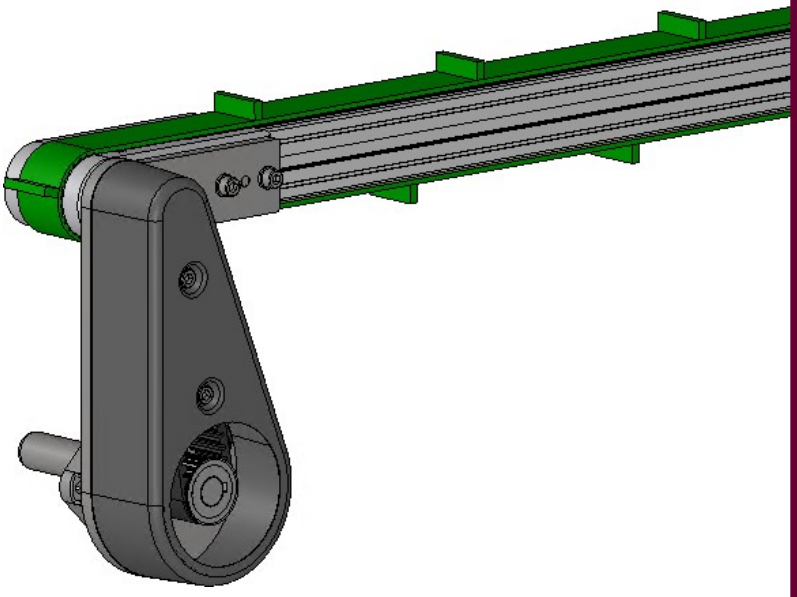
BACHTEL GROUP

Timing belt conveyor instructions



Original operating and assembly instructions
November 2024 / Version 1

1 Table of contents

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2 Operating instructions / assembly instructions

2.1 Purpose

These operating and assembly instructions are intended for all authorised persons who work with the timing belt conveyor. It contains all the information required for the application and use of the timing belt conveyor in the manner intended.

These instructions have been compiled with care. KANYA AG accepts no liability for errors in this document. If any documents are missing or discrepancies are discovered, please let us know. We reserve the right to make technical changes at any time.

2.2 Storage

These instructions must be kept for as long as you are in possession of a timing belt conveyor. If the system is passed on, these instructions must be supplied in full with the system.

The current instructions can be accessed using the QR code on the machine or at the following URL: https://www.kanya.com/en/service/instructions/conveyor-services.html

2.3 Operating instructions

Toothed belt conveyors that are supplied WITH a motor are considered to be complete machinery in accordance with the Machinery Directive. In this case, these instructions are regarded as operating instructions and a declaration of conformity is issued.

2.4 Assembly instructions

Toothed belt conveyors that are delivered WITHOUT a motor are considered partly completed machinery according to the Machinery Directive. In this case, these instructions are regarded as assembly instructions and a declaration of incorporation is issued.

2.5 Terms

Description of the terms used in these instructions:

- Instructions: Operating instructions or assembly instructions
- Machine: Toothed belt conveyor (term "belt conveyor" according to EN 619)
- Conveyor belt: Power-driven component of the conveyor (term "tension member" according to EN 619)
- Slide rail: Rail on which the toothed belt moves (Term "supporting element" according to EN 619)
- Drive shaft: Shaft on the motor side
- Deflection shaft: Shaft on the deflection side

2.6 Manufacturer

Kanya AG
Neuhofstrasse 9
CH - 8630 Rüti ZH
T +41 (0)55 251 58 58
info@kanya.com
www.kanya.com

3 Safety regulations

3.1 Intended use

The machine is used to transport unit loads or liquids in closed containers. The machine is

intended exclusively for commercial use.

All other uses are not permitted.

3.2 Non-intended use

The machine must not:

- transport people, animals or unpackaged food.
- The appliance must not be operated with values greater than those specified in the technical data.
- Come into contact with chips or coarse particles.
- Come into contact with corrosive media such as acids or alkalis.
- Operate in potentially explosive atmospheres.
- Operated outdoors and therefore exposed to the weather.
- Used for transporting hot materials and objects above 80°C.
- For the transport of objects that can be damaged by static discharges.
- For transport at excessively high speeds (risk of tipping or ejection of the transported goods)
- Use of the machine as a storage location.

Improper use of the machine can have consequences such as

- Health hazard and/or danger to life for the operating personnel or uninvolved third parties.
- Damage to the system or other objects.
- Production losses due to staff accidents or equipment damage.
- Unforeseeable risks of any kind due to the use of unauthorised third-party resources such as spare parts or accessories.

KANYA AG is not liable for damage due to improper use. In such cases, the risk is borne solely by the operator.

3.3 Changes to the system

No safety devices may be dismantled or put out of operation.

Covers and protective panelling may only be removed for maintenance work. The covers and panelling must be closed or fitted when the machine is in operation.

Unauthorised modifications and conversions to the machine are strictly prohibited for safety reasons.

The installation and/or use of third-party products such as spare parts or accessories that have not been tested and approved by KANYA AG is not permitted.

KANYA AG is not liable for damage caused by the installation and/or use of unauthorised third-party products.

3.4 Careful handling of the machine

The operator of the machine is obliged to operate it only when it is in perfect and undamaged condition. The machine must be maintained in accordance with the maintenance schedule.

3.5 Safety-conscious working

- Read the operating instructions first.
- Always work with safety and risk awareness in mind.
- Report any damage or defects immediately to the person responsible.
- Repair the device first, then continue working!
- Carrying out specified maintenance and repair measures.

3.6 Organisational measures

- Ensure that these operating instructions are always available.
- Ensure that only sufficiently qualified and authorised, competent persons operate, maintain and repair the device.
- Ensure that these competent persons are regularly instructed in all applicable occupational safety and environmental protection issues and are familiar with the operating instructions and, in particular, the safety instructions contained therein.
- Regularly check the functionality.
- Check at regular intervals whether work is being carried out in a safety and hazard-conscious manner.

3.7 Assembly, maintenance and repair

- Only by authorised persons.
- Do not modify or change safety-relevant parts.
- All planned changes must be authorised in writing by Kanya AG.
- The maintenance work specified in the instructions (cleaning, servicing, inspection, etc.) must be carried out on time.

3.8 Other regulations that must be observed

- Country-specific regulations
- Accident prevention regulation
- Information / type plates

3.9 State of the art

When used as intended, the machine corresponds to the state of the art and the recognised safety regulations.
Nevertheless, there are risks and residual dangers to life and limb. These dangers increase if the machine is not operated as intended or by unauthorised and untrained persons.

3.10 Residual risks

The use of technical products is associated with hazards. Residual hazards are hazards that cannot be eliminated by design measures or protective devices.
Safety instructions are used to draw attention to residual dangers.

3.11 Disregard of the safety regulations

KANYA AG is not liable for damage or malfunctions resulting from failure to observe these instructions or from operating errors.
KANYA AG is also not liable for damage caused by non-compliance with statutory or other local safety, accident prevention and environmental protection regulations.

3.12 Authorised persons

Only skilled personnel who have been trained in the areas of mechanics and electrics, are qualified by knowledge and practical experience and have read and understood these instructions are authorised to work on the machine.

3.13 Obligation to report faults and damage

The operator is obliged to contact KANYA AG for any work that cannot be carried out by the above-mentioned authorised persons.
KANYA AG is not liable for damage caused by failure to make contact or by work carried out by untrained and unauthorised personnel of the operator.

3.14 Third-party suppliers

The safety instructions in the operating instructions of third-party suppliers must be observed and complied with.

3.15 Local laws and regulations

In addition to these instructions, the local and statutory safety, accident prevention and environmental protection regulations must be observed.

4 Product-specific hazards

4.1 Danger due to missing protective devices

DANGER

The machine may only be operated with fully functional protective devices that prevent access to the protected area during operation.

Operation of the machine without protective devices is prohibited.

4.2 Danger from electric current

DANGER

There is a danger to life when touching live electrical parts.

The power supply to the system must be switched off before working on electrical components and secured against being accidentally switched on again.

4.3 Risk of crushing due to conveyor belt (tension member)

WARNING

There is a risk of crushing between the conveyor belt and the drive shaft, idler shaft or idler roller, between the conveyor belt and the guide rail and between the conveyor belt and standing edges, which can lead to permanent personal injury.

Do not hold any limbs or objects under the conveyor belt.

4.4 Risk of crushing between conveyed goods

WARNING

There is a risk of crushing between the individual conveyed goods or between the conveyor belts and the dust hopper, which can lead to permanent personal injury.

Do not hold any limbs or objects between the conveyed goods.

4.5 Risk of crushing if stability is lost

WARNING

Hazard due to loss of stability (especially with narrow conveyors) or improper fastening.

Provide substructure with sufficiently wide and stable support.

4.6 Danger from being caught or wound up

WARNING

There is a risk of personal injury if the operating personnel are caught by loose long hair, loose clothing or jewellery (rings etc.).

The operator of the machine is responsible for all measures to ensure the safe and proper operation of the machine.

4.7 Danger due to the influence of drugs

WARNING

There is a risk of serious personal injury and damage to property if the operating personnel are under the influence of alcohol, drugs or medication that reduce their ability to operate the machine safely and properly.

The operator of the machine is responsible for all measures to ensure the safe and proper operation of the machine.

4.8 Fire hazard due to open fire.

DANGER

Oils or material removal are ignited by naked flames or sparks. Open flames or smoking are prohibited in the vicinity of the machine!

4.9 Fire hazard due to solvents.

DANGER

Residues of solvents can cause the system to catch fire.

It is prohibited to clean the system with solvents or cleaning agents containing solvents.

4.10 Danger from stepping on and climbing over

WARNING

If the machine is climbed over during operation, the machine may start up unexpectedly. There is a risk of injury.

Entering or climbing over the machine is prohibited.

5 Technical data

Operating temperature:	+5° C to +40°C
Temperature at standstill:	-20° C to +60°C
Max. Temperature change during operation:	15°C/h
Humidity:	10% to 90% (condensation is not permitted)
Prohibited operation:	in explosive atmospheres and in corrosive gases.
Maximum weight of material to be conveyed:	see machine rating plate
Conveyor belt dimensions:	see layout in the appendix
Electrical connection:	see motor rating plate
Back-up fuse:	see motor rating plate
Effective factor cosϕ:	see motor rating plate

6 Transport

6.1 Transport conditions

The relevant national regulations and legal requirements must always be observed. Transport and installation work may only be carried out by authorised persons.

Before transporting, compare the unit weight and load-bearing capacity of the means of transport and select means of transport with sufficient safety and load-bearing capacity.

Avoid strong impacts and tilting of the machine. Do not pull or push the machine across the floor.

The machine must be secured against tipping over during transport and, if necessary, during storage.

Before lifting the machine, the position of the centre of gravity must be determined and observed.

DANGER

People must never stand under the lifted load, nor may the load be carried over people.

The use of suitable lifting gear is mandatory.

WARNING

Risk of crushing when lowering loads.

When lowering loads, there is a risk of crushing underneath the load, which can lead to permanent personal injury.

Do not hold any limbs under the load.

7 Commissioning

7.1 Setting up the machine

Commissioning a horizontally conveying machine: The machine must be levelled lengthwise and crosswise to the conveying direction. Adjust the height of the substructure accordingly and check with a spirit level.

Commissioning of machines that do not convey horizontally is the responsibility of the operator.

7.2 Electrical installation

Important

The safety instructions, installation instructions and electrical connection diagrams in the operating instructions of third-party suppliers must be observed and complied with.

Connect the motor and, if present, the frequency inverter.

The operator is responsible for the galvanic isolation device and permissible fuse protection.

DANGER

There is a danger to life when touching live electrical parts.

Wiring work and the opening and closing of electronic connections may only be carried out by qualified persons when the appliance is de-energised.

The power supply to the system must be switched off before working on electrical components and secured against being accidentally switched on again.

7.3 Initial commissioning

The operator of the machine is obliged to ensure that it is in a safe condition, including the safety devices, before commissioning it for the first time.
This is also required at appropriate, regular intervals during operation, but at least after every repair or maintenance work.

Check the following after starting the machine for the first time:

- Centre run of the conveyor belt
- Correct belt speed
- Belt running direction in the direction of the drive roller (pulling operation)

7.4 Adjusting the running of the conveyor belt

The conveyor belt was adjusted at the factory before delivery.

Important

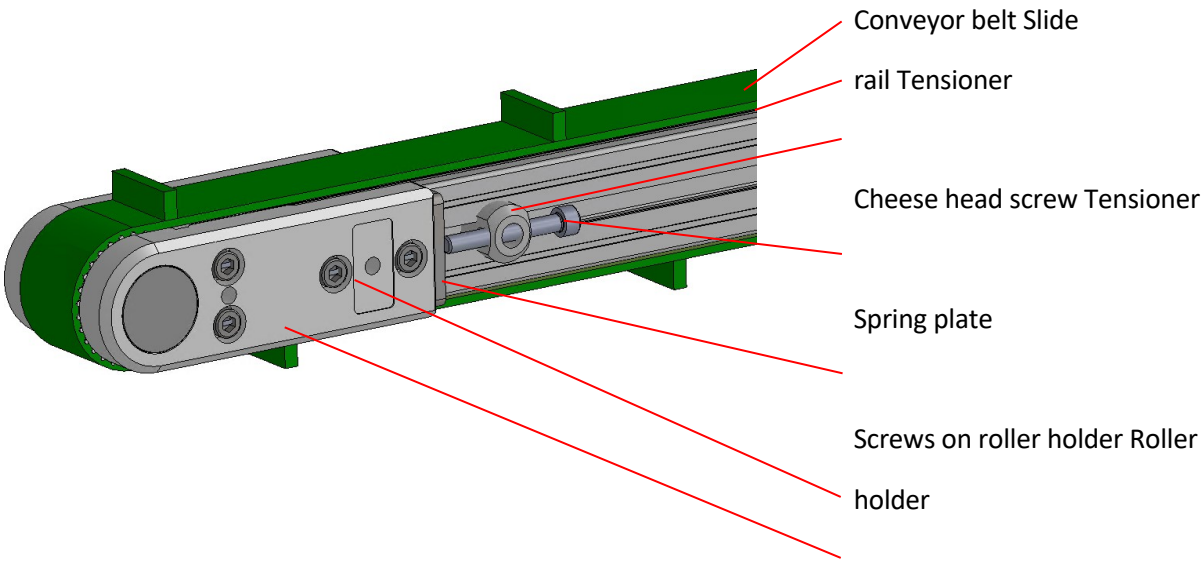
The conveyor belt is tensioned to the required tension by defined pressure springs.

- If the conveyor belt bulges at the edge of the roller, the tension is too high.
- If there is a gap between the conveyor belt and the roller, the tension is too low.

The conveyor belt is fitted with a tracking wedge and is guided over the centre of the toothed wheels and the slide rail. The spring plate is already positioned at the stop of the roller holder at the factory. The ideal tension of the conveyor belt is already set here by the built-in compression spring. However, if readjustment is required, this is carried out via the roller holder. The conveyor belt is always adjusted on the deflection side.

Procedure:

1. Loosen the screws on the roller holder (do not remove completely)
2. Adjust the roller holder as required using the cylinder screw tensioner. There must be no overtension on the belt (see note: Important).
3. Tighten the screws on the roller holder again
4. Observe machine for 2-10 belt cycles
5. If necessary: Repeat steps 1 to 4 until the conveyor belt runs in the centre



8 Maintenance, servicing and repair

8.1 Security

The machine is designed to provide years of trouble-free service. The usual careful handling and normal maintenance are assumed.

Maintenance should be carried out as required, but at least once a year by competent service technicians. The operator is recommended to conclude a service contract with an authorised service organisation.

Important

Failure to carry out maintenance in accordance with the instructions in this manual can lead to malfunctions or breakdowns of the machine and impair the operational safety and service life of the machine.

The relevant national safety regulations must be observed for all assembly, maintenance, servicing and repair work outside and inside the machine.

The operating personnel must be informed before starting work.

Safety-relevant parts may only be opened, removed and then fully reassembled by authorised and trained, competent persons, as they are not electrically fused as standard.

To prevent the system from being accidentally switched on again, the main switch (the responsibility of the operator) must be secured in the OFF position with a padlock and the key kept in a safe place.

DANGER

Electric current.

There is a danger to life when touching live electrical parts.

The power supply to the system must be switched off before working on electrical components and secured against being accidentally switched on again.

All warning and information signs are safety devices and must not be removed. Illegible or damaged signs must be replaced with new ones.

8.2 Maintenance intervals

No.	Place	Activity	Interval
1	General	Cleaning and visual inspection of the entire machine including the intake opening of the fan cowl; gaps between the cooling fins on the engine.	1 month
2	Conveyor belt	Check that the conveyor belt is centred and running in the correct direction. Readjust the toothed belt if necessary. *See the settings of the* För.	1 week
3	Screw connections	One month after initial commissioning, check all screw connections and tighten if necessary.	1 month after IBN
4	Toothed belt drive	*If present: Visually check the toothed belt for wear, damage and pre-tension. If necessary, replace or re-tension the toothed belt.* *See* ***error! Reference source could not be found.*** *-* Replace toothed belt (indirect drive)	1 month
5	Conveyor belt	Visually check the conveyor belt for wear and damage. Replace the conveyor belt if necessary. *See* ***error! Reference source could not be found. -*** *Replace conveyor belt*	6 months
6	Electrical installations	Visually check the cables and replace if necessary.	6 months
7	Rolling bearings	Check all grooved and self-aligning ball bearings for wear and replace if necessary.	6 months
8	Screw connections	Check all screw connections and tighten if necessary.	1 year
9	Signs	Missing, illegible or damaged signs must be replaced by new ones.	1 year
10	Engine	Check ball bearing, replace shaft seal and change oil according to engine manufacturer's instructions.	-

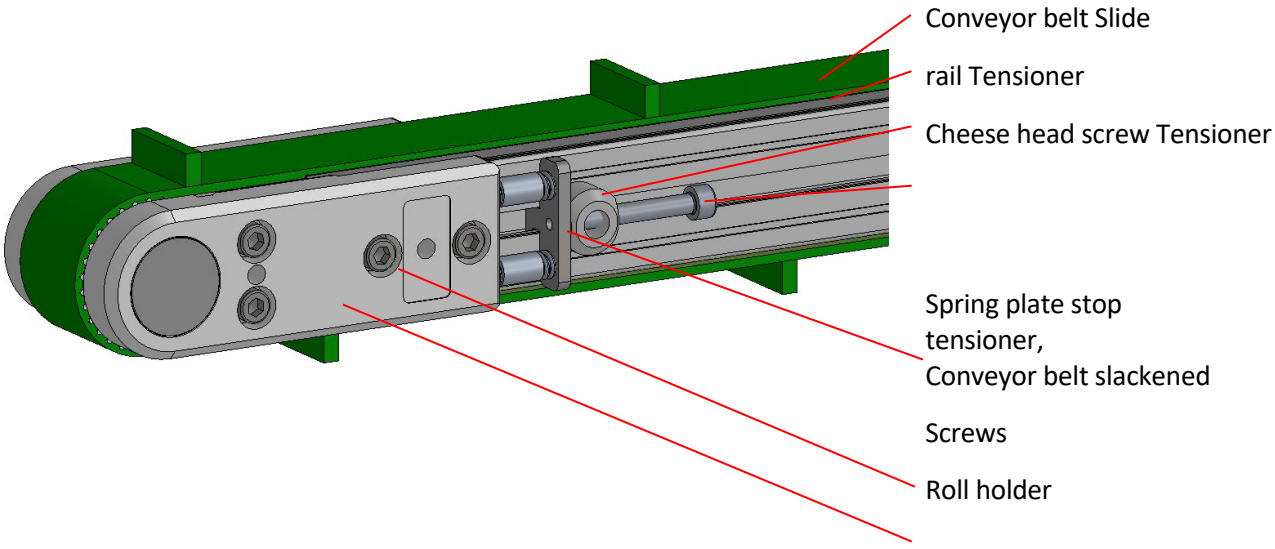
8.3 Wearing parts

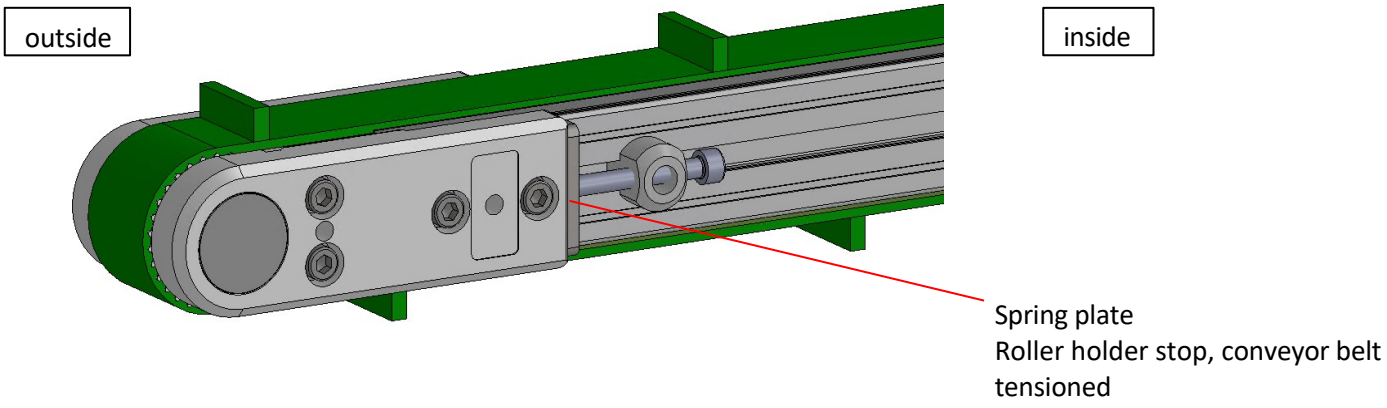
Wear parts include the following components:

- Conveyor belt
- Toothed belt drive (indirect drive)
- Slide rail
- All rolling bearings

8.4 Replace conveyor belt

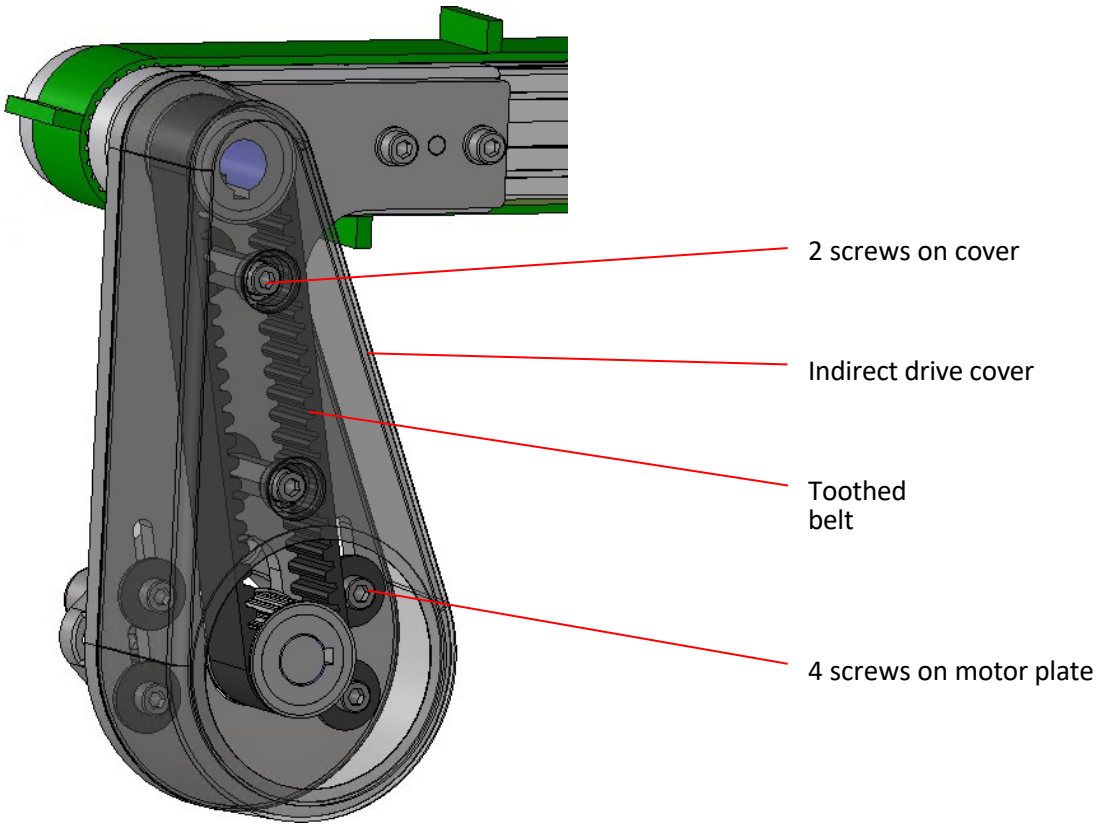
1. Provide new conveyor belt
2. Observe safety instructions: *See* ***Error! Reference source could not be found.*** *- Security*
3. If present and necessary: Remove substructure and idlers
4. Loosen the screws on the roller holder (do not remove completely)
5. Release the tension on the conveyor belt: Loosen the tensioner cylinder screw until the spring plate hits the tensioner
6. Push the roller holder inwards
7. Pull down existing conveyor belt and pull on new conveyor belt
8. If present: Refit the substructure and support rollers
9. Push the roller holder outwards by hand (pre-tensioning on the toothed belt)
10. Tighten the tensioner cap screw until the spring plate hits the roller holder
11. Tighten the screws on the roller holder
12. Put the machine back into operation.
13. Proper disposal of removed timing belt





8.5 Replace toothed belt (indirect drive)

1. Provide new timing belt
2. Observe safety instructions: *See* ***Error! Reference source could not be found. -*** *Security*
3. Loosen the screws on the cover over the toothed belt and remove the cover of the indirect drive
4. Loosen the screws on the motor plate (do not remove them completely). Push the motor upwards to release the tension on the toothed belt.
5. Remove existing timing belt and fit new timing belt
6. Press the motor down by hand and retighten the screws on the motor plate
7. Fit the cover and retighten the screws on the cover
8. Machine is ready for operation again.
9. Proper disposal of removed timing belt



9 Waste disposal

The machine must be disposed of at the end of its service life in accordance with national regulations.