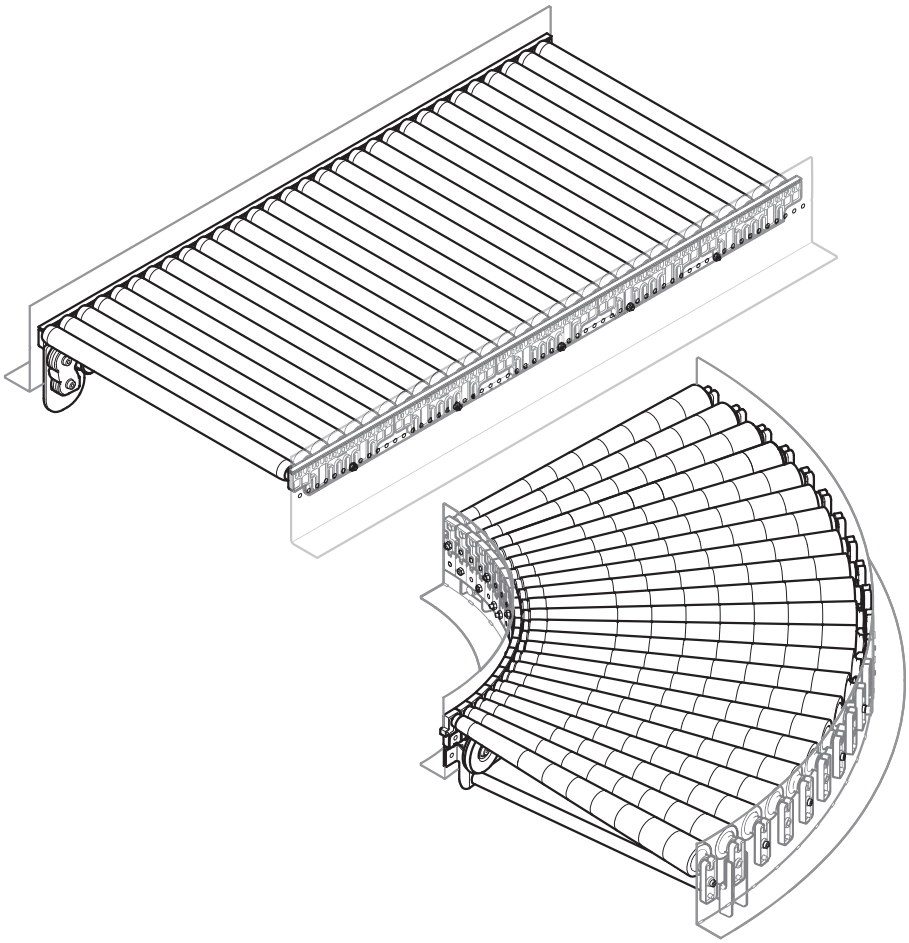
INTERROLL®

INSPIRED BY EFFICIENCY



User manual

Interroll RollerKit Light

Version 2.1 (07/2016) en
Translation of the original instructions

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Introduction

Information about how to use the manual

Contents of this operating manual

This operating manual contains important notes and information about the various operating phases of the RollerKit Light:

- Transport, assembly and start-up
- Safe operation, maintenance and troubleshooting, disposal
- Accessories

Validity of the manual

The manual describes the RollerKit Light as it is delivered by Interroll.

In addition to this manual, special contractual agreements and technical documents apply to special designs.

The manual is part of the product

- ➢ For trouble-free, safe operation and to accept any potential warranty claims, read the operating manual and follow the instructions before using the RollerKit Light.
- ➢ Keep the operating manual near the RollerKit Light.
- ➢ Pass the manual on to any subsequent operator or user of the RollerKit Light.
- ➢ Interroll does not accept any liability for faults or defects due to non-observance of this operating manual.
- ➢ If you have any questions after reading the operation manual, feel free to contact our customer service. See the last page for your local contact information.

Warning notices in this manual

The warning notices in this document refer to risks which may be encountered when using the RollerKit Light. The relevant warning notices, *see "Safety", page 6* are explained in the chapter on safety and at the beginning of each chapter.

There are three categories of warning notices. The following signal words are used in the document as required:

- Danger
- Warning
- Caution

Signal word	Meaning
Danger	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
Warning	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
Caution	Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

Structure of warning notices

⚠ DANGER

Nature and source of the hazard
Possible consequence of non-observance

➢ Information about how to avoid the hazard.

Further symbols

NOTICE

This symbol identifies possible material damage.
➢ Information about how to avoid damage.

This symbol displays safety instructions.

This symbol marks useful and important information.

➢ This symbol marks the steps that have to be carried out.

Safety

General safety instructions

The RollerKit Light has been built to comply with the state of the art. Nevertheless,users may encounter hazards during use:

- Hazard to life and limb of user and/or bystanders
- Adverse effects of the RollerKit Light and other circumstances.

Ignoring the warning notices in this manual may lead to serious injury.

- ➢ Always read the entire operating manual and safety instructions before working with the RollerKit Light and observe all of the information contained therein.
- ➢ Only trained and qualified persons are permitted to work with the RollerKit Light.
- ➢ Always keep the user manual at hand when working with the RollerKit Light so you can consult it quickly if required.
- ➢ Always comply with relevant national safety regulations.
- ➢ If you have any questions after reading the operating manual, feel free to contact our customer service. See the last page for your local contact information.

Intended use

The RollerKit Light must only be used for industrial purposes and the surrounding area. The RollerKit Light is used for setting up a conveyor unit or conveyor system in order to convey packaged goods. The maximum load is 35 kg/drive, under consideration of the permissible roller load. Any other use is considered inappropriate. Any non-manufacturer modifications that affect the safety of the product are not permitted.

The RollerKit Light must only be operated with the RollerDrive EC 310 within the specified output limits.

Unintended use

The RollerKit Light must not be used to transport persons or bulk cargo. The weight of the packaged product that is transported must not exceed 35 kg/drive.

The RollerKit Light is not designed to handle stress from impacts or shocks.

Use of the RollerKit Light for anything other than the intended purpose requires approval by Interroll.

Qualified persons

Qualified persons are those who have read and understood the manual and, taking national regulations into account, are capable of competently working with the machinery.

Only trained and qualified persons may work with the RollerKit Light, taking the following into account:

- The relevant manuals and diagrams
- The warning and safety instructions in this manual
- The system-specific regulations and requirements
- National or local regulations and requirements for safety and accident prevention

Dangers

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

Bodily injury

- ➢ Maintenance or repair work must only be performed by authorized and qualified persons in accordance with the applicable regulations.
- ➢ Before using the RollerKit Light, ensure that no unauthorized persons are near the conveyor.

Electricity

- ➢ Only perform installation and maintenance work after you have switched off the power.
- ➢ Ensure that the RollerKit Light cannot be switched on accidentally.

Rotating parts

- ➢ Keep your fingers and hair away from moving parts.
- ➢ If you have long hair, always wear a hair net.
- ➢ Never wear loose clothing.
- ➢ Never wear jewelery such as necklaces or bracelets.
- ➢ Wear safety shoes.

Working environment

- ➢ RollerKit Light Do not use in areas where there are risks of explosions.
- ➢ Remove equipment or material which is not required from the workspace.
- ➢ Ensure that the goods cannot fall or topple over.
- ➢ Adjust the conveyor speed to the goods you are moving in order to prevent the goods from flying out of the curves.
- ➢ Wear safety shoes.
- ➢ Regulate and monitor careful placement of the goods on the conveyor.

Faults during operation

- ➢ Mount roller as described in the specifications found in the operating manual.
- ➢ Regularly inspect the parts of the RollerKit Light for visible damage.
- ➢ If you see smoke, hear unusual noises or blocked and/or damaged goods, stop the RollerKit Light at once and secure it so that it cannot be started accidentally.
- ➢ Contact qualified personnel immediately to find the source of the fault.
- ➢ Do not walk on the roller track of the RollerKit Light.

Accidental start-up

- ➢ Make sure that the RollerKit Light cannot be started up accidentally, particularly during assembly, maintenance work and in the event of a fault.

Interfaces to other devices

You may encounter hazards while integrating the RollerKit Light into a complete system. These are not part of this manual and have to be analyzed during the design, installation and startup of the complete system.

- When combining the RollerKit Light with other conveyors or machinery, check for new hazards before start-up.
- Additional constructive measures may be required.

Operating modes

Normal mode Operation of the installed device at the end customer's as a conveyor in a complete system.

Special mode All operating modes required to guarantee and maintain safe and normal operation.

Special operating mode	Explanation	Comment
Transport/Storage	Loading and unloading, transport and storage	-
Assembly/Initial start-up	Installation at the customer's site and performing the test run	In a de-energized state
Cleaning	External cleaning	In a de-energized state
Maintenance/Repairs	Maintenance and inspection tasks	In a de-energized state
Troubleshooting	Troubleshooting in the event of a fault	In a de-energized state
Fault elimination	Eliminating the fault	In a de-energized state
Shut-down	Removing from the complete system	In a de-energized state
Disposal	Disposal of RollerKit Light and packaging	-

Product information: Curve

Product description

The RollerKit Light is a universal conveyor system with flexible kits for curves and straight lines. The kits can be installed by the operator into a conveyor unit or conveyor system. Designed specifically for small or light packaged goods, these curves can be used to convey goods having a maximum weight of 35 kg/m.

Degree measure

The curves are available in the following angles:

- 30°
- 45°
- 60°
- 90°

Conveyor Rollers

The inside radius of a curve is constant; the outer radius depends on the length of the conveyor rollers. The conveyor rollers are available in six different lengths, *see "Roller width dimensions (order size)", page 11*.

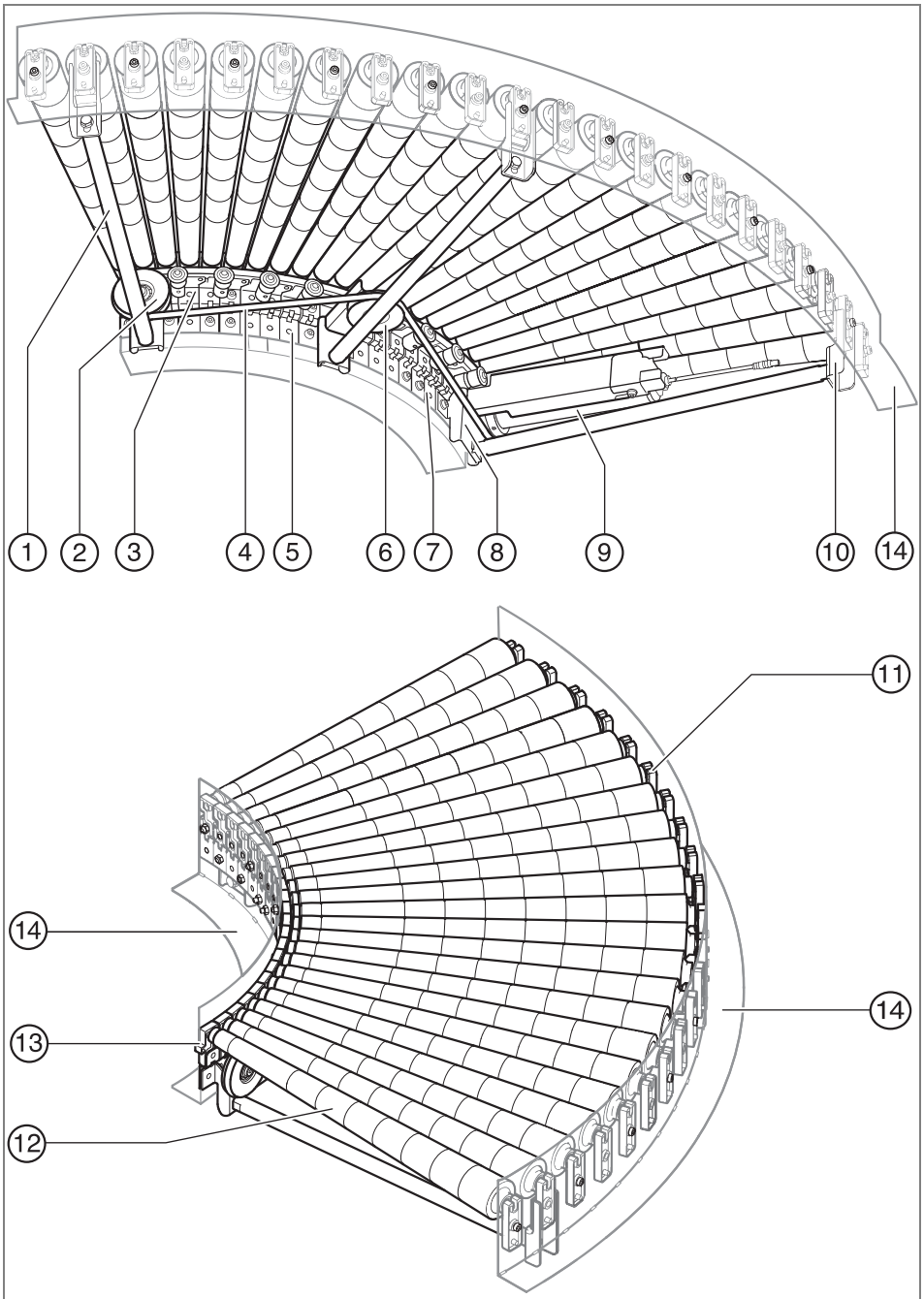
Motor and motor control

The InterrollRollerDrive EC310 is the drive of the RollerKit Light. The RollerDrive can be controlled using the InterrollDriveControl 20, Drive Control 54 and ConvoyerControl controllers. The actual controller used in the specific case depends on the particular application.

The relevant information on the functions of the controllers can be found in the corresponding operating manuals or by going to www.interroll.com.

The Interroll DriveControl 20, DriveControl 54 and ConvoyerControl motor controls are not included in the scope of delivery and are referred to in the following as the Interroll Controller.

Components



① Crossbar
② Diverter, outer
③ Support plate, diverter
④ Round belt
⑤ Support plate, center
⑥ Diverter, center
⑦ Support plate, motor side
⑧ Motor station
⑨ RollerDrive
⑩ Crossbar bracket
⑪ Bearing block, outer
⑫ Conveyor roller
⑬ Bearing block, inner
⑭ Profile (at site)

Scope of delivery

The scope of delivery of the curve contains the following components:

- Motor station with RollerDrive EC310 and deflection roller
- 2 or 3 crossbars with crossbar brackets, depending on model
- 2 or 3 support plates with support and guide rollers, depending on model
- Bearing blocks, inner
- Bearing blocks, outer
- 2 deflection rollers
- Conical conveyor rollers
- Round belt
- RollerDrive EC310 operating manual
- Operating manuals

Technical data

Maximum permitted weight	35 kg / drive
Speed	0.1 bis 0.8 m/s
Maximum noise level (without container)	55 dB(A) [1]
Conveyor Rollers	Interroll Series 1700 KXO
Ambient temperature in operation	0 °C bis 40 °C (32 °F bis 104 °F)
Ambient temperature during transport and storage	-30 °C bis +75 °C (-22 °F bis +167 °C)
Air humidity	5 to 85 %

[1] Value can vary according to installation conditions, profile shapes and the resonance behavior of the system.

The technical data of the RollerDrive and Interroll Controller is listed in the appropriate operating manual.

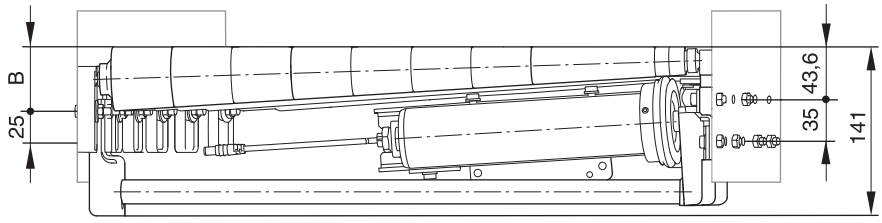
Roller width dimensions (order size)

The following lists all dimensions in millimeters (mm).

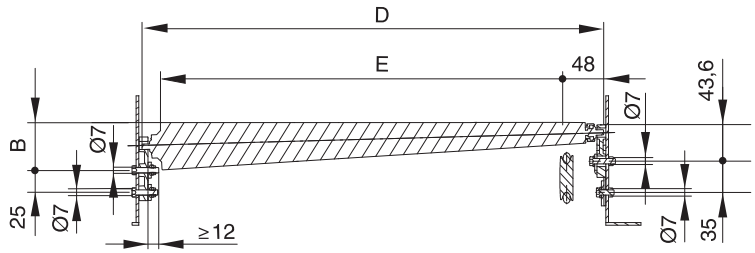
Table of dimensions

Order size	**300**	**350**	**400**	**450**	**500**	**550**	**600**
Variable							
A	326	376	426	476	526	576	626
B	47.3	48.9	50.5	52.1	53.7	55.3	56.9
C	678	728	778	828	878	928	978
D	320	370	420	470	520	570	620
E	250	300	350	400	450	500	550

Dimensions of conveyor rollers



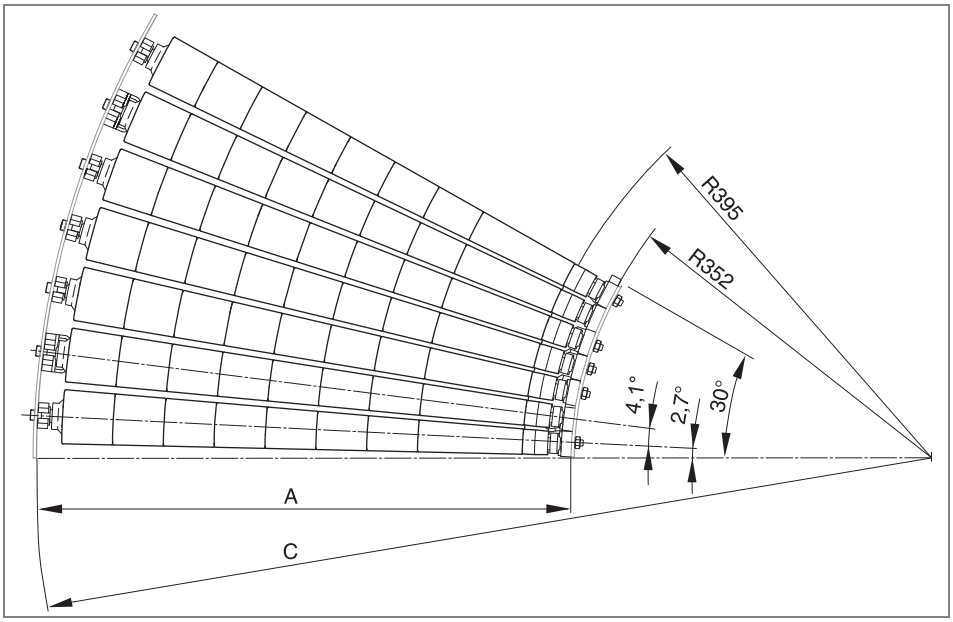
Side view with RollerDrive



Sectional view

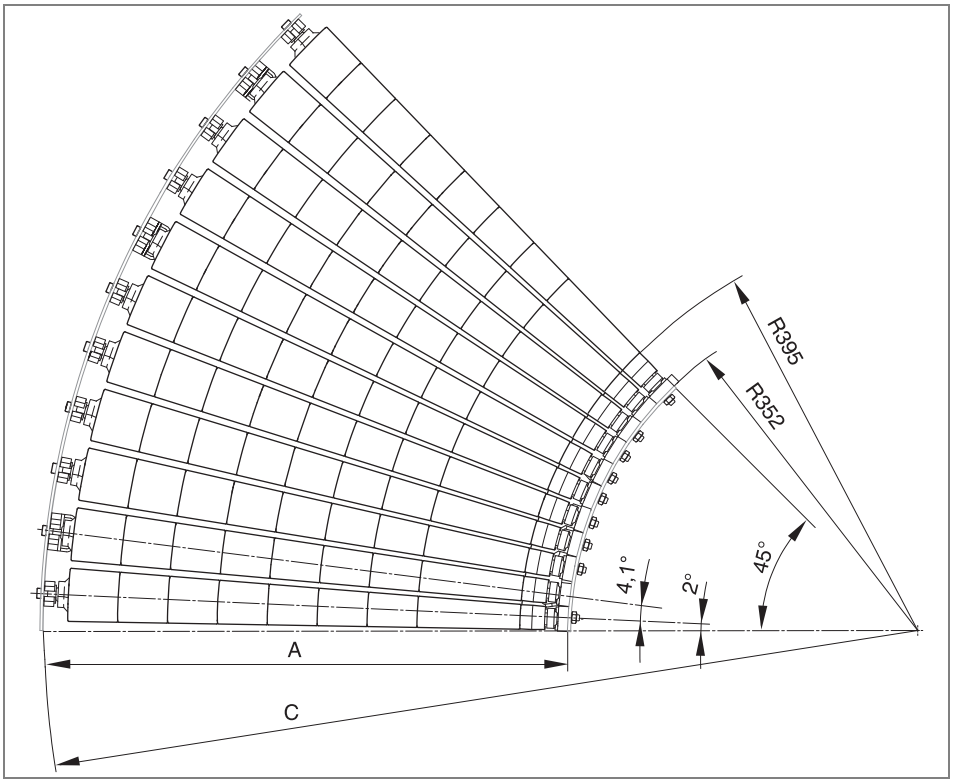
Dimensions 30° curve

Order size	300	350	400	450	500	550	600
Variable							
A	326	376	426	476	526	576	626
C	678	728	778	828	878	928	978



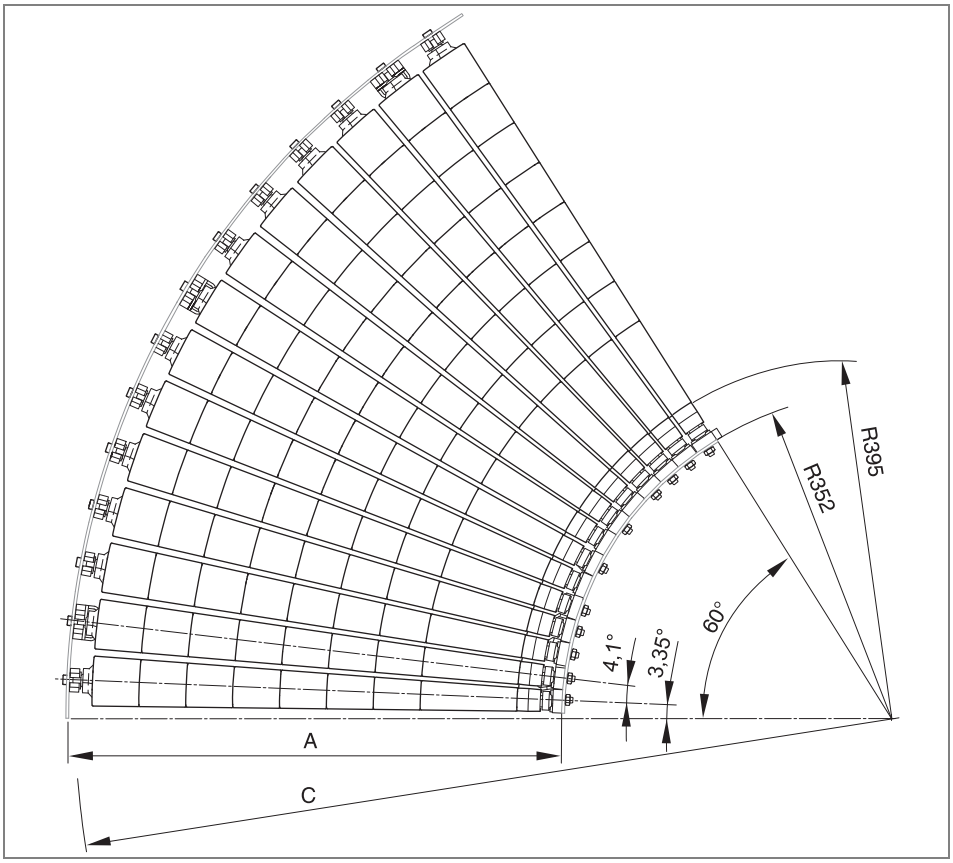
Dimensions 45° curve

Order size	300	350	400	450	500	550	600
Variable							
A	326	376	426	476	526	576	626
C	678	728	778	828	878	928	978



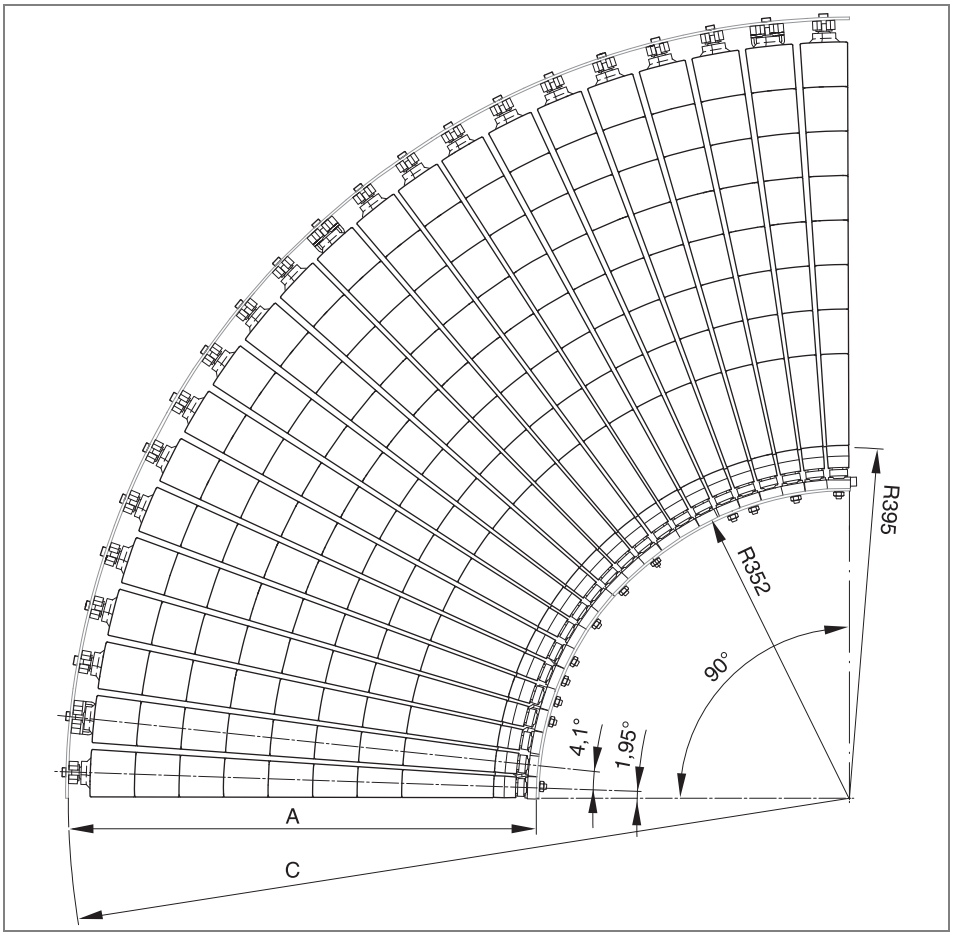
Dimensions 60° curve

Order size	300	350	400	450	500	550	600
Variable							
A	326	376	426	476	526	576	626
C	678	728	778	828	878	928	978



Dimensions 90° curve

Order size	300	350	400	450	500	550	600
Variable							
A	326	376	426	476	526	576	626
C	678	728	778	828	878	928	978



The dimensions of the RollerDrive and Interroll Controller are listed in the appropriate operating manual.

Sizes of holes in outer sheet*

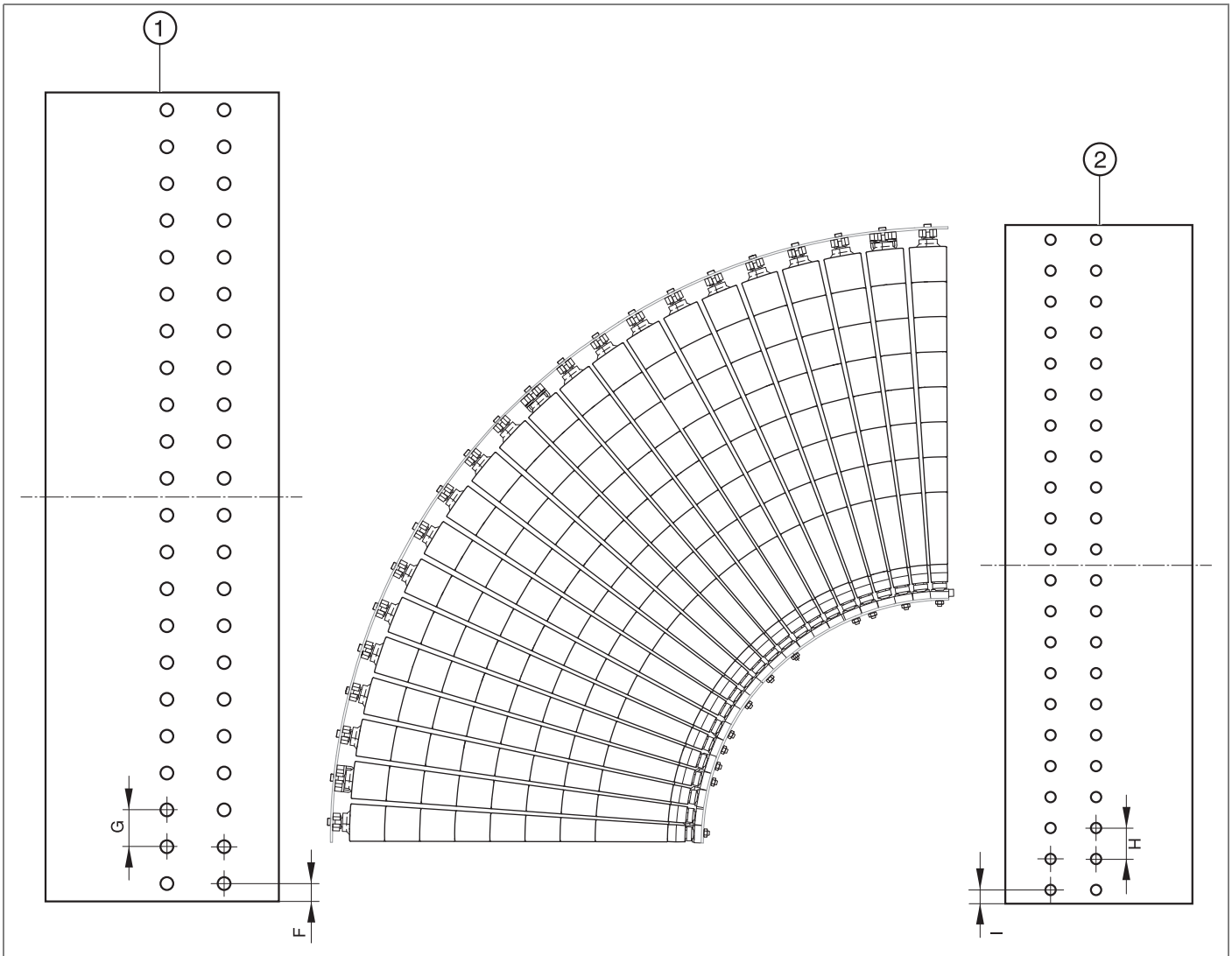
Rated size	Spacing G	Dimension F 30°	Dimension F 45°	Dimension F 60°	Dimension F 90°
300	48.8	32.0	23.7	39.7	23.1
350	52.2	34.4	25.5	42.6	24.8
400	55.8	36.7	27.2	45.6	26.5
450	59.3	39.1	28.9	48.5	28.2
500	62.9	41.4	30.7	51.4	29.9
550	66.5	43.8	32.4	54.3	31.6
600	70.1	46.1	34.2	57.2	33.3

Sizes of holes in inner sheet*

Rated size	Spacing H	Dimension l 30°	Dimension l 45°	Dimension l 60°	Dimension l 90°
300	25.1	16.5	12.2	20.5	11.9
350	25.1	16.5	12.2	20.5	11.9
400	25.1	16.5	12.2	20.5	11.9
450	25.1	16.5	12.2	20.5	11.9
500	25.1	16.5	12.2	20.5	11.9
550	25.1	16.5	12.2	20.5	11.9
600	25.1	16.5	12.2	20.5	11.9

* The dimensions are based on a profile thickness of 3 mm.

Winding of inner and outer sheet



① Winding outer sheet
② Winding inner sheet

Order size and permissible speed

Only speeds between 0.1 and 0.8 m/s are permitted for the RollerKit Light curve! The DriveControl settings and permissible speeds (**in bold**) depending on the order sizes are listed in the table.

Setting on the DriveControl (m/s)	equivalent to average speed in the curve (m/s)	300	350	400	450	500	550	600
0.98	=>	1.58	1.66	1.74	1.82	1.89	1.97	2.05
0.92	=>	1.48	1.56	1.63	1.70	1.78	1.85	1.92
0.85	=>	1.37	1.44	1.51	1.57	1.64	1.71	1.78
0.78	=>	1.26	1.32	1.38	1.45	1.51	1.57	1.63
0.72	=>	1.16	1.22	1.28	1.33	1.39	1.45	1.51
0.65	=>	1.05	1.10	1.15	1.20	1.26	1.31	1.36
0.58	=>	0.94	0.98	1.03	1.07	1.12	1.17	1.21
0.52	=>	0.84	0.88	0.92	0.96	1.00	1.05	1.09
0.45	=>	**0.73**	**0.76**	**0.80**	0.83	0.87	0.91	0.94
0.38	=>	**0.60**	**0.63**	**0.66**	**0.69**	**0.71**	**0.74**	**0.77**
0.32	=>	**0.52**	**0.54**	**0.57**	**0.59**	**0.62**	**0.64**	**0.67**
0.25	=>	**0.40**	**0.42**	**0.44**	**0.46**	**0.48**	**0.50**	**0.52**
0.18	=>	**0.29**	**0.30**	**0.32**	**0.33**	**0.35**	**0.36**	**0.38**
0.12	=>	**0.19**	**0.20**	**0.21**	**0.22**	**0.23**	**0.24**	**0.25**
0.05	=>	**0.08**	**0.08**	**0.09**	**0.09**	**0.10**	**0.10**	**0.10**

Assembling the curve

The following section describes the assembly of a 90° curve using the RollerKit Light as an example. The number of support plates, crossbar, bearing blocks and conveyor rollers depends on the degree of the curve. The profile of the conveyor is provided by the operator.

Warning information for assembly

⚠ CAUTION

Risk of injury due to improper assembly

- ➢ Assembly should only be carried out by qualified personnel taking account of the safety information.

⚠ CAUTION

Rotating parts
Risk of crushed fingers

- ➢ Do not place fingers in between the rollers and the round belts.
- ➢ Install a protective device (such as a guard plate) to prevent fingers from getting trapped in the round belt.
- ➢ Install an appropriate warning on the conveyor.

NOTICE

Risk of damage leading to failure or shortened service life of the RollerKit Light

- ➢ Do not drop or mishandle the parts of the RollerKit Light in order to avoid internal damage.
- ➢ Check the RollerKit Light for visible damage before assembly.
- ➢ Observe the information concerning the assembly of the RollerDrive and the DriveControl.

For information on assembly of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

Warning information relating to the electrical installation

NOTICE

Hazard of damage to motor and motor controller

- ➢ Observe the safety information found in the operating manuals of the RollerDrive and DriveControl.

For information on the electrical installation of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

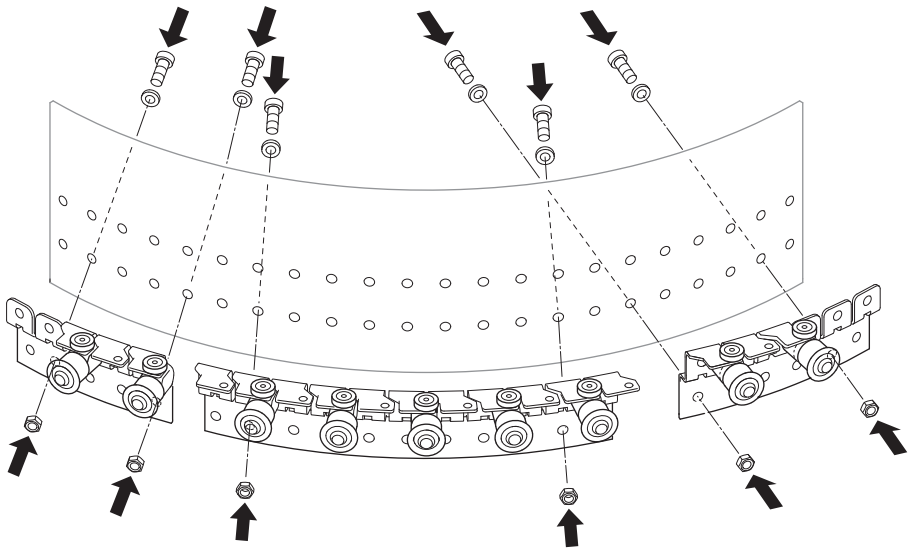
Installing the curve on the inside

The required screw sizes are at least M6x16 on the bottom and M6x25 on top. The length depends on the thickness of the selected profile.

Mounting the support plates

The support and guide rollers are pre-mounted to the support plates. The support plates are first attached loosely to the internal profile because the bearing blocks must be inserted later.

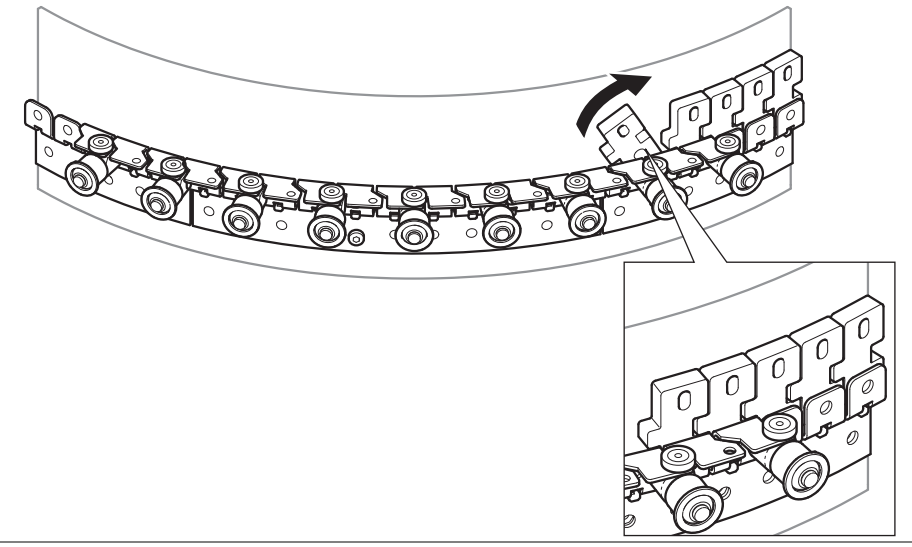
- Loosely screw the support plate of the motor station to the inner side of the internal profile of the curve.
- Loosely screw the center support plate to the internal side of the curve.
- Loosely screw the support plate to the internal side of the internal profile of the curve.



Support plates and internal profile

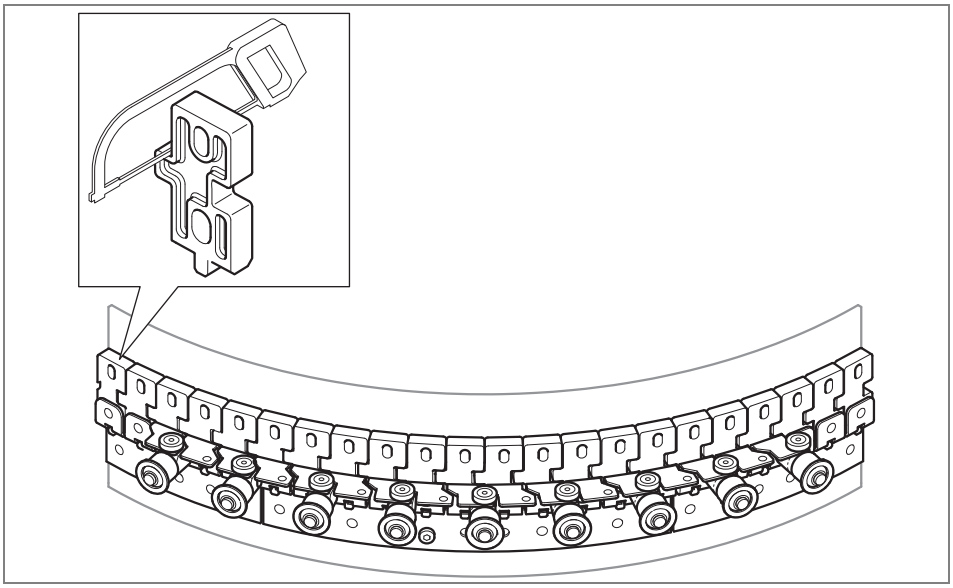
Installing the bearing blocks on the inside

- Insert bearing blocks one by one between the support plates and the internal profile of the curve.



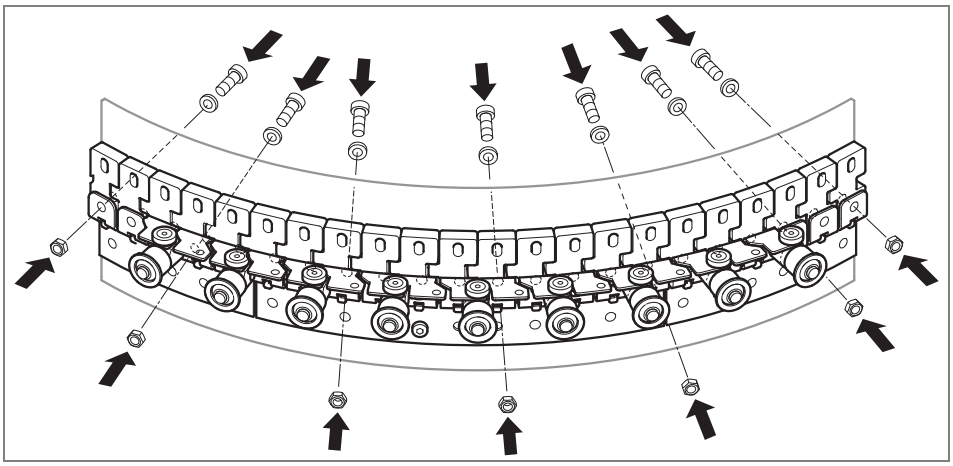
Assembling the curve

➢ Saw off the nose of the last bearing block and insert into the internal profile of the curve.



Attaching inner support plates

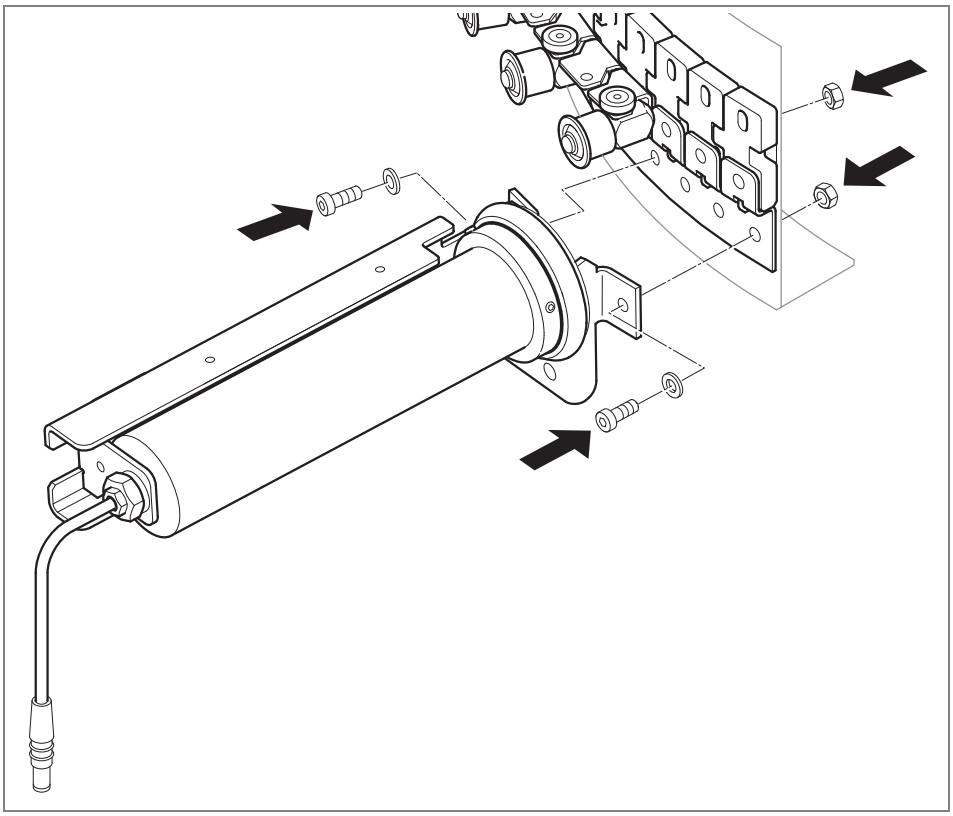
➢ Attach support plates with remaining screws on top.



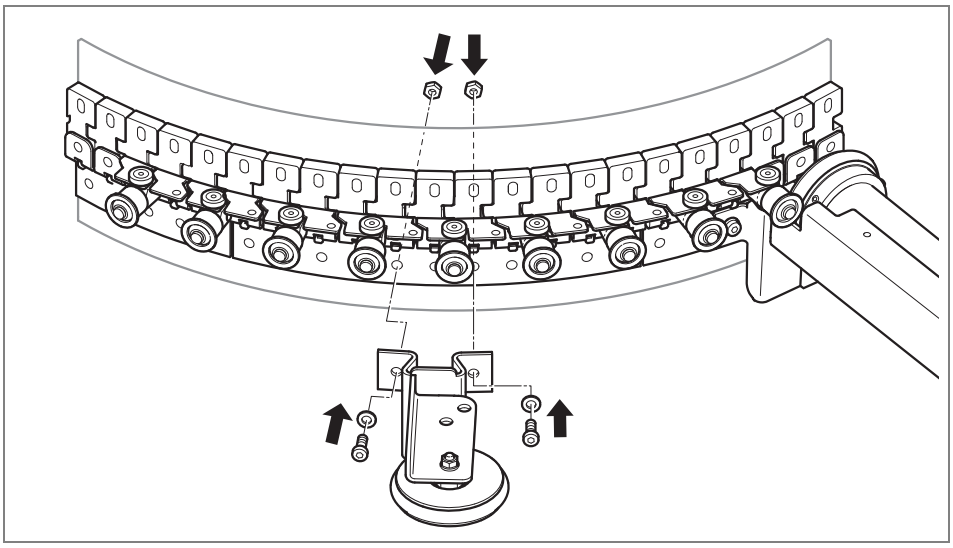
➢ Tighten all screws.

Assembling the motor station and diverters

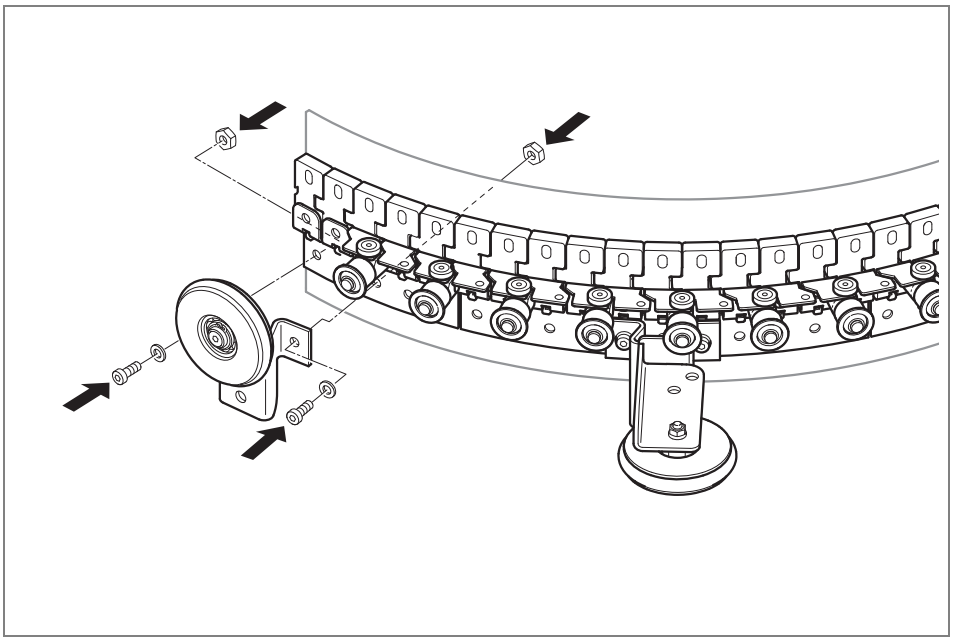
➢ Screw the motor station to the support plate on the motor side and the inner profile of the curve.



➢ Screw center diverter to the support plate and the inner profile of the curve. To assemble the center diverter for other curve radii, refer to *see "Assembling center diverter for 60°, 45° and 30° curve", page 22*.



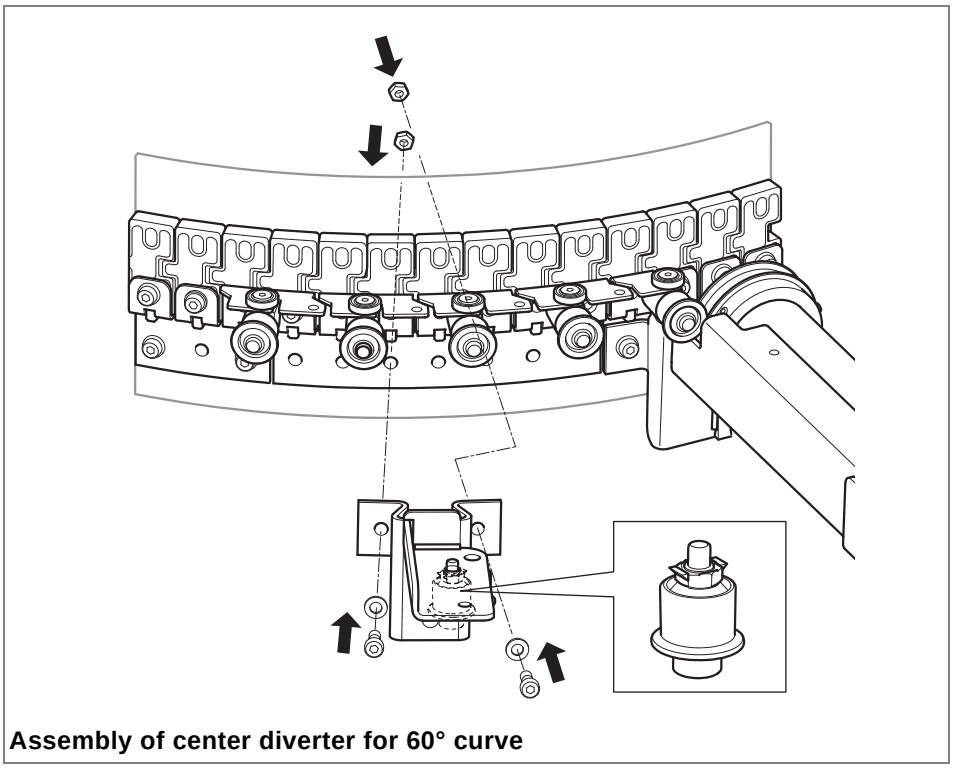
➢ Screw outer diverter to the support plate and the inner profile of the curve.



Assembling center diverter for 60°, 45° and 30° curve

The following section describes the assembly of the diverter for other curve radii.

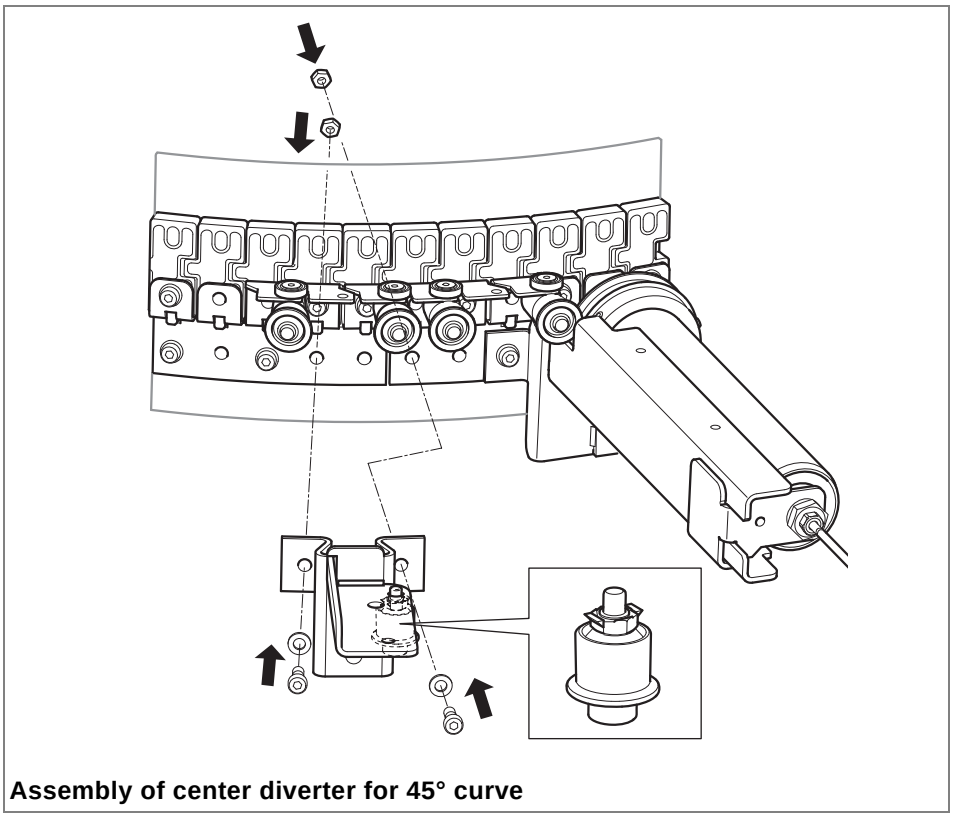
➢ Screw center diverter to the support plate and the inner profile of the curve.



Assembly of center diverter for 60° curve

➢ Screw center diverter to the support plate and the inner profile of the curve.

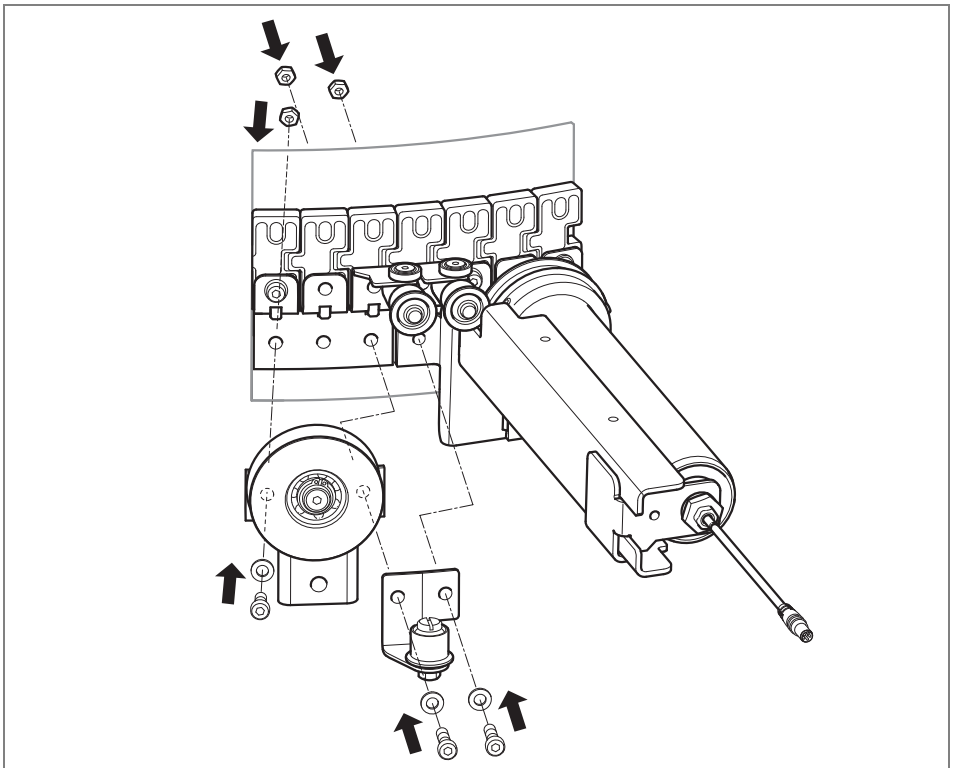
Assembling the curve



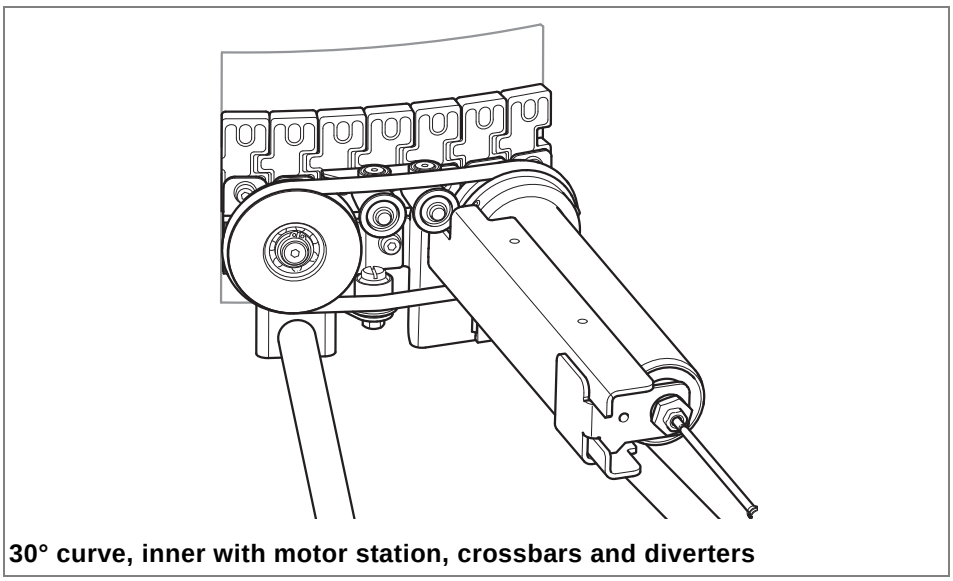
Assembly of center diverter for 45° curve

➢ Attach bracket for crossbar with a screw on the left side.
Screw diverter to the support plate and the inner profile of the curve.
Attach the right side of the bracket at the same time.

Assembling the curve



Assembly of center diverter for 30° curve

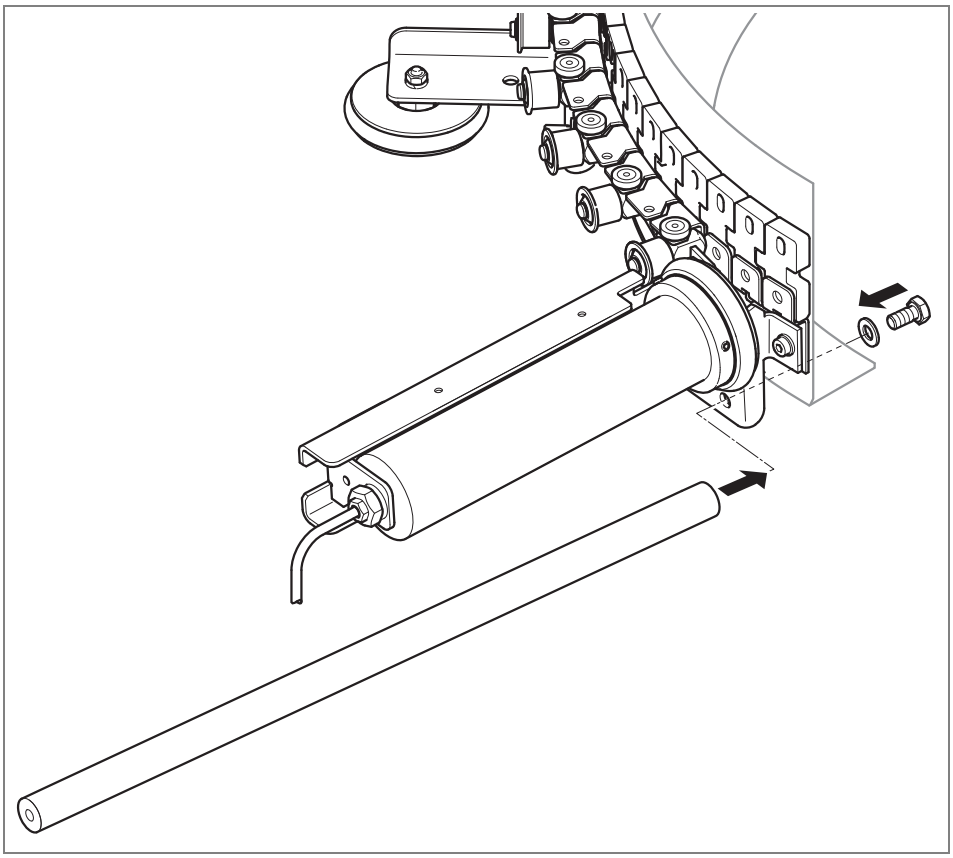


30° curve, inner with motor station, crossbars and diverters

Installing the inner crossbars

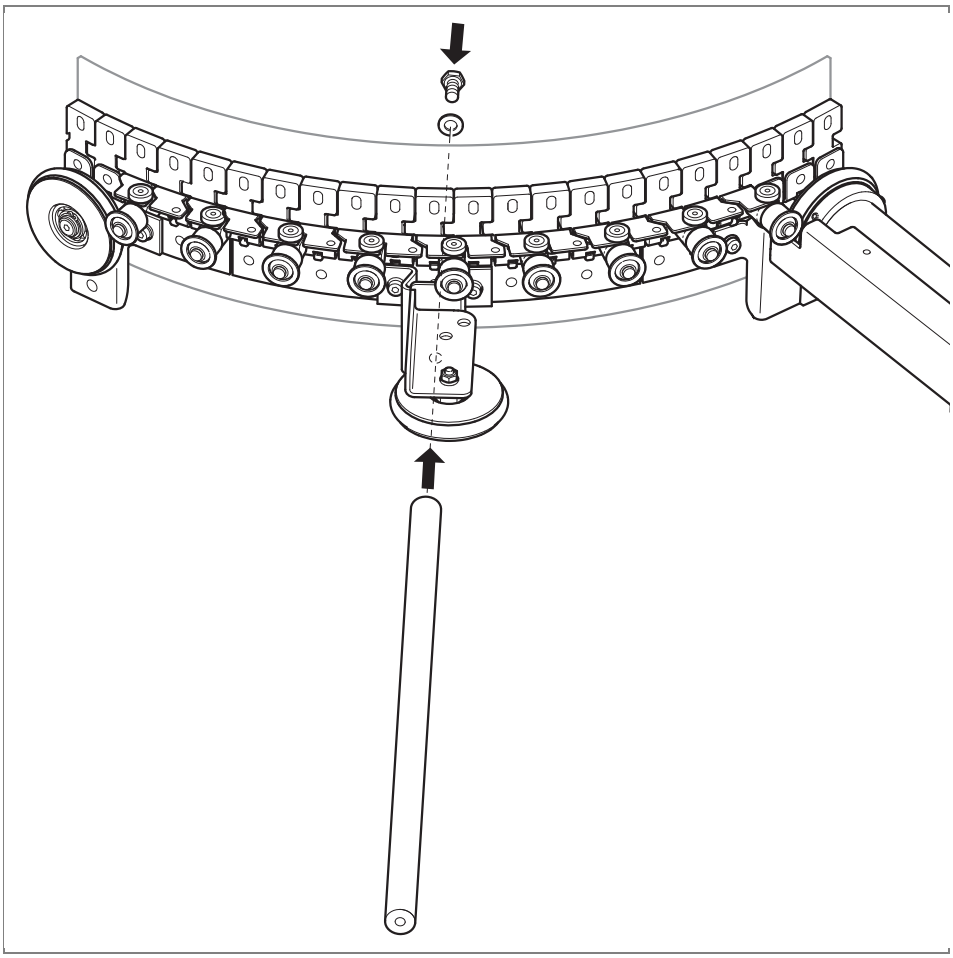
➢ Screw first crossbar to the lower bracket of the motor station.

Assembling the curve



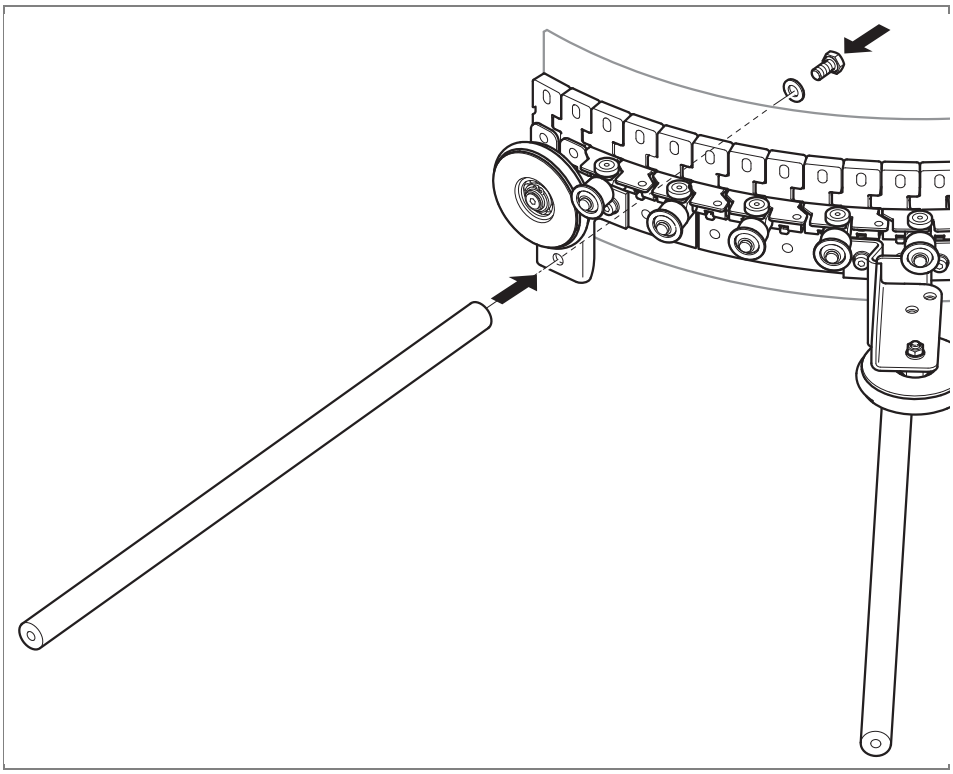
➢ Screw the second crossbar to the lower bracket of the center diverter.

Assembling the curve



➢ Screw third crossbar to the lower bracket of the outer diverter.

Assembling the curve



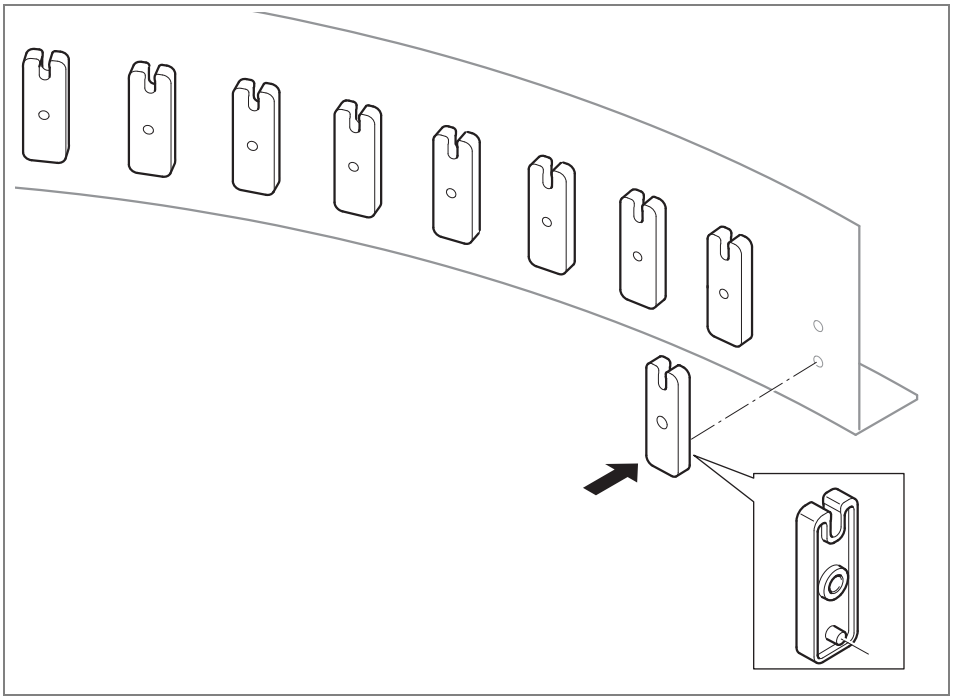
For the 30° curve, the second crossbar is mounted during this step. A third crossbar is not required.

Installing the outer curve

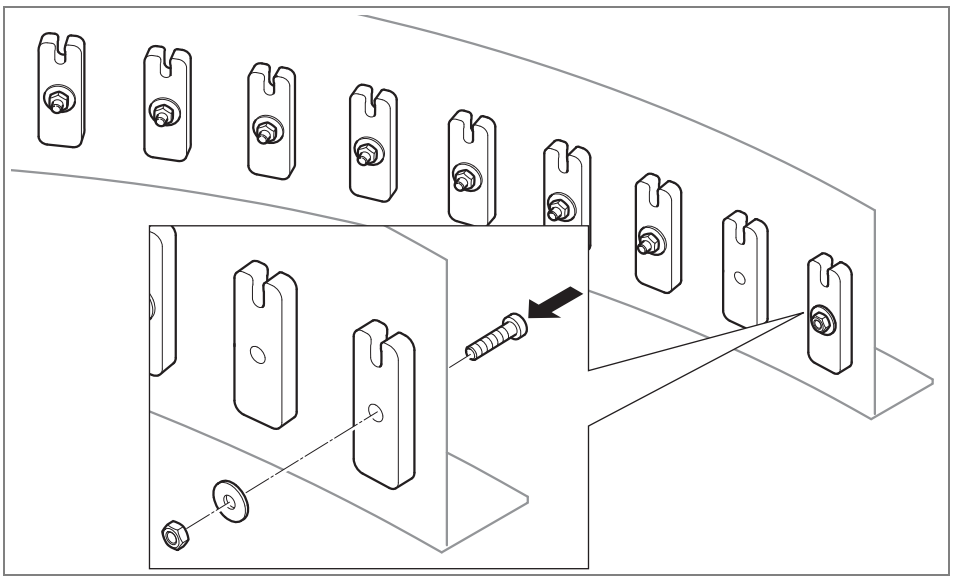
The required screw size is at least M6x25. The length depends on the thickness of the selected profile.

Installing the outer bearing blocks

➢ Place each bearing block with the nose on the outer profile of the curve.



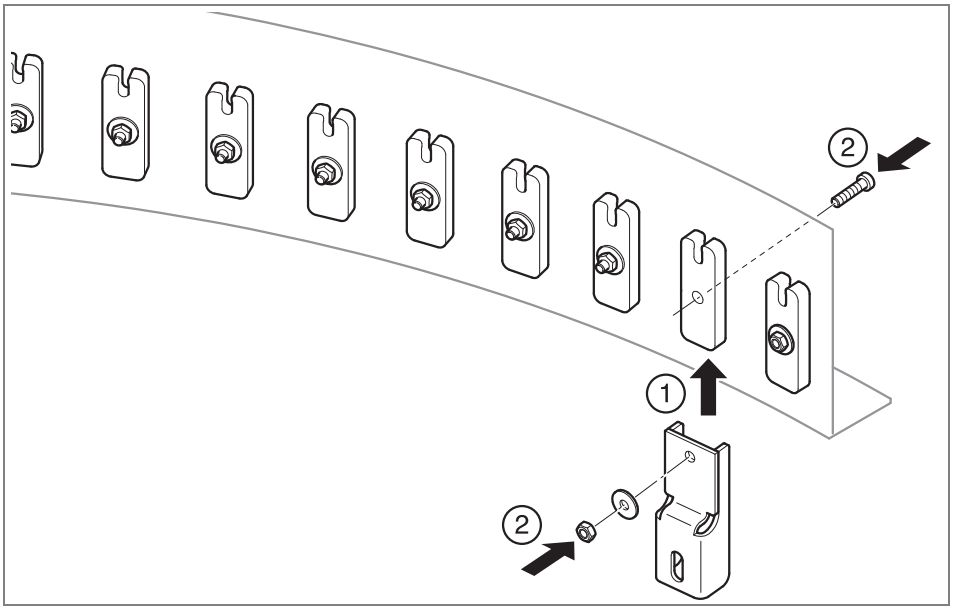
➢ Screw bearing blocks to the outer profile of the curve.



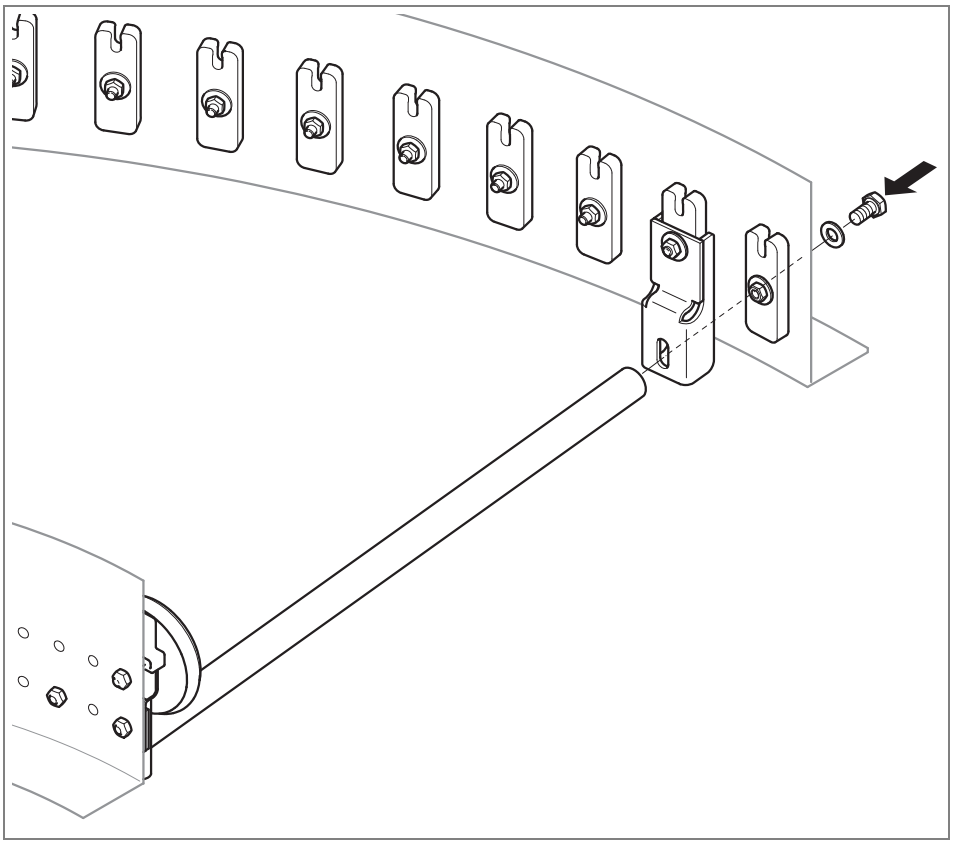
Every other bearing block from the outside is screwed together with the crossbar brackets to the outer profile of the curve.

Installing the outer crossbars

➢ Push the crossbar bracket on the end of the curve from below onto a bearing block ① and screw it together with the bearing block onto the outer profile of the curve ② .

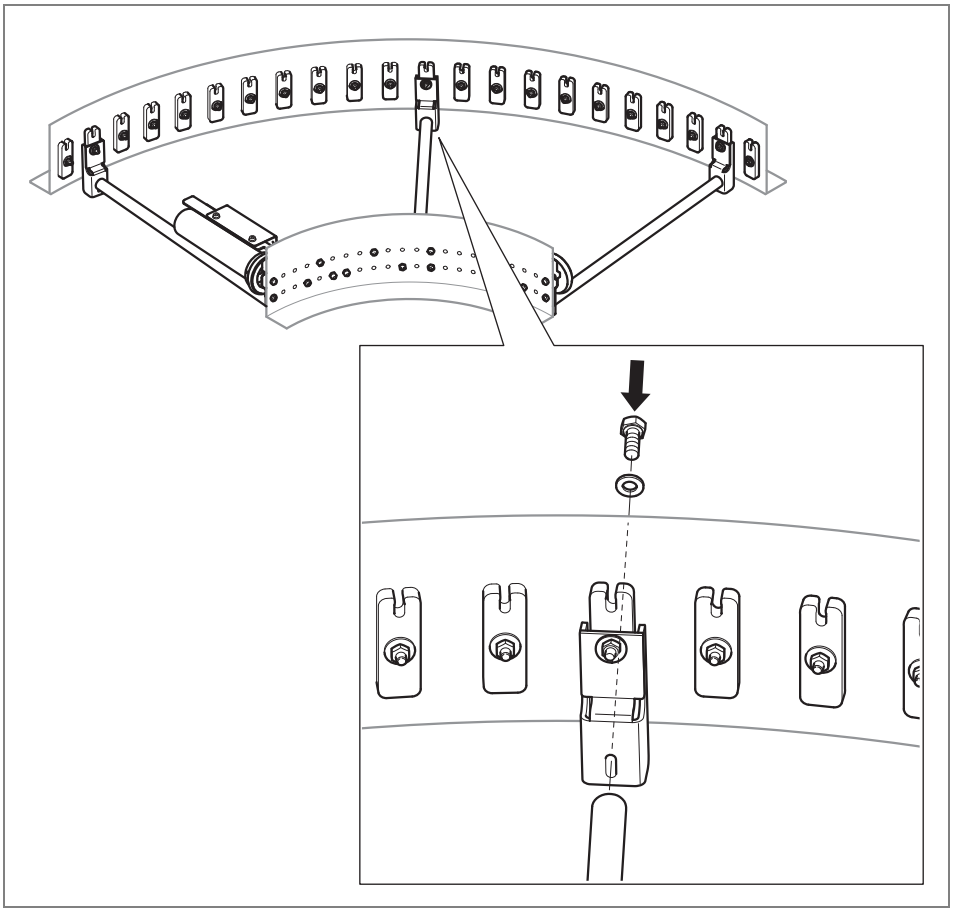


➢ Screw crossbar with a M8x16 screw and A8.4 washer onto the crossbar bracket.



Assembling the curve

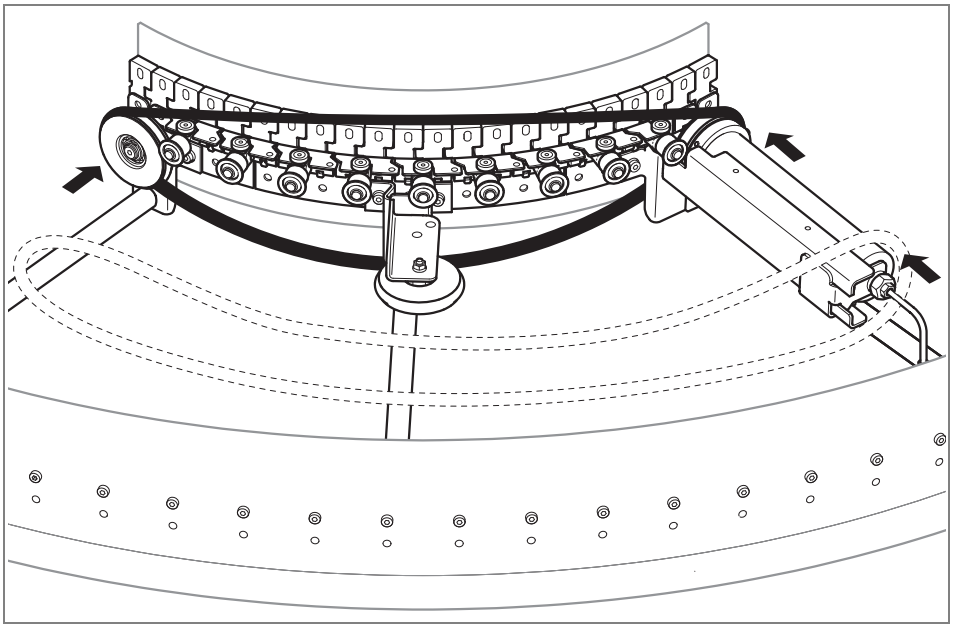
➢ Repeat steps 1 and 2 to attach the center crossbar to the outer profile of the curve as shown in the picture.



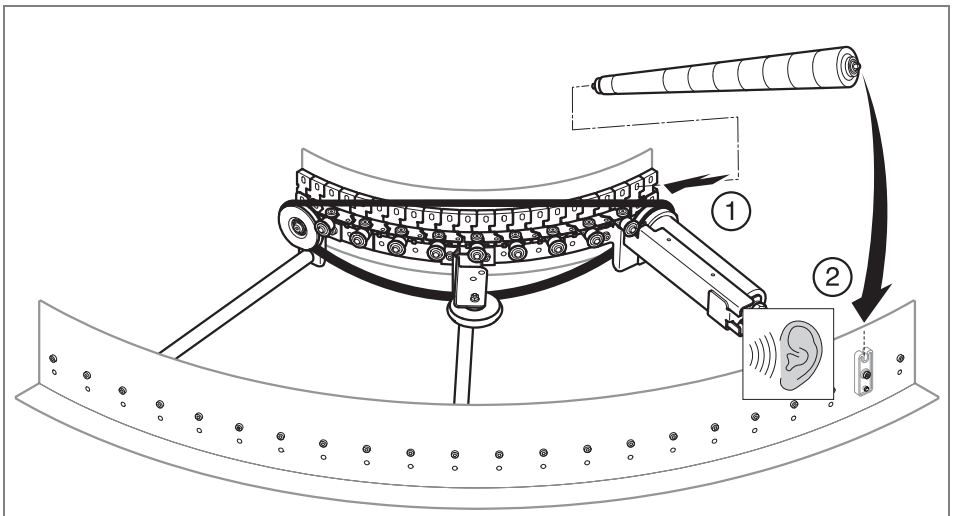
➢ Repeat steps 1 and 2 to attach the a crossbar at the beginning to the outer profile of the curve as shown in the picture.

Installing round belt and conveyor rollers

➢ Slip the round belt under the RollerDrive and loosely around the roller of the RollerDrive, on the outside of the diverter and resting on the supporting roller.



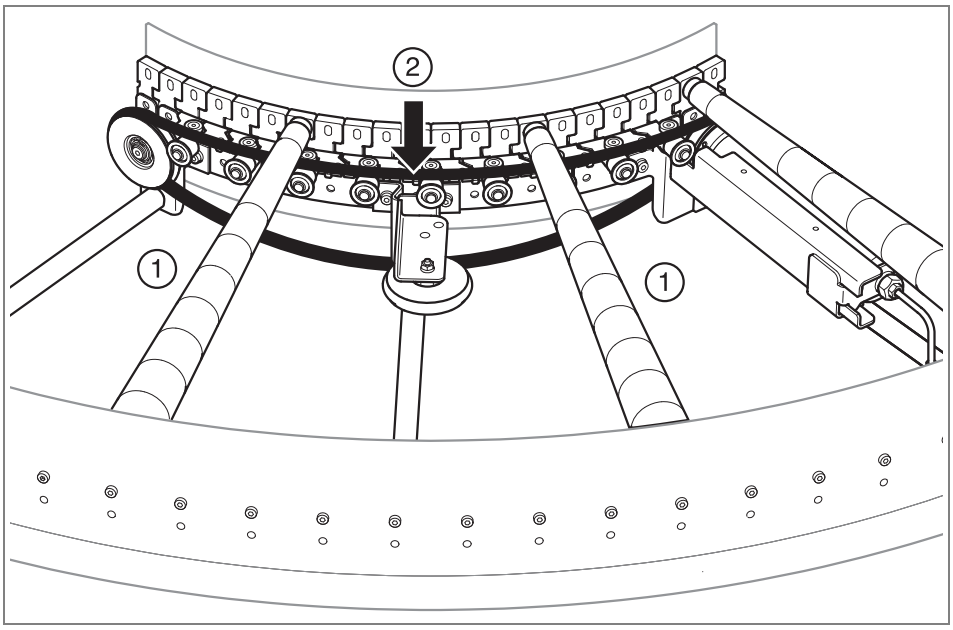
➢ Position one conveyor roller on the inner side into the bearing blocks ① , insert into the bearing blocks on the outer side of the curve by gently applying pressure so that you hear the conveyor roller snap in. ② .



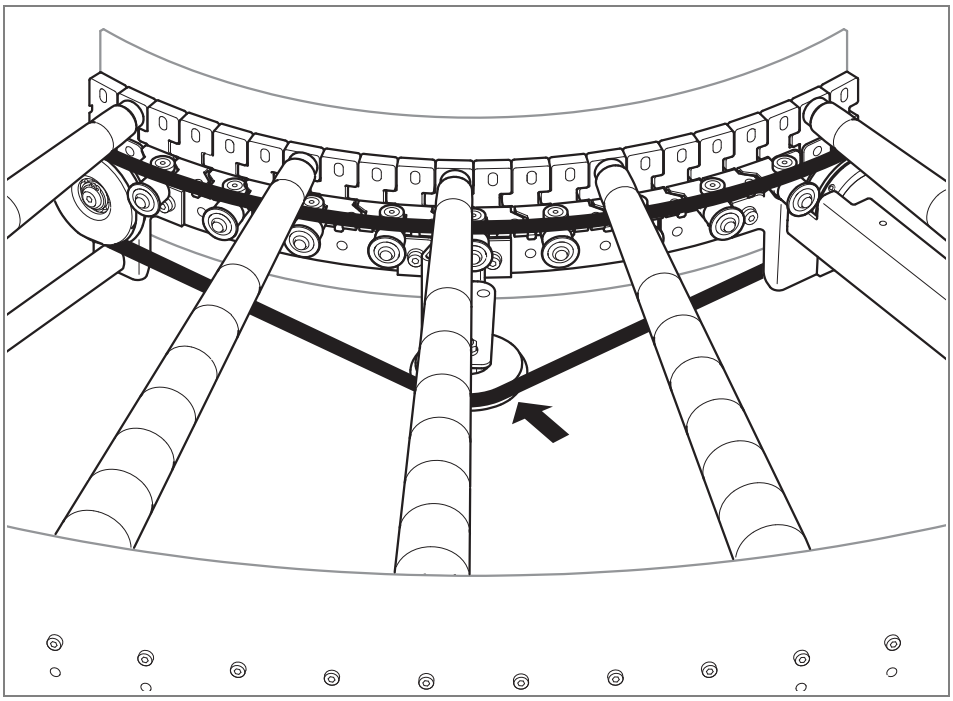
Installing inner and outer conveyor rollers

➢ Insert the remaining conveyor rollers ① and press the round belt downward ② and onto the supporting rollers.

Assembling the curve



➢ Tension the round belt over the diverter in the center.

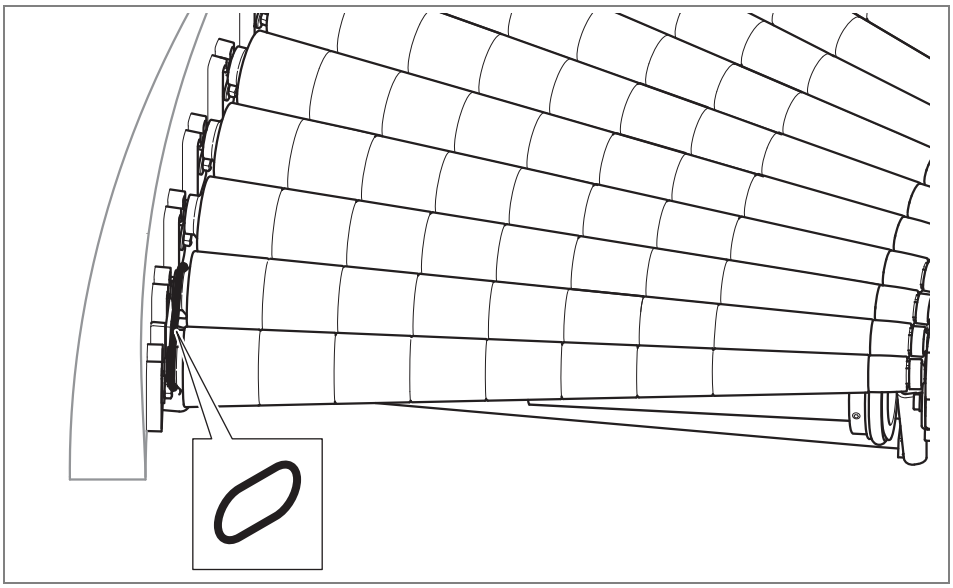


➢ Install other conveyor rollers.

Round belt option

The two outer rollers of the curve do not rest on the round belt and are therefore not driven. Each of these two rollers can also be driven using an additional small round belt. This additional round belt is not included in the scope of delivery, however.

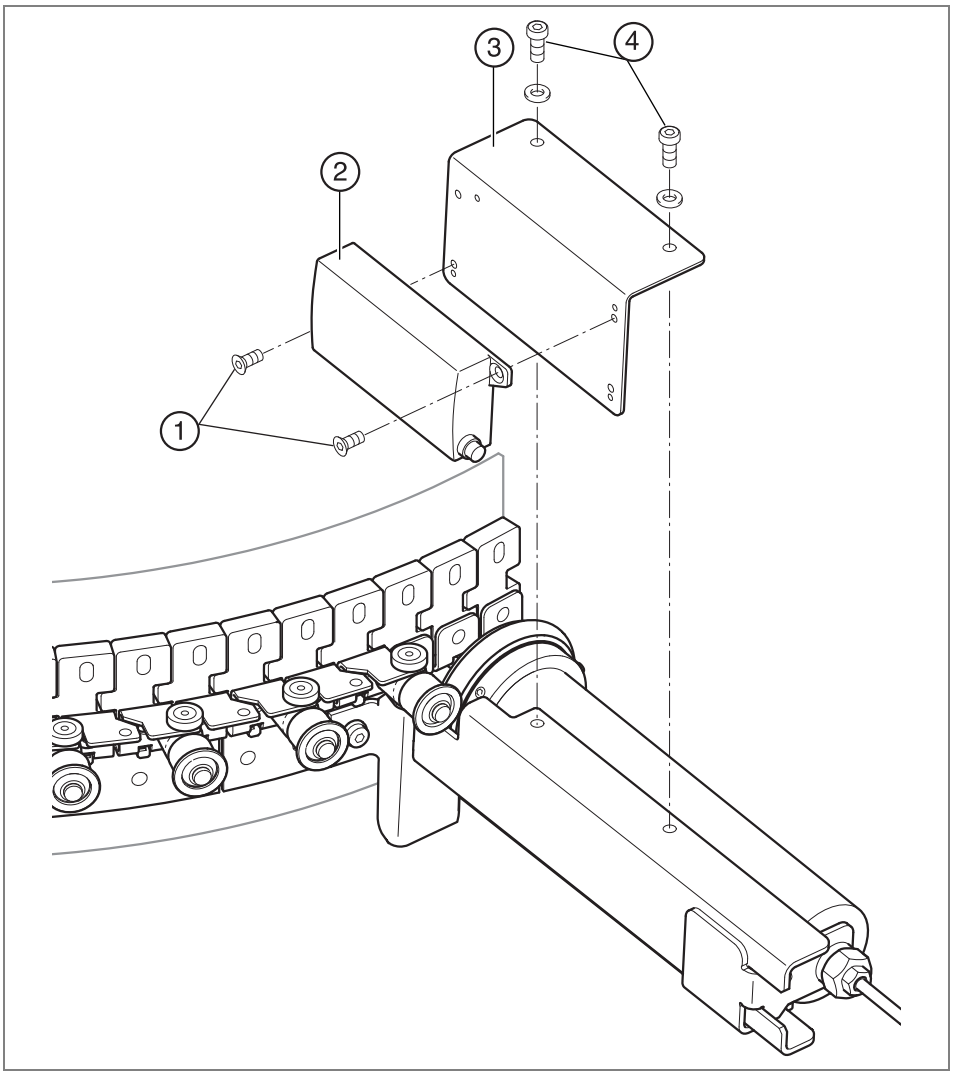
The diameter of the round belt should be 4 mm and the circumferential length 207 mm.



Assembling the DriveControl curve

TheDriveControl 20 or DriveControl 54 motor controls are not included in the scope of delivery.

- Attach the fastening plate ③ to the motor station using two hexagon socket screws ④ and two washers A8.4 provided.
- Screw the DriveControl DC 20 ② controller with two countersunk screws provided ① or the DriveControl DC 54 controller with the two hexagon socket screws provided to the fastening plate ③.



Product information Straight line

Product description

The straight lines of the RollerKit Light can be used to convey goods with a maximum weight of 35 kg/drive (under consideration of the permissibleroller load).

Lengths

Straight lines are available in seven lengths that can be custom shortened, *see "Dimensions", page 38*:

- 630 mm
- 840 mm
- 1050 mm
- 1260 mm
- 1470 mm
- 1680 mm
- 1890 mm

Conveyor Rollers

The conveyor rollers have a diameter of 30 mm. The lengths of the conveyor rollers determine the width of the roller track. The lengths can be custom selected in increments of 1 mm.

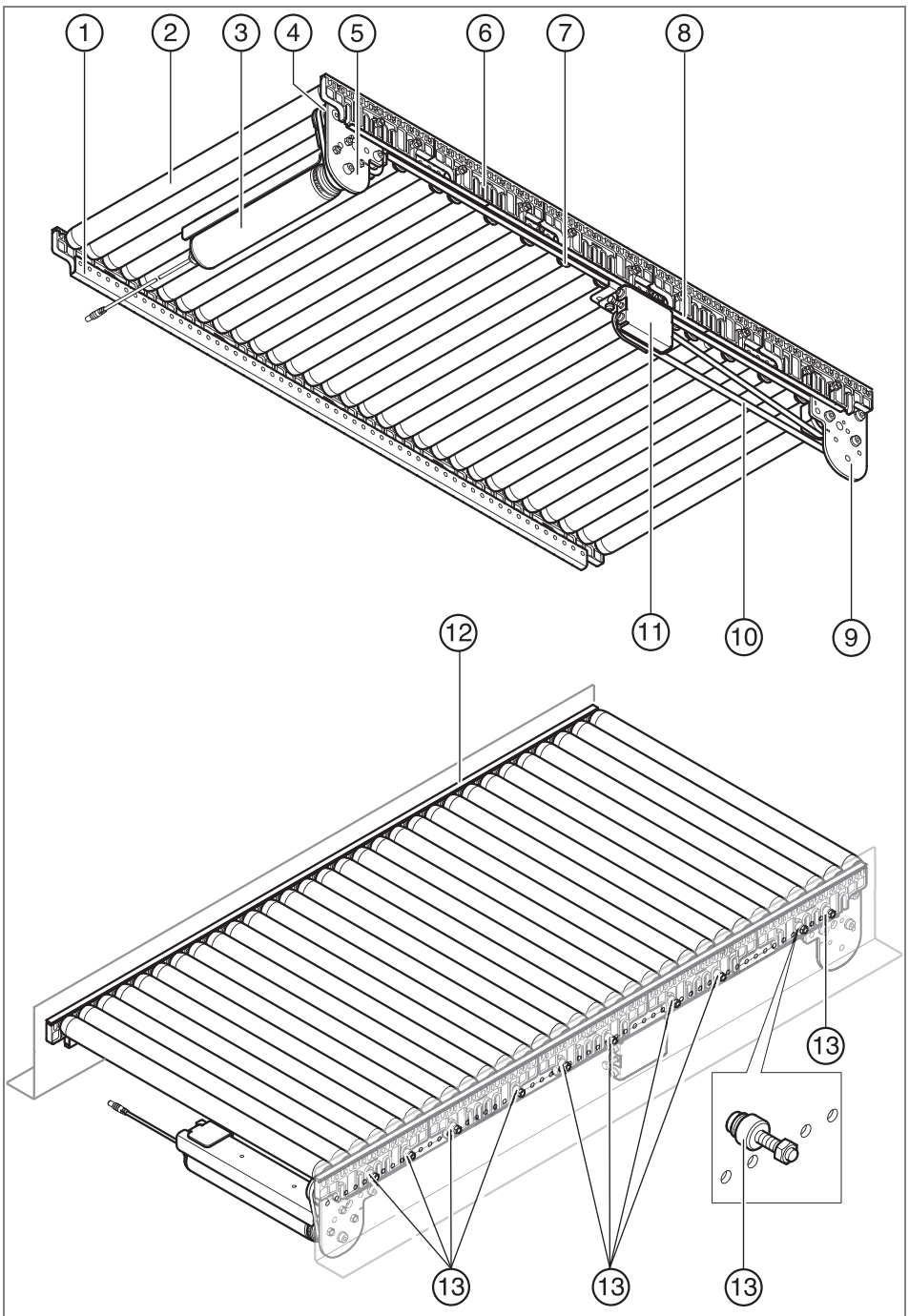
Motor and motor control

The InterrollRollerDrive EC310 is the drive of the RollerKit Light. The RollerDrive can be controlled using the Interroll DriveControl 20, Drive Control 54 and ConvoyerControl controllers. The actual controller used in the specific case depends on the particular application.

The relevant information on the functions of the controllers can be found in the corresponding operating manuals or by going to www.interroll.com.

The Interroll DriveControl 20, DriveControl 54 and ConvoyerControl motor controls are not included in the scope of delivery and are referred to in the following as the Interroll Controller.

Components



① Retaining plate, non-drive side
② Conveyor roller
③ RollerDrive
④ Diverter roller
⑤ Motor station
⑥ Universal comb
⑦ Supporting roller
⑧ Retainer plate, drive side
⑨ Diverter station
⑩ PolyVee Belt
⑪ Tensioning station
⑫ Cover rails
⑬ Spacer piece

Scope of delivery

The scope of delivery of the straight lines contains the following components:

- Motor station
- Diverter station
- Tensioning station
- Conveyor Rollers
- Supporting roller(s), depending on version
- Spacer piece
- Universal combs
- Cover rails
- Retainer plates, drive side
- Retainer plates, non-drive side
- PolyVee belt
- RollerDrive EC310 operating manual
- Operating manuals

Technical data

Maximum permitted weight	35 kg / drive, under consideration of the permissible roller load
Speed	0.1 bis 0.8 m/s
Maximum noise level (without container)	55 dB(A) [1]
Diameter of conveyor rollers	30 mm
Conveyor Rollers	Interroll Series 1700 light
Ambient temperature in operation	0 °C bis 40 °C (32 °F bis 104 °F)
Ambient temperature during transport and storage	-30 °C bis +75 °C (-22 °F bis +167 °C)
Air humidity	5 to 85 %

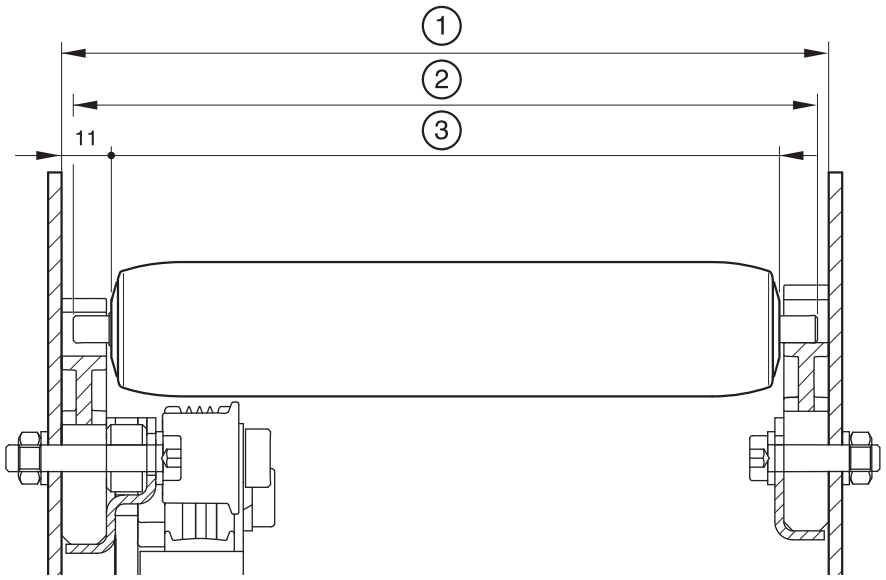
1) Value can vary according to installation conditions, profile shapes and the resonance behavior of the system.

The technical data of the RollerDrive and Interroll Controller is listed in the appropriate operating manual.

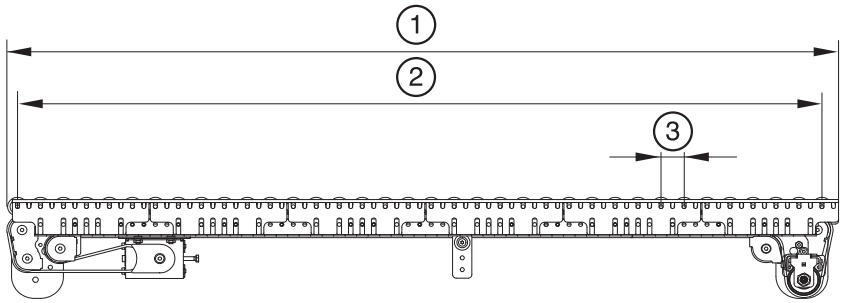
Dimensions

The following lists all dimensions in millimeters (mm).

Installation conditions of the straight line



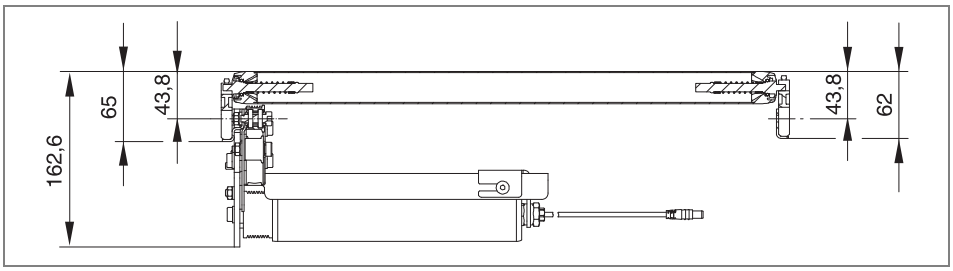
① Bearing distance (BD): BD = IL+22
② Total axle length
③ Installation length (IL)



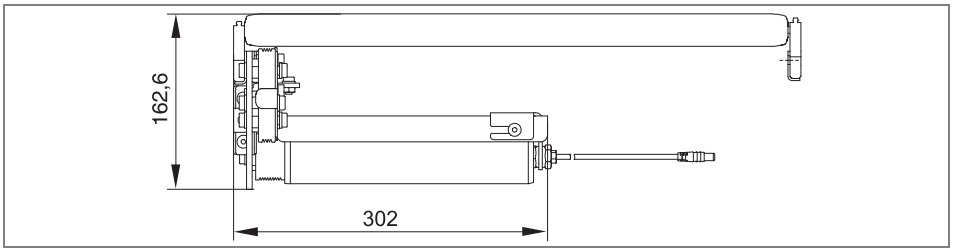
① Conveyor length
② Distance first/last conveyor roller
③ Conveyor roller segmenting = 35.0 mm

Conveyor roller segmenting				35			
PolyVee belt	Belt length	Number of conveyor rollers		Axle distance first/last conveyor roller		Conveyor length	
		from	to	from	to	from	to
PJ4500	4500	34	57	1155	1855	1190	1895
PJ3154	3154	24	38	805	1295	840	1330
PJ2210	2210	18	25	595	840	630	875
PJ1752	1752	14	18	455	595	490	630

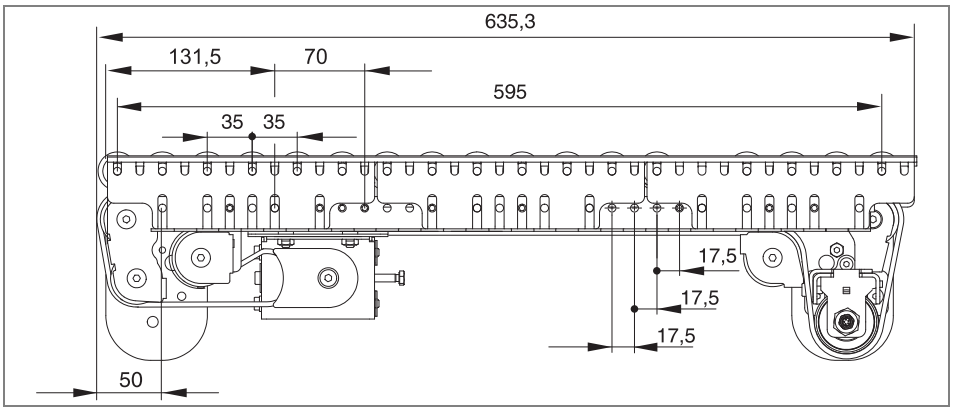
Dimensions of conveyor rollers

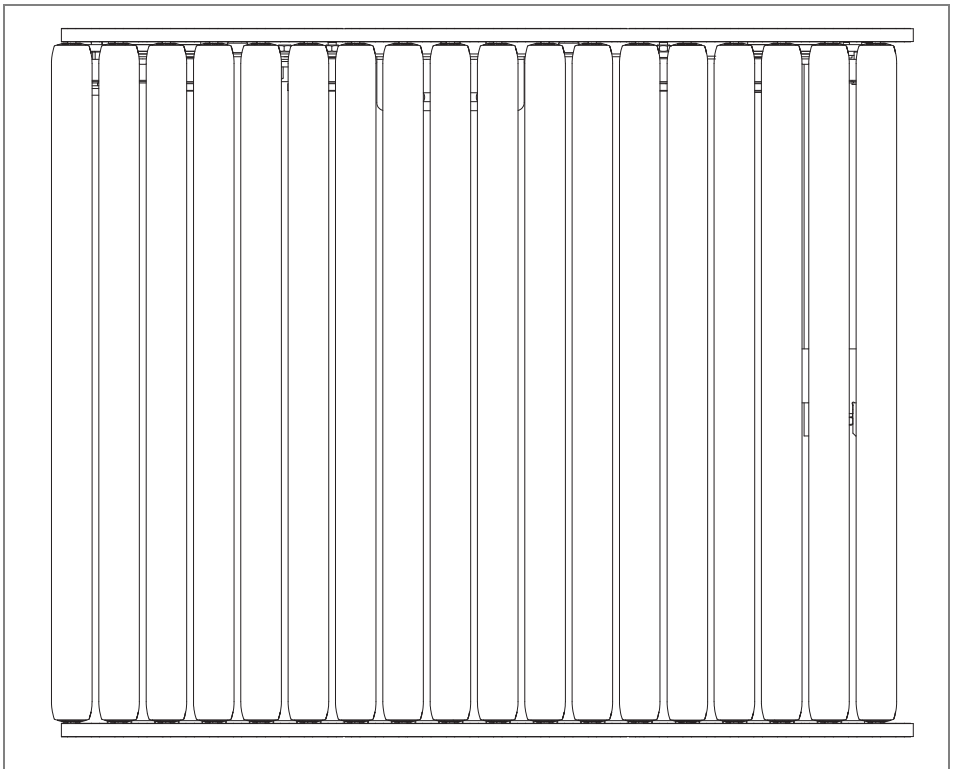


RollerDrive dimensions



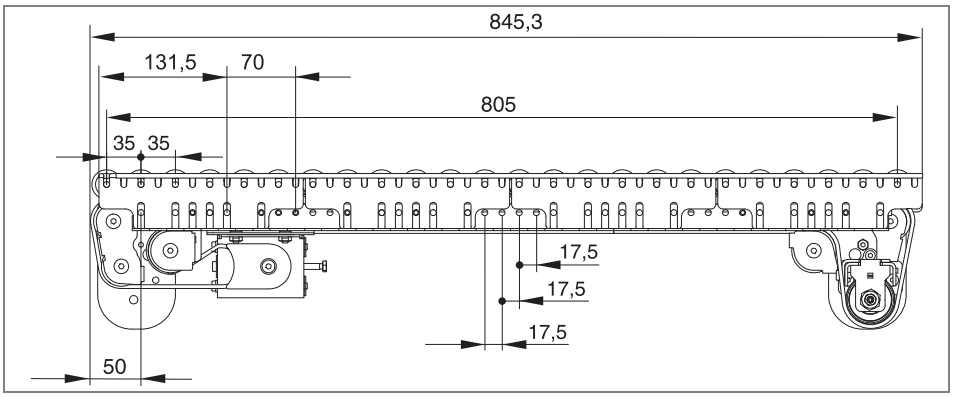
Dimensions straight line 630 mm

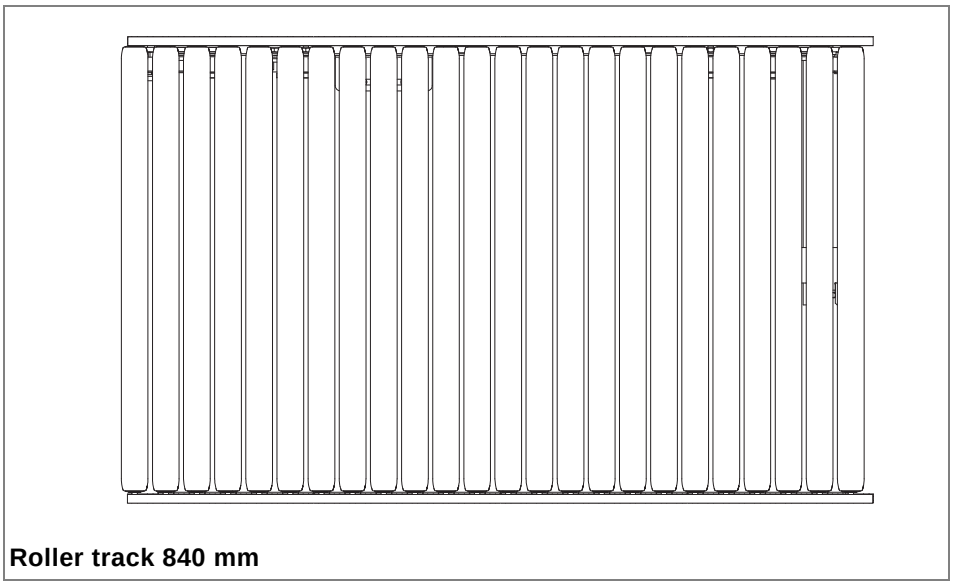




Roller track 630 mm

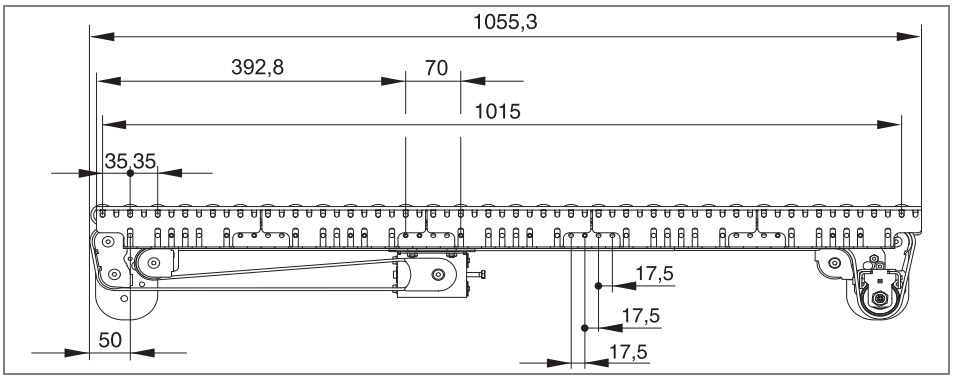
Dimensions straight line 840 mm

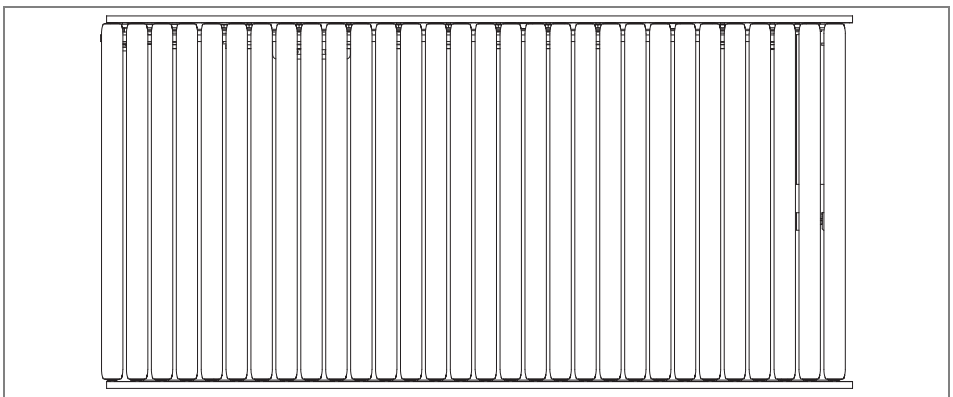




Roller track 840 mm

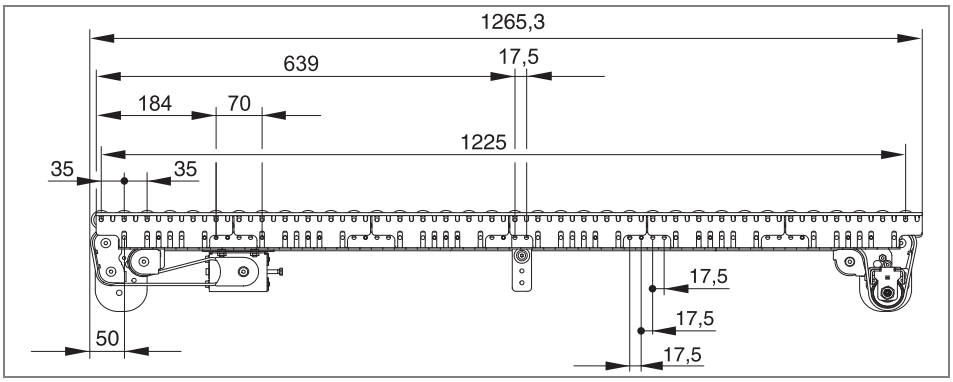
Dimensions straight line 1050 mm

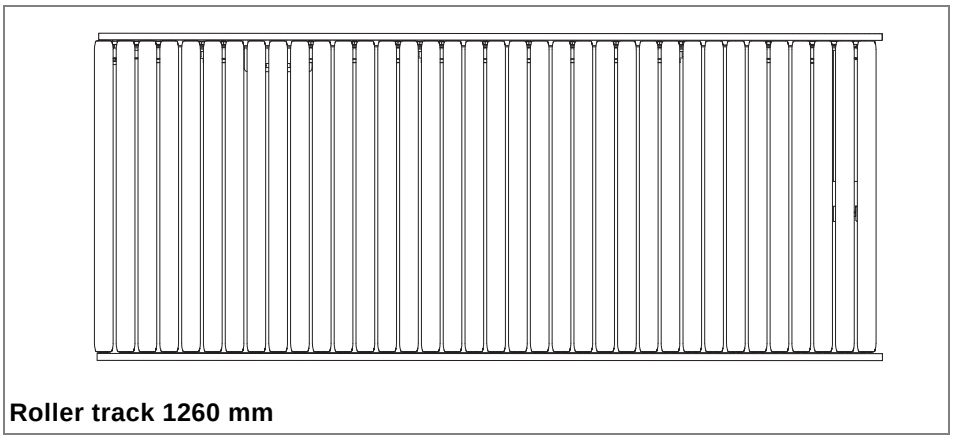




Roller track 1050 mm

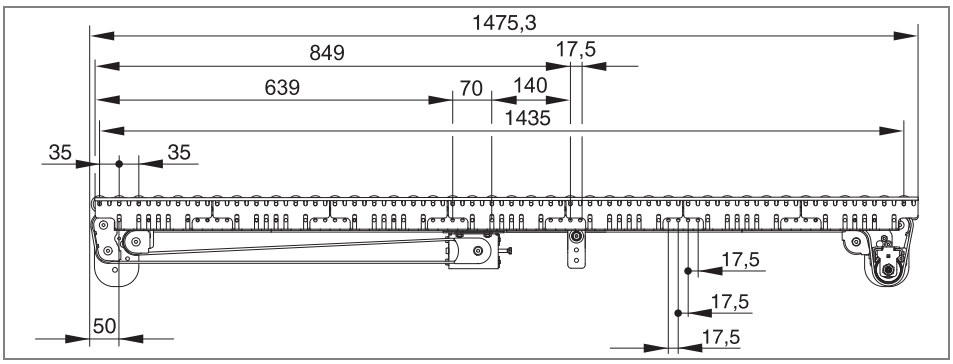
Dimensions straight line 1260 mm

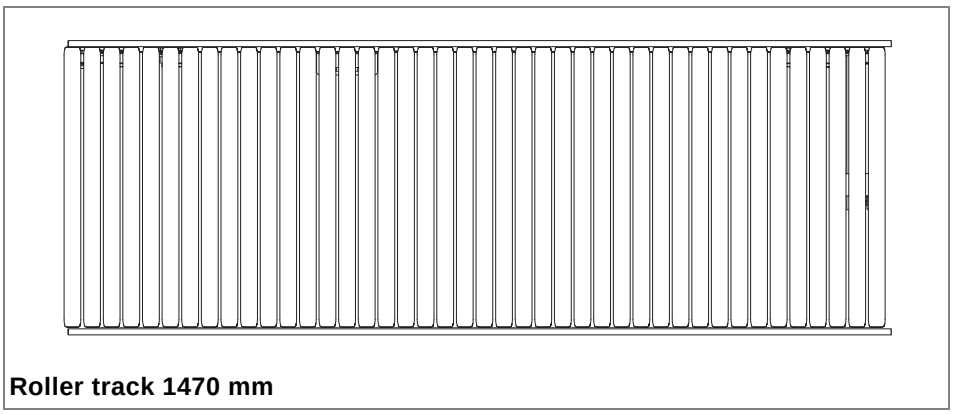




Roller track 1260 mm

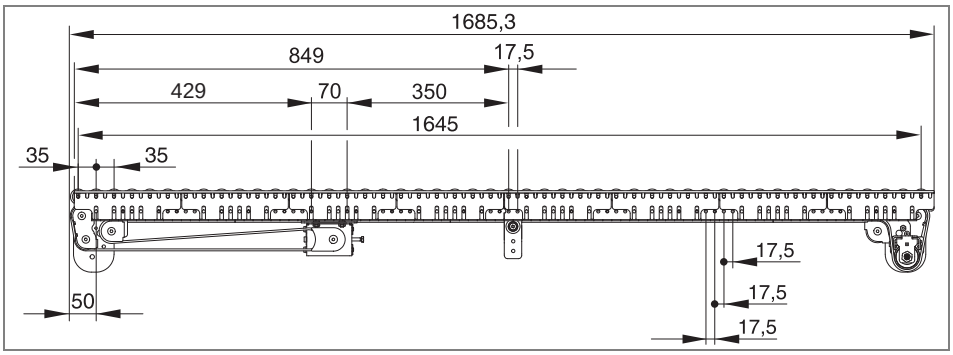
Dimensions straight line 1470 mm

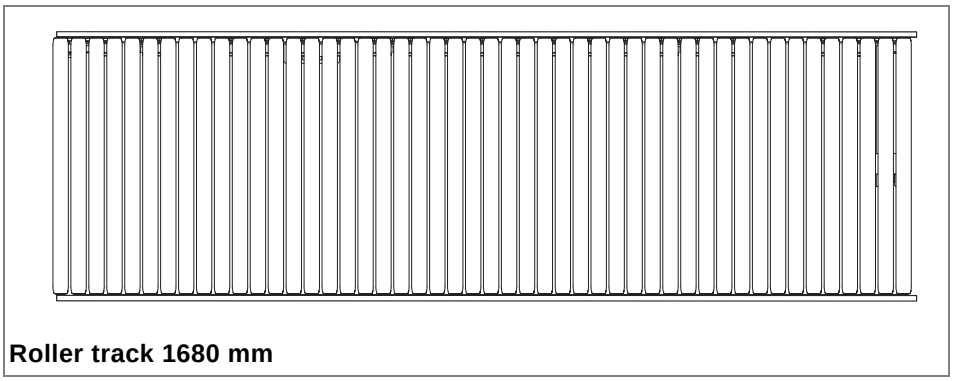




Roller track 1470 mm

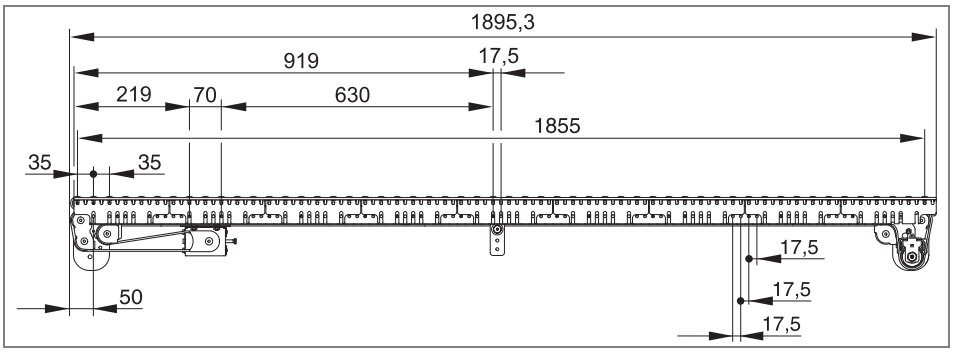
Dimensions straight line 1680 mm

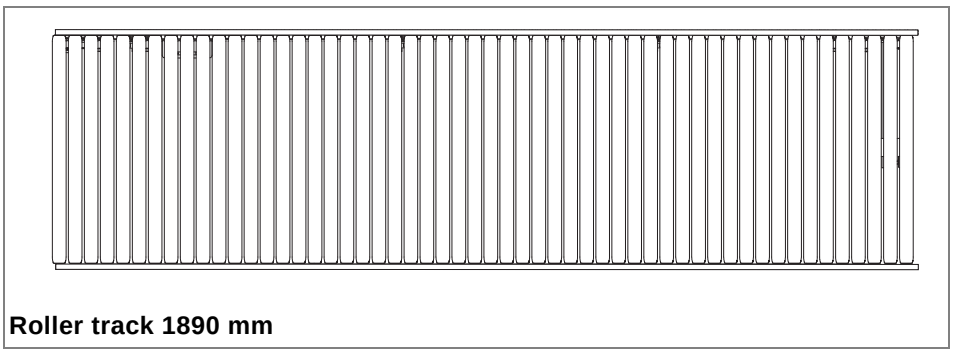




Roller track 1680 mm

Dimensions straight line 1890 mm

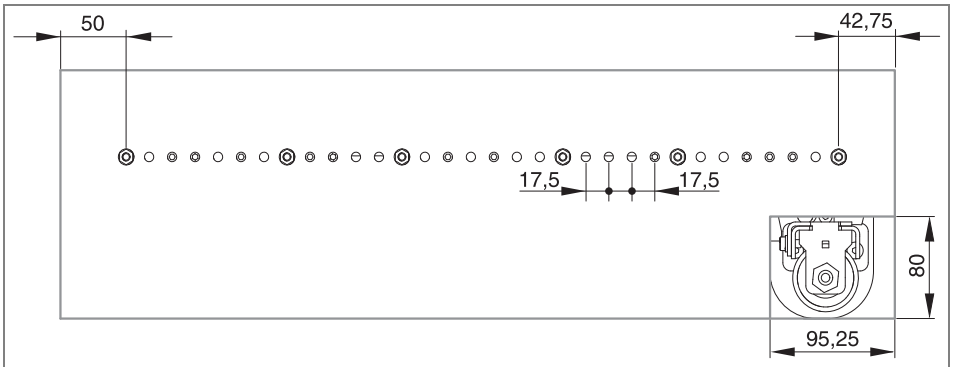




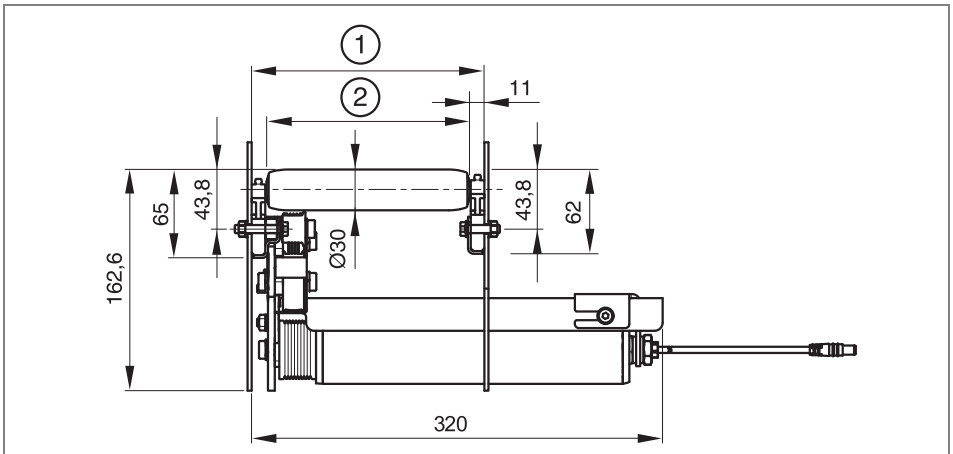
Roller track 1890 mm

Installation conditions with short conveyor rollers

If the bearing distance is less than 320 mm, the straight line profile on the non-drive side must be cut out for the RollerDrive.

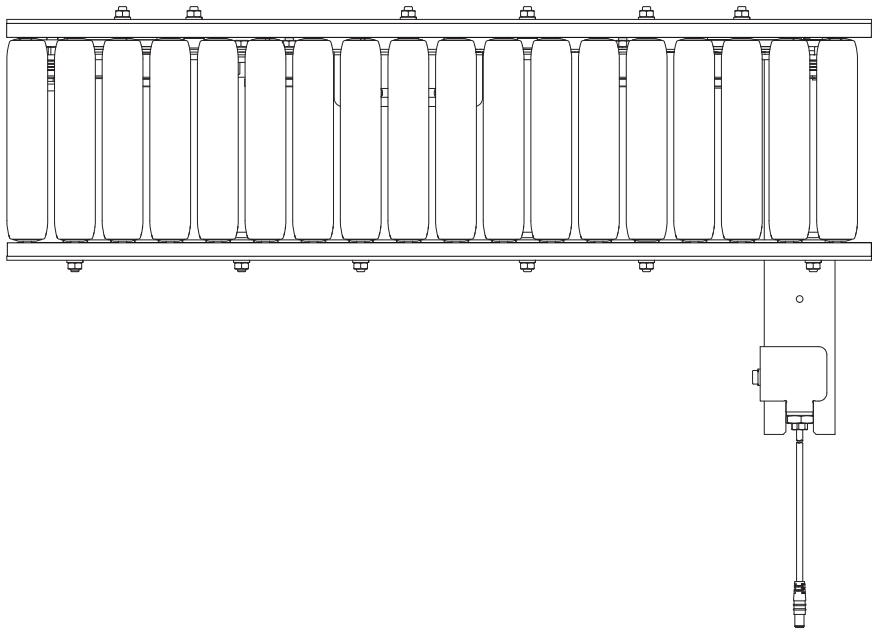


Hole pattern for straight line profile



Installation conditions for RollerDrive with short conveyor roller

① Bearing distance (BD)
② Installation length (IL)



Roller track with short conveyor rollers

Dimensions of the RollerDrive and Interroll Controller can be found in the appropriate operating manual.

Assembly, straight line

The following section describes the assembly of a straight roller track curve using the RollerKit Light as an example. The number and length of the retaining plates and universal combs, the belt length and the number of conveyor rollers, supporting rollers and spacer pieces depends on the total length of the roller track, *see "Dimensions", page 38*. The length of the conveyor rollers determines the width of the roller track. The profile of the conveyor can be custom selected by the operator.

Warning information for assembly

⚠ CAUTION

Risk of injury due to improper assembly

- ➢ Assembly should only be carried out by qualified personnel taking account of the safety information.

⚠ CAUTION

Rotating parts

Risk of crushed fingers

- ➢ Do not place fingers in between the rollers and PolyVee belts.
- ➢ Install a protective device (such as a guard plate) to prevent fingers from getting trapped in the PolyVee belt.
- ➢ Install an appropriate warning on the conveyor.

NOTICE

Risk of damage leading to failure or shortened service life of the RollerKit Light

- ➢ Do not drop or mishandle the parts of the RollerKit Light in order to avoid internal damage.
- ➢ Check the RollerKit Light for visible damage before assembly.
- ➢ Observe the information concerning the assembly of the RollerDrive and the DriveControl.

For information on assembly of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

Warning information relating to the electrical installation

NOTICE

Hazard of damage to motor and motor controller

- Observe the safety information found in the operating manual of the RollerDrive.
- Observe the safety information found in the operating manual of the DriveControl.

For information on the electrical installation of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

Attaching the drive side of the straight line

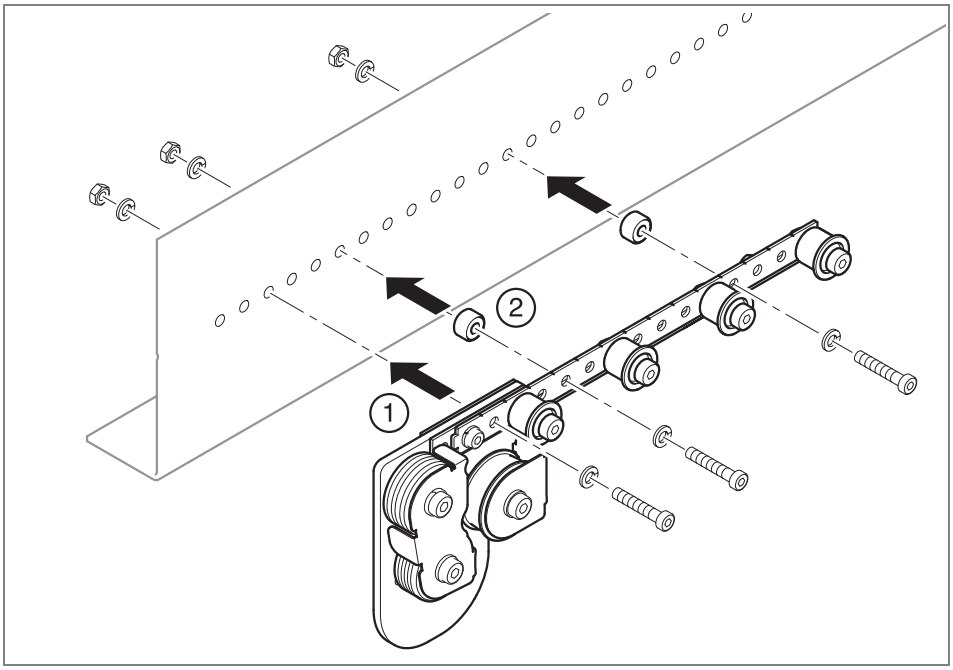
The following section describes the procedure for the entire installation of all components for the straight lines. The installation sequence described is recommended but not absolutely necessary.

The required screw size is at least M6x30. The length depends on the thickness of the selected profile.

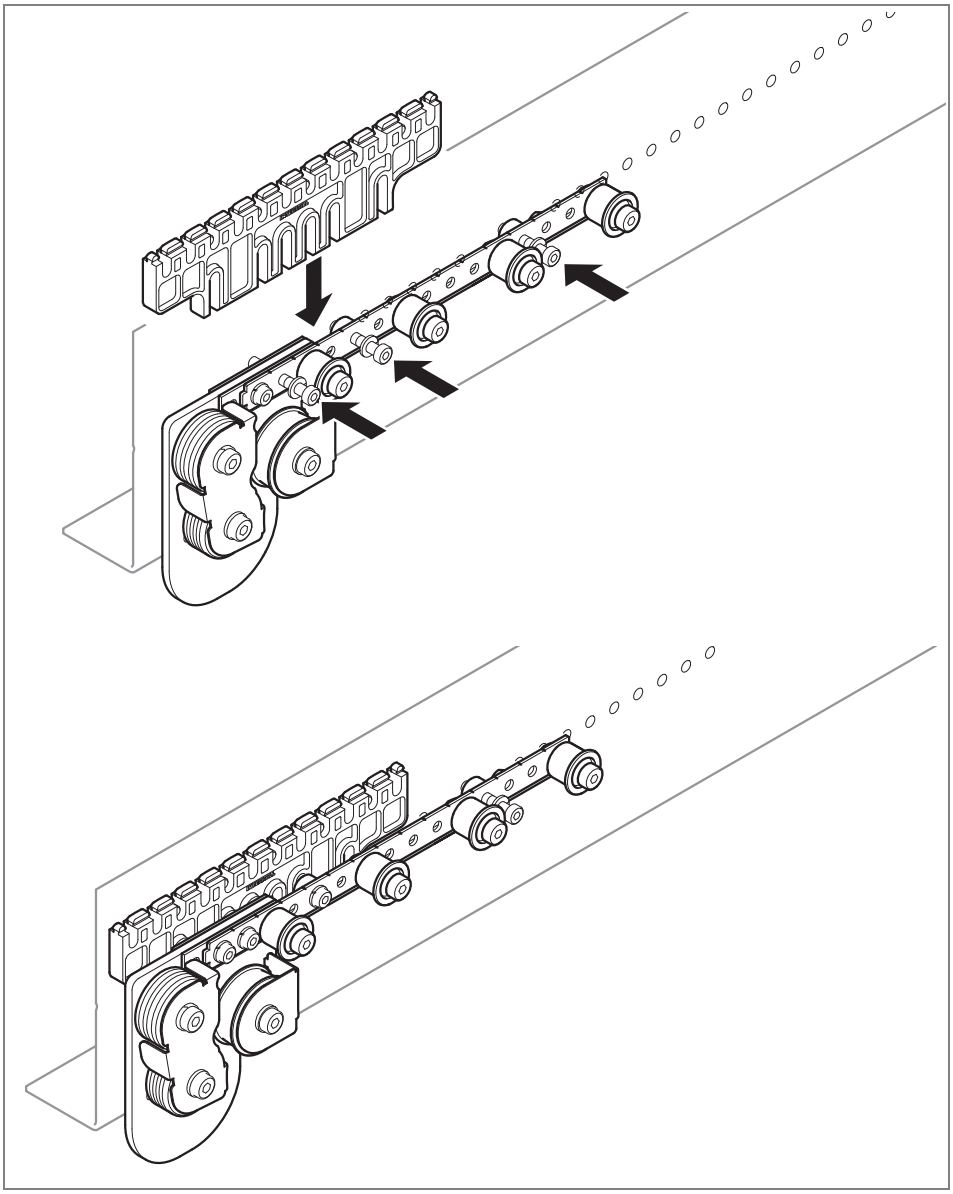
Attach components on the drive side

The plug system of the retaining plates ensures that the universal combs on the other side are aligned. If the retaining plates are shortened, the noses of the plug system must be removed. When assembling the retaining plates, you must then make sure that the universal combs are aligned, *see "Shortening retaining plates", page 58*.

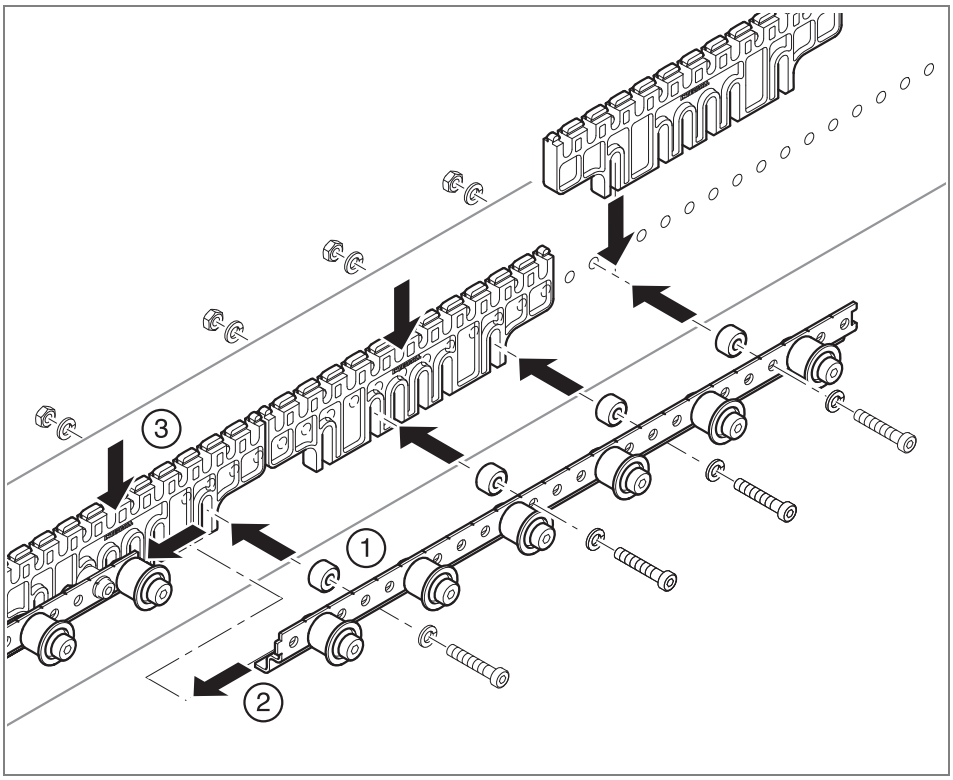
- Loosely attach diverter station to the drive side:
  Insert screws and washers through the retainer plate ①.
  Insert spacer pieces ② and attach retaining plate with the nut.



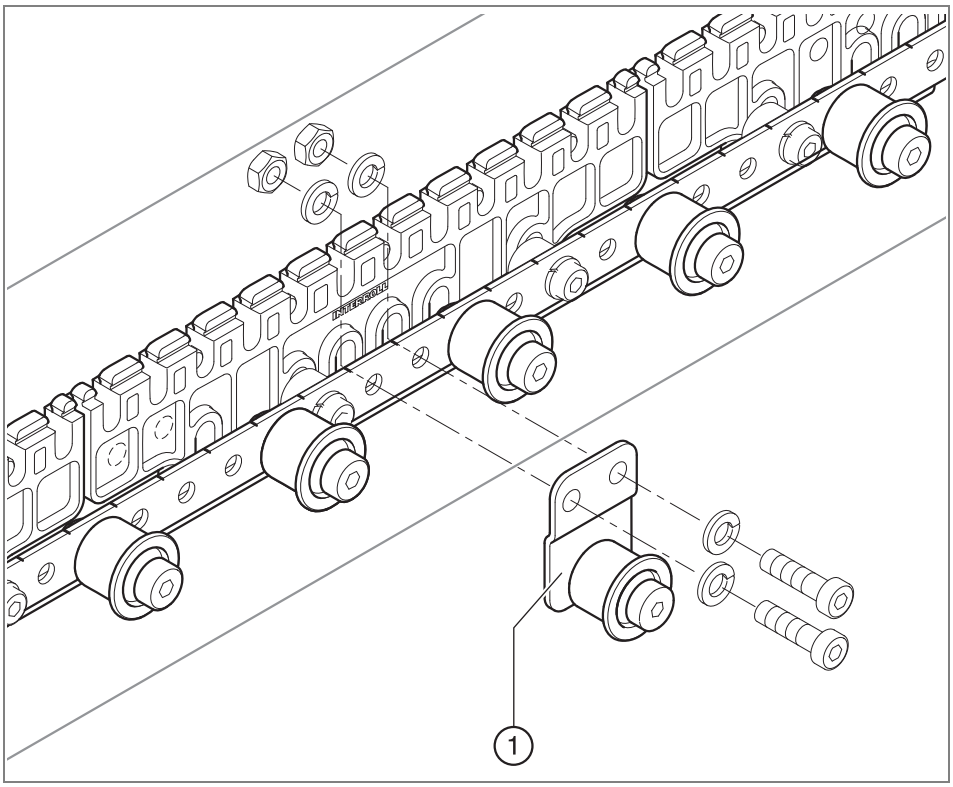
➢ Position universal comb on the supporting surface of the retainer plate. Make sure that the universal comb is aligned with the diverter station. Change position of the screw if necessary.



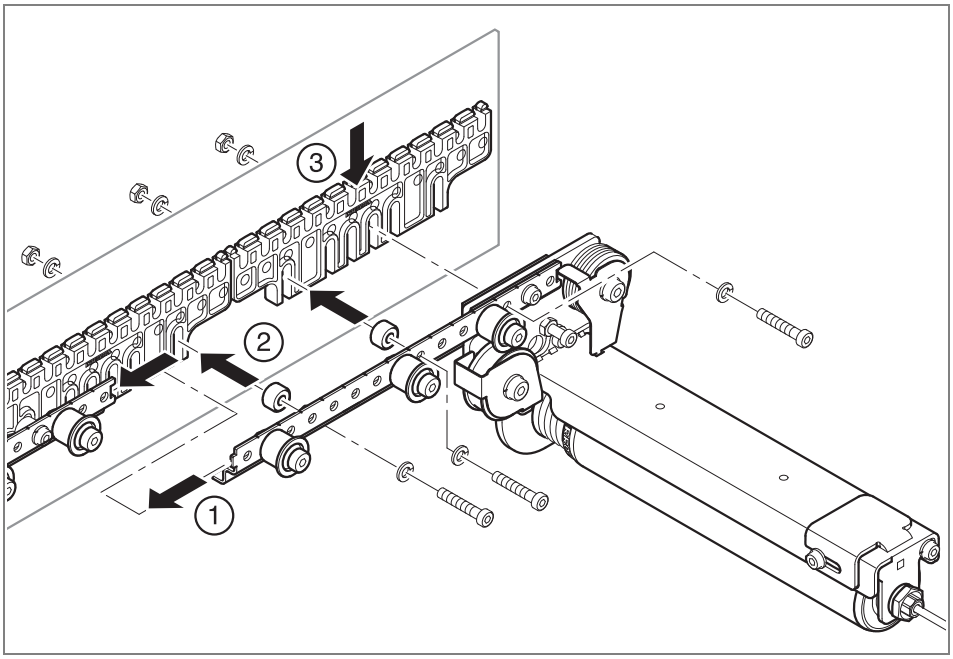
➢ Loosely attach additional retaining plates and universal combs in the same order.



➢ Depending on the length of the roller track, screw additional supporting rollers ① to a retaining plate. The attachment position depends on the length of the straight line, *see "Dimensions", page 38*.



➢ Loosely mount the motor station in the same way.



Mounting the tensioning station

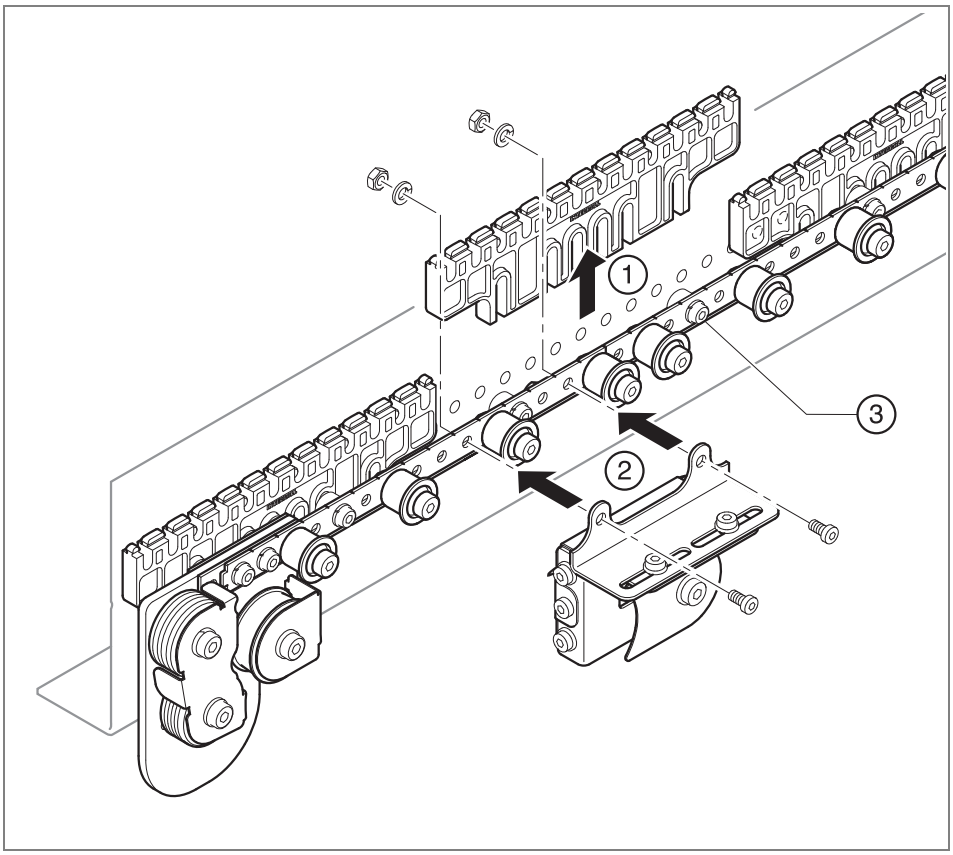
CAUTION

The spring of the tensioning station is energized.
Hazard of injury

➢ Keep the tensioning station closed.
➢ Have all repairs performed exclusively at the manufacturer's facilities.

The position of the tensioning station depends on the belt length, *see "Dimensions", page 38*. This makes it possible to compensate for different belt lengths.
If the straight line is shortened, the tensioning station must be offset by the same length.

➢ Screw tensioning station onto the retaining plate on the drive side:
Remove universal comb from the appropriate position ① .
Loosely attach the tensioning station ② , noting the position of the spacer pieces ③ .
Re-insert the universal comb.

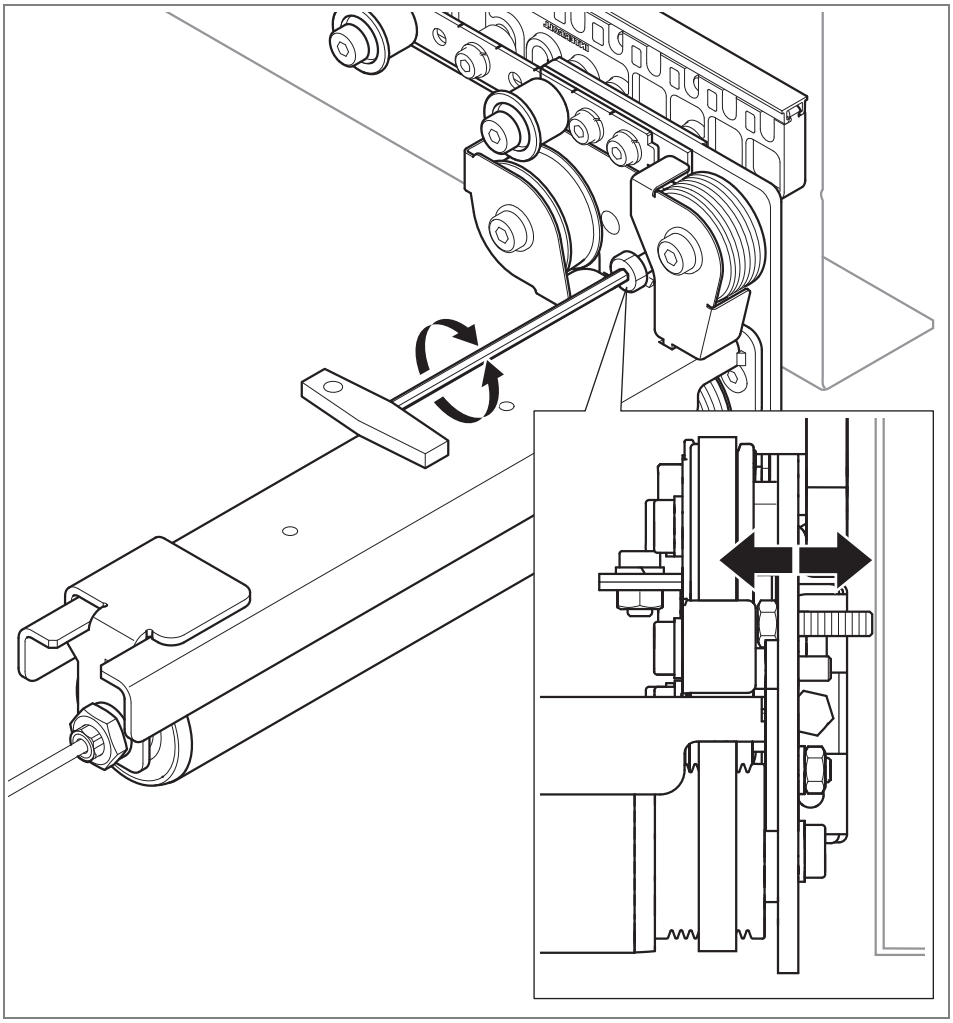


➢ Finally, tighten all screws on the drive side. Make sure that the combs are resting on the retaining plates.

Aligning the motor station

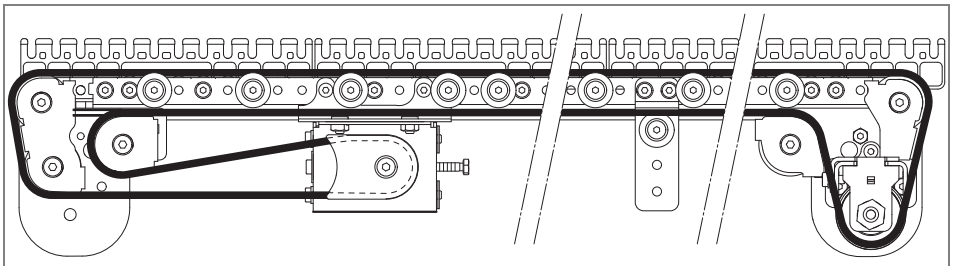
If the retaining plates on the drive side, the motor station and the diverter station are attached to the profile, the motor station must be aligned before the PolyVee belt is installed.

➢ Screw in the screw in the center of the motor station until the motor station pushes against the profile at a 90° angle.



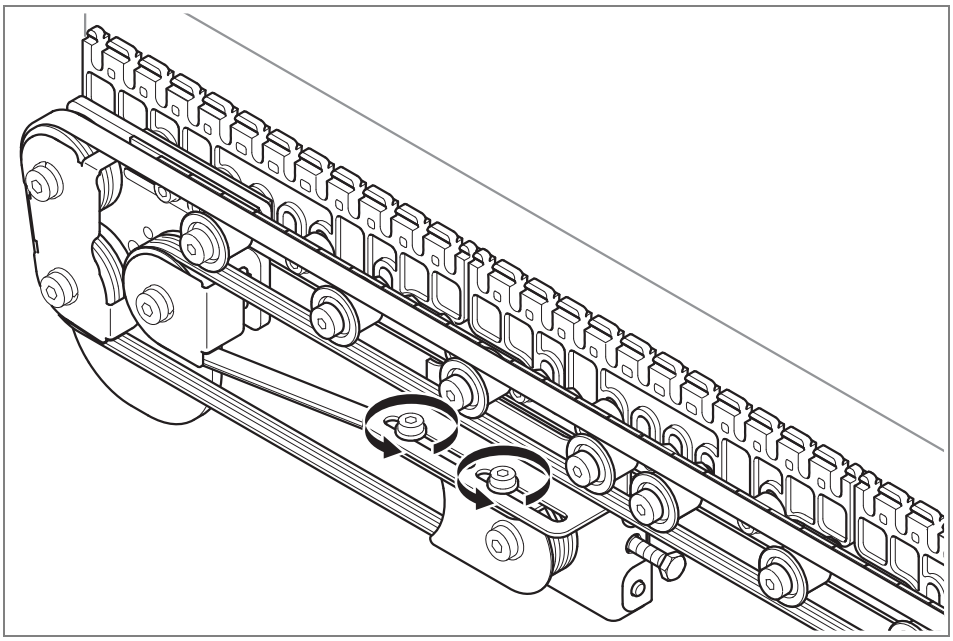
Installing the PolyVee belt

- Place the PolyVee belt around the roller of the RollerDrive and the diverter rollers of the motor station.
- Place PolyVee belt onto the supporting rollers.
- Place the PolyVee belt around the roller of the diverter station and around the roller of the tensioning station.

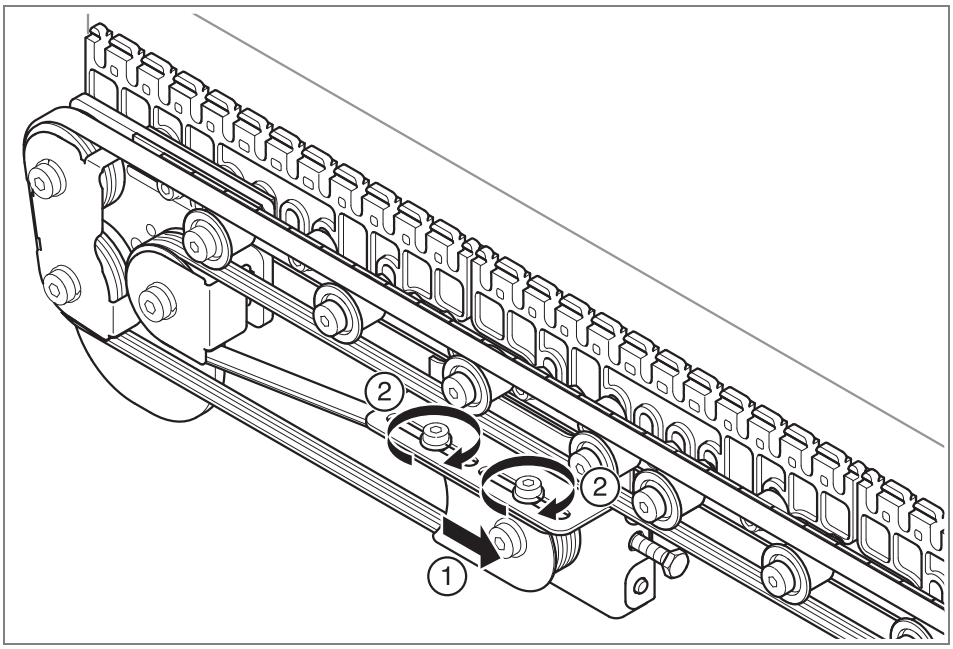


PolyVee belt installed

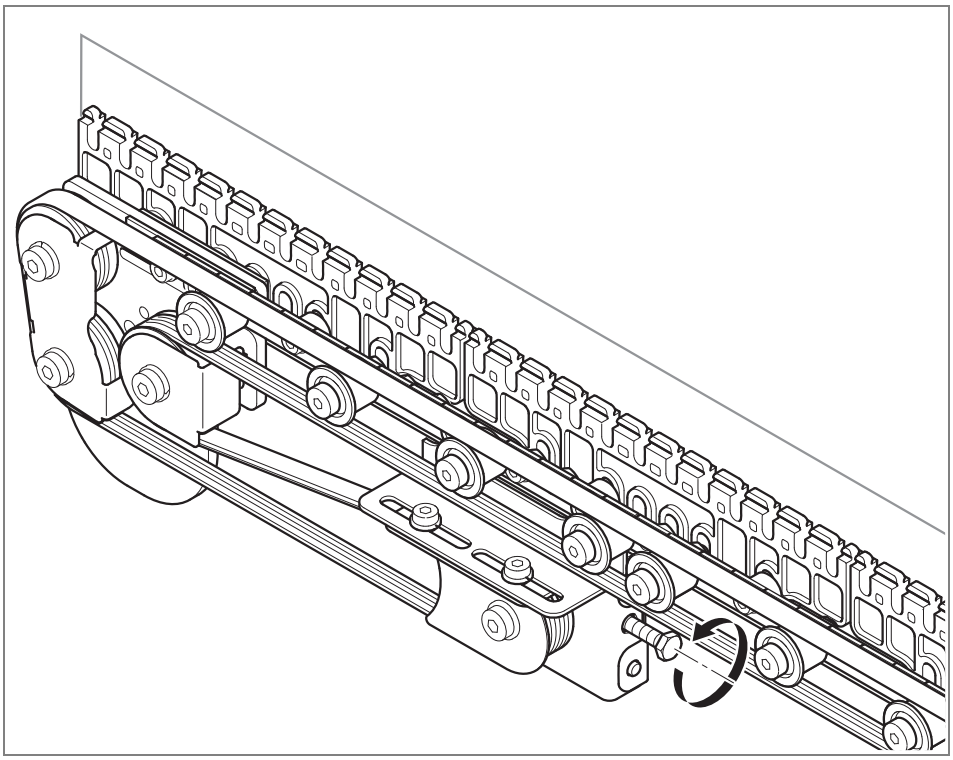
- Loosen the fastening screws in the elongated holes of the tensioning station.



- Slide the tensioning station ① to pre-tension the PolyVee belt.
  Re-tighten the screws ② .



➢ To tension the PolyVee over the roller of the tensioning station, turn the tensioning screw of the tensioning station counterclockwise until the screw is loose. Do not unscrew the screw all the way out.

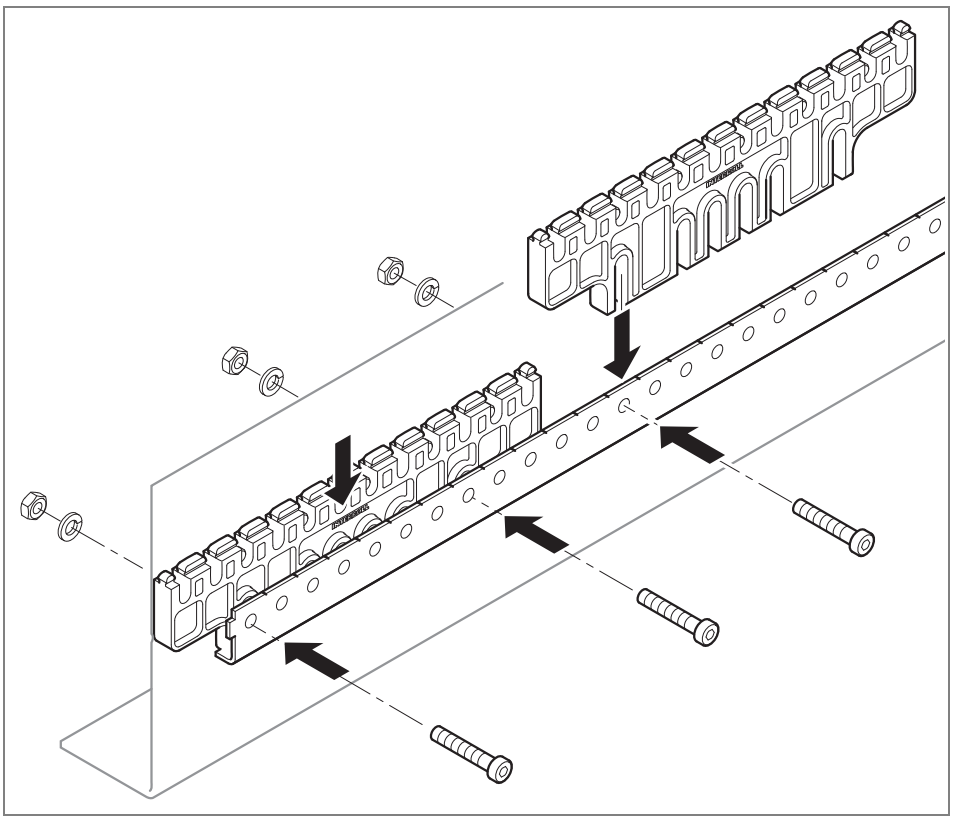


➢ Using your hand, check whether the PolyVee belt is taut.

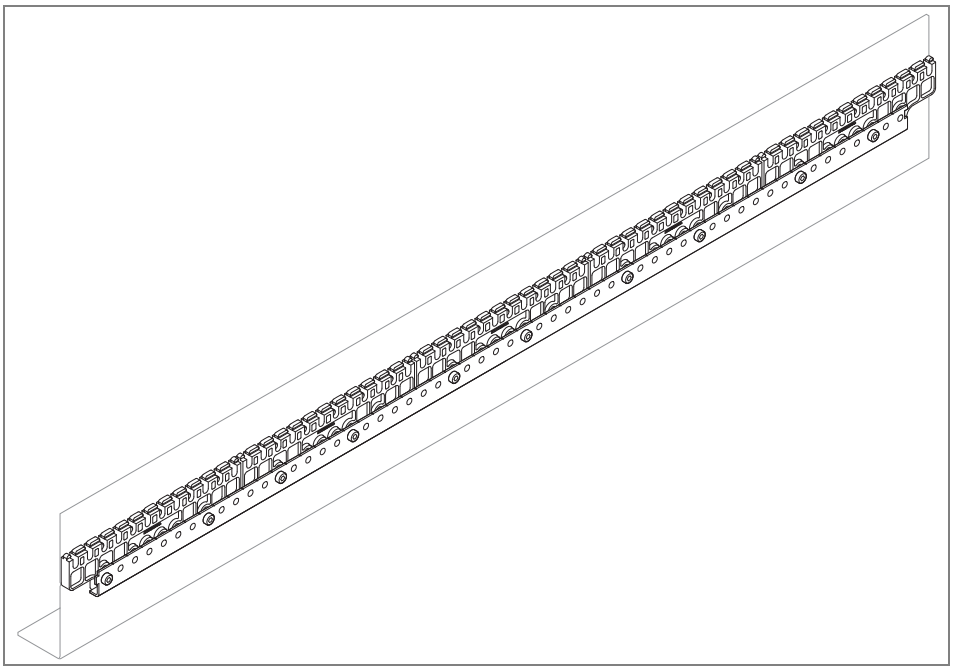
Attaching the non-drive side of the straight line

The required screw size is at least M6x20. The length depends on the thickness of the selected profile.

- Attach retainer plates and universal combs on the non-drive side in the same way as the drive side with the end at the height of the drive:
  Loosely pre-mount the retainer plates. During this step, place the screws so that there is a screw resting on the first and last elongated hole of one of the universal combs.
  Insert the universal combs into the supporting surfaces of the retainer plates.



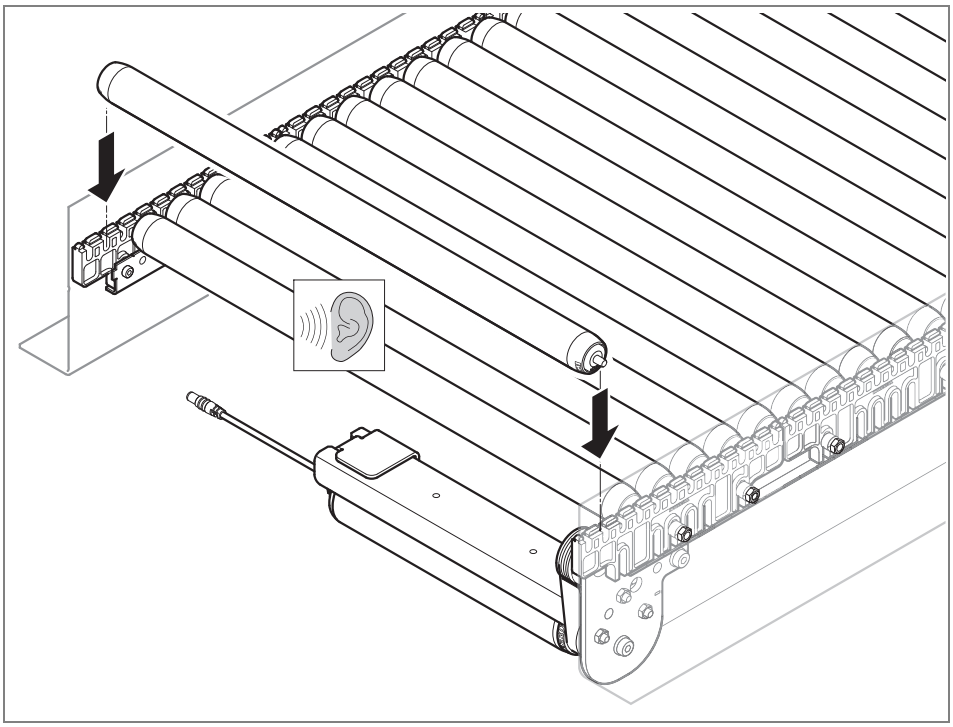
- Tighten the screws of the retaining plates.



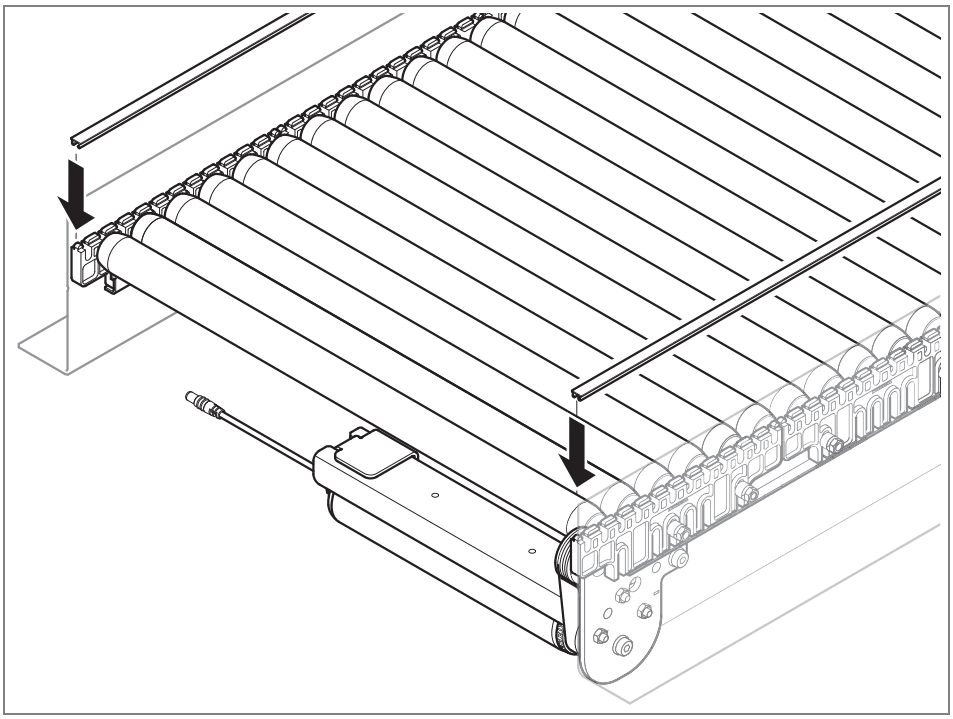
The first and last universal comb protrudes beyond the retaining plates.

Installing the conveyor rollers

➢ Gently press the conveyor rollers on both sides of the straight lines, onto the universal combs.



➢ Put cover rail on universal combs. Shorten the cover rail if needed.

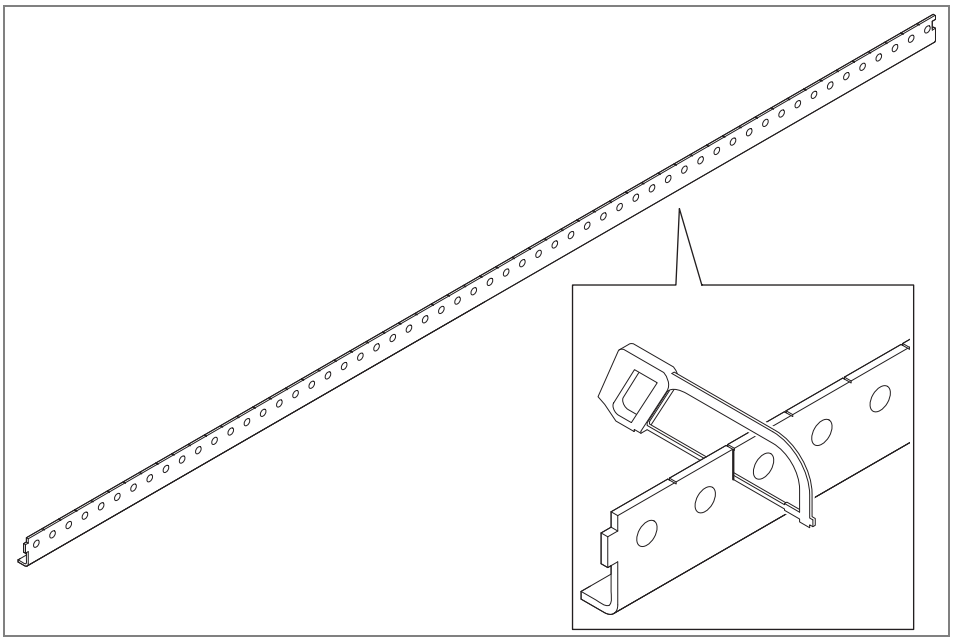


On the drive side, the conveyor rollers rest on the PolyVee belt so that on the drive side they are supported 3 mm higher than on the non-drive side.

Shortening retaining plates

The retaining plates are marked at intervals of 17.5 mm on the top and bottom. The retaining plates can be shortened along the markings. When doing so, the retaining plates must always be shortened by at least two markings because the conveyor rollers rest in the universal combs at intervals of 35 mm.

➢ Shorten the retaining plate along the marking to achieve the desired length.

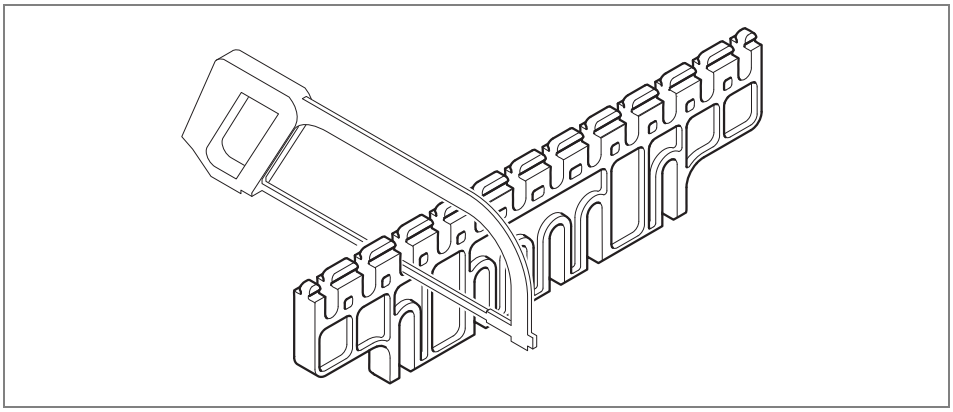


If the retaining plates are shortened, the noses of the plug system must be removed. When assembling the retaining plates, you must then make sure that the universal combs are aligned, *see "Mounting the tensioning station", page 51*.

Shortening the universal comb

Universal combs can be shortened along the recesses. The cut must be selected so that the elongated holes can still be used to fix the comb in place.

➢ Shorten the universal comb along the recess to achieve the desired length.



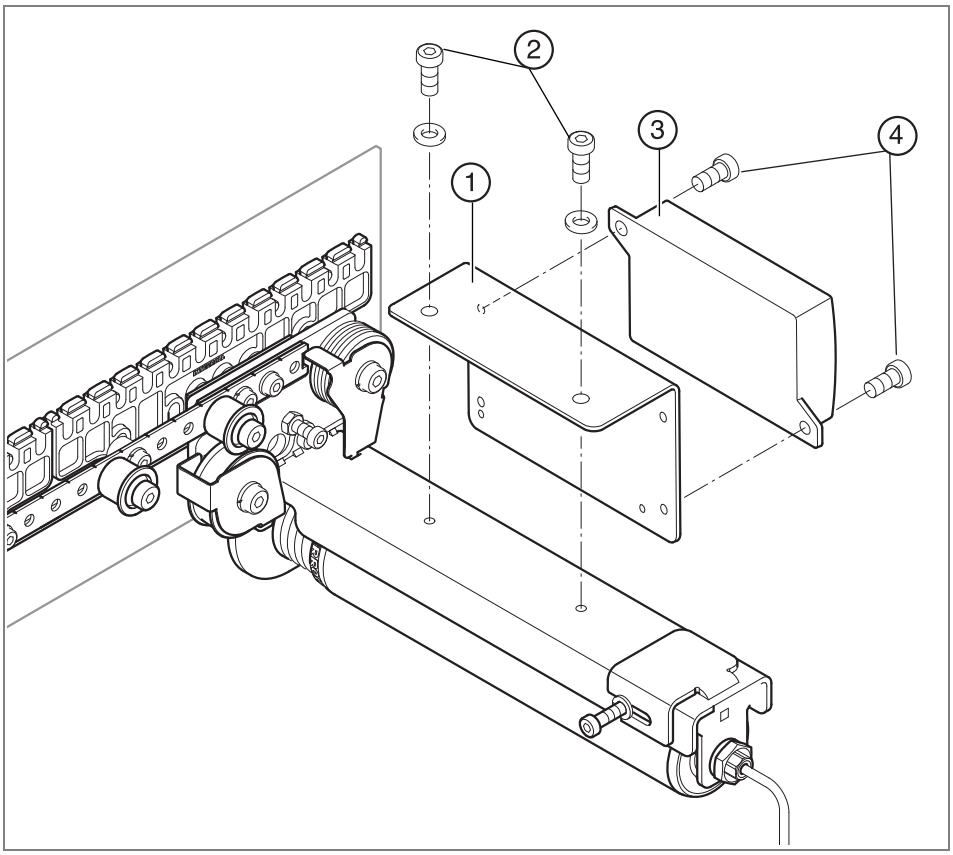
➢ Attach shortened universal comb in the center of the roller track.

Assembly DriveControl, straight line

Motor station assembly

TheDriveControl 20 or DriveControl 54 motor controls are not included in the scope of delivery.

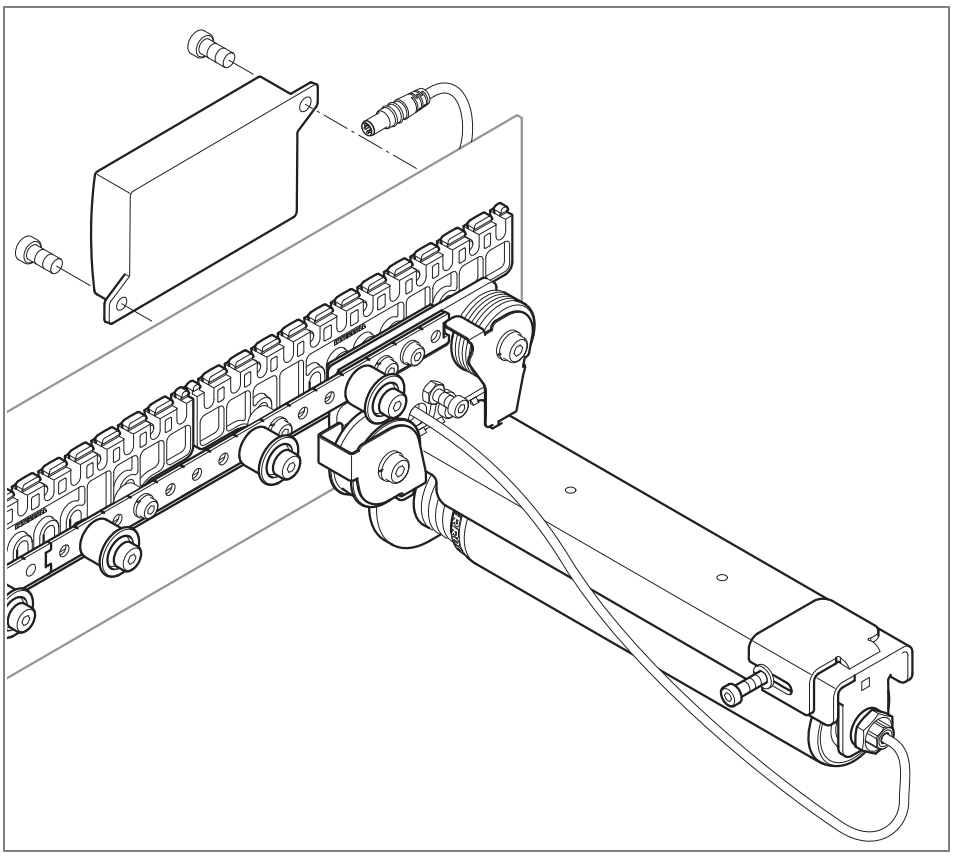
- ➢ Attach the fastening plate ① to the motor station using two hexagon socket screws ② and two washers A8.4 provided.
- ➢ Screw the DriveControl DC 20 controller with the two countersunk screws provided or the DriveControl DC 54 controller ③ with the two hexagon socket screws provided ④ to the fastening plate of the motor station ①.



Mounting to the profile

Alternatively, the controllers can be attached to the outside of the profile. This requires a way to attach these at the installation site.

➢ Guide the cable of the RollerDrive through the hole in the motor station to the outside and attach the controller to the profile.



Transport and storage

Transport

Every RollerKit Light is fully packed in a cardboard box.

CAUTION

There is a risk of injury if transported incorrectly.

- ➢ Only qualified and authorized persons should transport the product.
- ➢ Follow the instructions below.

- ➢ Do not stack pallets.
- ➢ Do not stack more than four cardboard boxes on top of each other.
- ➢ Check that the boxes are correctly fixed in place prior to transport.
- ➢ Avoid serious impacts during transport.
- ➢ Inspect every RollerKit Light for visible damage and completeness following transport.
- ➢ In the event of damage, take photos of the damaged parts.
- ➢ Report any damage caused by transport immediately to the transport company and Interroll to retain the right to claim for compensation.
- ➢ Do not expose the RollerKit Lights to serious fluctuations in temperature as this could lead to condensation.

Storage

CAUTION

Risk of injury due to improper storage

- ➢ Do not stack pallets.
- ➢ Do not stack more than four cardboard boxes on top of each other.

- ➢ Inspect each RollerKit Light for damage after storage.

For information on transport and storage of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

Initial startup and operation

Initial startup

Pre-commissioning checks

- Ensure that no objects are in contact with rotating or moving parts.
- Ensure all parts of the RollerKit Light are correctly attached to the profile and that all screws are tightened as indicated in the specifications.
- Ensure that there are no additional areas of dangerous areas exposed by interfaces to other components.
- Ensure that the wiring complies with the specification and relevant legal directives.
- Ensure that the product being processed does not fall off the sides of the conveyor and in between the conveyor rollers.
- Ensure that the product being processed is not carried out of the cam.
- Inspect all protective devices.
- Ensure that the conveyor is grounded.
- Ensure there are no bystanders in dangerous areas around the conveyor.

Initial startup

- Run the conveyor empty and with minimal or no conveyor load for the first few hours.

For information on start-up of the RollerDrive and Interroll Controller, refer to the appropriate operating manual.

Operation

⚠ CAUTION

Rotating parts and accidental start-up
Risk of crushed fingers

- Do not place fingers in between the rollers and the round belt or PolyVee belt or roller chain.
- Do not remove the protective device.
- Keep fingers, hair and loose clothing away from the rotating parts.

NOTICE

Damage to the RollerDrive or the motor control due to induction

- Do not push items along the roller conveyor by hand.
- Do not spin the RollerDrive manually.

Checks to be performed before every startup

- Check the speed settings.
- Check the parts of the RollerKit Light for visible damage.
- Check all protective devices.
- Ensure there are no bystanders in dangerous areas around the conveyor.
- Clearly specify and monitor the way goods are placed on the conveyor.
- Ensure that the RollerDrive is not blocked.

Ambient conditions during operation, *see "Technical data", page 11*.

For information on speed settings, refer to the operating manuals of the Interoll Controller.

Procedure in case of accident or malfunction

- Stop the conveyor at once and ensure that it cannot be started accidentally.
- In case of an accident: Provide first aid and call for emergency assistance.
- Inform responsible persons.
- Have the malfunction repaired by qualified persons.
- Start the conveyor only after this has been approved by qualified persons.

Cleaning and Maintenance

Warning notices concerning cleaning and maintenance

⚠ CAUTION

Risk of injuries due to incorrect handling

- ➢ Cleaning and maintenance work must only be performed by qualified and authorized persons.
- ➢ Perform maintenance work only after switching off the power. RollerKit Light Make sure the machine cannot be switched on accidentally.
- ➢ Set up signs indicating that maintenance work is in progress.

Cleaning

Increased surface friction reduces the roller speed since more power is used to overcome the resistance. Therefore, in a dirty environment, periodic cleaning will ensure good contact between the rollers and the goods and reduce friction losses.

- ➢ Using a simple cleaning brush (not a wire brush), remove foreign materials and dirt from the surface of the rollers and the belt by brushing gently.
- ➢ Do not use sharp-edged tools to clean the roller.
- ➢ Remove smaller amounts of dirt with a damp cloth. Make sure the RollerDrive is just moist at most.

For information on cleaning the Interroll Controller, refer to the appropriate operating manual.

Maintenance

Inspecting the belt(s)

- ➢ Dismantle rollers and regularly inspect belts for visible damage.

Replacing the round belt

The round belt of the curve can be removed from below.

- ➢ Remove the round belt from the roller of the RollerDrive, the diverter rollers and the supporting rollers.
- ➢ Place new round belt around the roller of the RollerDrive, outer diverter and supporting rollers.
- ➢ Tension the round belt over the diverter in the center.

Replacing the PolyVee belt

The PolyVee belt of the straight line can be removed from below.

- ➢ Turn the screw of the tensioning station clockwise to release the spring.
- ➢ Remove the PolyVee belt from the diverter rollers and supporting rollers.
- ➢ Install new belt, *see "Installing the PolyVee belt", page 54*.

Inspecting the RollerDrive

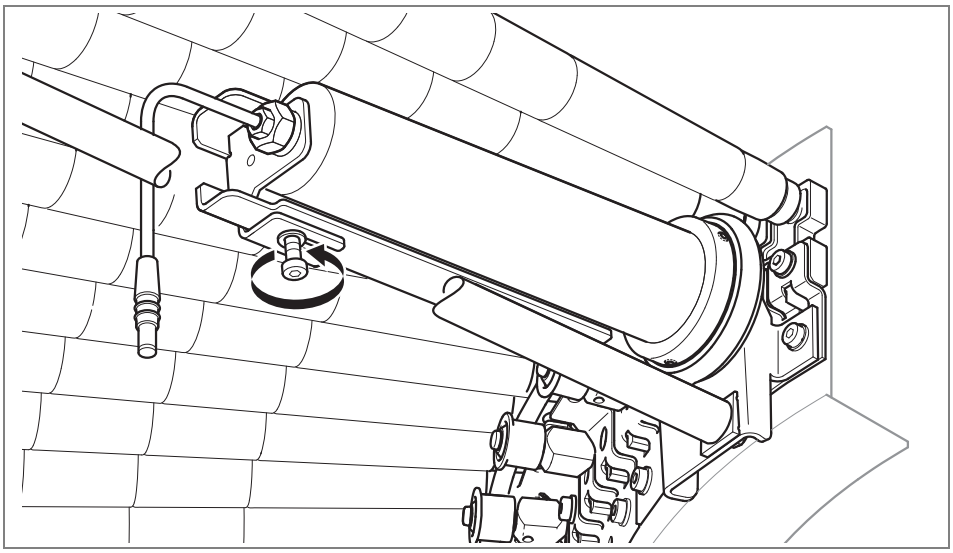
If the RollerDrive is not correctly attached in the bracket, the RollerDrive is probably rotating. This causes the cable of the RollerDrive to rotate as well, which can cause it to be damaged.

- ➢ Check the RollerDrive on a monthly basis for visible damage.
- ➢ Once per year, make sure that the RollerDrive is correctly attached in the bracket.

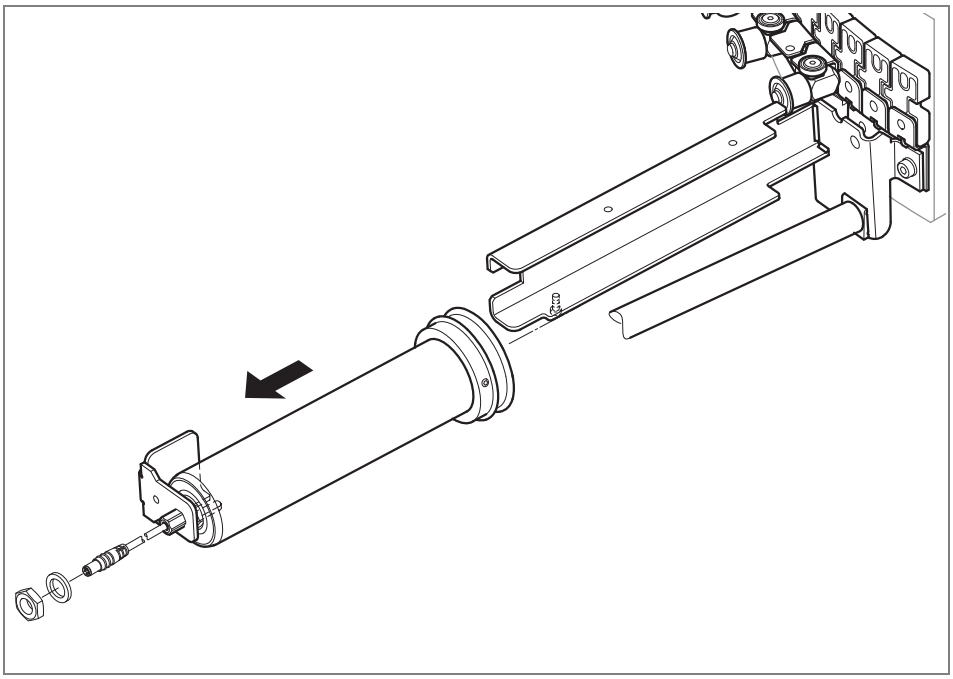
Replacing the RollerDrive of the curve

If a RollerDrive is damaged or defective, it must be replaced. The affected RollerDrive can be removed from the roller track curve either from below or from above once the conveyor rollers have been removed.

- ➢ Disconnect the motor cable from the motor control.
- ➢ Remove round belt, *see "Replacing the round belt", page 65*.
- ➢ Loosen the screw of the attachment bracket of the RollerDrive on the lower side of the motor station.



- ➢ Remove the RollerDrive from the motor station.
- ➢ Loosen the outer nut of the motor axle of the RollerDrive and remove the attachment bracket.

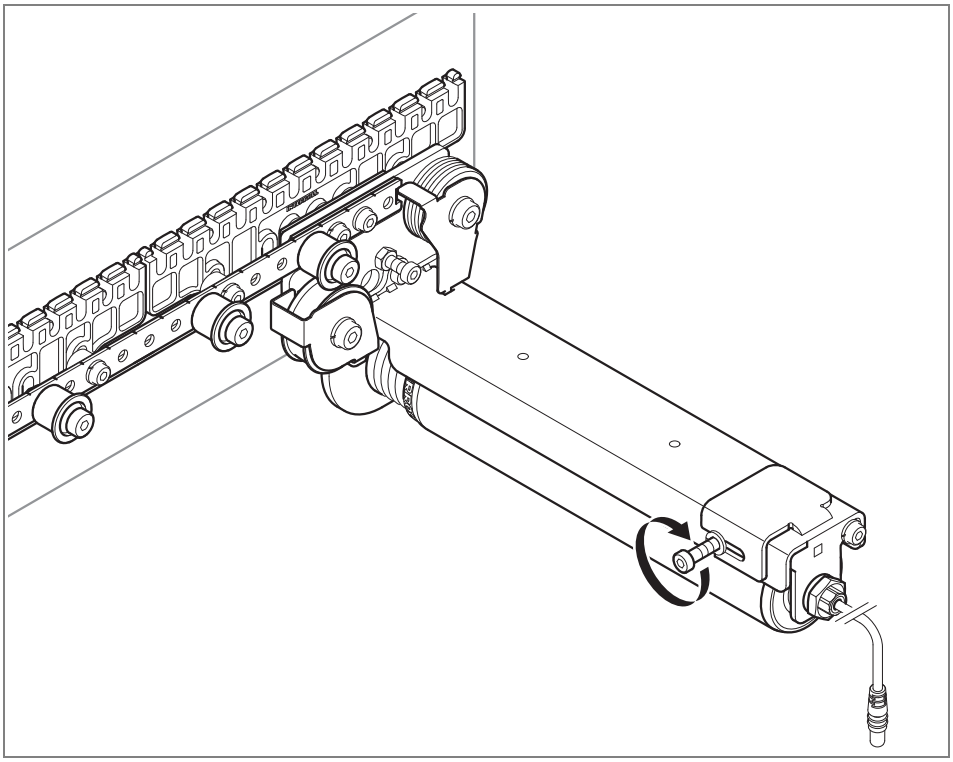


- Guide the motor cable of the new RollerDrive through the opening of the attachment bracket.
- Using the outer nut, screw down the bracket to the RollerDrive.
- Attach the RollerDrive with the screw on the lower side of the motor station.
- Connect the motor cable to the controller and put on round belt.

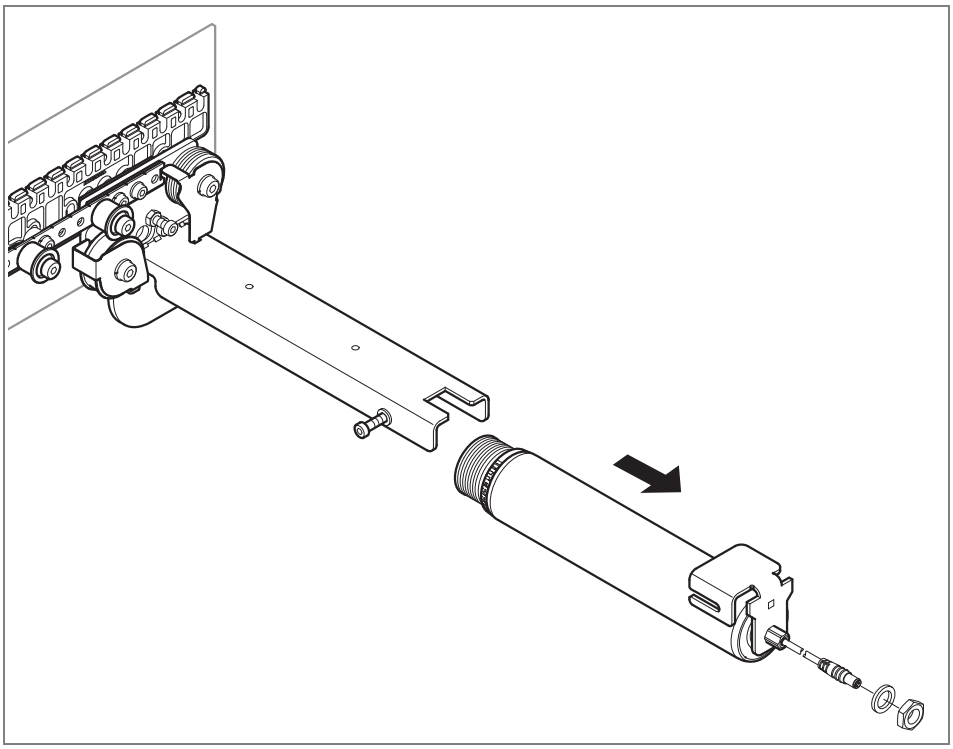
Replacing the RollerDrive of the straight line

The RollerDrive can be removed from the roller track from below or from above once the conveyor rollers have been removed.

- Disconnect the motor cable from the motor control.
- Loosen and remove the PolyVee belt, *see "Replacing the PolyVee belt", page 65*.
- Loosen the screw of the attachment bracket of the RollerDrive.



- Remove the RollerDrive from the motor station.
- Loosen the outer nut of the motor axle of the RollerDrive and remove the attachment bracket.



- Guide the motor cable of the new RollerDrive through the opening of the attachment bracket.
- Using the outer nut, screw down the bracket to the RollerDrive.
- Attach the RollerDrive the motor station with the screw.
- Connect the motor cable to the controller and put on the PolyVee belt.

For information on performing maintenance on the Interroll Controller, refer to the appropriate operating manuals.

Troubleshooting

Troubleshooting

⚠ CAUTION

Risk of injuries due to incorrect handling

- ➢ Troubleshooting must only be done by qualified and authorized persons.
- ➢ Only perform troubleshooting after switching off the power.
- ➢ RollerKit Light Make sure the machine cannot be switched on accidentally.

For information on starting up the RollerDrive and DriveControl, refer to the appropriate operating manual.

Abandonment and disposal

Shut-down

⚠ CAUTION

Risk of injuries due to incorrect handling

- ➢ Shut-down must only be executed by qualified and authorized personnel.
- ➢ Only perform shutdown of the RollerKit Light after switching off the power. Ensure that the machine cannot be switched on accidentally.

⚠ CAUTION

The spring of the tensioning station is energized.
Hazard of injury

- ➢ Keep the tensioning station closed.
- ➢ Have all repairs performed exclusively at the manufacturer's facilities.

➢ Disassembly of the RollerKit Light is performed in the reverse order of assembly.

Disposal

The operator is responsible for the proper disposal of the RollerKit Light. In doing so, industry-specific and local provisions must be observed for the disposal of the RollerKit Light and its packaging.

Appendix

Accessories

DriveControl

Part	Part no.
Retaining plate	1100470
DC 20	1001415
DC 54	1001416
DriveControl	1004023

Installation declaration

in accordance with the EC Machinery Directive 2006/42/EC, Appendix II B

The manufacturer:

Interroll Engineering GmbH
Hoeferhof 16
D - 42929 Wermelskirchen
Germany

hereby declares with sole responsibility that the product range

- RollerKit Light

is not a ready-to-use machine as defined by the EC Machinery Directive and, therefore, does not fully comply with the requirements of this directive. The commissioning of these conveyor modules is not permitted unless conformity of the entire machine/system in which they are installed has been declared in compliance with the EC Machinery Directive.

The health and safety requirements as stated in Appendix I have been applied. The special technical documents mentioned in Appendix VII B have been prepared and will be sent to the responsible authority if necessary.

Person authorized to prepare the technical documents:
Interroll Engineering GmbH, Hoeferhof 16, D - 42929 Wermelskirchen

Applicable EC directives:
- Machinery Directive 2006/42/EC
- EMC Directive 2004/108/EC
- RoHS Directive 2002/95/EC

Applicable harmonized standards:
- EN ISO 12100-03 "Safety of machinery - Basic concepts - risk assessment and reduction"

Wermelskirchen, 30 November 2012

Armin Lindholm

(Managing Director)

(This declaration can be obtained at www.interroll.com, if needed.)

Version 2.1 (07/2016) en
Translation of the original instructions

For your local contacts please visit
interroll.com/contacts