CONVEYOR SYSTEM WLX

Maintenance manual

FLEXLINK®

a coesia company

Table of contents

1 Safety

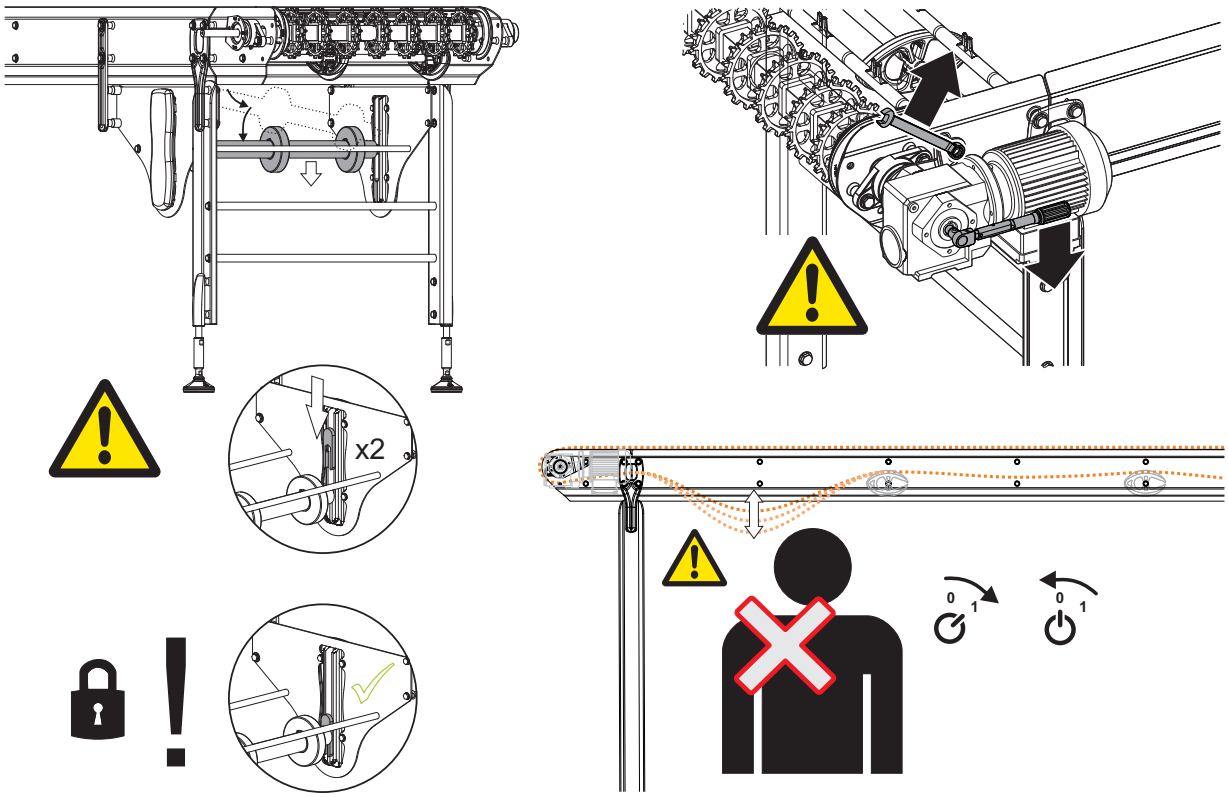
The machine has been designed in such a way, that it can be used and maintained in a safe way. This holds for the application, the circumstances and the instructions described in the manual. Any person working with or on this machine should study the manual and follow the instructions. It is the responsibility of the employer to make sure that the employee is familiar with and follows these instructions.

The company or the country in which the machine is used may require extra safety measures. This particularly applies to the working conditions. This manual does not describe how these are to be complied with. In case of doubt, consult your government or safety officer!

1.1 System information

The project number and/or general drawing number shall always be specified when communicating with FlexLink with respect to the machine.

Before handling the system, check safety around these areas.



1.2 Important safety conditions

At the moment that the machine is going to be operated by a user, the following safety conditions must be met:

- Make sure that children or animals have no access to the machine and its surrounding area by, for example, screening off the machine with a fence.
- Only persons who have read and understood the operating instructions are allowed to operate, maintain and clean the machine.
- Do not reach into the machine while it is running or on. Even if the machine is not running, it can be 'on', which means start operating automatically.
- Safety provisions, such as side plating, bottom plating, emergency stops and detectors may not be removed or deactivated while the machine is running.
- Provide good ambient lighting to enable the operator to work well and orderly with the machine.

General

- Incorrect use of the equipment can cause personal injury.
- Do not stand or climb on the equipment.
- Do not wear clothing or other articles that can fasten in the machine.
- Follow the instructions in this user manual when transporting the machine. FlexLink AB must approve all modifications or changes to this machine.
- Only use recommended spare parts.
- Only authorised personnel may open electrical units.
- FlexLink is not responsible for damage if service on the equipment is not performed in accordance with this maintenance manual.

Maintenance and Service technicians

Service technicians must have:

- Sufficient knowledge for reading technical information
- Ability to comprehend technical drawings
- Basic knowledge of mechanics
- Sufficient knowledge in the use of hand tools
- Skilled (EN *ISO* 12100:2010)

Electricians

Electricians must have:

- Experience from similar installations
- Sufficient knowledge to work from drawings and wiring diagrams
- Knowledge of local safety regulations for electrical power and automation
- Skilled (EN *ISO* 12100:2010)

To avoid risks, only experienced personnel with technical knowledge and experience may perform repair work on the machine's electronics components.

Operators

To correctly use the equipment, operators must have appropriate training and/or experience.

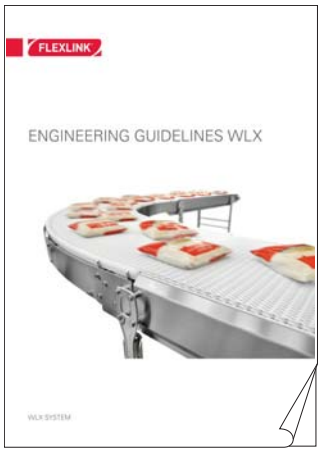
2 Inspection general

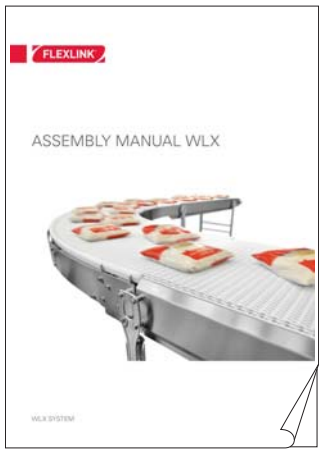
The inspection checklist have cross-references to other documents and refers to other chapters in present manual.

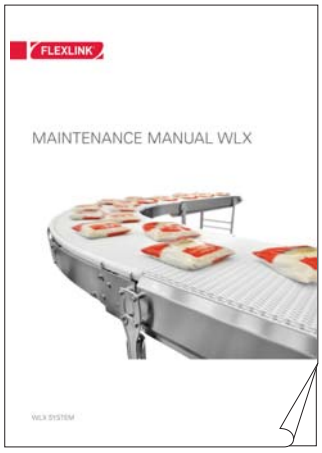
e.g. See chapter 5.3 in Engineering guidelines

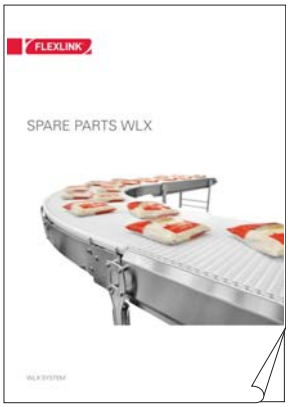
e.g. See chapter 5.3 in Assembly manual

e.g. Chapter 5.1 in present manual

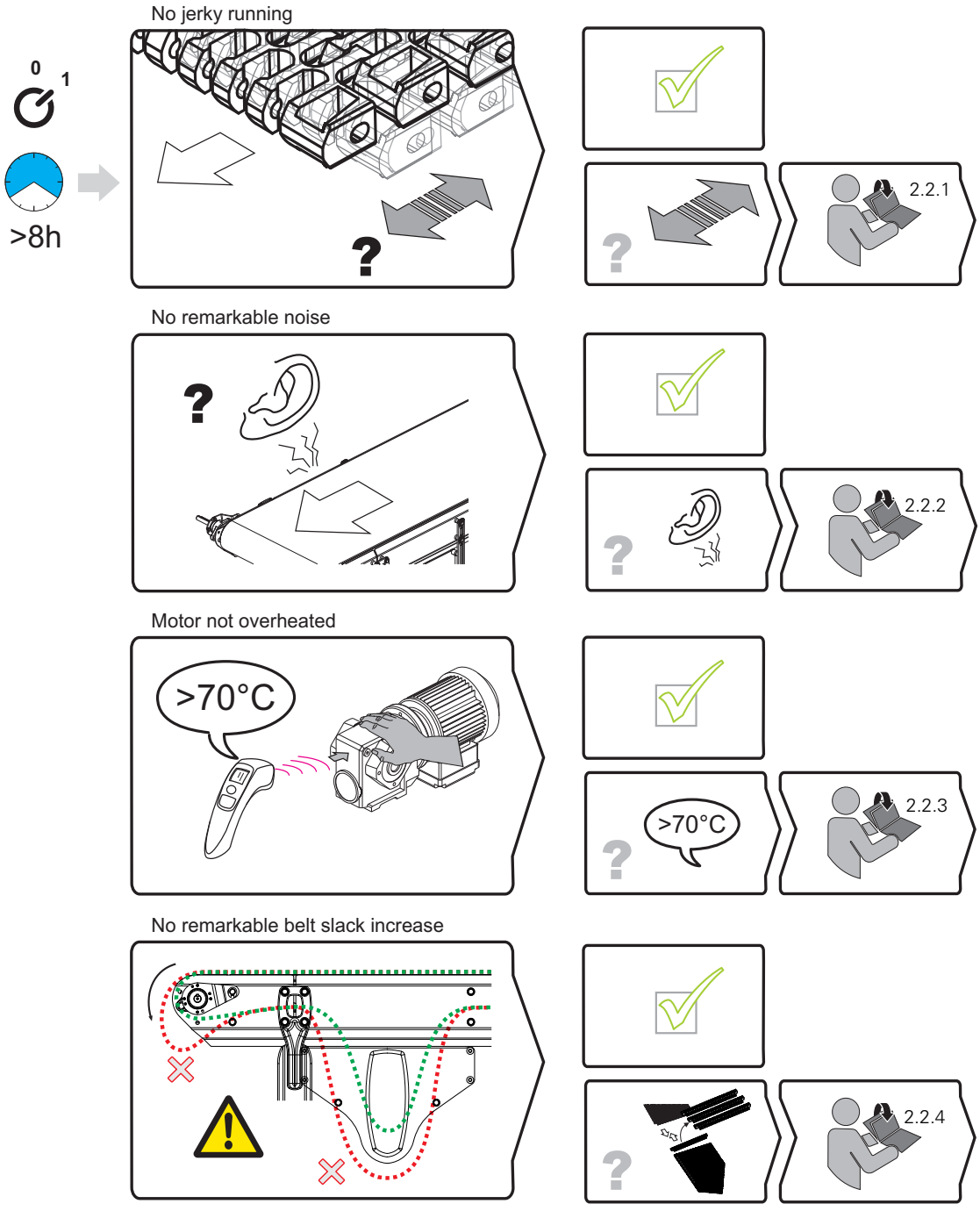




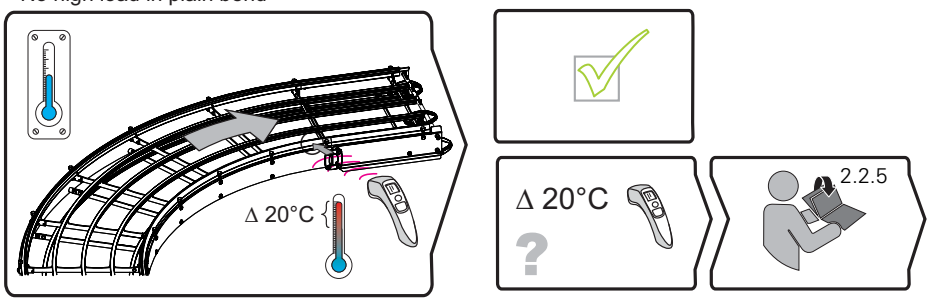




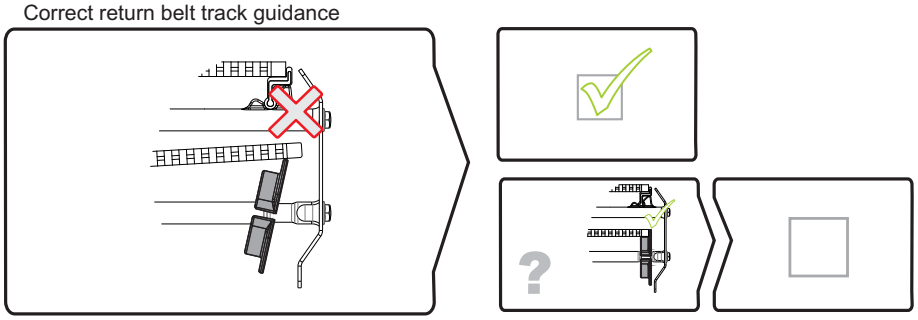
2.1 Inspection checklist



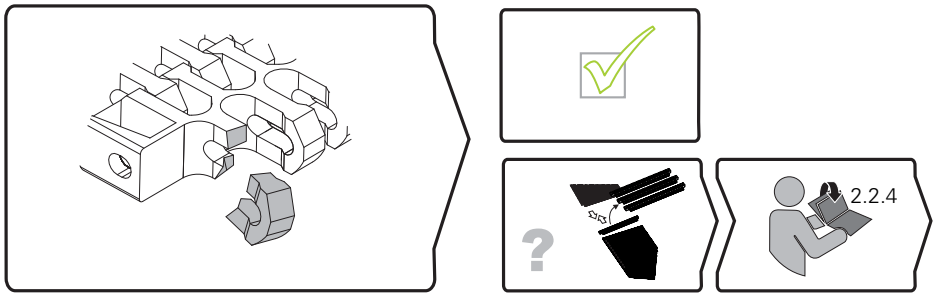
No high load in plain bend



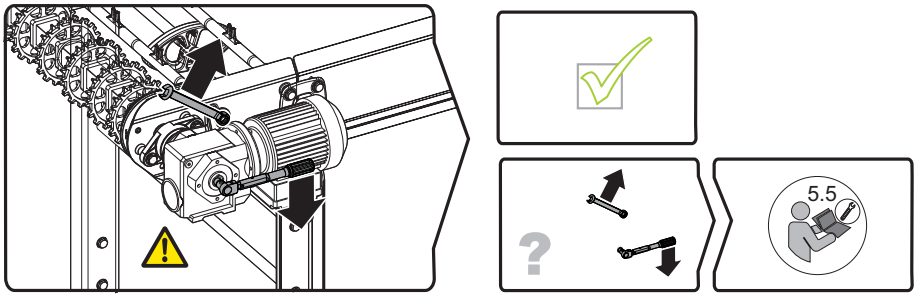
Correct return belt track guidance

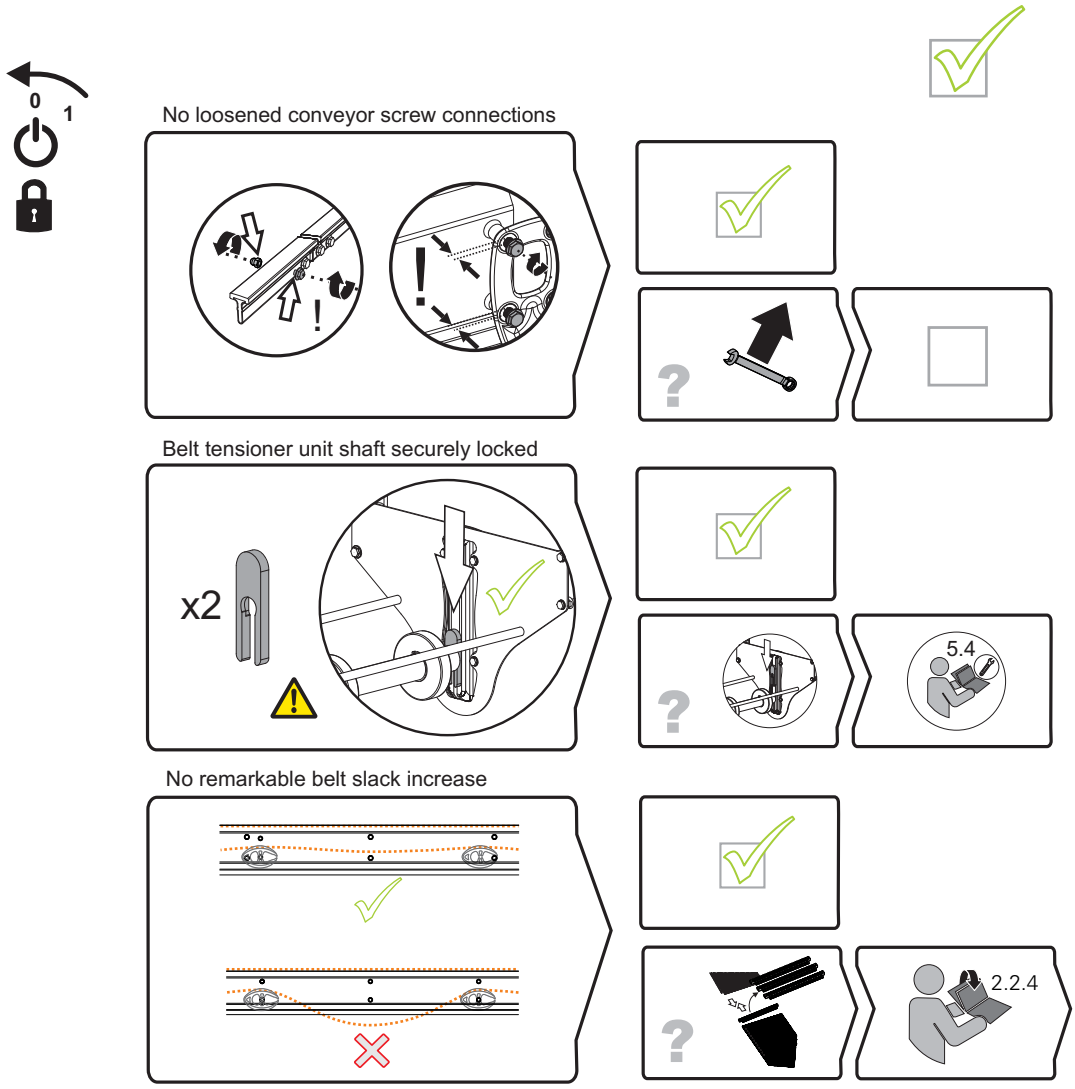


No belt cracks or broken links



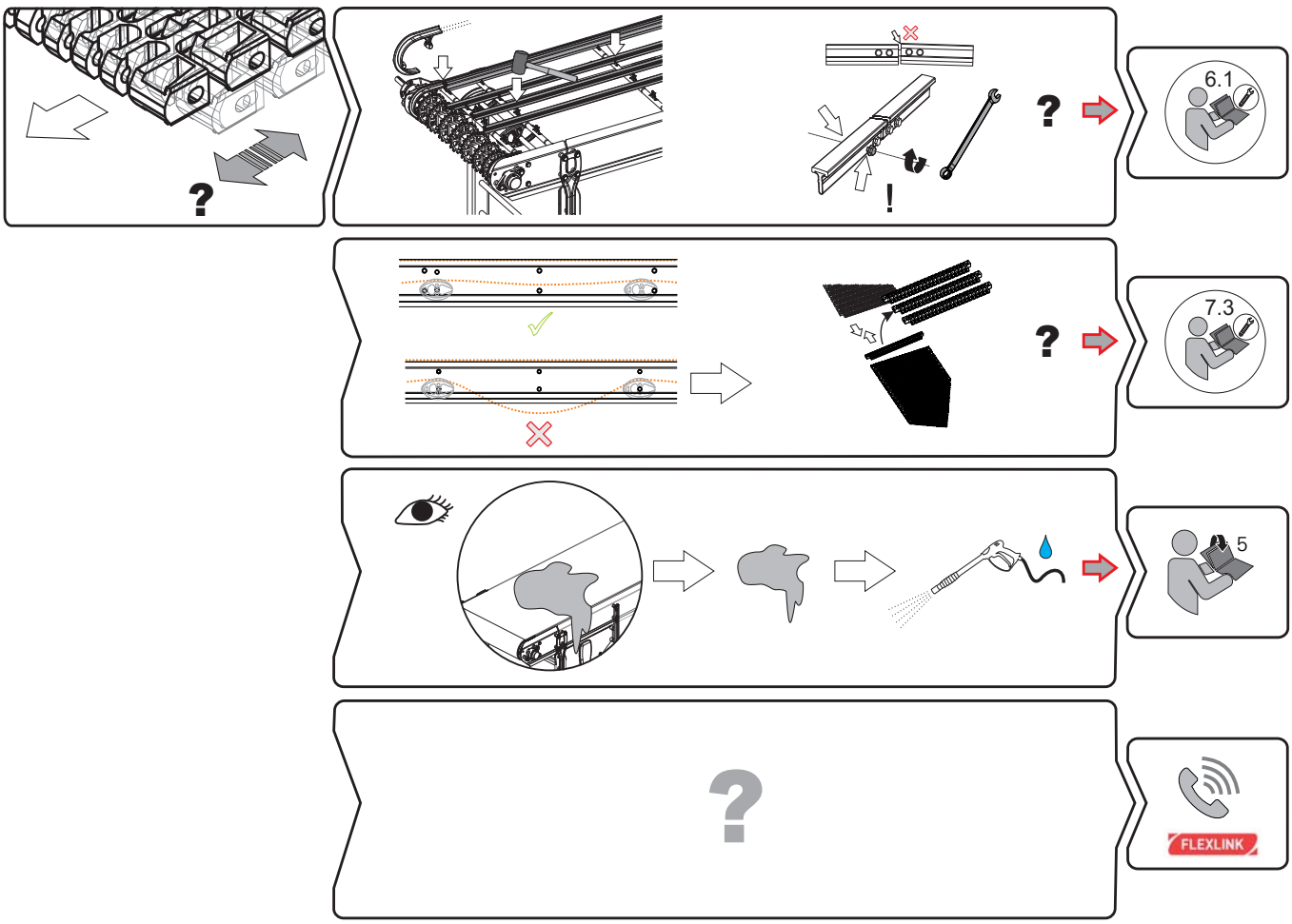
Motor securely fixed



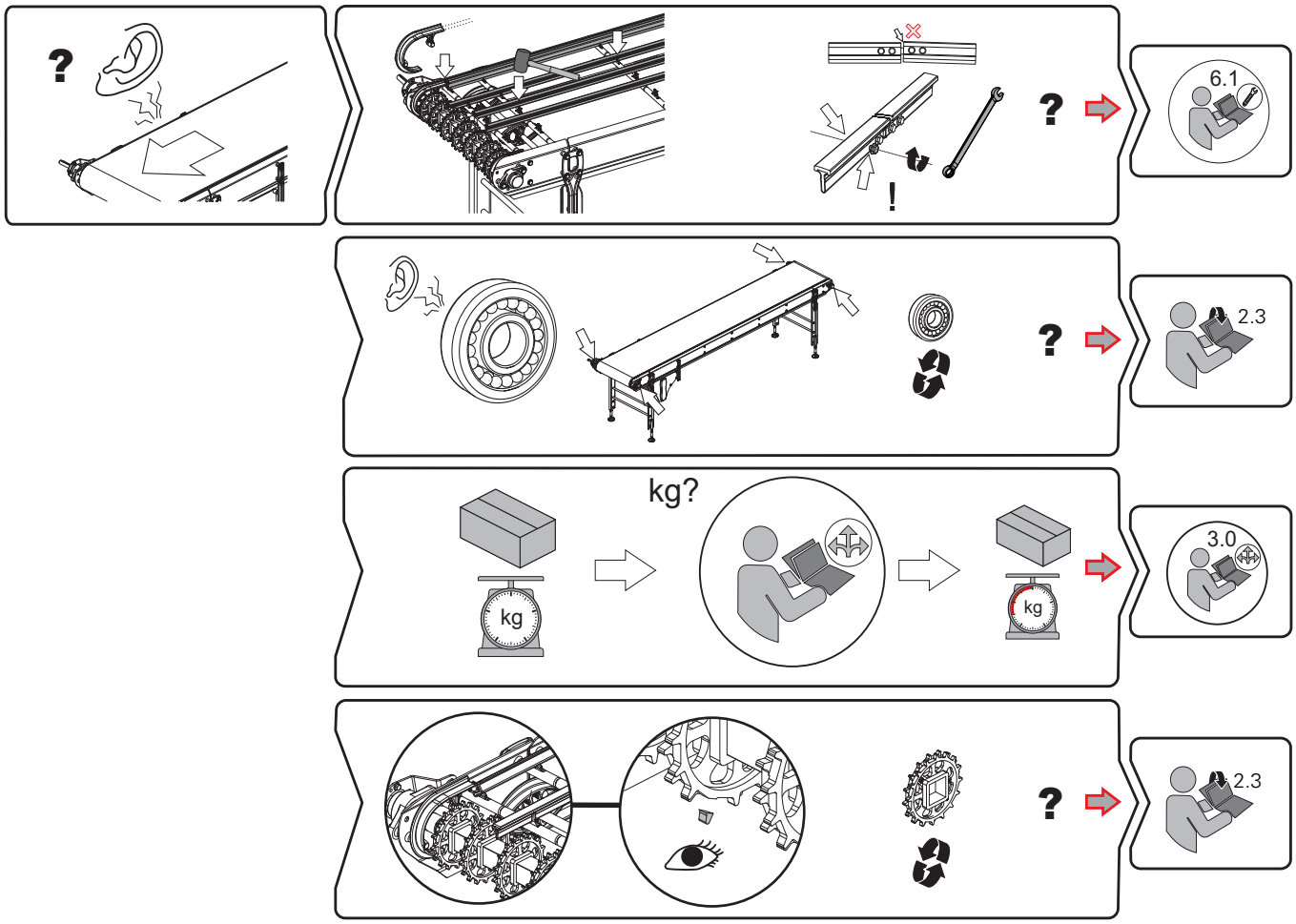

0
1
No loosened conveyor screw connections
?
Belt tensioner unit shaft securely locked
x2
?
5.4
No remarkable belt slack increase
?
2.2.4

2.2 Corrective actions

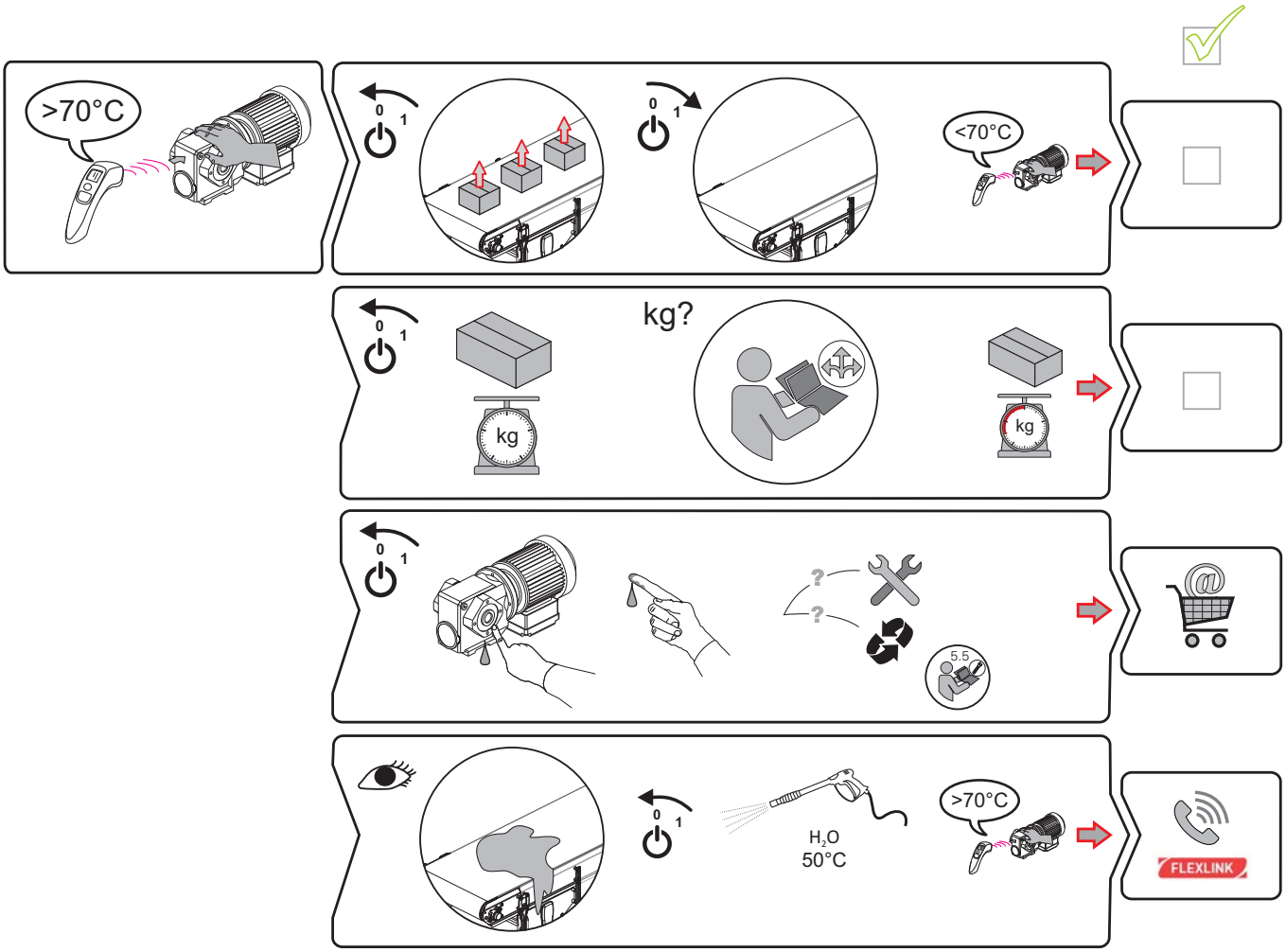
2.2.1 Jerky running



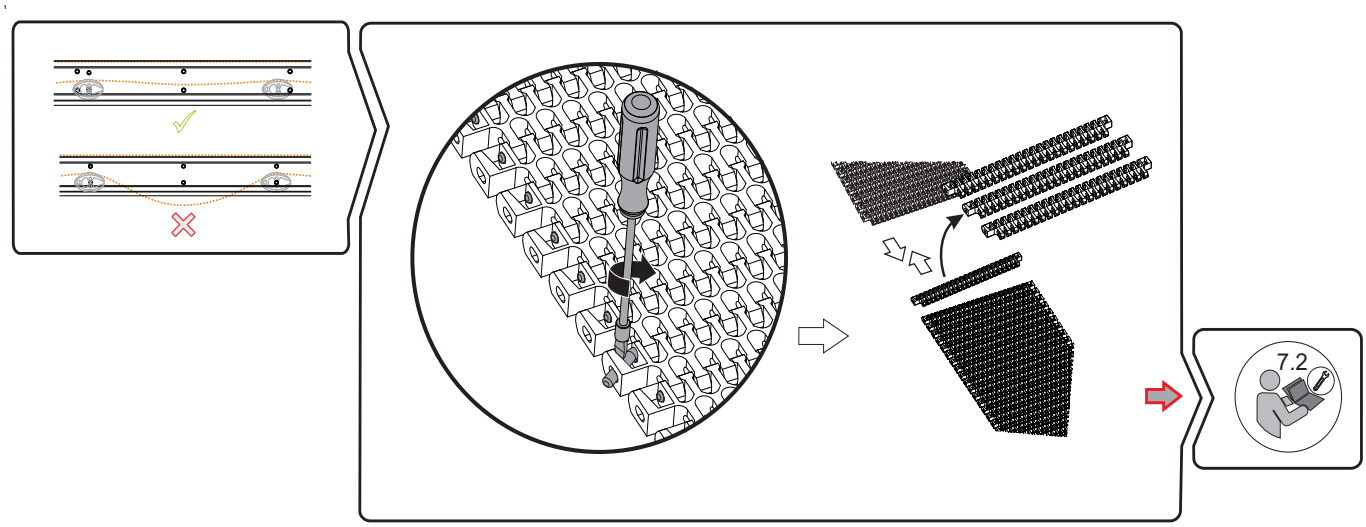
2.2.2 Remarkable noise



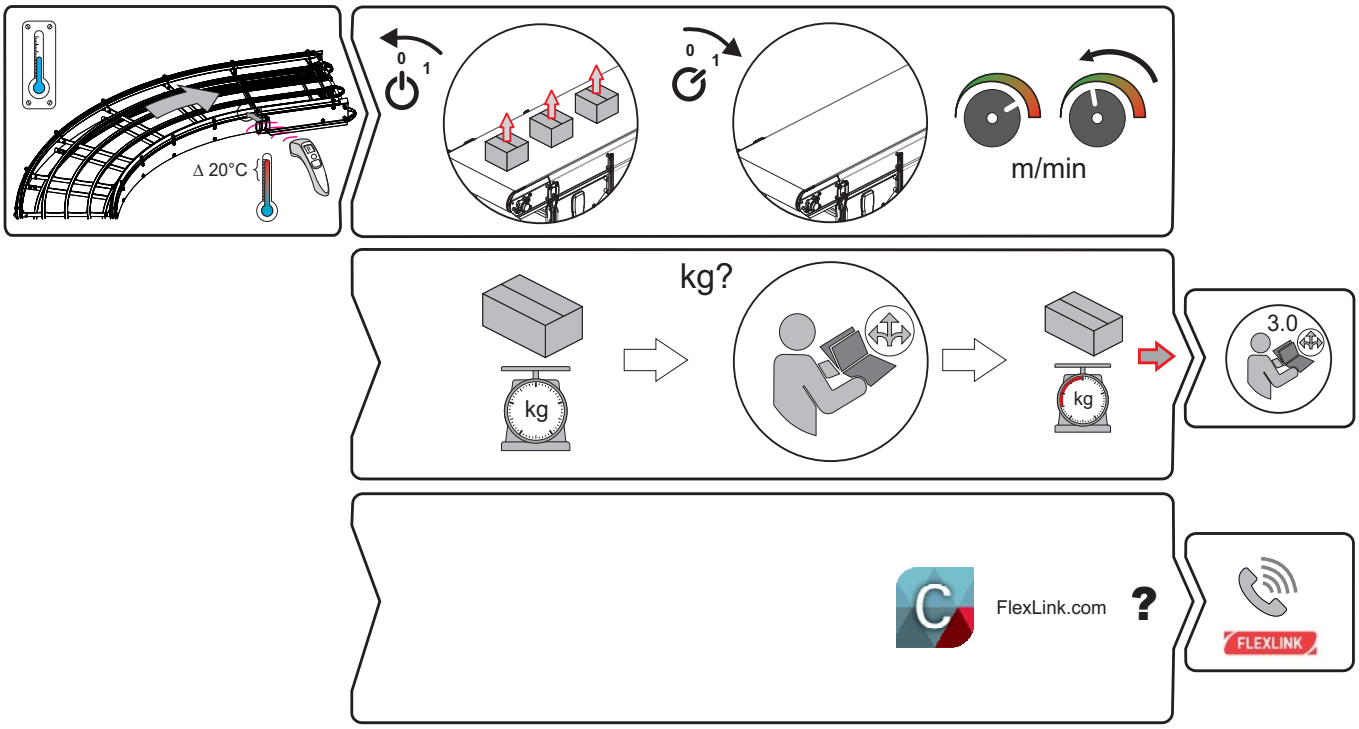
2.2.3 Motor overheated



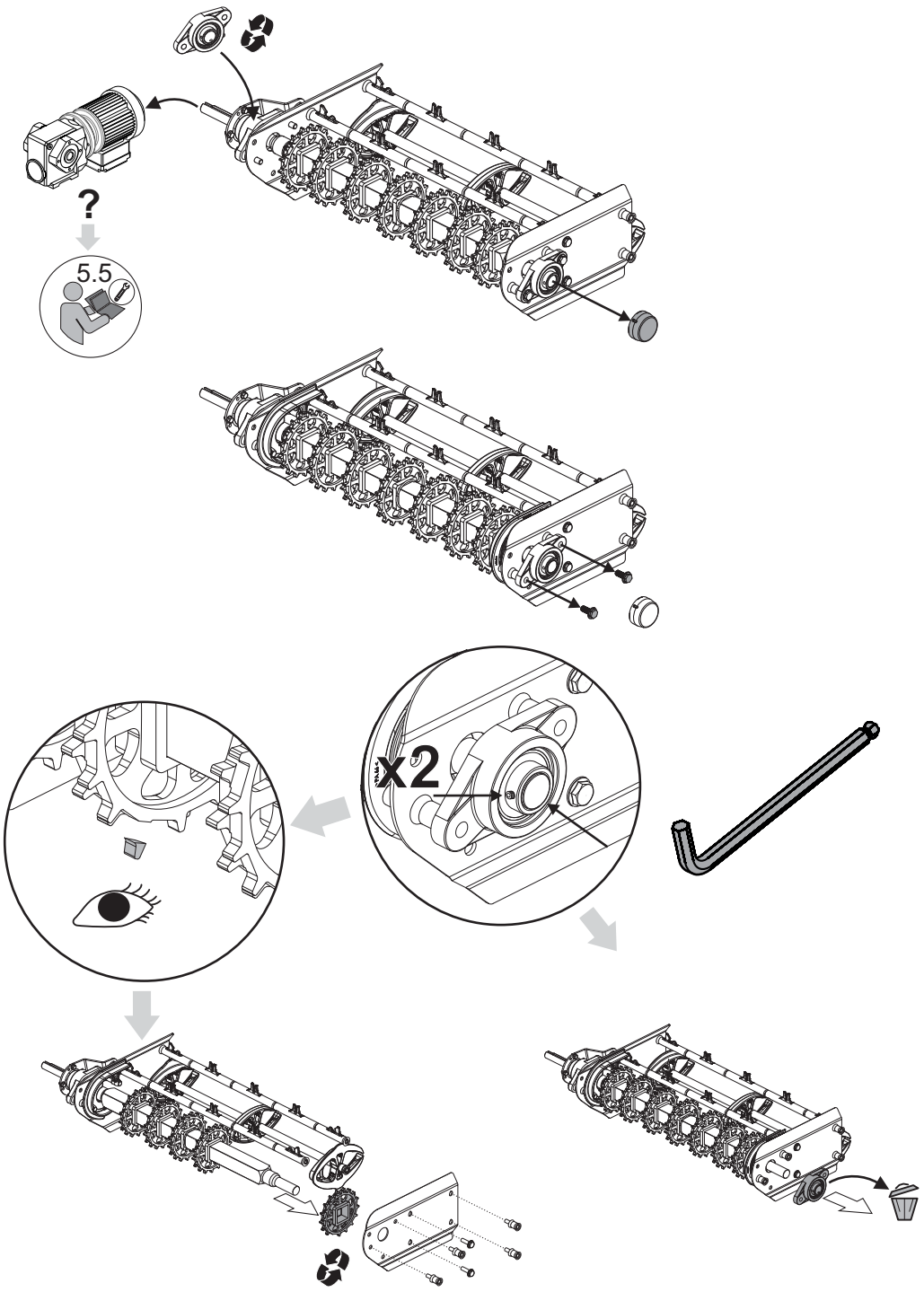
2.2.4 Shorten belt

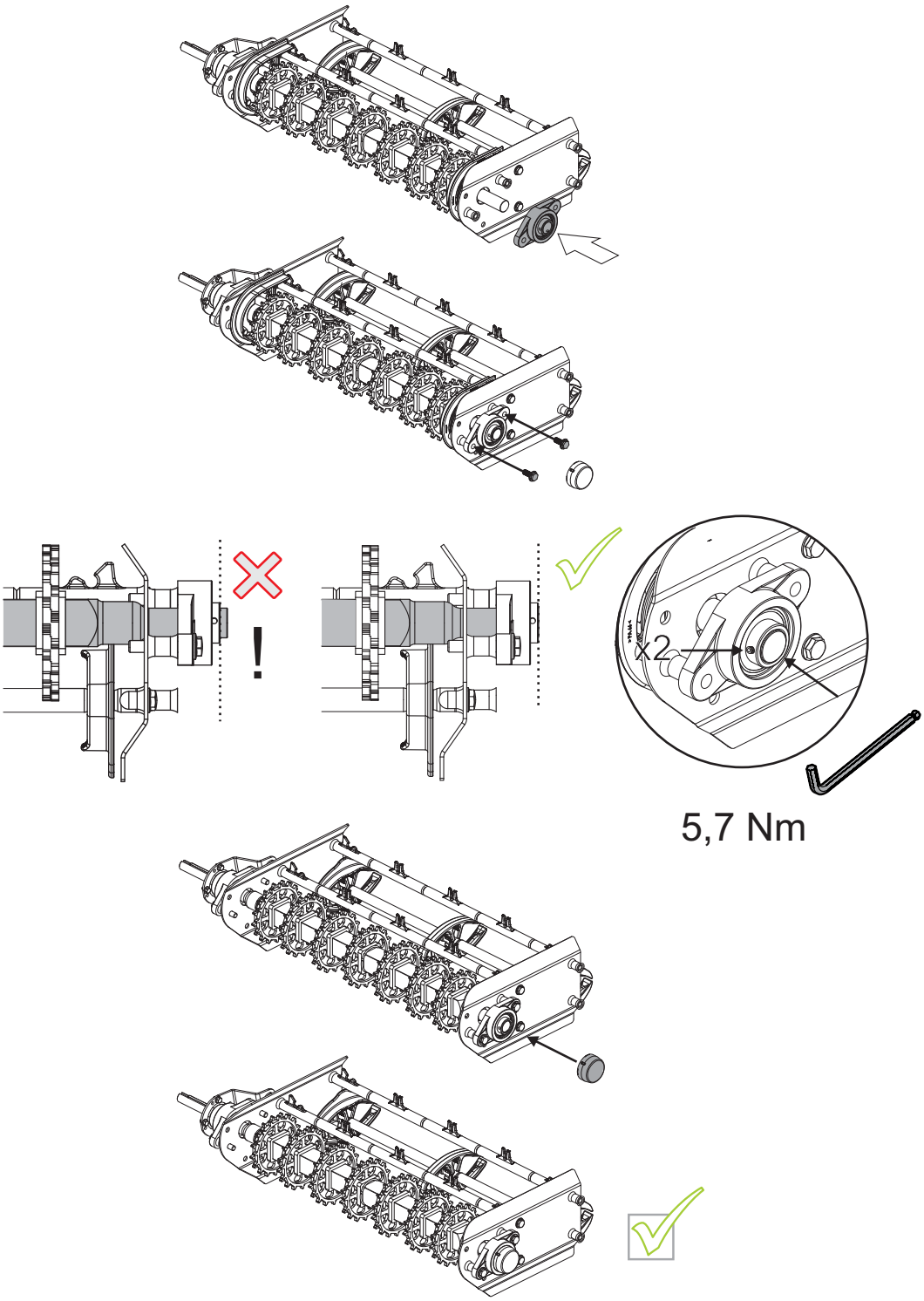


2.2.5 High load on plain bend



2.3 Change bearing house/sprocket




!
x2
5,7 Nm

3 Maintenance

3.1 System maintenance

3.1.1 Introduction

The following section is designed to offer assistance for your planned maintenance schedule. It may become evident that the suggested maintenance intervals can be shortened or extended to accommodate your local environmental conditions. Recommended maintenance every 1500 hour.

Maintenance of the FlexLink conveyor systems should only be carried out by competent persons, who are familiar with FlexLink equipment. If there is any doubt as to the most suitable procedure for maintenance, consult your FlexLink supplier.

3.1.2 Non FlexLink equipment

Equipment and components which are not from the FlexLink family of products should be maintained and serviced in accordance with their respective *manufacturer's* instructions.

3.1.3 Safety considerations

- Before starting any maintenance on your FlexLink equipment, the following safety instructions must be observed:
- All electricity must be switched off.
- Make sure that the motor switch is also switched off and locked in the "off" position.
- Pneumatic and/or hydraulic power must be disconnected and any pressure accumulation released.
- Products being transported should be, if possible, removed from the conveyor chain.
- Staff affected must be informed that maintenance work is being undertaken.

Warning: *Do not climb onto the equipment.*

3.2 Maintenance instructions

3.2.1 Introduction

This maintenance manual contains directions for the standard components sold through the WLX chapter of the FlexLink stainless steel catalogue. For non-FlexLink components, such as motors, pneumatic equipment, control systems etc., the manufacturer's maintenance instructions apply. In general, maintenance instructions are not given for equipment which the customer has chosen and specified for fitting to the installation.

The instructions supplied should be followed to ensure that the installation runs with a high degree of safety and to minimize the risk of breakdowns which can adversely affect the production.

The installation must be used for the transport of goods in accordance with the system specifications or within design criteria as outlined in the stainless steel catalogue. If a fault occurs on the installation which cannot be rectified with the help of the instructions in the manual, or if unexpected conditions occur during servicing, contact your FlexLink retailer or FlexLink maintenance personnel.

3.2.2 Warranty/guarantee

FlexLink conveyors are covered by warranty/guarantees as identified within the trading terms issued for each country. Check the warranty conditions for your system before submitting claims etc. If you are in any doubt as to what warranty is applicable to your system, consult your supplying agent or FlexLink direct.

3.2.3 Spare/replacement parts

If there is a demand for spare parts, contact FlexLink or your supplying agent.

3.2.4 Inspection checklist

A suggested maintenance inspection checklist is shown in next chapter.

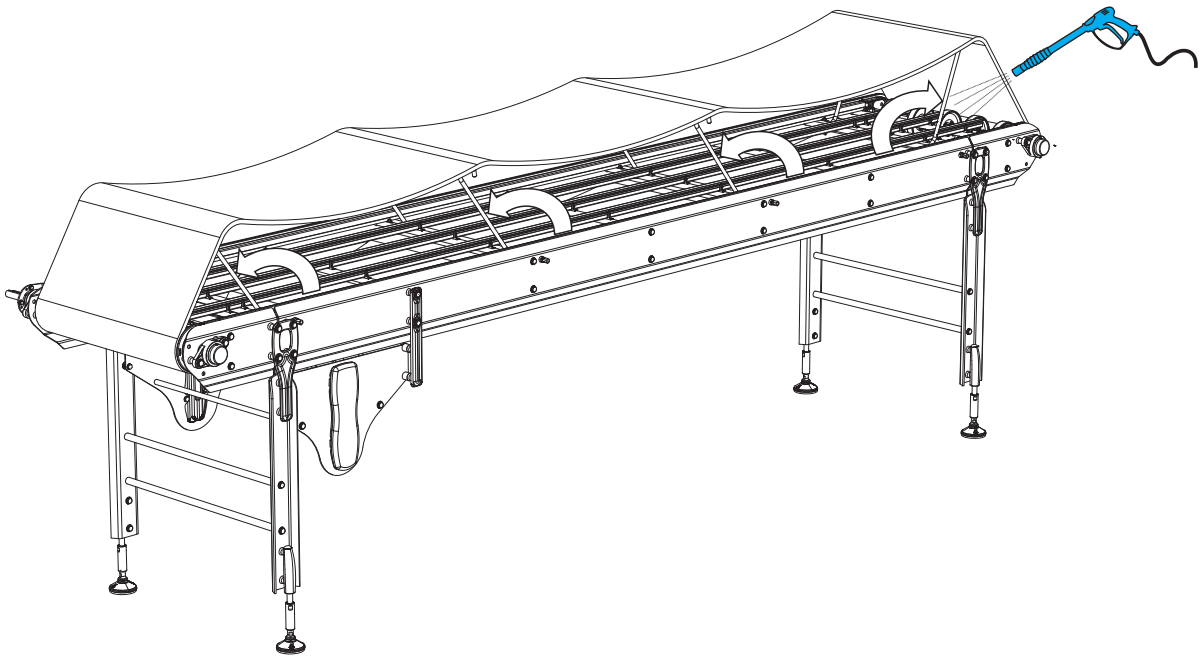
3.2.5 Important

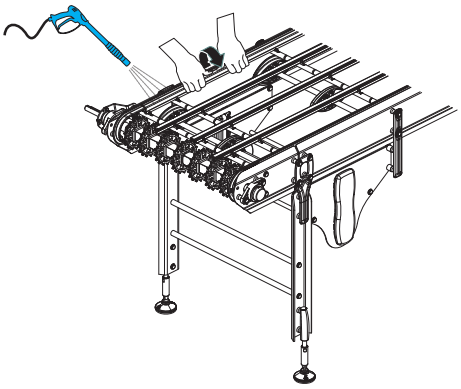
Consult your system documentation for any special maintenance required for your specific installation.

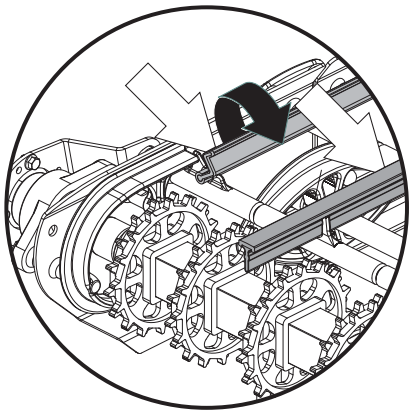
4 Cleaning

WLX system has an open design without compromising on safety. The system is designed to simplify cleaning/ inspection and to ensure consistent results for a safe food production.

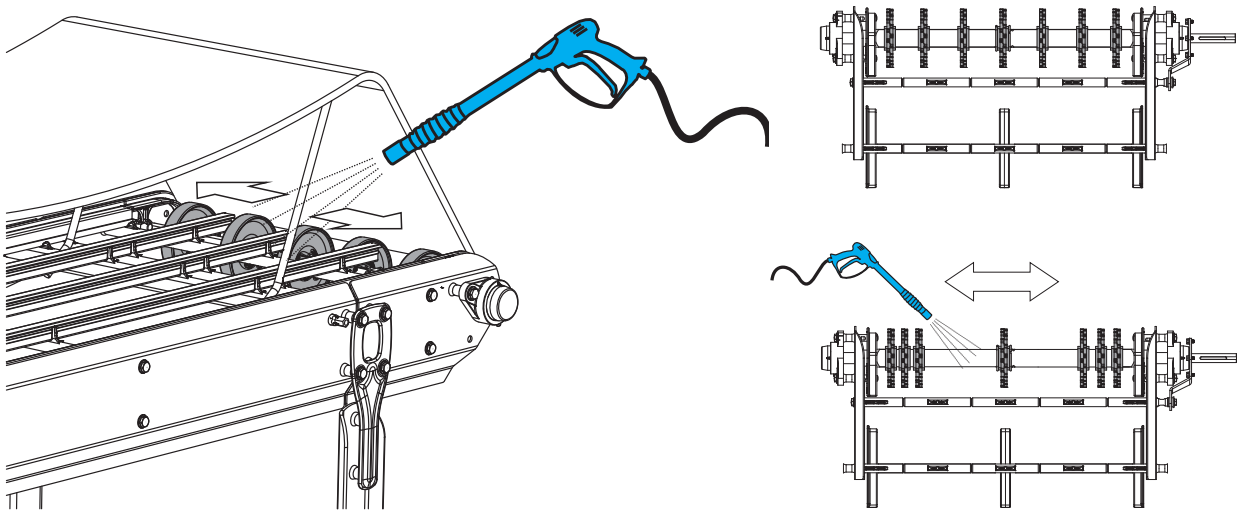
In order to facilitate cleaning, the return belt is free hanging, the top belt can be lifted up and the outer slide rails can be folded back. Lifting arms (as shown in picture) can be supplied as an option.
Note! Lifting arms only for WL374X, WL526X, WL678X.







Idler end wheels have an open design and can easily be moved sideways in order to facilitate cleaning of the shaft. When conveyor belt is removed also drive sprockets can be moved sideways.



4.1 Guidelines

Select correct cleaning chemicals in cooperation with the chemical supplier.

Never overdose. Consequence can be corrosion on the conveyor and belt degradation.

Recommendation is to clean the belt in place on conveyor in order to avoid recontamination during handling and belt reassembly.

Run the conveyor and clean the belt as it goes around the sprockets.

Stop the conveyor and use belt lifters to get access to the inside of the conveyor.

NB: *Note! Never run the conveyor when belt is lifted. The system must support a Lockout safety procedure.*

When using high pressure cleaning do not exceed 25 bar, 60 °C.

Sanitizer containing chlorine should not exceed 200 ppm chlorine.

Plastic conveyor parts and especially Belts shall not be exposed for chlorine based fluids for a longer period. Consequence is brittleness and discoloration of the plastic.

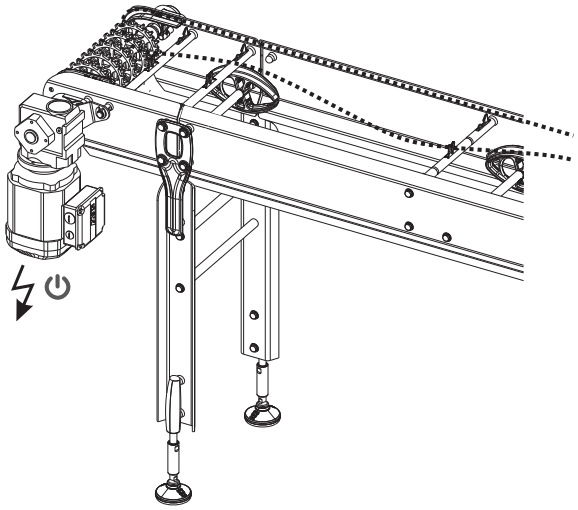
Plastic material resistance for different types of cleaning agents (Parameters such as concentration, temperature, exposure time influence the resistance. Follow the chemical supplier recommendations.) **Type of agent**	**Material**						
	POM Polyoximetylen	**PP** Polypropylene	**PA** Polyamide	**PE** Polyethylene	**PU** Polyurethane	**PK** Polyketone	**PBT** Polybutylene Terephthalate
Neutral	○	○	○	○	○	○	○
Alkaline	○	○	○	○	○	○	○
Acid	◐	○	◐	○	○	○	○
Chlorine	◐	○	◐	○	◐	○	◐
Item							
Modular belt, radius flush grid 	○						
Modular belt, Friction top belt 		○					
Flat top belt 	○						
Slide rails (core/sliding material) 		○		○			
Belt guides (for return belt) 						○	
Steering guides (drive, idler) 			○				
Sprockets, idler wheels (drive, idler, belt tensioner unit) 			○				
Guide blocks for shaft, Belt tensioner unit 		○					
Locking device, Belt tensioner unit 	○						
Bearing housing 							○
Bearing end cap 		○					

○ resistant ◐ conditionally resistant

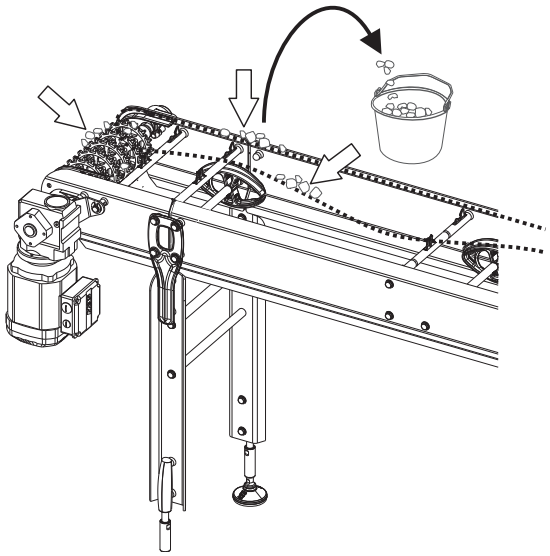
5 Typically cleaning process in wet applications

The cleaning procedure must be performed at least once a day when production has been carried out with the conveyor.

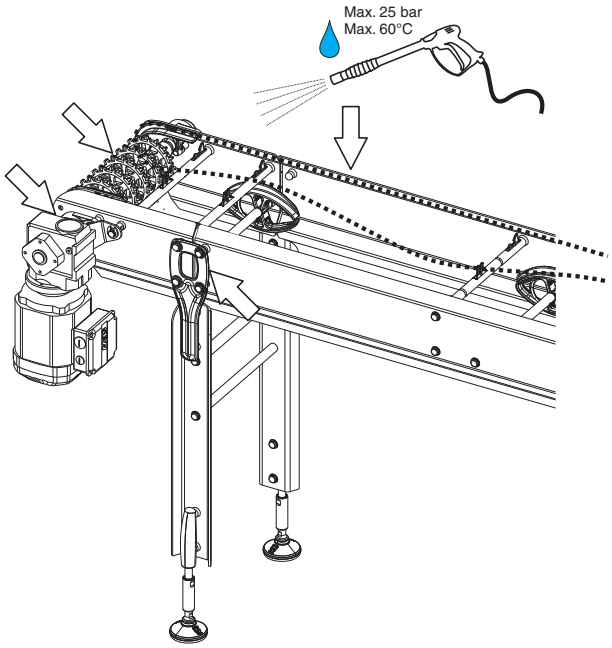
Step 1 – Preparation – switch off power supply.
The control system must support a lockout safety procedure.



Step 2 – Gross solid removal
Remove gross soil by scraping or brushing or other equivalent dry method.

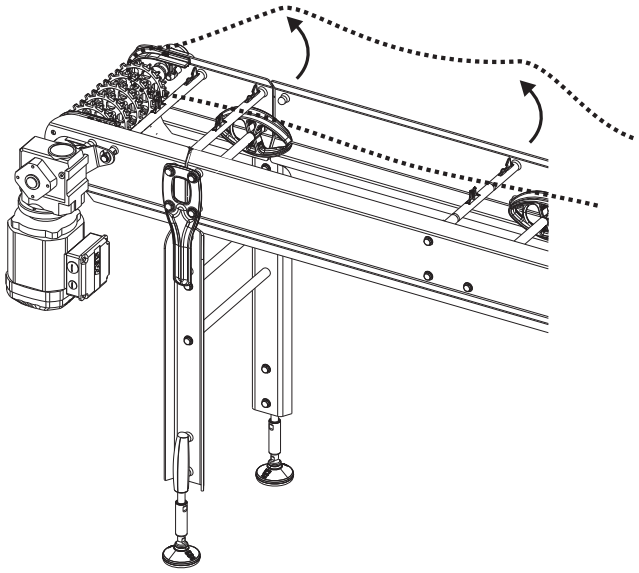


Step 3 – Pre-rinsing

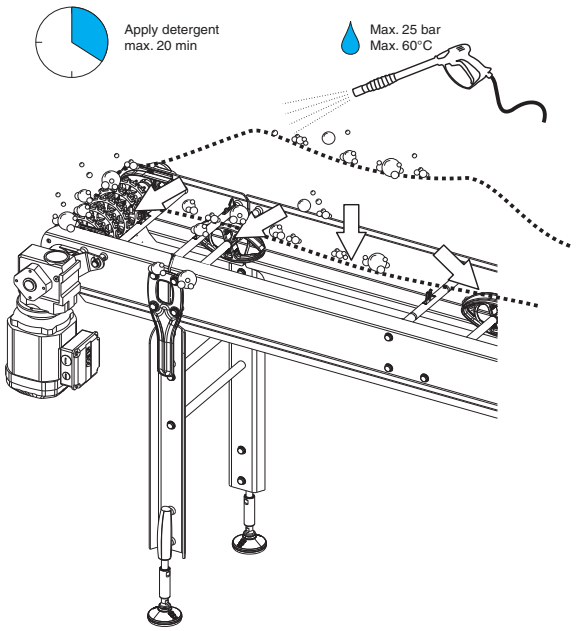


In pre-rinsing, soil is rinsed off or detached using warm water (up to 60°C) at low pressure (max 25 bar).
Note! Material exposed to high pressure is subject to excessive stress. Moreover, high pressure causes increased aerosol formation which leads to recontamination.

Step 4 – Lift belt



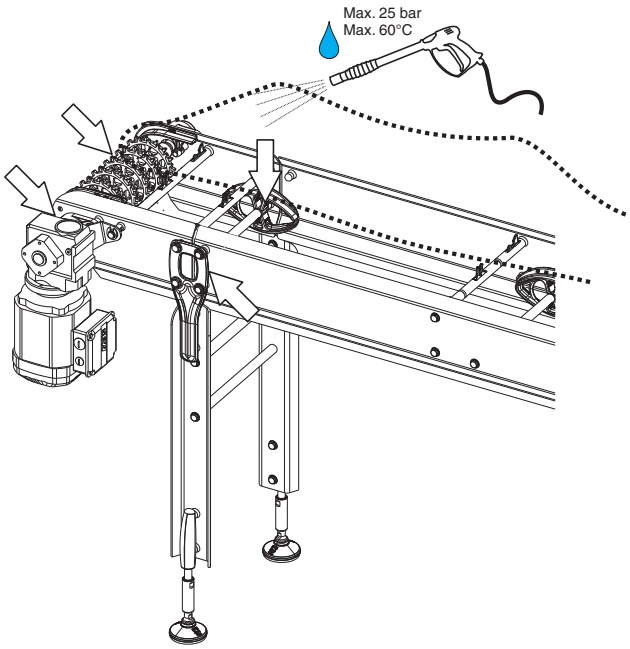
Step 5 – Cleaning



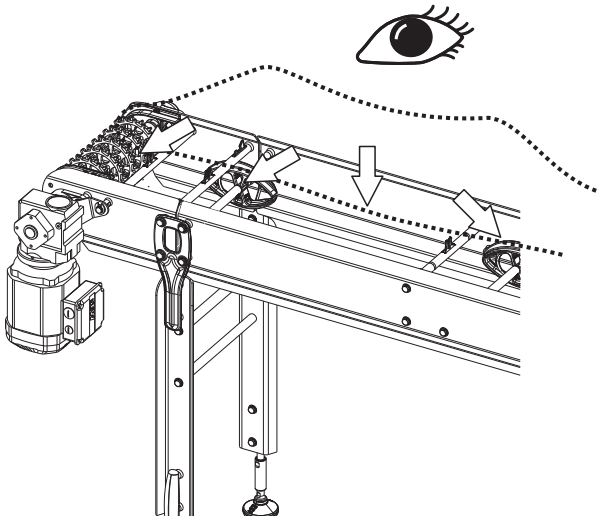
At the actual main cleaning stage, stubborn dirt on the belt (e.g. oils and fats) is dissolved with the aid of chemical cleaning agents. Cleaning agents are generally applied as foam. In practice, however, under certain circumstances the belt is also scrubbed manually.

Step 6 – Rinsing off

In this stage, dirt previously detached or dissolved is rinsed off the belt with the aid of warm water (up to 60 °C/140 °F) and low pressure. It is particularly important not to set the water pressure too high so that when rinsing off the conveyor belt neighbouring machinery, plant components, walls or floors are not contaminated again by splashes of material which has just been washed off (cross contamination).

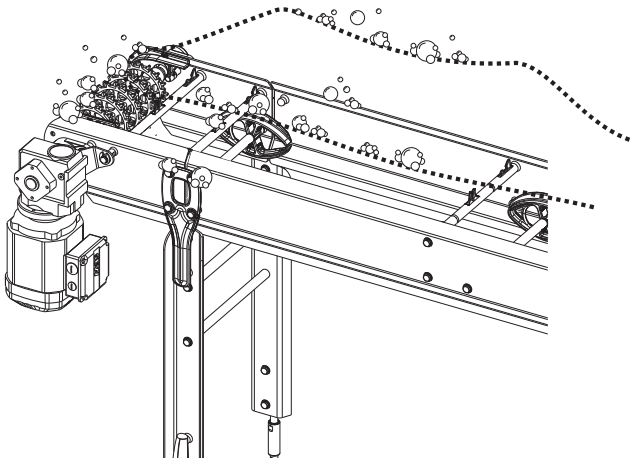


Step 7 – Check cleaning result



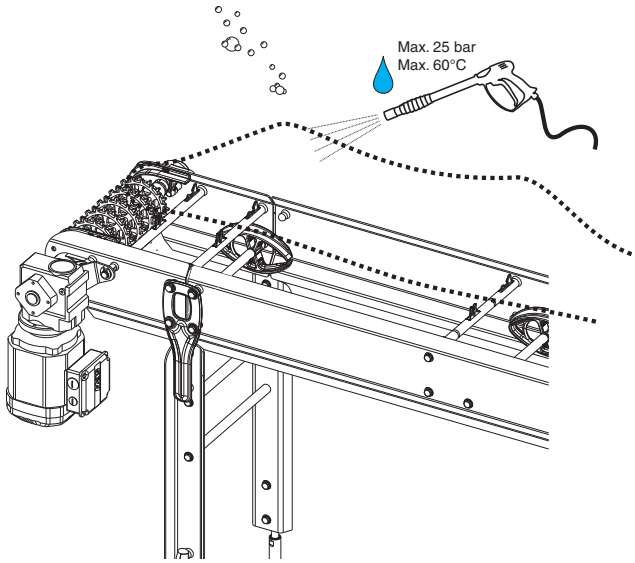
The cleaning result is checked visually and by hands to feel that the soil has been removed. Here an appropriate method e.g. ATP-kit or protein based kit can also be used.

Step 8 – Disinfect



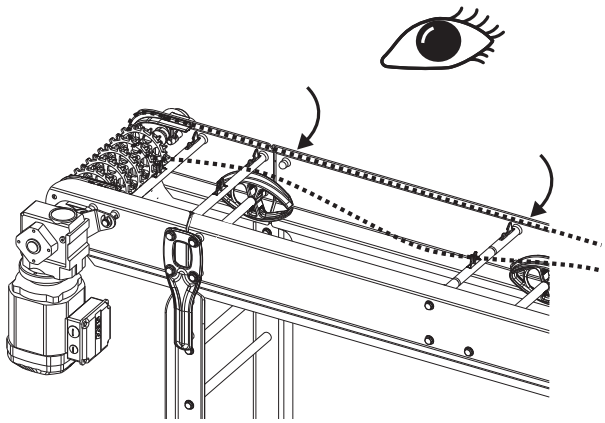
The disinfection should not be applied with pressure but with a specially nozzle for spreading disinfectant solution on all surfaces. Leave on for typically 10-15 min (follow instruction from disinfectant solution supplier).

Step 9 – Final rinse with potable water



No cleaning chemicals residues should be left on surfaces. Therefore the chemicals should be rinsed off with lukewarm potable water. Thereafter the equipment should be left to dry.

Step 10 – Verification of cleaning



The final cleaning and disinfection result is checked before the production is started up again. An appropriate culturing method in accordance to the food producer internal control system should be used (swab, contact plate).

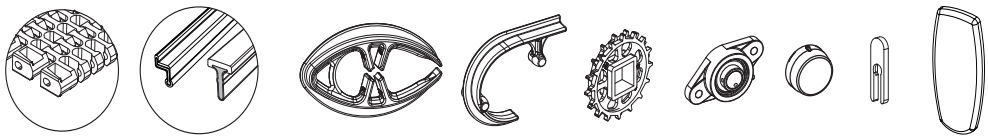
6 System dismantling and disposal

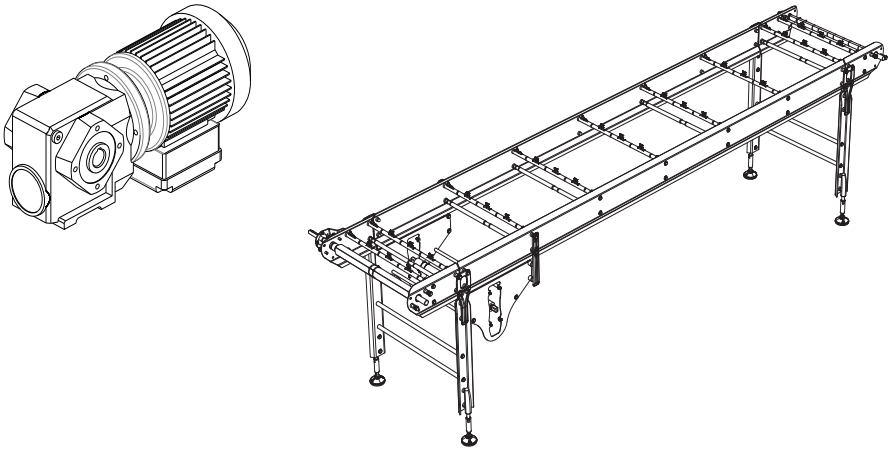
6.1 Important safety precautions when dismantling

Dismantling of the FlexLink conveyor system should be carried out by competent persons, who are familiar with the equipment being decommissioned.

In the absence of detailed information, every care should be taken to ensure that all items are securely retained during the decommissioning process. This is to ensure that the equipment remains stable and will not fall if left unattended.

With regard to the environment, you should separate the plastic, motor and stainless steel when you disassemble the system.

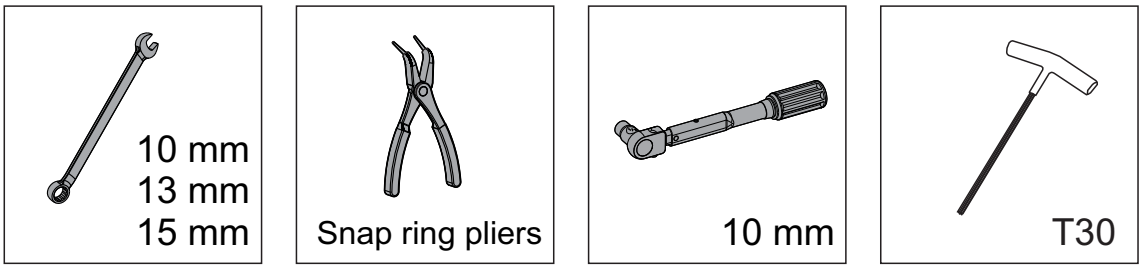




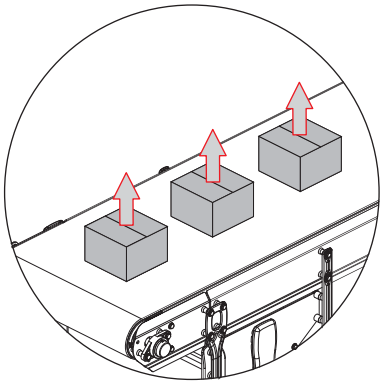
If there are any doubts as to the most suitable procedure for decommissioning, then consult the equipment supplier.

6.1.1 Dismantle a WLX Conveyor system

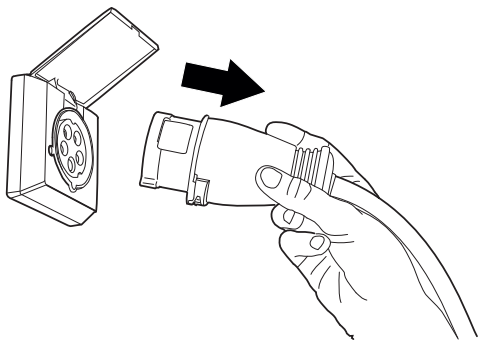
1 To dismantle a FlexLink conveyor the following tools are required.



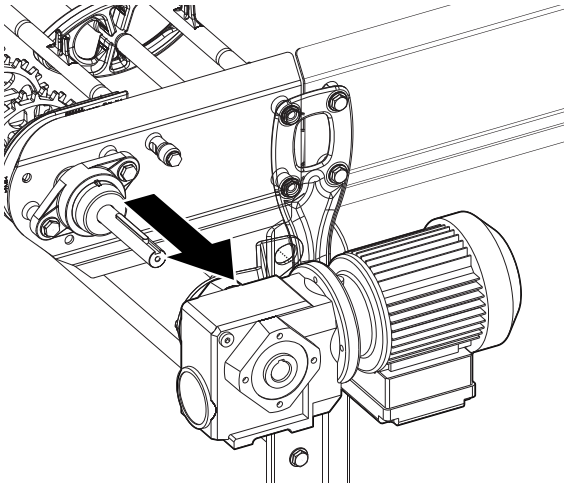
2 Remove any remaining product from the conveyor system.



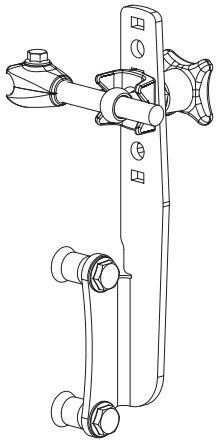
3 Switch off all electrical power. Ensure that system is safe by shutting down all feed supplies or removing electrical fuses.



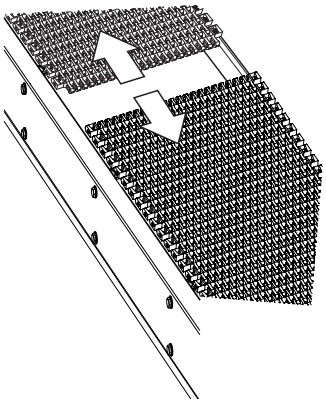
4 Remove motor



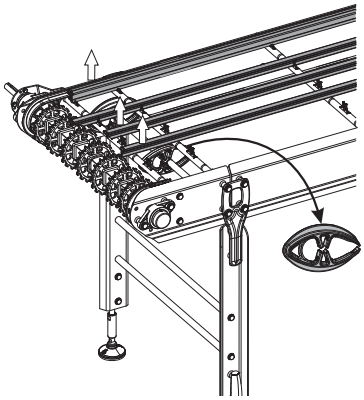
5 Remove guide rails and guide rail brackets etc



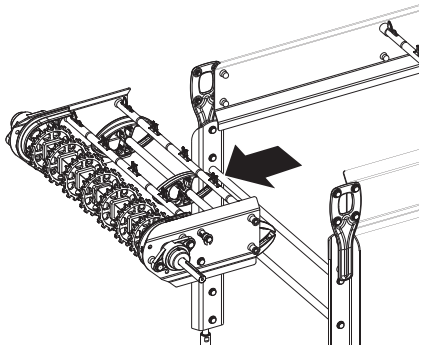
6 Remove Modular belt



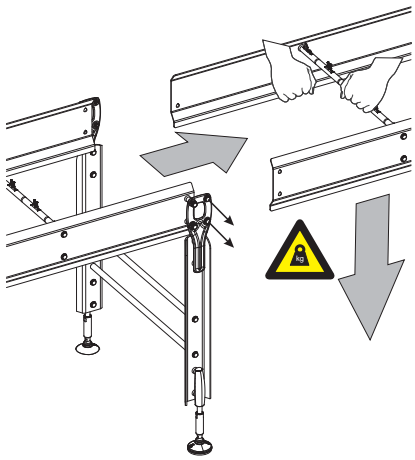
7 Remove Slide rails and Belt guides.



8 Remove Drive units and Idler end units



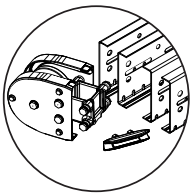
9 Remove Beams from Support legs.



6.2 Recycle

Sort different materials ready for disposal. Recycle components in accordance with local regulations.

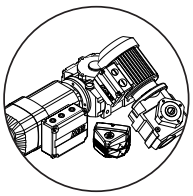
Material categories



Stainless steel

Beams, bends, support legs etc.

- EN: 1.4301, 1.4305, 1.4436



Electronics

Motors and all other electronics

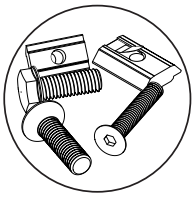
Plastics

Chains

- Acetal resin

Slide rails

- HDPE, PA/PE, PVDF, UHMWPE, PVC



Steel

Fasteners

- Electro zinc plated steel

Most material in the WLX system are stainless steel. Separate stainless steel, plastic and the motor. This table shows the different plastics to be disposal. 	**Material**						
	POM	**PP**	**PA**	**PE**	**PU**	**PK**	**PBT**
	Polyoximetylen	Polypropylene	Polyamide	Polyethylene	Polyurethane	Polyketone	Polybutylene Terephthalate
Modular belt, radius flush grid 	○						
Modular belt, Friction top belt 		○					
Flat top belt 	○						
Slide rails (core/sliding material) 		○		○			
Belt guides (for return belt) 						○	
Steering guides (drive, idler) 			○				
Sprockets, idler wheels (drive, idler, belt tensioner unit) 			○				
Guide blocks for shaft, Belt tensioner unit 		○					
Locking device, Belt tensioner unit 	○						
Bearing housing 							○
Bearing end cap 		○					