

Chassis

The chassis for the EURO-flex conveyors consist of aluminium profiles and guide rails. These are supplied in 6 m long rods. The aluminium profile is also available in any cut lengths. There are 3 different guide rails materials available. Guide rails made of HDPE grey are used for dry running, as these have a very low coefficient of friction. If high chemical or thermal resistance is required, or if heavy accumulation is expected, it is recommended to use guide rails made of PVDF white. The guide rails must be fixed at the beginning with plastic screws.

The EURO-flex 55 and EURO-flex 85 system requires 4 m of guide rails per running metre of aluminium profile.

The EURO-flex 195 system requires 8 m of guide rails per running metre of aluminium profile.

Tool

A tool is available for mounting the guide rails.

Chassis connections

The individual chassis profiles are connected externally with screwable connecting straps. Per strapped joint, 2 straps each are required for systems EURO- flex 55 and EURO- flex 85, and 4 straps each for the system EURO- flex 195. Under high load, the strapped joints of the EURO- flex 85 may be reinforced with 2 additional internal straps.

Technical specifications

Material	Chassis profile	Anodised aluminium
	Guide rails	HDPE gray
		PVDF white
PVDF blue		
Weights	Chassis profile 55	2,3 kg/m
	Chassis profile 85	3,6 kg/m
	Chassis profile 195	6,9 kg/m

Deflection

EURO-flex 55	Deflection 8.5 mm permissible, at point load 30 kg, axis distance 3 m
	Deflection 8 mm permissible, at area load 15 kg/m, axis distance 3 m
EURO-flex 85	Deflection 10 mm permissible, at point load 60 kg, axis distance 3 m
	Deflection 10 mm permissible, at area load 30 kg/m, axis distance 3 m
EURO-flex 195	Deflection 10 mm permissible, at point load 180 kg, axis distance 3 m
	Deflection 10 mm permissible, at area load 90 kg/m, axis distance 3 m



Chains

The horizontal and vertical curved chains EURO-flex 55, EURO-flex 85 and EURO-flex 195 consist of a wear- and impact-resistant POM plastic and stainless steel connecting bolts. The EURO-flex 55 and EURO-flex 85 systems have toothed chain links.

The toothing offers 2 essential advantages:

- On straight lines, in curves as well as during drive and idler, the gap between the chain links does not bear the risk of accidents.
- Even the smallest parts (up to Ø 16 mm) may be conveyed or pushed on/off without any problem even in accumulating operation.

The chains EURO-flex 195 are designed in a way that no risk of accidents occurs even in the curves through the chain plates opening.

To be able to convey the most different products also on ascending and descending slopes or even vertically, a multitude of belt cleats types are available. For detailed information, please, see the related chapter or call us for information.

Technical specifications

Material Chain POM white, other RAL colours available on request.
Bolt stainless steel 1.4301

Temperatures Operation between -40°C to +90°C

Weights	EURO- flex 55	0,44 kg/m
	EURO- flex 85	1 kg/m
	EURO- flex 195	2kg/ m

Tensile force	EURO- flex 55	1000 N
	EURO- flex 85	2200 N
	EURO- flex 195	4000 N

Packaging unit	EURO- flex 55	3 m
	EURO- flex 85	3 m
	EURO- flex 195	5 m

Radius minimum	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm
		EURO- flex 195	600 mm
	Vertical	EURO- flex 55	300 mm
		EURO- flex 85	400 mm
		EURO- flex 195	600 mm

Drive stations

Head drive stations are to be used preferably. The head drive stations are installed in the conveying direction at the end of the conveyor. The designation “right” and “left” refer to the configuration of the chain drive, viewed in conveying direction, with the motor at the bottom.

In addition to the head drives, center drives, arc bends and rotary drives may be delivered. Please see the various chapters for further information and specifications.

All drive stations may be delivered with or without motor. In both cases, the related motor plates for SEW S37 are included in the scope of delivery. Adapter plates for other motors available upon request.

For the design of the motor, we need speed, load and track routing of the conveyor. We provide example calculations up.

Technical specifications

Possible conveying speeds $V = \text{up to } 60 \text{ m/min}$

Possible motor output

- $P = 0,18 \text{ KW}$
- $0,25 \text{ KW}$
- $0,37 \text{ KW}$
- $0,55 \text{ KW}$

Material $\text{steel, galvanized / PE}$

Chain wheels $\text{Head drives are driven using chain wheels and roller chain.}$
 $\text{For the required chain wheels, please, see chapter Drive.}$

Design of the motor speed for head drive stations

Speed of the drive motor

Notation used:

- $V = \text{conveying speed}$ (m/sec)
- $ZM = \text{number of teeth of the chain wheel – gear motor}$
- $ZA = \text{number of teeth of chain wheel – drive station}$
- $Nab = \text{output speed of the gear motor}$ (rpm)

Calculation EURO- flex 55 $Nab = 215 \times V \times ZA / ZM$ (rpm)

Calculation EURO- flex 85 / 195 $Nab = 155 \times V \times ZA / ZM$ (rpm)

Deflection pulley

In case of head drive stations, the deflection pulley are installed at the end of the conveyor opposite to the conveying direction. In case of middle drives, 2 deflection pulley are required.

Variant:

Deflection pulley with chain introduction

At the deflection pulley an additional opening for installation and removal of the chain is provided.

Variant:

Deflection pulley without chains introduction

When this deflection pulley is used, the chain is installed and removed at the drive station.

Technical specifications

Material steel, galvanized / PE

Wheel bends

Horizontal direction changes with small radii should be made using wheel bends wherever possible.

Through the ball bearing supported deflection pulley plates, the friction forces and thus wear and chain tensile force are extremely low. The space required must be taken into account when planning the system. The connection straps for connecting to a Chassisprofil are included in the scope of delivery. The required guide rails must be ordered separately.

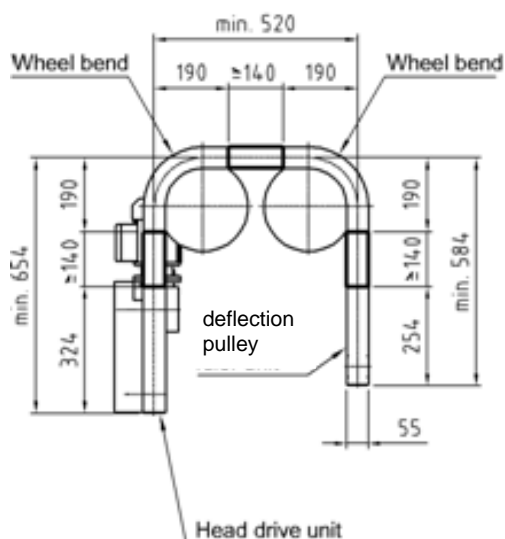
Technical specifications

Material steel, galvanized / PA 6 / Anodised aluminium

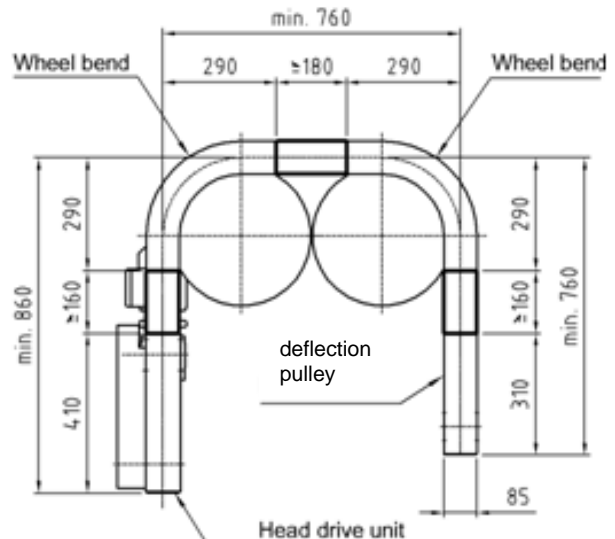
Radius	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm

Planning notes

EURO- flex 55



EURO- flex 85



Continuous bend

Horizontal slide bend

The horizontal slide bends consist of PE solid material with a very low coefficient of friction to the chain material. Despite of this, horizontal bends should only be used for the systems EURO-flex 55 and EURO-flex 85 if the use of wheel bends is impossible. The connecting strips for the connection to the chassis profile are included in the scope of delivery. For the connection of horizontal continuous bends to other components, please, observe the following planning notes.

Technical specifications

Material steel, galvanized / PE

Radius	Horizontal	EURO- flex 55	125 mm
		EURO- flex 85	200 mm
		EURO- flex 195	600 mm

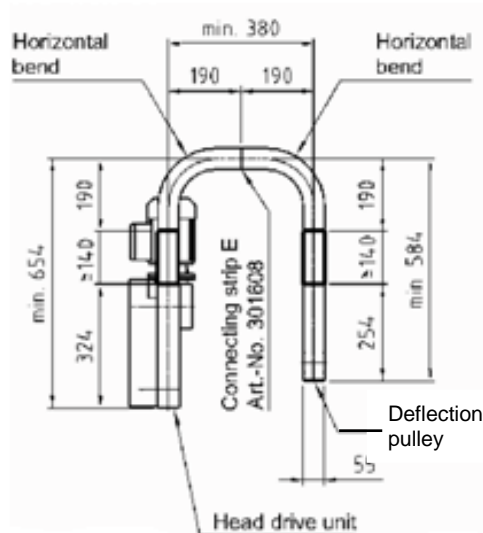
Other radii available on request

Other angles available on request

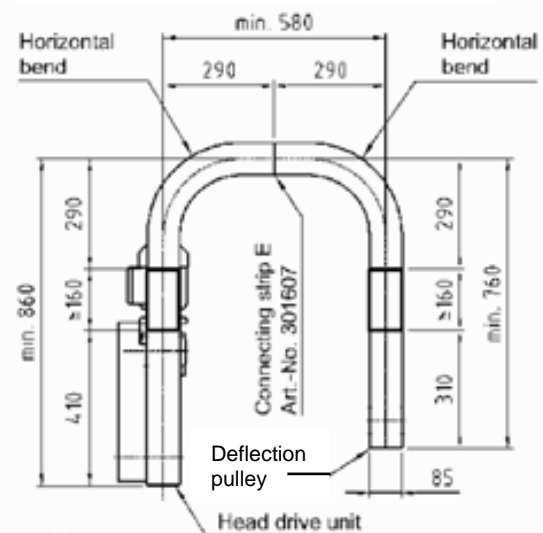
Angle	Horizontal	EURO- flex 55	30°, 45°, 60°, 90°
		EURO- flex 85	15°, 30°, 45°, 60°, 90°, 180°
		EURO- flex 195	30°, 45°, 60°, 90°, 180°

Planning notes

EURO-flex 55



EURO-flex 85



Vertical bends

The vertical slide bends are composed of bent aluminium profile. Various angles are available for the realization of inclines and declines.

All components as well as the chassis may directly be connected to the vertical bends. The required connecting strips are included in the scope of delivery.

Technical specifications

Material steel, galvanized / PE

Radius

Vertical	EURO- flex 55	300 mm
	EURO- flex 85	400 mm
	EURO- flex 195	600 mm

Other radii available on request

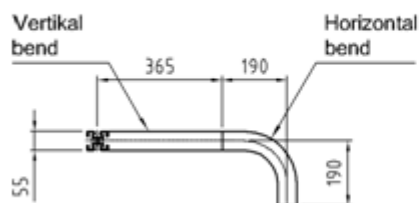
Other angles available on request

Angle

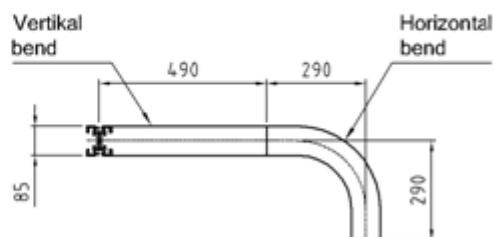
Vertical	EURO- flex 55	5°, 10°, 15°, 30°, 45°, 60°, 90°
	EURO- flex 85	5°, 10°, 15°, 30°, 45°, 60°, 90°
	EURO- flex 195	5°, 10°, 15°, 30°, 45°, 60°, 90°

Planning notes

EURO- flex 55



EURO- flex 85





Supports

To support the conveyors, 2-leg and 3-leg supports are available. The support length may be defined using the pipe length, fine adjustment can be made using the threaded bars at the adjusting feet. The adjustable feet can be doweled. In case of higher loads on the conveyor or for a higher support, an aluminium profile 100 x 100 with various fastening angles and base plates is available. The profile ends and grooves may be sealed using end caps and covering strips.

Technical specifications

Material	Two-leg and three-leg supports	PA 6/ steel, galvanized
	Pipe	Steel, galvanized
	Fastening elements	PA 6/ steel, galvanized
	Profile 100 x 100 and 50 x 50	Anodised aluminium
Supporting height	Two-leg and three-leg supports	H = 400 - 2000 mm
	Pipe 100 x 100	Up to max. 4000 mm

Side guides

The design of the side guides varies and depends on the product to be conveyed and the conveying situation. As standard, 3 side guide profiles are available for this purpose. Using the elements offered, fixed, adjustable and variable side guides for most of the product shapes and sizes may be realized.

Models	Side guide 20 x 20, Anodised aluminium
	Side guide 25 x 11, Anodised aluminium, can be combined with RAPS protective strip
	Side guide Ø 12 mm, steel, galvanized
	Side guide Ø 12/8 mm, steel, galvanized / PA

Order information	The distances, and thus the number of side guide holders depend on the conveying situation. In case of accumulating operation, a distance of 0.3 - 0.5 m may be necessary, in case of normal transport operation, distances of 1 - 1.5 m may be sufficient.
--------------------------	---



Quick installation guide

1.1 General information

This Short instructions describes the installation, cleaning, maintenance and servicing of the conveyor system.

1.1.1 Target group

The following persons must read and observe this Quick Start Guide:

- Persons who deploy the machine for its intended use
- Persons who are responsible for the operational safety, operation and operating behaviour of the machine
- Persons who operate or service the machine

1.1.2 Copyright

Without the express written permission of euroflex it is not permissible for any part of this manual to be:

- Copied
- Photographically transmitted
- Reproduced
- Translated
- Saved on any other electronic medium or put into any electronically readable form

1.2 Safety

1.2.1 General

Only the operator of the plant is responsible for the proper assembly and accident-free operation. Obligations of the proprietor

1.2.2 Obligations of the operator

The operator is obliged to implement measures that result from the information provided by the Machinery Directive 2006/42 / EC.

These include in particular:

- Adhering to the laws and regulations valid at the installation site.
- Marking hazard zones.
- Training and instructing personnel.
- Providing personal protective equipment.
- Stipulating instructions and prohibitions.



1.2.3 Hazard zones and signs identifying these

The operator of the system is responsible for the identification of the hazardous areas (prohibition, warning and mandatory signs).

The danger zones refer to the immediate environment in which they are installed and serve to protect persons.

1.2.4 Protective guards

Protective guards in machine areas in which a risk to persons exists protect personnel against injuries.

The protective covers must be placed by the operator.

1.2.5 Protective equipment

When dwelling or working in the hazard zones and operating areas it is necessary to wear general or special personal protective equipment.



1.3 Assembly

During installation, the safety regulations, which result from the specifications of the Machinery Directive 2006/42 / EC are to be implemented.

This chapter contains the instructions information for assembly.

Observe the information and instructions provided on the coming pages.

1.3.1 Overall view of the flat-top chain conveyor



Figure 1: Overall view of the flat-top chain conveyor

1. Flat-top chain
2. Lateral guide
3. Drive
4. Base plate
5. Support



1.3.2 Assembly of the slide rails on the flat-top chain conveyor

Install the slide rails in as many continuous lengths as possible.

In highly stressed areas, the slide rails must be separated to allow expansion. Separation is required at arc wheels bend, deflection units and drive units.

Avoid slide rail connections at joints of the guide profiles.

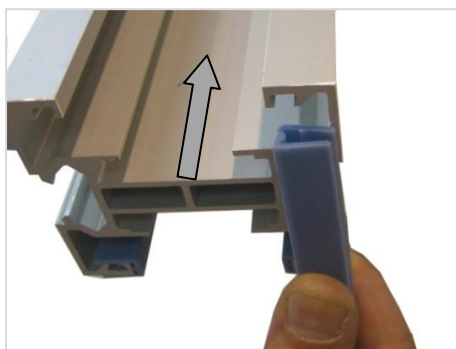
Never connect slide rail in horizontal or vertical continuous bends.

Required tool:

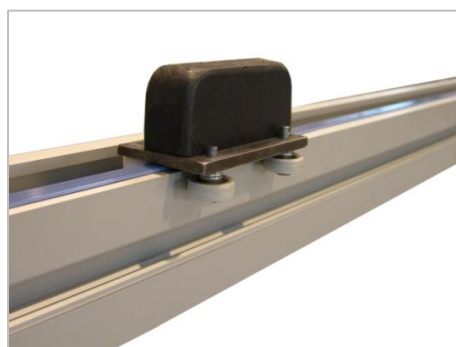
1. Mitre cutter
2. Steel pin (\varnothing 4mm x approx. 200mm long)
3. Hammer
4. Carpet knife
5. Assembly tool (euroflex)



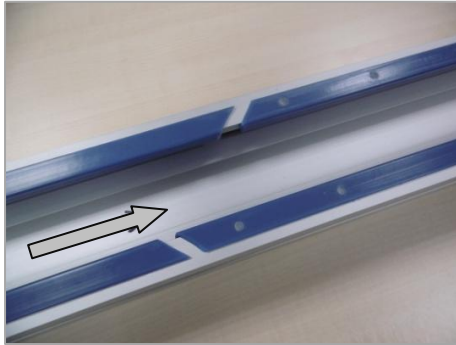
- Check the slide rail for damage.
 - Only use undamaged slide rails
- Chamfer the slide rail at the start (viewed in running direction)



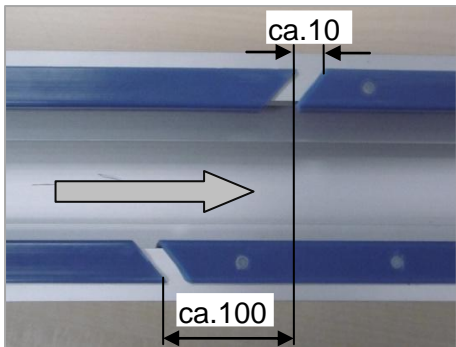
- Clip slide rail to the profile in the running direction with the assembly tool (see Figure).



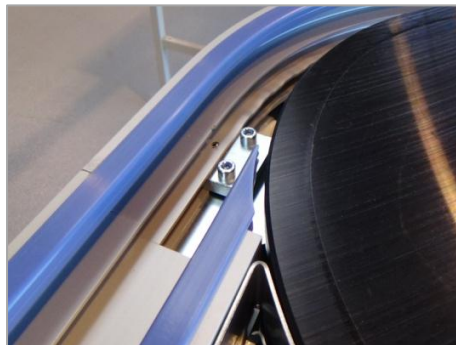
- Clip slide rail to the profile in the running direction with the assembly tool.
- Avoid the development of “waves” in the slide rail by clipping it on completely (audibly).
- Avoid slide rail connections at joints of the guide profiles.



- In the case of sliding rail connections, cut the two sliding rail ends with the mitre cutter at an angle of approx. 45°. Gently deburr the butt ends.
- Cut back the start of the new sliding rail section with a narrow angle (transport direction see arrow). Gently deburr the butt ends.

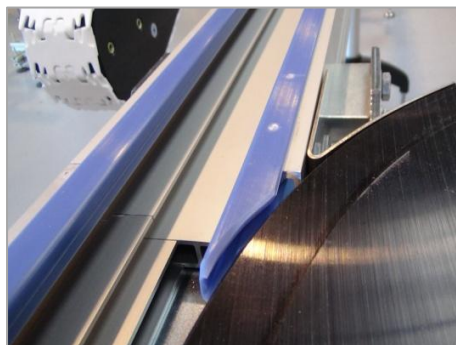


- Maintain a distance of approx. 10mm between the sliding rail ends (transport direction see arrow).
- Do not position two sliding rail connections so that they are opposite each other. Maintain a minimum spacing of approx. 100mm.
- Each sliding rail section must be double fixed at the start (viewed in the transport direction) (see following pages "Fixing sliding rail").



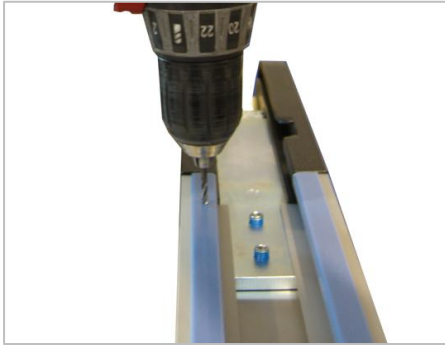
Sliding rail before bending wheel:

- Cut off the end of the sliding rail with an angle of approx. 45° with the mitre cutter.
- The sliding rail must be somewhat longer than the guide profile. A distance of 10mm must be maintained between the end of the sliding rail and the bending wheel.
- The end of the sliding rail may not curve upwards or downwards.

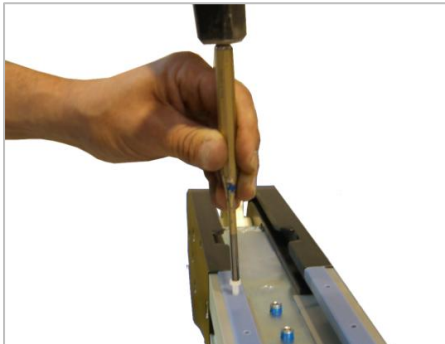


Sliding rail after the bending wheel:

- Cut off the end of the sliding rail with an angle of approx. 45° with the mitre cutter. Chamfer the sliding rail end in the transport direction.
- The sliding rail must be somewhat longer than the guide profile. A distance of 2mm must be maintained between the end of the sliding rail and the bending wheel.
- The end of the sliding rail may not curve upwards or downwards.
- Each sliding rail must be double fixed at the start (viewed in the transport direction) (see following pages "Fixing sliding rail").



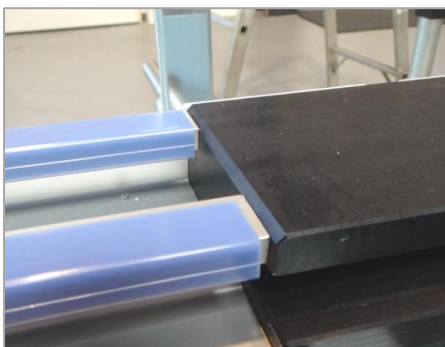
- Fasten each slide rail piece at the front end (viewed in running direction).
- Using the drill (drill bit \varnothing 3.4 mm), drill a hole in the slide rail and chassis.
- Attention: Do not drill through the slide rail. The underside of the slide rail must not be drilled or protruding.
- After drilling, deburr and remove all chips.



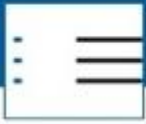
- Carefully knock in M4x8 plastic screw.



- Cut off the screw head flush careful.
- Any protrusions can be reworked with the file.



- Mount the sliding rail at the end of the profile (seen in the transport direction) before intermediate or following elements with a spacing of approx. 5mm. Cut off the sliding rail parallel to the elements with the mitre cutter and gently deburr the ends.
- Mount the sliding rail at the end of the conveyor with a spacing of approx. 5mm at the drive station. Cut off the sliding rail parallel to the drive station with the mitre cutter and gently deburr.



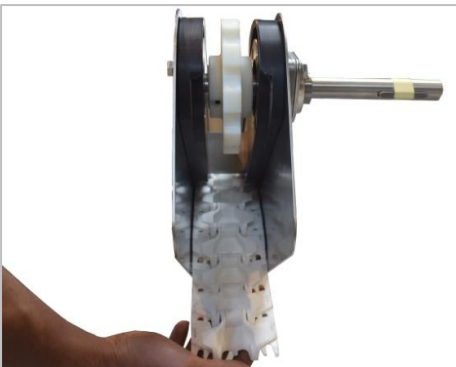
1.4 Mounting the flat-top chain



- Check the run using a short piece of the chain.
- Remove any clamping points and rework seams if necessary.
- Observe the run direction of the chain.



- Variant:
- Feed the conveyor chain into the deflection pulley.
- Insert the chain into the deflection pulley in the running direction and push/pull until the chain has been pulled completely through the conveyor.



- Variant:
- Feed the conveyor chain into the drive station.
- Feed the conveyor chain in the running direction into the drive station from below and slide in/pull through until the chain has been drawn fully through the conveyor.



- At the assembly opening fit the chain bolt and close the chain with this.
- Select the chain length so that the contraction of the chain ends is done with little effort.
- With a tight chain, rattling will be heard at the drive station.



1.5 Cleaning

When cleaning the safety instructions which follow from the details of the Machinery Directive 2006/42 / EC are to be implemented.

1.5.1 Prerequisites

NOTE! Improper cleaning

The consequences may be damage to the machine or objects within its environment.

- Do not use steam jet or high pressure cleaning devices for cleaning surfaces.
- Do not use compressed air for cleaning and drying surfaces.

Remove contaminants that arise during ongoing operation with plenty of water under low pressure and cleaning products. Remove process product residues.

Contact euroflex for instructions on cleaning any further contaminants.

The cleaning products used shall be specified by the local hygiene officers. For the selection of the cleaning agent observe the following requirements.

Use the following:

- Solutions with a pH value between 4.5 and 9
- Water under low pressure
- Water temperatures below 40°C

Do not use the following:

- Cleaning products containing chlorine, ammoniac, phosphoric acid or their compounds
- Abrasive cleaning products
- Solutions with a pH value below 4.5 or above 9
- Water under high pressure
- Water temperatures above 40°C

1.5.2 Preparation

1. Switch off machine.
 - ⇒ No voltage is present at the machine.
2. Close the pneumatic supply at the main valve.
3. Secure the main switch on the switch cabinet and main valve for the pneumatics with a separate safety lock to prevent a restart.

1.5.3 Execution

Protective equipment: Protective equipment against cleaning products used

Prerequisite:

The machine has been prepared for cleaning and the cleaning prerequisites have been fulfilled.

1. Remove surface contamination without damaging the surface.
2. Remove residue of conveyance goods.
3. Rinse off solution with water under low pressure.
4. Rub surface to dry it.



1.6 Spare parts

NOTE! Use of non-original spare parts

Replacement of parts with non-original spare parts during maintenance.

This can lead to defects in the conveyance goods, malfunctions, a loss of the safety functions and the damage or destruction of parts.

During maintenance only replace parts with original spare parts from euroflex.

1.7 Maintenance

When servicing the safety instructions which follow from the details of the Machinery Directive 2006/42 / EC are to be implemented.

Quantity of lubricant

- Spray on evenly and sparingly.

1.8 Maintenance schedule

Interval: Every 8 operating hours

Place	Maintenance work	Personnel
Safety equipment	Check function	
Machine/system	<ul style="list-style-type: none">▪ Inspect for visible damage▪ Clean surface▪ Remove foreign bodies	Maintenance personnel
Gears	Check leak-tightness	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel

Interval: Every 40 operating hours

Place	Maintenance work	Personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Electrical wiring	Check wiring for visible damage.	Maintenance personnel



Interval: Every 170 operating hours

Place	Maintenance work	Personnel
Screw connections	Check screw connections on all load-bearing and moving parts for correct tightness.	Maintenance personnel
Surfaces	Check surfaces for damage.	Maintenance personnel
Flange bearing (if present)	Check eccentric ring for secure seating	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel

Interval: Every 500 operating hours

Place	Maintenance work	Personnel
Gear wheel	Check gear wheel for visible damage.	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion.	Maintenance personnel
Slide rail	Check slide rail for visible damage.	Maintenance personnel
Sprocket wheels of gear motor and drive unit	Sprocket check for visible damage and wear.	Maintenance personnel
Roller chain (drive unit)	Check for damage and Roller chain elongation	Maintenance personnel
Motor plate	Check motor plate for tight fit	Maintenance personnel

Interval: Every 1000 operating hours

Ort	Wartungsarbeit	Personal
Bearings and links	Check correct function of bearings and links.	Maintenance personnel
Conveyor chain	Check conveyor chain belt for damage and linear expansion	Maintenance personnel
Guides	Check conveyor chain guides in the drive unit and deflection units	Maintenance personnel



1.9 Lubrication schedule for flat-top chain conveyor

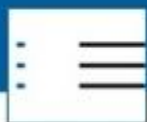
Item	Part				
	Name	Quantity	Information	Interval	Lubricant
1	Roller chain	1	Spray Every time after cleaning!	170 operating hours	Chain lubricant spray NSF H1
2	Drive station, Deflection pulley, Continuous bend, Wheel bend	-	Spray Every time after cleaning!	40 Operating hours	Silicone spray NSF H1
3	Gear motor, Drive engine	1	Lubrication and maintenance information: "see manufacturer's instructions".	-	-

Materials in the EURO-flex conveyor systems

The following table contains the most important **mechanical and physical properties**

Material:	Density kg / m3	E-modulus N / mm2	Tensile strength N / mm2	Water absorption%	Temperature range ° C
Anodized aluminum AlMgSi 0,5 / F25	2.700	65.000	280	-	-
Galvanized steel P235TR1 (ST 37)	7.850	210.000	390	-	-
Stainless steel steel 1.4301	7.900	200.000	500	-	-
Polyamide, PA	1.360	8.000	180	6,6	-40 to +120
Polyethylene, PE-UHMW	950	1.000	25	0,02	-50 to +80
Polypropylene, PP	1.160	1.500	40	0,03	+1 to +104
Polyoxymethylene, POM	1.410	3.000	70	0,8	-40 to +90
Polyvinyl chloride, PVC	1.440	3.100	54	2,5	-10 to +90
Superfric	1.780	1.800	50	0,1	-40 to +140
Styrene polymer, ABS	1.120	2.400	75	0,5	-50 to +110

The indicated values are approximate values at a temperature of 20 ° C. Please note that the mechanical and physical properties of the materials described change due to temperature influences. Technical changes and modifications are reserve.



Chemical resistance

Chemical	Material									
	Anodized aluminum	Galvanized steel C 45	Stainless steel 1.4301	PA Polyamide	PE-UHMW Polyethylene	PP Polypropylene	POM Polyoxymethylene	PVC Polyvinyl chloride	Superfric	ABS Styrene polymer
Acetone	x	-	+	+	+	+	x	-	+	x
Ammonia	x	-	+	+	+	+	+	-	+	x
Benzene	x	+	+	+	+	+		x	+	x
Hydrochloric acid (2%)	-	-	-	-	+	+	-	-	-	-
Acetic acid	x	-	x	-	+	+	-	-	-	-
Formaldehyde	x	+	+	+	+	+	+	x	+	x
Honing oil	x	+	+	-	+	+	x	-	x	-
Mineral oil	x	+	+	x	x	+	x	x	x	x
Sodium chloride	-	-	x	+	+	+	+	x	+	x
Oxalic acid	x	x	x	-	x	x	x	-	x	-
Petroleum	-	-	+	+	-	+	x	x	+	x
Phenol	-	-	x	-	-	-	-	-	-	-
Phosphoric acid	-	-	x	-	+	+	-	-	-	-
Nitric acid	-	-	+	-	x	+	-	-	-	-
Sulfuric acid	-	-	x	-	x	+	-	-	-	-
Soapy water	x	x	+	+	+	+	+	x	+	x
Carbon tetrachloride	x	x	x	+	x	-	-	-	+	x
Hydrogen peroxide	x	x	+	-	x	x	-	-	-	-
Tartaric acid	-	x	+	+	x	+	x	-	+	-
Citric acid	+	+	+	x	+	+	x	x	x	-

Explanation

+ Good resistance

x resistance depending on the application / practical test recommended

- Insufficient resistance / not recommended

The shown suitabilities have been determined under laboratory conditions at 20°C. The actual resistance in practice is influenced by various factors such as temperature, load, concentration of the chemical and the actual exposure time. Plastic hinge chains and plastic modular belts are generally not resistant to liquids with a pH lower than 4.5 or higher than 9.