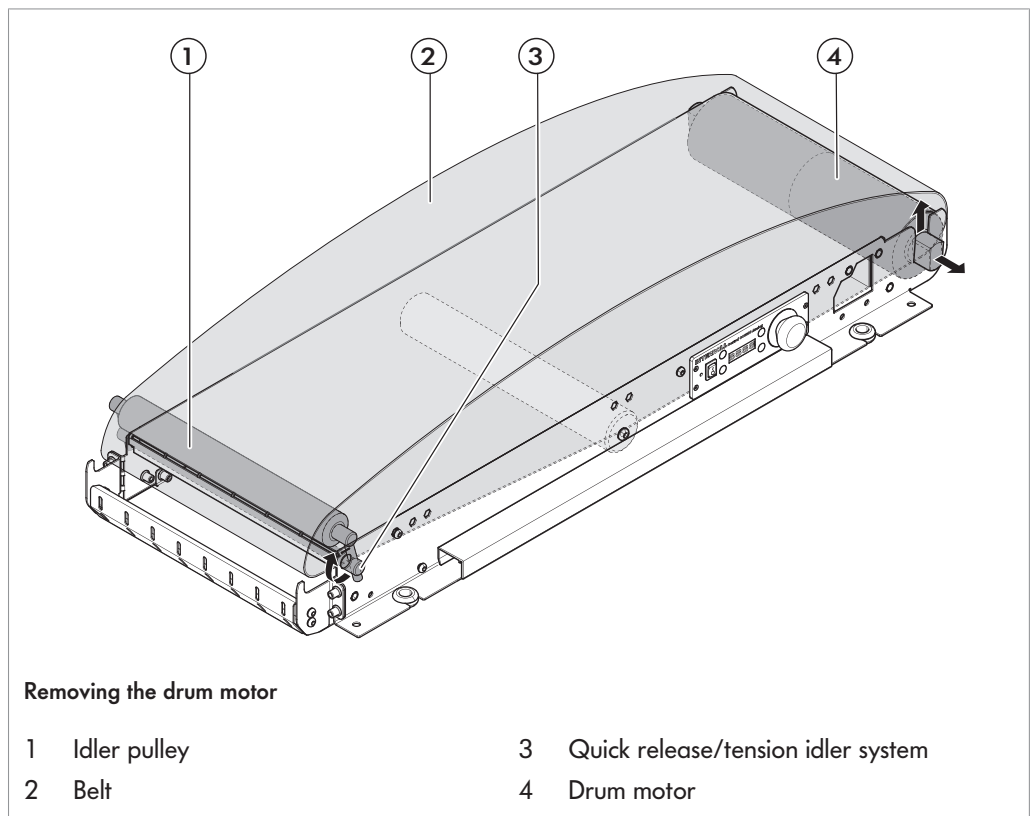
- ▶ Ensure that the personnel involved in maintenance and repair have secure footing and sufficient room to move.
- ▶ Mechanical maintenance and repair work should be performed only by service personnel. Observe the safety information.
- ▶ Electrical maintenance and repair work should be performed only by authorized electricians. Observe the safety information.
- ▶ Observe the weight of the module (see type plate), if necessary, work in pairs.
- ▶ Use suitable loading and lifting equipment. Secure the module against falling or tipping.

⚠ CAUTION

Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.



Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Requirement:

- The module is shut down.
- ▶ Remove the side covers.
- ▶ Remove the end covers.
- ▶ Release the quick release/tension idler system (3).
- ▶ Remove the plug, if the drive is installed with a plug system.
- ▶ Lift the belt drive (4) out of the module frame slots.
- ▶ Pull out the idler pulley (1), including the tensioning screws.
- ▶ Replace the drive or idler pulley.
- ▶ Reassemble the conveyor in reverse order.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Replacing the support roller

⚠ WARNING

Risk of crushing and injuries

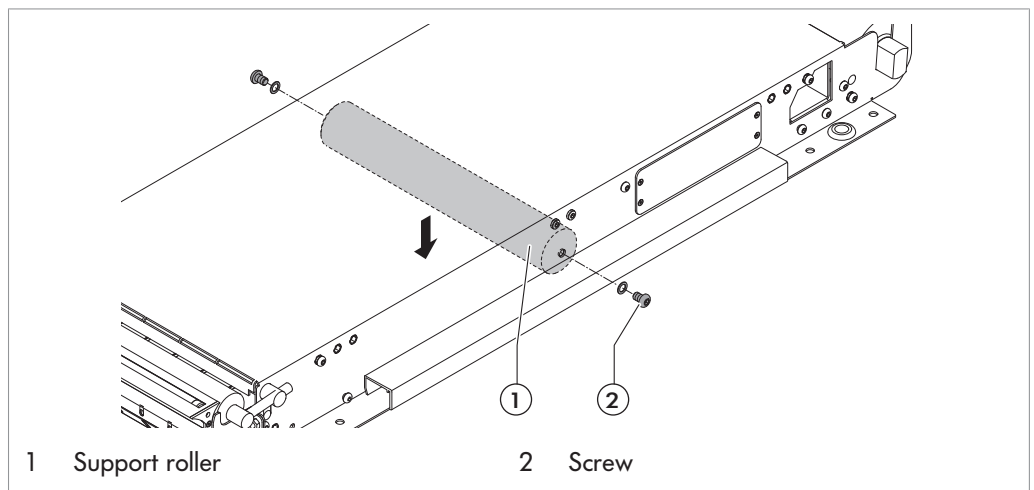
- ▶ Ensure that the personnel involved in maintenance and repair have secure footing and sufficient room to move.
- ▶ Mechanical maintenance and repair work should be performed only by service personnel. Observe the safety information.
- ▶ Electrical maintenance and repair work should be performed only by authorized electricians. Observe the safety information.
- ▶ Observe the weight of the module (see type plate), if necessary, work in pairs.
- ▶ Use suitable loading and lifting equipment. Secure the module against falling or tipping.

⚠ CAUTION

Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.



Requirement:

- The module is shut down.
- ▶ Remove the belt from the frame, see *"Replacing the belt"*, page 64.
- ▶ On both sides of the module, unscrew the fastening screws (2) of the roller (1).
- ▶ Remove the roller (1) towards the bottom.
- ▶ Reinsert the new roller (1) analogously and position it.
- ▶ Screw the fastening screws (2) into the roller (1) and tighten them.
- ▶ Install the belt, see *"Replacing the belt"*, page 64.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Replacing the control

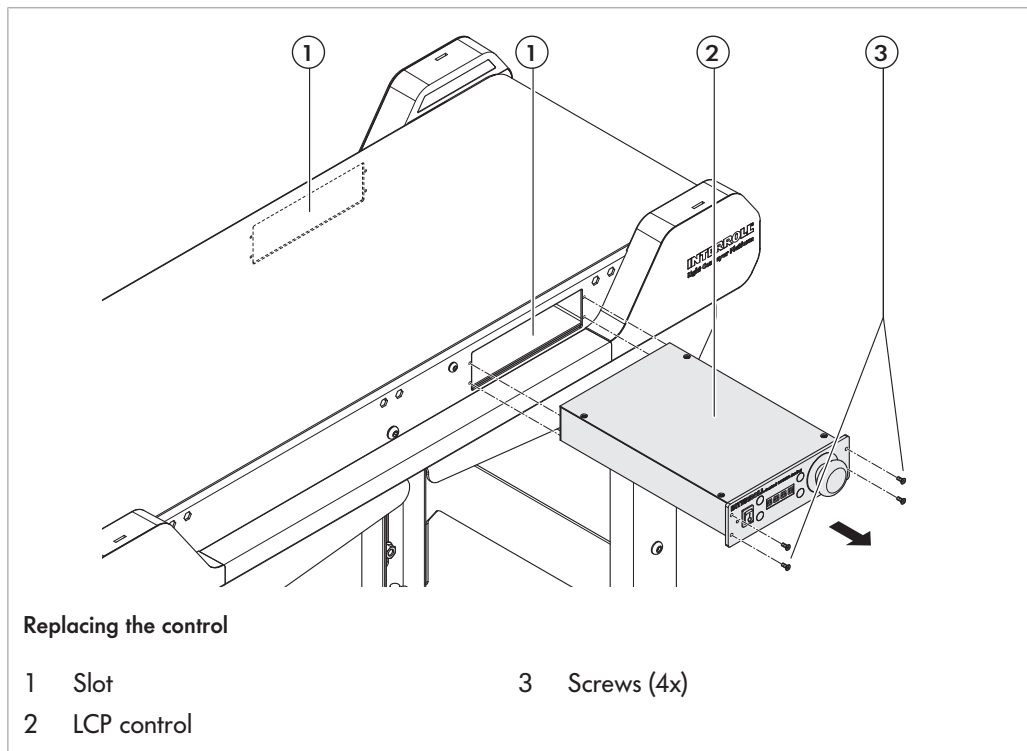


⚠ CAUTION

Risk of crushing and electric shock

Performing installation and maintenance tasks on a conveyor system while it is in operation can cause crushing and electric shock.

- ▶ Power down the module and ensure that it cannot be started accidentally.



Requirement:

- The module is shut down.
- The main power supply is disconnected.
- The ground wire is removed.
- ▶ Unscrew the 4 x M3 screws (3).
- ▶ Pull the control (2) carefully out of the frame.
- ▶ Disconnect the cables between control and conveyor.



The control can be placed closer to the drive end either on the right or left side as desired by the customer.

- ▶ Remove the cover from the slot (1).
- ▶ Place the new control in the frame and connect the cables.
- ▶ Screwing the 4 x M3 screws.

Interroll Straight Conveyor and Transfer Conveyor

Maintenance and repair

Maintenance intervals

Refer to the manufacturer's documentation for information about lubricating intervals and maintenance tasks for the belt drive.

Maintenance and inspection list

Interval	Mach. No./type: Component	Task/inspection
Weekly	Entire conveyor	General visual inspection.
Monthly	Entire conveyor	Check screw connections. Re-tighten if necessary.
	Drive rollers/end rollers	Listen for noise development/check for damage. Replace if necessary.
	Belt	Check operating behavior and voltage. Adjust if necessary. Check for damage. Replace if necessary. Check belt support end for soiling. Clean as required.
Quarterly	Belt drive	Check belt drive (visual inspection).
		Check cable for damage.
		Check temperature.
		Listen for noise development. Replace if necessary.
		Check for oil loss.
Every 6 months	Entire conveyor	Check for debris/dirt. Clean as required.

Troubleshooting

DANGER

Risk of death due to high voltage



- ▶ Switch off and disconnect the LCP control unit from the main power supply by pulling out the power plug and ensure that the device cannot be started accidentally.
- ▶ Work on electrical appliances should only be carried out by authorized and qualified electricians.
- ▶ Display signs warning of maintenance and repair work when carrying out tasks.
- ▶ Close off the area around the module.
- ▶ Inform people entering the closed off area of the risks.

- ▶ Stop the device immediately and ensure that it cannot be started accidentally.
- ▶ Remove the conveyed goods.
- ▶ Always make sure that nobody can be injured before restarting the module.
- ▶ Dispose of any leaked oil correctly. If necessary, a specialist must replace the belt drive.

Fault	Cause	Remedy
Transport cannot be started and belt drive is not running	Main switch and/or control switched off; capacitor problem	▶ Check the switch position. If necessary, press the main switch and/or key-operated switch of the control. Check capacitor.
	Belt too loose/transport weight too high	▶ Re-tension the belt; observe maximum weight.
Belt rubs against the side frame	Belt adjustment is not straight	▶ Adjust belt to run straight
Protective motor switch is triggered by excessive power input	Gear box defective/drive roller bearing defective	▶ Replace defective parts.
	Short circuit	▶ Check electrical connections and replace defective parts.
	Excessive unit load	▶ Observe maximum weight.
Noise development/squeaking/whistling	Bearing defective	▶ Replace bearings.
	Belt rubbing	▶ Remove the cause.

For a description of the error codes displayed by the LCP Control, see "Error codes", page 23.

Interroll Straight Conveyor and Transfer Conveyor

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, see type plate.

The following information is required for an order:

- Machine number
- Type
- Item number in spare parts list
- Designation
- Material number

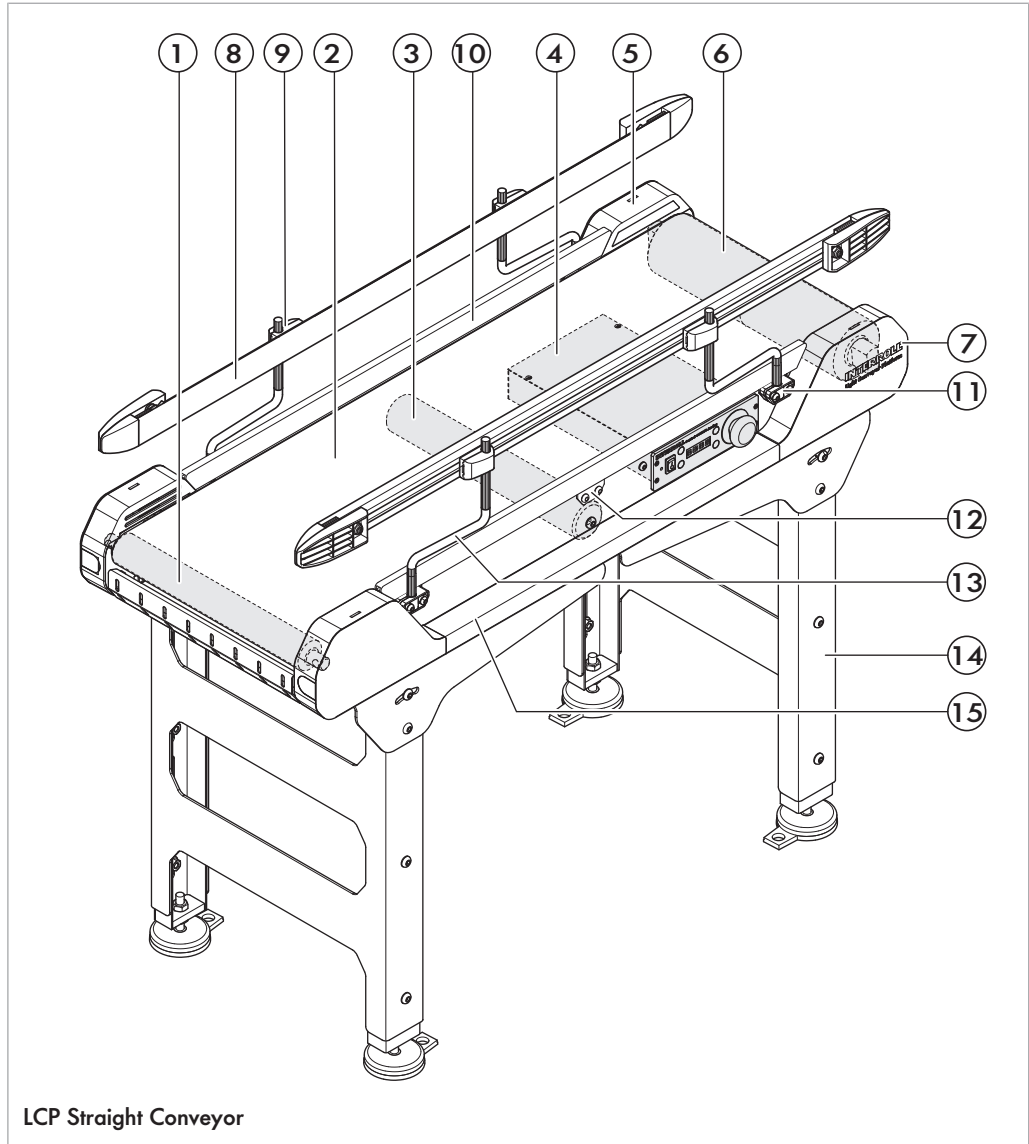
For additional information about the spare parts portfolio, please contact your supplier.

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Straight Conveyor

Spare part designation



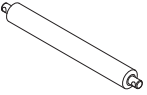
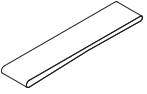
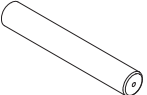
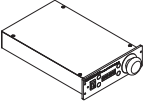
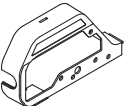
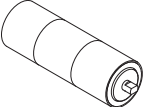

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Spare parts list

S = spare part, W = wear part, T = tool

Type: LCP straight conveyor

Item	Designation	Material number	S/W/T*	
1	Idler pulley ø 40 mm	See project data	S	
2	Belt (ascending belt)	See project data	W	
3	Roller, ø50 mm	See project data	S	
4a	LCP Main Control	See project data	S	
4b	LCP Local Control	See project data	S	
4c	LCP Digital Control	See project data	S	
4d	(LCP Network Control)	See project data	S	
5	Side cover incl. reflective tape	See project data	S	
6	Drum motor ø 80 mm	See project data	S	
7a	Photo cell incl. holder (Type A)	See project data	S	
7b	Photo cell incl. holder (Type B)	See project data	S	
7c	Photo cell incl. holder (Type C)	See project data	S	
	Power cable			
	Network cable			
	Signal cable			



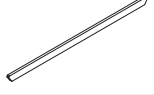



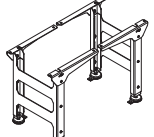

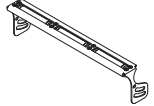
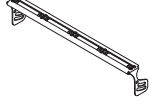

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Accessories

S = spare part, W = wear part, T = tool


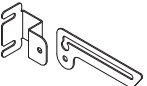
Type: LCP straight conveyor

Item	Designation	Material number	S/W/T*	
8	Adjustable side guide Aluminum/technopolymer/steel	See project data	S	
9	Side guide support	See project data	S	
10	Fixed side guide Aluminum/technopolymer/steel	See project data	S	
11	Adjustable side guide bracket	See project data	S	
12	Fixed side guide bracket	See project data	S	
13	Universal support	See project data	S	
14a	Supports (low)	See project data	S	
14b	Supports (medium)	See project data	S	
14c	Supports (high)	See project data	S	
15	Cable channel cover	See project data	S	
	Side guide connector	See project data	S	
	Bridge (for straight conveyor, 320 mm)	See project data	S	
	Bridge (for straight conveyor, 420 mm)	See project data	S	
	Bridge (for straight conveyor, 620 mm)	See project data	S	

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Type: LCP straight conveyor

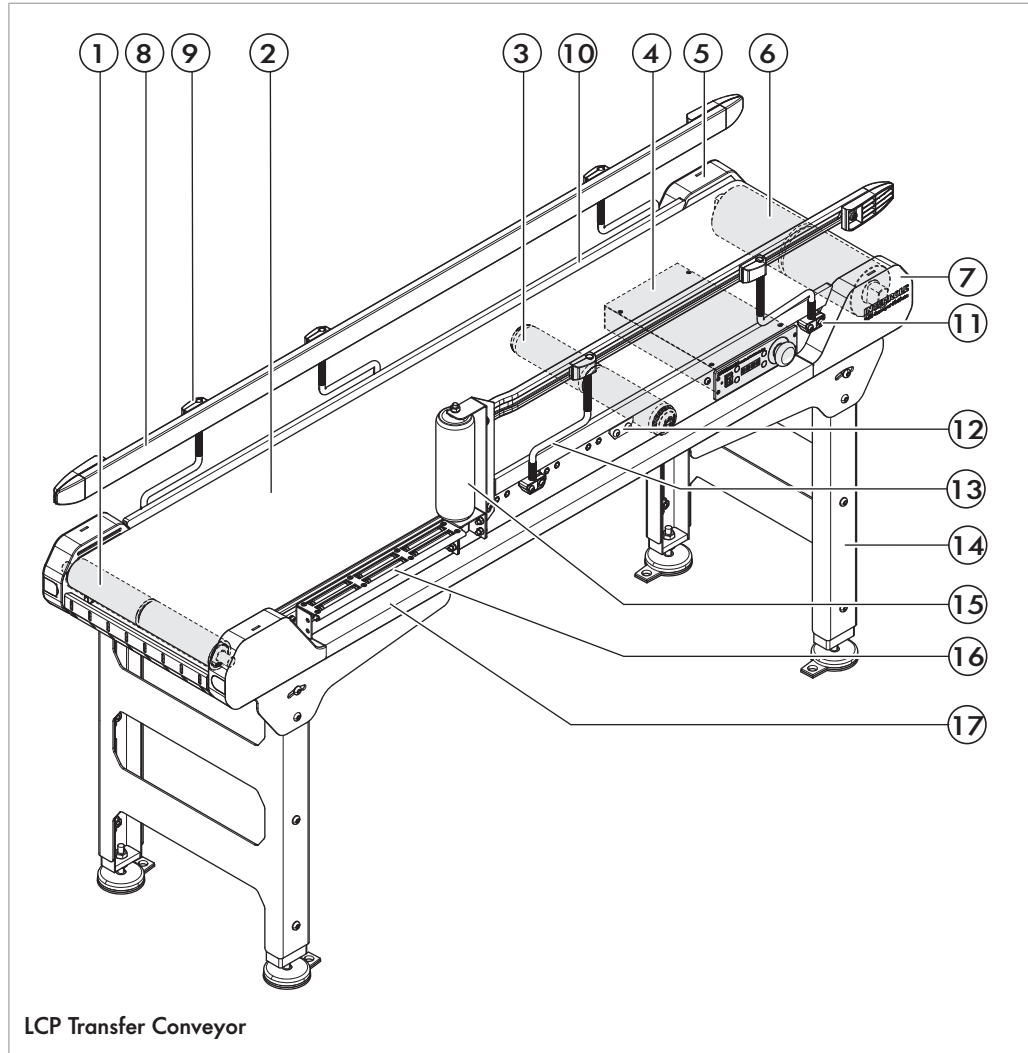
Item	Designation	Material number	S/W/T*	
	Connecting brackets (straight to straight or straight to incline/decline or transfer to straight)	See project data	S	
	Connecting brackets (90° turn)	See project data	S	

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Transfer Conveyor

Spare part designation



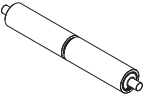
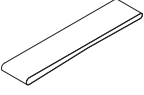
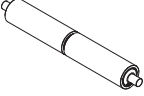
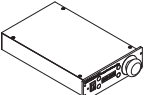
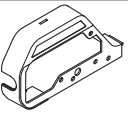
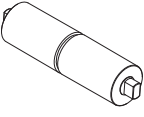

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Spare parts list

S = spare part, W = wear part, T = tool

Type: LCP transfer conveyor

Item	Designation	Material number	S/W/T*	
1	Idler pulley ø 50 mm	See project data	S	
2	Belt (ascending belt)	See project data	W	
3	Roller, ø50 mm	See project data	S	
4a	LCP Main Control	See project data	S	
4b	LCP Local Control	See project data	S	
4c	LCP Digital Control	See project data	S	
4d	(LCP Network Control)	See project data	S	
5	Side cover incl. reflective tape	See project data	S	
6	Drum motor ø 90 mm	See project data	S	
7a	Photo cell incl. holder (Type A)	See project data	S	
7b	Photo cell incl. holder (Type B)	See project data	S	
7c	Photo cell incl. holder (Type C)	See project data	S	
	Power cable			
	Network cable			
	Signal cable			



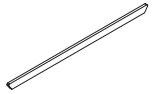

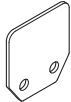
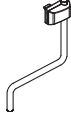
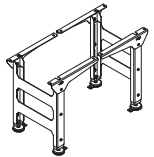
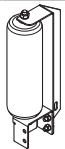
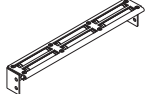
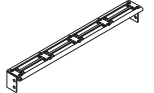
Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Accessories

S = spare part, W = wear part, T = tool


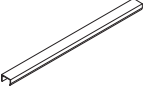

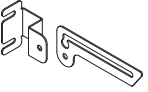
Type: LCP transfer conveyor

Item	Designation	Material number	S/W/T*	
8	Adjustable side guide Aluminum/technopolymer/steel	See project data	S	
9	Side guide support	See project data	S	
10	Fixed side guide Aluminum/technopolymer/steel	See project data	S	
11	Adjustable side guide bracket	See project data	S	
12	Fixed side guide bracket	See project data	S	
13	Universal support	See project data	S	
14a	Supports (low)	See project data	S	
14b	Supports (medium)	See project data	S	
14c	Supports (high)	See project data	S	
15	Corner rollers	See project data	S	
16a	Transfer bridge (for transfer conveyor, 320 mm)	See project data	S	
16b	Transfer bridge (for transfer conveyor, 420 mm)	See project data	S	

Interroll Straight Conveyor and Transfer Conveyor

Spare and wear parts

Type: LCP transfer conveyor

Item	Designation	Material number	S/W/T*	
16c	Transfer bridge (for transfer conveyor, 620 mm)	See project data	S	
17	Cable channel cover	See project data	S	
	Side guide connector	See project data	S	
	Connecting brackets (straight to straight or straight to incline/decline or transfer to straight)	See project data	S	
	Connecting brackets (90° turn)	See project data	S	

Decommissioning and disposal

Shutdown

CAUTION

Risk of injury due to incorrect handling

- ▶ Shutdown may only be performed by qualified and authorized persons.
 - ▶ Only shut down the belt drive after switching off the power. Ensure that the belt drive cannot be turned on accidentally.
-
- ▶ Disconnect the motor cable from the power supply and motor control.
 - ▶ Slacken tension on the belt.
 - ▶ Remove the retaining plate from the mounting bracket.
 - ▶ Remove the belt drive from the conveyor frame.

Disposal

- ▶ Adhere to the manufacturer's disposal instructions when disposing of motor oil.
 - ▶ To protect the environment, recycle the packaging.
-

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.
-

Interroll Straight Conveyor and Transfer Conveyor

Decommissioning and disposal

NOTICE

Information concerning the designation and collection of waste electrical and electronic equipment.

- ▶ The operator is responsible for the proper disposal of the belt drive.
 - ▶ In doing so, industry-specific and local regulations for disposal of the controller and its packaging must be observed.
 - ▶ When disposing of the motor oil, observe the disposal documents of the motor manufacturer.
 - ▶ The packaging must be recycled to protect the environment.
 - ▶ Risk of injury due to incorrect handling.
 - ▶ Disconnect the motor cable from the power supply and motor control.
 - ▶ Slacken tension on the belt.
 - ▶ Remove holding plate from the motor mount.
 - ▶ Remove the belt drive from the conveyor frame.
-

The operator is responsible for the proper disposal of the drum motor. In doing so, industry-specific and local regulations for disposal of the belt drive and its packaging must be observed.

⚠ WARNING



The symbol placed on the product or its packaging indicates collection of selected electrical and electronic waste. This means that the product should not be disposed of with other household waste.

Proper disposal of old and waste electrical and electronic equipment will help to prevent potential negative effects on the environment and on human health. The user is responsible for collecting selected used equipment, which should be turned over to a collection site for such equipment.

Appendix

Warranty for Interroll belt drives and conveyor systems

Interroll provides a 2-year warranty covering their range of belt drives and conveyor systems against faulty workmanship and/or materials from the date of delivery or collection from the factory. The warranty period is based on regular operation of the product eight hours per day, provided no written agreement to the contrary is in effect.

As part of this warranty, Interroll repairs or replaces any defective product free of charge that is returned to the factory before the warranty period expires. The warranty period shall not be extended by repairs performed in the context of the warranty.

Restrictions

Interroll and its dealers do not assume any liability for shutdowns or damage to the product due to the following causes:

- Non-observance of the installation or maintenance notes from Interroll
- Operation of the motor without suitable motor protection
- Not connecting the internal Interroll thermal circuit breaker (if available)
- Damage to the belt from cutting and cuts from sharp objects
- Damage to the belt from improper belt tracking, overtensioning or damage from corrosive fluids
- Reversing the belt drive before the motor has come to a complete stop
- Use of the belt drive outside the specifications stated on the type plate and/or in the current Interroll catalog or quote
- Repairs, alterations or modifications to the product by anyone other than a qualified Interroll representative will render this warranty null and void unless Interroll has previously agreed to such repairs in writing.

Exceptions

The Interroll warranty excludes any liability for the following damages:

- Damages to the shell lagging or other additional materials through regular wear or incorrect use
- Costs for removal and return shipment of the product to Interroll as part of this warranty
- Damages to other systems that are used in conjunction with the product
- Loss of income, injuries or other costs in conjunction with the failure of the product

Installation declaration

in terms of the EC-Machine Directive 2006/42/EG, Annex II 1 A

The manufacturer:
INTERROLL – Joki A/S
Hammerholmen 2 - 6
2650 Hvidovre, Denmark

hereby declares with sole responsibility that the product:

- Interroll LCP Light Conveyor Platform
 - Series Straight
 - Series Transfer

is conformal to the following directives and standards:

Directives:

- Machinery Directive 2006/42/EC Appendix I
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EC

The relevant technical documents according to Appendix VII A are available and will be presented to the competent national authorities electronically, if required.

Responsible for EC documentation: INTERROLL – Joki A/S , Hammerholmen 2 - 6 , 2650 Hvidovre, Denmark

Standards:

- EN ISO 12100:2010 "Safety of machinery - General principles for design - Risk assessment and risk reduction"
- EN 619 Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of unit loads

In case of modification of the machine, not in consultation with Interroll, this declaration of conformity becomes invalid.

April 11, 2022
Hvidovre, Denmark



Andreas Traberg
(Managing Director)

