

Overview

Application

Mounting instructions for replacing the measuring rope for cable pulls with a housing diameter of 130 mm, such as ECN30PL* or cable-pull rotary encoders such as ECA30PL*.

Note
Modifications and/or repairs carried out by the user will void the warranty and exclude the manufacturer from any liability.

Safety Notices

Warning!
Risk of injury during dismantling due to pretensioned spring!

The removal and mounting of the spring package and measuring rope must only be carried out by trained and qualified personnel. This requires two people. A safety helmet and safety goggles must be worn when performing the work. The installed spring package is under mechanical stress. During removal, it is essential to observe the safety measures described in the following steps. The measuring rope must also be checked and retracted slowly after the spring package has been mounted. If the procedure is not performed correctly, there is a risk of injury due to the measuring rope quickly retracting and also when removing a pretensioned spring package from the cable pull.

Necessary Aids / Special Tools

The following aids/tools are required for the removal and mounting of measuring ropes

- Safety goggles, safety helmet
- Measuring rope stopper, e.g., P+F accessory ACC-PACK-CS-SL*135
- Circlip pliers, combination pliers
- Allen key 1.5 mm, 5 mm
- Medium-strength threadlocker, e.g., omniFIT® 100M

Removing the Spring Package

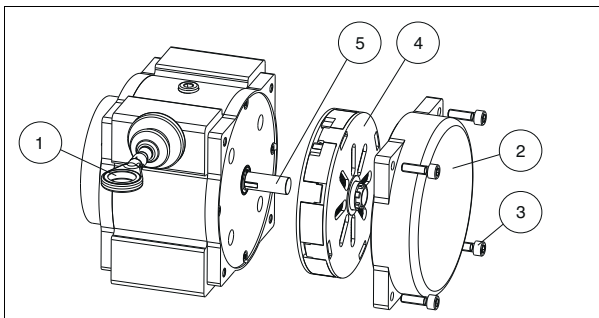


Figure 1

1. Pull out the measuring rope (1) as far as possible and then fix it in this position, e.g., with the measuring rope stopper from P+F.

Warning!
Risk of injury when dismantling the spring cover!
It is essential to observe the instructions in the following step for dismantling the spring cover (2). If this is not done correctly, there is a risk of the spring cover being flung away in an uncontrolled manner.

2. Carefully loosen and remove the screws (3) of the spring cover while pressing against the spring cover (2) with light pressure. It is essential that the spring cover turns back until the spring package (4) is fully relieved of tension.
3. Carefully remove the spring cover (2) and pull the spring package (4) off the shaft (5).

Removing the Measuring Rope

Note
For cable-pull rotary encoders, remove the rotary encoder from the cable pull before performing the following steps.

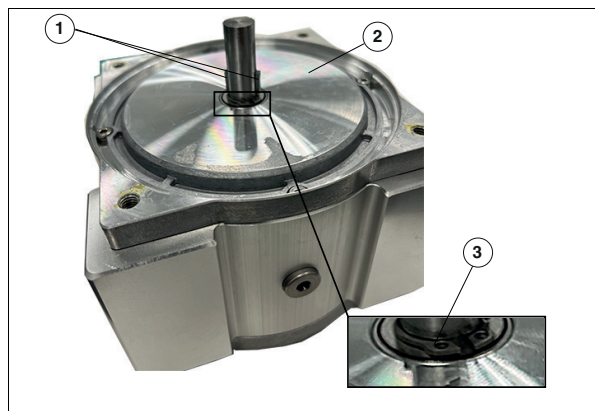


Figure 2

1. Remove the feather keys (1).
2. Remove the circlip (3) using circlip pliers.
3. Remove the shim ring (2).

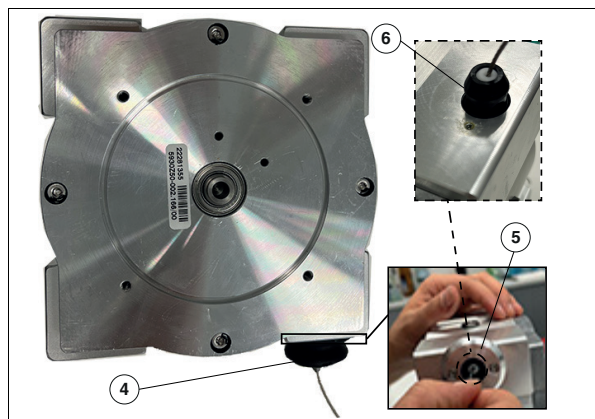


Figure 3

4. Carefully remove the bellows (4) by hand.
5. Unscrew the two screws securing the retaining ring (5) and remove the retaining ring.
6. Unscrew the rope gland (6) using an AF 10 open-end wrench.

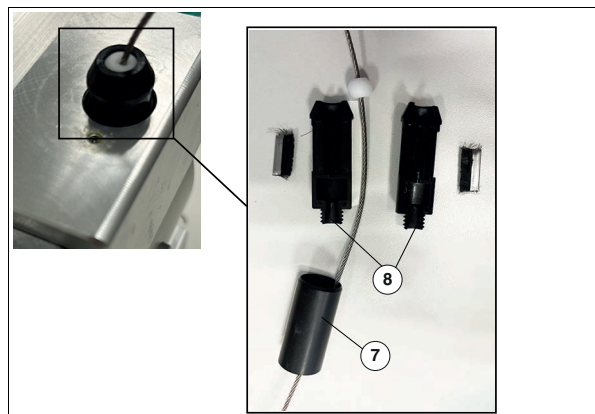


Figure 4

7. Pull the sleeve (7) of the rope gland downward.
8. Carefully split the rope gland (8) into two halves.

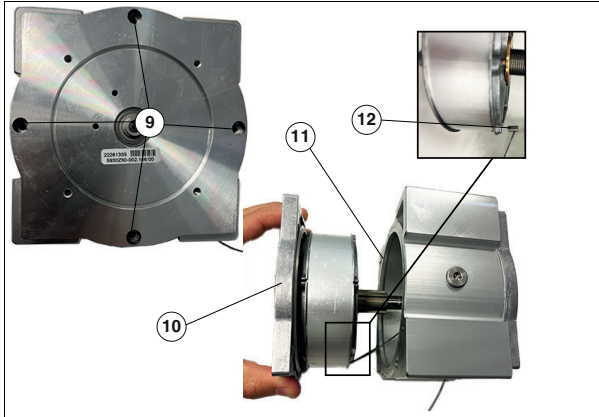


Figure 5

9. On the side of the cable pull where the rotary encoder is mounted, loosen the four screws (9) securing the flange.
10. Pull the flange with the complete rope drum (10) out of the housing (11).
11. Unhook the rope mount (12) and disconnect it from the measuring rope. To do this, loosen the hexagon socket cap head screw of the rope mount using a 1.5 mm Allen key.

Mounting the Measuring Rope

1. Remove the protection cap on the new measuring rope and slide the bellows over the measuring rope.

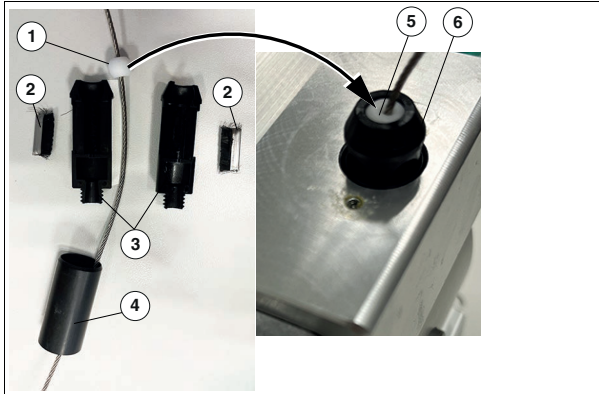


Figure 6

2. Thread the new measuring rope through the ball (1) and place it in one half (3) of the rope gland.
3. Connect the second half (3) of the rope gland to the first half.
4. Insert the brushes (2) correctly into the brackets and slide the sleeve over the assembly.
5. Thread the measuring rope through the cable pull housing at the designated point (5).
6. Screw the complete rope gland (6) into the cable pull housing and tighten by hand with an AF 10 open-end wrench (without screw locking).

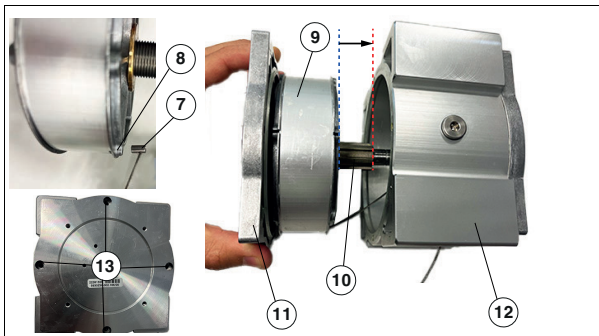


Figure 7

7. Attach the rope mount (7) to the end of the measuring rope. Use pliers to hold the rope mount against the measuring rope. Tighten the hexagon socket cap head screw of the rope mount with a 1.5 mm Allen key so that the measuring rope is securely clamped.
8. Attach the rope mount (8) to the rope drum correctly.
9. Rotate the rope drum (9) forward up to the front edge of the wedge profile (10) so that the respective front edges form a plane (dashed lines must be aligned).
10. Insert the flange with rope drum (11) into the cable pull housing (12).
11. Coat the four screws (9) with threadlocker (medium-strength) to secure the flange.
12. Screw the four screws (9) in again to secure the flange and tighten with a torque of 1.4 Nm.

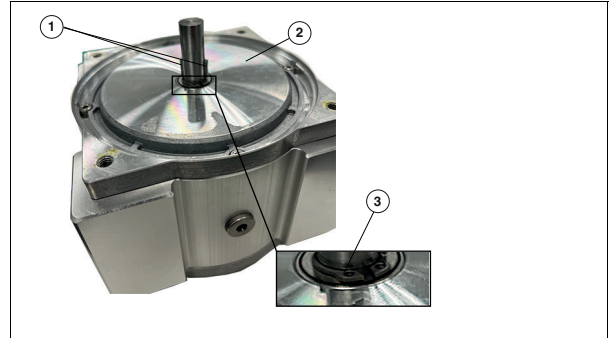


Figure 8

13. Reinsert the shim ring (2).
14. Insert the circlip (3) using circlip pliers.
15. Insert the feather keys (1).

Mounting the Spring Package

Requirement: The measuring rope is pulled out as far as it will go.

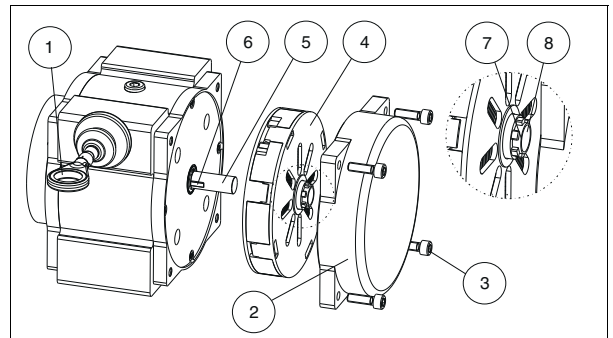


Figure 9

1. Slide the new spring package onto the shaft in such a way that on the first spring package, the feather key (6) of the shaft engages in the groove of the spring package (7).
2. Lightly grease the O-ring of the spring cover (2) with standard silicone grease.
3. Mount the spring cover (2), and ensure that the interlocks (8) of the spring package engage correctly with the grooves of the spring cover (2).

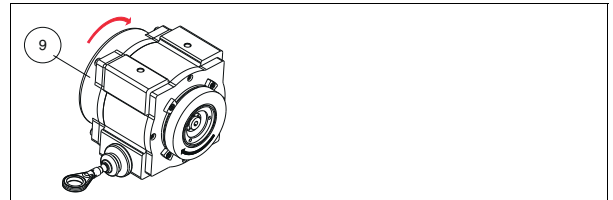


Figure 10

4. Now pre-tension the spring package again by turning the spring cover (9) counterclockwise with slight counterpressure as far as it will go (approx. 40–50 revolutions).
5. Then, depending on the measuring length, you must release the tension of the spring package slightly again according to the table below.
6. Turn the spring cover (9) back clockwise by X turns, depending on the measuring length.

Measuring Length	Revolutions X
5 m	6
10 m	2 (12°)
15 m	8 (12°)
20 m	4 (12°)
25 m	12 (18°)
30 m	6 (12°)

* for spring package, double

Figure 11

7. Coat the four screws (3) for the spring cover with threadlocker (medium-strength).
8. On the spring cover, position the four screws (3) to be fastened, and tighten them each with 3 Nm.

Warning!

Risk of injury due to a quickly retracting measuring rope!

The cable pull is now pre-tensioned again. After removing the measuring rope stopper, always allow the measuring rope to retract slowly and in a controlled manner, otherwise there is a risk of injury due to uncontrolled retraction of the measuring rope.

9. Release the measuring rope stopper and allow the measuring rope to be retracted slowly and in a controlled manner.