



medemagroup



# Service Manual Spider



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## Introduction

This manual contains servicing instructions for the Spider .

The Service Manual is a supplement to our Spare Parts Catalogue and User Manual.

Spider is designed for safe travel for at least 10 years, up to a max. of 5,000 hours, provided it is serviced and safety-checked every year, corresponding to 500 hours of operation. The service must be carried out by an authorised workshop.



**IMPORTANT!** For safety reasons it is of the utmost importance that the servicing and safety check intervals are complied with, as this minimises the risk of brake failure and short-circuits in the wiring, which could generate heat and cause a fire.

If help is required with troubleshooting, Medema Production A/S is always happy to provide telephone assistance. If the problem seems to be an electrical fault that prevents the Spider from working, please tell us the error code. This can be found on the battery indicator on the control panel. Read more about this in the section on [Troubleshooting](#).

Please also have the Spider serial number handy when contacting Medema Production A/S.

If you have any questions that are not answered directly by this manual, you are always welcome to contact us at:

Medema Production A/S  
Tel: +45 7010 2054  
Email: [info@minicrosser.com](mailto:info@minicrosser.com)  
Internet: [www.minicrosser.dk](http://www.minicrosser.dk)

NB: Errors and omissions excepted. Specifications subject to change.

Medema Production also reserves the right to update the service manual in line with any modifications or improvements to the product.

## Symbols



Used in the manual to indicate sections describing situations where extra care is required owing to the risk of personal injury.



Used to indicate sections on electromagnetic compatibility (EMC).

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## Warning!



For safety reasons the vehicle must not be lent to persons who are not completely familiar with it. The vehicle is designed for one person only.



The MC Spider has been designed for users weighing max. 130 kg.

## Joystick



The joystick control box should not be exposed to extreme temperatures or be in a humid environment for a long time.



The joystick control box must not be exposed to severe stroke.



Do not turn off the control box while driving, except in emergencies, since this can damage the electronics.



For cleaning use a damp cloth with a mild soapy solution. Do not let water or moisture into the steering box.

## Seat and backrest

The upholstery fabrics on the seat and backrest can be washed in a washing machine. Washing instructions are on the back of the seat pad / backrest.

## Safe servicing

- ◆ To avoid injuries to both the service engineer and the subsequent user of the Spider, it is important to get to know the product before servicing it.
- ◆ Be particularly aware of the following:
  - ◆ The Spider **MUST** be turned off at the main switch. If electrical components are being serviced, the positive terminal on the battery **MUST** also be disconnected.
  - ◆ If the voltage needs to be measured in the course of troubleshooting, take great care not to short-circuit anything.
  - ◆ Take great care not to short-circuit the battery terminals.
  - ◆ Be careful not to lift heavy parts such as the seat, battery and motor gear incorrectly or drop them.
  - ◆ Make sure to raise one rear wheel off the ground so that the Spider cannot drive off accidentally.
  - ◆ Use professionally maintained tools.
  - ◆ Where lock nuts are used, **NEW** ones **MUST** be fitted when the Spider is reassembled.
  - ◆ Take care to fit new cable strips in the same way as the old ones. Make sure that no cables can be trapped by moving parts or stick out in such a way as to catch on things.
  - ◆ End every service by making sure that the product is roadworthy:
    - Check that all the connectors are plugged in correctly.
    - Check that all the mechanical parts are properly secured.

## Tool list












The following tools are needed to service the Spideren:

- ◆ Circlip pliers
- ◆ Allen keys
- ◆ Allen 9/64
- ◆ Box spanners, 7-17 mm
- ◆ Open-ended spanners, 7-17 mm
- ◆ Torx screwdrivers, 10/20/25/30 and 45 slut.
- ◆ Needle-nose pliers
- ◆ Side-cutting pliers
- ◆ Plastic hammer
- ◆ Set of punches
- ◆ Retractable knife
- ◆ Steel brush
- ◆ Water pump pliers
- ◆ Wire strippers
- ◆ Crimping tool
- ◆ Pliers for Molex 5556/5558 crimps
- ◆ Riveting pliers
- ◆ Small cable ties
- ◆ Multimeter
- ◆ Battery tester
- ◆ Tyre pressure gauge
- ◆ Tyre pump with Schrader valve
- ◆ Acid-free oil and grease
- ◆ Loctite 406 / 603
- ◆ Cable ties
- ◆ Cable tie bar
- ◆ Circlip Pliers
- ◆ Screwdriver with vent

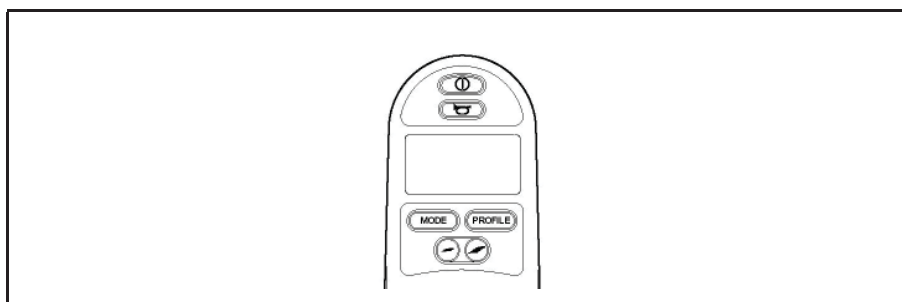
## Parts Joystick R-net





### Joystick R-net

1	 Start/stop button
2	 Horn
3	 Lights (Extra)
4	 Profile-button
5	 Indicator right (Exstra)
6	 Speed selection
7	 Hazard warning lights (Exstra)
8	 Display
9	 Mode-button
10	 Indicator left (Exstra)
11	 Joystick



## Using the Joystick R-net



### Speed selection with joystick R-net

1	To start the wheelchair: Press button 1  and wait for the battery indicator to stabilise (3-5 seconds)
2	Select the maximum speed:  Keep pressing button Speed selection to maximize or minimize the maximum speed.

### Driving

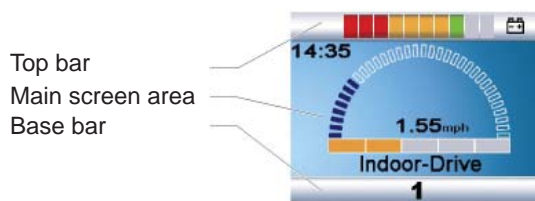
1	Start driving by moving the joystick  in the direction you want to travel. The speed depends on how far forward you push the joystick. To brake, return the joystick to the starting position in the centre.
2	It is important to check the battery indicator  regularly to prevent the scooter stopping because of flat batteries.

### Note!










If you are driving on a sloping surface with poor grip, e.g. gravel or snow, it is important to brake gently to avoid losing control of the scooter. To brake gently: move the joystick to the central position SLOWLY.

## LCD Screen



Symbol	Description
	Shown in the top bar. Color red, yellow and green - fully charged. Color red and yellow - ok, but need to be charged soon. Color red, steady - ok, but charge as soon as possible. Color red slowly blinking - charge NOW!
	Shown in the top bar. When the control system contains more than one method of direct control, such as a secondary Joystick Module, then the Module that has control of the wheelchair will display the In Focus symbol.
	Shown in the base bar. The currently selected Profile is shown in numeric form.
	Shown in the base bar. This symbol is displayed when the control system has intentionally reduced the power to the motors, in order to protect them against heat damage.
	Shown in the base bar. This symbol is displayed when the control system has intentionally reduced its own power, in order to protect itself against heat damage.
<b>Indoor-Drive</b>	Shown in the bottom of the main screen area. This symbol shows the chosen profile.
<b>14:35</b>	Shown in the top left corner of the main screen area. This displays the current time. The clock is user adjustable - Whether the clock is displayed on screen. - The display format, 12 or 24 hour - Adjusting the time.
	Shown in the center of the main screen area. This gives a proportional display of the wheelchairs speed. The Arc begins at 0% and has a programmable maximum. The programmable parameter is Max Displayed Speed.
	Shown just below the speed regulation. This displays the current maximum speed setting.
<b>1.55mph</b>	Shown in the center of the main screen area. This displays the actual speed of the wheelchair derived from the motors. The display can be set to mph or km/h.
	When the control system is operating in a latched condition this symbol will be displayed.
 	If the speed of the wheelchair is being limited; for example, by a raised seat, then this orange symbol will be displayed. If the wheelchair is being inhibited from driving, then this red symbol will be flashing.

## Mode

Mode	Description
 Backrest	Displays the sections of the chair currently selected for movement.
 Bluetooth	When Bluetooth Mode is entered the following screen will be displayed.
	When the control system requires a reboot, this symbol will be flashed.
	Waiting symbol. This symbol is displayed when the control system is changing between different states.
	This symbol will be displayed for a short time before the R-net enters into a sleep state.
	If you operate the Joystick before or just after you switch the control system on, the screen will flash the joystick displaced screen. Let go of the joystick within 5 seconds, or the system has to be restarted.
	When the control system safety circuits have operated and the control system has been prevented from moving the wheelchair a diagnostics screen will be displayed. This example show a warning of low battery voltage, and a trip code in the top right corner.

## Safety check

### Daily safety check:

The electronic system has an integrated safety check which runs up to 100 times per minute. To supplement this check, you should carry out the following regular checks.

- ◆ Switch off the electronic system (no lights in the display)
- ◆ Check if the joystick is bent
- ◆ Check if the joystick is damaged in any other way
- ◆ Check that it returns to the central position when you release it

If the check reveals any problems, contact a competent service engineer before using the scooter again.

### **Weekly safety check:**

Parking brake: This test must be carried out on a flat surface with at least one metre of free space around the scooter.

- ◆ Start the scooter and slowly move the joystick forward. There is a clicking sound. (The scooter may start to move in this setting).
- ◆ Immediately release the joystick and listen for the clicking sound, which should occur within one second.

Repeat in all directions.

- ◆ Check that the rubber bellows around the joystick is intact. This is important, as the bellows prevent moisture getting into the electronic system.
- ◆ Check that the control box is properly secured.

If the check reveals any problems, contact a competent service engineer before using the scooter again.

### **Monthly check**

Check the tyre pressure at least once a month. It should be 3,5 bar.

### **Yearly check**

Spider is designed for safe travel for at least 10 years, up to a max. of 5,000 hours, provided it is serviced and safety-checked every year, corresponding to 500 hours of operation. The service must be carried out by an authorised workshop.



**IMPORTANT!** For safety reasons it is of the utmost importance that the servicing and safety check intervals are complied with, as this minimises the risk of brake failure and short-circuits in the wiring, which could generate heat and cause a fire.

## Troubleshooting

Trouble	Possible causes	Remedy
Spider will not run. There is no light in the battery indicator.	<p>The Spider is not turned on (I/O button)</p> <p>The batteries are discharged.</p> <p>Thermal protection popped out.</p> <p>Charging connector sits in.</p> <p>Malfunction.</p>	<p>Turn the Spider on (I/O button).</p> <p>Charge for at least 12 hours.</p> <p>Press thermal protection back in again.</p> <p>Turn off the charger and remove the charging socket.</p> <p>Contact supplier.</p>
Spider will not run, but there is light in the battery indicator.	<p>A function key for a function that is not mounted is pressed.</p> <p>Indicator light will be lit and there will be a light for the activated function key.</p> <p>Fault in the electronics.</p>	<p>Press the function key that lights and turn off at I / O button. Wait 5 seconds., Press I / O button again.</p> <p>Contact supplier.</p>
The driving speed is too low	<p>Not enough air in the tires.</p> <p>The wheelchair is overloaded.</p> <p>The seat is raised above its lowest position. (Light above I / O button is shown).</p> <p>Battery capacity is too low.</p>	<p>Pump pneumatic wheels to 3.5 bar.</p> <p>Stop and wait a few minutes before starting again.</p> <p>Lower the seat.</p> <p>Recharge or replace batteries.</p>
Too few km per charging.	<p>Batteries are not working.</p> <p>The charger is not working.</p> <p>Not enough air in the tires.</p> <p>The method of charging is wrong.</p>	<p>Recharge your batteries and make sure that the green light on the charger lights.</p> <p>Contact supplier.</p> <p>Pump pneumatic wheels to 3.5 bar.</p> <p>Read the manual.</p>
Charging lamp is not lit when the charger is connected to an outlet.	<p>No power at outlet.</p> <p>Error in the cable.</p> <p>Errors in the charger.</p>	<p>Turn on the switch.</p> <p>Please read the supplied user manual for the charger.</p> <p>Contact supplier.</p>

<b>Trouble</b>	<b>Possible causes</b>	<b>Remedy</b>
The ready lamp on the charger does not light up even though the charger has been on for 12 hours.	There has been a power cut. The charger is doing a top-up charge. There is a problem with the batteries. There is a fault in the charging plug for the Spider.	Reconnect the charger and repeat the charging process. Check again after half an hour. Contact supplier. Push the charging plug all the way in and repeat the charging process.
The ready lamp on the charger lights up even when partly discharged batteries are connected.	The fuse in the charger has blown. The switch in the charging plug is malfunctioning	Contact supplier. Contact supplier.
The charging lamp indicates a fault.	The charging plug has not been inserted. or there is a mains fault.	Push the charger plug in. Contact supplier.
Status light flashes with 9 flashes per cycle.	The Spider is disengaged when it starts.	Switch off the chair and activate the parking brake.
Status light flashes with 1 flash per cycle.	The batteries need charging.	Start charging
The Spider runs at half speed or not at all.	The seat is raised above its lowest position. The seat is not raised.	No action - not a fault. If the cause is not a raised seat, this may be a serious fault. Contact a competent service engineer as soon as possible. (HMC or therapist).

If the above mentioned suggestions don't work, please contact your supplier.

## Programming

The electric control in the Spider can be programmed so that it best meets the customer's needs.

From the factory the vehicle is programmed in default configuration, so that smooth acceleration, proper braking and sensitivity are guaranteed.

For each step, which can be found at R-net Joystick Box, the supplier can, using a separate programming device, set values for speed, braking, acceleration and sensitivity. Change in programming may be performed only by persons trained in OBP (On Board Programming) systems. An incorrect change in parameters can cause the chair's driving characteristics to be dangerous to the user.

### **Note!**



If the provided programming is changed, it is at your own risk.

## Maintenance

Spider is designed so that it requires very little care and maintenance.

**However we recommend an annual inspection, which the following are checked:**

	Description	Date	Initials
1	Transaxle - clean, check for leakage. Check bearings.		
2	Tire pressure - should be 3.5 bar		
3	Tire condition - check for cracks or abnormal wear.		
4	Cables - check that the insulation on the cables are intact and that no cables are trapped, fasten loose cables, check for signs of heat damage.		
5	Power Unit w / joystick - check for moisture - make function tests.		
6	Batteries - check the battery poles and strap.		
7	Charger - Make sure that the charger gives the correct charge voltage / current.		
8	Fuses - function test.		
9	Moving parts, legrests etc. - Lubricated with acid free oil.		
10	Checking the wheels, central wheel, pivot wheel, anti-tilt wheel - clean up and check for play.		
11	Check the brakes / disengagement.		
12	Screws and washers - check that the screws are fastened properly, and that screws and washers are intact.		
13	Hoist and tilt (check for breaks on the frame, hoist and tilt. Check that there are no cracks or breaks - must not be welded).		
14	Frame: check for cracks. If there is cracks, change frame - must NOT be welded.		
15	Switches: check the switch controlling the speed reduction when the hoist is activated.		
16	Accessories: check the accessories, manual and electronic. Replace any faulty finger screws or handles.		
17	Test drive - all functions tested in their extreme positions. The Spider is tested with max. load.		

**If the panels have lost their shine:**

- ◆ Wipe the panels dry with a damp cloth.
- ◆ Wax them with car wax.



**Note!**

NEVER use a high-pressure cleaner or hose. It may damage the Spider's electronic system.

During drying Spider must stand on a flat surface. It should be indoors, preferably in a heated room. The temperature must not exceed 50°.

The Spider is designed to stay safe to use for at least 10 years, up to a maximum of 5,000 hours, providing it has service and safety inspections every year, which is equivalent to around 500 operating hours. The service must be carried out either by Medema Danmark A/S or an authorised workshop.



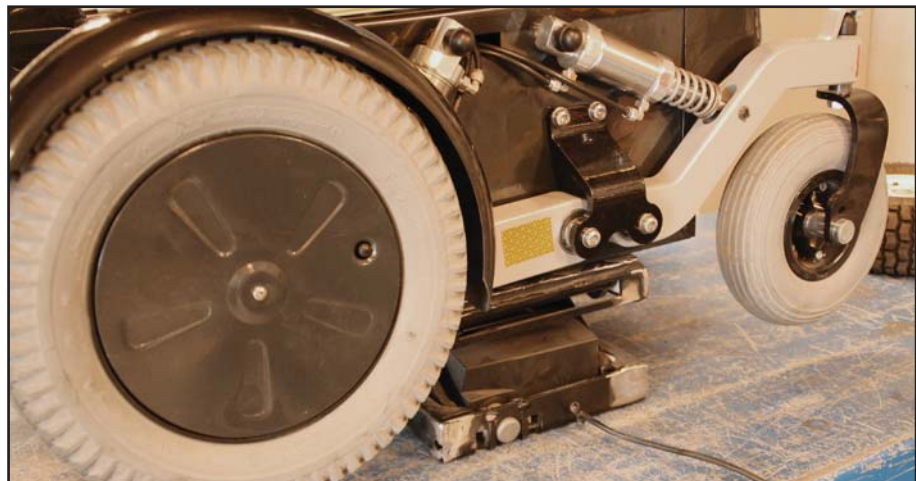
**IMPORTANT!** For safety reasons it is of the utmost importance that the servicing and safety check intervals are complied with, as this minimises the risk of brake failure and short-circuits in the wiring, which could generate heat and cause a fire.

## Servicing the Spider

When the Spider enter the workshop it must be checked. This is a general check, which aims to detect mechanical defects.

**Remember that the vehicle must be turned off before you begin!**

It is recommended that the Spider is placed on a workbench or table, which has to be strong enough. In addition, the workbench or table must be fastened to the floor.



*Lift the Spider with a jack, lift or similar to free the wheels from the base.  
Make sure the chair is stable.*

## Checking the pivot wheel

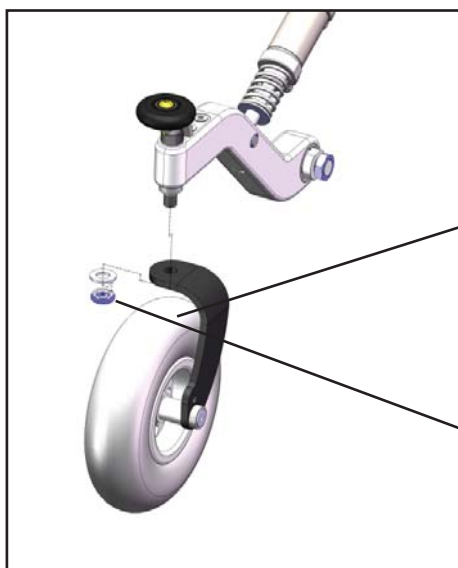
Place a piece of wood or similar beneath the chassis to lift the wheel clear of the ground.



Check the bearings in the swing mode. If there is a play, tightened it.

If this is not enough, then both bearings have to be changed.  
(Art No. Bearing SR-01193)

Notice the number and the position of the washers.



Now check the wheels. If there is any play, the wheels have to be changed.  
(Art No. Bearing CR-1-0085)

Mount in reverse order, with washer and M14 contra nut.

*M14 contra nut.*



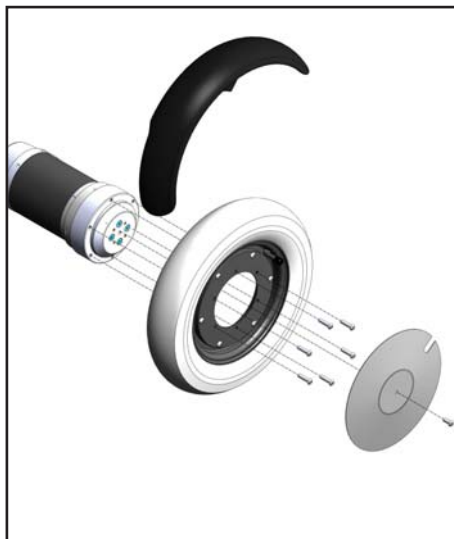
**Note!**  
All nuts are secured with Loctite 243 (blue)

## Checking the drag wheel

## Kontrol af trækjul



Place a piece of wood or similar beneath the chassis to lift the wheel clear of the ground.



Unmount the screw in the center of the cover.

Unmount then six screws in the wheel rims. The wheel can now be removed.

Mounting in reverse order.

**Note!**  
**All nuts are secured with Loctite 243 (blue).**

## Checking the disengagement

The Spider is equipped with two disengagement levers. One on each motor.

### Note!



You must NEVER brake the Spider by switching off with the I/O button while moving, as this applies the magnetic brake with considerable force, with a resulting risk of tipping.



ALWAYS disengage on both sides. The disengagement handles should be pushed as high as possible. Otherwise there is risk of personal and material damage. To resume running normally with Spider, disengagement handles should be in "Normal position for driving" on both motors.

### Warning!



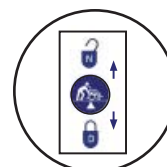
When the scooter is disengaged, the braking system is deactivated. If it just disengages on one side, there is a risk that the wheelchair starts to roll.



You must NEVER disengage on sloping terrain. This can lead to serious damage or personal injury.

Make sure that the disengagement handles are placed in (normal position for driving), which means it's connected (the scooter can not be pushed).

If you can push the scooter anyway, the transmission is defective and needs replacement.



The image show "Normal position for running". Push the handles up to disengage. ALWAYS on both sides.

## Checking the brakes

Parking brake / magnetic brake: Has to be tested on a flat ground with minimum 1 meter free space around the scooter.

- ◆ Turn on the Spider, and move the joystick slowly forward, until a click is heard. (In this position the scooter might start to move).
- ◆ Immediately let go of the joystick, and listen for the click, which must be heard within one second.

Repeat for all driving directions!

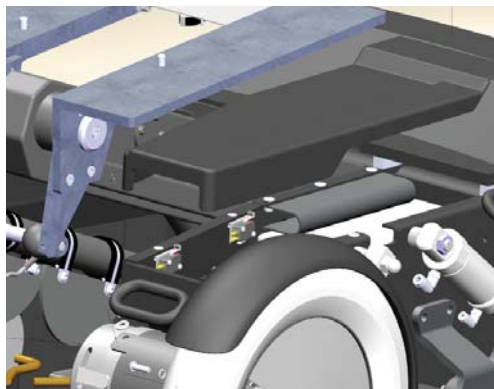
Problem	Cause	Solution
The scooter has too long braking distance.	Deceleration can be set to the wrong value in the programming.	Change the value in the program.
	The magnetic brake can be worn.	Replace the magnetic brake (see section <a href="#">Replacing the magnetic brake</a> ).
Stolen bremsler slet ikke	Deceleration can be set to the wrong value in the programming.	Change the value in the program.
	No voltage to magnetic brake (no click sound in the joystick).	Repair the power supply for the magnetic brake.
	Magnetic brake is very worn.	Replace magnetic brake (see section <a href="#">Replacement of magnetic brake</a> ).

The vehicle must meet the following braking distances.

Maximum, horizontal stop distance - ISO 7176-6												
Speed (km/t)	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0
Distance (m)	0,6	0,8	1,0	1,2	1,5	1,7	2,0	2,2	2,5	2,8	3,2	3,5

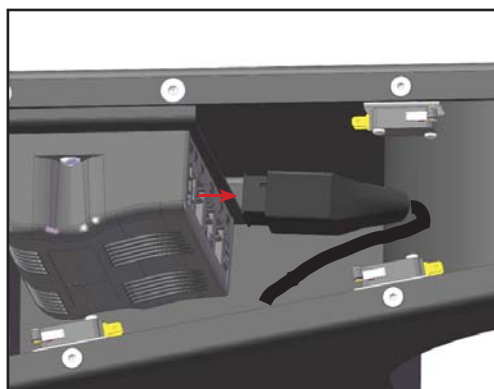
## Replacing the motor gear

Place a piece of wood or similar beneath the chassis to lift the wheel clear of the ground.

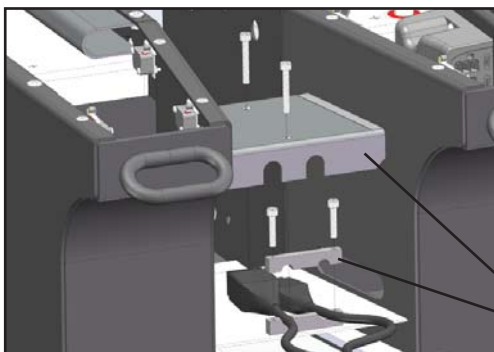


Unmount the seat and the legrests, or position the seat in the highest possible position.

Unmount the front top cover i the left side.

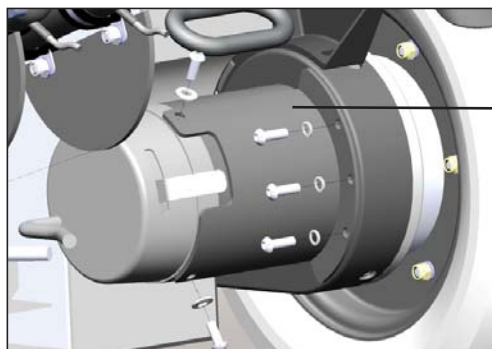


Unmount the plug for the motor.



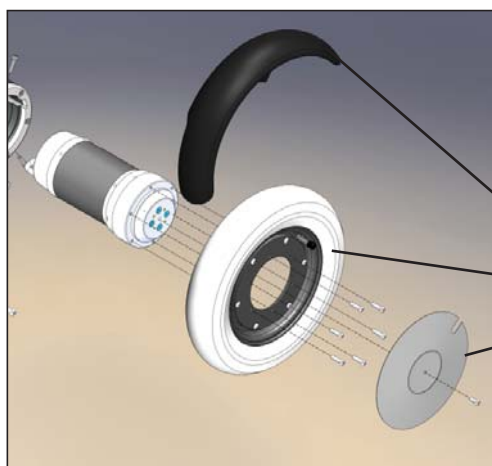
Unmount the wire protector and the Afmontér kabelbeskytteren og stretch-shipper. Pull the wire from the motor through the opening in the chassis.

Wire protector  
Stretch-shipper



Unmount the motor cover.

*motor cover.*

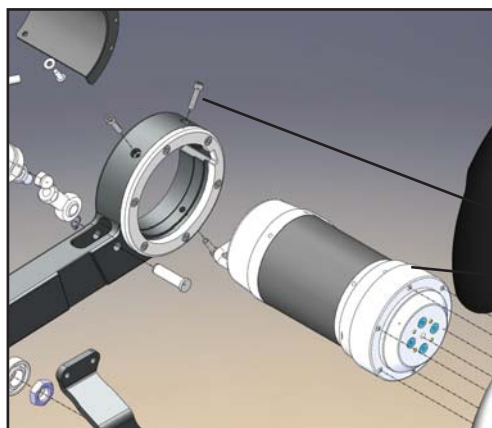


Unmount the hub cap, drag wheel and the front wheel cover.

*Front wheel cover*

*Drag wheel*

*Hub cap*



Now the motor can be unmounted. Mount a new en reverse order.

*Screws to fasten the motor*

*Motor*

Test the vehicle thoroughly, preferably with load.

**Note!**

- ◆ The clicking sound, should occur within one second.
- ◆ When the disengagement levers are in "Normal position for driving" (down), it must not be possible to push the wheel chair.

## Replacement of coal in the motor

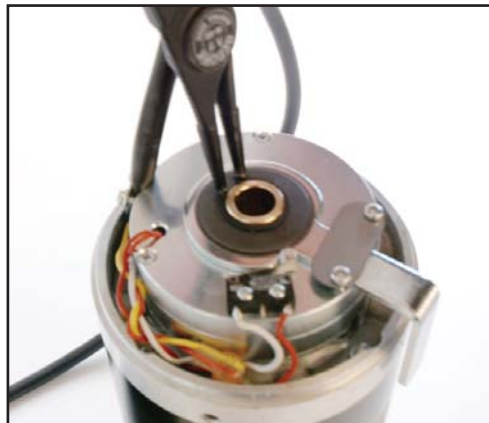
If the coals in the motor get worn, it is possible to exchange them. Follow the procedure below.

Unmount the motor. See section [Replacing the motor gear](#)



Art. No:  
CR-1-0094 Right motor  
Art. No:  
CR-1-0095 Left motor

Please refer. also to [Front suspension](#).



Unmount the cover.

Unmount the circlip.



Unmount disengagement lever.

*Disengagement lever*

*Screw driver 10'er torx*



Now lift of the disengagement lever.



Unmount the screws that keeps the magnetic brake in place.

*Screw driver w/phillip mite*



Unmount the cable holder.

*Screw driver 10'er torx*



Unmount the magnetic brake.

**Note!**

The small distance-pieces are to be used when mounting the magnetic brake again.

*Distance-piece*



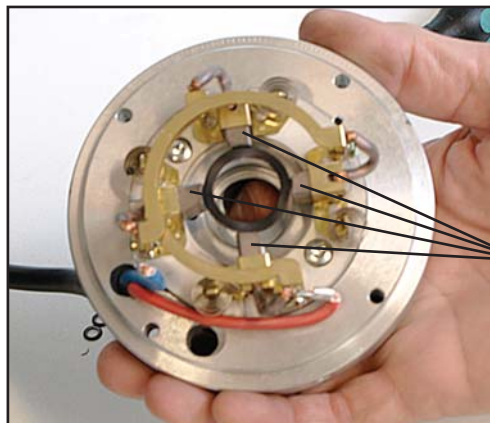
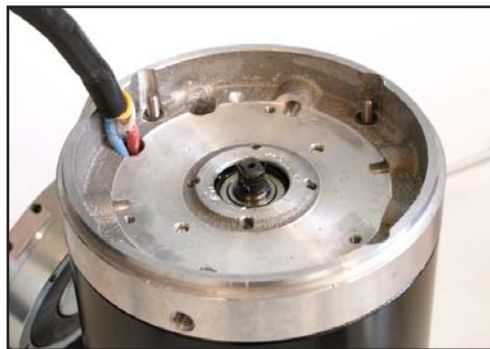
Unmount the washer.

*Slotted screwdriver size 8 with slit*



To unmount the special nuts that keep the ancor plate, you have to use a screwdriver with a slit. You take a slotted screwdriver size 8, and make a slit that fits over the thread.

*4 pcs special nuts*

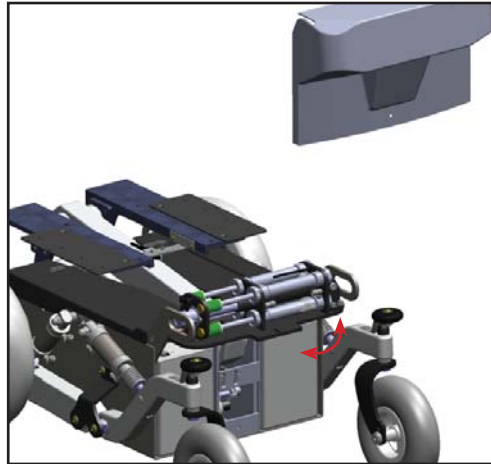


Replace the coals, and mount it all again in reverse order.

*Coals*

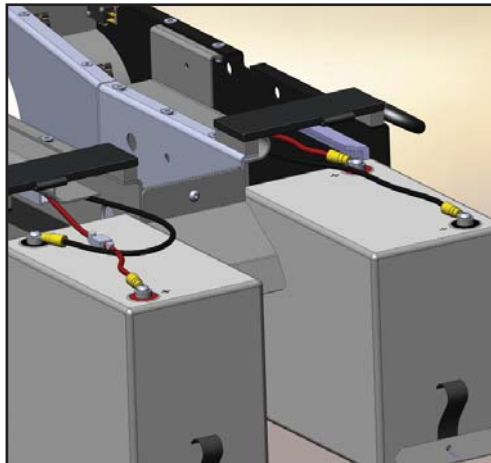
## Replacing the actuators hoist / tilt

It is recommended to remove the seat before you start.

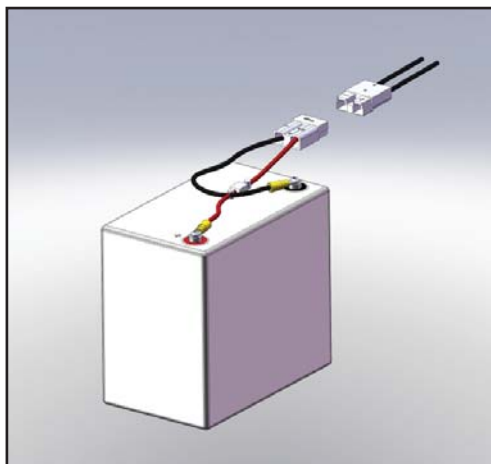


Remove the rear top cover and the rear bottom cover.

Tilt the hydraulic station up.



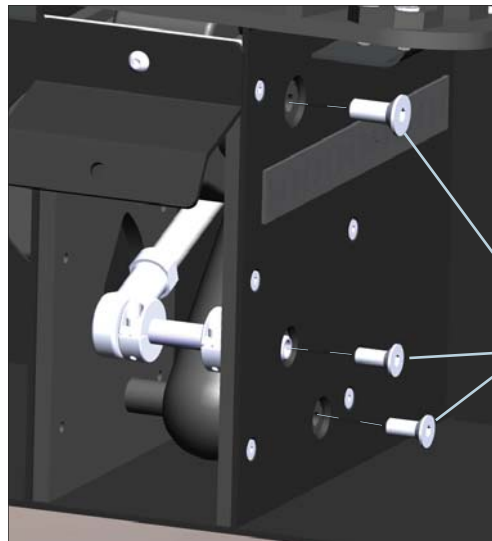
Pull out the batteries on their tray.



Unplug the batteries.

Batteries and trays can now be removed.

It provides access to loosen the axles to the actuators.

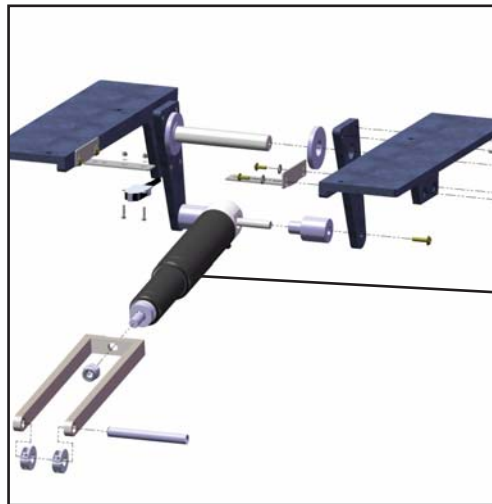


Unmount these screws on both sides of the axels.

Now the hoist and tilt mudules can be removed.

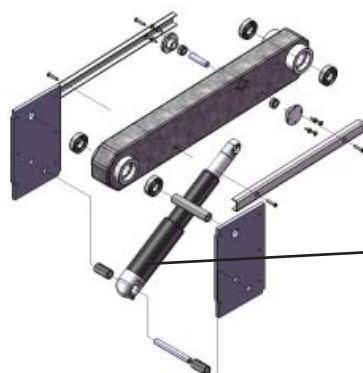
M10

M8



Unmount the tilt module and replace the actuator.

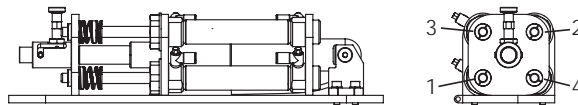
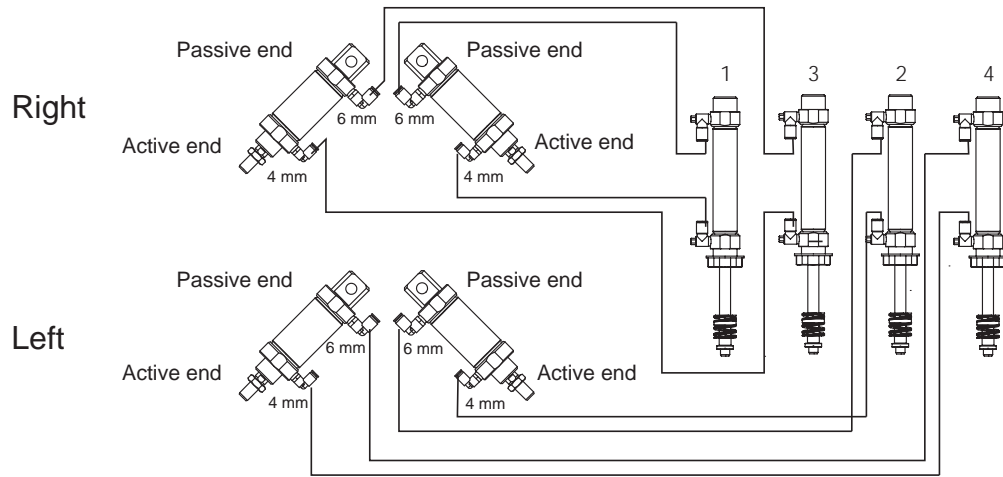
Actuator



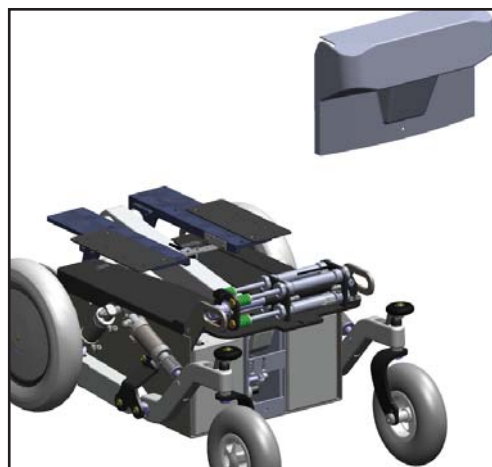
And also the hoist / lifting tower, can be unmounted and the actuator can be replaced.

Actuator

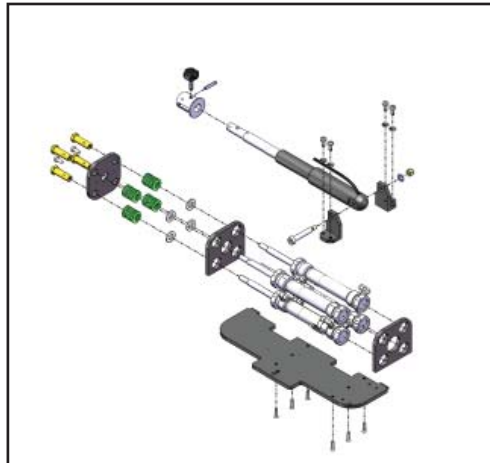
## Oil hoses



## Replacing a cylinder



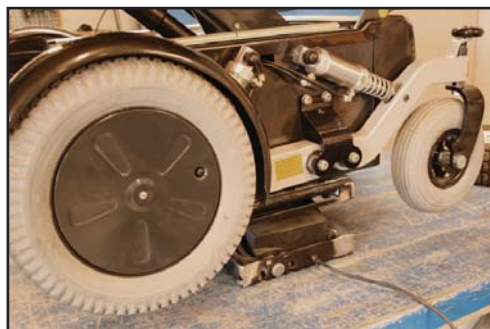
If a cylinder in the lifting device needs replacing, the chair must be sent to the factory.



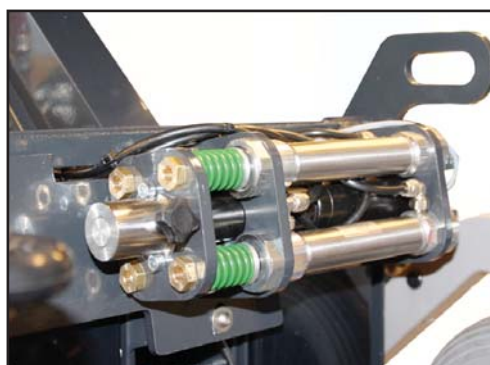
To fill oil: See section on Filling of oil.

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## Filling of oil.



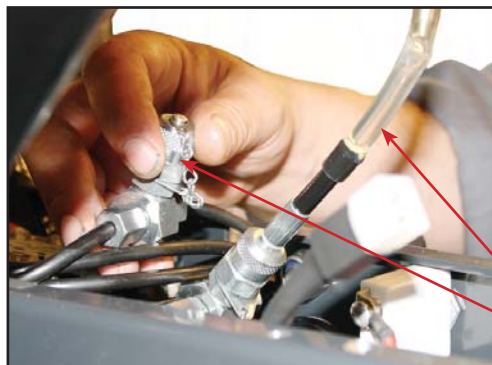
Lift the wheels of the ground.



Lift the undercarriage to the highest possible position, so the lifting device contains the least possible oil.



Remove the top screen on both sides.



Remove the cap on the T piece which is connected to the cylinder where oil is to be filled. Connect the feed hose from the oil holder.

*Feed hose from the oil holder  
T piece with cap.*



The oil holder is fastened to the chair frame and the feed hose is mounted on the T piece.



The wheel must be raised/ lowered a few times to pump oil into the cylinder. Carry on until there are no bubbles left in the hose.

*The wheel raised*



*The wheel lowered*



Remove the feed hose again. The T filling socket is closed with the attached cap.

## Replacing the Joystick



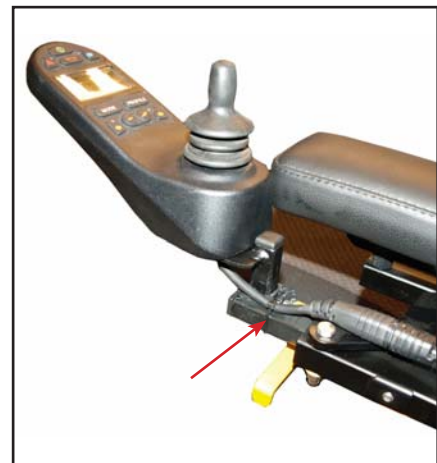
*Remove the plastic strip that keeps the cord to the joystick.*



*Flip up the armrest and remove the two screws that secure the joystick onto the joystick bracket.*



*Unplug the joystick. Mount a new joystick in reverse order.*



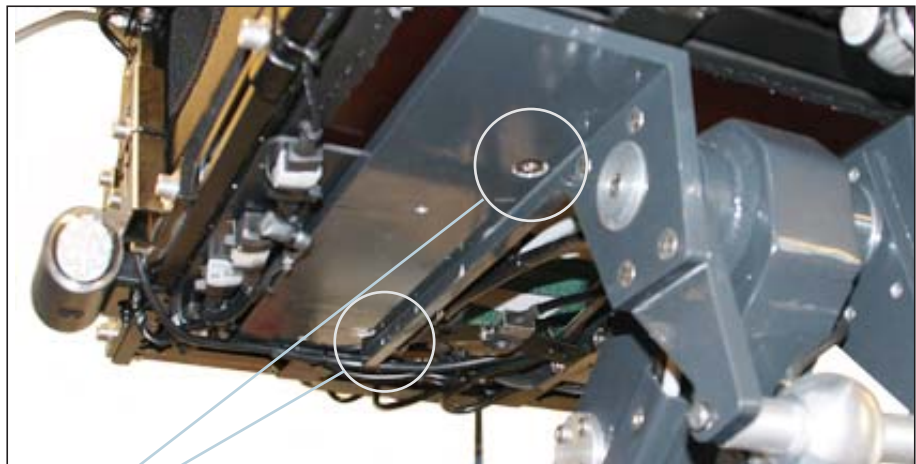
**REMEMBER** to mount a new plastic strip.

## Checking the bolts



*Check and tighten all visible bolts on the side of Spider.*

## Checking the bolts under the seat



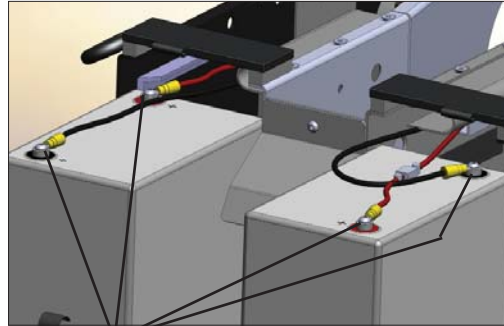
*Countersunk*

In the top of the hoist / tilt module the 4 bolts to restrain the seat to the frame are placed.

These must be checked / tightened.

If any of the bolts are replaced, all bolts must be secured with Loctite 243

## Checking the battery poles



*Battery poles*

Check that the cable shoes are properly mounted on the poles.

If necessary, tighten the screws.

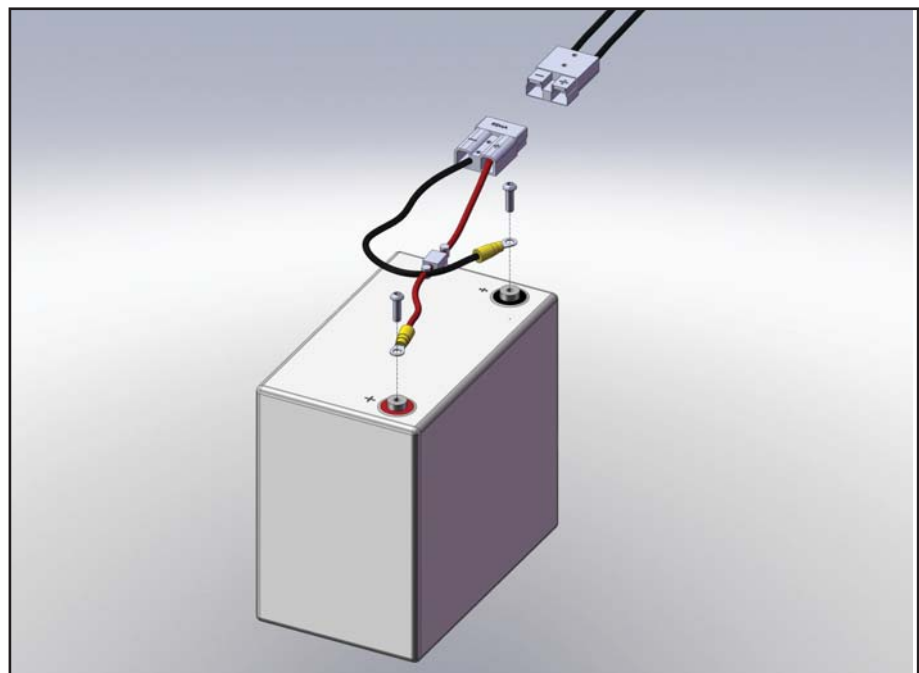
---

## Replacing batteries

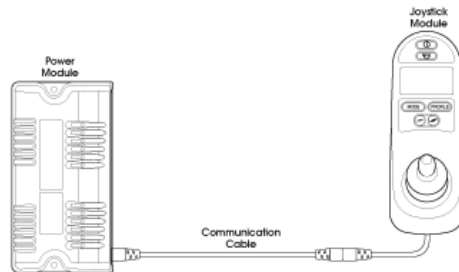
You get to the batteries as described in the section [Replacing the actuators hoist / tilt](#)

Remove the Plus and minus poles on both batteries. The batteries can now be replaced.

Be aware that no cables must be trapped in the installation of new batteries.

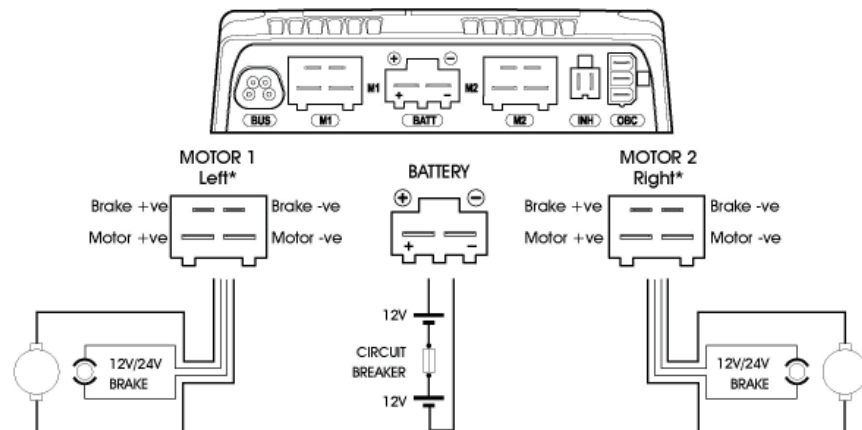


## Joystick R-net and the powermodule

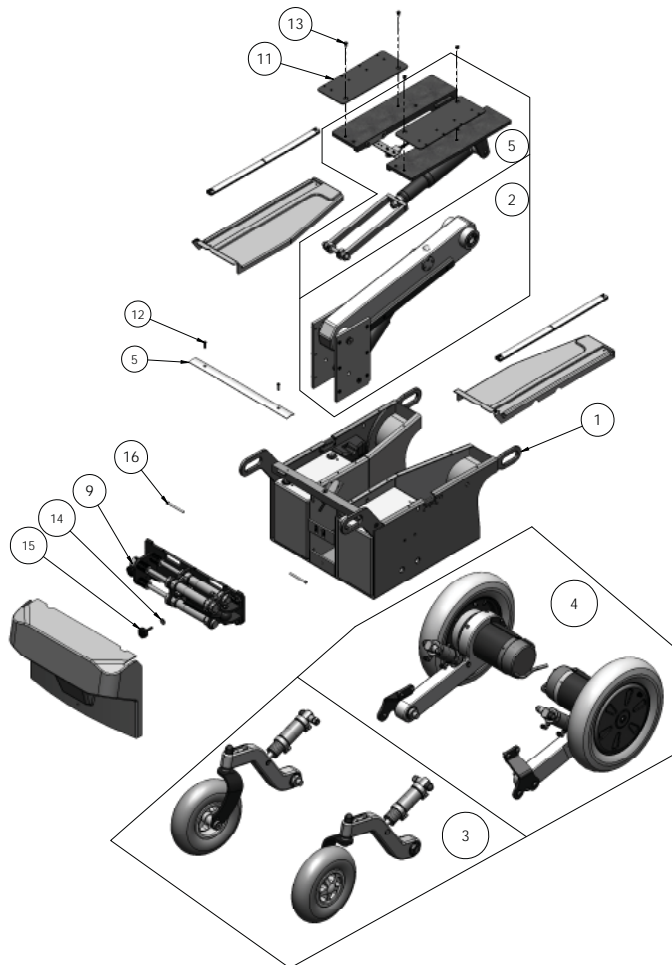


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## Motors and the powermodule

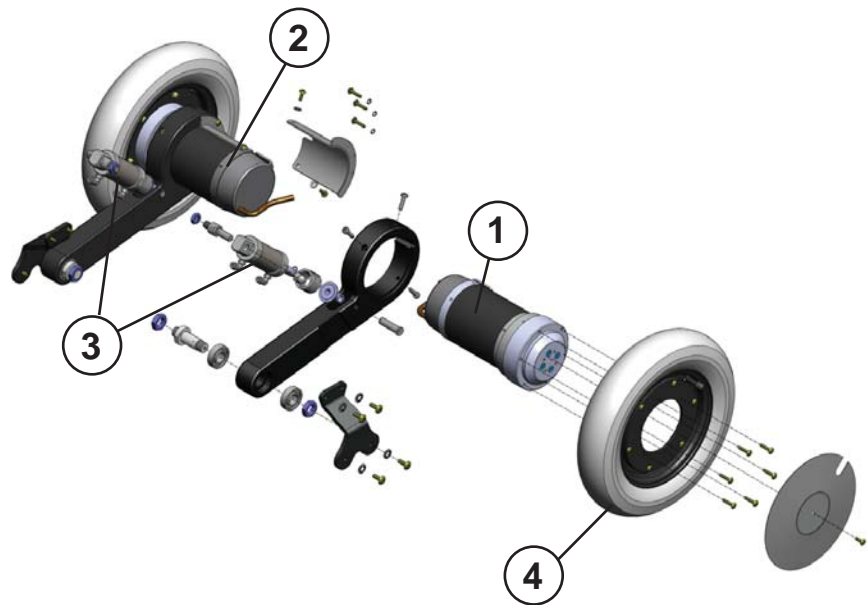


## Overview



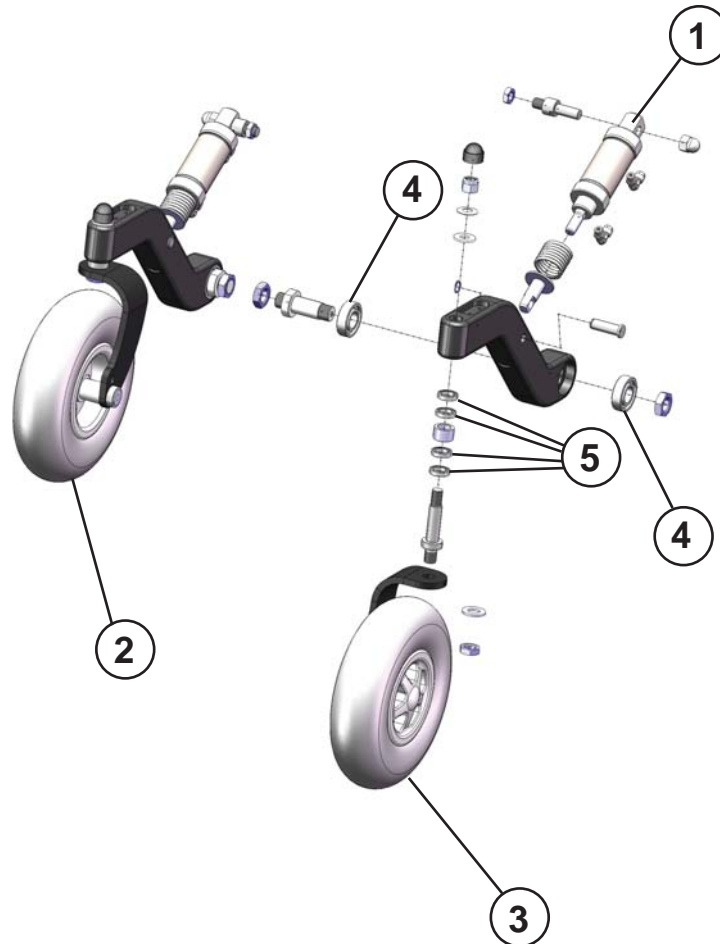
Pos	Description	Qty.
1	Frame w/batteries and Power module	1
2	Hoist / Lifting Tower	1
3	Rear suspension w/Swing wheel	1
4	Front suspension w/motors and wheel	1
5	Alu rail	1
6	Front shield top, right	1
7	Front shield top, left	1
8	Tilt assembly	1
9	Hydraulic station	1
10	Safety switching TTS - 434 mm	2
11	EI plate for wire. Spider	2
12	M5x20 Countersunk A2 Torx T25	2
13	M6x12 Countersunk A2 Torx T30	4
14	Polyamid washer Ø6 - Ø18	1
15	Handle, BTHP M6/Ø25x25	1
16	M5x50 Socket Head Cap FZB	2

## Front suspension



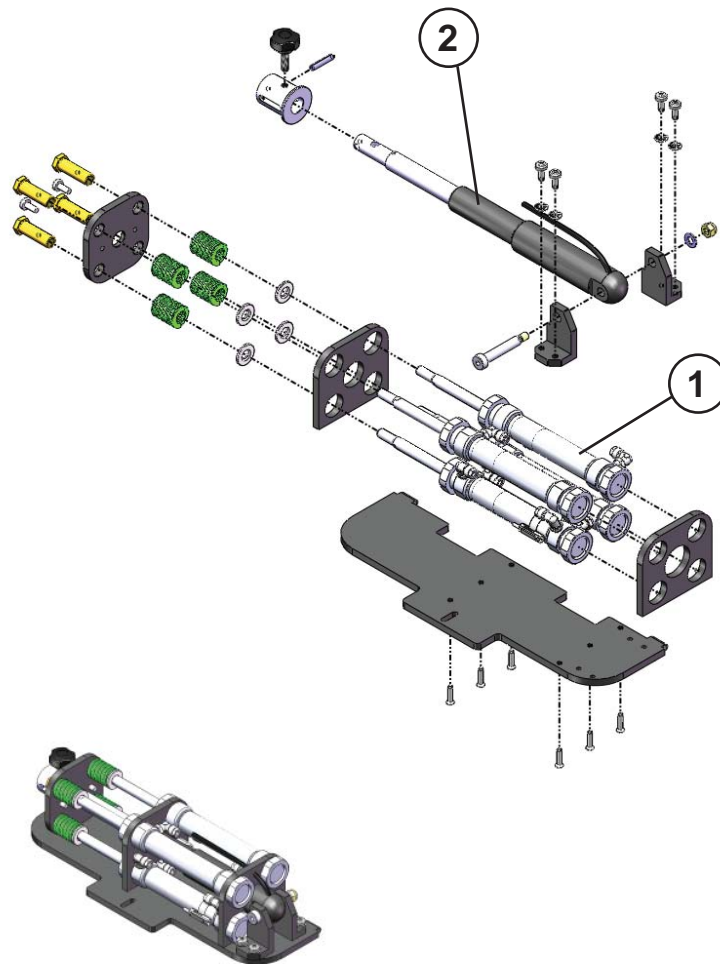
Pos	Art. No	Description
1	CR-1-0094	Motor PMNSt 110/50 - 550W right (incl. magnetic brake)
2	CR-1-0095	Motor PMNSt 110/50 - 550W left (incl. magnetic brake)
3	CR-1-0032	Lifting Cylinder for wheels
4	CR-1-0100	Drag Wheel for Spider

## Rear suspension



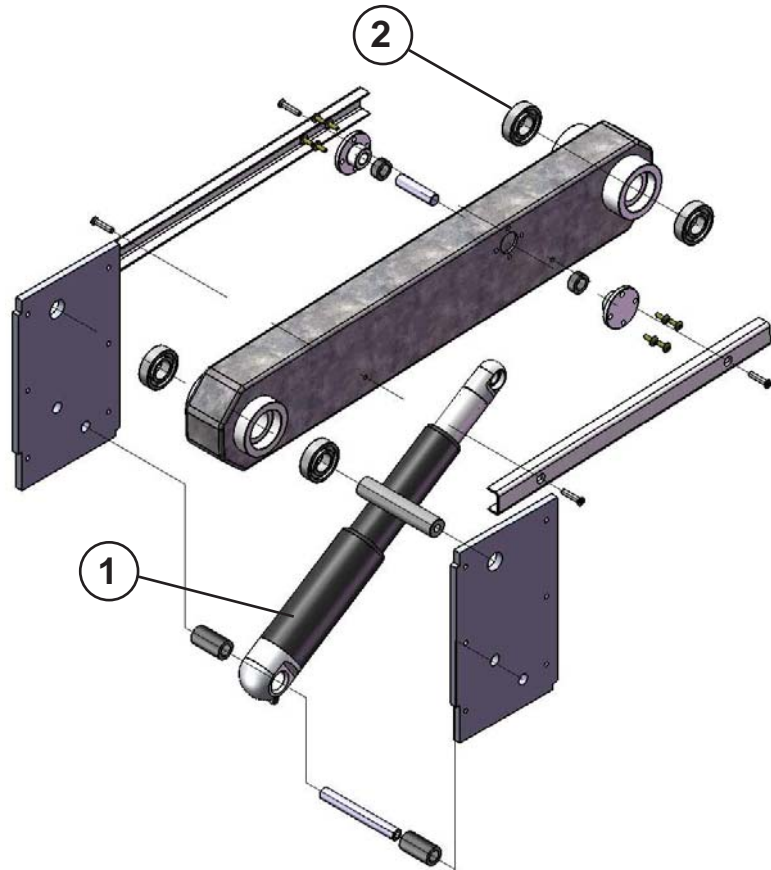
Pos	Art. No	Description
1	CR-1-0032	Lifting Cylinder for wheels
2	CR-1-0084	Swing Brackets complete w/wheel, right
3	CR-1-0085	Swing Brackets complete w/wheel, left
4	SR-00095	Bearings SKF - 6004 - RS
5	SR-01193	Bearings 61802 2RS, Ø15-Ø24x5

## Hydraulic station



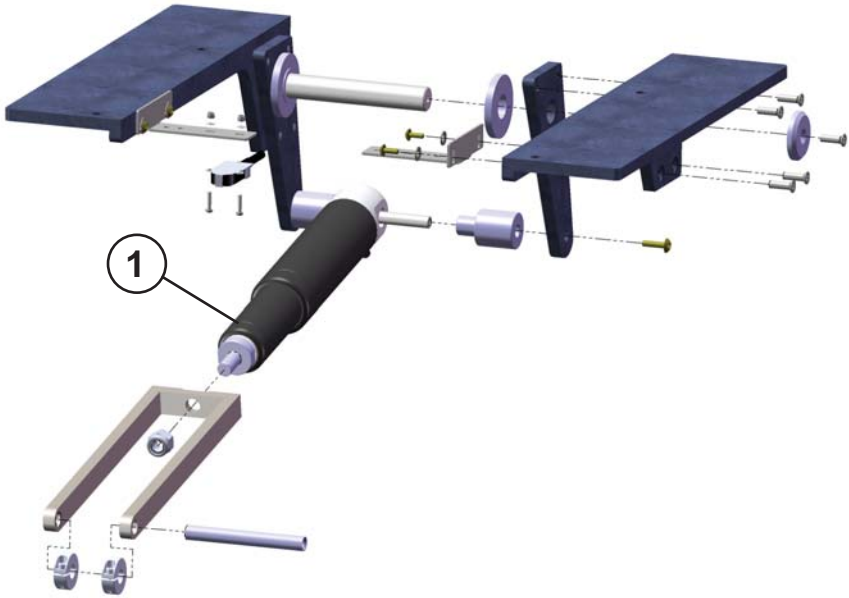
Pos	Art. No	Description
1	CR-1-0042	Cylinder CMK2-H 25-80
2	CR-2-0072	Actuator, hydraulic system

## Hoist / Lifting Tower



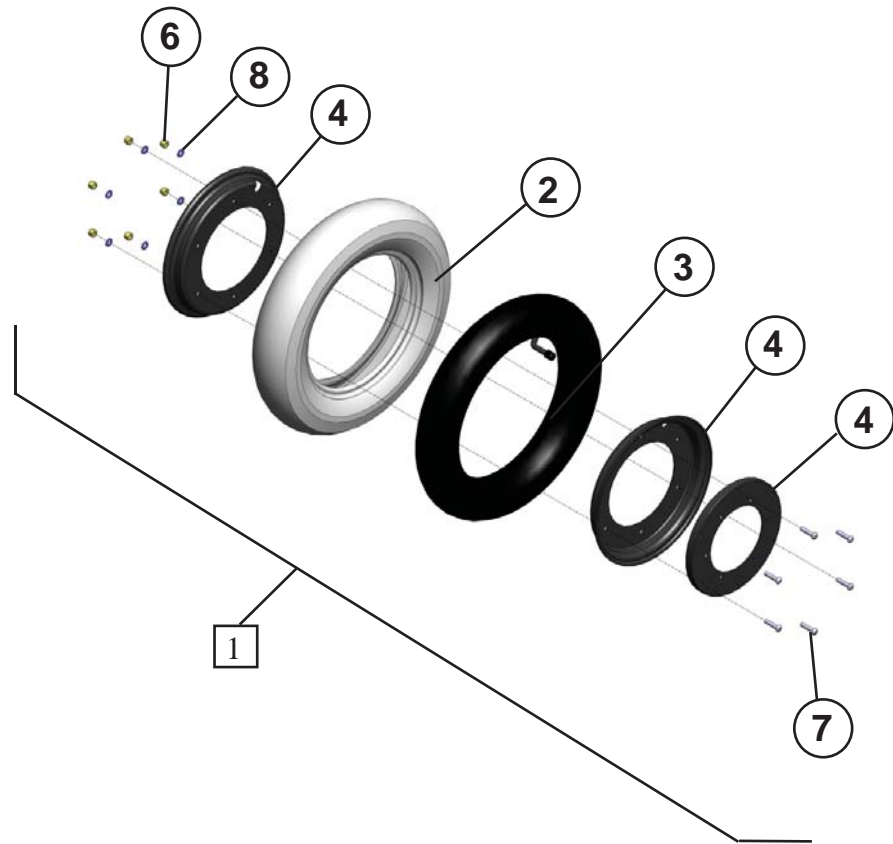
Pos	Art. No	Description
1	CR-2-0014	Actuator for hoist, Spider
2	SR-00095	Bearing SKF - 6004 - RS

# Tilt module



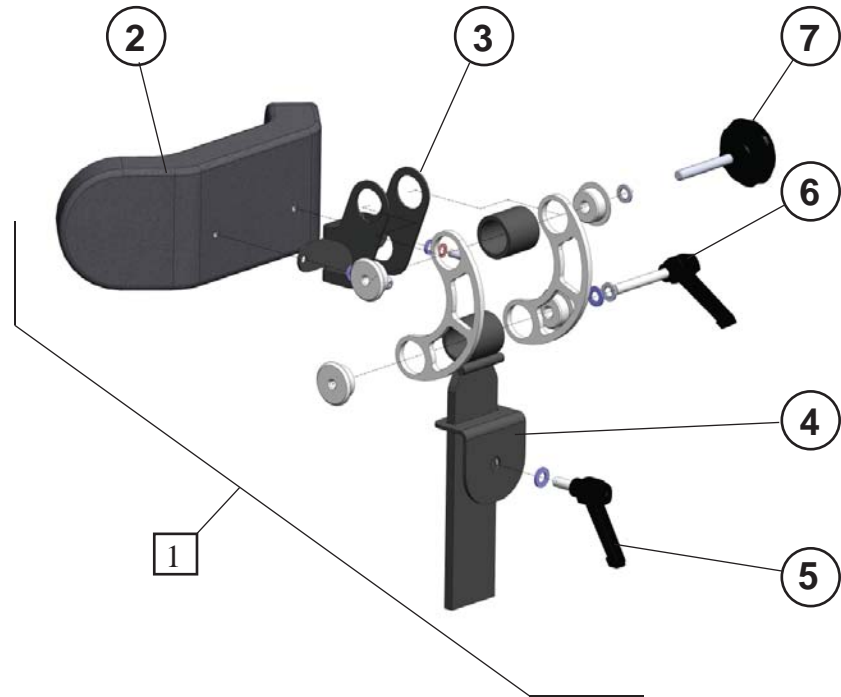
Pos	Art. No	Description
1	CR-2-0025	Actuator for tilt, Spider

## Mounting the drag wheel



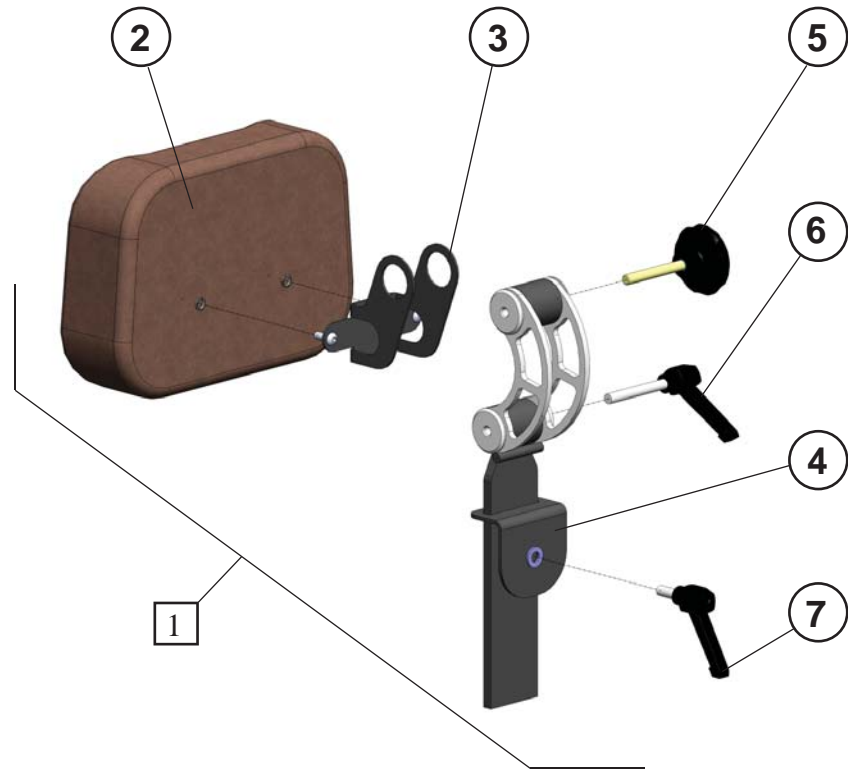
Pos	Art. No.	Description
1	CR-1-0100	Drag wheel complete, Spider
2	CR-1-0090	Tyre 3.00-8 PN C248
3	CR-1-0097	Inner tube for drag wheel, Spider
4	CR-1-0098	Rim for drag wheel, Spider
5	CR-1-0099	Wheel rim for drag wheel, Spider
6	SR-00301	Ø6 lock nut, FZB
7	SR-03154	M6 x 25 Button head A2
8	SR-03228	Ø6 washer A2

## Headrest Junior



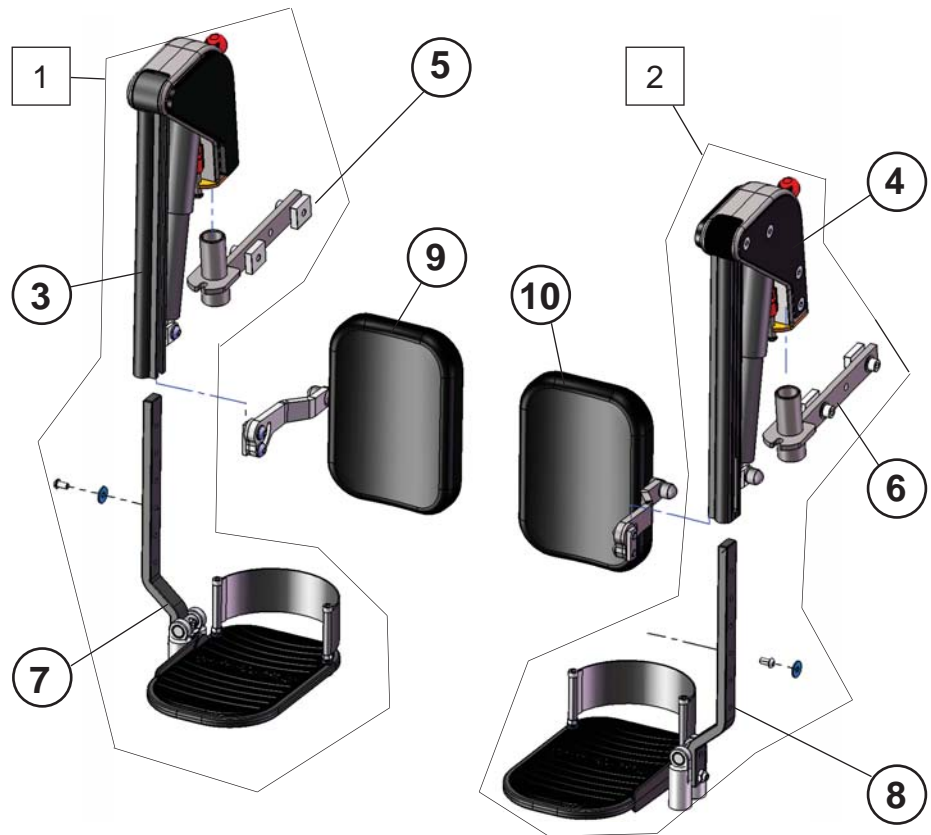
Pos	Art. No.	Description	Qty
1	C2-0272	Headrest w/ ajustable pad, junior, fabric	1
1	C2-0273	Headrest w/ ajustable pad, junior, PU	1
2	CR-00731	Headrest - ajustable, junior (fabric)	1
2	CR-00815	Headrest - ajustable, junior (PU)	1
3	5-127-7-535	U-bracket for headrest	1
4	CR-00075	Angle bracket for headrest	1
5	CR-00654	Ø8x20 hand screw	1
6	SR-00280	Ø8x60 hand screw	1
7	SR-03825	Hand Lever w/ M8 x 60 thread	1

## Headrest pad adult



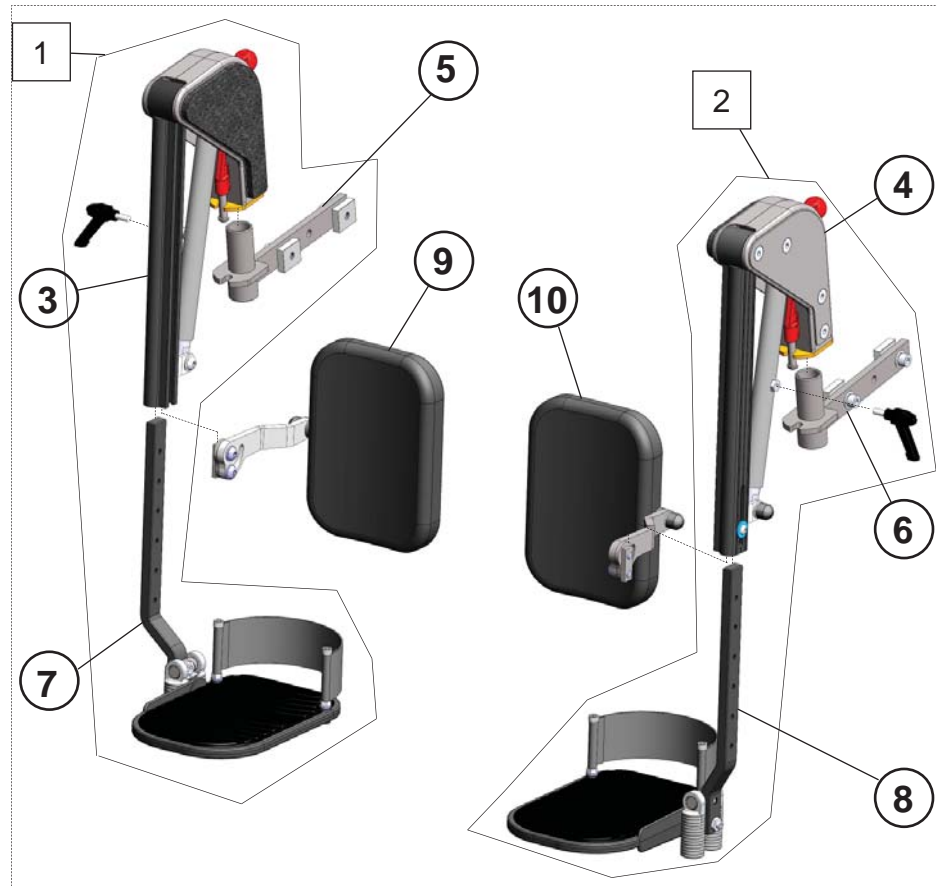
Pos	Art. No.	Description	Qty
1	C2-0270	Headrest w/ ajustable pad, adult, fabric	1
1	C2-0271	Headrest w/ ajustable pad, adult PU	1
2	CR-00730	Headrest - ajustable, adult, fabric	1
2	CR-00814	Headrest - ajustable, adult, PU	1
3	5-127-7-535	U-bracket for headrest	1
4	CR-00075	Angle bracket for headrest	1
5	SR-03825	Hand Lever w/ M8 x 60 thread	1
6	SR-00280	Ø8x60 hand screw	1
7	CR-00654	Ø8x20 hand screw	1

## Footrest, electric adult



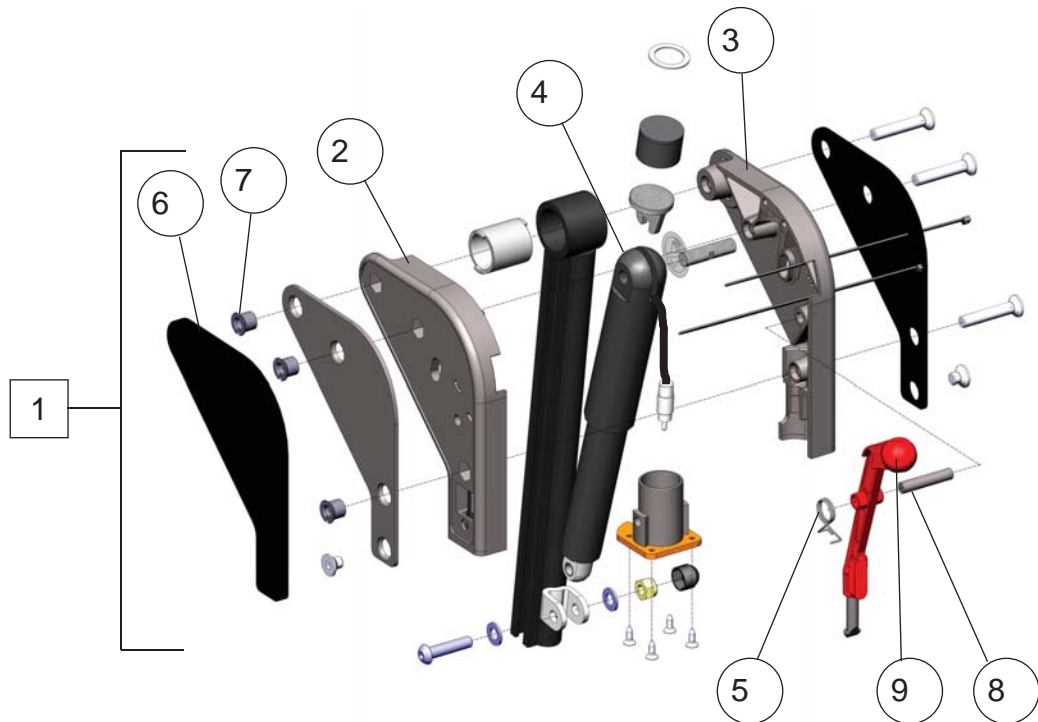
Pos	Art. No.	Description	Qty
1	CR-00870N	Footrest electric adult, right, SB40-45	1
2	CR-00871N	Footrest electric adult, left, SB40-45	1
3	CR-00878	Footrest actuator part, right	1
4	CR-00879	Footrest actuator part, left	1
5	CR-00874	Mounting Bracket f/footrest, right electric.	1
6	CR-00875	Mounting Bracket f/footrest, left electric.	1
7	CR-00880N	Footplate right, SB40-45	1
7	CR-00980	Footplate right, SB50+	1
7	CR-00880	Footplate right, SB35	1
8	CR-00881N	Footplate left, SB40-45	1
8	CR-00981	Footplate left, SB50+	1
8	CR-00881	Footplate left, SB35	1
9	CR-00876N	Calf rest right complete, SB40-45	1
9	CR-00996	Calf rest right complete, SB50+	1
10	CR-00877N	Calf rest left complete, SB40-45	1
10	CR-00997	Calf rest left complete, SB50+	1

## Footrest, manual adult



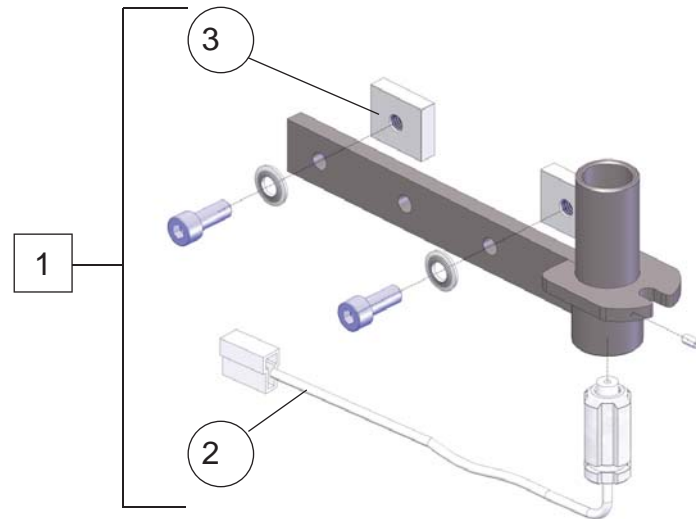
Pos	Art. No	Description	Qty
1	CR-4-0002	Footrest manual adult, right, SB40-45	1
2	CR-4-0003	Footrest manual adult, left, SB40-45	1
3	CR-4-0010	Footrest top part, right manual	1
4	CR-4-0015	Footrest top part, left manual	1
5	CR-00874	Mounting Bracket f/footrest, right	1
6	CR-00875	Mounting Bracket f/footrest, left	1
7	CR-00880N	Footplate right, SB40-45	1
7	CR-00980	Footplate right, SB50+	1
7	CR-00880	Footplate right, SB35	1
8	CR-00881N	Footplate left, SB40-45	1
8	CR-00981	Footplate left, SB50+	1
8	CR-00881	Footplate left, SB35	1
9	CR-00876N	Calf rest right complete, SB40-45	1
9	CR-00996	Calf rest right complete, SB50+	1
10	CR-00877N	Calf rest left complete, SB40-45	1
10	CR-00997	Calf rest left complete, SB50+	1

## Footrest actuator part



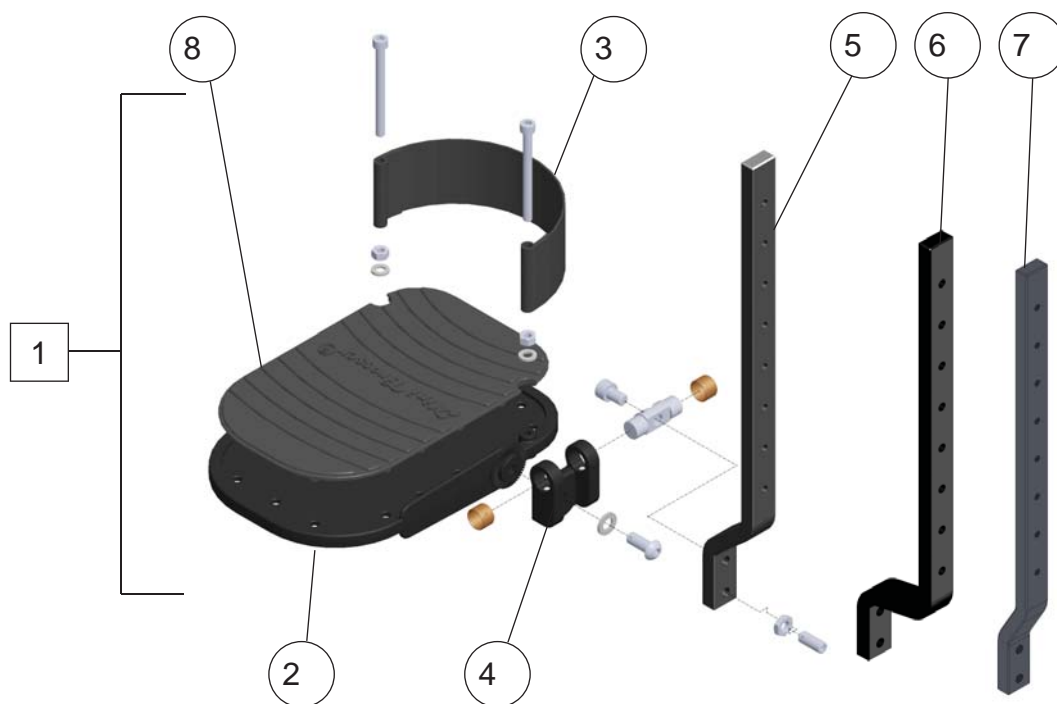
Pos	Art. No.	Description	Qty
1	CR-00878	Footrest actuator part right	1
1	CR-00879	Footrest actuator part left	1
2	5-200-6-014	Legrest head left	1
3	5-200-6-015	Legrest head right	1
4	CR-00890	Actuator part electric legrest complete	1
5	5-200-6-031	Spring for lock, legrest	1
6	CR-00886	Knee protector, right	1
6	CR-00887	Knee protector, left	1
7	5-200-6-050	M8 special nut	3
8	SR-01708	Pin for locking device	1
9	CR-00894	Locking device for legrest	1

## Mounting bracket for footrest



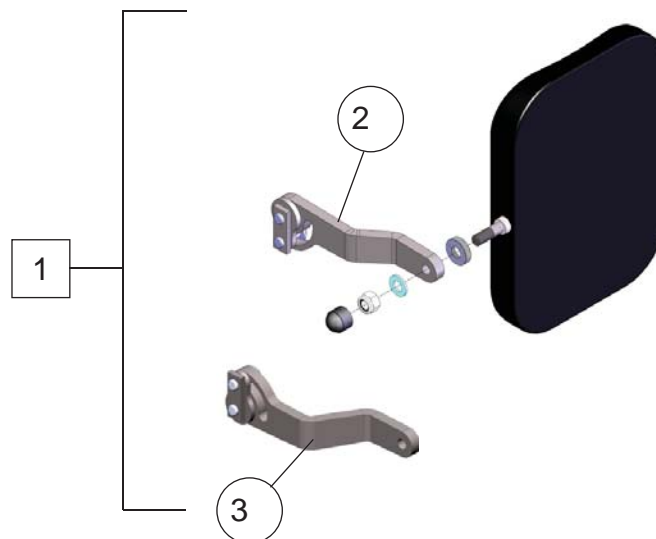
Pos	Art. No.	Description	Qty
1	CR-00874	Mounting bracket for footrest right	1
1	CR-00875	Mounting bracket for footrest left	1
2	CR-00889	Plug for legrest complete w/ cable	1
3	SR-00022	C-rail mounting	2

## Footplate



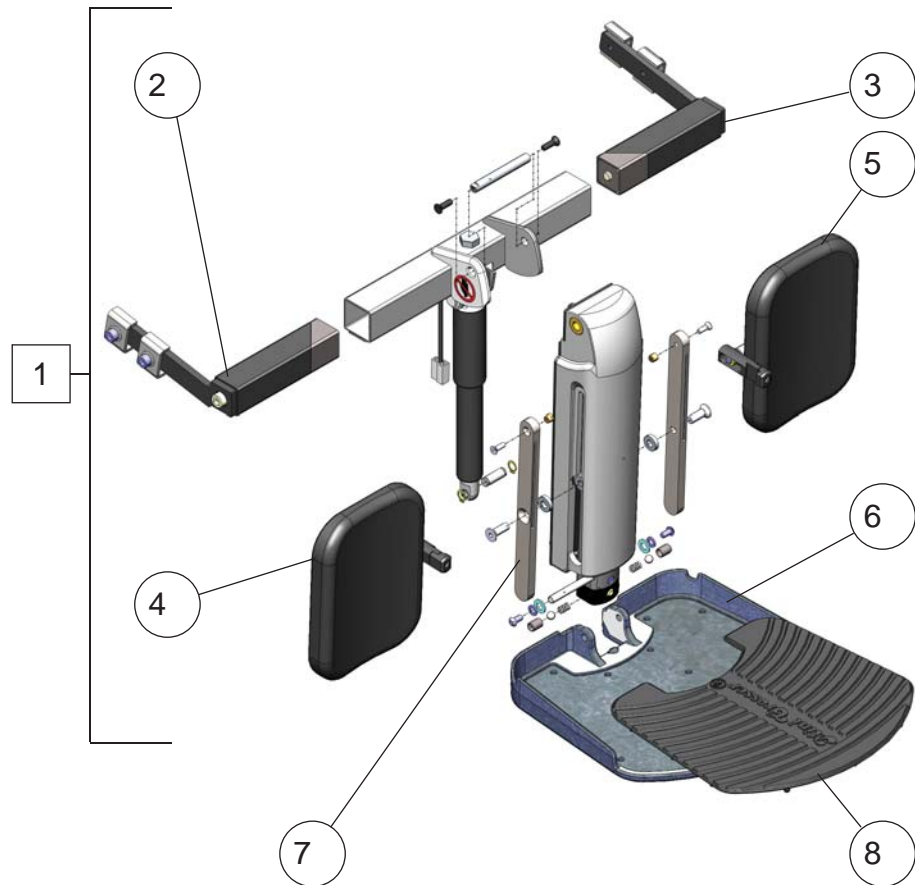
Pos	Art. No.	Description	Qty
1	CR-00880N	Footplate right SB40-45	1
1	CR-00881N	Footplate left SB40-45	1
1	CR-00880	Footplate right SB35	1
1	CR-00881	Footplate left SB35	1
1	CR-00980	Footplate right SB50+	1
1	CR-00981	Footplate left SB50+	1
1	CR-00884	Footplate junior / child right	1
1	CR-00885	Footplate junior / child left	1
2	5-200-6-005	Footrest aluminum	1
3	CR-00897	Heel strap alu footplate	1
4	CR-01250	Hinge angulation, footplate	1
5	CR-00888	Profile lower part electric-legrest SB40-45	1
6	CR-00998	Profile lower part electric-legrest SB50+	1
7	CR-00883	Profile lower part electric-legrest SB35	1
8	CR-00882	Mat alluminium footplate	1

## Calf rest



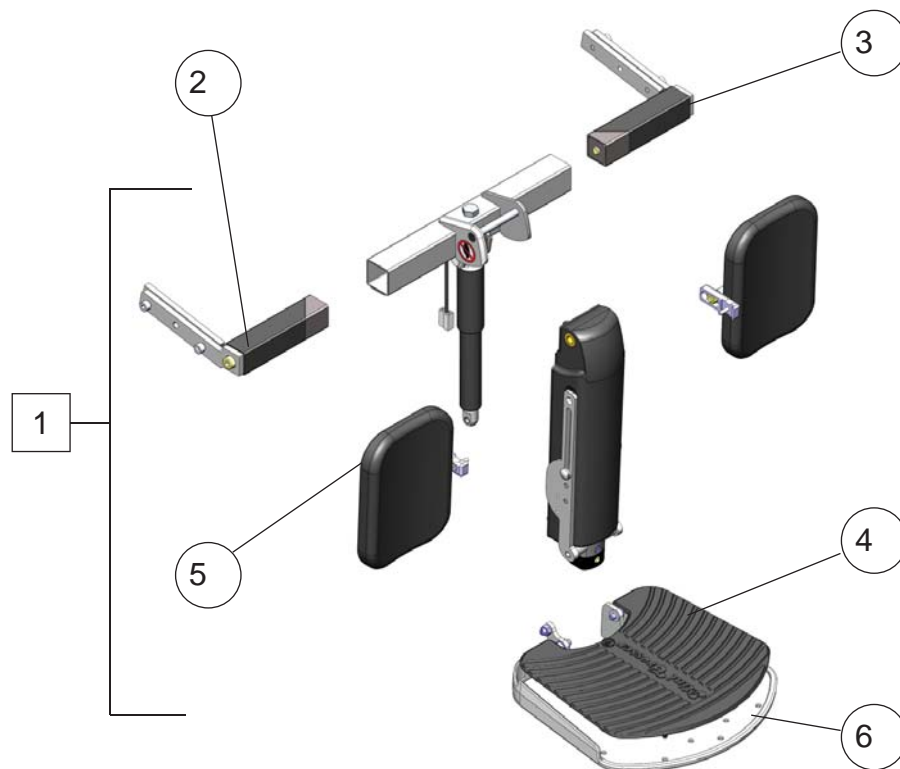
Pos	Art No.	Description	Qty
1	CR-00876N	Calf rest right complete SB40-45	1
1	CR-00877N	Calf rest left complete SB40-45	1
1	CR-00996	Calf rest right complete SB50+	1
1	CR-00997	Calf rest left complete SB50+	1
2	5-200-06-027	Arm for calf rest for legrest, right SB40-45	1
2	5-200-06-028	Arm for calf rest for legrest, left SB40-45	1
3	5-200-06-029	Arm for calf rest for legrest, right SB50+	1
3	5-200-06-030	Arm for calf rest for legrest, left SB50+	1

## Central footplate, adult, electric



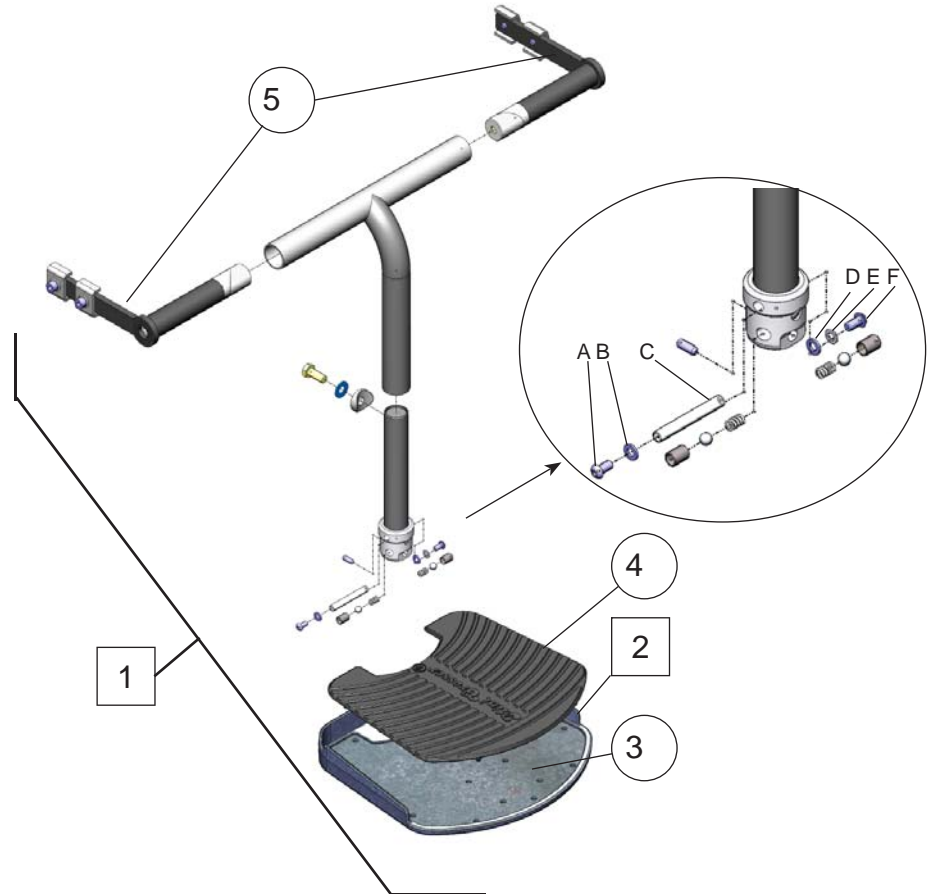
Pos	Art. No.	Description	Qty
1	CR-01200	Footplate for adult (out-in/up-down)	1
2	CR-01212	Torque joint complete adult, right	1
3	CR-01213	Torque joint complete adult, left	1
4	CR-01232	Calf rest II complete, right	1
5	CR-01239	Calf rest II complete, left	1
6	5-210-6-046	Central footplate, alluminium	1
7	5-210-6-030	Sliding rail - calf rest	2
8	CR-01202	Footmat for footplate adult/child	1

## Central footplate, child, electric



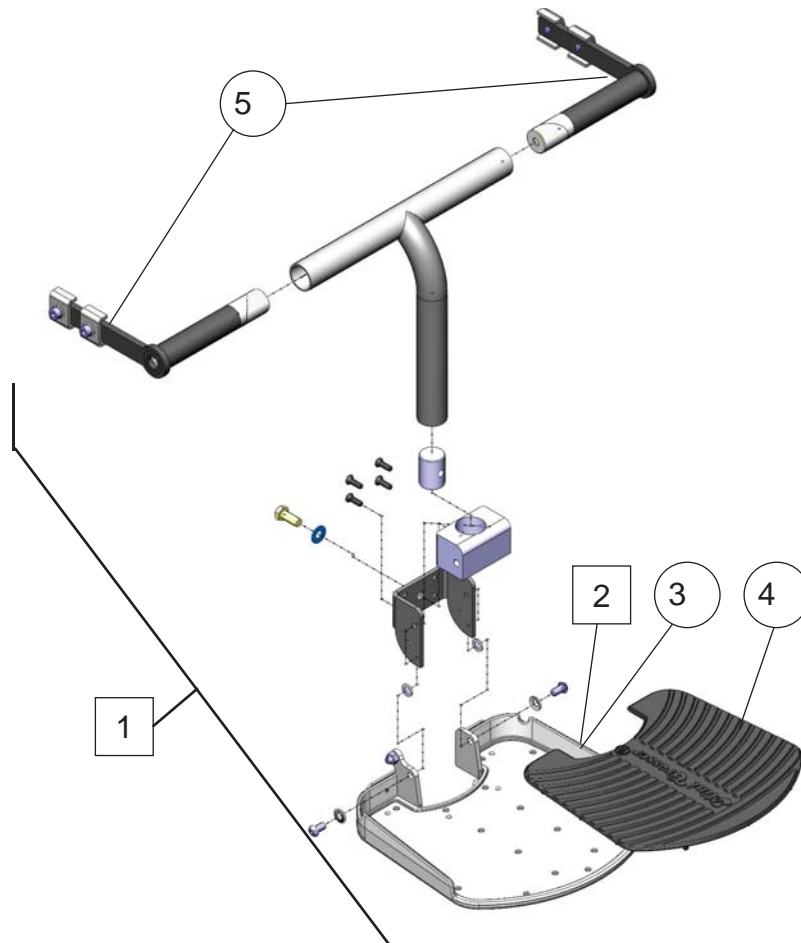
Pos	Art. No.	Description	Qty
1	CR-01201	Footplate for child (out-in/up-down)	1
2	CR-01214	Torque joint complete child, right	1
3	CR-01215	Torque joint complete child, left	1
4	CR-01202	Footmat for footplate adult/child	1
5	CR-01208	Calf rest complete, child	2
6	5-210-6-046	Central footplate alluminium	1

## Central footplate adult, manual



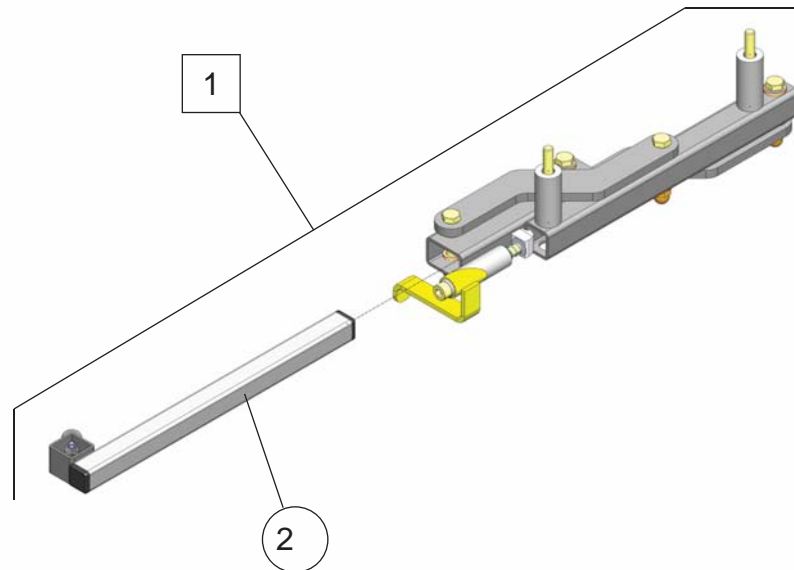
Pos	Art. No	Description	Qty
1	C5-0037	Footrest, manual, adult	1
2	CR-01203	Footplate incl. mat and pos A-F	1
3	5-210-6-046	Central footplate aluminium	1
4	CR-01202	Mat for Central footplate aluminium	1
5	CR-4-0020	Torque joint round	2

## Central footplate, Junior manual



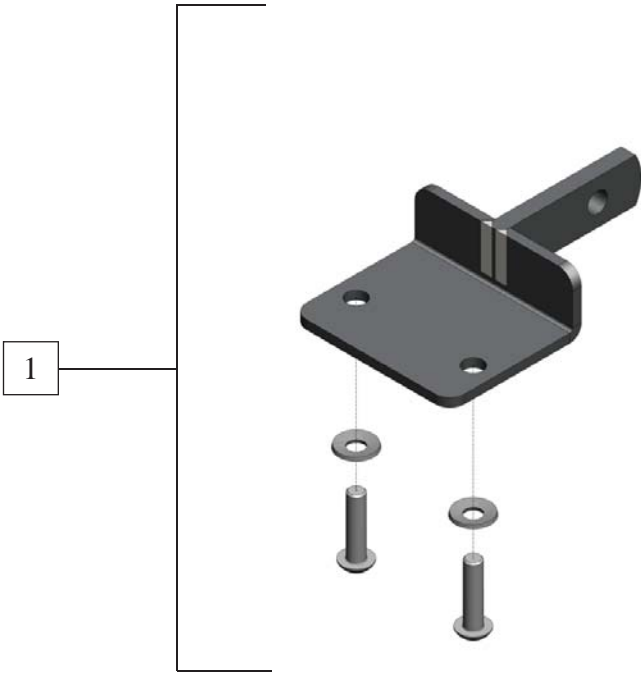
Pos	Art. No	Description	Qty
1	C5-0038	Footrest, manual, junior	1
2	Cr-01204	Footplate incl. mat	1
3	5-210-06-022	Central footplate aluminium	1
4	CR-01202	Mat for Central footplate aluminium	1
5	CR-4-0020	Torque joint round	2

## Swing-away joystick mount (adult)



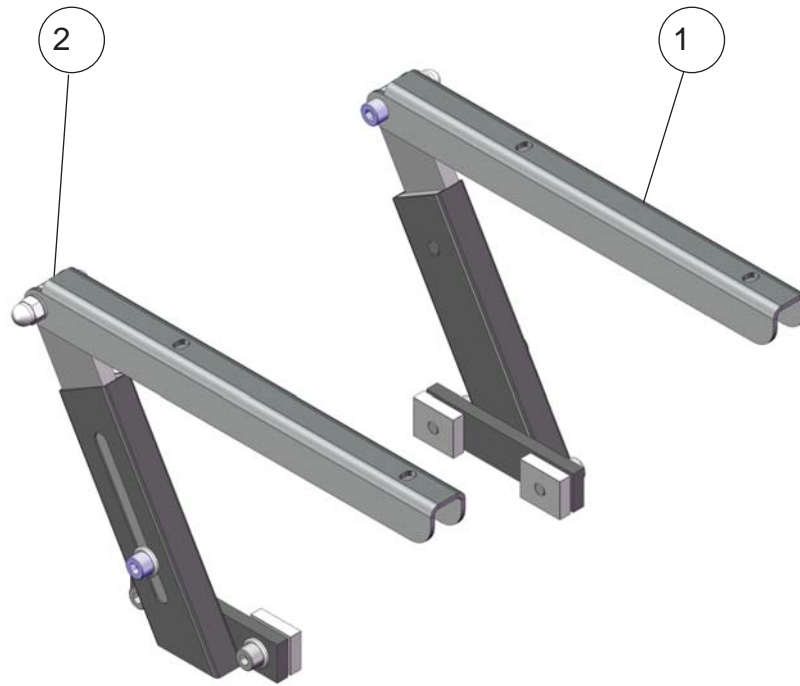
Pos	Art. No.	Description	Qty
1	C2-0070N	Swing-away joystick mount, right, adult	1
1	C2-0071N	Swing-away joystick mount, left, adult	1
2	CR-00688	Ajustable bracket 2, adult complete	1

# Joystick mount, Europa joystick up



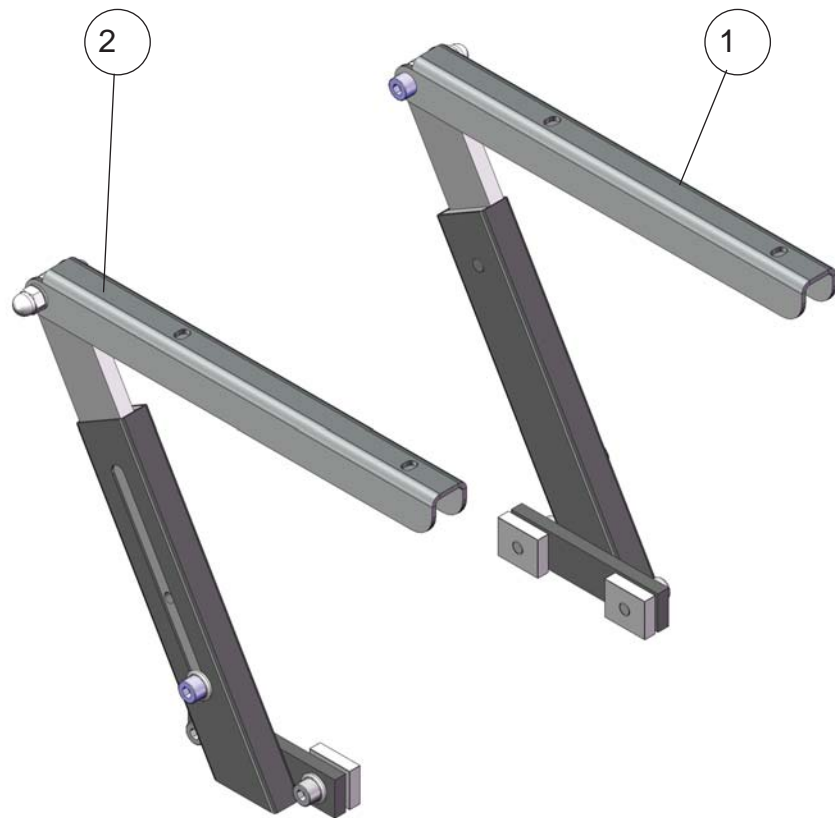
Pos	Art. No.	Description	Qty
1	C5-0098	Joystick mount for Europa joystick up	1

## Armrest low adult - high ajustable



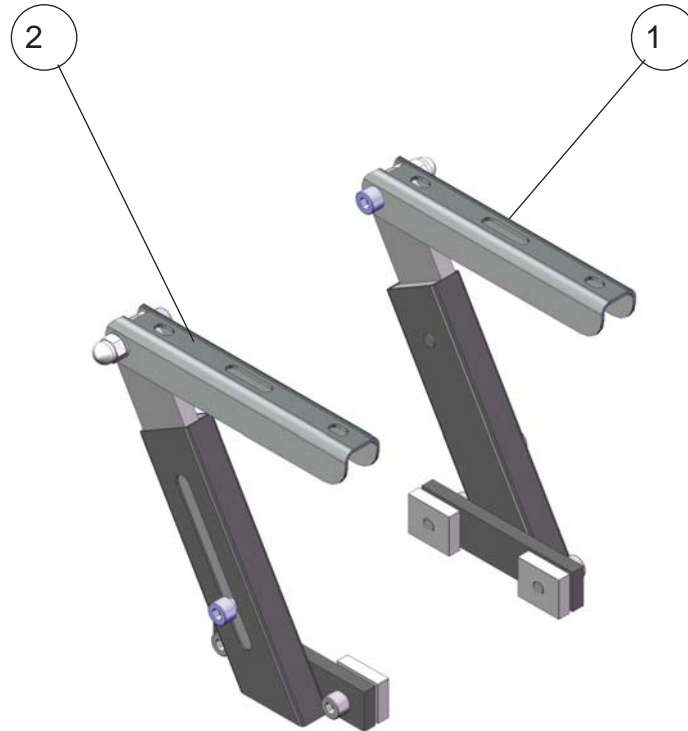
Pos	Art. No.	Description	Qty
1	SR-04523	Armrest mount low, left, adult	1
1	SR-04522	Armrest mount low, right, adult	1

## Armrest high adult - high adjustable



Pos	Art. No.	Description	Qty
1	SR-04489	Armrest mount high, left adult	1
1	SR-04488	Armrest mount high, right adult	1

## Armrest junior - high ajustable



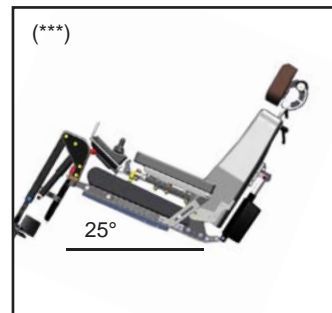
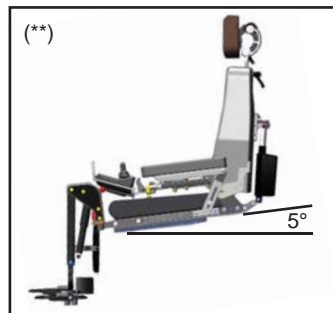
Pos	Art. No.	Description	Qty
1	SR-04525	Armrest mount, left junior	1
1	SR-04524	Armrest mount, right junior	1

## Technical data

Spider	
<b>General information:</b>	
Wheel sizes: Pivot wheels: back Central wheels: biggest	Ø230 mm / solid Ø350 mm / pneumatic
Total length w/o leg support	99 cm
Total width	65 cm
Weight incl. seat (45 cm)	165 kg
Weight without seat	142 kg
Tyre pressure for central wheels	3,5 bar
Max. speed	10 km/t
Clearance W/ lowered chassis	7,8 cm 3,8 cm
Change of level	6 cm
Turning circle	129 cm
Motor	2 motors with central drive
Max. user weight - standard	130 kg
Suspension	Yes
Climbing ability with max. user weight (130 kg) Clas B	8° = 14%
Optional extras possible	Yes
Standard colour	Black
Classification	Class B
<b>Batteries:</b>	
Batteries	2 x 12 V / 56 Ah
Battery dimensions	22.8 x 13.7 x 20.7 cm
Battery weight	2 x 17,5 kg
Charging time	At least 8 hours
Charger	24V DC - 10 A
Driving distance	30 km (*)
Electronic system	120 A P&G
<b>Seats (Spinalus):</b>	
Seat width	35, 40, 45 cm
Seat depth	32-52 cm
Height of backrest	36, 48, 56, cm
Height front edge seat to ground with lowest possible chassis and seat	380 mm
Height front edge seat to ground with raised chassis and lowered seat	420 mm
Height front edge seat to ground with highest possible chassis and seat	740 mm
Tilt forw. - seat lowest possible	5° (**)

<b>Spider</b>	
Tilt back - seat lowest possible	0°
Tilt forw. - seat highest possible	5° (**)
Tilt back - seat highest possible	25° (***)
<b>Lights:</b>	
Lights/Indicators	Extra equipment

(\*) Driving distance is depending on: temperature, wind, terrain, tyre pressure and user weight.







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