Electrical actuators for seat tilt and back recline, HD Balance

Art no: 69801 and 69802

Manual / Assembly instructions

Included parts

Assembly

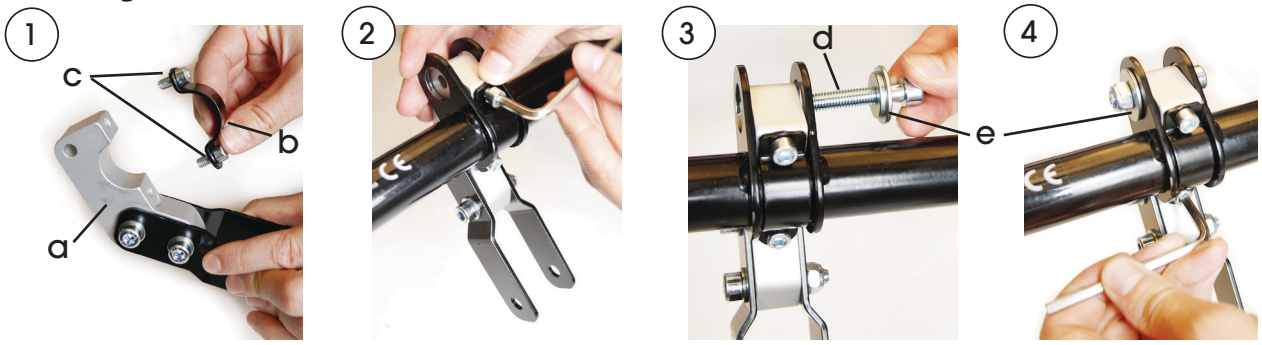
Note: If actuators are to be mounted on an HD Balance, the wheelchair needs to have the standard configuration.

Demounting of the existing tilt- and back recline parts

Start with demounting the tilt bar, tilt lock and gas spring. In the document 95720-1, Technical Information, section 2.6 and 2.7, this procedure is described. Follow the instructions in these sections until the wire controls, tilt bar, tilt lock and gas spring are demounted. Check that the plates on the front of the seat- and wheel frame are lining (Figure 1). If there is a misalignment greater than approximately 1 mm it might not be possible to mount the actuators. The deformity needs to be fixed before the actuators can be mounted.

Figure 1.

Mounting of the actuators



1-2. Attach the clamp bracket (a) with the clamp (b) between the plates on the front cross bar of the wheel frame. Use two of the M6 screws and apply a small amount of a medium threadlocker, see document 95720-1. Do not yet tighten the screws.

3. Use the M8 screw (d), the flange washer (e) and the M8 nut to fix the clamp bracket to the plates. Tighten the screw.

4. Now tighten the M6 screws.

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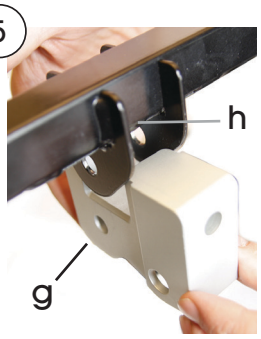

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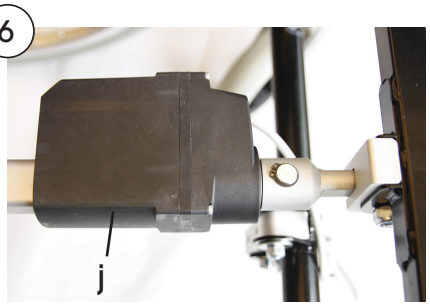

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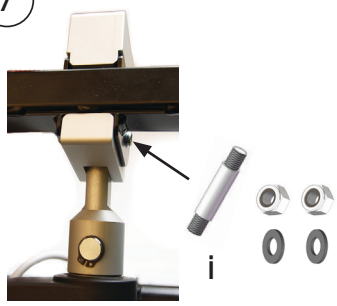

5. Place the adapter bracket (g) between the plates on the cross bar of the seat frame. If there is a misalignment between the hole in the bracket and the holes in the plates, this is probably due to the weld seam (h) on the bottom side of the cross bar. Use a file on the weld if the screw (i, figure 7) doesn´t go through the holes.

6. Now attach the back recline actuator to the bracket. Attach it with the box (j) placed in the same direction as shown in the figure. Note: If the wheelchair will be equipped only with actuator for seat tilting the gas spring should be mounted to the bracket instead of the actuator.

7. Fix the actuator with the screw (j) and two locking nuts with washers.

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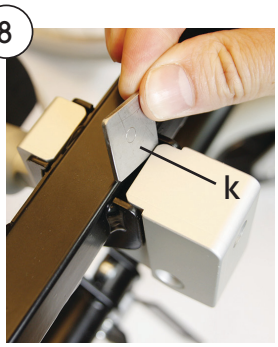

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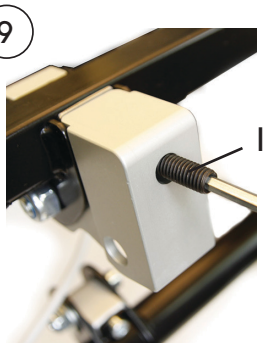

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8. Place the square plate (k) between the bar and the adapter bracket.

9. Tighten the set screw (l) securely. After this the back recline actuator can be attached to the back frame.

10. Now attach the tilt actuator. Start from the top with the short end, according to the picture. Attach it with the box (m) placed in the same direction as shown in the figure. Use the pin (n) with one groove and fix this with the bigger circlip, SGA 12 (o). Note! Handle the circlips correctly with the right tools.

11. Fasten the lower end of the actuator between the plates on the wheel frame. Use the two spacers (p) according to the picture. Mount with the smaller circlips, SGA 10, on both sides. Note! Handle the circlips correctly with the right tools.

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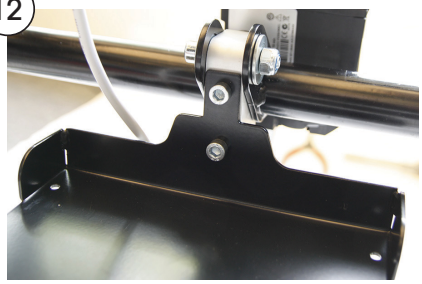

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12. Fasten the holder for the control box with the two remaining M6 screws. Use medium threadlocker.

13. Fix the control box to the holder with the four M5 screws and nuts.

Handling the cables

It's important that the cables are connected correctly to ensure proper operation of the actuators. The cables have different colors to facilitate this. Connect as shown in Figure 1 and 2.

The light gray cable connects the control box with the back recline actuator. The black cable connects the control box with the seat tilt actuator.

The control unit is attached to the control box. From there the cord is drawn in a way so that it is as free as possible, to the desired position.

Make sure that the cables are tightly attached to the control box and tie them up with the velcro according to figure 2.

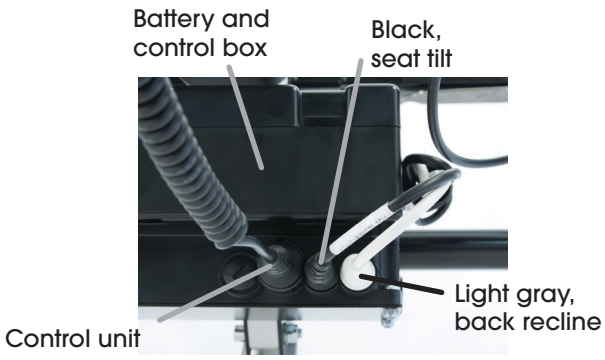

Figure 1.

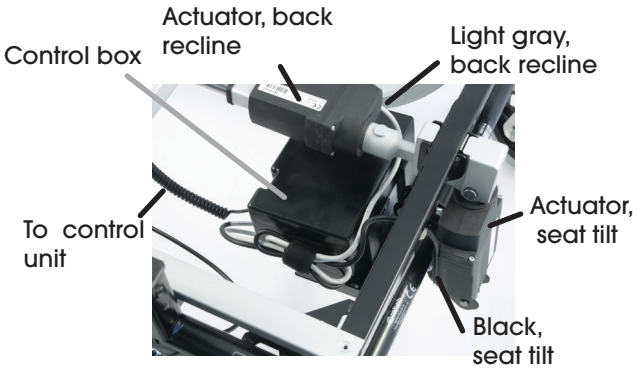

Figure 2.

Figure 3.

After installation, check the actuator function properly by making full tilt and back recline in both directions for each actuator.

Intended use

The actuators run the seat tilt and back recline on the wheelchair. They are operated from the hand control unit. It is not possible to control the seat tilt or the back recline manually on a chair equipped with actuators.

Before the first use, the battery must be charged continuously for 24 hours to ensure a good performance throughout the product lifetime.

- The control unit can be operated by either the patient or caregiver, depending on what is appropriate in each case. Always make an individual risk assessment before the user alone can manage the control unit.
- Crusching hazards: As the actuators are powerful it can be difficult to detect if something is jammed in the movement. Be careful!
- Keep in mind that if a table tray is used there is a risk that the patient gets squeezed against it when the backrest goes up. This can lead to suffocation.
- The product should not be used by patients who demand high durability, e.g. patients with substantially increased tonus / spasticity or users with a similar movement pattern / behavior.

Operating the tilt and back recline

Figure 4 shows the functions operated by the control unit. Press the button for the desired motion and hold it until the back / seat is in the desired position. NOTE: Press only one button at a time!

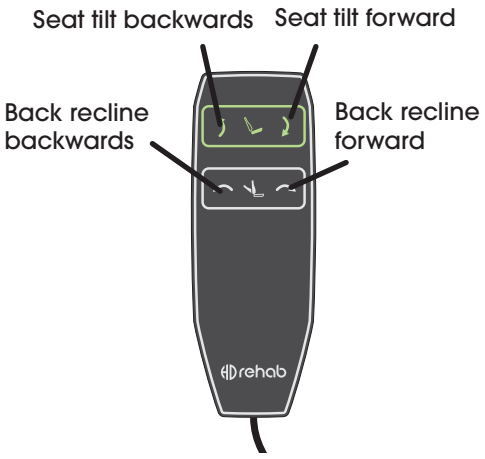

Figure 4.

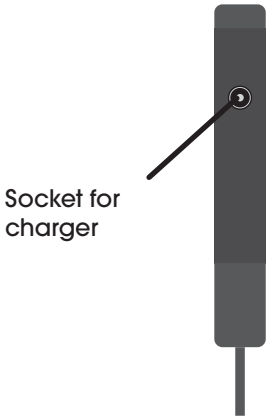

Figure 5.

Charging

Charging is done by connecting the charger to the socket on the side of the control unit, see Figure 5. For optimum lifetime the batteries should be recharged as often as possible, but certainly as often as every three months. Otherwise they will be damaged due to self-discharge. A beep indicates when charging is required immediately.

The battery must be replaced at least every four years, sometimes more often depending on how often it is used. Frequent and heavy discharges will shorten the lifetime.

Maintenance

The actuators are closed systems and need no internal service. However they must be checked regularly so that no physical damage has occured. Worn or damaged parts must be replaced immediately. Also the fixing points must be checked for cracks or other damage.

Never open a control box that has stopped working. If doing so it will void the guarantee.

In case of failure always check the following:

- That the cables are firmly connected to the right sockets.
- That the battery is charged.

Please contact HD Rehab if the problem remains.

The actuator set is manufactured by LINAK. The actuators are of the type LA23 and battery and control box is of the type CB8-A. More information about the products can be found on their website.

Care instructions

Keep the actuators and control unit clean by regularly wipe them with a damp cloth.

Disposal

The battery is a lead acid battery and is recycled in the same manner as a car battery. The other parts can be disassembled and sorted into plastic, metal and electrical waste.

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