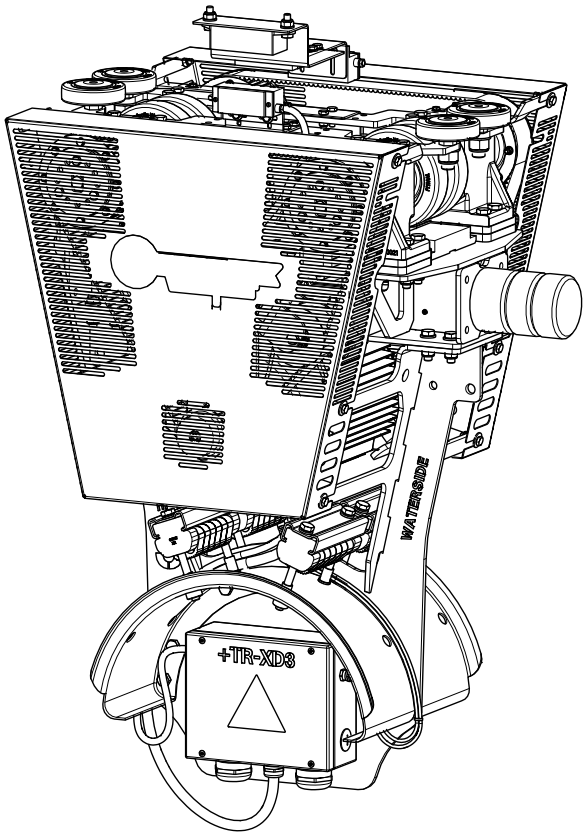
Installation Instructions

Motorized Cable Trolley
Mounting a Sensor for belt monitoring
Program 0380

Order-Number
03-S902-0001



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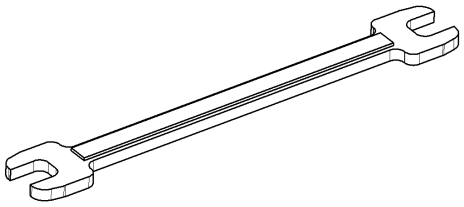
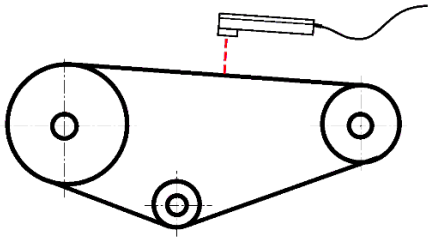
1 Required Tools

Wrenches for Sizes ■ 13 mm (all types suitable) ■ 17 mm (all types suitable) ■ 19 mm (open-end wrench needed for one step; all other types suitable for other steps) ■ 36 mm (open-end wrench) ■ Optional: spirit level or strait rod at least 500 mm long	
Belt Tension Measuring Device	

2 Working Steps

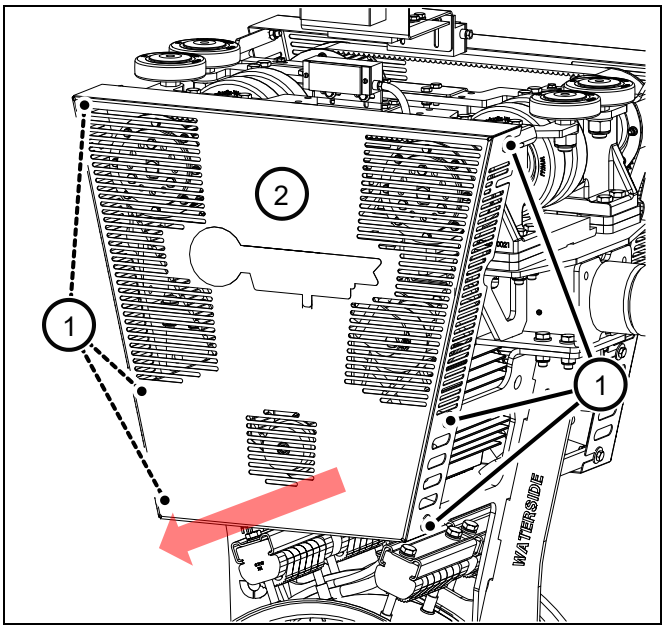
CAUTION!

Risk of injury!

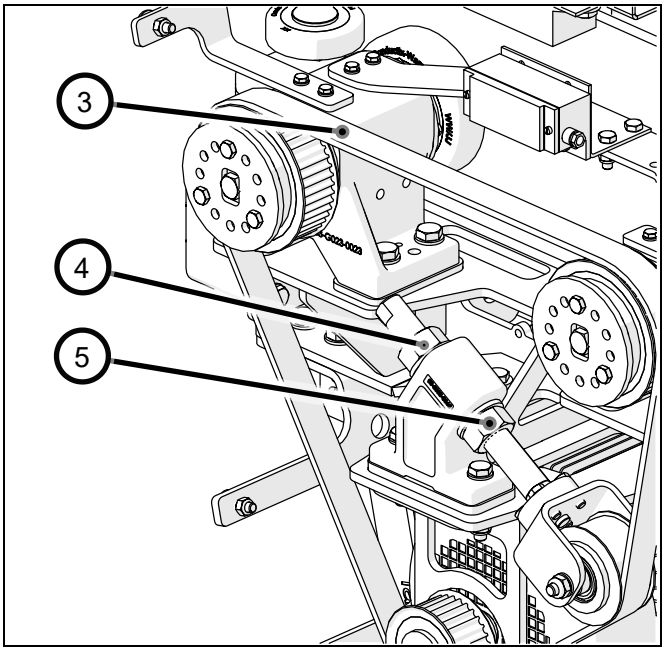
– Secure the motorized festoon system from unexpected switch-on.
– Safety devices that have been removed, must be remounted immediately and inspected after work has been completed.
– Any used measuring tools must be cleaned up/collected after completion and their inventory must be checked.
– Before approaching systems with damping devices, they must first be released.

2.1 Disassembly Steps

1. **Dismount protective cover.**
   a. Loosen the 6 screws (1), 3 turns.
   b. Remove the protective cover (2).



2. **Dismount toothed belt.**
   a. Untighten nuts (4 and 5) to retract tension pulley.
   b. Remove toothed belt (3) without applying force to it.



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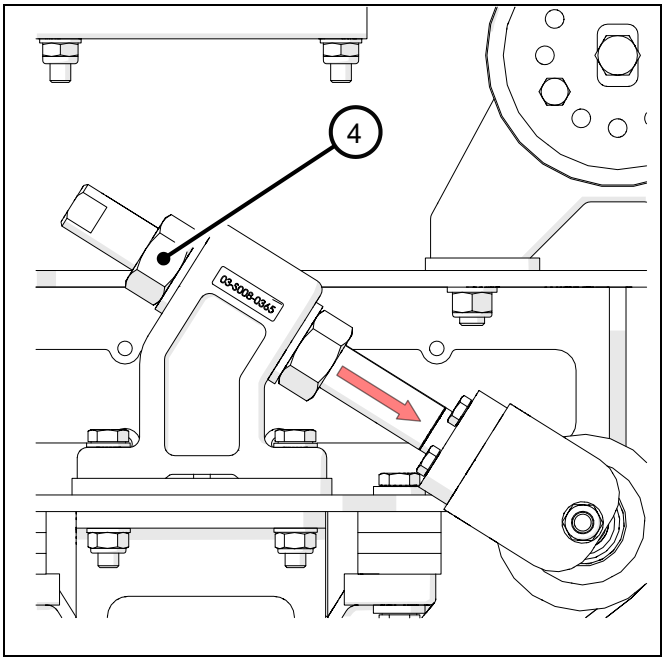
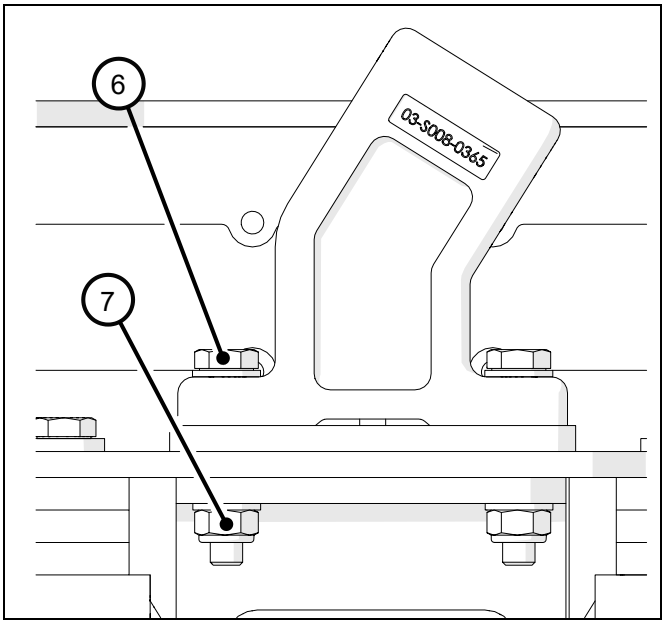
3. **Extract tension pulley**.
   a. Remove nut (4).
   b. Remove the tension pulley in the direction shown.



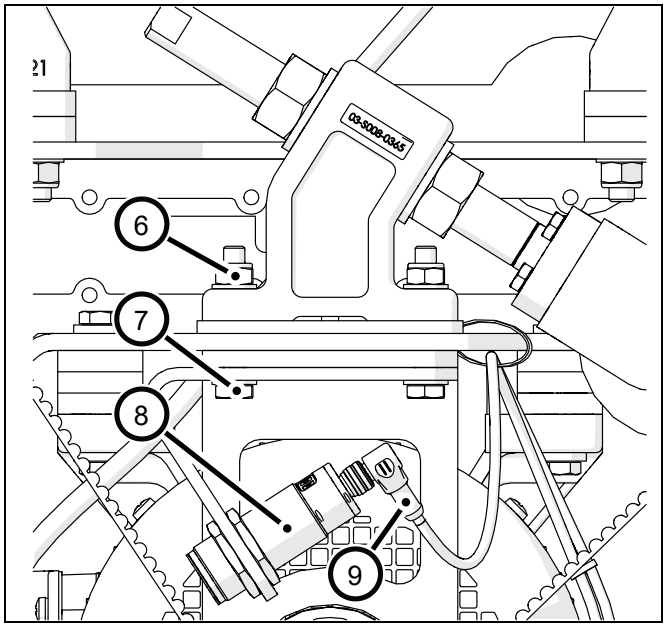
4. **Remove the nut and washer (7) and pull out the screw (6).**
   Depending on the year of construction the screws may be mounted in the other direction compared to the ones shown in the picture.



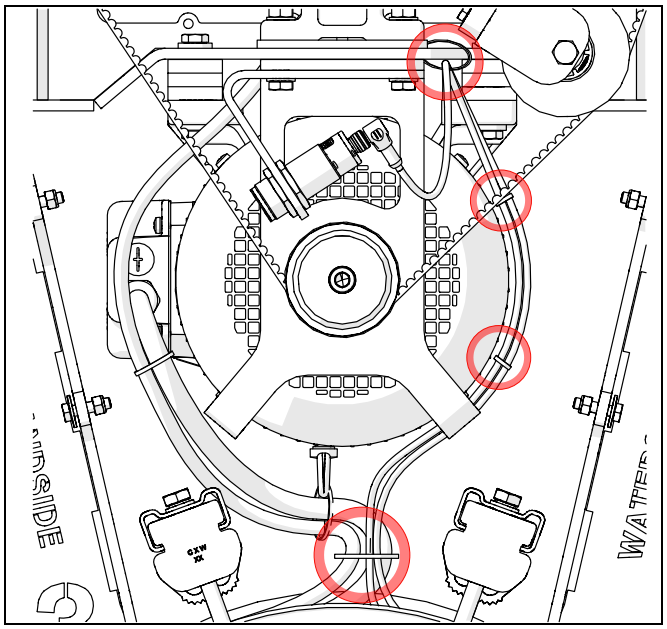
2.2 Assembly Steps

The assembly is made in reverse order.

1. **Secure the sensor set to the frame.**
   a. Use the supplied screws (7) and nuts (6).
   b. Then attach the cable (9) to the sensor (8) and connect it in the terminal box.



2. **Secure the sensor cable to the frame and then along the rest of the cables with cable ties.**



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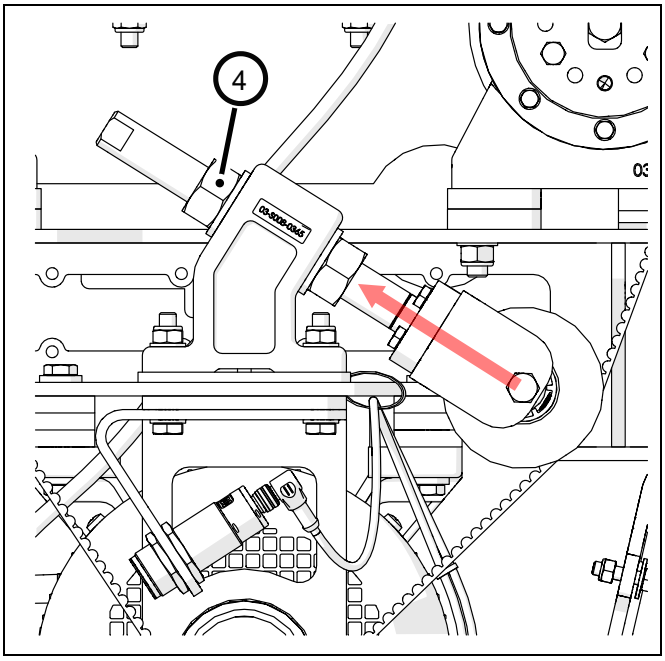
3. Insert the tension pulley with threaded rod.
4. Secure it against falling with the nut (4).



NOTICE!

- After 6.000 crane operating hours both toothed belts must be replaced.
- Assembly works at the toothed belt drive must comply with the particularities of the belt design. The operating behaviour, utilization and the lifetime are dependent on the quality of the producer's recommendations.
- In case of worn out or defective toothed belt, always replace both toothed belts.

2.3 Adjusting and calibrating the sensor

NOTICE!

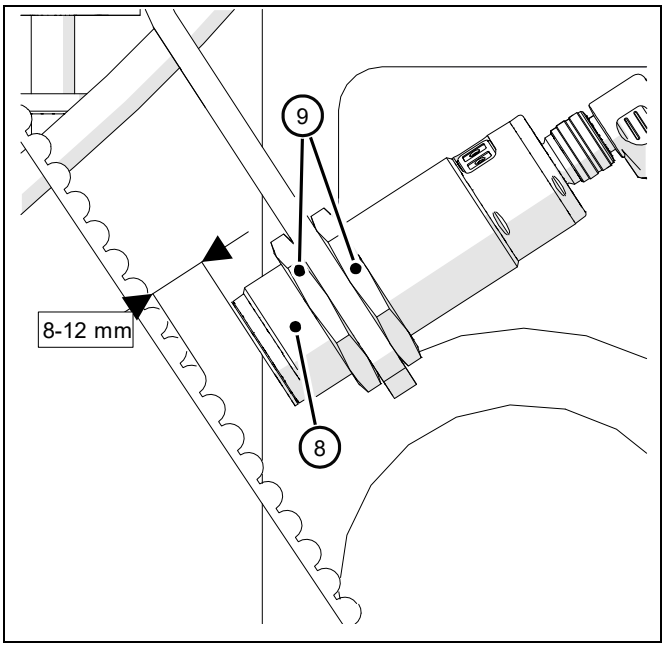
Correct calibration of the sensor is essential for a faultless operation of the belt monitoring.
It is important to:

- Follow the steps of this manual
- Observe the sequence of the steps in this manual
- Carry out the “empty” calibration without the toothed belt
- Don’t change the protrusion of the sensor after calibration

If any deviation happens, the calibration has to be repeated completely!

1. Set the distance between the sensor (8) and the toothed belt

a. Method a: With the toothed belt (preferable when toothed belt has already been mounted)
Set the distance between the sensor (8) and the toothed belt to 8 to 12 mm and tighten the nuts (9).



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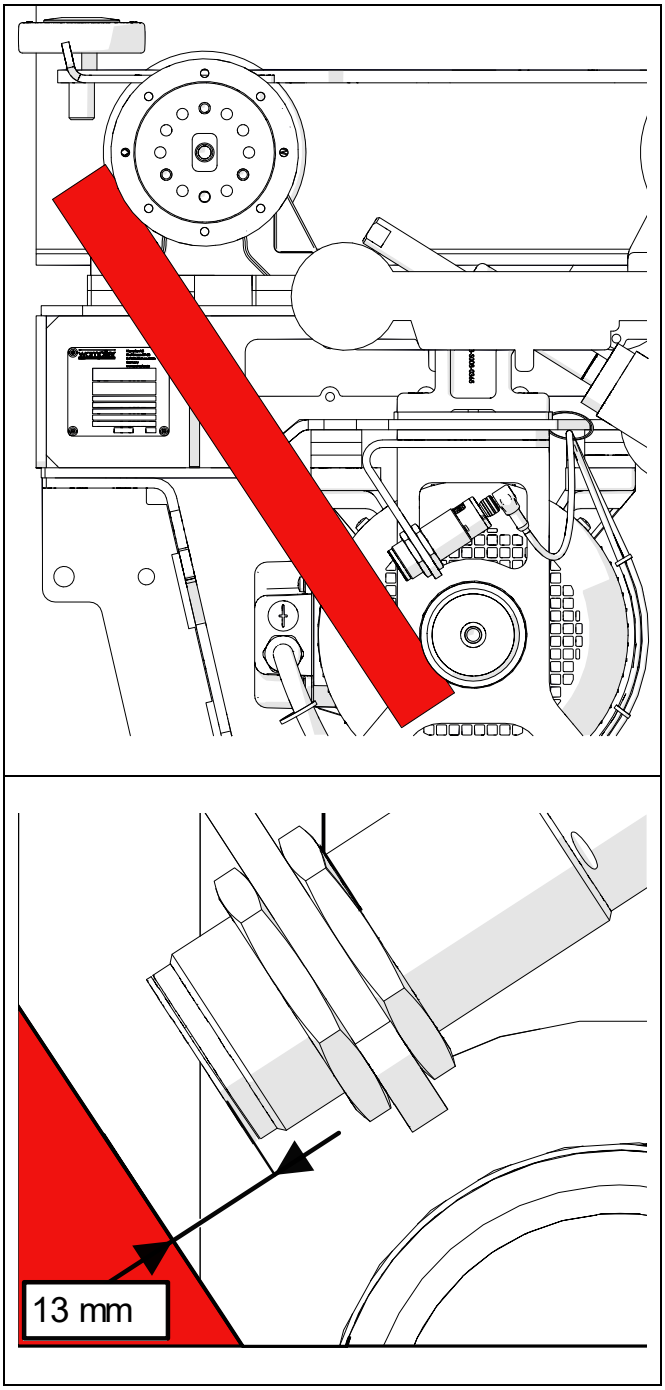
b. **Method b**: With a spirit level (preferable when belt has been removed for sensor installation)
Hold the spirit level towards the 2 pulleys next to the sensor as shown and set the distance between the sensor and the toothed belt to 13 mm.



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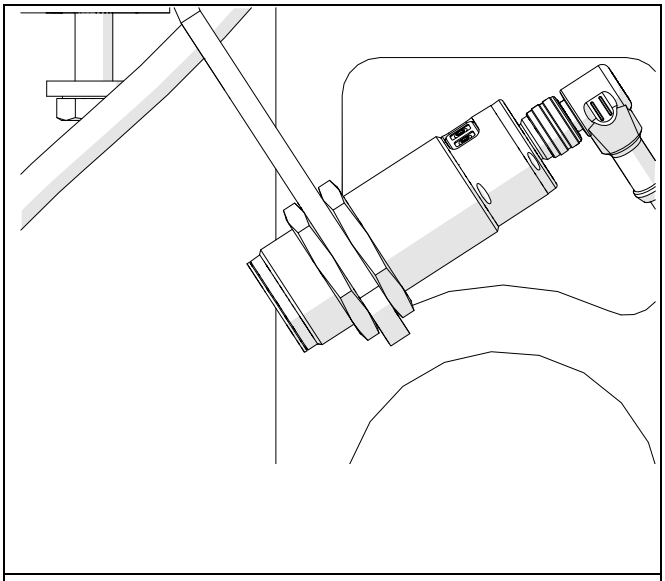
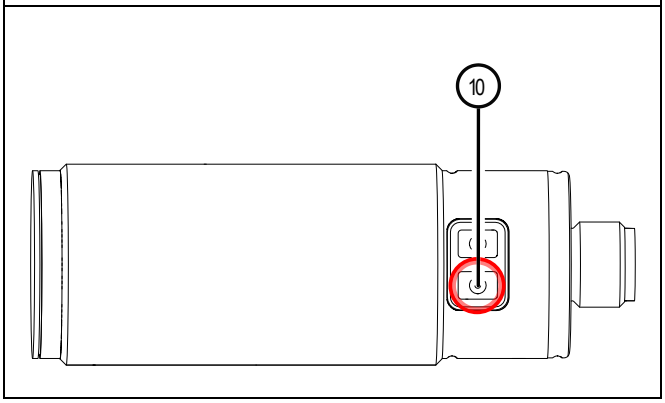
2. Carry out the “empty” calibration.

The “empty” calibration causes the unit to blank out the installation environment. The “empty” calibration also readjusts the unit anew. Any adjustment that has already been carried out is deleted.
It is necessary to carry out the “empty” calibration while the sensor is mounted to the motorized cable trolley and that the toothed belt and the optional spirit level are removed. Otherwise, an incorrect detection is possible.

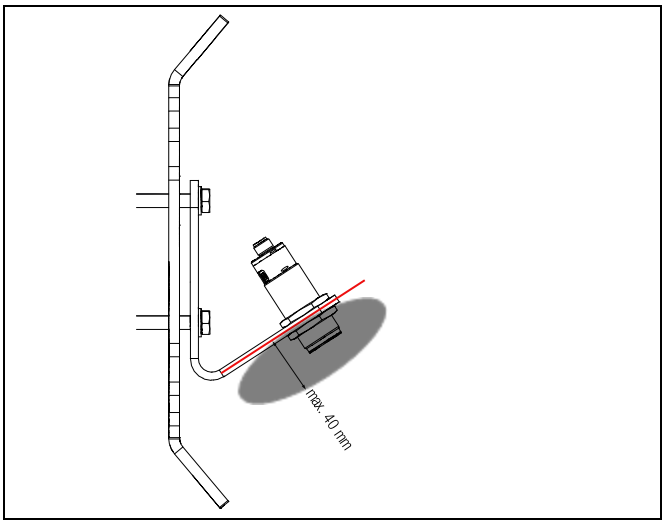
a. Press the [OUT OFF] key (10) for 2 to 6 seconds.
   The LED flashes slowly while the key is pressed.
b. Release the key.
   After releasing the key, the LED turns off.

The symbols “normally closed contact” and “normally open contact” are not relevant. Just follow the steps in this manual.





ATTENTION:
There must be no foreign objects in the detection zone during the teaching process.
There is a defined detection zone from the mounting bracket forwards (max. 40 mm), backwards and to the side. If there is a foreign object (e.g. a hand, tool, etc.) in the measuring range during the teaching process, the teaching process is faulty and must be repeated.



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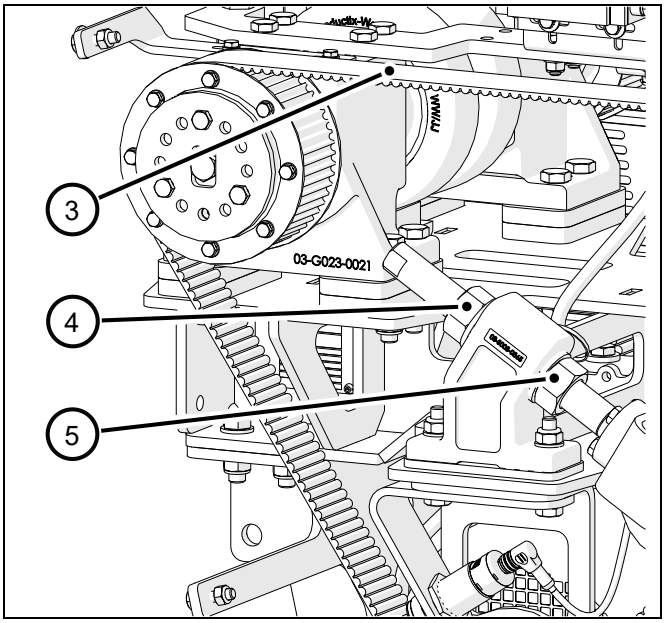
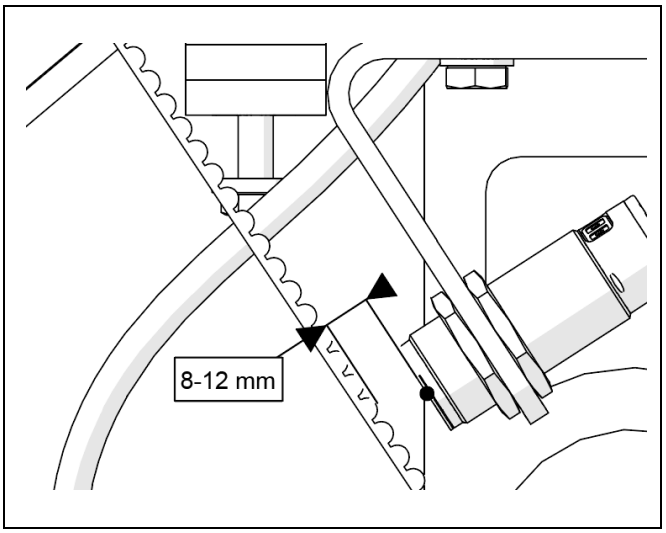
3. **Mount toothed belt.**
   a. Put on toothed belt (3) without applying force to it.
   b. Tighten nut (5) to extend tension pulley.
   c. Check and adjust toothed belt (3) tightening. Before each measurement move the motor cable trolley back and forth a few times.
   (⇒ for details see Mounting Instructions)
   d. Secure belt tensioner by tightening nut (4).



4. Check the distance from the toothed belt to the sensor.
The distance must be between 8 and 12 mm.

If the distance has to be adjusted in order to match the tolerance, go back to step 2.3.1.



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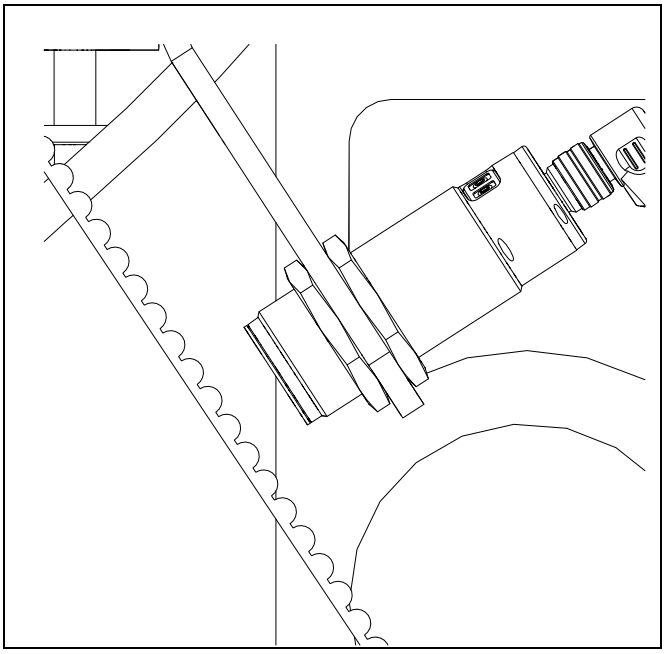
5. Carry out the “full” calibration.

The “full” calibration causes the unit to blank out the installation environment. The “full” calibration also readjusts the unit anew. Any adjustment that has already been carried out is deleted.

It is necessary to carry out the “full” calibration while the sensor is mounted to the motorized cable trolley and that the toothed belt and the optional spirit level are removed. Otherwise, an incorrect detection is possible.

c. Press the [OUT ON] key (10) for 2 to 6 seconds.
   The LED flashes slowly while the key is pressed.
d. Release the key.
   After releasing the key, the LED turns off.



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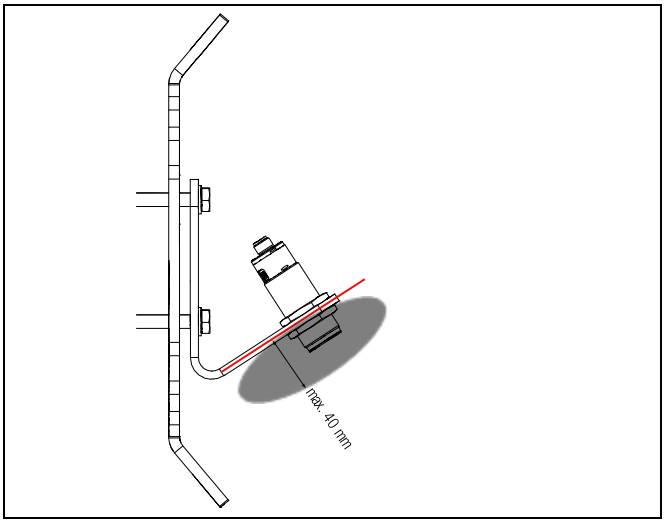
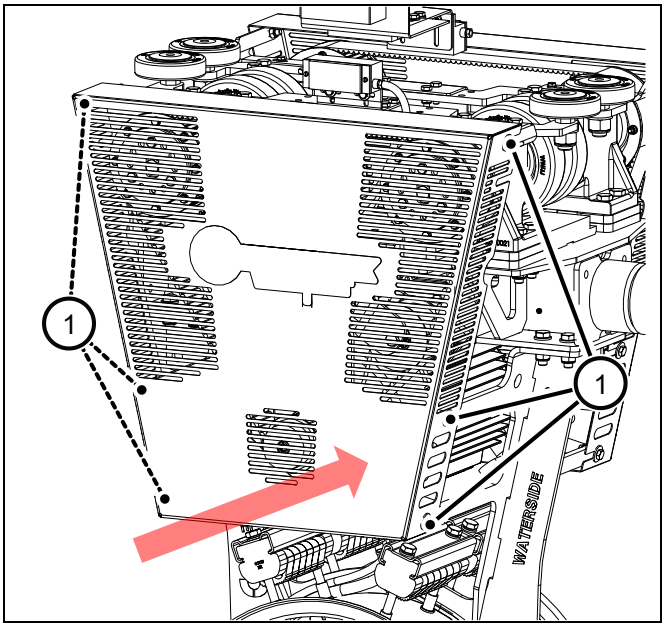


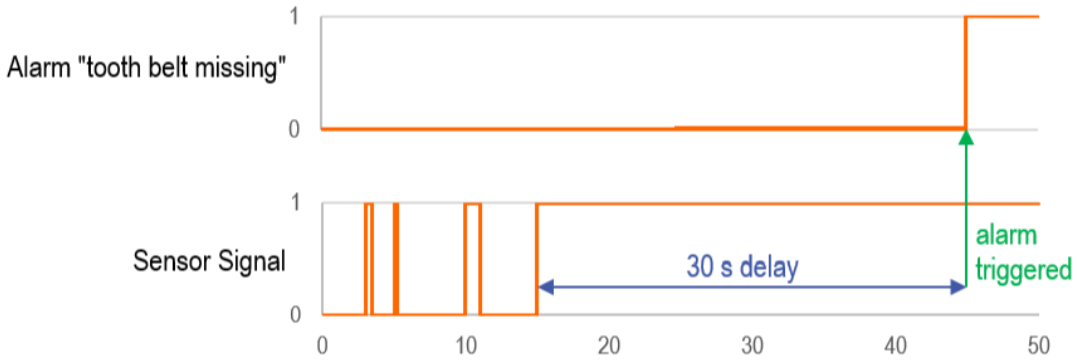
6. Mount protective cover.



3 Software Settings

Due to the dynamic behavior of the toothed belt, short false signals from the sensor are possible. To prevent false alarms, a delay in the software must be set, so that only a continuous sensor signal of a certain time period triggers an alarm. 30 seconds is considered a reasonable delay.

Example of delayed alarm:



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