NEATECH™
REHAB SERIES

EVO 1

SERVICE MANUAL

2019-03 0.2

DECLARATION OF CONFORMITY

The manufacturer

Neatech.it

Via A. de Curtis 4/A, 80040, Cercola (NA), Italy

declares that

the wheelchair EVO 1
(reference code: S045)
other names: EVO-1, EVO 1, EVO-1 FWD, EVO-1 RWD, EVO 1 FWD, EVO 1 RWD, PEGASUS EVO 1

satisfies the requirements laid down by the European Directive 93/42;
according to the criteria for classification of Annex IX of this Directive, it is classified as:

class I medical device

It also complies with the requirement of the harmonized standards:
UNI EN 12182 – Technical aids for disabled person
UNI EN 12184 – Electrically powered wheelchairs, scooters and their chargers - Requirements and test methods

Index

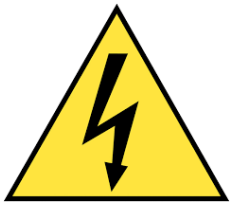
Symbols in this manual

WARNING

This symbol means presence of danger for the user or damage for the product. Always follow instructions when this symbol is present.

PINCH HAZARD

This symbol means presence of pinch hazard.



ELECTRICAL WARNING

This symbol means presence of danger related to the presence of electrical energy. Please pay special attention when this symbol is present.

INFORMATION

This symbol means general information intended to simplify or best explain the use of the product.

CONTACT INFORMATION

This symbol means the need of contacting an authorized service center or the manufacturer.

TEMPERATURE

The temperature of some surfaces may increase when the product is exposed to external heat sources as direct sunlight.

TIPPING HAZARD

Tipping hazard is strongly reduced because of the design of the product according to EN 12182.

In any case, please pay special attention during the adjustments and use of the product to prevent any damage to the user or product itself.

Any transport on a slope greater than the maximum safety slope can be dangerous.

Please don't seat on armrests.

ANTI-TIP DEVICES

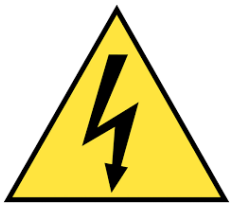
Using anti-tippers substantially reduces your risk of falling over, which can cause serious injury. The Anti-Tippers will keep you from falling over, but they will limit your ability to be pulled up curbs and some other maneuvers. **IT IS NOT POSSIBLE TO HAVE THIS WHEELCHAIR WITHOUT ANTITIP DEVICES**.

Center of balance of the wheelchair and so its stability cab be affected by:

- User position
- Us of a backpack
- Tilting of the seat

PINCH HAZARD

Make sure your feet do not hang up or get caught in the space between the footrests. In general, make sure you have proper space in areas you will travel through to minimize pinching or entrapment of body parts.



ELECTROMAGNETIC RADIATION DANGER

The behavior of the wheelchair while driving may be affected by electromagnetic fields created by transceivers such as: Citizens band (CB) radios, walkie-talkies, fire and police radios, cellular phones, lap-top computers, commercial radio and television broadcast antennas. PLEASE USE CAUTION in the presence of these devices.

Electromagnetic radiation can cause your chair, without warning, to:

- release its brakes
- move by itself
- move in unintended directions

If any of these occur, it could result in severe injury to you or others. Electromagnetic radiation can damage the control system of your chair. There is no way to know the effect on electromagnetic immunity if you add accessories or modify this chair. Any change to your chair may increase the risk related to electromagnetic radiation. Parts from other suppliers have unknown electromagnetic properties. **The wheelchair might disturb the operation of devices in its environment.**

INFORMATION

For information on how to obtain information and instructions in a format appropriate for use by visually impaired people please contact the manufacturer.

Service manual is intended for technical personnel to maintain and repair wheelchairs. It is important to follow the instructions contained in this manual in order to professionally work with the product.

The qualified personnel who works with wheelchairs must comply with all provisions of occupational safety and common sense in order to preserve his own safety.

The manufacturer declines all responsibility for any accidents occurring during the working with the product.

WARNING: It is prohibited to use the product or its parts for any purpose other than that indicated. For a correct use please follow the instructions given in this manual. The manufacturer disclaims any responsibility for damages caused by improper use of the product.

The manufacturer disclaims any responsibility for inappropriate selection of product model and configuration.

Information in this manual may be subject to change without notice. All information, pictures and specifications are based on the product details that were available at the time of preparation of this document. They are representative examples and they are not intended to be exactly as the actual product.

MODIFICATIONS

Any unauthorized modification to the product may increase the risk of personal injury and damage to the product itself. All modifications should be done by an authorized service center.
Do not use any unauthorized accessories or spare parts on the product. Do not use the product in combination with other medical devices without first having considered any risk due to combination of more products.

MANUFACTURER

For any need not expressly explained in this manual, please contact the manufacturer.

Neatech.it SRL

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INCIDENT REPORTING

If an incident occurs, please contact an authorized service center. For a list of authorized service center please contact the manufacturer.

DISPOSING

This product and all its components can not be treated as household waste. For more detailed information on how recycling and disposal this product contact your local waste disposal service.

4.3 Use as seat in a motor vehicle

The wheelchair is designed to be secured facing forward when used as a seat in a motor vehicle and it complies with the requirements of ISO 7176-19:2008.

It is possible to use four-point strap systems or the DAHL docking station.

Ease of access to, and maneuverability in, motor vehicle can be significantly affected by wheelchair size and turning radius. Smaller wheelchairs or with a shorter turning radius will generally provide greater ease of vehicle access and maneuverability to a forward- facing position.

Always use ISO 10542-1 approved Wheelchair Tiedown and Occupant Restraint Systems, which are suitable for the weight of the wheelchair or Dahl docking.

Wheelchair users should transfer to the vehicle seat and use the vehicle-manufacturer-installed restraint systems whenever it is feasible and the unoccupied wheelchair should be stored in a cargo area or secured in the vehicle during the travel.

For the correct positioning of occupant belt restraints on the user, please consider following.

- The pelvic belt should be worn low across the front of the pelvis, so that the angle of the pelvic belt is within the preferred zone of 30° to 75° to the horizontal, similar to that shown in figure.

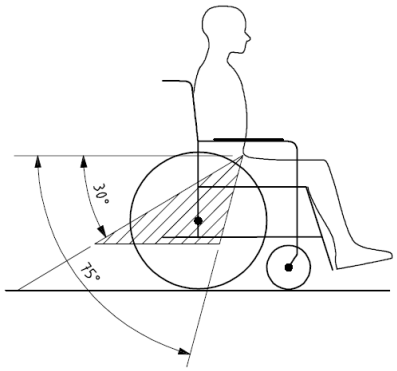
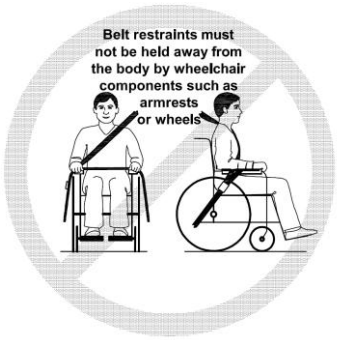
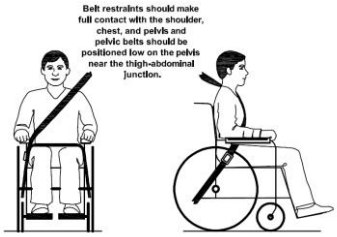


Figure 41

- Belt restraints should be adjusted as tightly as possible, consistent with user comfort.
- Belt should not be twisted during the use.

IMPROPER BELT RESTRAINT FIT	PROPER BELT RESTRAINT FIT
	
BELT RESTRAINTS MUST NOT BE HELD AWAY FROM THE BODY BY WHEELCHAIR COMPONENTS SUCH AS ARMRESTS OR WHEELS	BELT RESTRAINTS SHOULD MAKE FULL CONTACT WITH THE SHOULDER, CHEST AND PELVIS AND PELVIC BELTS SHOULD BE POSITIONED LOW ON THE PELVIS NEAR THE THIGH ABDOMINAL JUNCTION

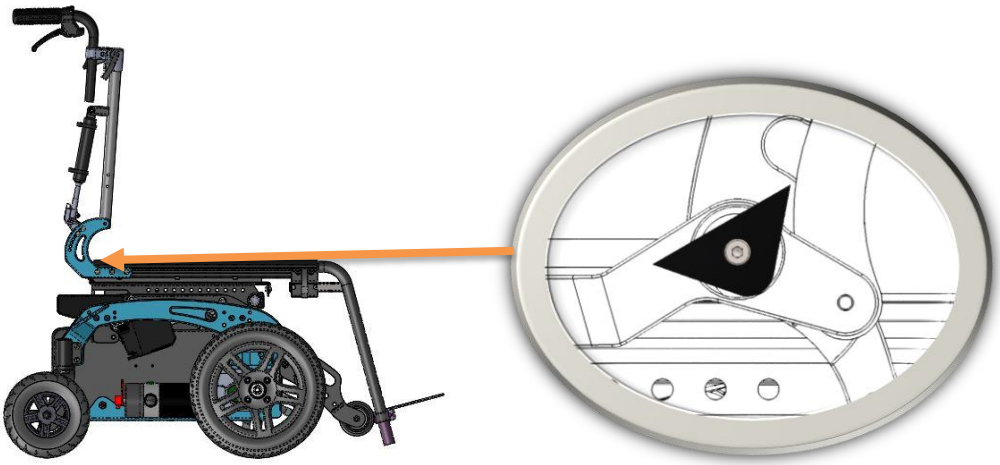


Figure 42

In order to mount pelvic belt on the wheelchair, firstly mount the fixing plate as shown in figure. Use socket head cap screw M6x10 and a 5 mm allen wrench. Repeat operation for both left and right side of the wheelchair.	**ALLEN WRENCH**  5 mm

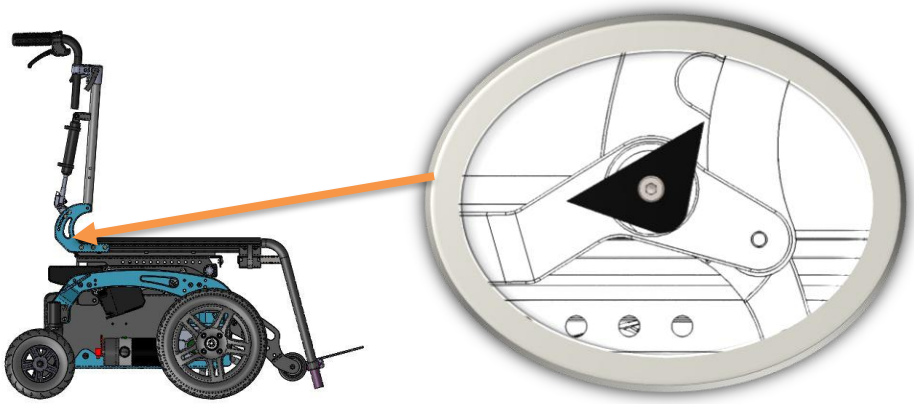


Figure 43

In order to mount chest belt on the wheelchair, firstly mount the fixing plate as shown in figure. Use socket head cap screw M6x10 DIN 912 and a 5 mm allen wrench. Repeat operation for both left and right side of the wheelchair.	**ALLEN WRENCH**  5 mm

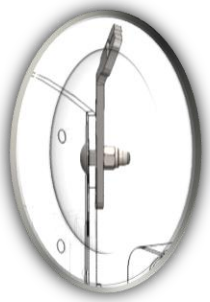


Figure 44

Moreover, chest belt must be fixed in the upper part of the backrest. Firstly mount the fixing plate as shown in figure. Use hushroom head square neck bolt screw M5x16 DIN 603, M5 nut, and a 8 mm open-end wrench. Repeat operation for both left and right side of the wheelchair.	**OPEN-END WRENCH**  8 mm

WARNING

The seating system must be set in the DEFAULT POSITION when used in a motor vehicle. Particularly be sure that the seat is horizontal, legrest are completely down and backrest is completely up. For more information see section 3.12.

WARNING

Evo3 wheelchair has lots of configurations and accessories. The wheelchair safety when used as a seat in a motor vehicle is assured by the manufactured if the specific configuration is mentioned in the order form and if all instructions in the manual are followed. Particularly it may exist some options or accessories that are not compatible with the use of the wheelchair as a seat in a motor vehicle, or it may exist some accessories that require some precautions.

WARNING

If the backrest is with gas springs, when using the wheelchair as a seat in a motor vehicle, it is necessary to lock the movement of the gas springs with the locking system shown in the picture. Always repeat the operation for the left and right side of the wheelchair. WARNING: Safety of wheelchair and user can't be assured when the movement of gas springs is not correctly locked while using the wheelchair as a seat in a motor vehicle.

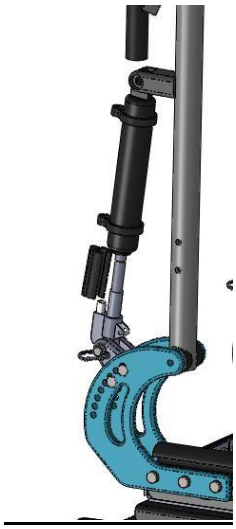


Figure 45

WARNING

The wheelchair complies with the requirements of ISO 7176-19:2008 and has been designed and tested for use only as a forward-facing seat in a motor vehicle.

Compliance with this standard does not preclude using the wheelchair facing rearward in large accessible vehicles such as autobus.

WARNING

The wheelchair has been dynamically tested in a forward facing orientation with the ATD restrained by both pelvic and shoulder belts.

WARNING

Both pelvic and shoulder belt should be used to reduce the possibility of head and chest impacts with vehicle components.

WARNING

In order to reduce the potential of injury to vehicle occupants wheelchair tray should be removed and secured separately in the vehicle.

WARNING

When possible other auxiliary wheelchair equipment should be either secured to the wheelchair or removed from the wheelchair and secured in the vehicle during travel, so that it does not break and cause injury to vehicle occupants in the event of a collision.

WARNING

You should not use this product in a motor vehicle if your weight is less than 22 kg.

WARNING

Postural supports should not be relied on for occupant restraint in a moving vehicle unless they are labelled as being in accordance with the requirements specified in ISO 7176-19:2008.

WARNING

The wheelchair should be inspected by a manufacturer's representative before reuse following involvement in any type of vehicle collision.

WARNING

Alterations or substitutions should not be made to the wheelchair securement points or to structural and frame parts or components without consulting the wheelchair manufacturer.

WARNING

Wheelchair has sealed type batteries. Never use different battery type when used in a motor vehicle.

WARNING

Care should be taken when applying the occupant restraint to position the seatbelt buckle so that the release button will not be contacted by wheelchair components during a crash.

4.3.1 Four points tie-down

Use the tie down points marked with the symbol shown in figure.

Figure 46

Use the tie down points marked with the symbol shown in figure. Hook the wheelchair in 4 points: two in the front part and two in the rear part.

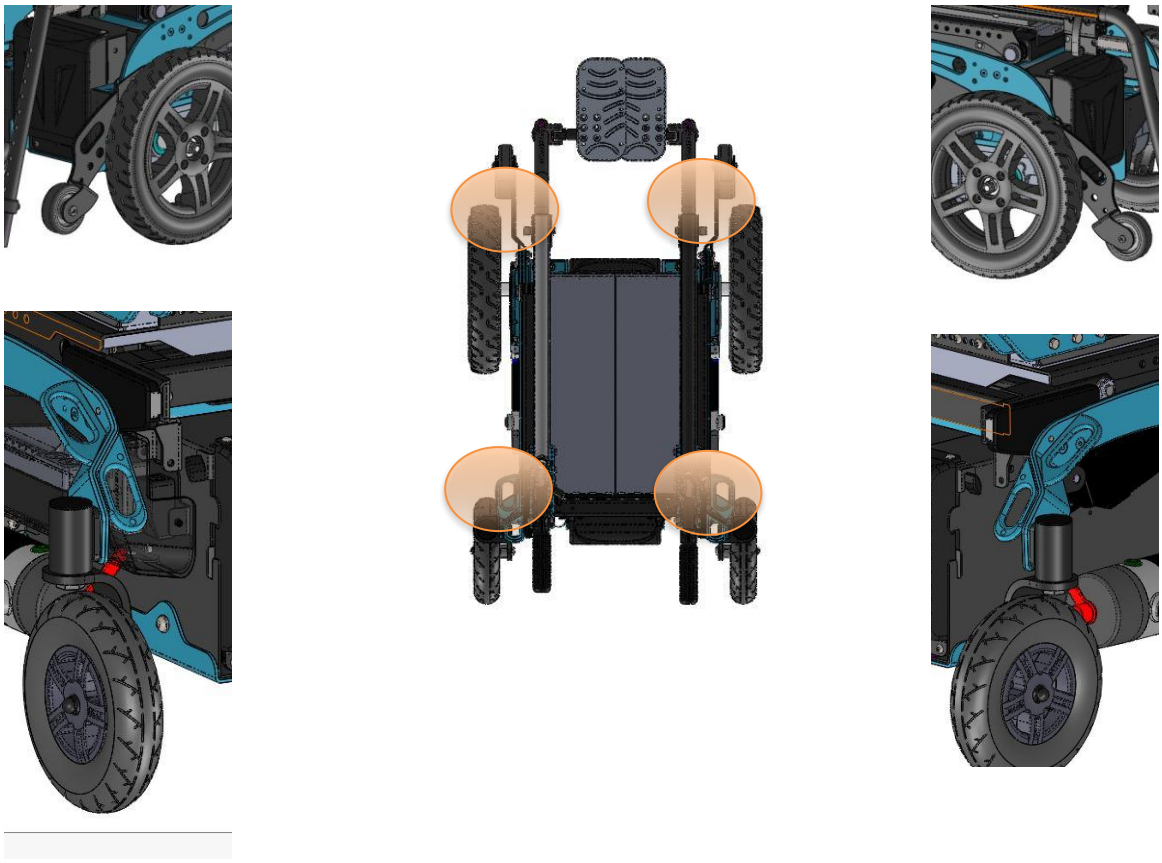


Figure 47

Tie down straps should form angles shown below.

PREFERRED ANGLES OF FRONT WHEELCHAIR TIE DOWN STRAPS

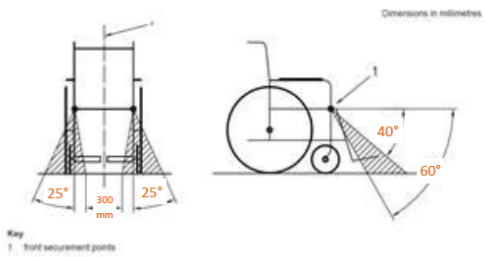


Figure 48

PREFERRED ANGLES OF REAR WHEELCHAIR TIE DOWN STRAPS

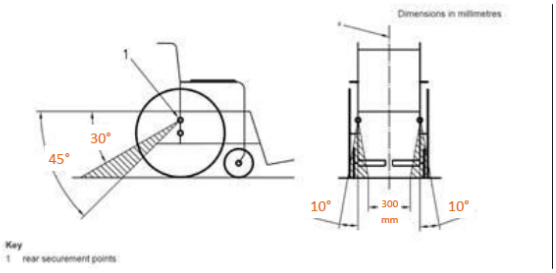


Figure 49

WARNING

Always use four tie down straps.

4.3.2 Dahl engineering docking station

WARNING

Please be sure that the vehicle is equipped with a fully working and compatible Dahl docking system.

Figure 50

- To use the system, maneuver the wheelchair slowly and in a uniform direction over the docking station. The lock plate under the wheelchair helps to guide the wheelchair into place in the docking station. When the lock plate is fully engaged in the docking station, a spring-action locking pin automatically secures the lock plate.
- The docking station is equipped with a control switch that indicates whether the lock plate is correctly secured in the docking station. As soon as the lock plate comes into contact with the locking pin, a warning tone will sound and the red led in the control panel will light up until the lock plate is either fully engaged or else the wheelchair is removed from the docking station. As an indication that the wheelchair is properly secured, the warning tone will cease, the red diode in the control panel will go out and the green led will light up.
- When the wheelchair is correctly secured, the safety belt should be fitted and adjusted so that it fits the user.
- **UNLOCKING PROCEDURE**. When the vehicle has been brought to a halt, remove the safety belt. To unlock commence by driving the wheelchair forward to release pressure on the lock pin and then press the red release button in the control panel. The locking pin will be triggered/released for approx 5 seconds, after which the locking pin is automatically locked/activated again. Do not attempt to reverse out the docking station until the red LED on the control module, which indicates the unlock position, has been illuminated. Move the wheelchair away from the docking station within this 5-second period.

WARNING

Attempting to reverse the wheelchair before the red LED has been illuminated will result in blocking the docking station lock mechanism which makes it impossible to reverse. If this happens repeat above unlocking procedure.

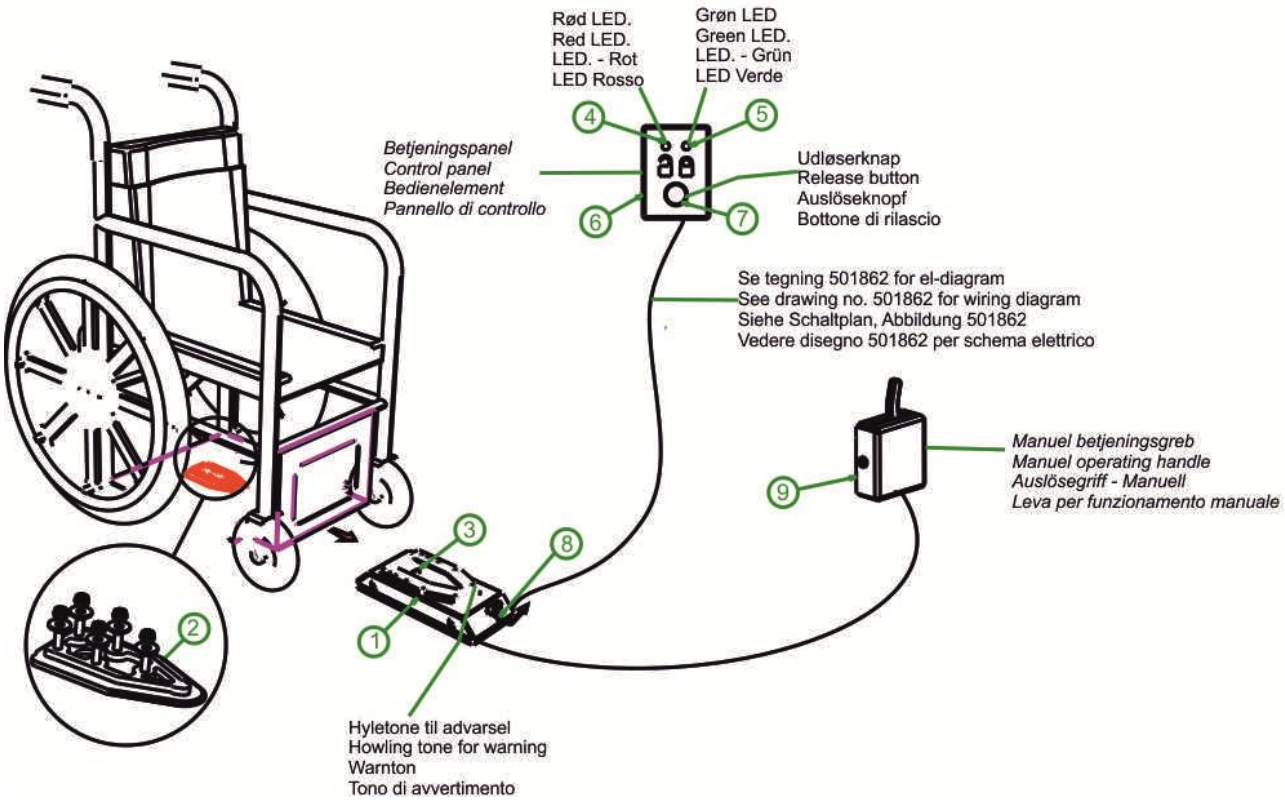


Figure 51

CONTACT INFORMATION

For more information contact the manufacturer of the wheelchair or the manufacturer of the docking station.

Dahl Engineering

Løvevej 3

DK-7700 Thisted

Tel. +45 96 18 00 77

https://dahlengineering.dk

sales@dahlengineering.dk

4.3.3 Mounting of the Dahl engineering docking station - Installation of Dahl Lock plate assembly under the wheelchair

Please also refer to the Maintenance Manual User Guide for the Dahl Docking Station and vehicle specific installation instructions from Dahl Engineering. Instruction must be complied with.

Installation of the Dahl Docking station must be carried out by a registered car adaptation company by a qualified and experienced technician/fitter.

CONTACT INFORMATION

For ordering the Dahl Docking station and components needed for the installation in the vehicle and other accessories, please contact the manufacturer of the docking station.

Dahl Engineering
Løvevej 3
DK-7700 Thisted
Tel. +45 96 18 00 77
https://dahlengineering.dk
sales@dahlengineering.dk

Kit Dahl

Figure 52

ID	Quantity
(1) #500673	1
(2) #500561	1
(3) #502800	5
(4) #503340	5

Figure 53

• Remove batteries. For more information see section 4.7.1 . • Remove the plate shown in figure.	

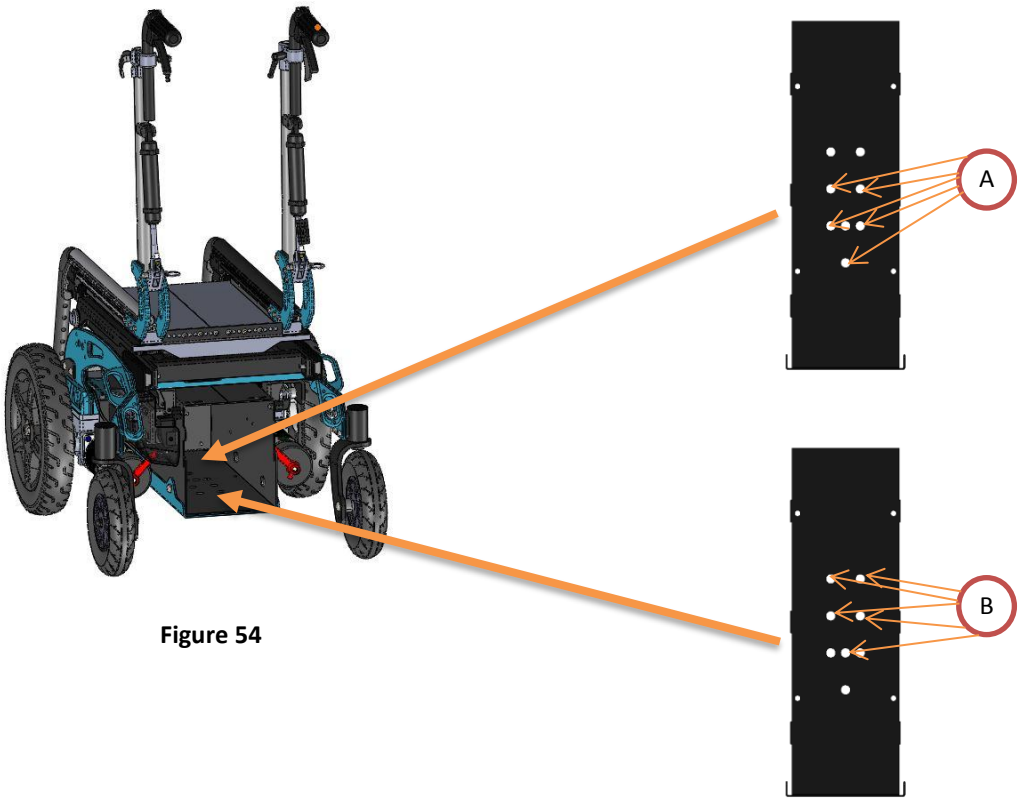


Figure 54

- In the bottom of battery box there are globally 8 holes. 5 of them must be used to mount the nuts of Dahl kit #502210. Choose one of two possibilities shown in figure (A or B).

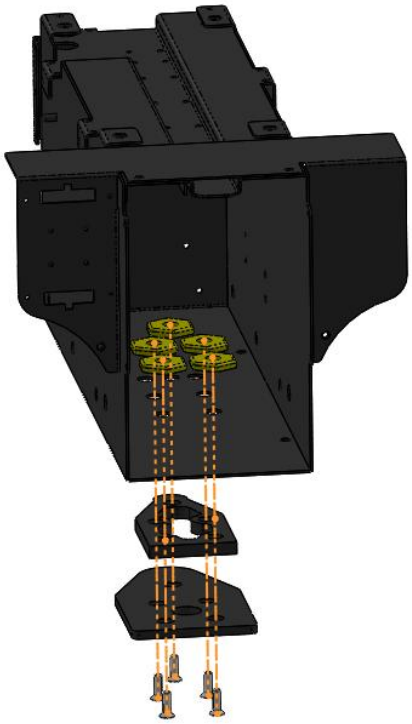


Figure 55

- Place nuts provided into the DAHL kit #502210 in the 5 chosen holes with recess down.
- Lock plate (A) and spacer (B) as shown in figure.

WARNING

<u>When mounting the bolts of DAHL kit, you must assure that tightening torque is in the range 16-18 Nm.</u>

<u>Use Loctite 222® to secure thread on screws to prevent them from coming loose.</u>

<u>Only original DAHL #502800 bolts with strength 14.9 must be used, as normal bolts will not be strong enough.</u>

<u>If necessary cut the screws not to interfere with the battery.</u>

LOCTITE® is a registered mark of Henkel AG & Company KGaA.

• Mount again the plate previously removed. The purpose of this plate is to offer a larger support surface and to avoid that batteries rest only on nuts of Dahl kit just mounted. It could be needed to cut this plate in order to let room for the Dahl kit just mounted. • Mount again batteries. For more information see section 4.7.1 .	

Figure 56

CONTACT INFORMATION

For the preparing of the vehicle and of the wheelchair, please contact the manufacturer of the docking station.

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https://dahlengineering.dk
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Note

EVO 1

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