



Conveyor

S380



Instructions for use
Translation in original

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Appendices

1.	Environmental product declaration	Included in this document
2.	EC Declaration of Conformity	Supplied as a separate document
3.	Remaining hazards/risks to be managed by customer	Supplied as a separate document
4.	Spare parts list	Supplied as a separate document
5.	Drawings	Supplied separately

1 General information about this document



NOTE!

Read this document and its appendices carefully

It is important that all personnel working with or nearby equipment are aware of the risks they may be exposed to, and for all such personnel to have read and understood the contents of this document.

This document must be preserved throughout the service life of equipment supplied by Carryline AB.

Carryline AB is not liable for any injury or damage to equipment in cases where these regulations have not been complied with.

1.1 Description of symbols used in this document

The following symbols and warning texts are used in this document together with the descriptions shown below.



WARNING!

Indicates a dangerous situation which, if not avoided, will lead to death or serious injury.



CAUTION!

Indicates a dangerous situation which, if not avoided, may cause minor injuries or damage to equipment.



NOTE!

Indicates the presence of information that requires extra attention and which if ignored, may lead to damage to the machine.

2 General safety instructions



Warning!

Hair and working clothes – Hair must be tied back or restrained by a hairnet, and baggy garments or working clothes must be avoided as they may get caught in the machine.



Warning!

Power supply – Pneumatic or electrical power must be disconnected and a safe procedure applied whenever any form of work on the machine is carried out.



Warning!

Working at height – When working at height, safety procedures according to current regulations must be applied.



Caution!

Pinch or crush injuries – There is a risk of pinch or crush injuries between conveyors.



Caution!

Pinch or crush injuries – Do not touch the conveyor chain during operation with your hands or any object.



Caution!

Pinch or crush injuries – Depending on the type and weight of the products conveyed, there is a risk of pinch or crush injuries between the product and the conveyor.



Caution!

Tripping risk – Support legs and attachment points in the floor present a risk of tripping and falling.

The installer in charge must carry out a risk assessment regarding installation before work is begun.

Make sure that all ergonomic aspects (light, air, safe and clear access etc.) are met during installation, operation and maintenance of the machine.

Tools used for maintenance must be of good quality and selected with regard to the work. Tools and personal safety equipment must be used according to the tool manufacturer's recommendations.

Before starting the installed machine – Make sure that all tools are removed from the machine.

2.1 Remaining hazards/risks

Remaining risks that must be managed by the customer are described in Appendix 3.

2.2 Important information before use, maintenance and service

- Make sure that all operators (operations, service, maintenance etc.) have read and understood this document and have been properly instructed or trained.
- Before putting the machine into use, make sure that
 - all conveyors are securely anchored to the floor and/or walls,
 - all parts and add-ons are firmly secured to the conveyor, and
 - all installation work has come to an end.
- Keep the machine cleaned and serviced in accordance with this document.
- The user is responsible for such ergonomic aspects as lighting and keeping the machine available for operation and service.
- To reduce the risk of accidents, the user must keep the areas around the machine free of waste and other material that can have a negative effect on safe operation.
- Make sure all electrical and control installations comply with the applicable EU directives.
NOTE – Make sure that safety and emergency stops are tested and in full function and that the machine is included in such stops in accordance with this document.
- This machine may not be used for purposes other than those specified in the accompanying EC declaration.

2.3 Safety and function checks

- Regularly check that warning signs are intact and fully visible both after commissioning and during operation.
- Regularly check that all fixed covers are intact and correctly installed, i.e. not dismantled or only partially installed.
- Regularly check that all safety devices are intact and in the event of damage replaced immediately before operation recommences.

2.4 Transport and arrival checks

- The machine is properly packaged before delivery and upon arrival at the customer, it must be handled with care using suitable lifting equipment.
- Upon arrival, check that the machine is undamaged before installation work is begun.

2.5 Conversion or modification of the machine

- In order for the warranty and the EC declaration to remain valid, no machine modifications or conversions may be performed unless carried out by Carryline AB or other party approved by Carryline AB.
- If modifications are made to the machine, they also affect the contents of this document.

3 Technical specification

	Series	S380
Data		
Chain width		38 mm
Min radius		100 mm
Chain separation		25 mm
Max speed		80 m/min*
Max conveyor length per drive unit		10 m**
Noise level		<70 dB

*Depends on the number of curves, product weight and design.

**Depends on the number of curves, product weight, speed and design.

The layout and the EC declaration belonging to the machine describe other technical specifications that apply to the relevant delivery and installation.

4 Machine plate(s)

The machine is identified with machine plate(s) as illustrated below.



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Tillverkningsnr.
Manufacturing no.

Tillverkningsdatum
Manufacturing date

5 Installation

The conveyors are delivered on pallets or wrapped in plastic only. While it is often possible for 2 people to lift the conveyors by hand, we recommend the use of lifting equipment. Always lift by the conveyor body and not by the slide rails.

Long conveyors may be split into sections, where the sections are marked according to the example below:

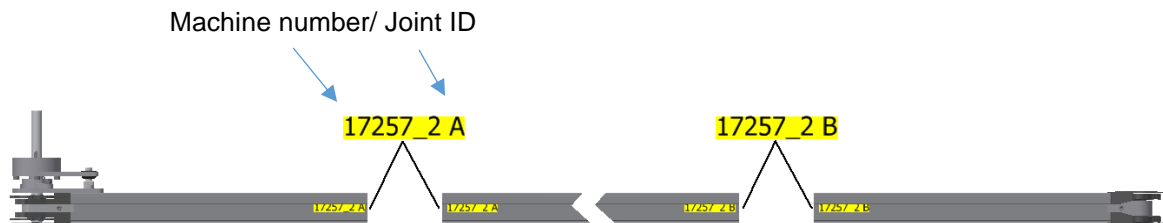


Figure. Sections with their markings

Move the parts to the installation site before beginning to assemble the sections.

5.1 Mechanical installation



Warning!

Working at height – When working at height, safety procedures according to current regulations must be applied.

Assemble the sections if the conveyor was delivered in separate parts and then install the conveyor on its support legs, ceiling suspension or similar. Note chain drive direction and pull on the chain from the underside of the idler unit. Adjust to the correct chain tension according to the Service and maintenance section.

Adjust the conveyor's position using the support legs or stand and its adjustable feet. Next, anchor the feet to the floor with suitable fasteners (self-grouting nails, expanders, bolts etc.)

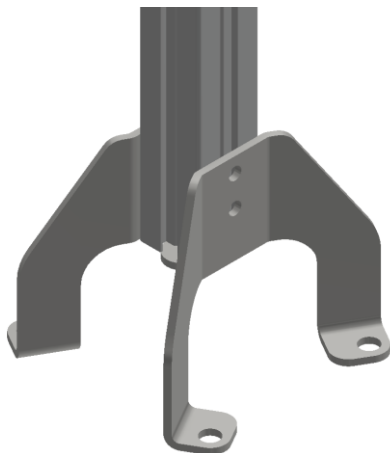


Figure. The most common type of foot.

Make sure the conveyor is stable and if necessary attach it to neighbouring equipment, walls etc. using extra brackets.

5.2 Electrical installation

All electrical installation must be carried out by a qualified electrician. Motors must be connected via a motor protector suitable for the motor concerned and fitted with a safety breaker where required.

The circuit diagram for connecting motors can be found in the relevant motor's connection terminal.

6 Start-up



NOTE!

*Upon start up, check that the direction of operation is correct. Switch off **immediately** if it is wrong and reconnect the conveyor to make it run in the right direction.*

Start and run the conveyor without load for approx 5 minutes and check that it runs evenly without jerks or dissonant noises.

As necessary, adjust chain length according to the instructions in the Service and maintenance section.

7 Service and maintenance

Clean the equipment once a week; however, depending on the surroundings it may be necessary to clean it more often. Remove any product residue, adhesive labels etc. and wipe clean with a damp rag and mild detergent. Inspect for damage and replace damaged parts (refer to the spare parts list). For the replacement of chains and slide rails; see 7.5.

7.1 Checking and adjusting the conveyor chain

Check chain tension after 40 operating hours and then every 160 hours.



Switch off and lock the power supply!

Check chain tension in the idler unit by pulling the chain 10 mm backwards on the top side and underside. Release the chain, which should then spring back toward the idler wheel using its own potential energy. If the chain does not spring back towards the idler wheel, adjustment is necessary.

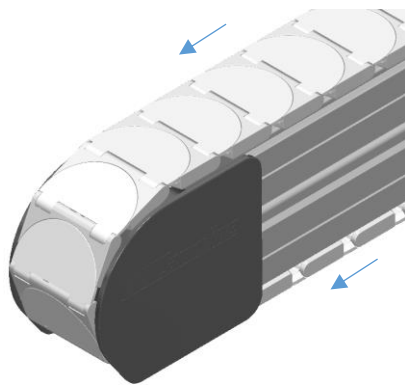


Figure. Checking chain tension in the idler unit.

Adjusting the chain in the idler unit. Separate the chain where it runs around the idler wheel by pulling back the chain on the top side and underside and then pressing the chain sections towards one another until the chain snaps apart.

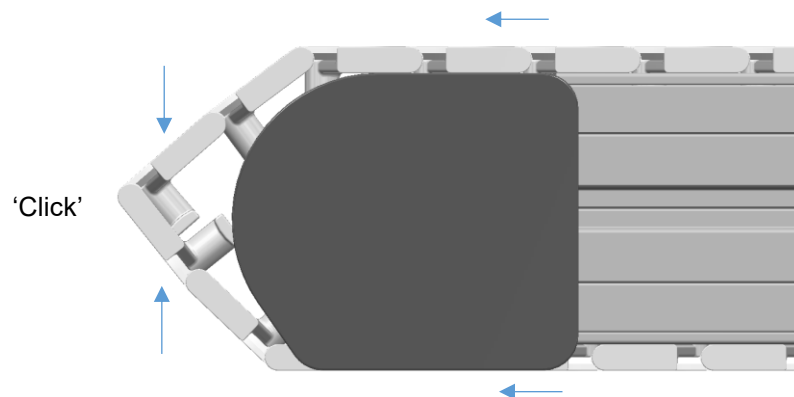


Figure. Separating a chain.

On an unladen chain, lay the top section over the bottom section. Remove links until there is one link less than the exact length of the unladen chain. It may be necessary to remove several links depending on conveyor length and design.

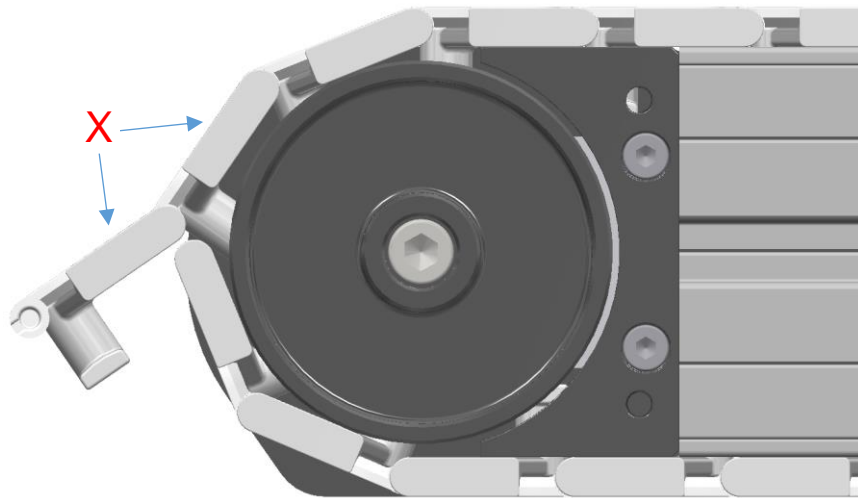


Figure. Removing links.

Assemble the chain by placing its ends at a 90° angle to each other. Insert the front edge of the lower link into the back of the top link and straighten the chain until a 'click' is heard.

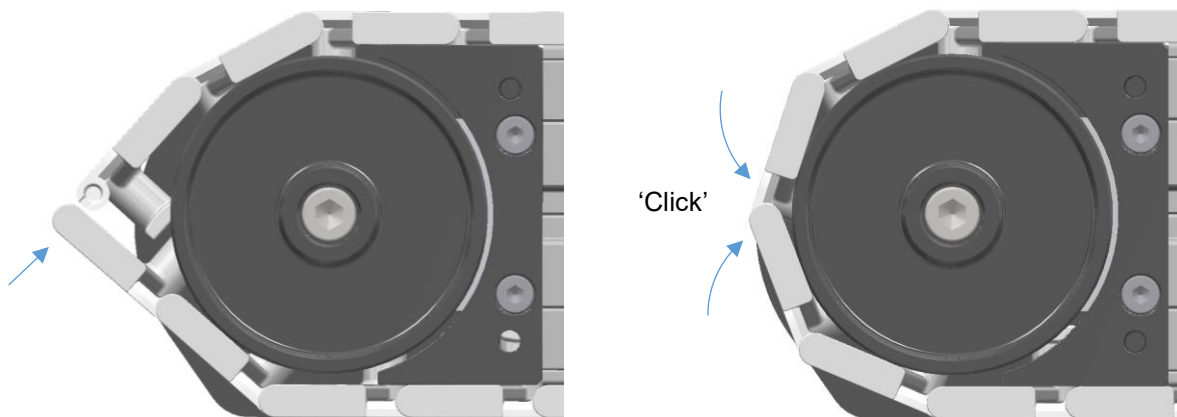


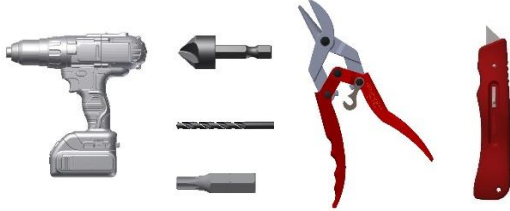
Figure. Assembling chain links.

Switch on the power supply and start the conveyor. Check that the conveyor runs smoothly and without jerks or dissonant noise. Depending on the design of the conveyor, different chain tensions may be necessary for good function. If the chain still does not run smoothly without jerks and dissonant noise, repeat the steps for adjusting chain length until good function is achieved.

7.2 Replacing the chain and slide rail

Tools required for working with the chain and slide rail:

Power drill, bit \varnothing 2.6 mm, countersink, Torx T10, secateurs, box cutter



Switch off and lock the power supply!

Remove the circlip from the driveshaft and then remove the motor and torque arm from the driveshaft.

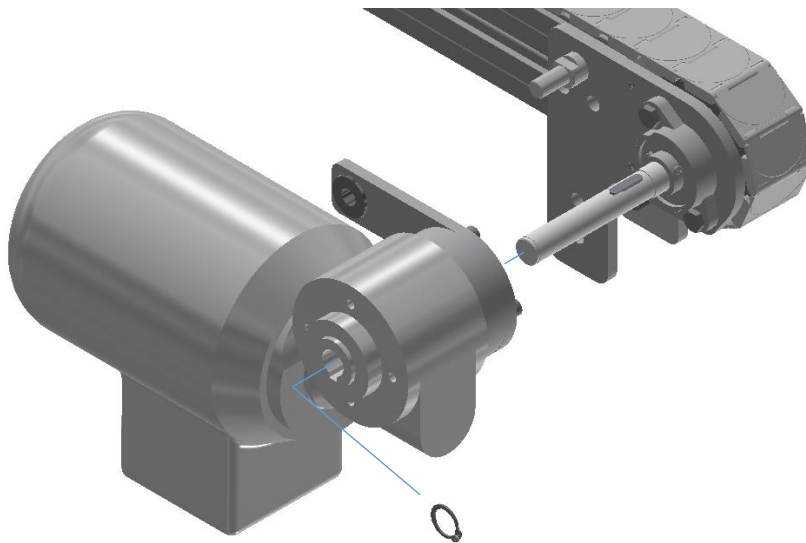


Figure. Removing a motor.

Split the chain as described in 7.1 and pull it out of the conveyor in the direction of operation.

Next, remove the old slide rail.

Using a knife, chamfer all three edges at the end of the two slide rails.

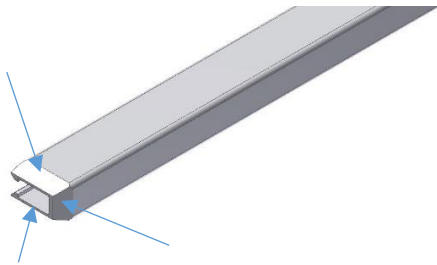


Figure. Chamfered slide rail edges.

By hand, manipulate approx 300 mm of slide rail until it is perfectly straight.

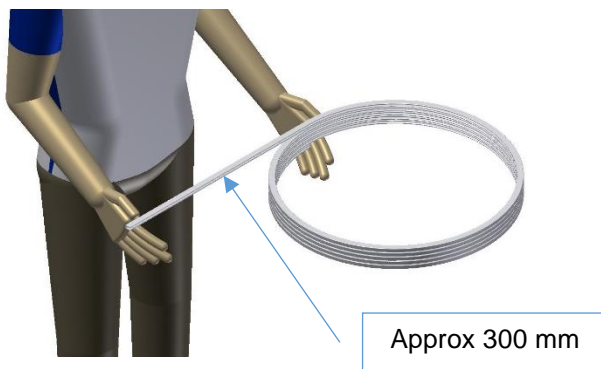


Figure. Shaping slide rails

Press the slide rails securely in place on the underside with the chamfer facing the edge of the profile in the drive unit and then press it in place along the profile. Cut the slide rail level with the profile towards the idler unit.

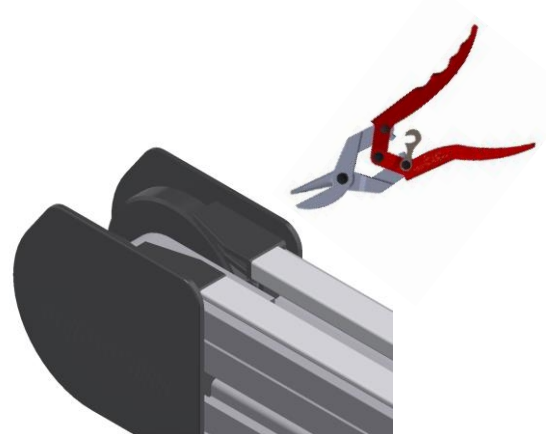
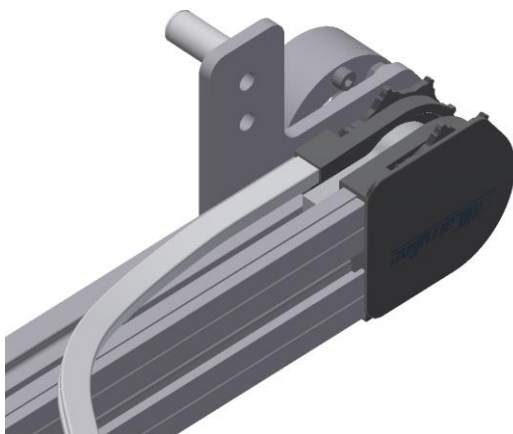


Figure. Installing the slide rail on the underside of the drive unit Figure. Slide rail in the idler unit

As illustrated, drill a 2.6 mm diameter hole. Countersink and fasten the slide rails to the drive unit using the self-tapping slide rail screws 400-1005. It's important to adhere to the width as otherwise the screw may impinge on the foot of the chain link. Hold the slide rail fast by hand throughout the drilling procedure. Make sure the head of the screw is fully countersunk in the slide rail. Make certain that all swarf is removed.

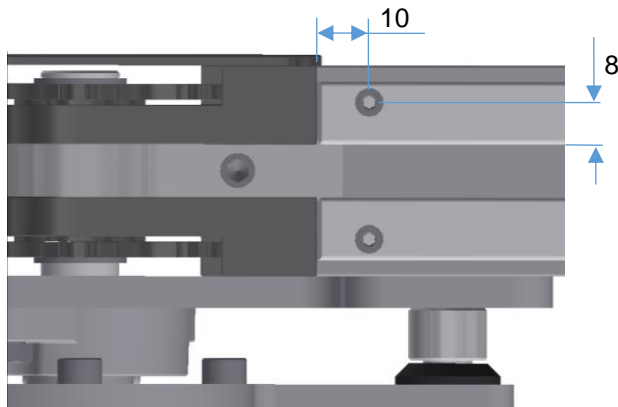


Figure. Slide rail fastened on the underside of the drive unit.

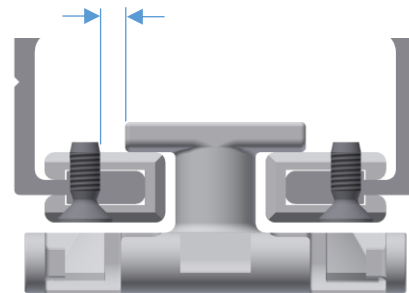


Figure. Clearance, chain link foot.

Chamfer and straighten the slide rail in the same way as above. Install the slide rail on the top side with the chamfer facing the profile edge in the idler unit. Cut the slide rail level with the profile towards the drive unit.

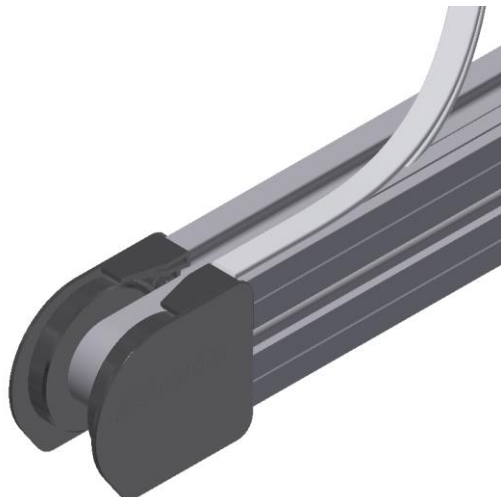


Figure. Installing the slide rail on the top side of the idler unit.

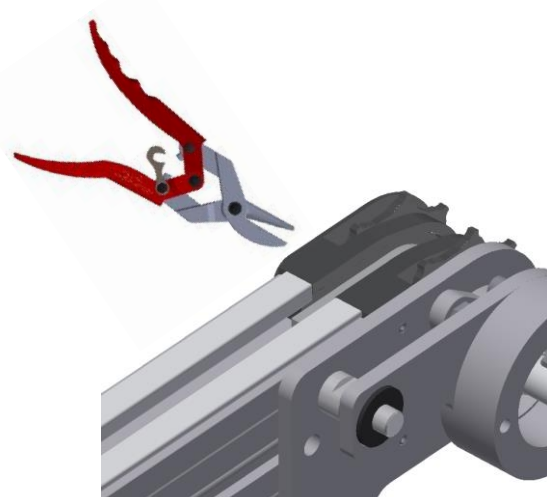


Figure. Drive unit slide rail.

As illustrated, drill a 2.6 mm diameter hole. Countersink and fasten the slide rails to the idler unit using the self-tapping slide rail screws 400-1005. It's important to adhere to the width as otherwise the screw may impinge on the foot of the chain link. Hold the slide rail fast by hand throughout the drilling procedure. Make sure the head of the screw is fully countersunk in the slide rail. Make certain that all swarf is removed.

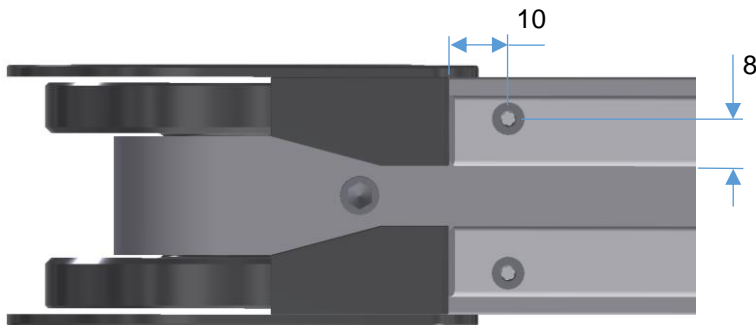


Figure. Slide rail screwed to the top side of the idler unit.

When splitting the conveyor, the slide rail must be cut according to the below. Always locate a slide rail join in a straight section and approx 100 mm from the profile split.

Top side

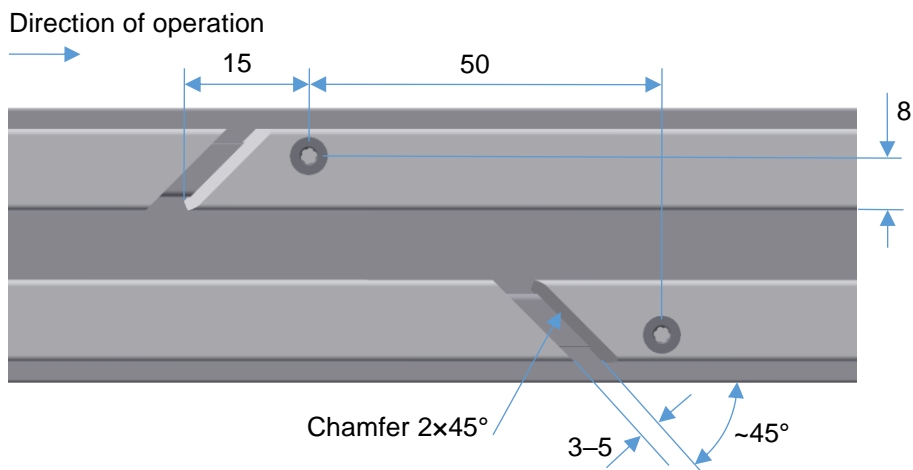


Figure. Joining the slide rail, top side.

Underside

Direction of operation

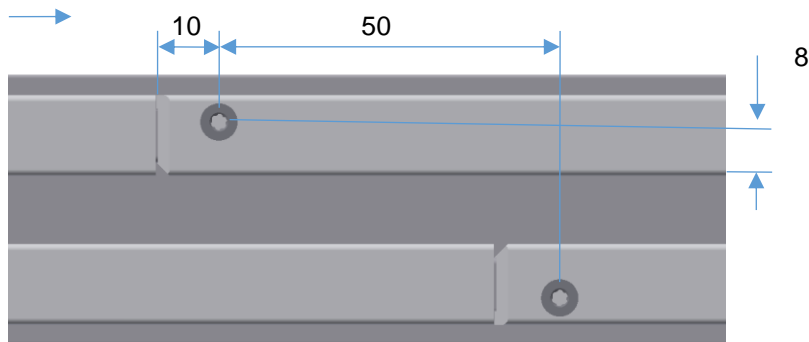


Figure. Joining the slide rail, underside.

Check all joints. Take around 300 mm of chain and pull it by hand in the drive direction through the entire conveyor making sure the chain runs smoothly over all joints.

Note the drive direction; install a new chain and adjust chain tension according to 7.1

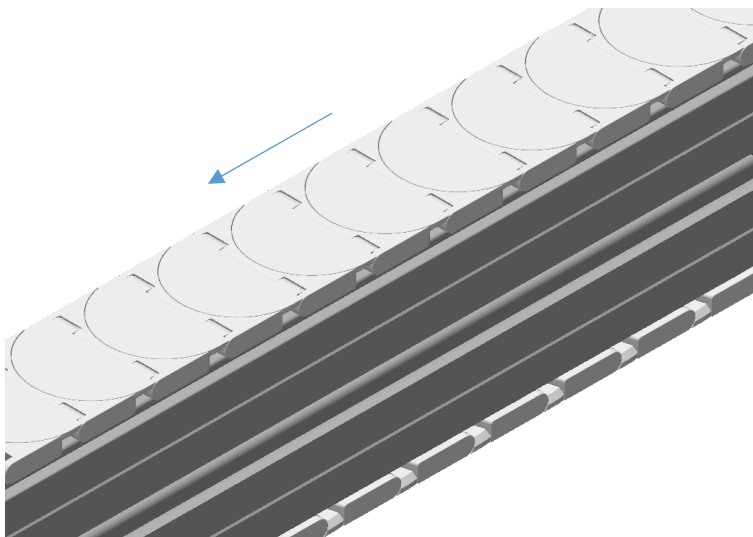


Figure. Direction of chain operation.

Make sure that all tools and replaced components are removed. Next, switch on the power supply. Start the conveyor and check that it runs smoothly without jerks or dissonant noise.

8 Dismantling the machine



Switch off and lock the power supply!

Dismantle the machine by following the instructions in Chapter 5 in reverse order.

9 Removing the machine



Switch off and lock the power supply!

Removal of the machine means that it must be disposed of and scrapped. In order for disposal and scrapping to take place properly, make sure that

- the machine is dismantled correctly and safely; see Chapter 8.
- that the machine's various components are broken down into the material fractions as used by Carryline AB and described in Appendix 1.
- that the various material fractions are sent for recovery according to local regulations.

10 Troubleshooting

Chain runs unevenly or jerkily

Cause	Action
Damaged or poorly installed slide rail.	Check and replace damaged slide rail.
Damaged conveyor.	Remove the chain and replace the damaged parts.
Dirt or fluids on the conveyor.	Clean with a damp rag and a mild detergent.
Chain too tightly or loosely tensioned.	Adjust chain tension.

Abnormal wear

Cause	Action
Excessive product weight on the conveyor.	Check current product weight and compare with specification.
Speed too high.	Check current speed and compare with specification.
Dirt on the conveyor.	Clean with a damp rag and a mild detergent.
Corrosive chemicals in contact with plastic parts.	Contact Carryline AB for information about approved chemicals.
Chain too tightly or loosely tensioned.	Adjust chain tension.

Dissonant noise

Cause	Action
Speed too high.	Check current speed. Compare with specification and adjust to correct value as necessary.
Worn or damaged driveshaft bearing.	Replace the bearing and driveshaft.
Worn or damaged slide rail and/or chain.	Replace the slide rail, and if necessary the chain.
Corrosive chemicals in contact with plastic parts.	Contact Carryline AB for information about approved chemicals.
Chain too tightly or loosely tensioned.	Adjust chain tension.

For other queries, contact


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Appendices

Appendix 1 – Environmental product declaration



Declaration of Environment

Carryline AB manufactures and supplies the market with chain conveyers in plastic with a main beam in aluminium or in stainless steel.

The conveyer system contain of a profile in aluminium or stainless steel, acetal- and nylon plastic, split pin in stainless, galvanized or stainless steel screw union and an electrical engine and gearbox.

All material is recyclable after dismantling.

Electronics in the system handle according to the regulation about producers responsibility for electronics.

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Carryline AB manufactures and markets chain-driven conveyors whose materials break down into the following fractions:

- Corrugated cardboard
- Aluminium
- Stainless steel
- Metals
- Chemicals (hazardous waste)
- Electronics
- Flammable waste
- Plastic (packaging)

All materials are recyclable after removal.

Also, Carryline AB has an internal recycling system for plastic granulate used in the manufacture of plastic links.