User`s Manual

LS - 300

Multifunctional Electric Wheelchair

Juni 2018

Revision Sheet

Release No.	Date	Revision Description
Rev. 1	15.06.18	
Rev. 2	20.06.18	Guideline for transportation in a vehicle
Rev. 3	26.06.18	Feedback from Dahl Engineering – Mounting must be included

1. Preliminery note 2
2. Important safety instructions 3
General safety instructions 3
Notes on EMC interference 4
Brakes 4
Intended Use 4
Indications 4
Contraindications 4
Declaration of conformity 4
3. Product Overview 5
Delivery 5
Check the delivery 5
Identification label 5
Overview 6
4. Use of the wheelchair 7
Basic settings 7
Control 7
Guideline for transportation in a vehicle 12
Mounting of the Dahl docking adapter on the wheelchair 20
Technical specifications 23
Charging 26
5. Examination of the wheelchair 28
Checking the tires 28
6. Cleaning and disinfecting 29
Cleaning 29
Disinfection 29
Re-use of the wheelchair 29
7. Maintenance 30
Replacing the batteries 30
Repair / maintenance plan 31
8. Transport 32
9. Storage 33
10. Disposal 33
11. Manufacturer 34

1. Preliminery note

Thank you for purchasing a LS-300 multifunction wheelchair. The LS-300 can be optimally adapted to your physical needs. All settings can be adjusted electronically, steplessly via the joystick. You can adjust seat height, seat angle, backrest angle, knee angle, armrest position, footplate position and leg length. Its size combined with its high functionality makes it ideal use as driverseat in cars, but it is also ideal for indoor and outdoor use.

Please charge the battery completely before first use, see Chapter 4 „Charging“, Page 16.
To get the most out of all the benefits of this wheelchair, read the instructions carefully, do not throw it away, but keep it handy.
Maintenance work or technical repairs may only be carried out by authorized specialist dealers.

LS-300

2. Important safety instructions

General safety instructions

- To avoid falls and accidents, it is important to familiarize yourself with your new wheelchair in a safe environment, on a level surface. We recommend to bring in a companion at the beginning.
- When adjusting and the wheelchair there is a risk of entrapment for the user as well as for third persons who are in the immediate vicinity of the wheelchair.
- Avoid driving against steps or curbs.
- When transporting the wheelchair, it must be secured against rolling away. Use the fastening devices.
- In the event of prolonged exposure to the sun, parts of the wheelchair may heat up, there is a risk of burns.
- Weight transfer due to body movement or load may increase the risk of tipping.
- Please do not hang objects such as carrying bags, backpacks etc. on the wheelchair, this is not intended. Attached loads, change the statics and can lead to falls and modified braking behavior.
- When driving on uphill or downhill gradients, make sure that the seat surface is not raised as this will limit the stability and can cause the wheelchair to fall over.
- Note that the braking distance is longer on inclines than on level ground.
- When overcoming slight obstacles or height differences, you should raise the seat slightly, if at all, and leave the backrest as steep as possible to prevent the wheelchair from tipping over.
- Do not bring damaged batteries into contact with skin, as the contents of the battery are harmful to health and can be corrosive.
- Only charge the battery in ventilated areas.

	Be sure to keep your arms and hands on the armrest during electrical adjustment of the wheelchair. Third parties should not touch the marked areas with their hands or fingers. **Entrapment!**

Notes on EMC interference

- Although all EMC directives have been observed, it is possible that the power wheelchair may be replaced by other electrical systems, such as electric motors, electric doors, alarm devices in department stores, mobile phones or the like is disturbed or disturbs.

Brakes

The wheelchair brakes to a halt when the joystick is released. The functionality should be checked before each use.

Attention: On gradients, the braking distance is extended.

Intended Use

The wheelchair is exclusively for the transport of disabled persons.

Indications

Inability to walk or severe disability caused by

• paralysis

• Joint contractures, joint damage - not on both arms

• loss of limbs

• Limb injury

The use of an electric wheelchair is intended for persons who, due to the disability, are unable to carry hand-driven wheelchairs, but have the ability to properly operate the electric wheelchairs.

Contraindications

Electric wheelchairs are unsuitable for people

• with reduced eyesight

• with severe balance disorders

• with severe limitations of cognitive abilities

• with inability to sit

Declaration of conformity

NHD, as the manufacturer, declares on its sole responsibility that the LS-300 electric wheelchair complies with the requirements of Medical Directive 93/42 / EEC.

3. Product Overview

Delivery

After receiving your goods, please check the contents for completeness

Packing

Electric wheelchair

Control device

Charger

Check the delivery

Your LS-300 wheelchair is delivered ready for use, no further assembly is necessary.
Please check if all listed elements are present.

Identification label

The identification label is located behind the right drive wheel, see Fig. Page 6.

- Manufacturer
- model
- Item number
- Max. user weigth
- Max. safe gradient
- CE mark
- Production date

Overview

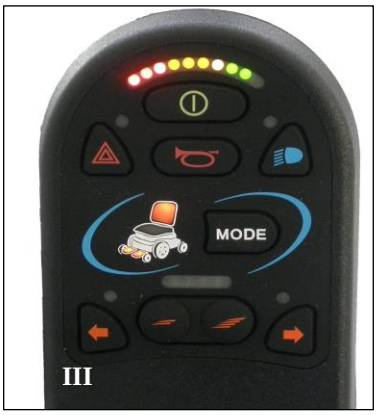
A	Headrest
B	Backrest
C	Armrest
D	Electrical control with connection for the charging unit
E	Seat cussion
F	Footrest
G	Rear Wheel
H	Front Wheel
I	Footrest plate
J	Battey unit
K	Identification label

Upon request, your wheelchair will be delivered with a lap belt, which is attached to the side of the seat plate. This belt does not serve as a safety belt during car rides. To close, push the two belt parts into each other until they click into place. Open the clasp by pressing on "Press".

4. Use of the wheelchair

Basic settings

The individual mechanical adjustments before the first use of your electric wheelchair, must be made by the authorized dealer.



Control

With the control you control the settings of your wheelchair, as well as the driving characteristics.

The control offers the possibility to electronically adjust the seat adjustment, it is located on the right armrest and can be operated with little force.

Please read carefully the safety instructions before first use.

Press the upper button to turn on the controller.

The "Mode" button takes you to the two main menus, setting mode or driving mode.

Setting

Attention: Please note that major changes, such as extreme positioning of the backrest or leg rest and / or high height adjustment, can negatively affect the stability. Also, the braking distances can be extended. If you have any questions, please consult your dealer.

If one or more areas of the wheelchair light in the display next to the Mode button lights up, you are in setting mode. With a right or left movement of the joystick you can switch between the areas to be set. If you move the joystick forwards or backwards in this mode, you change the position of the illuminated areas.

The following ranges can be infinitely adjusted via the control:

- Backrest at an angle
- seat angle
- Length of legrests
- Angle of legrests
- Seat height

Angle of legrest

Lengths of legrest

Backrest

Seat angle

Seat height

Driving mode

If you press the on-off switch, if no areas in the display next to the mode button light up, you are in driving mode.

When you move the joystick forward, the wheelchair moves forward.

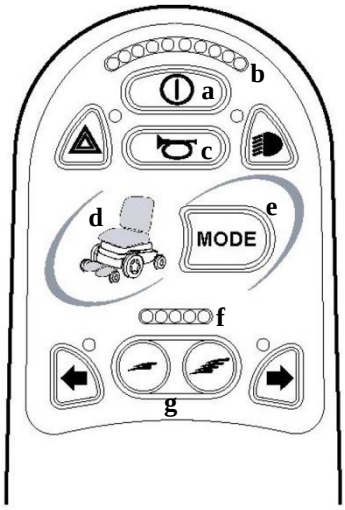
Brake by releasing the joystick. By releasing the joystick the wheelchair comes to a standstill.

To change from the setting to the driving mode, proceed as follows:

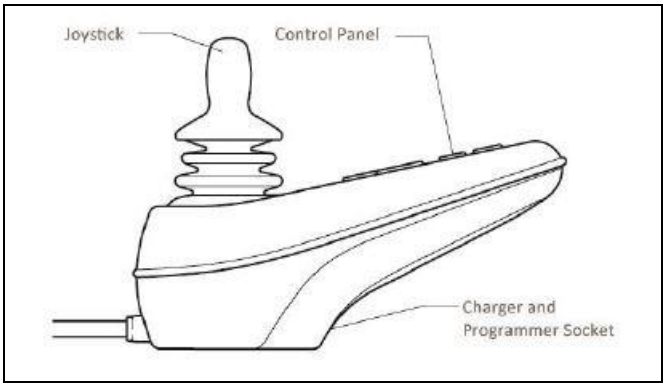
Press the Mode button, move the joystick to the right (or left) until no areas in the display next to the Mode button light up.

Speed

The speed is controlled while driving with the joystick, if you move the joystick only slightly, the ride is slower. Push the joystick to the stop to drive maximum speed. The maximum speed can be set in advance in five different driving profiles. (see section driving profiles)



a.) On and off switch
b.) Charge level
c.) Signal horn
d.) Display of the areas to be set
e.) Mode key to change the areas to be set
f.) Display of the max. speed too adjustment of the driving profiles
g.) Option key for determining the Speed in the driving profiles



Set driving profiles

You can define five different driving profiles with the controller. This allows the maximum speed to be programmed differently. Especially indoors it is recommended to set the maximum speed lower. Press the "Mode" button and move the joystick up or down to access the corresponding menu. With the help of the selector keys you can now preset the maximum speed and specify it in one of the five possible profiles.

Change of direction

If you move the joystick to a side position while driving, the wheelchair follows and moves in that direction.

Attention: The wheelchair has a low turning radius, make sure that no people or objects are too tight and you or others injured.

For reversing, move the joystick towards you.

Attention: Please make sure that there are no persons or obstacles behind you.

Overcoming obstacles

Drive slowly and head-on towards the obstacle to be overcome, staying about 50 cm in front of it. Make sure the wheels are perpendicular to the obstacle. Now drive at a steady, sufficient speed over it.

Attention: Do not try to drive over obstacles higher than 50 mm.

Do not drive over the obstacle at an oblique angle, there is a risk of tipping.

Freewheel function

The power wheelchair can be set in a manual sliding mode. This function may only be set by a companion. The following step is necessary for this:

Loosen the center handles on the brake release handles. ("Unlock" and "lock")

Attention: **The wheelchair has no braking function in sliding mode.**

The controller is automatically switched off in this mode.

After the shift, switch the system back to normal operation. If the controller is not yet active, switch it off and on again, now your electric wheelchair is again driveable.

Getting in and out

Bring your current seat as close as possible to the side of the LS-300. Make sure that the controller is turned off to prevent uncontrolled rolling. Fold up the armrest and footplate. Now slip sideways onto the seat of the LS-300, making sure that you are as far back as possible in the seat. Now fold down the footrest and the armrest again.

Armrests

The armrests can be folded up completely to make getting in easier.

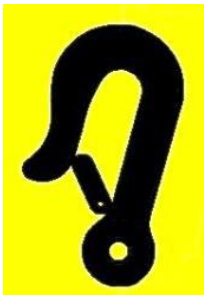
Foot plate folded up

Lock with the help of the controller

To secure the control, please proceed as follows:

Press the on button until a beep sounds. Release the button and slide the joystick forwards until you hear another beep. Release the joystick. Then move the joystick backwards until you hear another beep, release the joystick and a long beep sounds. The electric wheelchair is now locked against driving away. They realize. To unlock the wheelchair, follow the same procedure.

Guideline for transportation in a vehicle



The LS-300 complies with the requirements specified in ISO 7176-19:2008. It has been designed and tested according to the ISO 7176-19:2008, for transportation in a occupied position, forward facing in a vehicle.

The wheelchair is designed to use a 4-point heavy duty webbing restraint. for this matter the wheelchair has two brackets on the front end and two brackets on each rear side of the chassis. The brackets are indicated with a sticker. These anchoring point shall be used to connect the tie-down belt to.

4 point Tie-down belts

For the tie down belt we advice to use a Dahl heavy duty tie-down belt, model 501780 or 501781. The angle of the straps should be around 45° to the horizontal plane. This is in order to have maximum effect in vertical and horizontal direction.

Tie down straps under 45° angle

Tie down straps under 45° angle

The straps have to be connected to the vehicle at suitable anchor points. Make sure that the tire pressure is at the recommended level so the straps can have maximum effect. Make sure the straps are tightened to maintain optimal security.

WARNING:

Poor fixations of the wheelchair in a vehicle might cause damage to the vehicle itself, the wheelchair or the passengers inside the vehicle while driving. Not using a car safety belt while sitting in a wheelchair might lead to serious injuries in case of an accident.

Note:

The access to, and maneuverability in, motor vehicles can be significantly affected by wheelchair size and turning radius. Smaller wheelchairs and/or wheelchairs with a shorter turning radius will generally provide greater ease of vehicle access and maneuverability to a forward-facing position in the vehicle. Also the internal size of the vehicle will have a great influence of the maneuverability into and out of the vehicle. Make sure there are loose object inside the vehicle which might make entering en positioning inside the vehicle more complicated.

Although the wheelchair is designed and tested according to the ISO 7176-19:2008 requirements, we also advice: 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 travel.

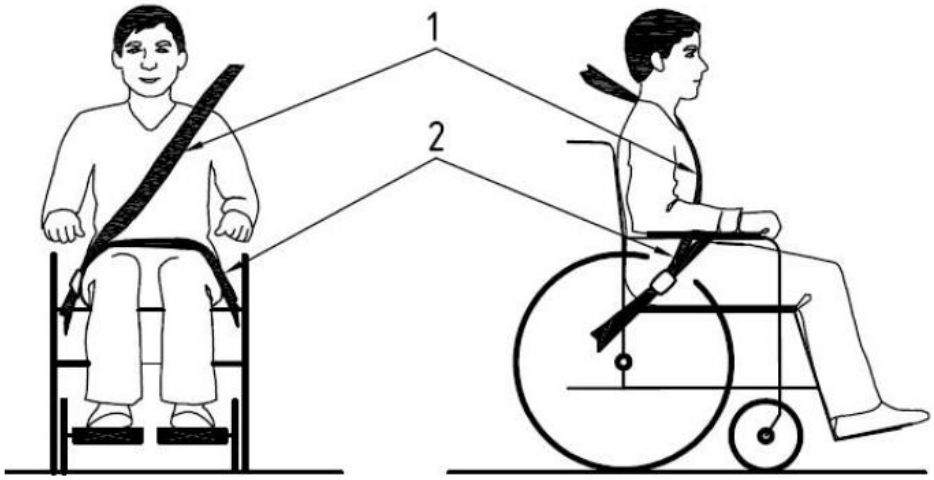
For more information, tie down kits for vehicles and or further information about tie-down belt and occupant 3-point safety belt, please visit the website of Dahl engineering at; WTORS.com

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.

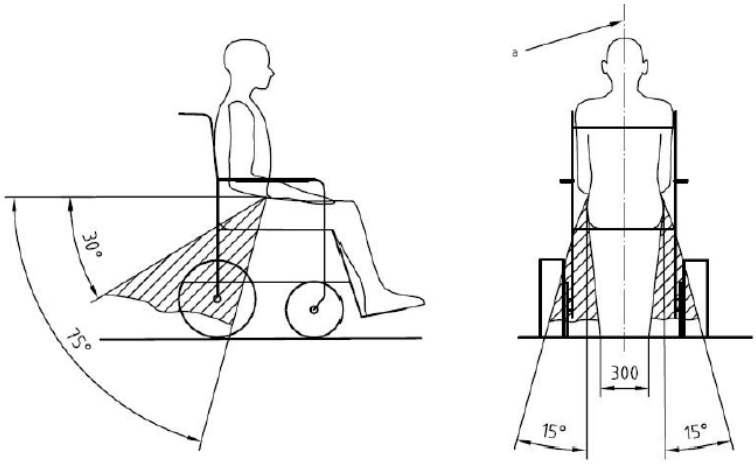
Safety belt

If the user is transported in his wheelchair, it is necessary to use a car safety belt to secure the wheelchair user.



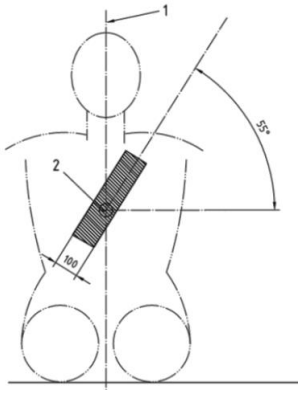
Positioning of the car safety belts for wheelchair users.

The wheelchair has been crash tested using tie down belts, and a 3-point occupant safety belt. We advise you to use a Dahl 3-point occupant safety belt model 500984 system or a system that is equally specified. It is very important to use the safety belt in the right angles according to the wheelchair user. The angle for the pelvis part (2) of the safety belt must be in angle of 30- 75 ° with the horizontal plane. (see picture below). Also the side angle should stay between the vertical plane to maximum of 15° angle with the vertical plane. (see picture below).



Optimal angles for a safety belt used by the wheelchair user

The shoulder part (1) of the safety belt should be positioned according to the figure below.



Shoulder safety belt positioning

Note:

Please obtain the following points for a optimal personal safety of the wheelchair user:

- 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, as shown in figure above.

- a steeper (greater) angle within the preferred zone is desirable.

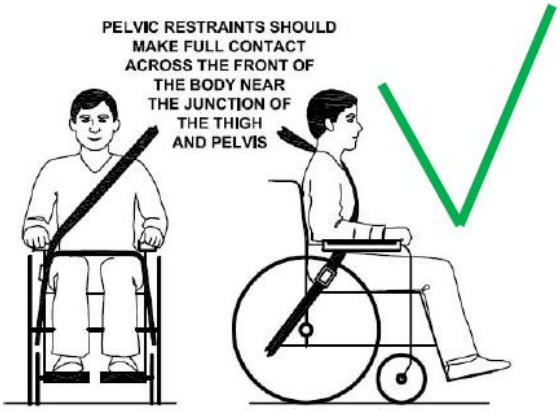
- belt restraints should not be held away from the body by wheelchair components or parts, such as the wheelchair armrests or wheels, along with an illustration similar to that of the figure shown above.

- upper torso belts should fit over the shoulder and across the chest, as illustrated in figure of the shoulder safety belt positioning.

- belt restraints should be adjusted as tightly as possible, consistent with user comfort.

- belt webbing should not be twisted when in use.

Picture of improper belt fit



Picture of proper belt fit

Note:

Please, make sure the following conditions are fulfilled to obtain a safe transportation:

- Whenever possible the occupied wheelchair shall be located in a forward-facing configuration and secured by the tie downs in accordance with the WTORS (wheelchair tie down and occupantrestraint system) manufacturer's instructions.

- This wheelchair is suitable for use in vehicles and has met the performance requirements for travelling forwards-facing in frontal impact conditions. Its use in other configurations within a vehicle has not been tested.
- The wheelchair has been dynamically tested in a forward-facing orientation with the ATD (anthropomorphic test device) restrained by both pelvic and upper torso belts.
- Both pelvic and upper torso belts should be used to reduce the possibility of head and chest impacts with vehicle components.

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

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

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

Note:

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

- Only use "gelled electrolyte" batteries on powered wheelchairs when used in a car.

WARNING:

Special 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.

Backrest, legrest and headrest settings during transportation.

During transportation in a occupied position, the backrest of the wheelchair needs to be set into an upright position. The legrest should be in a knee angle close to 90 degrees. The headrest needs to be adjusted well so it will catch the head of the wheelchair user during the rebound of an impact, this to reduce the risk of a whiplash.

Recommended position of the backrest, legrest and headrest

Transportation using Dahl Docking station

LS-300 has been crash tested using a Dahl docking station tie down system according to 7176-19:2008 and 10542-1:2012, where the wheelchair is facing forward in driving direction (driving direction like the driver seat).

LS-300 crash test using Dahl docking station.

The locking of the wheelchair into the Dahl Docking station make it much easier to lock down the wheelchair for occupied transportation. It can be used also for wheelchair users who want to drive the car by themselves.

The system is self locking and can be release by pushing a button. The locking device will open up for a certain time to make the un docking possible.

WARNING:

The Dahl Docking station is only allowed to build in to a vehicle by trained and authorized staff of a registered car adaptation company. For ordering the Dahl Docking and its accessories, please contact Dahl Engineering in Denmark for further details. You can find Dahl at; WTORS.com

The Dahl Docking station

Dahl Docking station

Dahl docking station mounted on the floor

Docking station and docking plate on chassis

Locking procedure:

Drive the wheelchair slowly into the vehicle and make sure you centre your wheelchair in the middle of the docking module. If well positioned the locking system will also guide the wheelchair into the docking station. keep in slowly driving until you feel the wheelchair is hitting the end position in the docking station. At the same time you will hear a clicking sound. The wheelchair is now locked in to the docking station. the light on the control panel will light up the LED showing the wheelchair is locked in correctly. Now switch the wheelchair off.

WARNING:

If the wheelchair is not centered correctly, it might not be possible to lock in top the docking station. In that case, retry by driving a bit backwards and re-center the wheelchair. try once more until you hear the clicking sound and you see the locked sign LED on.

After the wheelchair is locked in, put the car safety belt on according to the instruction „Safety belt", Page 14.

Do not forget to put the car safety belts on before driving in the vehicle. This on order to avoid dangerous situations and personal- or wheelchair damage.

Unlocking procedure:

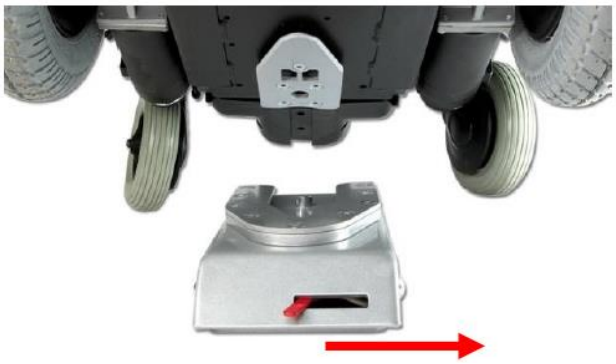
To unlock the wheelchair, first open up the car safety belt. Then switch on the wheelchair and switch to drive mode. Now push the release button of the Dahl Docking station. You will hear a firm click. The locking bolt is now retracted and the wheelchair can drive in reverse direction out of the Docking station.

Note:

After pushing the release button of the Dahl Docking station, the locking bolt is retracted for a certain period of time. After that time, the bolt will lift up again and lock the Docking station. Make sure you drive your wheelchair out of the Docking station in this time window of the unlocked position. If not, you have to push the release button one more time.

Manually unlocking in case of electric failure or accident:

The Dahl Docking station can be unlocked manually in case of an emergency or if the electric unlocking is failing.



To unlock the docking station manually, the red lever needs to pulled to the right. This retracts the locking bolt manually so the wheelchair can be released out of the docking station.

WARNING:

In case of a failure of the docking station, contact your local car adaptation company who has build in the device into your vehicle. Only authorized and trained staff is allowed to work on the docking device.

The Dahl Docking station is only allowed to build in to a vehicle by trained and authorized staff of a registered car adaptation company. For ordering the Dahl Docking and its accessories, please contact Dahl Engineering in Denmark for further details. You can find Dahl at; WTORS.com

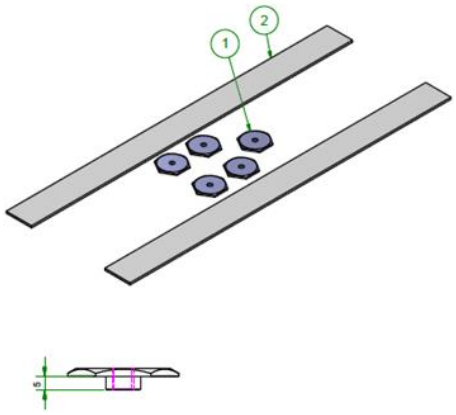
Mounting of the Dahl docking adapter on the wheelchair

LS-300 chassis is equipped with a Dahl docking plate underneath the battery box frame of the chassis.

LS-300 shassis with Dahl Docking plate mounted

For detailed information about the Dahl Docking system. please visit the homepage;
WTORS.com

To fit the Dahl docking plate, Dahl has created a special kit for LS-300 wich included the special Dahl nut plates and spacers for battery box of LS-300 to level the batteries. This kit is available under Dahl part no: 503341.



LS-300/Dahl mounting kit nuts and spacers no: 503341

WARNING:

The Dahl Docking station is only allowed to build in to a vehicle by trained and authorized staff of a registered car adaptation company. For ordering the Dahl Docking and its accessories, please contact Dahl Engineering in Denmark for further details. You can find Dahl at; WTORS.com

The LS-300 chassis has dedicated 5 holes in the chassis where the Dahl Docing plate can be mounted on.

Description of the monting:

1. Remove the batteries from the chassis an put the 5 special Dahl nut plates in to the dedicated mounting holes from the inside oft he battery box.

2. Two plastic spacers are tob e placed in every battery box on the floor. Best ist o fix hem some double sided tape.

3. Now take the Dahl spacer (Dahl part no: 500673 docking plate, Dahl part no: 500561 and 5 special Dahl high grade steel (14.9) Torx bolts Dahl part no: 502800) to mont the Dahl docking plate on to the LS-300 shassis.

Note:
The special Dahl high grade Torx bolts (Dahl part no: 502800) only come in one length which ofen is too long. They need tobe cut into the right length by the authorized engineer to fit the locking plate properly without damaging the batteries.

4. After cutting the bolts tot he right lenght, Loctite 222 needs to be added on to the thread to secure the bolts.

5. The five Torx boltsmshall be tightended with a torque wrench tot he preset torque of 18 Nm.

6. Place the batteries back into the chassis and connect them tot he electronics.

Now the LS-300 chassis is ready tob e docked into the Dahl Docking station. The mounting of the Dahl Docking station into your vehicle shall only be executed by a authorized car adaption company. They will get the right support and information from Dahl Engineering how to mount the docking station in to the designaded vehicle.

Dahl Docking kit

Technical specifications

Wheelchair

Dimensions

Total length with legrests:	1140 mm
Overall width:	630 mm
Folded length:	970 mm
Folded width:	630 mm
Folded hight:	1190 mm
Seat angle:	0 - 15 °
Effective seat depth:	500 mm
Seat width:	460 mm
Seat height from the ground up to the front seat edge:	410 - 850 mm
Backrest angle:	2 - 47 °
Backrest height:	500 mm
Lower leg length:	390 - 535 mm
Knee angle:	13 - 65 °
Armrest to seat dictance:	200 mm
Length of the armrest of the seat measured:	350 mm
Length of the armrest:	420 mm
Horizontal position of the rear axle measured from the backrest:	250 mm

Weights

Max. User load:	136 kg
Total weight:	168 kg
Headrest:	1,5 kg

Driving characteristics

Static stability downhill:	9 °
Static stability uphill:	9 °
Static stability sideways:	9 °
Range:	Min. 25 km
Dynamic stability uphill:	6 °
Max. Obstacle height:	50 mm
Max. speed:	9 km/h
Min. Braking distance at max. Speed:	1800 mm
Turning radius:	770 mm
Uneven ground:	30 mm
Ground clearance:	60 mm
Steering range:	1250 mm
Turning area:	1150 mm

Operating forces

Joystick:	ca. 1 N
Button	ca. 1 N
Coupling and decoupling of the drives:	60 N

Tires

Tire pressure:	250 kPA
Rear tires:	205 Ø mm
Tires in front:	345 Ø mm

Electrical

Control:	PG dt R-net
Batteries:	Valve Regulated Lead Acid, Gelled Electrolyte Battery 12V 60Ah
Charger:	Medico CCC 410S

Environmental conditions

Temperatur:	Actuators: -10 °C- + 60 °C Engine: 10 °C- + 60 °C
Humidity:	60% ± 20 %

Storage conditions

Temperature:	-45°C to 70°C
Humidity:	60% ± 20 %

Materials

Frame:	Steel powder-coated, corrosion-protected
Attachment parts:	Steel / aluminum powder-coated anodised
Seat cushion:	Flame retardant according to EN 1021-1 / 2
Back cushion:	Flame retardant according to EN 1021-1 / 2
Armrest cushion:	Flame retardant according to EN 1021-1 / 2

Batteries

The wheelchair is equipped with maintenance-free gel batteries.

If the wheelchair is not used for a long time, the charger should be connected every 6-8 weeks.

A complete discharge of the batteries should be avoided. Charging should be done in a ventilated room, Avoid open fire while charging. During the charging process, the wheelchair can not be used.

Battery charger

Dimensions WxHxD (including carrying handle)	220 x75 x 205 mm
Charge current (wave-free)	5A, 6A, 8A, 10A
Mass	2,6 kg
AC power	230V 50Hz
Efficiency	Not less than 90%
Insulation class	II (double insulated). This means that the charger can be connected to a standard socket without grounding.
Housing protection	Splash water, dust and water protected
Expected shelf life	1 year (by short connection of the charger to the mains current and a rechargeable battery)

Charging

Important: The charger may only be operated on permanently installed charging sockets. The charging plug may only be mounted and replaced by authorized specialist personnel.

Important: The charger should only be used to charge batteries installed in wheelchairs.

Attention: The charger must only be used with wheelchairs whose power supply is designed for |current loads that are at least equal to the rated charging current of the charger.

The charging cable of the wheelchair must be dimensioned with a sufficiently dimensioned fuse.

Attention: The charger must only be used to charge rechargeable **24 V** lead-acid batteries that are approved for use in wheelchairs.

Attention: Non-rechargeable batteries must not be connected to the charger!

The energy transfer from the mains to the battery takes place via a patented power circuit.

The charging process is controlled by a microcomputer and adjusted automatically to the battery charge level. This optimizes the life of the battery.

when the battery is fully charged, it will switch to trickle charge. An overcharge of the battery can not occur.

The charging time is as short as possible.

The "CHARGING", "COMPLETED" and "ERROR" lamps on the front of the charger indicate the charging status.

5. Examination of the wheelchair

Checking the brakes

Before each use you should check the brakes once. Drive carefully, then let go of the joystick, now the wheelchair must come to a standstill immediately. The click of the brakes should be audible. If the braking behavior deviates or shows unfamiliar behavior, please contact your dealer immediately.

Checking the tires

Drive wheel (front)

Swivel wheel (rear)

Please check the tire pressure regularly. Different air pressure in the tires affects the driving behavior unfavorably and leads to unwanted changes in direction. Too low tire pressure greatly increases the power consumption. The valves can be connected to common air pumps for car tires. Unscrew the plastic caps, attach the connector of the pneumatic tool to the valve, and fill the tire until the prescribed air pressure (here 250 kPa) is reached.

If the tires are damaged, the hoses can be repaired or replaced, please contact the authorized dealer.

6. Cleaning and disinfecting

Cleaning

Make sure that the wheelchair is switched off before cleaning. Dirt must be removed immediately after use. Frame parts and panels can be cleaned with a damp cloth. For solid dirt, you can use a mild household detergent.

Be sure to thoroughly clean all surfaces of the wheelchair. Detergent residues can then be removed with a damp cloth.

Do not use abrasives, caustic substances, acids or bleach. Detergents based on chlorine, acetone or benzene must not be used. Do not use high pressure or steam cleaners. Electronic components and cables must not come into contact with water.

Disinfection

The product is suitable for spray and wipe disinfection with common household disinfectants. All surfaces should be wiped with a clean cloth moistened with disinfectant. Evenly wet the product with disinfectant. Observe the concentration and exposure times of the disinfectant manufacturer Note the concentration and exposure times of the disinfectant manufacturer. Do not rinse the disinfectant and allow the product to air dry. Afterwards, the product must be checked for cleanliness and damage.

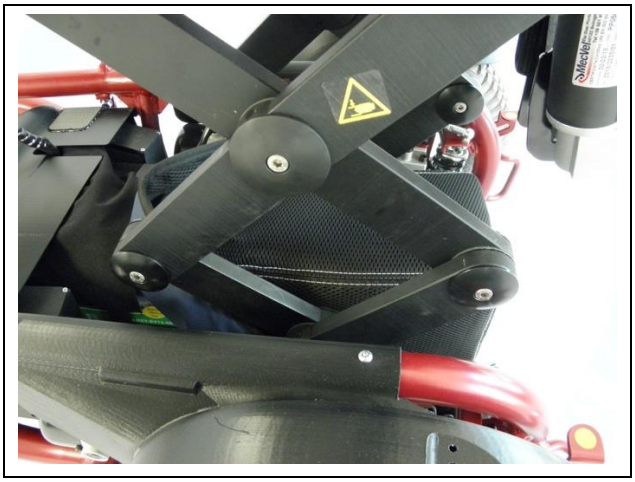
Re-use of the wheelchair

The wheelchair is suitable for re-use. When passing on, care must be taken that the wheelchair is serviced by the specialized trade and is treated hygienically. (see section on cleaning and disinfection)

7. Maintenance

Replacing the batteries

Have the replacement only carried out by authorized specialist personnel.
The battery is located under the seat. The seat must be raised until it stops by itself.



The fabric cover can now be removed.

First loosen the safety Velcro fasteners, then the power connections. Now the battery can be removed.

Attention: Please note that leaking or defective batteries are harmful to your health.

Repair / maintenance plan

Have repairs carried out by trained specialist personnel only. To prevent damage, we recommend to follow a maintenance plan.

Before every ride:

Please check as described in Chapter 5 "Checking the brakes" page 18, to see if they are working properly. Make a visual inspection, damaged or missing frame parts should be repaired or replaced immediately by the specialized trade.

Monthly:

Check the air pressure of the tires, different tire pressure leads to unintentional change of direction, too low air pressure increases the power consumption considerably.

Quarterly:

Check fasteners such as nuts and bolts for tightness. Test whether the tires still have sufficient tread depth (min.1 mm). Check all cables and connectors and have them fastened or replaced by a specialist dealer if necessary.

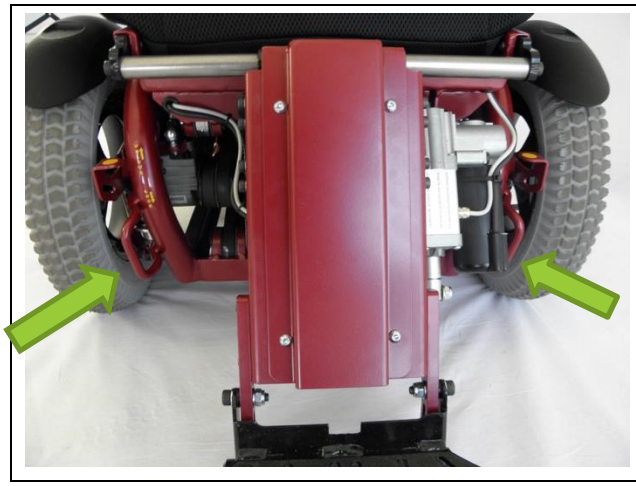
Yearly:

Have your wheelchair checked and repaired by the dealer if necessary.

The expected life of your wheelchair is 8 years. However, this depends on the frequency of use, care and the environment in which your wheelchair is used and stored.

8. Transport

Only vehicles that have been approved for this purpose may be used for transport. The wheelchair must be attached to the anchoring points provided for this purpose. The control must be OFF and the brake release handles must be in the "LOCK" position.

	Device for attach the wheelchair

	Symbol indicates the eyebolts. To secure, 4-point restraint systems anchored to the vehicle must be used.

If you want to transport the wheelchair empty, you can easily remove the headrest to save space. Loosen the lever screw and then pull the headrest out of the holder. To replace them, reverse the procedure and tighten the lever again.

The wheelchair can not be disassembled for transport.

9. Storage

If the wheelchair should be stored, please proceed as follows:

Turn off the wheelchair, disconnect the battery power connections, or remove them completely. See Chapter 7 „Replacing the battery“ Page 20. Note that the battery should not discharge completely, if necessary contact an authorized dealer.

Do not store the wheelchair in rooms with high condensation, such as laundry rooms or damp basements.

Before restarting, carefully check the wheelchair for any visible damage. Connect the battery, check if the tires have the required air pressure. Check all functions. Test whether the brakes fully perform their function.

If you detect a malfunction, contact the authorized dealer.

If you want to change the basic settings, have them made by an authorized dealer.

10. Disposal

If the electric wheelchair is to be disposed of, please contact your dealer. If you want to dispose of the wheelchair yourself, contact the responsible waste disposal companies and act according to the relevant regulations.

11. Manufacturer

NHD AS Gigstads vei 22, 3511 Honefoss, Norway
www.nhd.as
Mail: post@nhd.as
Telefon: +47 99316100

At the manufacturer's address you will find information on product safety, new features, or product recalls. For questions about your wheelchair, the authorized dealer is at your disposal.