

# Flex-Lifter Belt Lifters

## Installation, Operation and Maintenance Manual



*Flex-Lifter with lifting rods, examples*

**Please read before use.**

**Retain for further use.**

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## Customer service information

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## Storage

***The operating instructions must always be kept near to the machine.  
It must always be accessible***

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# Section 1 – Basic Specifications

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## 1.1 Warranty, Limitation of Liability



### Information!

Please note that the contents of this manual are not to be used or amended as part of any previous or existing agreement, commitment, or legal relationship. All obligations of Flexco Europe GmbH/ the supplier arise from the respective purchase agreement, which also contains the complete and solely applicable warranty regulation. These contractual warranty provisions are neither extended nor restricted by the instructions in this operating manual.

The information in this operating manual has been carefully checked. Nevertheless, we can accept no liability for any errors. To the best of our knowledge, all information and instructions for operation and maintenance result from consideration of our previous experience and findings. With the exclusion of further claims, we are liable for any errors or omissions as part of the warranty obligations within the purchase contract. Claims for compensation, regardless of the legal reason for such claims, are excluded.

Flexco Europe GmbH assumes no liability and warranty for damage and malfunctions resulting from non-compliance with this operating manual, improper installation or improper repairs by the personnel of the operator.

Contact Flexco Europe GmbH if complications and uncertainties arise. In this way, major damage can be avoided. Repairs may only be made by Flexco Europe GmbH. Only genuine replacement parts may be used for repairs.

## 1.2 Intended Use

The Flex-Lifter belt lifter is intended solely for the raising and lowering of belts on conveyor belts.

The drive is carried out manually with an appropriate ratchet or by using a suitable power wrench (not included as part of Flex-Lifter). Any other or additional use is considered to be improper, and is a misuse of the device.

- The Flex-Lifter must be positioned securely in the frame of the conveyor belt, so that it can neither fall nor tilt.
- The substrate must be sufficiently loadbearing.
- The drive of the conveyor belt must be stopped safely prior to raising. The belt must not move laterally during the lifting process. If necessary, it must be effectively blocked before lifting.
- The safety distance from the top roller or the end roller must always be at least 6m.
- The maximum permissible working widths, heights and lifting capacities must not be exceeded, see Section 3.2.
- The lifting rods of the return belt are intended exclusively to be attached to the ends of the troughing belts. Please note the maximum permissible towing capacity.
- Please note the maximum permissible load of the lifting rods for the return belt. Only use the lifting rods for the return belt with the original chains and accessories.
- The permissible environmental conditions must be complied with, see Section 3.2.

# Section 1 – Basic Specifications

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## 1.2 Intended Use continued

The intended use also includes:

- complying with the operating instructions,
- complying with the inspection and maintenance work.

### 1.2.1 Reasonably Foreseeable Misuse

- The lifting of belts with larger dimensions or a heavier weight.
- The lifting of other products (e.g. motor vehicles) or living things (e.g. people).
- Unauthorized modifications to the device.
- Welding work on the device.
- Operating the device in an explosive atmosphere.

## 1.3 Supplied Documents

- Operating manual

## 1.4 User Evaluation/Product Monitoring

We update this operating manual on a regular basis.

Your suggestions for improvement help to make it more user-friendly.

As we also want to offer you safe, state-of-the-art technology in the future, please inform us immediately of any

- malfunctions during operation,
- issues when handling the device,
- accidents or near-misses.

We will then get in touch with you, to discuss the safety and operation of the device.



### Information!

Notifying us of accidents or near-misses is an essential contribution to the improvement of the device.

# Section 1 – Basic Specifications

## 1.5 Labels on the Device

Labels are used to identify the device. They are mounted onto the frame (approximately in the center), and provide information about the device type and the serial number (Figure 1).

The correct type is marked in the check box on the left label. The serial number can be found on the label on the right-hand side.

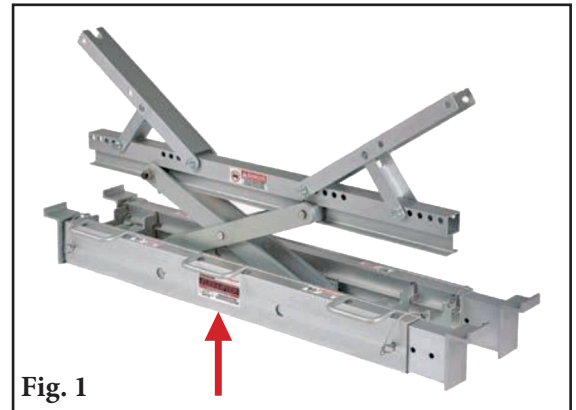


Fig. 1

Labels and their positions on the device

## 1.6 Operator's Work Station

The operator's work station is marked with an "X" in Figure 2.

The work station for raising and lowering is on the adjusting nut of the narrow side of the Flex-Lifter frame.

There are other work stations around the device for adjusting the foot sections and the troughing belts, for attaching and adjusting the lifting rod (optional), and for inserting or lifting the Flex-Lifter.



### **Danger!**

Set up the device so that you can operate it safely.

- Move any obstructions out of the way beforehand.
- Make sure that the installation site is adequately lit.
- Ensure secure positioning and safe access.
- In workstations at heights greater than 0.5 m above the ground, you must take the necessary safety measures to prevent falls, e.g. construct scaffolding with railings.
- Use the required personal protective equipment, e.g. a protective helmet, protective gloves, protective footwear, fall protection.

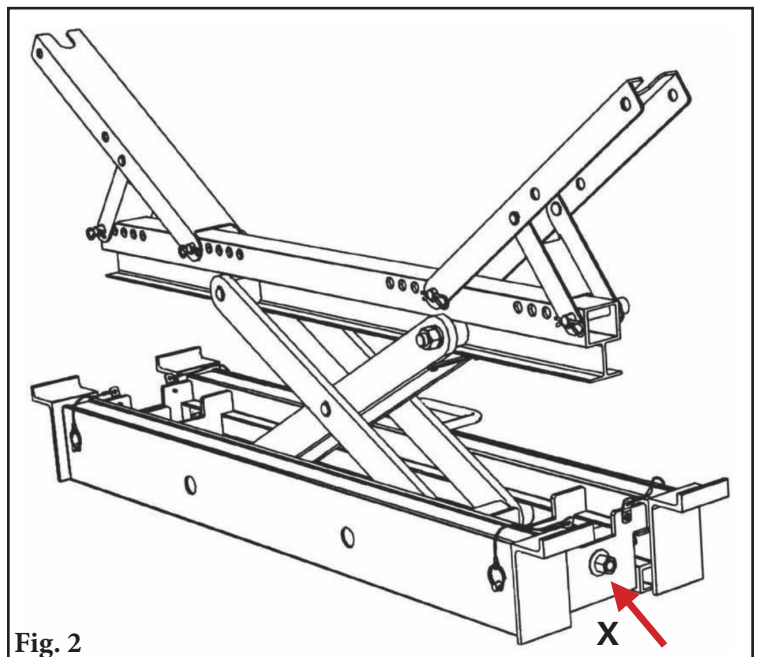


Fig. 2

Operator's work station

## Section 2 – Safety Information

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### 2.1 General

#### 2.1.1 Comply with the Instructions in the Operating Manual

- This operating manual contains the most important instructions for the safe operation of the device.
- This operating manual, especially the safety information, must be complied with by all persons who work on the device.
- In addition, the rules and regulations applicable for accident prevention in the place of operation must be observed.

#### 2.1.2 Obligation of the Operator

The operator is obligated to only permit the following people to work on the device:

- those who are familiar with the basic regulations on workplace safety and accident prevention, and who have been trained in the handling of the device; and
- those who have read the section on safety and warning signs in this manual, or have been informed of its content, and have confirmed their understanding of the content with their signature.

#### 2.1.3 Obligation of the Personnel





Before starting work, all persons who are authorized to work on the device undertake to

- comply with the basic regulations on workplace safety and accident prevention, and
- read the section on safety and warning signs in this manual, or to receive training about its content, and to confirm with their signature that they have understood the section on safety and warning signs.

### 2.2 Explanations of Symbols and Signs

- Please note these signs.
- Avoid these dangerous situations.

#### 2.2.1 Warning Signs and Information






Symbol	Signal Word	Meaning
	<b>Danger!</b>	Ignoring this warning sign may result in serious injury or death.
	<b>Warning!</b>	Ignoring this warning sign may result in serious injury or considerable damage to property.
	<b>Caution!</b>	Ignoring this warning sign may result in minor injury or minor damage to property.
	<b>Information</b>	This information facilitates the handling of the device, and will help you to avoid causing damage to the device during operation, maintenance, and cleaning.

## Section 2 – Safety Information



### 2.2.2 Symbols

Note all safety instructions and symbols attached to the equipment. Keep them in a fully legible condition.




#### Warnings:

Symbol	Explanation	Symbol	Explanation
	Warning of suspended load		Warning of hazardous area
	Warning of hand injuries, e.g. by crushing		Warning of a slip hazard
	Warning of hand injuries, e.g. by shears		

#### Prohibitions:

Symbol	Explanation	Symbol	Explanation
	Do not stand beneath a suspended load		Do not use as a lifting jack

#### Commands:

Symbol	Explanation	Symbol	Explanation
	Wear eye protection		Wear protective gloves
	Wear foot protection		

## Section 2 – Safety Information

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### 2.3 Organizational Measures

- Observe the accepted rules for occupational safety.
- Check the device for externally visible damage and operability before use.
- Regularly check that your employees work in a safety-conscious and hazard aware manner, in compliance with the operating manual.
- Use personal protective equipment, where necessary or required by regulations.
- The required personal protective equipment must be provided by the operator.
- Make sure that all safety instructions and warnings on the equipment are complete and in a fully legible condition, and replace them if necessary.
- Do not make any changes, additions or conversions to the device which may affect your safety.
- Replacement parts must meet the technical requirements specified by the manufacturer. This is ensured when using genuine spare parts.
- Observe the proper operational maintenance conditions, see Section 5.6.

### 2.4 Election and Qualifications of Personnel

- Work on the device may only be carried out by reliable personnel who conform to the requirements. Note the legally permitted minimum age.
- Only appoint trained and qualified personnel.
- Clearly determine the responsibilities of the personnel for set-up, operation, maintenance and repairs.
- Personnel who are to be trained, taught, instructed or participate in general training may only operate the device under the constant supervision of an experienced person.

### 2.5 Dangers when Handling the Device

Only operate the device

- in good order and condition,
- according to the intended use, see Section 1.2.
- if the operator has the necessary safety and hazard awareness, and works in compliance with the instruction manual.

**This is for your safety!**

## Section 2 – Safety Information

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### 2.5.1 Hazardous Areas and Potential Hazards

#### Hazardous Areas

- The working environment around the conveyor belt, in which the Flex-Lifter is used.
- Belt bearing rail with two adjustable troughing belts.
- Scissor linkage with pivot rod.
- Frame with extendable foot sections.
- Lifting rods of the return belt, if available.

Known risks or unexpected hazards exist permanently in these areas.

#### Potential Hazards

- Mechanical movements
- Height above the ground
- High weight forces
- Improper use of a drive tool, such as a power wrench (not part of the Flex-Lifter).
- Negligent use of personal protective equipment.

This may result in a risk to the health of personnel.  
Special safety regulations apply.

### 2.5.2 Residual Hazards

Residual hazards are hazards which

- cannot be completely eliminated constructively, or
- cannot be reduced to an acceptable level, or
- cannot be eliminated through the use of protective equipment.

They exist permanently. Information about the residual dangers is also on the signs which are attached to the device.



#### **Danger!**

Falling device or machine parts.



Never stand under a suspended or floating load.

Watch out for other people.



#### **Warning!**

The device may tilt during operation.

Ensure that the operator is qualified and authorized.

Secure the device against accidental movements, e.g. with straps.

## Section 2 – Safety Information

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### 2.5.2 Residual Hazards continued



#### **Danger!**

**Unfavorably situated operation sites can pose risks to the operational environment.**

- Set up the device so that you can operate it safely.
- Move any obstructions out of the way beforehand.
- Make sure that the installation site is adequately lit.
- Ensure secure positioning and safe access.
- In workstations at heights greater than 0.5 m above the ground, you must take the necessary safety measures to prevent falls, e.g. construct scaffolding with railings.
- Use the required personal protective equipment, e.g. a protective helmet, protective gloves, protective footwear, fall protection.



#### **Warning!**

**The device may tilt, slip or fall during operation.**

**The raised conveyor belt may be jerky and move downward.**

**During set-up, ensure that the device is on a flat bearing surface, and has a secure grip on the frame of the conveyor belt.**

**The width of the extendable foot sections must be properly adjusted.**

**The blade pins must all be reinstated and secured with split pins.**

**The base on which the Flex-Lifter stands, must be designed for the expected maximum load.**



#### **Warning!**

**The device may tilt, slip or fall during operation.**

**With inclined conveyor belts or inclined installation areas, you are responsible for the stability of the device, even when it is in its fully extended state.**

**In this case, you must also securely attach the device.**



#### **Warning!**

**If the conveyor belt moves laterally, the Flex-Lifter may tilt and fall.**

**Before starting work on the unit, make sure that the conveyor belt is disconnected from the power supply, and protected against reconnection.**

**Before starting work on the unit, make sure that the conveyor belt cannot move laterally. If the bands are tilted, the belt needs to be effectively blocked by clamping.**



## Section 2 – Safety Information

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### 2.5.2 Residual Hazards continued



#### **Warning!**

Risk of injury when searching for and rectifying faults.

Only appropriately trained and authorized persons are allowed to search for and rectify faults. See the Section 2.4, “Selection and qualifications of personnel”.



#### **Warning!**

The device has been built for “single-person operation” (raising and lowering). Risk of injury caused by other people using the device.

Ensure that during operation, only one person is using the device.

Exception: As a general rule, two people are required to set up and dismantle the conveyor belt.



#### **Warning!**

Risk of crushing or shearing by the linkage of the Flex-Lifter when raising and lowering.

Keep your hands and limbs away from the hazardous area when raising and lowering the conveyor belt.



#### **Caution!**

Danger of electrostatic charging.

If you install the Flex-Lifter on an electrically non-conductive base, possible electrostatic charges cannot flow. In this case, earth the Flex-Lifter.



#### **Warning!**

If the conveyor belt is too heavily loaded on the Flex-Lifter, the Flex-Lifter can buckle or break. Note the maximum permissible lifting capacity, depending on the lifting height, see Section 3.2.2.

If in doubt, you must relieve the belt by removing the conveying material and, if necessary, reducing the belt tension.

Limit the torque of the ratchet or the power wrench whilst raising the Flex-Lifter.

Ensure that the safety distance from the head and end rollers of the conveyor belt is at least 6m.

## Section 2 – Safety Information

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### 2.5.2 Residual Hazards continued



#### **Warning!**

Do not use a bent, fractured or otherwise damaged Flex-Lifter. Only operate the device if it is functioning properly.

Stop the device immediately if you notice an error.

As the operator, you are responsible for this.



#### **Warning!**

Danger of crushing in the event of unstable lifting rods of the return belt.

If you adjust the lifting rod of the return belt in width, do not pull the extension rod(s) too far, in order to avoid buckling.

The safety bolt must always be inserted through a bore hole in the extension rod, or else it will be unstable.

Reinsert safety bolt, and tighten it.



#### **Warning!**

Crushing and shock hazard in the event of overload at the fixing points of the lifting rod.

If the fixing points of the lifting rod are overloaded, the safety bolts may break, or the troughing belt may give way.

Please note the maximum permissible towing capacity.



#### **Warning!**

Risk of overloading when inserting the Flex-Lifter and lifting it from the conveyor frame.

The Flex-Lifter weighs up to approximately 57kg, according to its construction (without a lifting rod for the return belt).

Ask a second person to assist you when inserting the Flex-Lifter or lifting it from the conveyor frame. If possible, use a tool to release it.

Only persons who meet the physical requirements may insert the Flex-Lifter or lift it from the conveyor frame.



#### **Caution!**

Working with a hand-held power wrench belonging to a client may cause a setback. By doing this, you may injure your hands on the extended foot sections.

Use an extension rod if necessary.

Wear protective gloves if necessary.

## Section 2 – Safety Information

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### 2.5.2 Residual Hazards continued



#### Information!

Limit the torque of a power tool (power wrench) belonging to a client to a maximum of 52Nm. This is sufficient for raising the permitted loads.

Do not push against the stop at full torque when lowering. This can damage the thread.

Clean the device regularly, and grease the moving parts on a regular basis, so that the lifting mechanism will continue to run smoothly.



#### Warning!

Noise may result in hearing loss or deafness.

Wear appropriate hearing protection in the workplace, when necessary.

When using a power tool, such as a power wrench (not part of the Flex-Lifter), the noise level must be taken into account.

The noise level in the workplace environment must also be considered.

## Section 3 – Product Description

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### 3.1 Ordering Numbers, Part Numbers

#### 3.1.1 Flex-Lifter

The Flex-Lifter is available in the following sizes:

- M medium
- L large
- XL extra large

The sizes differ in shape, tare weight, operational width, lifting height, and maximum lifting capacity.

Designation	Size M	Size L	Size XL
Ordering number	FL-M-EC	FL-L-EC	FL-XL-EC
Part number	79926	79927	79928

#### 3.1.2 Lifting Rods for Return Belts

A lifting rod for the return belt is in the Flex-Lifter standard range of equipment for sizes M and L. This is optional for Flex-Lifter size XL.

Type	Size M	Size L	Size XL
Lifting rod ordering number	<b>FLRLB-M</b>	FLRLB-L	FLRLB-XL-EC
Lifting rod part number	76482	76481	79934

#### 3.1.3 Transport Carriage

The transport carriage is optional. This is not part of the standard scope of equipment.

Designation	For sizes M, L and XL
Ordering number	FLCK
Part number	77729

## Section 3 – Product Description

### 3.2 Technical Specifications

#### 3.2.1 General Information on Flex-Lifter

Designation	Size M	Size L	Size XL
Tare weight	28kg	34kg	57kg
Height of device (closed)	170mm	170mm	188mm
Maximum lifting height	350mm	400mm	400mm
Conveyor belt width	900 – 1500mm	1200 – 1800mm	1800 – 2400mm
Maximum lifting load, if lifting height > 175mm	1800kg *)	1800kg *)	2725kg *)

\*)See the following chart for further details.

Chart 1 General information, Flex-Lifter

#### 3.2.2 Permissible Safe Lifting Capacity, Depending on the Lifting Height



##### Information!

The permissible safe lifting capacity of the Flex-Lifter is dependent on the lifting height, due to the leverage of the shear pin. The larger the shear pin, the greater the permissible safe lifting capacity. The statements on the original signs on the device are binding.

Type:	Size M	Size L	Size XL
<b>Lifting height:</b>	<b>Permissible safe lifting capacity [kg]:</b>		
0 – 25mm	225	225	500
25 – 50mm	450	450	815
50 – 75mm	675	675	1140
75 – 100mm	900	900	1450
100 – 125mm	1150	1150	1680
125 – 150mm	1350	1350	2090
150 – 175mm	1600	1600	2400
> 175mm	1800	1800	2725

Chart 2 Permissible safe lifting capacity, depending on the lifting height

#### 3.2.3 Checking the Lifting Capacity at the Manufacturer

The load capacity of the Flex-Lifter has undergone type-dependent tests. The static test coefficient (test load/specified permissible safe lifting capacity) is 1.5. Before dispatch, each individual device is tested with a static test coefficient of 1.25. The result is recorded.

## Section 3 – Product Description

### 3.2.4 Reaction of the Flex-Lifter in the Event of Overloading

A shear pin is installed in the lifting mechanism of the Flex-Lifter. In the case of a critical overload, the thread of the lifting mechanism is damaged, or the shear pin shears off. Lifting is no longer possible. The device must be safely relieved. It is not permitted to continue using the damaged device. Contact the supplier (see the inside front page for the address), to have the device repaired correctly and professionally.



#### Information!

Limit the torque of a power tool (power wrench) belonging to a client to a maximum of 52Nm. This is sufficient for raising the permitted loads. Do not push against the stop at full torque when lowering. This can damage the thread. Clean the device regularly, and grease the moving parts on a regular basis, so that the lifting mechanism will continue to run smoothly.

### 3.2.5 Permissible Towable Load of the Lifting Rod

Lifting rods with chains are used as devices for lifting return belts. The chains are secured to the flat ends of the troughing belts with safety bolts.

The maximum towing capacity per fixing point is:

	Size M	Size L	Size XL
Towing capacity, max.			
	225kg	340kg	340kg

Chart 3 Maximum towing capacity per fixing point



#### Information!

The statements on the original signs on the device are binding.

## Section 3 – Product Description

### 3.2.6 Lifting Rods for Return Belts

A lifting rod for the return belt is in the Flex-Lifter standard range of equipment for sizes M and L. This is optional for Flex-Lifter size XL. The lifting rods are adjustable in width. The lifting rods for sizes M and L are straight; the lifting rods for size XL are V-shaped (troughed).

The lifting rods of the return belt are intended exclusively to be attached to the ends of the troughing belts. The lifting rods may only be used with the intended original parts (chains with shortening clutches, bolts).



#### Information!

The chains must be checked regularly. Please note the national provisions. In Germany, DGUV Regulation 100-500 (formerly BGR 500) applies.

Note the maximum permissible towing capacity at the fixing points of the troughing belts, see Section 3.2.5. The statements on the original signs on the device are binding.

	Size M	Size L	Size XL
Tare weight of the lifting rod	10kg	10kg	28.6kg

Chart 4 Tare weight of the lifting rod

	Size M	Size L	Size XL
Load capacity lifting rod, maximum			
	550kg	680kg	680kg

Chart 5 Maximum permissible load capacity of the lifting rod

### 3.2.7 Transport Carriage

The transport carriage is optional. This is not part of the standard scope of equipment.

Designation	For sizes M, L and XL
Empty weight	approx. 9kg

Chart 6 Empty weight of transport carriage (optional)

## Section 3 – Product Description

### 3.2.8 Necessary Accessories

The tools required for manual raising and lowering (nut driver and ratchet) are included in the scope of delivery. Power wrenches are not included in the scope of delivery.

Designation	Size M	Size L	Size XL
Size of nut driver	19mm	19mm	24mm

Chart 7 Accessories

### 3.2.9 Power wrench

Power wrenches are not included in the scope of delivery. Note the following when using a power wrench:



#### Information!

Limit the torque of the power wrench to a maximum of 52Nm. This is sufficient for raising the permitted loads. Do not push against the stop at full torque when lowering. This can damage the thread.

### 3.2.10 Environmental Conditions

Environmental conditions	Transport and Bearing	Operation
Temperature	-5 ... +65°C	+5 ... +65°C
Explosion Protection	Explosive atmospheres are not permitted	Explosive atmospheres are not permitted

Chart 8 Environmental Conditions

### 3.2.11 Information on noise

The Flex-Lifter itself operates almost silently. The noise level of the device in the workplace is <70 dB(A). When using a power tool, such as a power wrench (not part of the Flex-Lifter), the noise level must be taken into account. The noise level in the workplace environment must also be considered.



## Section 3 – Product Description

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### 3.3 Delivery State

The appliance and the accessories provided are packed in a shipping carton. The items are protected by padding, and are secured against sliding. The shipping carton may be mounted onto a wooden pallet.



**Fig. 3** Opened shipping carton, example

## Section 3 – Product Description

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### 3.4 Construction of the Flex-Lifter

The construction, dimensions and other properties of the Flex-Lifter depend on the size of the device, see Section 3.2.



**Fig. 4** Application examples

The Flex-Lifter belt lifter is used for lifting belts in conveyor belts, e.g. for maintenance purposes. It is very versatile. It can be used to lift upper flanges or, with a lifting rod, for lifting return belts.

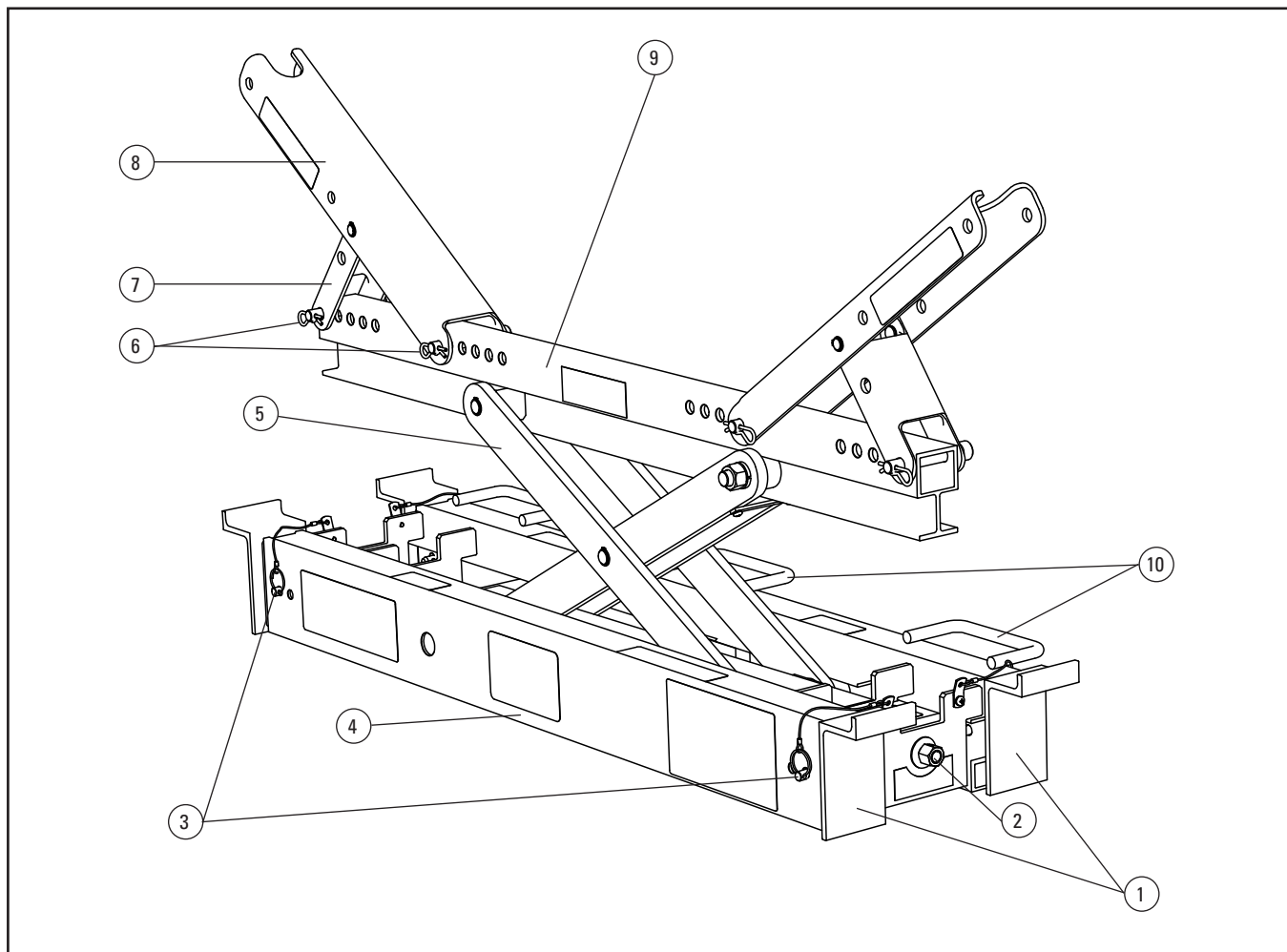
The Flex-Lifter is available for different conveyor belt widths, and in different sizes and designs. It is delivered in discharged condition. The extendable foot sections on the frame can be adjusted in width. They are secured by blade pins.

The extendable foot sections can be rotated through their longitudinal axes up to 180 degrees, so that the fixing bracket on the foot sections are either pointing upwards or downwards. This way, the frame of the Flex-Lifter can be positioned either “hanging from” or “sitting on” the frame of the conveyor belt.

Instructions for adjusting the Flex-Lifter can be found in Section 5.

## Section 3 – Product Description

### 3.4.1 Flex-Lifter Sizes M and L



**Fig. 5** Flex-Lifter Sizes M and L, diagram

Pos.	Designation	Pos.	Designation
1	4 extendable foot sections with turning option	6	4 blade pins for adjustable troughing belts
2	Adjusting nut for Flex-Lifter height adjustment	7	2 braces
3	4 blade pins for the width adjustment of the foot sections	8	2 troughing belts
4	2 frame rails	9	Belt bearing rail
5	Scissor linkage	10	Handles

## Section 3 – Product Description

### 3.4.1 Flex-Lifter Sizes M and L continued



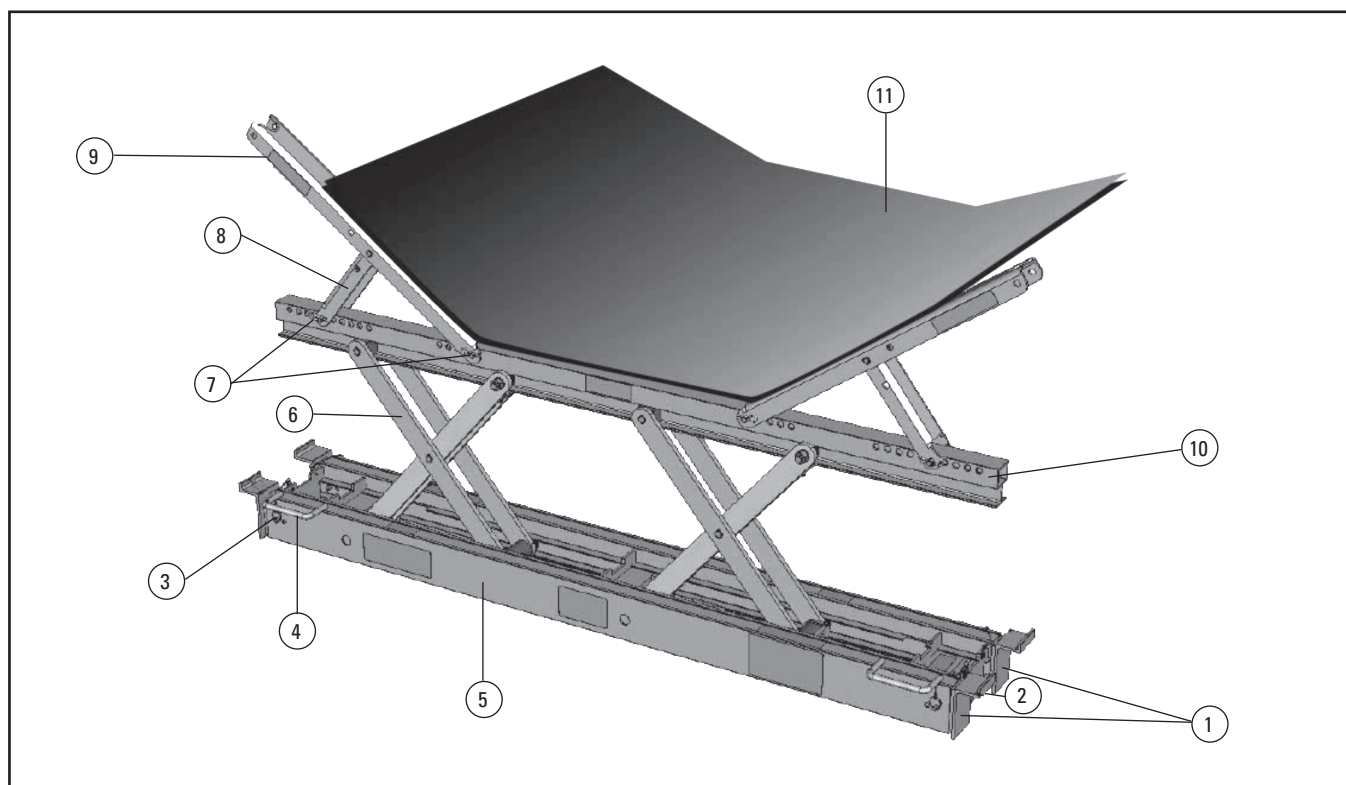
**Fig. 6** Flex-Lifter with lifting rods for return belts

Pos.	Designation	Pos.	Designation
1	Lifting rod for return belt, adjustable in width	5	2 Shortening clutches with safety mechanisms
2	Bolts for adjusting the width of the lifting rod	6	2 chains with shortening clutches on Flex-Lifter
3	2 bolts for attaching chains to the lifting rod	7	2 blade pins, external troughing belt pins to chain receivers
4	2 chains on the lifting rod	8	2 troughing belts, positioned horizontally

There is a lifting rod with two chains for lifting return belts. The lifting rod is adjustable in width. The chain ends are attached to flat-lying troughing belts with two blade pins on the external ends of the troughing belts. The shape of the lifting rod depends on the size of the Flex-Lifter. In sizes M and L, it is straight; in size XL, it is V-shaped.

## Section 3 – Product Description

### 3.4.2 Flex-Lifter Size XL

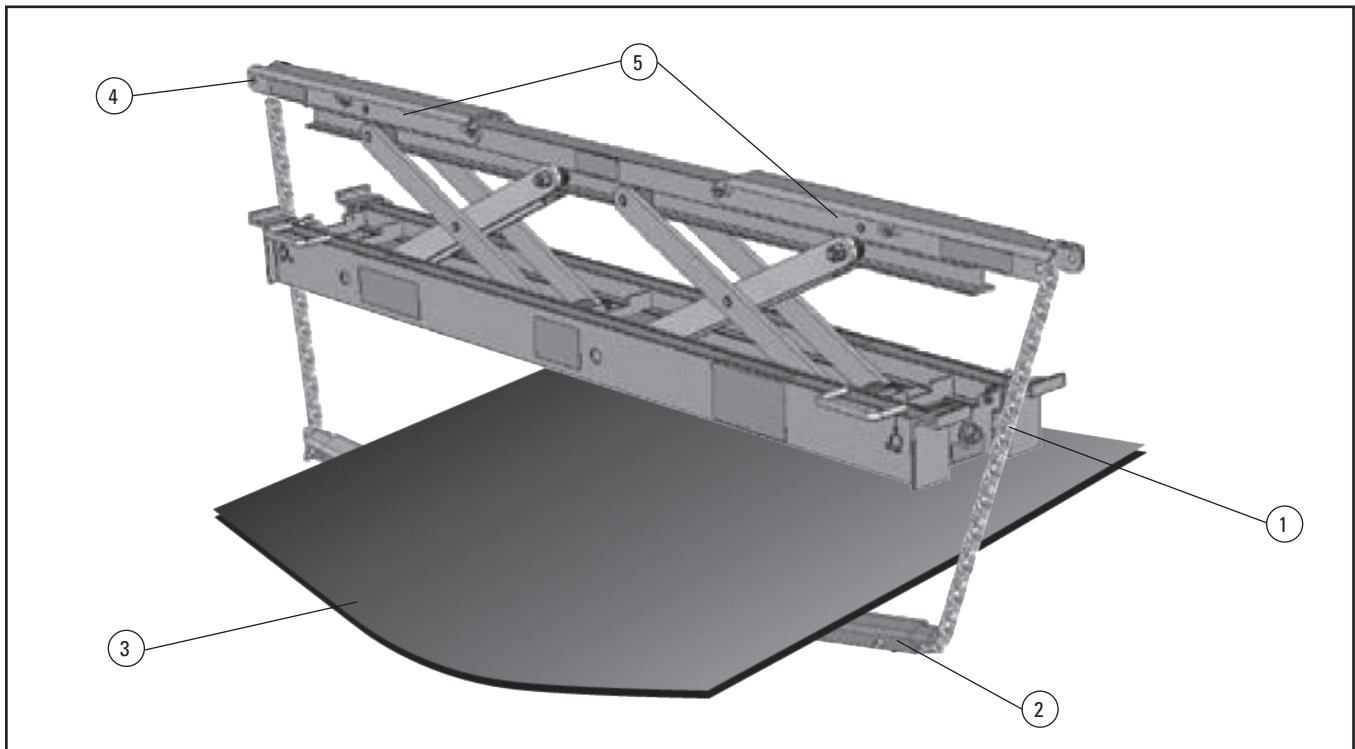


**Fig. 7** Flex-Lifter Size XL, diagram

Pos.	Designation	Pos.	Designation
1	4 extendable foot sections with turning option	7	4 blade pins for adjustable troughing belts
2	Adjusting nut for Flex-Lifter height adjustment	8	2 braces
3	4 blade pins for the width adjustment of the foot sections	9	2 troughing belts
4	2 handles	10	Belt bearing rail
5	2 frame rails	11	Belt
6	2 scissor linkages		

## Section 3 – Product Description

### 3.4.2 Flex-Lifter Size XL continued



**Fig. 8** Flex-Lifter Size XL with lifting rods for return belts, diagram

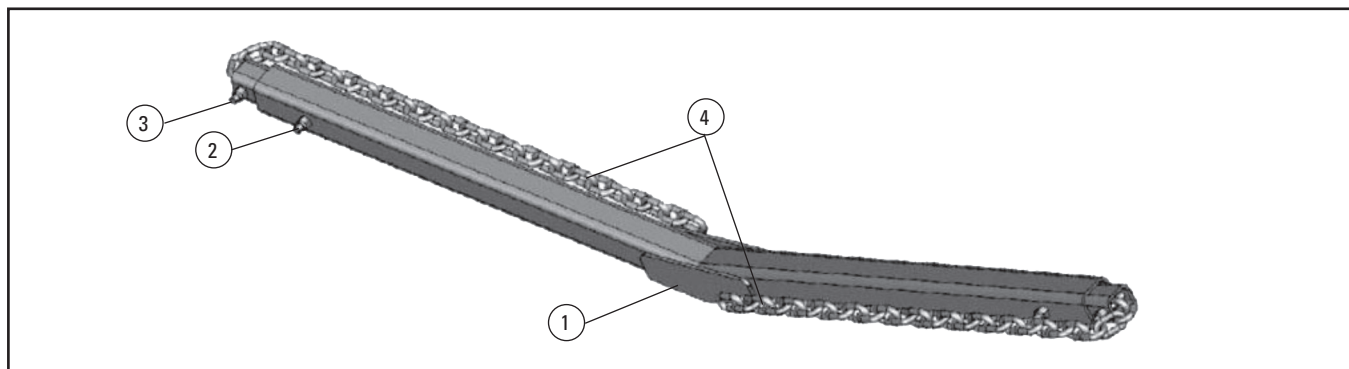
Pos.	Designation	Pos.	Designation
1	Chains on the lifting rod	4	Blade pins for chains
2	Angular lifting rod (optional) for return belt	5	2 troughing belts, positioned horizontally
3	Belt		

The chains in Flex-Lifter size XL with a lifting rod for the return belt are made in the same way as chains in Flex-Lifter sizes M and L, see Figure 6. The dimensions and load capacity of the chains can differ. The lifting rod for the return belt Flex-Lifter size XL is angular, see Figure 9.



## Section 3 – Product Description

### 3.4.2 Flex-Lifter Size XL continued



**Fig. 9** Lifting rod for return belt in Flex-Lifter size XL, diagram

Pos.	Designation	Pos.	Designation
1	Lifting rod for return belt, adjustable in width	3	2 bolts for attaching chains to the lifting rod
2	2 bolts for adjusting the width of the lifting rod	4	2 chains on the lifting rod

There is a lifting rod with two chains for lifting return belts, which is adjustable in width. The chain ends are attached to flat-lying troughing belts with two blade pins on the external ends of the troughing belts. The shape of the lifting rod depends on the size of the Flex-Lifter. In sizes M and L, it is straight; in size XL, it is V-shaped.

## Section 3 – Product Description

### 3.4.3 Chains on the Lifting Rods for Return Belts



**Fig. 10** Chains on the lifting rods for return belts, example

Pos.	Designation	Pos.	Designation
1	2 short chains with shortening clutches, to be attached to the troughing belts	2	2 long chains, to be attached to the lifting rods

The chains are coordinated with the relevant Flex-Lifter. The end links for attaching the blade pins to the troughing belts of the Flex-Lifter or for attaching the safety bolts to the ends of the lifting rod have larger openings, so that the blade pins and safety bolts can be inserted.

The remaining chain links are not intended for accommodating the blade pins or safety bolts. To shorten the chains on the lifting rods, the corresponding “middle” chain links are inserted into the shortening clutches until they click into place, see Figure 6. See Section 5.4.2 for further details.



## Section 3 – Product Description

### 3.4.4 Blade Pins on the Extendable Foot Sections



**Fig. 11** Blade pins on the extendable foot sections

The extendable foot sections on the frame can be adjusted in width. They are secured by blade pins.

The extendable foot sections can be rotated through their longitudinal axes up to 180 degrees, so that the fixing bracket on the foot sections are either pointing upwards or downwards. This way, the frame of the Flex-Lifter can be positioned either “hanging from” or “sitting on” the frame of the conveyor belt.

### 3.4.5 Blade Pins on the Troughing Belts



**Fig. 12** Blade pin with cotter pin on the troughing belt

The inclination of the troughing belt can be adjusted gradually with adjustable struts with blade pins, see Figure 12. The upper flange can be supported with various troughs and flat belts. The blade pins on the troughing belts are secured against falling by cotter pins.

## Section 3 – Product Description

### 3.4.6 Nut Driver for Adjusting the Height of the Flex-Lifter

The height of one of the adjusting nuts on the end face of the Flex-Lifter can be adjusted. For this, a power wrench and a ratchet and/or a nut driver are required. The power wrench and ratchet are included in the scope of delivery, see Figure 13. The size of the nut driver depends on the size of the Flex-Lifter, see Section 3.2.



**Fig. 13** Nut driver with ratchet, example

Pos.	Designation	Pos.	Designation
1	Raise/lower the switch	3	Nut driver
2	Release button of the nut driver		

## Section 3 – Product Description

### 3.4.7 Safety Bolts on the Lifting Rod

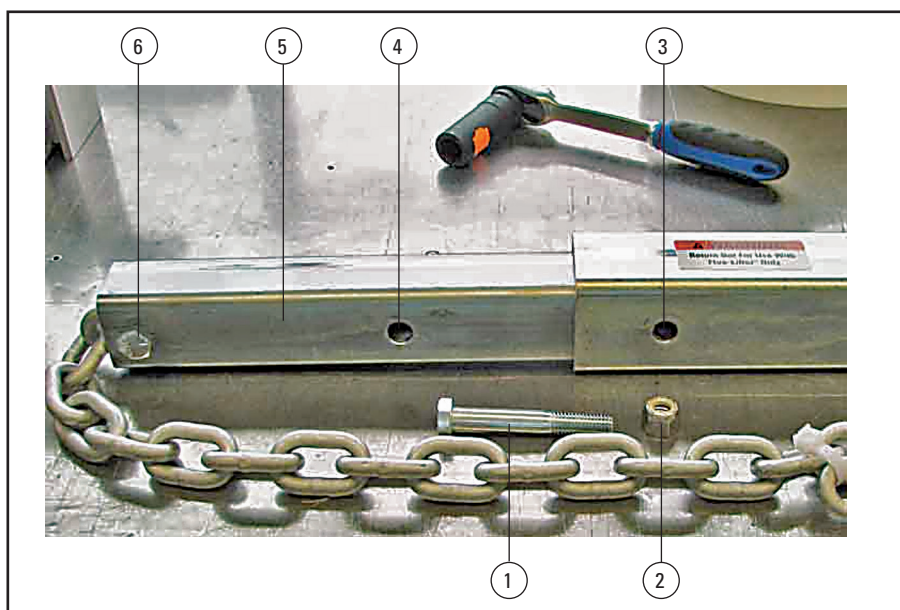


Fig. 14 Safety bolts on the lifting rod, example

Pos.	Designation	Pos.	Designation
1	Safety bolts on the lifting rod, unscrewed	4	Possible implementation of the safety bolt for width adjustment
2	Nut for safety bolt	5	Extendable rod for width adjustment
3	Plug position for the safety bolt for width adjustment	6	Safety bolts for the attachment of a chain end-link

The lifting rod features safety bolts for the attachment of chain ends and for width adjustment(s). The lifting rod for the return belt can be adjusted in width to the width of the belt, to a certain degree. The chains should, however, be suspended vertically downwards under load.

### 3.4.8 Transport carriage

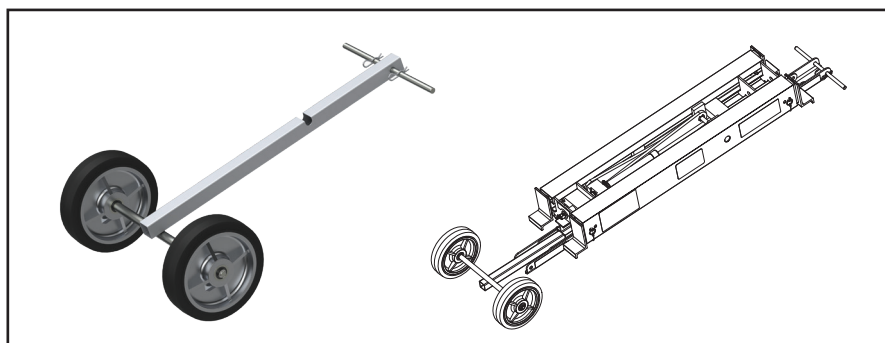


Fig. 15 Transport carriage (optional)

For easy transportation of the Flex-Lifter, a transport carriage is available (optional). For information on the use of the transport carriage, see Section 4.5.

## Section 3 – Product Description

### 3.5 Typical Application Examples



**Fig. 16** Typical application examples

Pos.	Designation	Pos.	Designation
1	Raise the trough-shaped belt	3	Raise the return belt with the lifting rod
2	Raise the flat belt		



#### Information!

Please also pay attention to the Flexco videos on how to adjust and use the Flex-Lifter (with explanations in English). These can be seen on line on YouTube.

## Section 4 – Transport

---

### 4.1 Safety Regulations



#### **Danger!**

The device or components may fall.



Never stand under a suspended or floating load.

Watch out for other people.



#### **Information!**

Please note the symbols on the packaging.

### 4.2 Requirements of the Operating Personnel

- The device is pre-assembled, and has handles on the frame.
- The center of gravity of the device is crucial.
- The weight depends on the size, see Section 3.2.
- Transportation tasks involving forklift trucks or cranes may only be carried out by trained and authorized personnel.
- The personnel must have knowledge of, and apply, the applicable legal and normative requirements for transportation.

### 4.3 Scope of Delivery, Transportation Damage

The entire scope of delivery is listed in the shipping documents. Check all parts of the device and the accessories for completeness, integrity and transport damage immediately after delivery.



#### **Information!**

Transport damage and/or missing parts must be reported to the vendor in writing within five working days. Hidden damages must be reported within a period of five working days after discovery.

## Section 4 – Transport

---

### 4.4 Internal Transport

- Transportation tasks involving forklift trucks or cranes may only be carried out by trained and authorized personnel.
- The device must be secured against movement, tilting and rotating, or the movement or disconnection of parts, by taking appropriate measures.
- Drive the means of transport at walking pace. The device may fall if the speed is too fast.
- Do not drive on ramps or slopes.
- Retain the packaging for further transportation.
- As a form of internal transportation, the device can be carried by two strong persons, using the handles.
- Optionally, a transport carriage is available.
- For internal transportation, the device can be mounted onto the transport carriage (optional).
- The installation and set-up of the Flex-Lifter on the operation site is described in the Section 5 “Operation”.

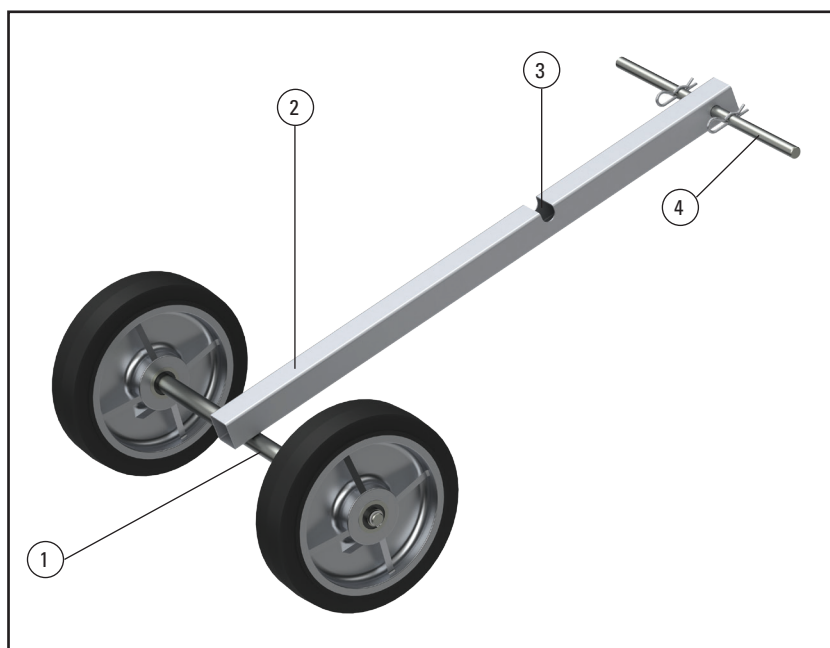


**Fig. 17** Unpacking



## Section 4 – Transport

### 4.5 Use Of The Transport Carriage (Optional)



**Fig. 18** Empty transport carriage (optional)

Pos.	Designation	Pos.	Designation
1	Wheel frame, wheels with axes and tubes	3	Groove on the tube
2	Tube of the wheel frame	4	Removable handle bar with 2 cotter pins

### Preparation

Remove the handlebar from the tube of the wheel frame (see Figure 18). To do this, remove one of the cotter pins and pull the handlebar out of the tube.

### Attaching Flex-Lifter to the Transport Carriage

See Figure 19 to Figure 22.

- 1 Remove the cotter pin (see Figure 19, pos. 1) and the pin (see Figure 19, Pos. 2) on one of the troughing belts.
- 2 Slide the tube of the wheel frame (see Figure 20, Pos. 5) through the troughing belt, into the tube of the Flex-Lifter (see Figure 20). The groove on the tube (Figure 20, pos. 3) must be able to cover the bore hole for the pin (Figure 20, Pos. 4) on the troughing belt.
- 3 Then insert the pin back into the bore hole on the troughing belt (see Figure 20, Pos. 4) and secure it by inserting the cotter pin (see Figure 19, Pos. 1).

## Section 4 – Transport

### 4.5 Use of the Transport Carriage (Optional) continued

- 4 Insert the handlebar of the transport carriage (Figure 21, Pos. 7) into the external bore hole of the troughing belt opposite, and secure it by inserting the cotter pin (see Figure 21, Pos. 6).
- 5 Check that the Flex-Lifter is attached to the wheel frame, and the handlebar is tightly fixed (see Figure 22).
- 6 Lift the transport carriage by its handle, and pull it to the operation site.

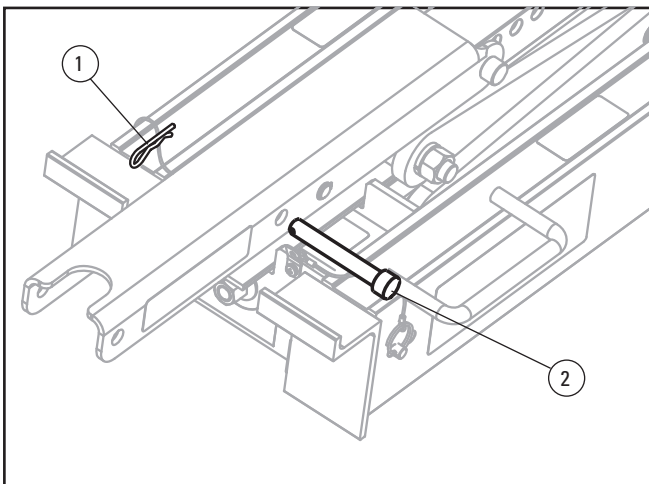


Fig. 19 Trolley assembly 1

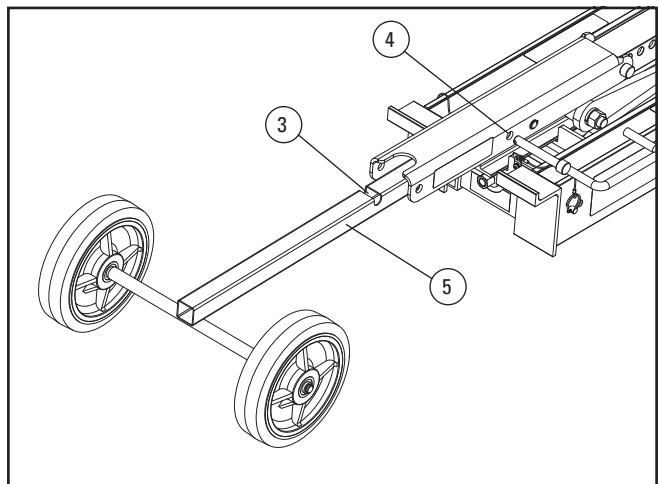


Fig. 20 Trolley assembly 2

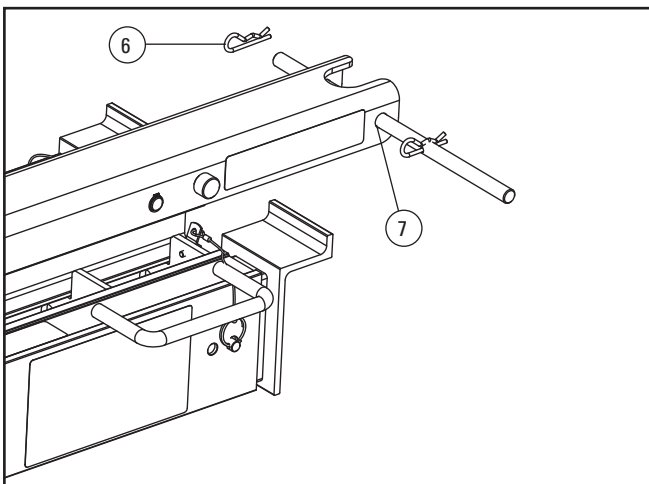


Fig. 21 Trolley assembly 3

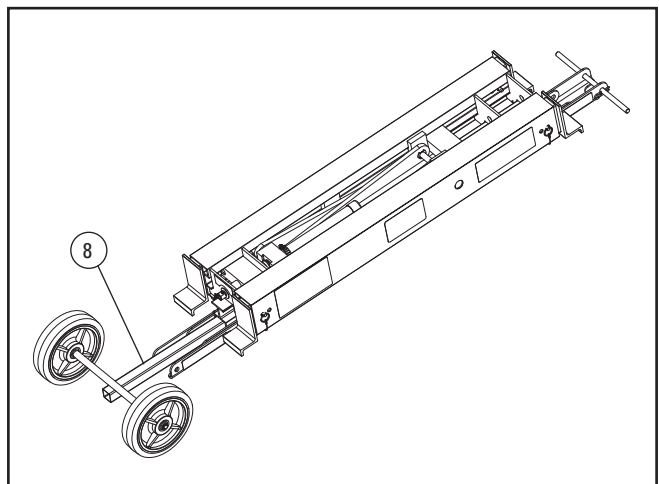


Fig. 22 Trolley assembly 4

Pos.	Designation	Pos.	Designation
1	Splint	5	Wheel frame
2	Pin	6	Remove cotter pin
3	Groove on the tube	7	Attach handlebar
4	Borehole for pin	8	Transport carriage with Flex-Lifter



## Section 4 – Transport

---

### 4.5 Use of the Transport Carriage (Optional) continued

#### Removing Flex-Lifter from the transport carriage

Proceed by carrying out the assembly process in reverse:

- 1 Remove the handlebar from the troughing belt (see Figure 21, Pos. 6 and 7).
- 2 Remove the pin from the bore hole (see Figure 20, Pos. 4).
- 3 Remove the tube of the wheel frame (Figure 20, Pos. 5) from the troughing belt opposite.
- 4 Insert the pin back into the intended hole on the troughing belt, and secure it with the cotter pin (see Figure 19, Pos. 1 and 2).
- 5 Insert the handlebar of the transport carriage into the intended hole the tube on the wheel frame, and secure it with the cotter pin (see Figure 18, Pos. 4)

The device can only be used in the deployment location.

## Section 5 – Operation And Handling

---

### 5.1 Safety Regulations



#### **Warning!**

The device may tilt, slip or fall during operation.

The raised conveyor belt may be jerky and move downward.

Make sure that the conveyor belt is safely disconnected from the mains and has been locked against unauthorized activation.

Make sure that the conveyor belt cannot move laterally when it is out of service. Block the belt, if necessary.

During set-up, ensure that the device is on a flat bearing surface, and has a secure grip on the frame of the conveyor belt.

The width of the extendable foot sections must be properly adjusted.

The blade pins must all be reinstated and secured with split pins.

The base on which the Flex-Lifter stands, must be designed for the expected maximum load.



#### **Warning!**

If the conveyor belt is too heavily loaded on the Flex-Lifter, the Flex-Lifter can buckle or break. Please note the maximum permissible lifting capacity.

If in doubt, you must relieve the belt by removing the conveying material and, if necessary, reducing the belt tension.

Limit the torque of the ratchet or the power wrench whilst raising the Flex-Lifter.

Ensure that the safety distance from the head and end rollers of the conveyor belt is at least 6m.



#### **Warning!**

The device has been built for “single-person operation” (raising and lowering). Risk of injury caused by other people using the device.

Ensure that during operation, only one person is using the device.

Exception: As a general rule, two people are required to set up and dismantle the conveyor belt.



#### **Warning!**

Risk of crushing or shearing by the linkage of the Flex-Lifter when raising and lowering.

Keep your hands and limbs away from the hazardous area when raising and lowering the conveyor belt.

## Section 5 – Operation And Handling

---

### 5.1 Safety Regulations continued



#### Warning!

Risk of overloading when inserting the Flex-Lifter and lifting it from the conveyor frame.

The Flex-Lifter weighs up to approximately 57kg, according to its construction (without a lifting rod for the return belt).

Ask a second person to assist you when inserting the Flex-Lifter or lifting it from the conveyor frame. If possible, use a tool to release it.



#### Information!

Limit the torque of a power tool (power wrench) belonging to a client to a maximum of 52Nm. This is sufficient for raising the permitted loads.

Do not push against the stop at full torque when lowering. This can damage the thread.

Clean the device regularly, and grease the moving parts on a regular basis, so that the lifting mechanism will continue to run smoothly.

Please note the safety information in Section 2.5.2.

### 5.2 Requirements of the Operating Personnel

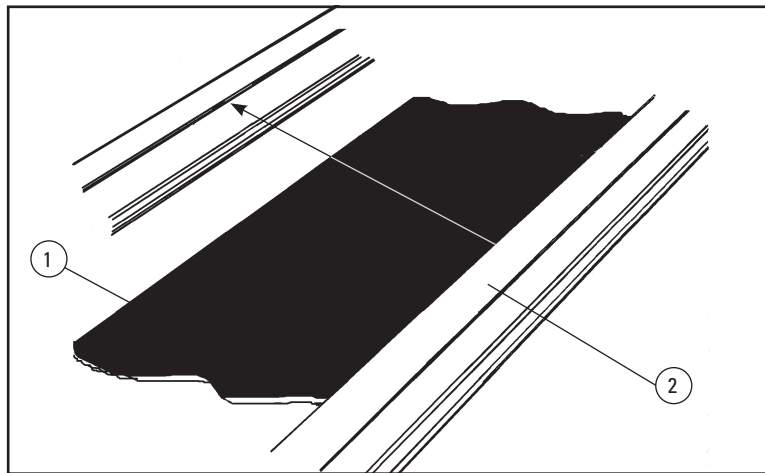
- The device may only be installed, adjusted and operated by trained personnel who conform to the requirements.
- The operator is responsible for the selection and training of operating personnel.
- The operator must train the operating personnel in the safety-conscious handling of the device.
- The safety training of the operating personnel by authorized instructors must be repeated on a regular basis.
- The operating personnel must have read the operating manual or have been informed of its content, and have fully understood the content.
- Maintenance work may only be carried out by suitably trained, qualified and authorized staff.

### 5.3 Cleanliness

Before using the device, the workspace should be cleaned of all coarse dirt and discarded objects.

## Section 5 – Operation And Handling

### 5.4 Flex-Lifter Set-up

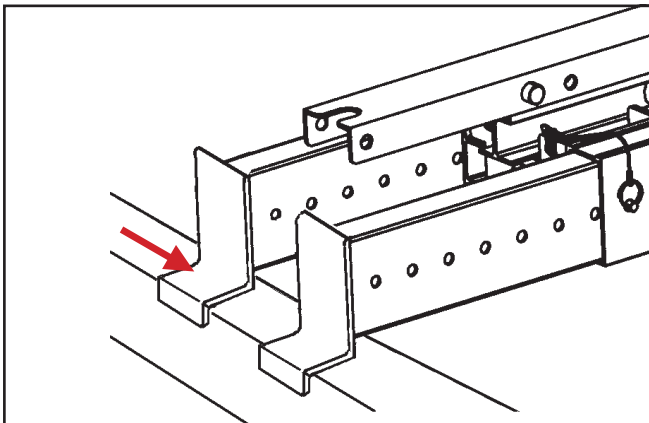


**Fig. 23** Measuring the width

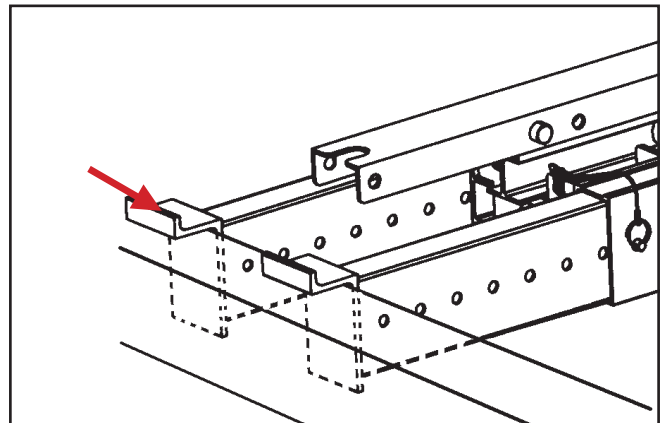
Pos.	Designation	Pos.	Designation
1	Tape	2	Conveyor system construction

#### Step 1: Measure the conveyor belt

Having determined in which position the conveyor belt of the Flex-Lifter is to be used, measure the width of the conveyor system structure, see Figure 23.



**Fig. 24** Foot section, mounted



**Fig. 25** Foot section, suspended

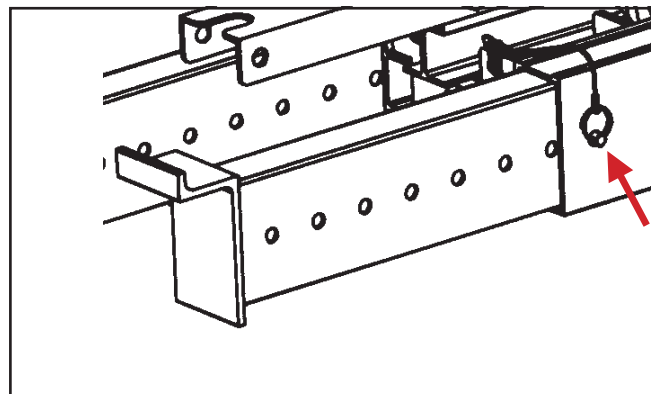
## Section 5 – Operation And Handling

### 5.4 Flex-Lifter Set-Up continued

#### Step 2: Presetting the extendable foot sections of the belt lifter

Based on the measurements taken, set the extendable foot sections to the width of the system, to ensure that the foot sections sit firmly on the conveyor belt. The extendable foot sections can either be adjusted so that they rest on the conveyor structure, if more height is required, see Figure 24, or so that they are suspended in the conveyor structure, see Figure 25.

To preset the extendable foot sections, only the blade pin (see Figure 26) needs to be removed, and then the foot section can be pulled inward or outward. Adjust both foot sections to the same length, so that both foot sections sit securely on the conveyor structure.



**Fig. 26** Pulling foot sections outwardly and securing with a blade pin

#### Step 3: Position the belt lifters on the conveyor belt

After adjusting the extendable foot sections on or in the conveyor system structure, slide the belt lifter safely over the conveyor belt, and position it at a right angle to the conveyor system structure.

## Section 5 – Operation And Handling

### 5.4.1 Application on the Upper Flange

#### Step 4a: Position the troughing belt on the upper flange for troughed bands

To raise a flat band, please see Step 5a.

Remove the external troughing belt pin (see Figure 27) and raise the troughing belt, so that the internal brace can swivel into position (see Figure 28). Repeat this on the other side of the device. The troughing belts should be adjusted so that they fit the idler roller station.

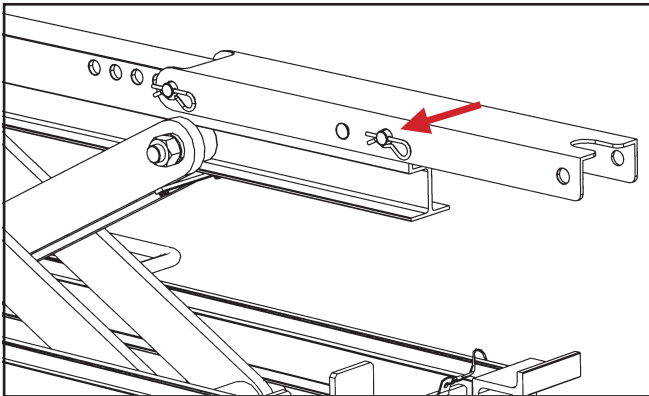


Fig. 27 Troughing belt pin with cotter pin

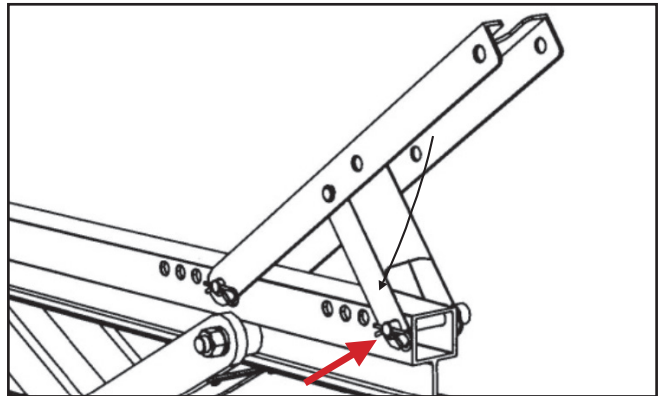


Fig. 28 Brace swivel with large braces

The lifting rod for the upper flange has two sets of holes on each side (each with 5 holes). By removing both of the troughing belt pins, the internal wing axis point can be amended so that it fits into the transition zone of the return rollers.

#### Step 5a: Raise the belt

Rotate the adjusting nut counter-clockwise with the supplied nut driver and ratchet, until the belt has reached the desired height. Optionally, you can use a power wrench with limited torque (not included). Remove the ratchet or power wrench before starting repair work on the conveyor belt.

#### Step 6a: Lower the belt

When the repair work on the conveyor belt has been completed, put the ratchet or power wrench back on the adjusting nut and rotate it clockwise until the belt lifter is in its lowest position once more.



#### Caution!

When lowering the belt, do not continue to rotate it once it has reached its end position, as this could damage the device.

## Section 5 – Operation And Handling

### 5.4.1 Application on the Upper Flange continued

#### Step 7a: Remove belt lifters

As described in Step 3 and Step 4, remove the troughing belt pins, lower the troughing belt into a flat position, and insert the troughing belt pins again. Slide the belt lifter safely away from the conveyor belt construction and bring the extendable foot sections as far inwards as possible, so that the device can be safely transported and stored. Reinsert the blade pins.

### 5.4.2 Application on the Return Belt

A lifting rod for the return belt is included in the Flex-Lifter standard range of equipment for sizes M and L. This is optional for Flex-Lifter size XL.

#### Step 4b: Adjust the width of the lifting rod to match the belt width



#### Information!

The straight lifting rods in sizes M and L each have an extension rod, see Figure 29. The V-shaped angular lifting rods (size XL) each have two extension rods at both ends, see Figure 30.

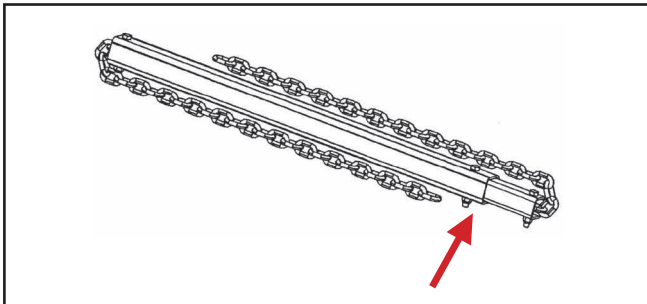


Fig. 29 Lifting rods, sizes M and L

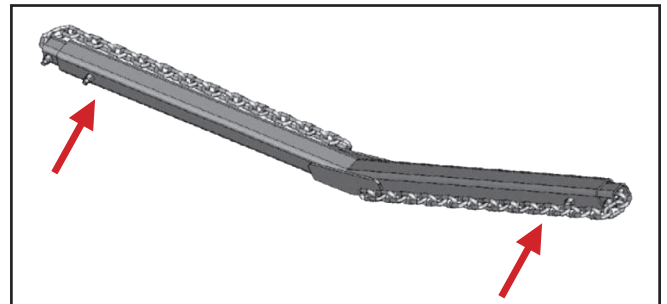


Fig. 30 Lifting rods, size XL

Remove the safety bolts, and adjust the width by moving the extendable extension rod(s). The extension rods have holes for the insertion of the securing bolts.

Do not pull the extendable extension rod(s) too far out. The safety bolt must always be inserted through a bore hole in the extension rod, or else it will be unstable. Reinsert safety bolt, and tighten it with a nut.

## Section 5 – Operation And Handling

---

### 5.4.2 Application on the Return Belt continued

#### Step 5b: Attach short chains to the troughing belts with shortening clutches

Attach the end links of the short chains to the ends of the troughing belts using shortening clutches, and secure them with the troughing belt pins and cotter pins, see Figure 31.

#### Step 6b: Attach long chains to the lifting rods, if necessary

Attach the end links of the long chains to the ends of the lifting rods, and secure them with safety bolts and nuts, see Figure 32



**Fig. 31** Attaching short chains



**Fig. 32** Attaching long chains



## Section 5 – Operation And Handling

### 5.4.2 Application on the Return Belt continued

#### Step 7b: Construct the lifting rod and attach the chains

The troughing belts must be in their original, flat position. Place the lifting rod below the return belt, and support it.



**Fig. 33** Attaching the chain to the lifting rod

Raise the long chains of the ends of the lifting rod on both sides. You can determine the chain length by selecting an appropriate link and connecting it to the shortening clutch, see Figure 33.

When inserting the chain link into the shortening clutch, a metal tab clicks into place on completion.

To connect or disconnect, first remove the lifting rod. Press the metal tab on the shortening claw inward by hand. With the other hand, you can now pull the chain link out of the shortening clutch, see Figure 34.

## Section 5 – Operation And Handling

### 5.4.2 Application on the Return Belt continued



Fig. 34 Unhinging the chain from the lifting rod



Fig. 35 Lifting rod hanging from the chain



### Information!

Note the maximum permissible towing capacity on the ends of the troughing belt, see Section 3.2.

## Section 5 – Operation And Handling

---

### 5.4.2 Application on the Return Belt continued

#### Step 8b: Raise the belt

Rotate the adjusting nut counter-clockwise with the supplied nut driver and ratchet, until the belt has reached the desired height. Optionally, you can use a power wrench with limited torque (not included). Remove the ratchet or power wrench before starting repair work on the conveyor belt.

#### Step 9b: Lower the belt

When the repair work on the conveyor belt has been completed, put the ratchet or power wrench back on the adjusting nut and rotate it clockwise until the belt lifter is in its lowest position once more.



#### Caution!

When lowering the belt, do not continue to rotate it once it has reached its end position, as this could damage the device.

#### Step 10b: Remove belt lifters

In order to disconnect the long chains, first remove the lifting rod. Press the metal tab on the shortening claw inward by hand. With the other hand, you can now pull the chain link out of the shortening clutch, see Figure 34.

Using the shortening clutch, remove the cotter pins and the troughing belt pins from the attachment points of the short chains. Remove the short chains. Put the troughing belt pins back into the boreholes in the troughing belt, and secure them with the cotter pins.

Slide the belt lifter safely away from the conveyor belt construction and bring the extendable foot sections as far inwards as possible, so that the device can be safely transported and stored. Reinsert the blade pins.

## 5.5 Decommissioning, Storage and Re-starting

Please note the safety information in Section 2.5.2.

Clean the device, and oil the pivot rod and threaded nut on the Flex-Lifter. Oil the hinges lightly, if necessary. Cover the device with a sheet.

Please comply with the environmental conditions for storage, see Section 3.2.10. When re-starting, carry out a visual inspection and operation maintenance, see Section 5.6.



## Section 5 – Operation And Handling

---

### 5.6 Operational Maintenance By Operating Personnel

Operational maintenance is a means with which to contribute to a smooth and efficient operation in the production process. The operating personnel can carry out this work after appropriate instruction.

#### **Cleaning and visual inspection**

- Clean the device with a dry cloth after use.
- Check that the Flex-Lifter, including the lifting rod, is in perfect condition and undamaged. The parts must not be bent or otherwise changed (e.g. by drilling or welding).
- Check that the pivot rod and the threaded nut on the Flex-Lifter are clean, stainless and well-oiled. Oil if necessary. Cover the pivot rod again with the cover provided.
- Check that the unloaded device operates smoothly.
- Oil the hinges lightly, if necessary.
- Check the pins on the troughing belts, including the cotter pins and all of the blade pins and safety bolts for wear. Replace missing or damaged parts immediately.
- See the Section 6, “Malfunctions, repairs”.

## Section 6 – Malfunctions, Repairs

---

### 6.1 Safety Regulations



#### **Danger!**

Risk of injury when searching for and rectifying faults. Only appropriately instructed and authorized persons are allowed to search for and rectify faults. See the Section 2.4, “Selection and qualifications of personnel”.

Please note the safety information in Section 2.5.2.

### 6.2 Malfunctions, Possible Causes, And Solutions

Malfunctions/Errors	Possible Causes	Solutions
Adjusting nut difficult to move	Dirty pivot rod or threaded nut	Clean and re-grease
	Thread damaged	Contact Flexco
	Shear pin sheared off.	Contact Flexco
Component damaged	By wear or overloading	Contact Flexco

If repairs are necessary on the Flex-Lifter, you must contact the manufacturer. Damage to the device may only be rectified by the manufacturer.

### 6.3 Maintenance



#### **Information!**

Damage to the device may only be rectified by the manufacturer. In case of damage, send the device back to the manufacturer.

## Section 7 – Disposal

---

### 7.1.1 Safety regulations



#### **Danger!**

**Dispose of products in accordance with the applicable waste code. Wear personal protective equipment where necessary.**

Please note the safety information in Section 2.5.2.

### 7.1.2 Environmental and Health Risks

Be aware of environmental compatibility, health risks, disposal regulations, and local possibilities for proper disposal.

### 7.1.3 Material Groups

Separate metals, non-metals, composite materials and auxiliary materials by material type, and dispose of them in an environmentally-friendly way.

## Section 8 – EC Declaration Of Conformity

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**EC declaration of conformity in accordance with EC Machinery Directive 2006/42/EC, Annex II, No. 1, Paragraph A**

**The Flex-Lifter belt lifter** has been engineered, constructed and manufactured in accordance with the EC Directive named above. The Flex-Lifter belt lifter has been placed on the market under the sole responsibility of

Flexco Europe GmbH  
Leidringer Straße 40 – 42  
D – 72348 Rosenfeld

The following harmonized standard has been applied:  
DIN EN ISO 12100

Complete technical literature exists. The relevant operating manual for the device is available in the original language.

The person responsible for compiling the technical documentation is: Mr. Rosenbaum. See above for address.

Rosenfeld, 12/29/15

Place, Date

Dipl.-Ing. (FH) Ingo Rosenbaum, Production Manager



## Section 9 – Annex

## 9.1 Confirmation Of Instruction

I hereby confirm that I have read all sections, or have been informed of their content, and also fully understand the content.

[illegible]



## Section 10 – Key Words

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### A

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## **The Flexco Vision**

To become the leader in maximizing  
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through superior service and innovation.

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