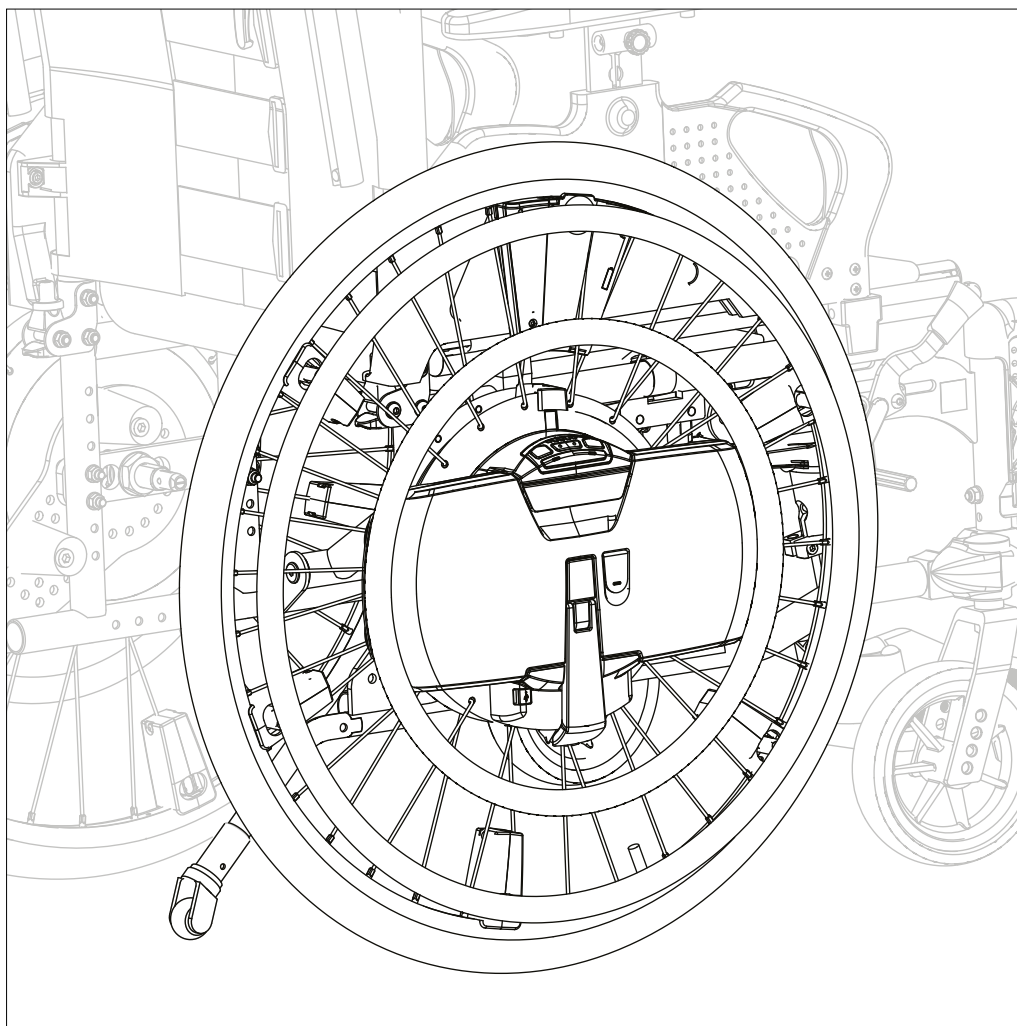


Power assist



TECHNICAL MANUAL

EN

# WheelDrive



QUICKIE®

The logo for QUICKIE, featuring a stylized, curved swoosh above the word "QUICKIE" in a bold, sans-serif font. A registered trademark symbol (®) is located at the top right of the word.

© 2017 Sunrise Medical

All rights reserved.

The information provided herein may not be reproduced and/or published in any form, by print, photoprint, microfilm or any other means whatsoever (electronically or mechanically) without the prior written authorization of Sunrise Medical.

The information provided is based on general data concerning the construction known at the time of the publication of this manual. Sunrise Medical executes a policy of continuous improvement and reserves the right to changes and modifications.

The information provided is valid for the product in its standard version. Sunrise Medical can therefore not be held liable for any damage resulting from specifications of the product deviating from the standard configuration. Illustrations contained in the manual may deviate from the configuration of your product.

The information made available has been prepared with all possible diligence, but Sunrise Medical cannot be held liable for any errors contained in the information or the consequences thereof.

Sunrise Medical accepts no liability for loss resulting from work executed by third parties.

Names, trade names, trademarks etc. used by Sunrise Medical may not, as per the legislation concerning the protection of trade names, be considered as being available.

## Table of content

1	Introduction.....	4
1.1	This manual	4
1.2	Identification of the product	4
1.3	Symbols used in this manual	5
1.4	Remarks before use	5
2	Safety .....	6
2.1	Personnel qualification	6
2.2	Identification on the product	6
2.3	Temperature	6
2.4	Electromagnetic radiation and interference	6
2.5	Markings on the WheelDrive	7
2.6	Technical specifications	7
2.7	Modifications / Adaptations	7
3	Parts in box and tools to use.....	8
3.1	Tools to use	8
4	Spare parts.....	9
4.1	Use of the parts lists	9
	01 WheelDrive exploded view	10
5	Service instructions .....	11
5.1	Glossary	11
5.2	Maintenance plan	11
5.3	Assembling, replacement and adjustment instructions	13
5.3.1	Preparation before driving with the WheelDrive	13
5.3.2	Determine which QRA to use	13
5.3.3	Mounting the variable quick release axle (QRA)	14
5.3.4	Releasing the QRA balls	15
5.3.5	Setting the QRA balls and adjust the outside axle tip to the release button	16
5.3.6	Mounting additional extender brackets (optional) for the support blocks	18
5.3.7	Mounting the support blocks on the WheelDrive	19
5.3.8	Mounting the tyres	21
5.3.9	Charger connector cover	22
5.3.10	Battery contacts cleaning	23
5.3.11	Anti-tip	24
5.3.12	Spoke guard	25
6	Troubleshooting.....	26
7	Technical product information.....	28
7.1	CE Declaration and standards	28
7.2	Technical specifications	28
8	Warranty .....	29
8.1	Definitions of terms	29
8.2	Warranty period table	29

# 1 Introduction

## 1.1 This manual

This service manual explains the mounting of the WheelDrive onto a manual wheelchair frame. The WheelDrive is compatible with most common wheelchair frames in the market. The mounting can be done with a number of standard parts, supplied with the WheelDrive wheels. For each wheelchair frame model a different setting is needed. Once a wheel is set for a certain frame construction, it cannot be put directly onto another frame construction; an adjustment to the settings is required.

Mechanics who do the mounting and repairs on this Power assist must be well trained and familiar with the repair methods and the maintenance of the WheelDrive. Always make sure that the work is carried out safely, particularly with respect to procedures requiring the Power assist to be lifted up. We advise that you contact our technical helpdesk before doing repair work on a WheelDrive that has been involved in an accident.

The following specifications are important when ordering parts:

- Model
- Year of manufacture
- Colour
- ID-number
- Part number
- Name of the part concerned

This information is provided on the identification plate. See 'Identification of the product'.

### Available documentation

This manual will help you to service the Power assist. Other relevant document available / required to service the Power assist is the user manual

### Service and technical support

For information concerning specific settings, maintenance or repair works please contact the Sunrise Medical Customer Service department. They are always prepared to help you. Ensure you have at hand:

- Model
- Year of manufacture
- ID-number

## 1.2 Identification of the product



The identification plate contains the following data:

- Article number
- Date of manufacture
- Left or right wheel
- Identification number

See for the location of the identification plate 'markings on the WheelDrive'.

---

### 1.3 Symbols used in this manual

---

**Note!**

*Pointing out possible problems to the user.*

**⚠ Caution!**

*Advice for the user to prevent damage to the product.*

**⚠ Warning!**

*Warnings for the user to prevent personal injury.*

---

Not following these instructions may result in physical injury, damage to the product or damage to the environment!

---

### 1.4 Remarks before use

---

**Note!**

*Pull of the rubber caps from the main battery contact, otherwise you do not have power for the system*

*Charge the battery first, before use*

---

## 2 Safety

### 2.1 Personnel qualification

Repairs may only be carried out by trained and authorised service technicians.

During the execution of their work, they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.

Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

### 2.2 Identification on the product

#### Safety

Safety information is indicated with the warning symbol.

#### **Warning!**

*Follow the instructions carefully next to these warning symbols! Not paying careful attention to these instructions could result in physical injury or damage to the Power assist or the environment. Wherever possible, safety information is also provided in this manual in the relevant chapter.*

### 2.3 Temperature

#### **Warning!**

*Avoid physical contact with the WheelDrive motor. The motor is continuously in motion during use and can reach high temperatures. After use, the motor will cool down slowly. Physical contact may cause burns.*

*Ensure that the WheelDrive is not exposed to direct sunlight for extended periods of time. Certain parts of the WheelDrive become hot if exposed to the sun for too long. This may cause burns or skin irritation.*

### 2.4 Electromagnetic radiation and interference

The Power assist has been tested for compliance with the applicable requirements regarding electromagnetic radiation (EMC requirements).

#### **Note!**

*It cannot be excluded that electromagnetic radiation emanating from mobile telephones, medical apparatus and other sources, may have an influence on the Power assist.*

*It cannot be excluded that the Power assist will interfere with the electromagnetic fields of, for example, shop doors, burglar alarm systems and/or garage door openers.*

In the unlikely event that such problems do occur, you are requested to notify your dealer immediately.

The Power assist can be affected by sources of radio waves, such as radio and TV transmitters, amateur radio stations, lifts, transmitting equipment, stereo radios and mobile telephones. If the Power assist electronics are not well shielded, sensitive electrical devices, such as shop alarm systems and garage door openers, can be affected. The WheelDrive has been tested for such interference. Please report any problems of this nature to your dealer immediately.

#### **Note:**

*There is no easy way of testing the effects of radio waves on the general immunity of the Power assist.*

## 2.5 Markings on the WheelDrive

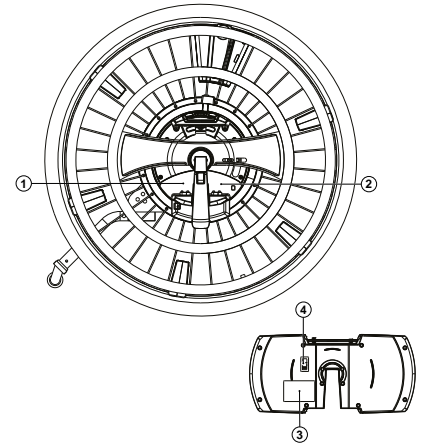
Never remove or cover up the markings, symbols and instructions affixed to the Power assist. These safety measures must remain present and clearly legible throughout the entire lifespan of the Power assist.

Replace or repair any markings, symbols or instructions that have become illegible or damaged immediately. Please contact your dealer for assistance.

### Product labels

The following sticker/label can be found on the product:

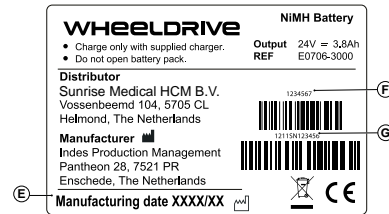
1. Power assist identification label
  - A. Article number
  - B. Date of manufacture
  - C. Left (L) or right wheel (R)
  - D. Serial number
2. Power assist manufacturer label
3. Battery identification label
  - E. Date of manufacture
  - F. Article number
  - G. Serial number
4. Firmware version label



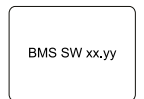
1



2



3



4

## 2.6 Technical specifications

No changes may be made to the technical specifications.

## 2.7 Modifications / Adaptations

Modifications, not executed by Sunrise Medical, to components and electronics of this product are not permitted.

### 3 Parts in box and tools to use

#### 3.1 Tools to use

The tools below are needed for various mechanical settings and maintenance:

Quantity	Description	Size (mm)
1	Screwdriver, medium	5
1	Screwdriver, crosshead	-
1	Hammer (plastic)	-
1	Chaser	-
1	Circlip pliers	-
1	Open ended spanner	6 / 10
1	Ring spanner	7 / 10 / 11 / 13 / 17
1	Torque wrench	-
1	Socket	7 / 8 / 10 / 11 / 12 / 13 / 16 / 17
1	Socket bit	6
1	Allen key	3 / 4 / 5 / 6 / 8
1	Locktite	243
1	Shock absorber adjustment key	-

#### **Caution!**

*Use only high-quality tools for the adjustment(s) described.*

*Make sure that the hexagon of the spanner is attached securely to the hexagon of the fastening article. This prevents the 'rotation' of hexagons of fastening articles and spanners that may affect proper adjustment.*



## 4 Spare parts

### 4.1 Use of the parts lists

This document is meant as a reference to order parts for the WheelDrive.

#### How to order

When ordering parts, please specify:

- ID-number (see the identification plate)
- Group (to which the relevant part belongs)
- Article number
- Number of parts required
- Description (in the relevant language)
- Dimensions (if applicable)

#### Remark

- If a part does not have an article number, it means that the part concerned cannot be purchased separately. The part concerned is part of the assembly shown. This assembly must be ordered as one piece. It has to be replaced in its entirety.
- Boxed position numbers refer to the relevant drawing.

#### Order address

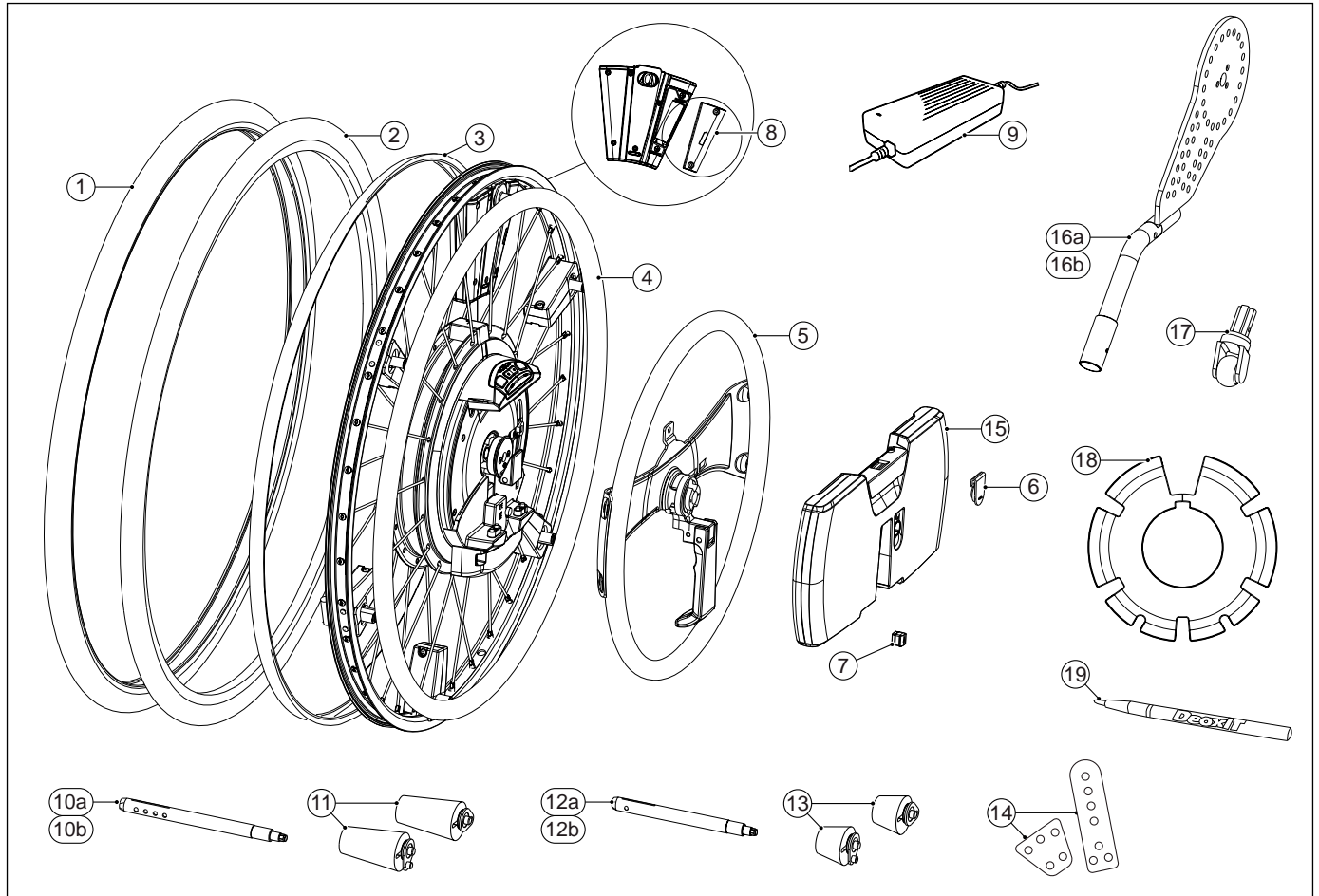
Please mail or fax your orders to Sunrise Medical.

#### Service technicians

Repairs may only be carried out by trained and authorised service technicians. During the execution of their work they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.

Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

## 01 WheelDrive exploded view



Pos	Qty	Article number	Description
1	2	9007932	Tyre 24" Marathon plus evolution black
1-5	1	1018154	Drive wheel assy with air punctureproof tyre 24" Marathon plus evolution black, right
1-5	1	1018155	Drive wheel assy with air punctureproof tyre 24" Marathon plus evolution black, left
2	2	9007934	Tube 24" Schrader valve
3	2	9007936	Rim tape 24" wheeldrive
6	2	9007938	Charger connector cover
7	1	9007941	USB cover (10 pieces)
8	1	9007945	Cover for sensor box AA batteries (2 pieces)
9	2	9007947	WheelDrive charger
10a,11,14	2	9008490	Mounting set 12 mm (total length of quick release axle = 172 mm)
10b,11,14	2	9008491	Mounting set 12,7 mm (total length of quick release axle = 172 mm)
12a,13,14	2	9008494	Mounting set 12 mm Short (total length of quick release axle = 118 mm)
12b,13,14	2	9008495	Mounting set 12,7 mm Short (total length of quick release axle = 118 mm)
15	2	9007957	Battery pack
16a	1	9007961	Anti-tip arm for 24" wheel, right
16b	1	9007963	Anti-tip arm for 24" wheel, left
17	1	9007959	Anti-tip wheel (2 pieces)
18	2	9008492	Spoke guard 24"
18	1	1017395	Spoke guard 24", set
19	1	9009885	Cleaner battery contacts WheelDrive
-	2	84538	24" Silicone push rim cover
-	1	1018562	24" Silicone push rim cover, set

## 5 Service instructions

### 5.1 Glossary

Assist Rim – Big rim, located at same position of normal wheelchair.

Drive Rim – Small rim, extra rim located in the centre.

Handle safety feature – Auto shutdown function when handle is opened.

Anti-tip – Tip-over protection, located at the back of the wheelchair.

Sensor Box – Triangular shaped box, located between the spokes

### 5.2 Maintenance plan

The maintenance plan is a reference guide for maintenance and inspection of the WheelDrive. Below, we have indicated what needs to be checked, how often this should be done and by whom.

Time span	Description	To be carried out by	
		User	Dealer
Daily	Charge batteries after each use	X	
Weekly	Check tire pressure	X	
Monthly	Inspect tire wear	X	
	Inspect support blocks fixture	X	
Every 6 months	Change batteries Sensor (both)	X	
Service appointment	Inspect the drive		X
	Inspect the electrical system		X
	Inspect the battery		X
	Inspect the safety tip feature		X
	Inspect the rims		X
	Overall inspection		X

However there is a signaling to warn the user at low battery status, it is recommended to change the batteries of the SensorBox every 6 months.

#### **Warning**

*Do not use rechargeable batteries.*

Maintenance plan should be carried out by the dealer every time the WheelDrive is presented for service-related matters.

#### **Maintenance requirement for re-use**

Clean battery contacts with special cleaner, to prevent extraordinary wear of contacts. Cleaner is available at Sunrise Medical.

#### **Warning**

*Do not use other cleaners than provided by Sunrise Medical.*

The following points must be carried out before re-use:

	Annual inspection						
	1	2	3	4	5	6	7
Inspect the drive							
Use Assist rim to drive forwards							
Use Assist rim to drive backwards							
Use Drive rim to drive forwards							
Use Drive rim to drive backwards							
Inspect electrical system							
Check all status LEDS							
Check for BEEP signaling							
Check function of all buttons							
Check handle safety feature							
Inspect the battery							
Check for damages							
Check locking in the WheelDrive							
Check charger connector cover							

	Annual inspection						
	1	2	3	4	5	6	7
Inspect anti-tip							
Check movement anti-tip leg							
Check anti-tip wheel							
Check fixture anti-tip							
Inspect Assist rim							
Check for damages							
Check movement							
Check centre position							
Inspect Drive rim							
Check for damages							
Check movement							
Check center position							
Overall							
Check for tire wear							
Check the support block installation							
List of necessary repairs:							

**Handle safety feature**

Handle safety feature prevents switching on the system with the handle in open position. Be sure to put the handle in close position when operating the WheelDrive.

**Batteries**

The battery is fitted with gold plated contacts. Make sure contacts are clean and undamaged.

**⚠ Warning**

Ensure the batteries are always fully charged. Not using the batteries for an extended period of time can damage them. Do not use the WheelDrive if the batteries are almost run down and never if the batteries are completely empty. This can seriously damage the batteries and you may run the risk of coming to an unintended standstill

Batteries contain acids. Damaged batteries are a serious health hazard.

If the capacity of the batteries is continually decreasing so that the wheelchair can only be used for short trips, this means that the batteries are reaching the end of their lifespan. The batteries then need to be replaced.

**Anti-tip**

The anti-tip can be positioned upwards or downwards.

**⚠ Warning**

Be sure to put the anti-tip in the downwards position before use.

**Rims**

The rim safety feature prevents using the WheelDrive when rims are operated during startup. Be sure to leave the rims in idle and untouched condition about 3 seconds after switching on the WheelDrive.

**⚠ Warning**

At all time the rims must be able to move clearly from other objects. Any disturbance from burrs or bends will affect the drive experience.

**Overall**

Tires must perform well under normal conditions. Insufficient inflation or over-inflation will reduce the drive experience. Cracks, bumps or lack of profile may increase the risk of a flat tire.

Badly installed WheelDrive will reduce the drive experience. Refer to 5.4 and 5.5 to check the support blocks and axle setting.

**⚠ Warning**

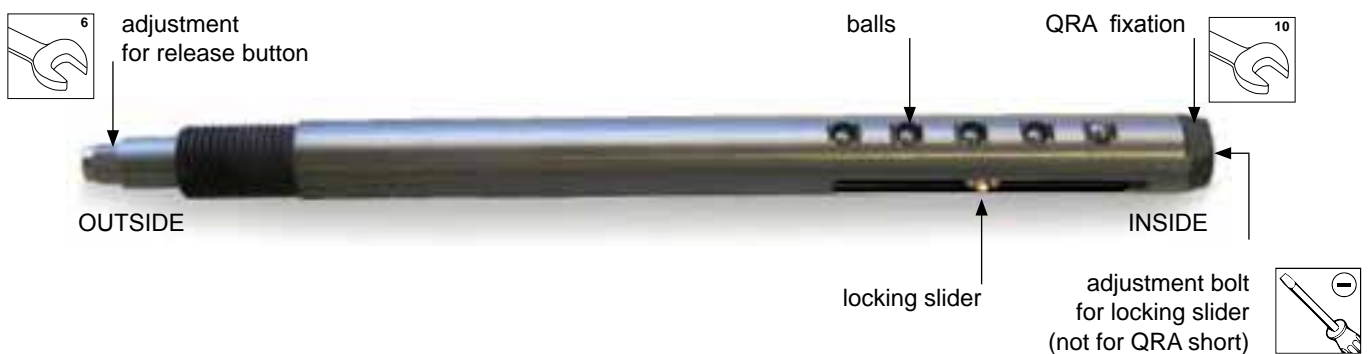
Support blocks and axles subject to wear must be replaced! If ignored, hazardous events can occur. Risk of serious injury.

### 5.3 Assembling, replacement and adjustment instructions

#### 5.3.1 Preparation before driving with the WheelDrive

The assembly of the WheelDrive should be performed by qualified professionals. Before driving with the Power assist, following actions need to be taken:

- Remove the contact covers
- Click the battery in the WheelDrive
- Follow the steps in the next paragraphs:
  - Determine which quick release axle (QRA) to use
  - Mounting the variable QRA
  - Releasing the QRA balls
  - Setting the QRA balls and adjust the outside axle tip to the release button
  - Mounting additional extender brackets (optional) for the support blocks
  - Mounting the support blocks
- Mounting the wheels on the chair and adjust the support blocks



#### 5.3.2 Determine which QRA to use

Two types of quick release axles are provided.

- Quick release axle for receivers of 25-75 mm
- Quick release axle short for a receiver of 37 mm

Each type comes in 2 diameters: 12 and 12,7 mm. Be sure to choose the right axle size before installing the WheelDrive. To determine the difference between 12 or 12,7 mm, look at the rib in the middle of the QRA. An axle without rib is a 12,7 mm QRA. An axle with rib is a 12 mm QRA.

**Axle diameter** Determine which QRA diameter you need to use, based on the receiver of the wheelchair frame. If you have no proper measuring device to measure the diameter of your axle receiver, you can also determine the required axle diameter by trial and error: the axle has to be a tight fit. Ensure that there is no play and that the axle can only be moved along the length of the axle.

**Axle length** If you have a wheelchair with a tilting mechanism, it might be useful to use the short quick release axle. Using the short QRA prevents conflicts between the QRA and the wheelchair's tilt mechanism. Before installing the short QRA, make sure the wheelchair frame is fitted with a 37 mm receiver. Alternatively replace the receiver as fitted with a 37 mm receiver. See in the next paragraph how to mount and adjust the QRA.



### 5.3.3 Mounting the variable quick release axle (QRA)

#### Preparation

To prevent the risk of injury, always turn off the Power assist and remove the battery.

#### Instructions

- Turn the release button adjustment completely into the outside end of the QRA. This can be done by hand or with an open ended spanner 6 mm.
- Put the QRA in the motor housing and tighten with your hand until you feel resistance.
- Tighten the axle completely into the housing with an open ended spanner 10 mm on the QRA fixation. You need to turn the axle many times until the axle is fully secured.

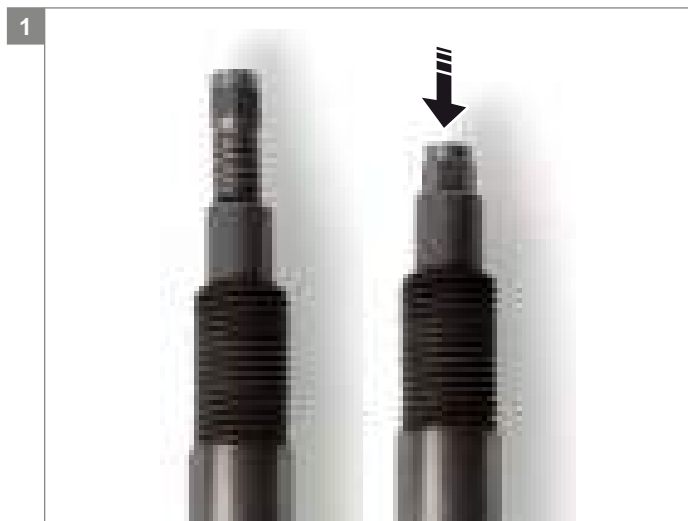
**⚠ Warning!** When the axle is not properly secured in the motor, it may come loose!

#### Relevant article numbers

- 9008490 Mounting set 12 mm
- 9008491 Mounting set 12,7 mm
- 9008494 Mounting set 12 mm, short
- 9008495 Mounting set 12,7 mm short

#### Tools used

- Open ended spanner, 6 mm
- Open ended spanner, 10 mm



**Note!** When the axle is not properly secured in the motor, it may come loose!

### 5.3.4 Releasing the QRA balls

#### Preparation

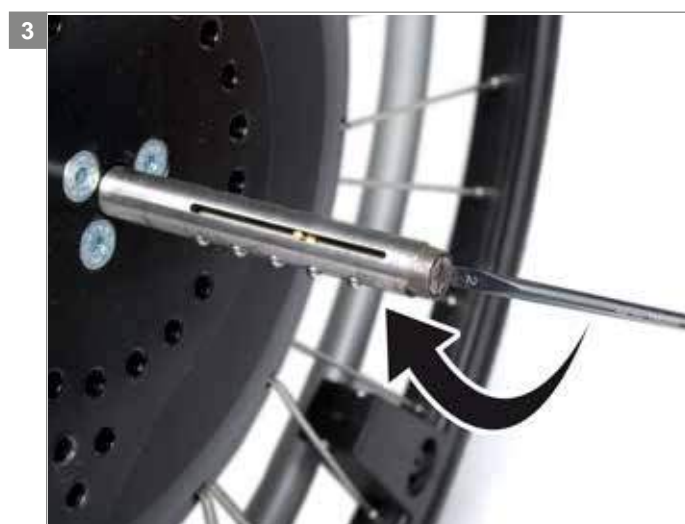
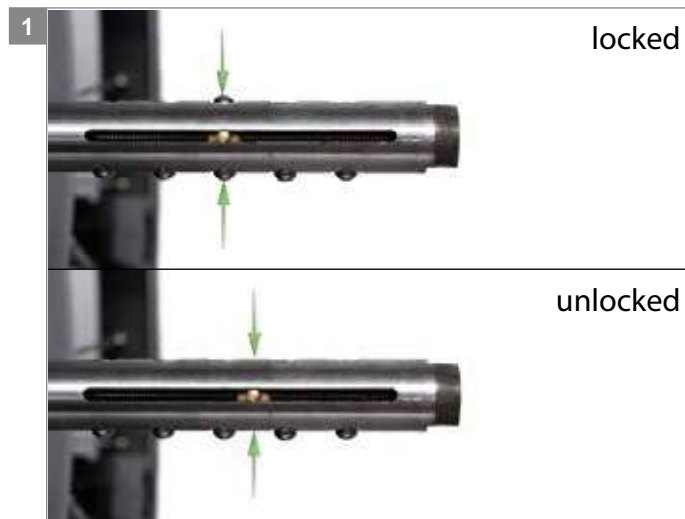
To prevent the risk of injury, always turn off the Power assist and remove the battery.

#### Instructions

- The QRA is locked if the slider is aligned with a pair of balls. Before you mount the WheelDrive to the wheelchair, the QRA balls need to be released (unlocked).
- The side of the axle with the adjustment bolt for locking slider is visible on the inside of the wheel.
- Unlock the axle by turning the adjustment bolt for locking slider with a screwdriver. The slider indicator will become unaligned with the balls.
- You can mount the WheelDrive to the wheelchair

#### Tools used

Screwdriver



### 5.3.5 Setting the QRA balls and adjust the outside axle tip to the release button

#### Preparation

To prevent the risk of injury, always turn off the Power assist and remove the battery.

#### Instructions

- Put the WheelDrive with anti-tip and the QRA completely in the axle receiver. The anti-tip plate should touch the axle receiver.
- On the inside of the QRA, loosen the QRA With an open ended spanner 10 mm until a ball comes fully out of the axles-receiver.

**⚠ Warning!** Do not loosen the axle more than 10 mm outwards (second pair of balls). The axle will not be properly secured in the motor and may come loose!

- The QRA is in its correct position, to lock itself to the axle receiver.
- On the outside of the QRA, turn the adjustment for release button with a open ended spanner 6 mm. The outside tip of the QRA should touch the quick release button on the handle. When it is not touching at all, the wheel cannot be removed properly. If it is touching the quick release button too hard, the slider will unlock and the wheel may come loose.

**Note!** When the outside tip of the axle touches the quick release button do not continue. Tip; adjust the outside tip of the axle at a distance of 1 to 2 mm from the quick release button.

- Remove the wheel and adjust the adjustment bolt for the locking slider with a screwdriver. The slider should be aligned with the pair of balls to lock these balls at the length of the axle receiver.

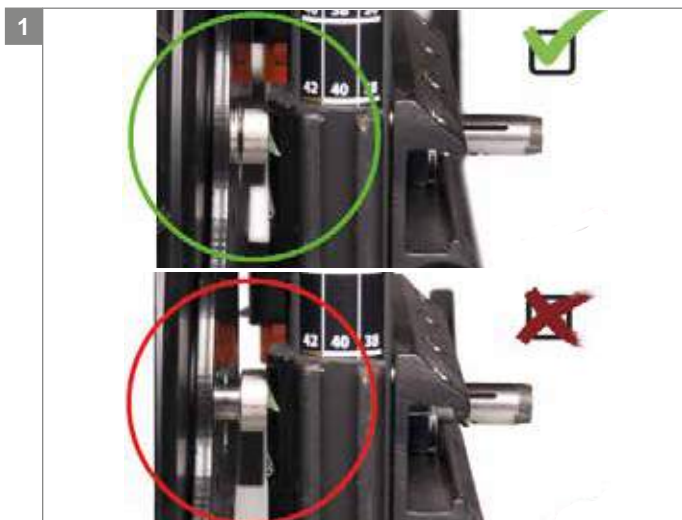
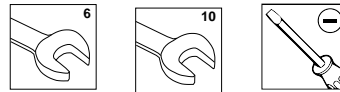
**⚠ Warning!** Make sure that the slider is perfectly aligned of the balls. If not, the slider may come unlocked and loose to the wheelchair.

- Put the wheel back on the wheelchair frame by pushing the release button located on the handle.

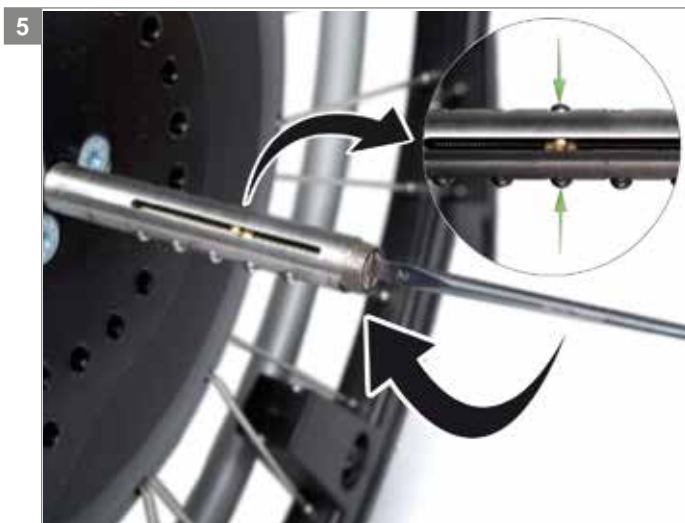
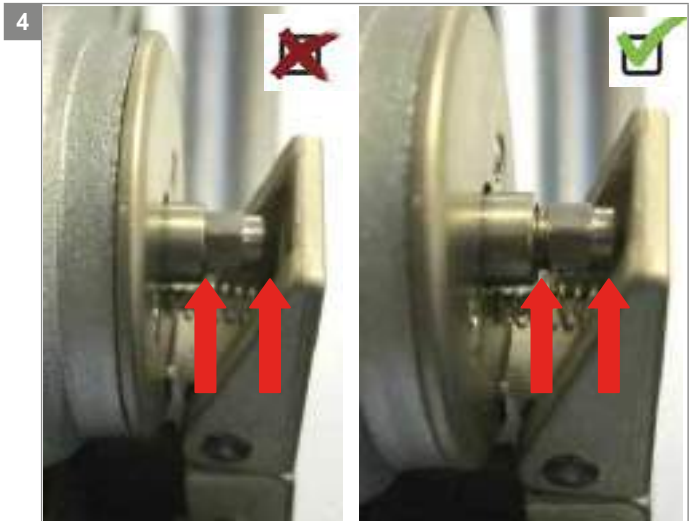
- End check: remove the wheel and put the wheel back on. When you hear a distinct click the QRA is properly adjusted. When you do not hear a distinct click, it means the balls cannot protrude from the QRA. The QRA will not lock the axle in the receiver. Repeat the previous steps to fine-tune the setting of the QRA.
- **Note!** When adjusting the outside tip, use a screwdriver on the slider adjustment bolt on the inside tip of the QRA to keep the slider perfectly aligned with the balls.

#### Tools used

Open ended spanner, 6 mm  
Open ended spanner, 10 mm  
Screw driver







### 5.3.6 Mounting additional extender brackets (optional) for the support blocks

#### Preparation

To prevent the risk of injury, always turn off the Power assist and remove the battery.

In some cases there is insufficient space to position the support blocks on the anti tip plate. In other cases the support blocks might interfere with other wheelchair parts or a tilting mechanism. In that case optional additional extender brackets can be useful.

Two additional extender brackets are available as an option. Use only the bracket best fitted for the circumstances.

**Note!** Do not mount one bracket on the other bracket.

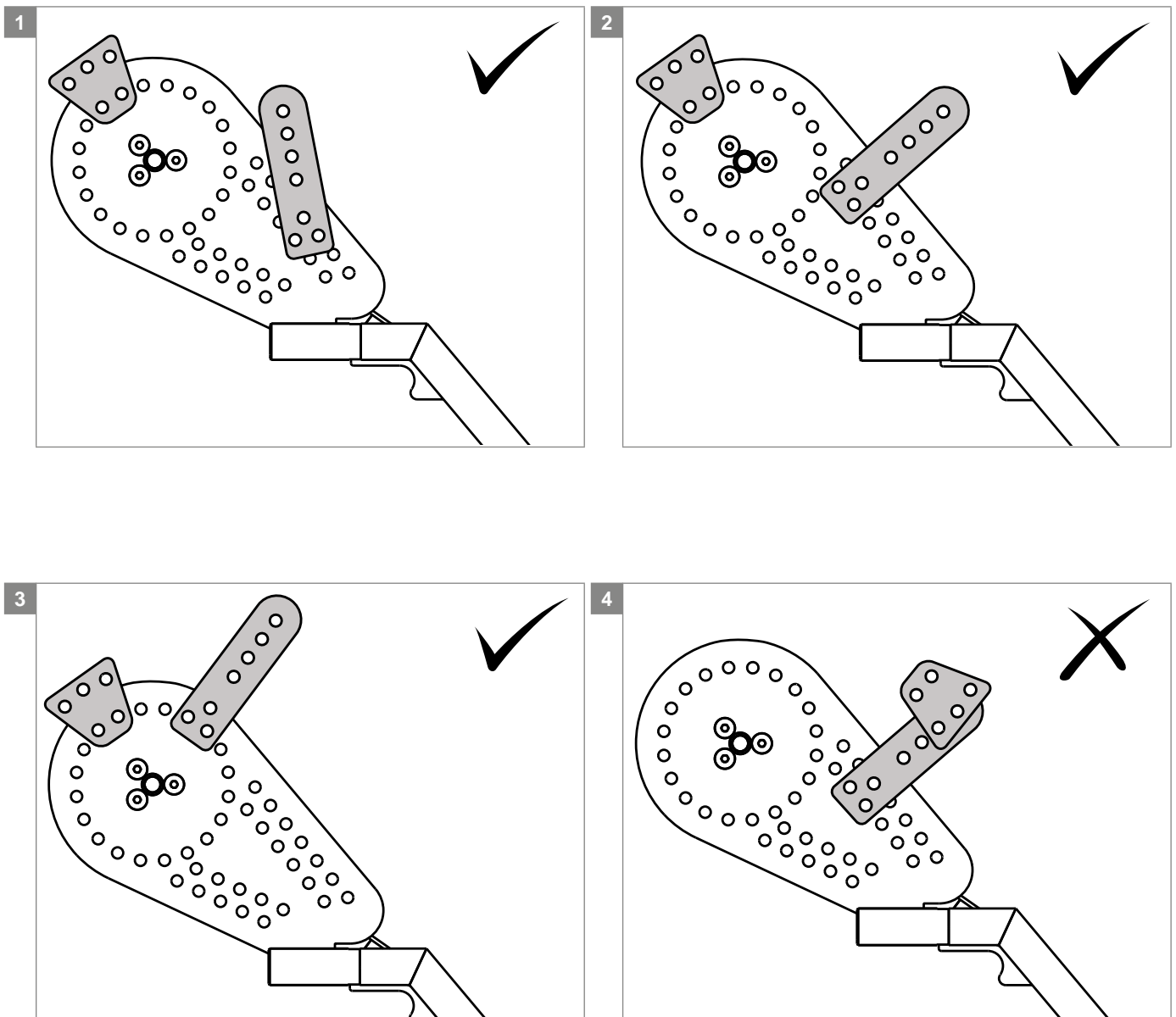
#### Instructions

- Choose the best fitting bracket, search for a possible position for the bracket and determine which mounting holes to use.

- Fix the bracket with two bolts, using a torque wrench (25 Nm).
- Search for a possible position for the support blocks on the bracket, close to the frame.
- Tighten the support blocks-bolt finger tight, so the blocks can still rotate around the bolt.
- Rotate the support block against the frame and tighten the bolt

#### Tools used

Torque wrench 25 Nm, hexagonal 5 mm bit



### 5.3.7 Mounting the support blocks on the WheelDrive

#### Preparation

To prevent the risk of injury, always turn off the Power assist and remove the battery.

#### Instructions

- Position the anti-tip wheel 6 cm above the ground by using the supplied carton triangle.
- Assemble the 4 support block parts
- Determine the position for the first support block close to the frame that counters the rearward rotation of the motor and the anti-tip plate. Tighten the support block-bolt finger tight, so the block can still rotate around the bolt.
- Determine the position for the second support block close to the frame that counters the forwards rotation of the motor and the anti-tip plate.

**Note!** Make sure that both blocks stop rotational movement in opposite directions.

**Note!** Make sure that the supporting area of the wheelchair frame is stiff enough for countering the motor torque.

Tighten the support block-bolt finger tight, so the block can still rotate around the bolt.

- Place the plastic film on the support block to create a proper play for taking off the wheel.
  - Rotate the support blocks one after another clockwise towards the frame and tighten the bolt.
  - Remove the plastic film from the block by pulling the pull tab. It is important to remove the film smoothly, to make sure the block and film are not too tight to the frame.
- Note!** The support blocks may not mount too loose. When the blocks are loose along the frame, the anti-tip plate rotates with the motor
- Make sure the support blocks will be fixed over half way through the frame of the wheelchair (step 5)

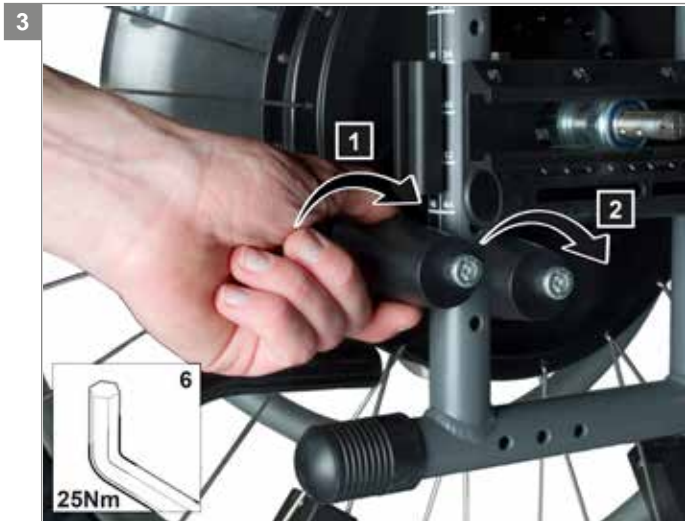
#### Relevant article numbers

- 9008490 Mounting set 12 mm
- 9008491 Mounting set 12,7 mm
- 9008494 Mounting set 12 mm, short
- 9008495 Mounting set 12,7 mm short

#### Tools used

Torque wrench 25 Nm, hexagonal 6 mm bit





### 5.3.8 Mounting the tyres

#### Preparation

To prevent the risk of injury, always turn off the Power assist and remove the battery.

#### Instructions

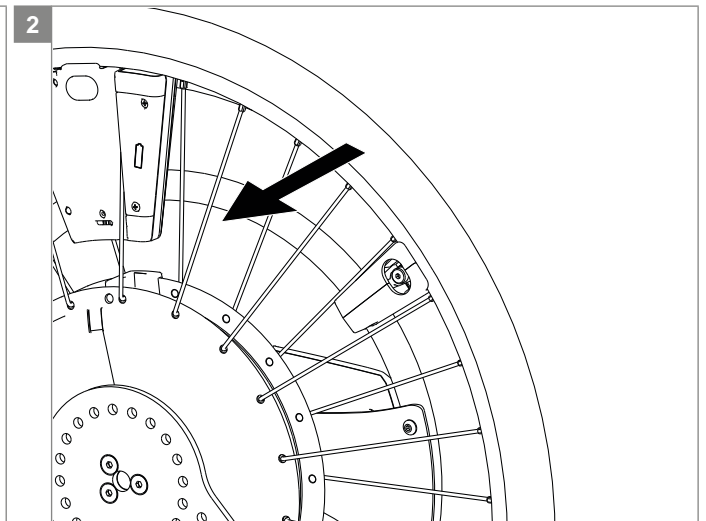
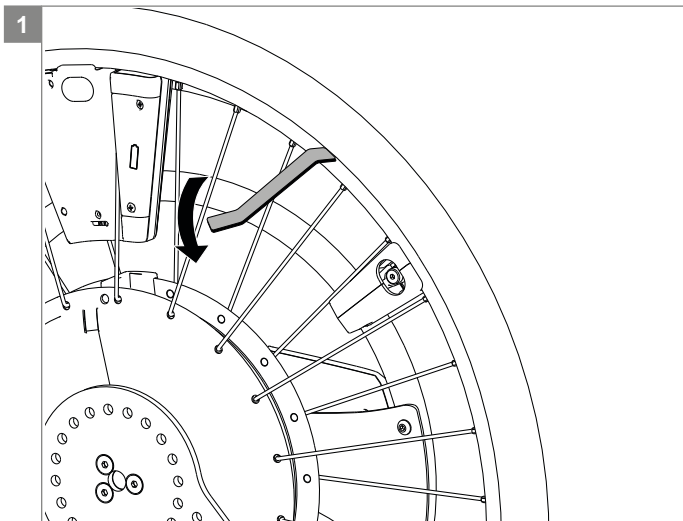
- **Note!** Do not remove or change the rim protection. The rim protection is custom designed to bear the high pressure tires.
- Unlock the WheelDrive and remove from frame.
- Removal of the outside tire only in inwards direction. Do not remove the outside tire to the front, damage to rims is possible.
- The WheelDrive tyre is designed for indoor- and outdoor use. The tyre has a pre-defined rolling direction. Please pay attention when the tyre is replaced or removed for any service.
- Remove tyre like normal wheelchair tyres.

#### Relevant article numbers

9007932 Marathon Plus Evolution Black

#### Tools used

Tyre levers



### 5.3.9 Charger connector cover

**Preparation**

To prevent the risk of injury, always turn off the Power assist and remove the battery.

**Instructions**

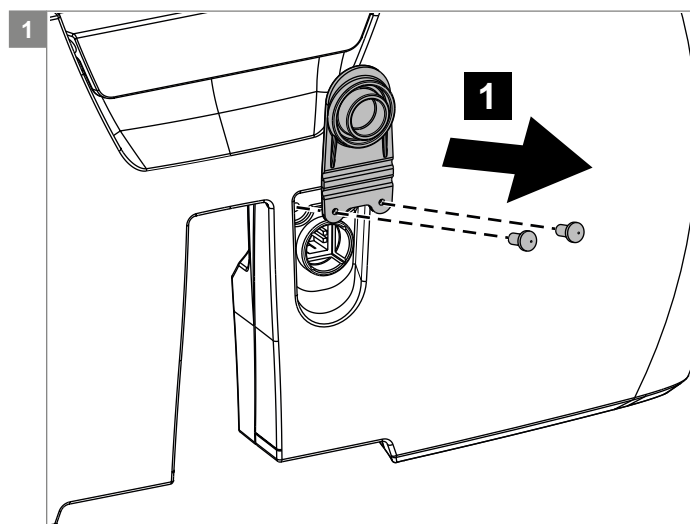
- Unscrew the 2 bolts (REMFORM M3x6).
- Remove the charger connector cover.
- Mount the connector cover in reverse order

**Relevant article numbers**

9007938 Charger connector cover

**Tools used**

Philips head screwdriver



### 5.3.10 Battery contacts cleaning

**Preparation**

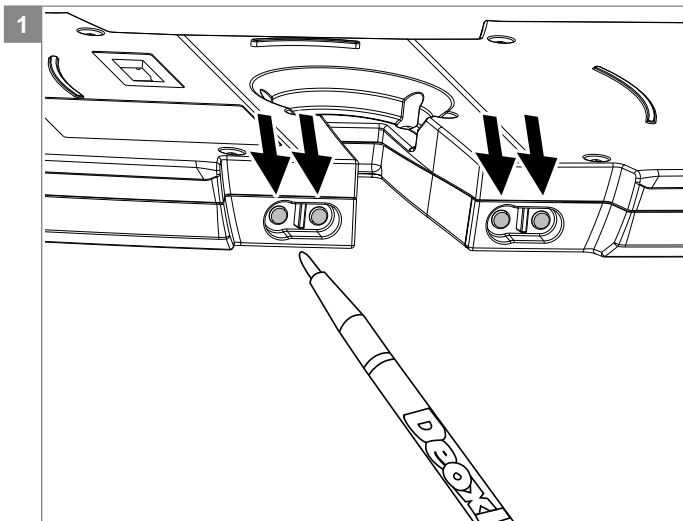
To prevent the risk of injury, always turn off the Power assist and remove the battery

**Relevant article numbers**

9009885 Contact cleaner

**Instructions**

Clean all 4 contacts, refer to manual on cleaner.



### 5.3.11 Anti-tip

#### Preparation

- To prevent the risk of injury, always turn off the Power assist and remove the battery
- Unlock the Wheeldrive and remove from frame.

#### Instructions

- Remove the 3 screws
- Mount the Anti-tip in the desired position.

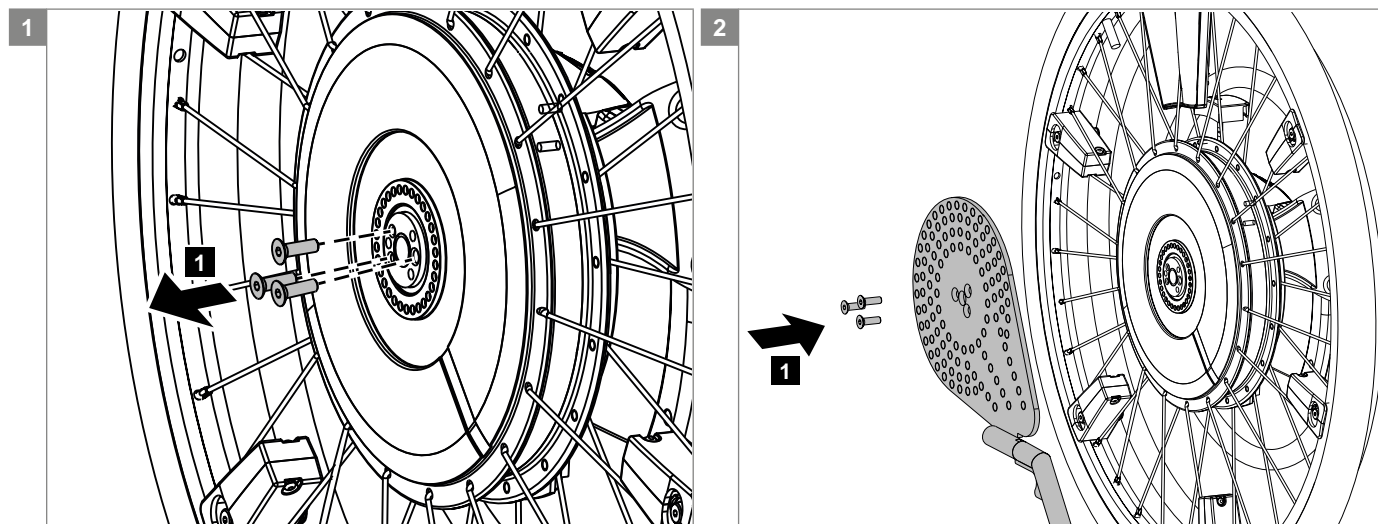
**Note!** Anti-tip are right and left oriented

#### Relevant article numbers

- 9007961 Anti-tip arm, right
- 9007963 Anti-tip arm, left

#### Tools used

- Allen key 4
- Loctite 243





### 5.3.12 Spoke guard

#### Preparation

- To prevent the risk of injury, always turn off the Power assist and remove the battery
- Unlock the WheelDrive and remove from frame.

#### Instructions

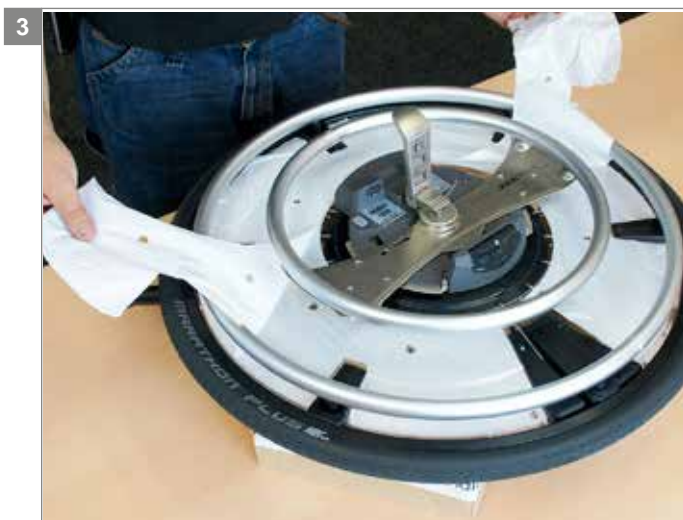
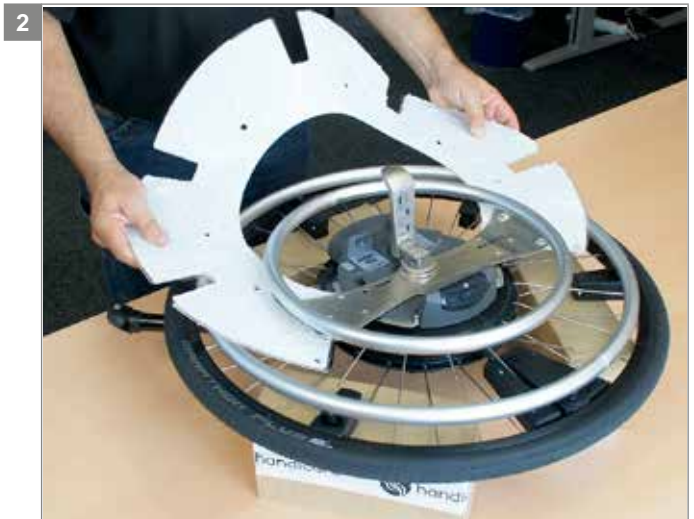
- Put the WheelDrive on a platform, example some boxes, to prevent axle damage.
- **Note!** Do not remove the protective film from the spoke guard. Place the spoke guard through the two WheelDrive rims
- Remove the protective film
- Click the spoke guard on the spokes (10x)

#### Relevant article numbers

- 9008492 Spoke guard 24"
- 1017395 Spoke guard 24", set

#### Tools used

n/a



## 6 Troubleshooting

The WheelDrive is beeping:

After switching ON, the following signalling can occur			
Signal	Effect	Notification	Solution
🔊 4 beeps with Profile I button blinking	One or both of the rims are not operational	Assist rim and/or Drive rim is not at its rest position	Take away the reason for the rim displacement to enable the rim usage again
During first usage of the Assist rims, the following signalling can occur			
Signal	Effect	Notification	Solution
Slow blinking as in figure 29 and beeping for ~10 seconds	None	25% remaining capacity of sensor box AA batteries	Replace sensor box AA batteries soon
Fast blinking as in figure 29 and beeping for ~10 seconds	None	10% remaining capacity of sensor box AA batteries	Replace sensor box AA batteries as soon as possible
During normal usage, the following signalling can occur			
Signal	Effect	Notification	Solution
🔊 Long beeps for several seconds	Braking on the motor activated	Speed is getting too high	Slow down to 2 km/h
Battery indication off for approx. 4 seconds then blinking and beeping for approx 7 seconds	WheelDrive will switch to less accurate method of battery capacity measurement	Loss of contact with battery management system	Replace battery pack
🔊 Long beeps	Power will be switched off	WheelDrive not used for 15 minutes	Turn on the system if you want to use the WheelDrive again
		Wheel handle not closed	Close the wheel handle and put on the system if you want to use the WheelDrive again
		Battery is empty	Recharge your batteries and put on the system if you want to use the WheelDrive again
		Speed is too high	Slow down the wheelchair to a standstill and put on the system if you want to use the WheelDrive again
		OFF button is pushed	Put on the system if you want to use the WheelDrive again
🔊 3 beeps, repeating until rotation stops	Possibly damage to charger cable or connector	Wheel is rotating while charger is connected	Stop rotating the wheel

Other possible errors;

Possible cause	Check
WheelDrive no function	<ul style="list-style-type: none"> <li>Batteries placed?</li> <li>Batteries placed correctly?</li> <li>Batteries charged?</li> <li>Check battery contacts at both sides.</li> </ul>
WheelDrive has no support by the Assist rim	<ul style="list-style-type: none"> <li>Is the Assist rim undamaged?</li> <li>Are batteries placed in sensor box</li> <li>Are batteries sufficient to power the sensor box</li> <li>The use of rechargeable batteries (this is not allowed).</li> <li>At start-up of the system the Assist rim is not in center position. This results in warning beeps by the system. Refer to user manual for warning beeps.</li> </ul>
WheelDrive has no support by the Drive rim	<ul style="list-style-type: none"> <li>Is the Drive rim damaged?</li> <li>Is the Drive rim bend in any way?</li> <li>At start-up of the system the Drive rim is not in center position. This results in warning beeps by the system. Refer to user manual for warning beeps.</li> </ul>
WheelDrive is driving by itself (no input is given by user and the WheelDrive starts to move)	<ul style="list-style-type: none"> <li>Check center position of Assist rim</li> <li>Check center position of Drive rim</li> <li>Check for damages both rims</li> </ul>

Possible cause	Check
WheelDrive does not charge	<ul style="list-style-type: none"><li>• Check if plug is in wall outlet.</li><li>• Check if plug is firmly placed in charger.</li><li>• Check if plug is placed firmly in battery.</li><li>• Check if the green indicator light is working on the charger.</li><li>• When charging, the indicator changes to red.</li><li>• If indicator is red flashing, an error is detected.</li></ul>
WheelDrive installation problems	<ul style="list-style-type: none"><li>• Check correct installation</li><li>• Press lock button for installing and releasing wheel</li><li>• Remove wheel in a straight line outwards</li></ul>
The wheelchair does not drive in a straight line	<ul style="list-style-type: none"><li>• Check the battery voltage</li><li>• Check the tyre pressure</li><li>• Check if the wheelchair frame is straight lined (by placing the original wheels)</li></ul>

## 7 Technical product information

### 7.1 CE Declaration and standards



This product complies with the COUNCIL DIRECTIVE 93/42/EEC of 14 June 1993 concerning medical devices. The product also meets the following requirements and standards. This has been verified by independent test organizations.

Standard	Definition/description
EU guideline 93/42 EEC	Requirements as stated in Appendix 1 apply
EN 12183 (2009) Class B	Manual wheelchairs - Requirements and test methods
EN 12184 (2009) Class B	Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods
ISO 7176-14 (2008)	Power and control systems for electrically powered wheelchairs and scooters - Requirements and test methods
EN 62304 (2006)	Medical device software – Software life-cycle processes
ISO 7176-21 (2009)	Requirements and test methods for electromagnetic compatibility of electrically powered wheelchairs and scooters, and battery chargers

### 7.2 Technical specifications

Product	Model
WheelDrive right wheel	E0706-5500
WheelDrive left wheel	E0706-5501

WheelDrive	
Class	Indoor and outdoor use (EN12184 class B)

Description	Unit	
Additional width in reference with manual wheel per side	mm (inch)	21,5 (0.8)
Total additional width in reference with manual wheel	mm (inch)	43 (1.7)
Total weight without batteries	kg (lbs.)	9,7 (1.5)
Weight of the batteries (set)	kg (lbs.)	3,6 (0.6)
Wheel diameter	inch	22 / 24
Distance range approx (ISO 7176-4)*		
Assist rim	km (mi)	20 (12.4)
Drive rim	km (mi)	12 (7.5)
Climbing capacity for obstacles (outdoor), driving backwards	mm (inch)	50 (2)
Maximum speed forward** (support until)	km (mi)	6 (3.7)
Operating temperature	°C	-10 and +40
Ingress Protection Rating	Splashing water proof IPX4	
Battery	NiMH, 24V, 3.8Ah	
Battery charge temperature	°C	0 till +40
Battery storage temperature	°C	-20 till +40
Battery service life	500 load cycles	
Maximum user weight	kg (lbs.)	130 (20.5)
Battery charger	N100-24, reference number Indes_SUP012	
Charging time (full-charge) approx	hours	2
AA batteries sensor box	A-brand Alkaline AA (LR6) battery, 2700mAh	

\* Range dependent on user weight, condition of tyres, type of terrain, condition of battery and weather conditions

\*\* Driving faster than 15 km/h is not allowed with a fully charged battery pack; a potential overvoltage will result in a shut-down

## 8 Warranty

### 8.1 Definitions of terms

Definitions of terms used in this warranty:

- After sales service part: Part purchased after the initial product that is durable and may be subjected to natural wear and tear or natural contamination during normal operation within the lifetime of the product.;
- Consumable part: Part that is subjected to natural wear and tear or natural contamination during normal operation within the lifetime of the product (section 9 of Sunrise Medical HCM B.V.'s general terms and conditions of sale);
- Client: Those who purchase the product directly from Sunrise Medical;
- Corrective action: Repair, replace or refund of the product;
- Dealer: Those who re-sell the product to the User;
- Defect: Any circumstance due to which the product is not sound or fit to use, caused by a lack of quality of the material used to manufacture the product as well as the quality of the manufacturing process;
- Option: An accessory delivered with the initial product by Sunrise Medical to extend the standard product model;
- Product: Product that is delivered according to brochure or contract (e.g. wheelchair, scooter, battery-charger etc.);
- Part: Part of product that can be exchanged or replaced. This can be an option, accessory, service part or consumable part;
- Returns: Product or part that needs to be returned;
- RMA-process user: Process to return goods, contact your dealer;
- RMA-process client: Process to return goods, contact Sunrise Medical's Customer Service;
- User: Those who use the product;
- Warranty: The rights and obligations set forth in this document;
- Warranty period: The period of time during which the warranty is valid;
- Warranty provider: Sunrise Medical HCM B.V., Vossenbeemd 104, 5705 CL Helmond, The Netherlands (also referred to as Sunrise Medical).

Notwithstanding the rights and obligations of Sunrise Medical, Client and User set forth in Sunrise Medical's general terms and conditions of sale, the rights of the Client and/or User towards Sunrise Medical in case of defects are limited to the provisions set forth in this warranty. For the duration of the warranty period Sunrise Medical guarantees that the product is without defects. In case of any defects the User is required –within two weeks after discovery of the defect- to contact the dealer. He has to complete a return form and return the product or part via the RMA-process. Sunrise Medical will, at its sole discretion, take the corrective action it seems fit under the given circumstances within a reasonable period of time (depends on nature of claim) from receipt of the completed return form. The warranty period will not be extended after a corrective action.

### 8.2 Warranty period table

#### Power assist

Description	Warranty period	Examples include, but are not limited to the parts mentioned below
Drive system*	1 year	Motor, motor mechanics
Electronics*	1 year	Controller, controlling mechanism, wiring harness, electronic components
After sales service parts	New: 1 year after invoice Repaired: 90 days after invoice	Brakes
Consumable parts	40 days after invoice	Spoke guards, grip friction pushrim cover
Options/ Accessories	1 year	Delivered with the initial product

\* also in case of after sales service part delivery

Sunrise Medical will only accept shipment costs and corrective costs related to warranty on equipment during the warranty period.

This warranty will void in case of:

- The product and/or its parts being modified;
- Changes in cosmetic appearance by use;
- Failure to observe the instructions for use and maintenance, use other than normal use, wear and tear, negligence, collateral damage by neglect of earlier symptoms, overloading, third-party accidents, non-original parts used and defects not caused by the product;
- Circumstances beyond our control (flood, fire, etc.).

This warranty does not cover:

- Tyres and inner tubes
- Batteries (covered by the battery manufacturer's warranty).

Clients and/or Users have legal (statutory) rights under applicable national laws relating to the sale of consumer products. This warranty does not affect statutory rights you may have nor those rights that cannot be excluded or limited, nor rights against the entity from whom the product was purchased. Clients may assert any rights they have at their sole discretion.



Indes B.V.  
P.O. Box 265  
7500 AG Enschede  
The Netherlands  
[www.indes.eu](http://www.indes.eu)



The WheelDrive is a product of Indes Production Management B.V. and is in conformity with the provisions of the medical devices directive concerning class I medical devices.

**Version list**

Version	Page	Draw	Changes
2015 v2	10	1	<ul style="list-style-type: none"> <li>• Changed article number 9007953, 9007951, 9007967 and 9007965 into 9008490, 9008491, 9009494 and 9008495</li> <li>• Deleted article number 9007955 and 9008200 (parts are included in new numbers)</li> <li>• Added article number 1017395 Spoke guard, set</li> </ul>
	16-27		Updated article numbers
	16-17		Combined service instruction 'Setting the QRA balls' and 'Setting adjustment screw'
	18		Add note and image 'not mounting the bracket on bracket'
	19-20		Combined service instruction 'Mounting the support blocks on the WheelDrive' and 'Mounting the wheels on the chair and adjusting the support blocks'
	25		Deleted service instruction 'Parameter setting' (currently not available)
	25		Added service instruction 'Spoke guard'
	26-27		<ul style="list-style-type: none"> <li>• Added 'WheelDrive is bleeping' tables</li> <li>• Added possible cause 'The wheelchair does not drive in a straight line'</li> </ul>
	29		Updated warranty text
2016 V1	-	-	Replaced Handicare by Sunrise Medical HCM
	10	1	<ul style="list-style-type: none"> <li>• Deleted article numbers 9007930, 9007949 and 9007943</li> <li>• Added article numbers 1018154, 1018155 and 9007936</li> <li>• Updated drawing</li> </ul>
	21	5.3.8	Updated instruction
Rev.1.0	1,32		Update covers
	-	-	Replaced Sunrise Medical HCM by Sunrise Medical
	7		Update sub paragraph Product labels
	10		<ul style="list-style-type: none"> <li>• For article numbers 1018154 and 1018155 changed Pos 1-4 into Pos 1-5</li> <li>• Added article number 84538</li> </ul>
	29		Updated warranty text
Rev.2.0	10	1	<ul style="list-style-type: none"> <li>• Changed description article numbers 1018154, 1018155, 84538</li> <li>• Changed quantities article numbers 9007932, 9007934, 9007936, 9007938, 9007947, 9007957, 9008492, 84538</li> <li>• Added article number 1018562 24" Silicone push rim cover, set</li> </ul>
Rev 3.0	10		<ul style="list-style-type: none"> <li>• Updated article descriptions for article numbers 9008490, 9008491, 9008494, 9008495.</li> </ul>
	13-20		<ul style="list-style-type: none"> <li>• Updated paragraphs 5.3.1. to 5.3.7. No change in the way of working, just in the description.</li> </ul>

AU  
Sunrise Medical Pty. Ltd.  
6 Healey Circuit, Huntingwood  
NSW 2148  
Australia  
T: +61 (2) 9678 6600  
E: enquiries@sunrisemedical.com.au  
www.SunriseMedical.com.au

BE  
Sunrise Medical HCM B.V.  
Vossenbeemd 104  
5705 CL Helmond  
The Netherlands  
T: +32 (0)78 150 159  
E: customerservice@sunrisemedical.be  
www.SunriseMedical.be

CH  
Sunrise Medical AG  
Lückhalde 14  
3074 Muri/Bern  
Schweiz/Suisse/Svizzera  
T: +41 (0)31 958 3838  
E: info@sunrisemedical.ch  
www.SunriseMedical.ch

DE / AT  
Sunrise Medical GmbH & Co. KG  
Kahlbachring 2-4  
69254 Malsch/Heidelberg  
Deutschland  
T: +49 (0) 7253/980-0  
E: kundenservice@sunrisemedical.de  
www.SunriseMedical.de

DK  
Sunrise Medical ApS  
Park Allé 289 G  
DK-2605 Brøndby  
T: +45 70 22 43 49  
Email: info@sunrisemedical.dk  
www.SunriseMedical.dk

ES / PT  
Sunrise Medical S.L.  
Polígono Bakiola, 41  
48498 Arrankudiaga – Vizcaya  
España  
T: +34 (0) 902142434  
E: marketing@sunrisemedical.es  
www.SunriseMedical.es

FR  
Sunrise Medical S.A.S  
ZAC de la Vrillonnerie  
17 Rue Mickaël Faraday  
37170 Chambray-Lès-Tours  
T: + 33 (0) 2 47 55 44 00  
E: info@sunrisemedical.fr  
www.SunriseMedical.fr

IT  
Sunrise Medical S.r.l.  
Via Riva, 20 – Montale  
29122 Piacenza  
Italia  
T: +39 0523 573111  
E: info@sunrisemedical.it  
www.SunriseMedical.it



NL  
Sunrise Medical HCM B.V.  
Vossenbeemd 104  
5705 CL Helmond  
The Netherlands  
T: +31 (0)492 593 888  
E: customerservice@sunrisemedical.nl  
www.SunriseMedical.nl  
www.SunriseMedical.eu (International)

NO  
Sunrise Medical AS  
Delitoppen 3  
1540 Vestby  
Norway  
T: +47 66963800  
E: post@sunrisemedical.no  
www.SunriseMedical.no

PL  
Sunrise Medical Poland Sp. z o.o.  
ul. Elektronowa 6,  
94-103 Łódź  
Polska  
T: + 48 42 275 83 38  
E: pl@sunrisemedical.de  
www.Sunrise-Medical.pl

SE  
Sunrise Medical AB  
Box 9232  
400 95 Göteborg  
Sweden  
T: +46 (0)31 748 37 00  
E: post@sunrisemedical.se  
www.SunriseMedical.se

UK  
Sunrise Medical  
Thorns Road  
Brierley Hill  
West Midlands  
DY5 2LD  
United Kingdom  
T: +44 (0) 845 605 66 88  
E: enquiries@sunmed.co.uk  
www.SunriseMedical.co.uk

Dealer / distributor:

Serial number:



TM\_WheelDrive\_EU\_INT\_Rev.3.0\_2017\_04\_19

