SIDE GRIP CONVEYOR

S830

Instructions for use
Translation in original

Appendices

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.

Caution!

Pinch or crush injuries – Risks can occur at pneumatic accessories without covers such as separation stop, pusher and divider.

Symbols that can be found on the machine

Pinch or crush injuries!

Indicates that there is a risk of pinch or crush injurie. During operation hands or other objects must not come in contact with equipment marked with the symbol.

A risk analysis for the installation must be done by the responsible installer before work start up.

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 according to the work. Tools and personal safety equipment must be used according to the tool manufacturer's recommendations.

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 guards 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 repaired 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 Data	S830
Chain width	83 mm
Min radius	150 mm
Chain pitch	38 mm
Max speed	50 m/min*
Max conveyor length per drive unit	20 m**
Noise level	<70 dB

4 Machine plate(s)

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

5 Installation

The conveyors are delivered on pallets or wrapped in plastic only. Using suitable equipment (a forklift or similar), always lift the conveyor by the stand it is built on.

Large side grip conveyors may be split into sections for transport.

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 conveyor if it was split into sections for delivery. Install and adjust the chain 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.)

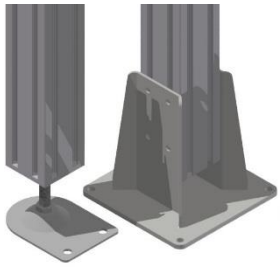


Figure. Typical feet.

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

Install the infeed and outfeed equipment and make sure that the surrounding covers are assembled and complete.

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.

Any hatch switches must be integrated into the control system such that the side grip conveyor stops immediately if a hatch is opened.

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).

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!

Chain tension is controlled by gas springs in the idler unit. Measure the distance between the rod eye and the gas spring housing. If the distance is greater than 90 mm, chain adjustment is necessary. Repeat on both conveyors.

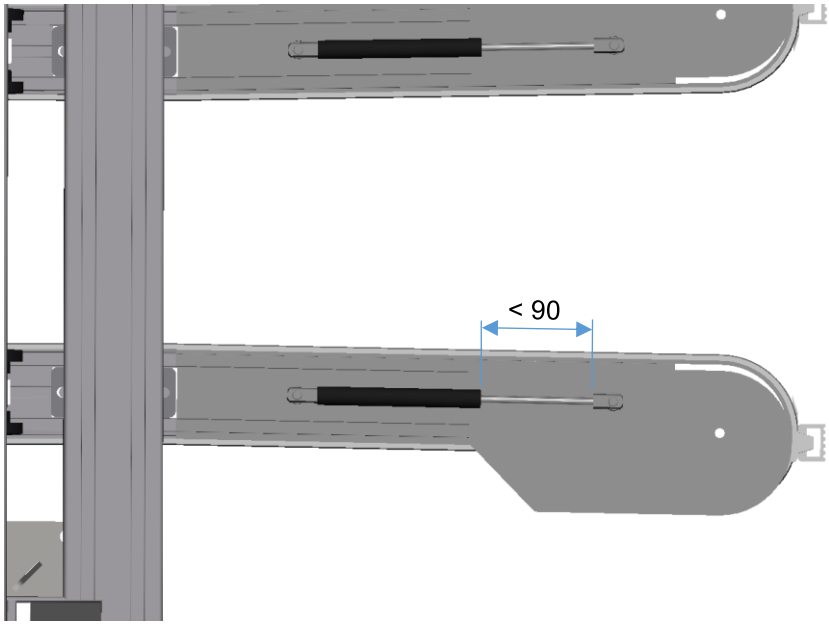


Figure. Gas springs in the idler unit.

Tools required for working with chain adjustment:

Polygrip, spanner 13 mm, circlip pliers

Switch off and lock the power supply!

Caution!

Crush injuries – observe caution when working with gas springs.

Undo the front attachment approx ½ turn and push it forward to release the energy in the gas spring. Perform the same operation on the gas spring on the underside.

Figure. Releasing gas spring energy.

Remove the circlip on the rear attachment on the top side and lift the gas spring away from the attachment.

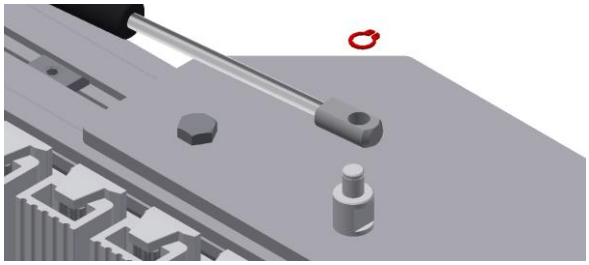


Figure. Removing gas springs.

Remove the shaft screw on the top side and then slide the top side plate backwards to expose the chain.

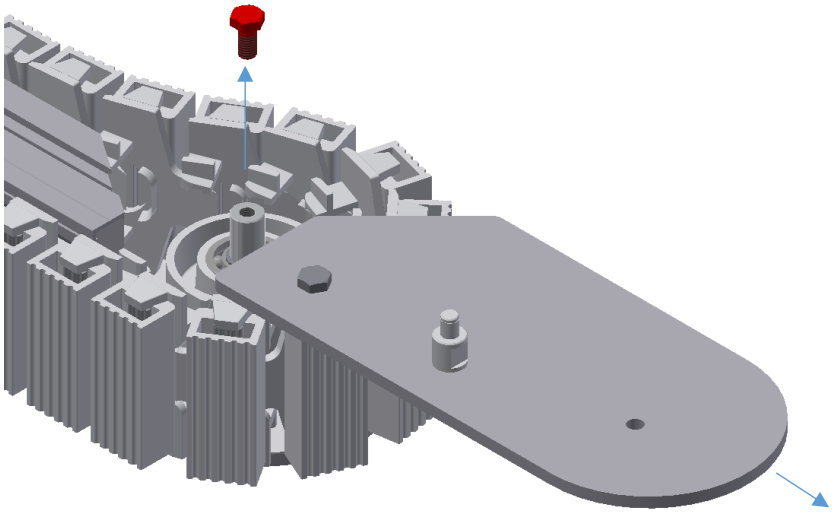


Figure. Exposing the chain.

Use the Polygrip to carefully prise away the top flight of the chain before pressing out a pin and separating the chain.

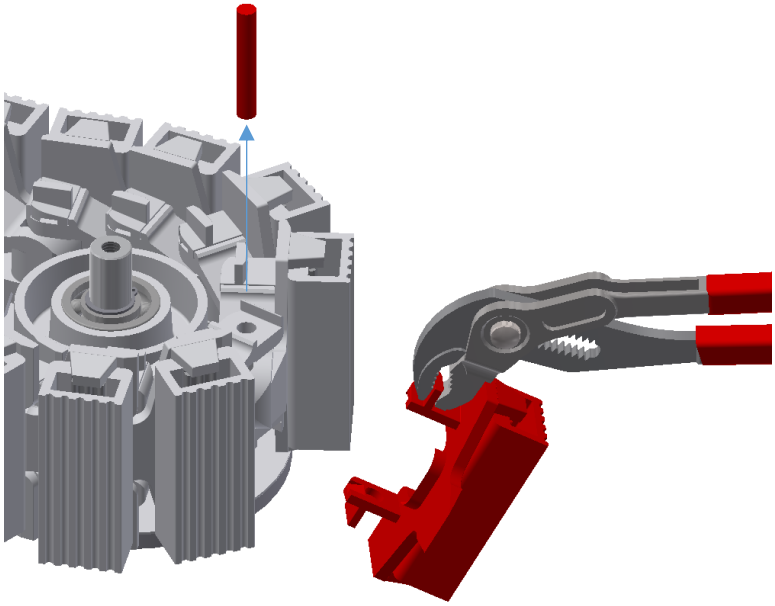


Figure. Separating a chain

Push the lower side plate with the idler wheel towards the end stop and then remove a suitable number of links.

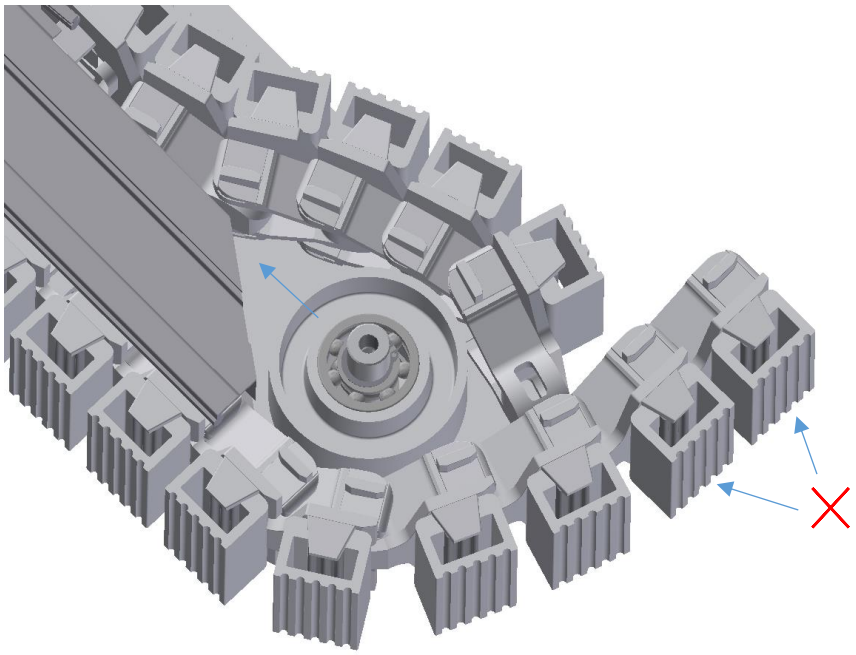


Figure. Removing chain links.

Join the chain using the pin and top flight before reinstalling the top side plate. Next, reinstall the gas spring and the circlip.

Tension the chain by pressing the front gas spring attachment backwards to compress the gas spring before tightening the attachment. Repeat the operation on the underside.

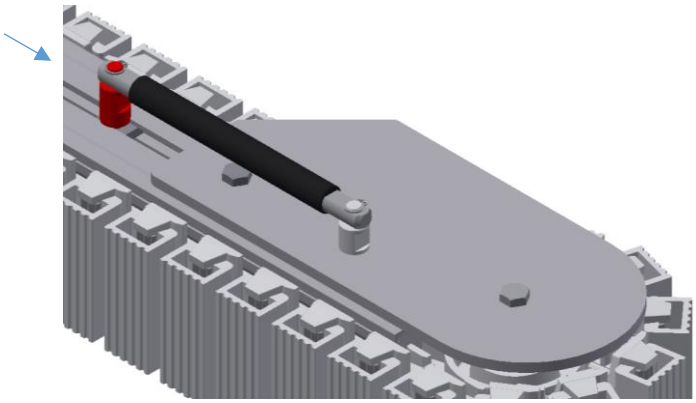


Figure. Tensioning the chain.

Make sure that all tools and dismantled parts are removed. Next, switch on the power supply and start the conveyor. Check that it runs smoothly and without jerks or dissonant noise.

7.2 Replacing the conveyor chain and slide rail

Tools required for working with the chain and slide rail:

Power drill, bit ø 2.6 mm, countersink, Torx T10, secateurs, box cutter, slide rail tool 400-1060, Polygrip, spanners 10 and 13 mm, circlip pliers

Switch off and lock the power supply!

Split the chain as described in 7.1

Remove the 4 × M6 screws inside the motor plate and the single M6 screw on the driveshaft and remove the motor from the driveshaft.

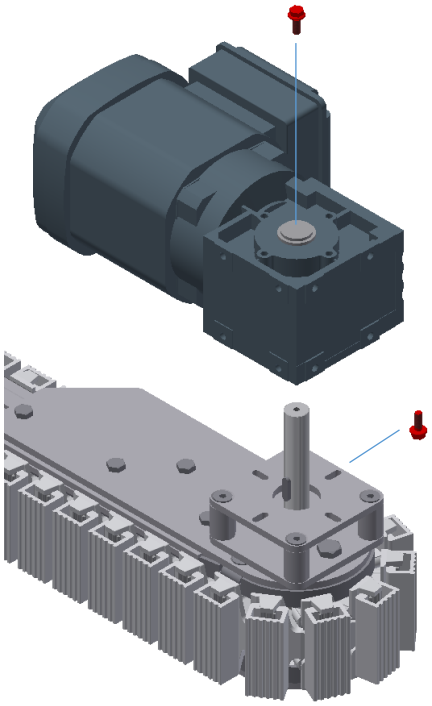


Figure. Removing a motor.

Pull the chain out of the conveyor in the direction of operation through the idler unit where the chain was separated.

Next, remove the old slide rail.

Check for wear and if necessary, replace the chain guides on the underside of the drive unit and on top of the idler unit. Refer to the spare parts list.

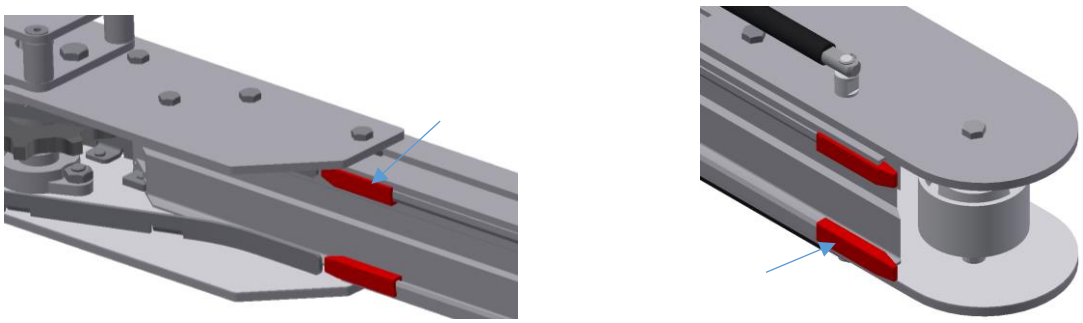


Figure. Slide rails on the top and underside.

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

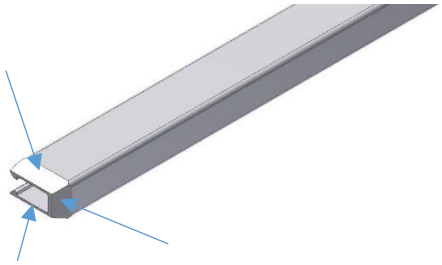


Figure. Chamfered slide rail edges.

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

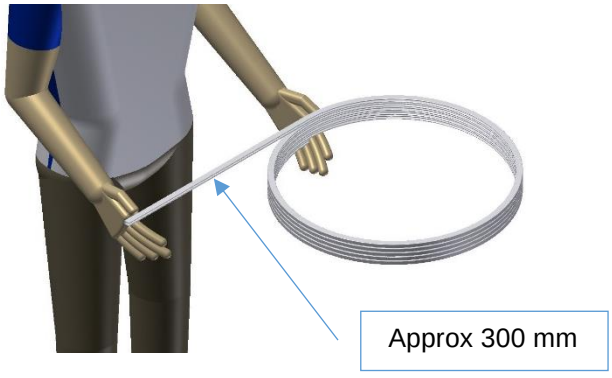


Figure. Shaping slide rails.

Press the two chamfered slide rails against the chain guides on the underside of the drive unit. Use slide rail tool 400-1060 to press in the slide rail along the profile. Cut the slide rail level with the profile on the underside of the idler unit.

Figure. Installing the slide rail on the underside.

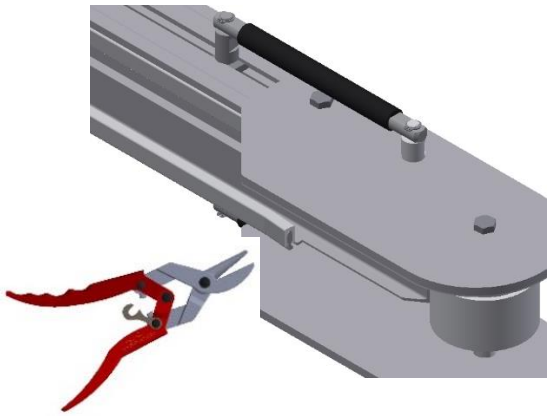


Figure. Cutting the slide rail, underside.

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. Hold the slide rail fast by hand throughout the drilling procedure. Make certain that all swarf is removed.
Make sure the head of the screw is fully countersunk in the slide rail. However, the tip of the screw may not penetrate the other side of the slide rail.

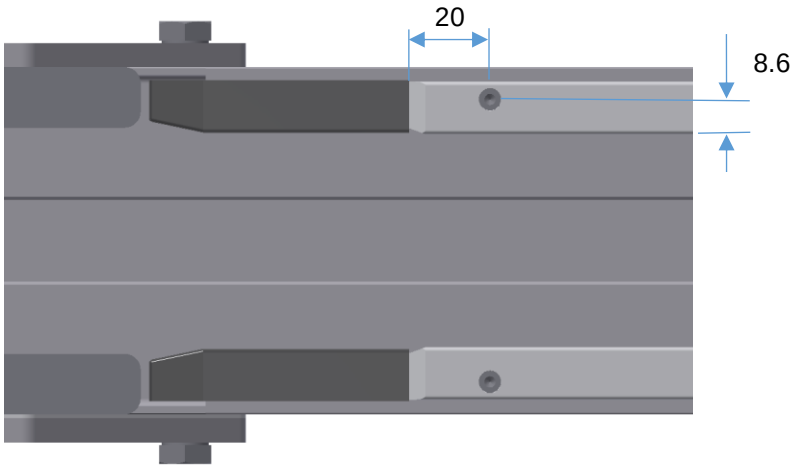


Figure. Slide rail fastened on the underside.

Chamfer and straighten the slide rail in the same way as above. Install the slide rail on the top side against the chain guides on the idler unit. Cut the slide rail level with the profile in the drive unit.

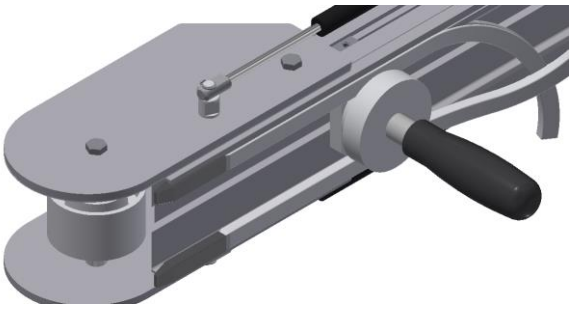


Figure. Installing the slide rail, top side.

Figure. Cutting the slide rail, top side.

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. Hold the slide rail fast by hand throughout the drilling procedure. Make certain that all swarf is removed.
Make sure the head of the screw is fully countersunk in the slide rail. However, the tip of the screw may not
penetrate the other side of the slide rail.

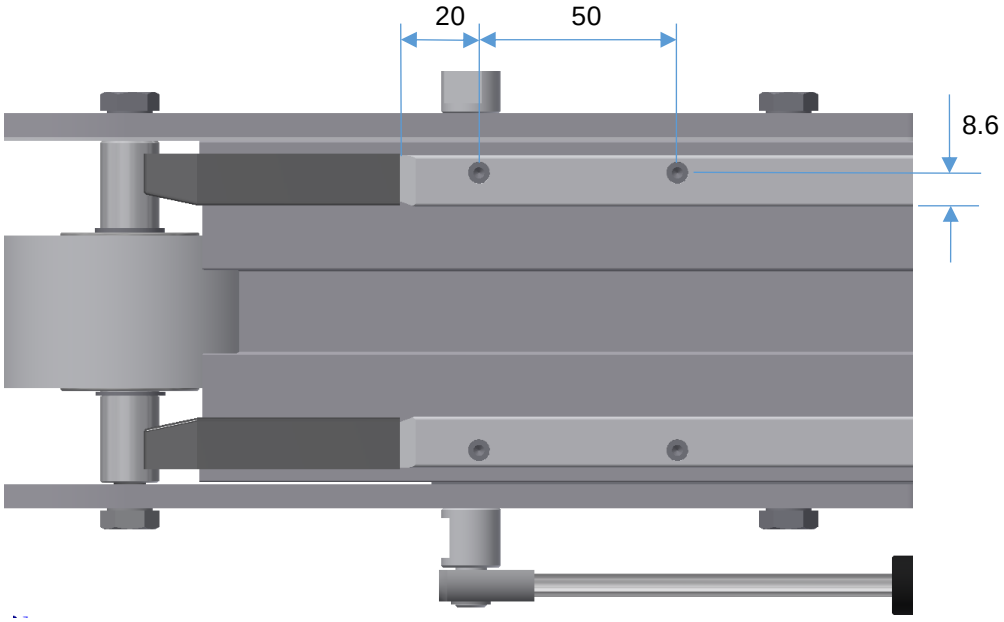


Figure. Slide rail fastened on the top side.

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.

Cut and chamfer the ends as illustrated.
Drill a 2.6 mm diameter hole. Countersink and fasten the slide rails at a distance of 3–5 mm. Make certain that all swarf is removed.
Use self-tapping slide rail screws 400–1005.
Make sure the head of the screw is fully countersunk in the slide rail and does not protrude through the back.

For the topside

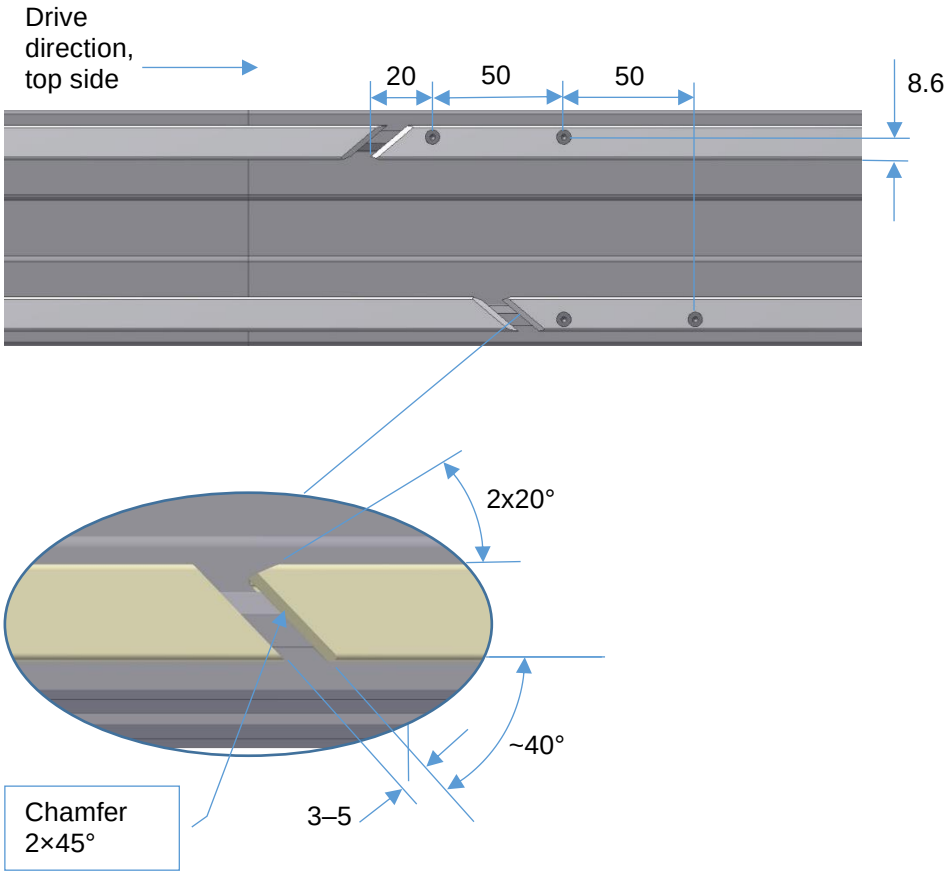


Figure. Joining the slide rail, top side.

For the underside

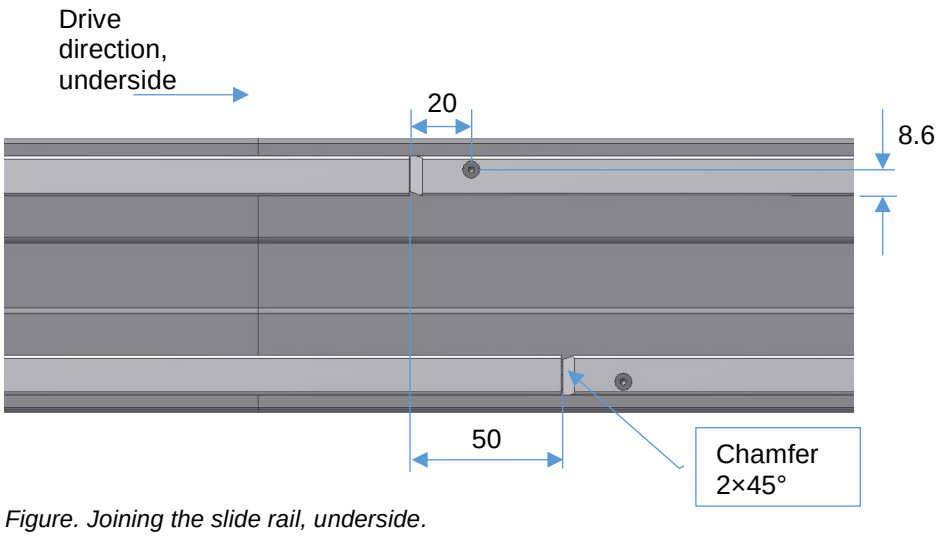


Figure. Joining the slide rail, underside.

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

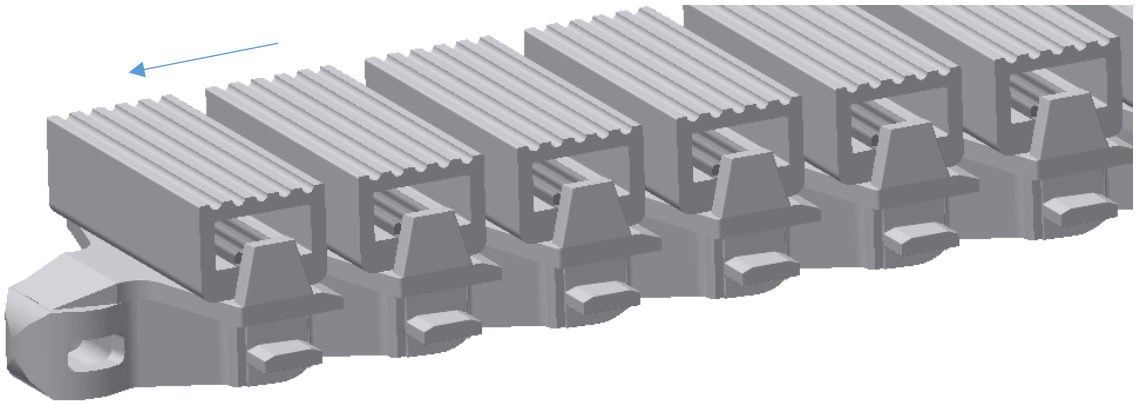


Figure. Direction of conveyor chain operation.

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

Motor overheats
Check power supply (A) and compare with the motor rating plate.

Cause	Action
Excessive product weight on the conveyor.	Remove products and test without load. Check current product weight and compare with specification.
Damaged conveyor, chain runs slowly	Remove the chain and replace the damaged parts.
Dirt or fluids on the conveyor.	Clean with a damp rag and a mild detergent.
Oil leak in gearbox.	Replace motor/gearbox.

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

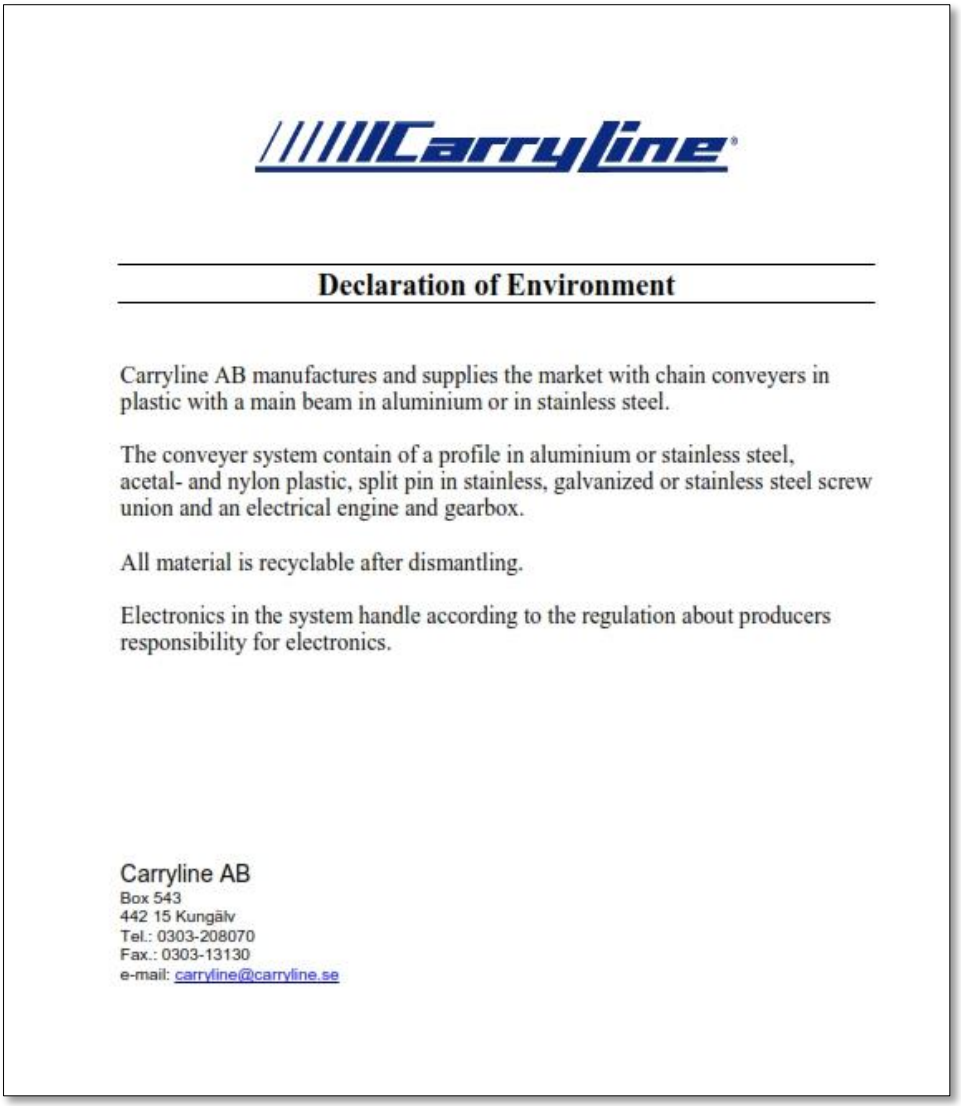
Carryline AB

+46 10 130 73 00

info@carryline.se

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.