



# Service Manual

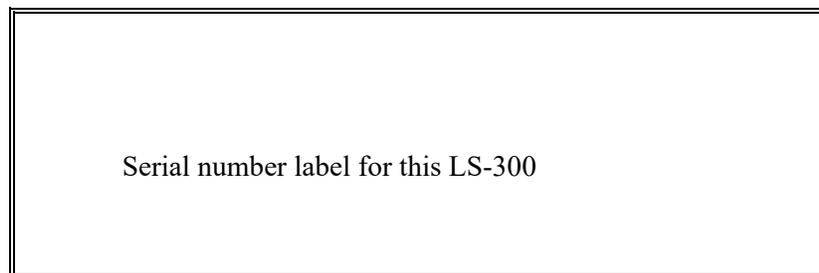
LS - 300

Multifunctional Electric Wheelchair

December 2020

### Revision Sheet

Release No.	Date	Revision Description
Rev. 1	29.11.2018	
Rev. 2	12.03.2019	Maintenance, Pre-sale information, User manual
Rev. 3	14.10.2019	Exploded view – chapter 10
Rev. 4	27.01.2020	Exploded view – chapter 10, measure on seat cushion
Rev. 5	04.02.2020	Corrected electrical wiring – chapter 9
Rev. 6	28.02.2020	Modification; Replaced batteries, Warranty period table, Leg to seat surface angle, EU MDR Regulation 2017/745.
Rev. 7	05.03.2020	Chapter 4 Adjustment User Manual
Rev. 8	19.08.2020	Changed chapter 4 Use of wheelchair
Rev. 9	09.12.2020	Addition to chapter 4 - Adjustment armrests.



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## **1. Introduction Service manual LS-300**

This manual contains the instructions for repairs and general maintenance of the LS-300 power wheelchair.

Mechanics who do repairs on this wheelchair must be well trained and familiar with the repair methods and the maintenance of the LS-300 wheelchair.

Always make sure that the work is carried out safely, particularly with respect to procedures requiring the wheelchair to be lifted up. We advise that you contact our service department before doing repair work on a wheelchair that has been involved in an accident.

The following specifications are important when ordering parts:

- Model
- Year of manufacture
- Colour
- Identification number
- Name of the part concerned

Available documentation:

The following technical documentation is available for this wheelchair:

- Service manual
- User manual
- Pre-sale

## 2. Symbols used in this service manual

Warning symbol



Follow the instructions next to this symbol closely.  
Not paying careful attention to these instructions could result in physical injury or damage to the wheelchair or the environment.

Reference symbol



The symbol refers to a separate user manual or pre-sale.

### 3. Pre-sale information



The hole Pre-sale document is attached this Service Manual.

See Attachment 1.

#### Pre-sale data LS-300:

**SUNRISE**  
MEDICAL.

# LS 300

DEN LAVESTE  
SETEHØYDEN  
I MARKEDET

LS 300

**KINETIC BALANCE** **SWITCH-IT** **LINK-IT** **JAY** **WHITMYER**

Oppdatert januar 2020



## LS 300

- **LAVEST SETEHØYDE** gir problemfri innkjøring og posisjonering i bil – både på førerplasse og på passasjerplasse i kjøretøy
- **LAVEST TYNGDEPUNKT** gir stabilitet og kjørekomfort ved utendørs kjøring
- **LAVEST MULIG SITTEHØYDE INNENDØRS** for å komme innunder venlige bord og for å nå ned til gulvet

LS 300 ER IDEELL FOR POSISJONERING PÅ FØRER- OG PASSASJERPLASSEN I KJØRETØY.

LS 300 GIR MULIGHET FOR Å KJØRE STOLEN INN I LAVERE BILMODELLER - FOR BLANT ANNET ENKLERE INNKJØRING I PARKERINGSBUS.



SPESIFIKASJONER LS 300			
Sittehøyde (uten pute)	84-201-85 cm	Sittebredde	63 cm
Sittebredde	84-85-86 cm*	Stolavt	108 kg
Sittebredde	84-85-86 cm*	Maks stolavt	108 kg
Settehøyde	0-15"	Hjul diameter foran	12"
Regulering	2-42"	Hjul diameter bak	18"
Regulering	2-42"	Kan bestes komplett med alle elektriske utrustninger	
Regulering	2-42"	* Andre størrelser og mål på forespørsel	



STABIL SETELAPT Tross og shock absorber



OPPLEBARE ANLEGG og utrustning som kan utveksles uten å gi videre innkjøring og innpakning.



SMÅL, DOKKERT og utrustninger for innkjøring i lavere



SMÅL, DOKKERT og utrustninger for innkjøring i lavere

## LS 300

JOYSTICKER OG ULIKE BETJENINGS-ALTERNATIVER, BELTER, VESTER, NAKKESTØTTER OG HOLDERE INNGÅR I VÅRT RIKHOLDIGE STANDARD TILBEHØRSORTIMENT.

UNIK LØSNING FOR LEDGAGERSTYRING SOM MAN SELV SETTER PÅ VED BEHOV - HELT UTEN VERKTØY.



ET KOMPLETT KONSEPT OG LØSNINGER FOR ALT



## RYGG- OG SETEPUTER

SETESYSTEM MED HØY KOMFORT OG TILPASNINGSMULIGHETER FOR ULIKE TYPER SITTEPROBLEMATIKK. RYGG OG SETEPUTER TILPASSER DINE BEHOV



STANDARD RYGGPUTER. finnes i ulike størrelser med støttemål for små og store brukere.



SETEPUTER. finnes i flere ulike størrelser i ulike bredder og dybder.



### MER ENN BARE PRODUKTER!

Våre lokale salgsrepresentanter hjelper deg gjerne med å vurdere alternative løsninger og tilpasse disse. LS 300 produseres i Norge og vi utfører individuelle tilpasninger ved behov.

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All informasjon kan endres uten varsel. Ta kontakt med Sunrise Medical om du har spørsmål. Du finner de utvalgte lenkene tilgjengelige i PDF-format på [www.SunriseMedical.no](http://www.SunriseMedical.no)



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## General information

Visually Impaired	Contact producer/supplier for electronic information	The standard options that are available for the wheelchair is:	<ul style="list-style-type: none"> <li>• different seating systems</li> <li>• attendant control</li> <li>• hooks for bag/backpack</li> <li>• lateral support</li> </ul>
Intended use	Class B electric wheelchair is designed for indoor and outdoor use by persons with impaired mobility. Maximal user weight 136 Kg. Temperature range - 10 °C - 50 °C Humidity max. 60% +/- 20% Do not use as seat in cars	Equipment designed by the manufacturer that can be removed without the use of tools	The headrest can be removed without tools. This is unfavorable when using the chairs. Favorable for transportation.
Sound power level	78db	Operator control adjustment is:	<ul style="list-style-type: none"> <li>• speed / velocity</li> <li>• seat functions mode</li> <li>• driving mode</li> <li>• light on/off</li> <li>• indicators</li> </ul>
Requirements for user	Adequate cognitive and Physical ability for safely operations of the wheelchair under different conditions	Storage condition	If the chair should be stored for more than 2 months - do it on a dry room with not less than 10 °C. Remember to charge the chair from time to time. Only the headrest can be removed for storage
General demand for surface	Avoid slopes over 6° and driving on slippery surface.	Maintenance instructions	Repairs shall be carried out by trained specialist personnel only. To prevent damage, we recommend following maintenance plan in User Manual.  The replacement of parts only carried out by authorized specialist personnel.
Documentation	EN 12184:2014 with relevant sub standards	Cleaning instructions	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. 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 meet contact with water. Wipe off moisture with a dry cloth.
Wheels	LS300 is equipped with air filled wheels	Disinfection instructions	The wheelchair is suitable for spray and wipe disinfection with common household disinfectants. All surfaces should be wiped with a clean cloth moistened with disinfectant. Observe the concentration and exposure times of the disinfectant manufacturer.
Adaptions	Make sure you have adjusted the wheelchair to your needs before driving		
Transport	The unoccupied wheelchair is suitable for land transport and air transport. LS 300 batteries fulfill IATAs dangerous goods regulations packing instructions 806, special provision A67 Only the headrest can be removed for transport Main switch is used to put the chair in a powerless state		
Driving distance theoretical	53 km under intended use. Use in steep conditions or rough ground etc. will have negative impact on the distance		
Height of curb to descend safely	70 mm		
LS 300 has a programmable controller	PG-dt-R-net. This can only be programmed by authorized service personnel		
Pivot width	1250 mm		
The intended operator	The intended operator is the occupant, but it can also be the assistant.		

## 4. User's manual



The whole User's Manual document is attached this Service Manual.

See Attachment 2.

### User Information LS-300:

#### 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.



Pass på å holde armer og fingre på armlenet når man benytter de elektriske funksjonen på stolen. Ledsagere må ikke berøre områder med advarselsmerker.  
**KLEMMFARE!**

### **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 EU MDR Regulation 2017/745.

## 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.

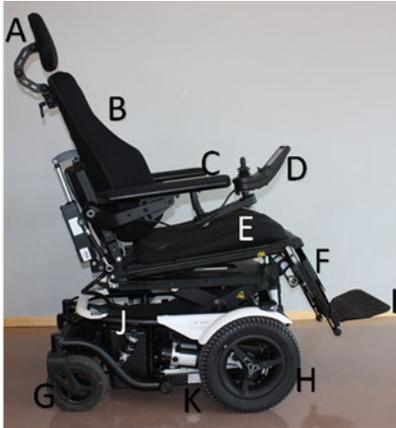
### Identification label

The identification label is located behind the right drive wheel.



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

## Overview LS-300



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

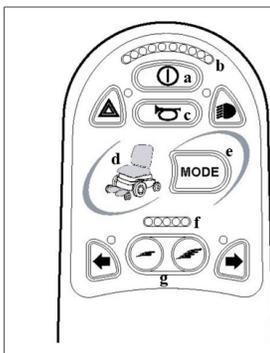
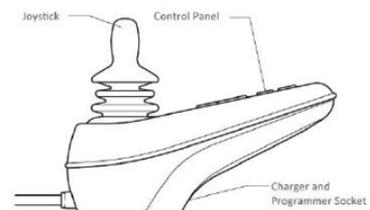
Upon request, your wheelchair will be delivered with a lap belt, which is attached to the side of the seat plate. This belt does not serve as a safety belt during car rides. To close, push the two belt parts into each other until they click into place. Open the clasp by pressing on "Press". "For optional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

## 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. Such settings may effect the stability of the chair.

The LS-300 has as standard control systems / joystick module CJSM-L-SW.



- 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

## 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.

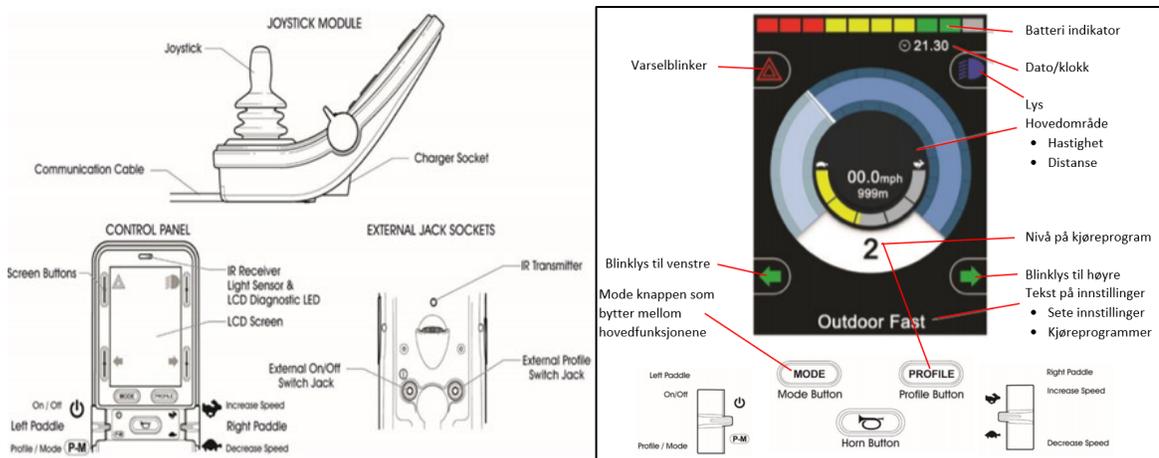
Press the upper button to turn on the controller.

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

**Attention:** LS-300 has an alternative control systems / joystick modules.

The LS-300 can be supplied with the Joystick Modules CJSM2

- 
- Large, high-resolution 3.5" VGA color display
  - Infra-Red (IR) Control as standard
  - Integrated Bluetooth control as an option
  - Stylish and ergonomic design
  - Built-in light sensor to automatically adjust screen brightness
  - Paddle switches for easy access to user controls
  - Enhanced programming and customization options
  - Speaker for enhanced horn volume
  - Metal case for improved robustness
  - Connect-and-Go



## 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 foot plate*



*Length of foot plate*



*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)

### ***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***

To climb up kerbs, steps or other use ramps or lowered areas. If not possible, 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.

### **Steep terrain**

Note that the maximum slope you can drive it 6°. If you drive forward be sure that your lean backwards as far as possible. Select an Mode with reduced speed and brake softly.

**Attention:** Do not drive over an oblique angle higher than 6°, 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.



**Lever for disconnect the motors**



**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.

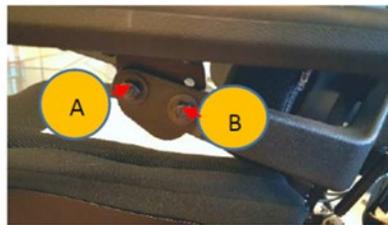
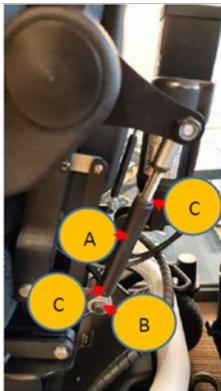
### *Armrests*



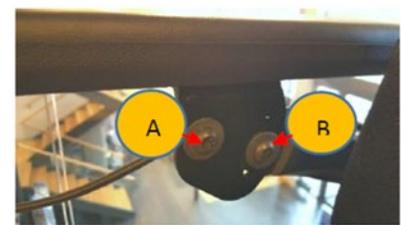
The armrests can be folded up completely to make getting in easier.

### *Height adjustment armrests*

Height adjustment is made by shortening the Adjustment Sleeve (A) (raising the armrest) or extending (lowering the armrest) using the inner threaded rods in it. Unscrew the lower attachment (B) and loosen the lock nut (C). Then rotate the adjusting sleeve and the inner threaded rods to such a length that the desired height of the armrests is achieved. Mount in reverse order.



**Exterior (locknut)**



**Inside (5mm Allen key)**

### *Adjust the angle of the armrest cushion*

To adjust the angle of the armrest cushion, loosen the screw (A), then loosen the screw (B) and the angle can be adjusted. Tighten screw (B) and then screw (A) again.

Always perform a load test to check that the armrest is properly attached.

### **Upholstered lateral support (optional)**

The optional upholstered lateral support offer support on the upper body. The supports are adjustable in height, width, depth and angle. The supports can also be flipped sideways for transferring in or out of the wheelchair. During this sideways flipping the adjustments stay intact. The soft rounded pads ensure optimal support and great comfort.

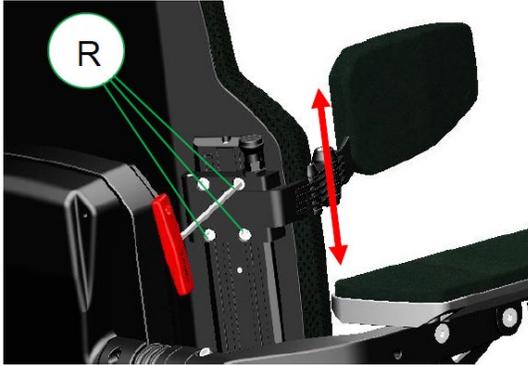


*Upholstered lateral support*

## Lateral support settings

The optional lateral support can be adjusted step less in height, depth, width and angle.

### Set the height of the lateral support.

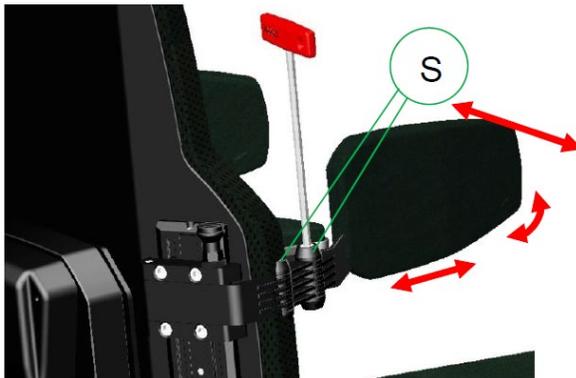


Step 1: loosen up the bolts (R) using a 5mm Hex key.

Step 2: move the lateral support in to the required height.

Step 3: tighten the bolts.

### Adjust the depth width and angle of the lateral support.



Step 1: loosen the bolts (S) of the friction joints.

Step 2: move the pad into the required angle, depth and width.

Step 3: tighten the bolts to fixate the setting.

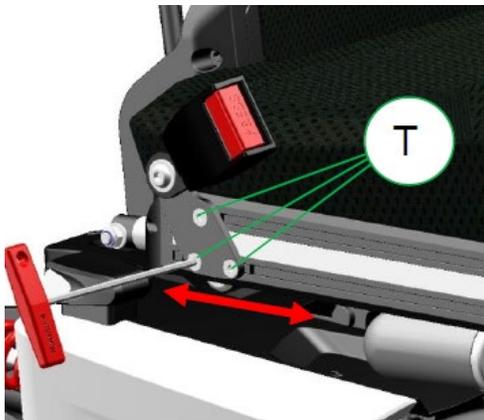
### Seat belt (optional)

For positioning, several types of belts are available.



### Seat belt (installation)

The optionally positioning belt can be adjusted in length and anchoring point. To change the setting simply follow the next steps:



- Step 1: loosen the bolts (T) using a 4mm Hex Key.
- Step 2: move the bracket in the required position.
- Step 3: fasten the bolts.

#### Caution:

Make sure the brackets are tighten properly to avoid sliding of the seat belt along the seat rail. A sliding seat belt might result in poor seating position of the user.

### Hooks for extra load such as backpacks and bags. (optional)

The hooks are placed on the back of backrest near the base of the headrest. See picture.



### **Lifting points**

“The chair is 168 kg heavy. We recommend no manual handling of the chair. If the chair must be lifted it can be lifted in the rings on the back of the chair and on the inside of the front wheel. See pictures on Chapter Transport.

### **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.



## Technical specifications

**Specification according ISO 7176-15**

**Maximum occupant mass: 136 kg**

**Mass of the test dummy according ISO 7176-11:2012: 136 kg**

Overall length (with leg rest)	1140 mm
Overall width:	630 mm
Folded length:	970 mm
Folded width:	630 mm
Folded height:	1145 mm
Total mass:	168 kg
Mass of the heaviest part (battery):	21,5 kg
Static stability downhill:	9 °
Static stability uphill:	9 °
Static stability sideways:	9 °
Theoretical distance range*):	53 km
Dynamic stability uphill:	6 °
Obstacle climbing:	50 mm
Maximum speed forward:	9 km/h
Minimum braking distance from maximum speed:	1448 mm
Seat plane angle:	0 - 15 °
Effective seat depth:	500 mm
Effective seat width:	420 - 520 mm
Seat surface height at front edge :	410 - 850 mm
Backrest angle:	2 - 47 °
Backrest height:	500 mm
Footrest to seat distance :	390 - 535 mm
Leg to seat surface angle:	08 - 50 °
Armrest to seat distance:	200 mm
Front location of armrest structure :	350 mm
Horizontal location of axle:	250 mm

Minimum turning radius	770 mm
------------------------	--------

*\*) Use in steep conditions or rough ground etc. will have negativ impactt on the distance.*

Note: The tests was performed with a test dummy according ISO 7176-11 and loaded with 13 kg.

The wheelchair conforms to the following standards:

1. requirements and test methods for static, impact and fatigue strengths (ISO 7176-8)
2. power and control systems for electric wheelchairs requirements and test methods (ISO 7176-14)
3. climatic test in accordance with ISO 7176-9

### **Further Specificatons**

Headrest:	1,5 kg
Uneven ground:	30 mm
Ground clearance:	60 mm
Steering range:	1250 mm
Turning area:	1150 mm
Overall height:	1145 mm
Seat width:	460 mm
Length of the armrest:	420 mm
Sound level:	67,8 dB(A)

### **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 two 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.



Type: . Haze HZY-EV12-60 batterier.  
Art.nr.: KP-NHD10200

**Attention:** The replacement is only carried out by authorized professionals. The battery is located under the seat. The seat must be raised until it stops by itself.

**Attention:** Be aware that leaks or defective batteries are harmful to your health.

### Battery charger

EC-Buddy (Swede Electronics)	10A XLR, Type no: ECB-1001
Dimension	205 x 179 x 90 mm
Charge current (wave-free)	Max 10A
Mass	1,3 kg
AC power	230V 50Hz
Safety class	Type B
Insulation class	II (double insulated). This means that the charger can be connected to a standard socket without grounding.
Density class	IPX4

### 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.

8 Amp 24 V



**WARNING:**

- Batteries emit explosive gases during charging. Avoid flames and sparks.
- The charger is intended only for lead batteries with 12 cells (24V).
- The charger is equipped with overheating protection but can become hot during charging.
- Charging must be done in a place with good ventilation.
- If one of the connectors becomes hot during operation, this can be an indication that the connector is worn or damaged. In such cases both the male and female connectors should be replaced. Cables and connectors must be changed only by the manufacturer or by an authorised service workshop.

**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.

### **Service information**

NHD AS performs service on the LS-300. Request must be made directly to us (see item § Manufacturer). Main components replaced by normal wear and tear are:

- Tire
- Battery
- Seat System

A Service Manual or User's Manual is available if necessary. Please contact us.

## **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



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 (drive wheel 350kPa, swivel wheel 250 kPa) is reached.

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

## **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)

## Transport

### 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.



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.

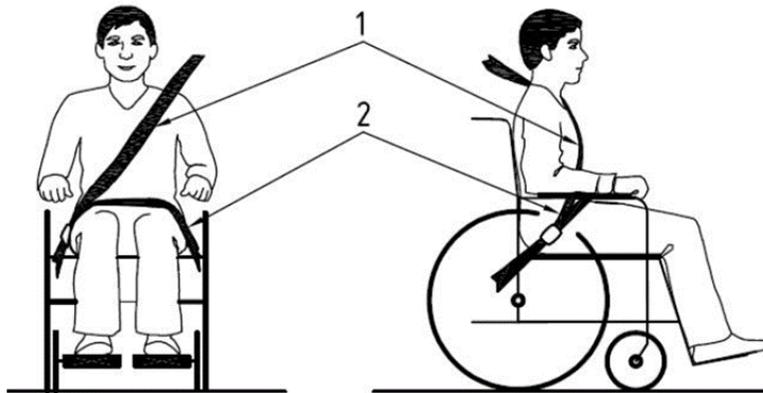
For more information, tie down kits for vehicles and or further information about tie-down belt and occupant 3-point safety belt, please visit the website of Dahl engineering at; [WTORS.com](http://WTORS.com)

**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**

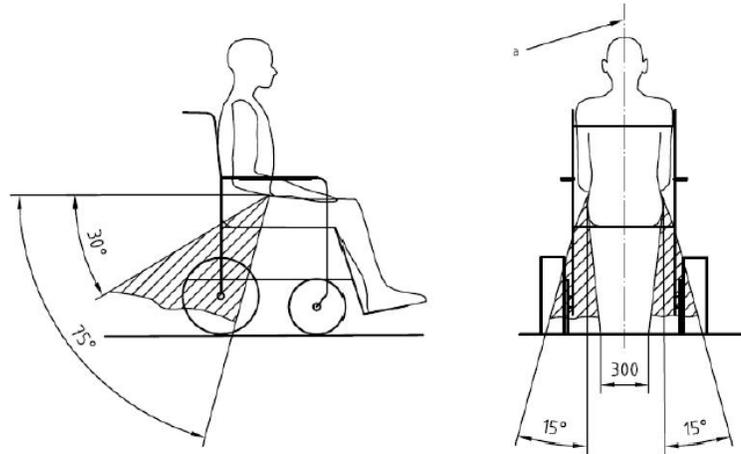
If the user is transported in his wheelchair, it is necessary to use a car safety belt to secure the wheelchair user.



*Positioning of the car safety belts for wheelchair users.*

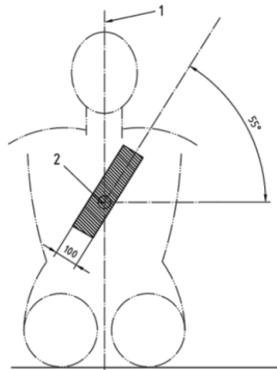
The wheelchair has been crash tested using tie down belts, and a 3-point occupant safety belt. We advise you to use a Dahl 3-point occupant safety belt model 500984 system or a system that is equally specified. It is very important to use the safety belt in the right angles according to the wheelchair 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.

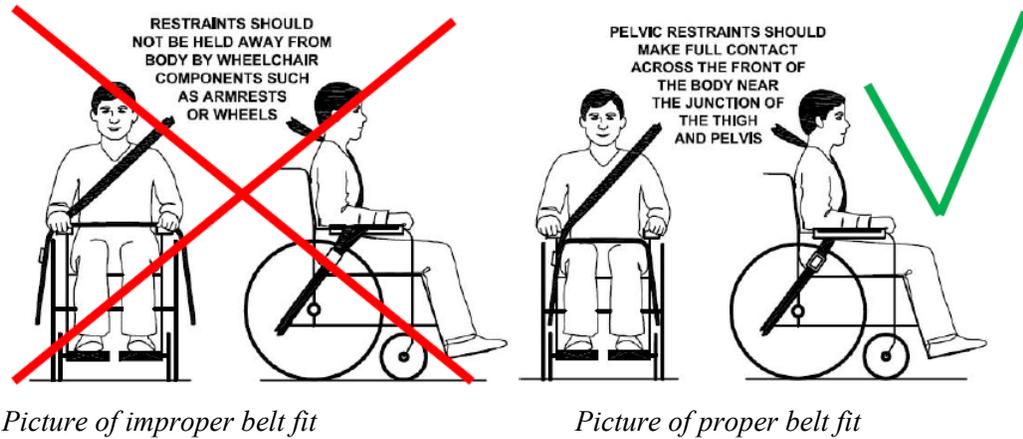


*Shoulder safety belt positioning*

**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.



**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 occupant restraint 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.

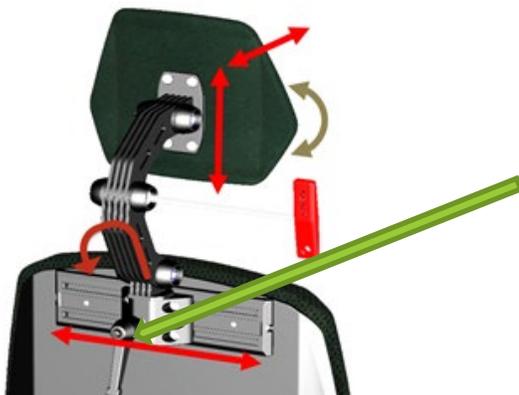


*Note: The wheelchair is suitable for land transport and air transport. LS-300 batteries comply with IATA Dangerous Goods Regulations 806, special provision A67.*

*Note: The wheelchair cannot be removed for transport.*

*Note: Recommended position of the backrest, legrest and headrest*

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



*Håndtak for å løsne og skru fast hodestøtten.*

### ***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](http://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 be 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 built in the device into your vehicle. Only authorized and trained staff is allowed to work on the docking device.*

The mounting of the Dahl Docking station into your vehicle shall only be executed by a authorized car adaptation company. They will get the right support and information from Dahl Engineering how to mount the docking station into the designated vehicle.



*Dahl Docking kit*

**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](http://WTORS.com)*

*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](http://WTORS.com)*

**Mounting of the Dahl docking adapter on the wheelchair**

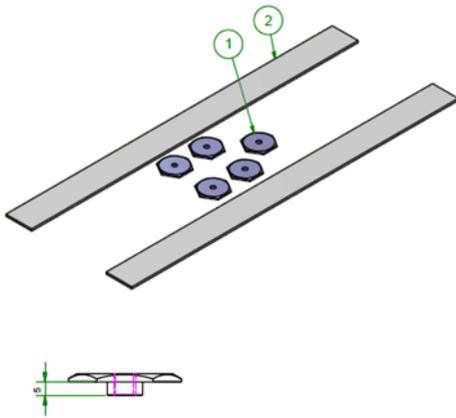
LS-300 chassis is equipped with a Dahl docking plate underneath the battery box frame of the chassis.



*LS-300 shassis with Dahl Docking plate mounted*

For detailed information about the Dahl Docking system, please visit the homepage;  
[WTORS.com](http://WTORS.com)

To fit the Dahl docking plate, Dahl has created a special kit for LS-300 which 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](http://WTORS.com)*



The LS-300 chassis has dedicated 5 holes in the chassis where the Dahl Docking 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 of the battery box.
2. Two plastic spacers are to be 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.

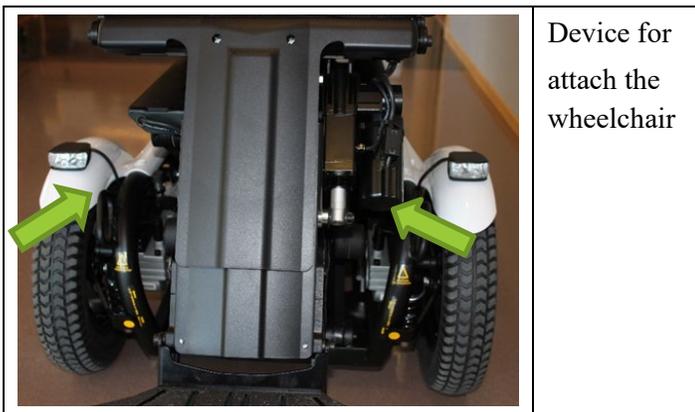
**Note:**

The special Dahl high grade Torx bolts (Dahl part no: 502800) only come in one length which ofen is too long. They need to be 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 bolts shall 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.

**Device for attach the wheelchair**

For wheelchair transport the wheelchair must be attached to the anchoring points provided for this purpose. See picture below. The control must be OFF and the brake release handles must be in the "LOCK" position.



## Storage

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

Turn off the wheelchair, disconnect the battery power connections, or remove them completely. Note that the battery should not discharge completely, if necessary contact an authorized dealer.

Only the headrest can be removed for storage.

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.

## 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. Part's that can be recycled are marked with recycle mark. You have to follow the local legal regulations for recycling

## Warranty

Warranty period table LS-300

Description	Warranty period	Examples
Frame	Within 5 years	Production defects on frame
Parts	Within 2 years	Production and / or material defects
Drive system*	Within 2 years	Transaxle, brackets, motor and brak
Electronics*	Within 2 years	Powermoduler, wiring and electronics components
After sales service parts	New: Within 1 year, after invoice. Repaired: Within 1 years after invoice	Brakes
Consumable parts	Within 1 year, after invoice	Brushes for drive motor, batteries, armrests, covers, tires etc.
Consumable parts Options/Accessories	Within 2 years	Handbag holder, basket etc. Delivered with the initial product

\* also in case of after sales service part delivery

**Attention:** Normal wear and tear or damage because of mishandling or incorrect use does not provide a basis for complaint.

## 5 Adjustment

### 5.1 Adjustment seat and backrest

The seating system is designed to optimize the seating comfort to the user. It can be adjusted in seat depth and seat width. A rail on each side provide mounting point for accessories like hip supports or safety belts. The seat pan is flat so other seating cushion can be fitted on to the seat as well.

The backrest is available in different lengths and width sizes to give the users maximum support and comfort. The cloth is available as 3D mesh or breathing but waterproof cloth.

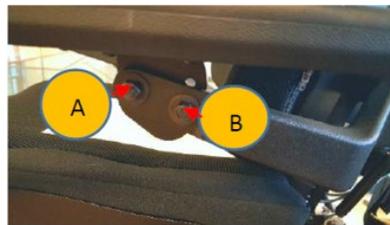
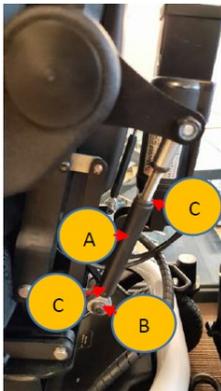
### 5.2 Adjustment armrest

The armrests of the seat provide good and comfortable support of the arm which result in a stabile seating position. The armrest has a soft upholstery on the top side. The arm rests come in

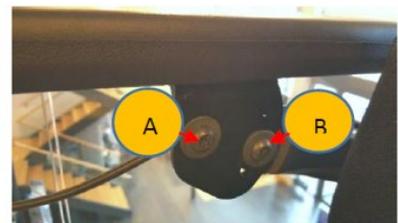
320 mm or 400mm length. A biomechanical mechanism makes sure the armrests are always in a good position to supply optimal support. The armrests are adjustable in height, depth, angle and inside angle. For transferring in and out of the chair, the armrests can be flipped up.

#### *Height adjustment armrests*

Height adjustment is made by shortening the Adjustment Sleeve (A) (raising the armrest) or extending (lowering the armrest) using the inner threaded rods in it. Unscrew the lower attachment (B) and loosen the lock nut (C). Then rotate the adjusting sleeve and the inner threaded rods to such a length that the desired height of the armrests is achieved. Mount in reverse order.



**Exterior (locknut)**



**Inside (5mm Allen key)**

#### *Adjust the angle of the armrest cushion*

To adjust the angle of the armrest cushion, loosen the screw (A), then loosen the screw (B) and the angle can be adjusted. Tighten screw (B) and then screw (A) again.

Always perform a load test to check that the armrest is properly attached.

### 5.3 Adjustment headrest

The headrest is adjustable in height, depth and angle to the requirements of the user. It can be taken off without losing its settings. As a additional option, a rail can be mounted to move the headrest out of centre. An other option is a rotation block to rotate the headrest to the left or right.

### 5.4 Adjustment legrest

The legrest should be in a knee angle close to 90 degrees. Adjusting the height of the leg is done as shown in the picture.



Adjusting



## 6 Replacement

### 6.1 Replacing front wheel



Replacement of front wheel:

Remove the small center cover over the hub with a screwdriver. Unscrew nut with correct ratchet. Remove the wheel.

Tightening is 20 – 22 N



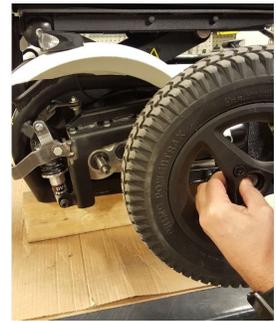
Remove cover with a screwdriver



Use correct ratchet



Take of the wheel



The front wheel is loose

## 6.2 Replacing swivel wheel (rear)



Replacing of swivel wheel (rear):

Unscrew the rear wheel with the correct Hex key. Lift the wheel out.



Hex key



Senterscrew is loose



Loosen swivel wheel (rear)

## 6.3 Replacing light (front- and rearlights)

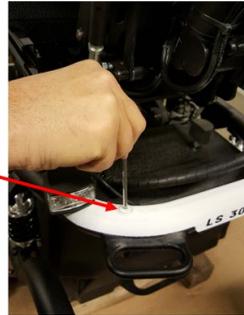


Unscrew the screw on the underside with an hex key. Lift the lamp out of the screen.

## 6.4 Replacing covers



To replace the covers, unscrew the screws with a hex key as shown in the illustration.



## 6.5 Replacing batteries

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

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

**Note:** To replace batteries, follow these steps:

1) Place the wheelchair on a level surface and lift the seat all the way up for better access.

2) Turn off the power supply using the ON / OFF key on the back of the chair.

3) Unscrew the 4 finger screws in the battery cover and cut over the clips with suitable pliers.

4) Carefully pull out the cables in the power module, pull out the 2 splits on both sides and remove the bolts.

5) Lift the power module aside - grasp the handle on the underside and pull out the battery drawer - see also the pictures below



In = Power on      Out = Power off

6) Grasp the battery cover and gently push it backwards so that the light module can be lifted away - picture A).

7) *NB! When replacing new batteries, the light module MUST be positioned so that it does not rest on the lift cord or cables. The light module should be placed in the designated location as in picture B).*

8) Remove the red and black battery shoes and pull them apart. Pull the battery compartment fully out and gently push the battery cover backwards.

9) Push the battery cover completely off the rear battery and disconnect the battery terminals.

10) Replace the batteries.

11) Reconnect the batteries. The procedure is performed in the opposite order.

**See photo illustrations for battery replacement:**



Unscrew the 4 finger screws



Cut the clips Carefully



Pull out the wires in the power module



Pull out the 2 splinters and take the out the bolts.



Lift Power Module aside.



Grasp the handle and pull the battery case slightly back.



A)Grasp the battery cover and gently pull it back



B)Place the light module in the designated location



Lift away the light module



Remove the red and black battery shoe and pull them apart



Pull the battery box fully out and push the cover backwards



Push the cover completely off the inner battery



Remove the battery terminals



Ready to change the batteries. The procedure is performed in reverse order to insert new batteries

## 7 Maintenance

### 7.1 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 "Checking the brakes", 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.



#### **Attention:**

**Maintenance work or technical repairs may only be carried out by authorized specialist dealers.**

## 8 Manufacturer

NHD AS Gigstads vei 22, 3511 Hønefoss, Norway

[www.nhd.as](http://www.nhd.as)

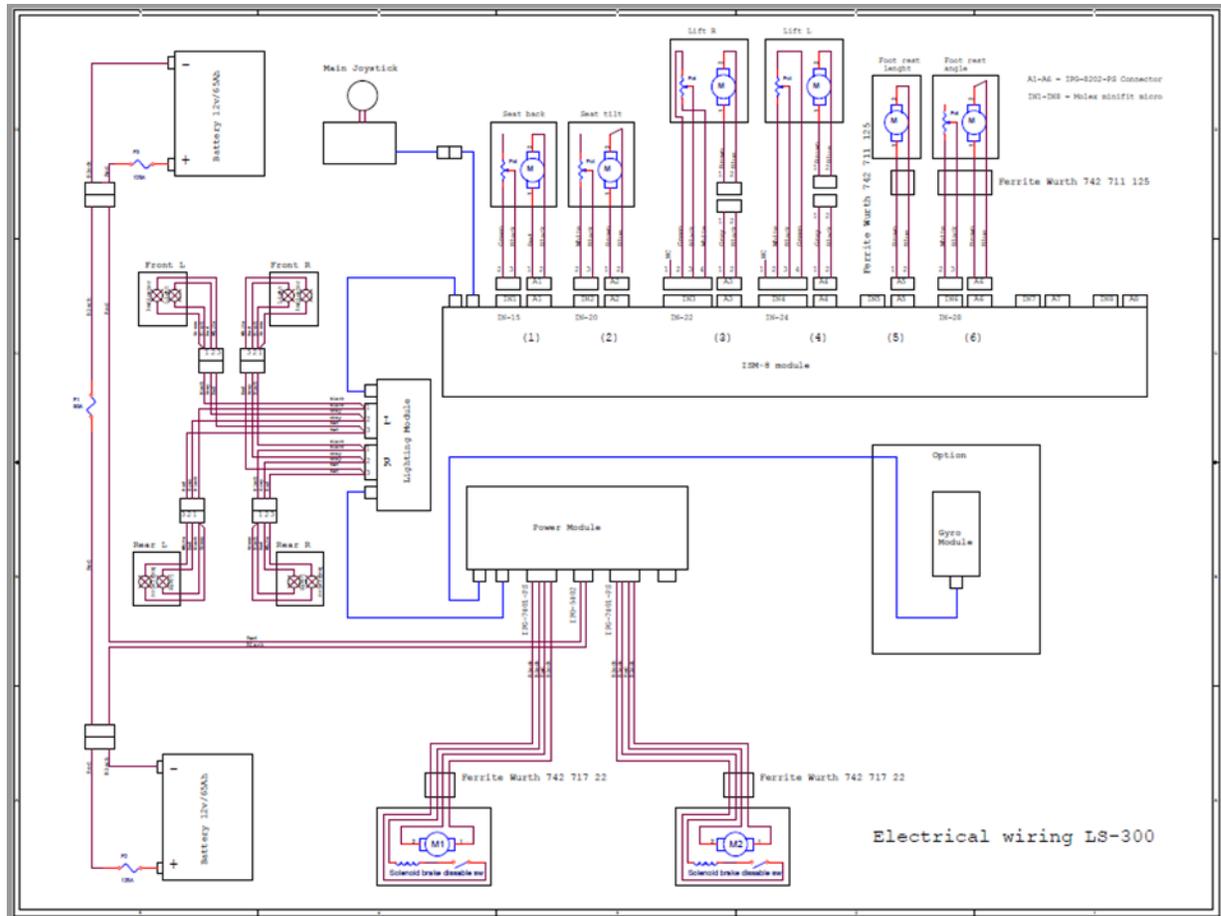
Mail: [post@nhd.as](mailto:post@nhd.as)

Phone: +47 99316100



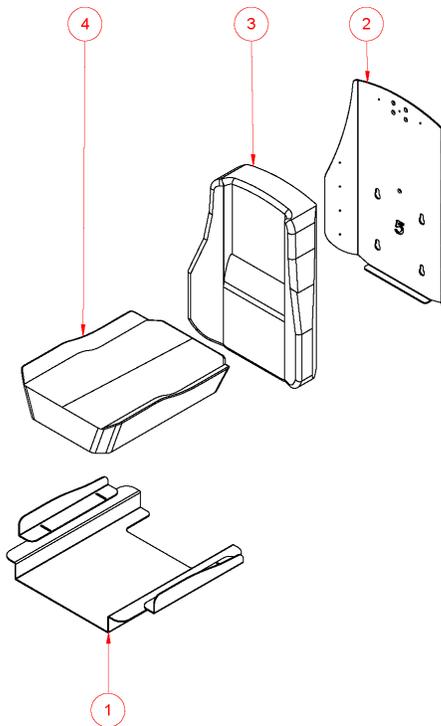
If you have questions regarding the LS-300 Power Wheelchair, please mail or phone. See information above. You find information about product safety or product recalls.

## 9 Electrical diagram, drawing



## 10 Exploded view

### Sittesystem / Seat system



Sittesystem LS-300  
Seat system LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102327	1	Sete, Skall NHD 3-7	Seat base chassis NHD 3-7
2	102329	1	Rygg, Skall NHD5 b47 x h58	Seat back chassis NHD5 w47 x h58
3	102332	1	Sete, Pute NHD5 b47 x d55	Seat base pad cushion NHD5 w47 x d55
4	102335	1	Rygg, Pute NHD5 b47 x h58	Seat back pad cushion NHD5 w46 x h58

Tilvalg Pos. 2/ Option pos. 2

Pos.	Art.	Ant./No	Beskrivelse	Description
2	102328	1	Rygg, Skall NHD3 b43 x h50	Seat back chassis NHD3 w43 x h50
2	102330	1	Rygg, Skall NHD7 b52 x h68	Seat back chassis NHD7 w52 x h68

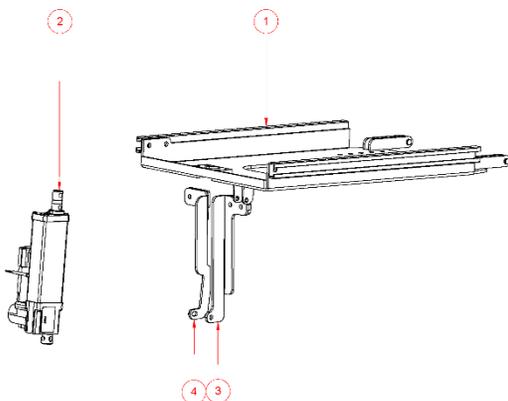
Tilvalg Pos. 3/ Option pos. 3

Pos.	Art.	Ant./No	Beskrivelse	Description
3	102331	1	Sete, Pute NHD3 b43 x d55	Seat base pad cushion NHD3 w43 x d55
3	102333	1	Sete, Pute NHD7 b52 x d55	Seat base pad cushion NHD7 w52 x d55
3	102337	1	Sete, Pute store vanger NHD3 b43 x d55	Seat base pad cushion large wing NHD3 w43 x d55
3	102338	1	Sete, Pute store vanger NHD5 b47 x d55	Seat base pad cushion large wing NHD5 w47 x d55
3	102339	1	Sete, Pute store vanger NHD7 b52 x d55	Seat base pad cushion large wing NHD7 w52 x d55

Tilvalg Pos. 4/ Option pos. 4

Pos.	Art.	Ant./No	Beskrivelse	Description
4	102334	1	Rygg, Pute NHD3 b42 x h50	Seat back pad cushion NHD3 w42 x h50
4	102336	1	Rygg, Pute NHD7 b50 x h68	Seat back pad cushion NHD6 w50 x h68
4	102340	1	Rygg, Pute store vanger NHD3 b42 x h50	Seat back pad cushion large wing NHD3 w42 x h50
4	102341	1	Rygg, Pute store vanger NHD5 b46 x h58	Seat back pad cushion large wing NHD5 w46 x h58
4	102342	1	Rygg, Pute store vanger NHD7 b50 x h68	Seat back pad cushion large wing NHD7 w50 x h68

### Tilt elektrisk / Seat tilt



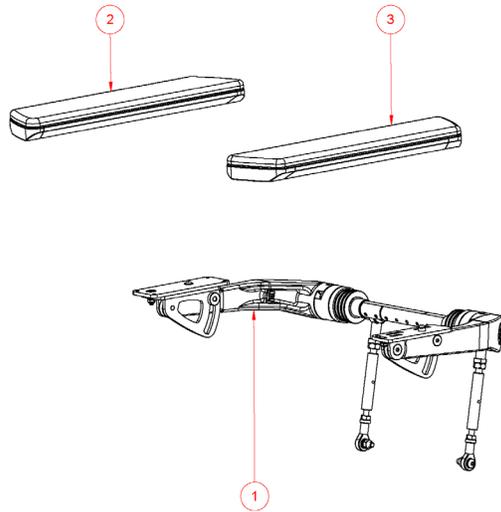
Splittegning/Exploded view

Tilt, Elektrisk LS-300  
Seat tilt LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102359	1	Tiltamme LS-300	Tilt frame LS-300
2	102024	1	Aktuator, tilt LS-300	Actuator seat tilt LS-300
3	102361	1	Brakett, tiltmotor venstre LS-300	Bracket for tiltmotor left LS-300
4	102360	1	Brakett, tiltmotor høyre LS-300	Bracket for tilt motor right LS-300

## Armlene / Armrest



Splittegning/Exploded view

Armlene LS-300  
Armrest LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102150	1	Armlene, innfestning u/puter bredde 410-530	Armrest assembly 410-530
2	102154	1	Armlenepute, høyre 400	Armrest pad, right 400
3	102158	1	Armlenepute, venstre 400	Armrest pad, left 400

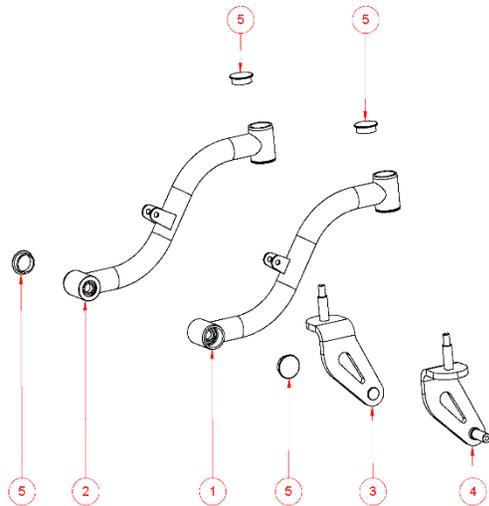
Tilvalg pos. 2/ option pos.2

Pos.	Art.	Ant./no	Beskrivelse	Description
2	102152	1	Armlenepute, høyre 320	Armrest pad, right 320

Tilvalg pos. 3/ option pos.3

Pos.	Art.	Ant./no	Beskrivelse	Description
2	102156	1	Armlenepute, venstre 320	Armrest pad, left 320

## Bakstilling / Rear carriage



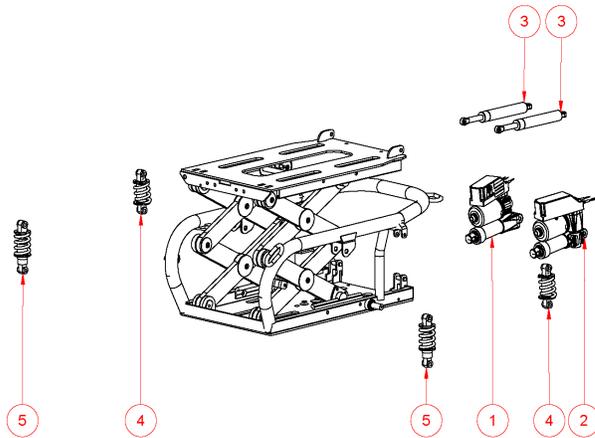
Splittegning/Exploded view

Bakstilling! LS-300  
Rear carriage LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102350	1	Bakstillingsrør, venstre LS-300	Left rear carriage arm LS-300
2	102349	1	Bakstillingsrør, høyre LS-300	Right rear carriage arm LS-300
3	102239	1	Hjulgaffel slavehjulsarm høyre LS-300	Caster bracket right LS-300
4	102240	1	Hjulgaffel slavehjulsarm venstre LS-300	Caster bracket left LS-300
5	102356	4	Plastplugg, rund bakstilling LS-300	Plastic castor cap LS-300

## Løft / Seat lift



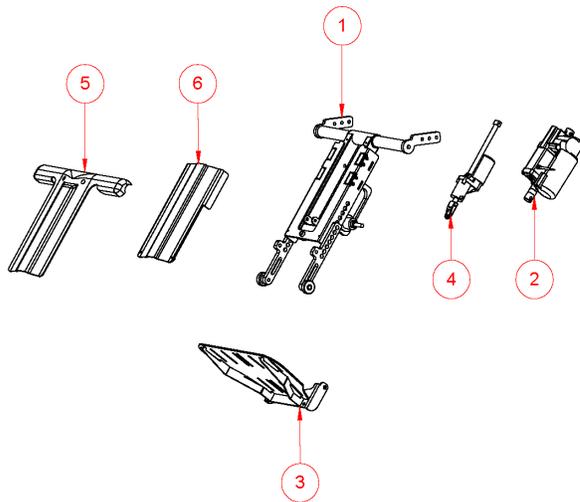
Splittegning/Exploded view

løft LS-300  
Seat lift LS-300



Pos.	Art.	Ant./ No	Beskrivelse	Description
1	102280	1	Aktuator, løft LS-300 høyre	Seat lift actuator, right LS-300
2	102022	1	Aktuator, løft LS-300 venstre	Seat lift actuator, left LS-300
3	102033	2	Gassdemper, LS-300 løft 1500N	Gas dampner, seat lift 1500N
4	102237	2	Støtdemper 100L/850LBS	Shock absorber 100/850LBS
5	102238	2	Støtdemper 125L/850LBS	Shock absorber 125/850LBS

## Fotbrett / Footrest



Splittegning/Exploded view

Fotbrett LS-300  
Footrest LS-300

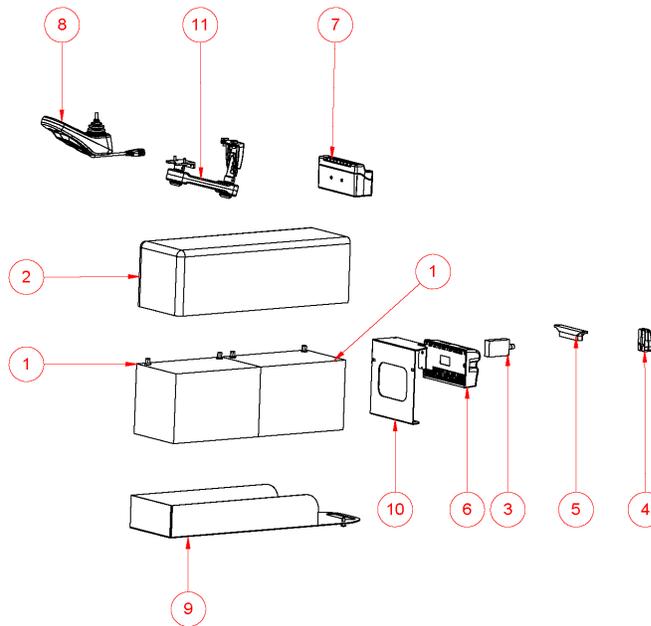


Pos.	Art.	Ant./ No	Beskrivelse	Description
1	102358	1	Grunnstamme elektrisk senter fotbrett LS-300	Base unit, legrest assembly LS-300
2	102021	1	Aktuator, fotbrett Tilt LS-300	Footrest tilt actuator LS-300
3	102031	1	Fotplate, Hel LS-300	Footrest single plate LS-300
4	102020	1	Aktuator, fotbrett lengdekomp LS-300	Legrest length compensation motor LS-300
5	102143	1	Deksel, fotbrett øvre LS-300	Cover, Footrest upper LS-300
6	102144	1	Deksel, fotbrett nedre LS-300	Cover, footrest lower LS-300

## Elektronikk / Control electronics

Splittegning/Exploded view

Elektronikk LS-300  
Control electronics LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	KP-NHD 10200	2	Batteri 12V 60Ah	Battery 12V 60Ah
2	102117	1	Batteritrek LS-300	Battery cover LS-300
3	102049	1	Sikring 90 A LS-300	Micro breaker 90Amp
4	102101	1	R-net, Gyromodul	R-net, gyro module
5	102064	1	R-net, Kabelblokk/forgrening	R-net Connector, 4-way bus
6	102063	1	Powermodul R-net PM 120	R-net power module 120 Amp
7	102128	1	R-net, ISM 8 aktuator modul CxSM	R-net, ISM 8 actuator module CxSM
8	102066	1	Joystick, R-net, JSM-LED-L	Joystick, R-net, JSM-LED-L
9	102118	1	Batterikasse LS-300	Battery tray with fastenings LS-300
10	102357	1	Innfestning powermodul LS-300	Bracket for power module LS-300
11	102202	1	Joystick, Standard feste høyre R-net	Standard joystick bracket right R-net

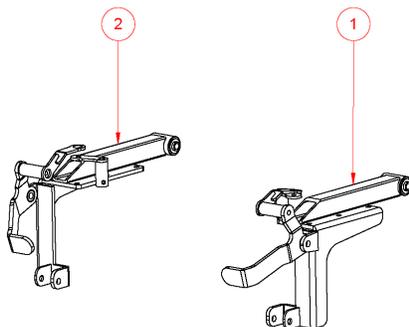
Tilvalg til Pos. 8/Option to Pos. 8

Pos.	Art.	Ant./No	Beskrivelse	Description
8	102114	1	Joystick, R-net CJSM-L SW	Joystick, R-net CJSM-L SW
8	102127	1	Joystick, R-net CJSM2-VGA IR	Joystick, R-net CJSM2-VGA IR
8	102098	1	Joystick, R-net CJSM2-VGA IR/Bluetooth	Joystick, R-net CJSM2-VGA IR/Bluetooth

Tilvalg til Pos. 11/Option to Pos. 11

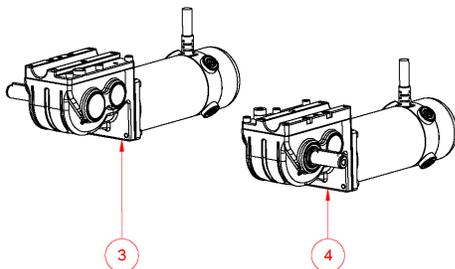
Pos.	Art.	Ant./No	Beskrivelse	Description
11	102203	1	Joystick, Standard feste venstre R-net	Standard joystick bracket left R-net
11	102200	1	Joystick, Parallelforskyrning høyre R-net	Swing away joystick bracket right R-net
11	102201	1	Joystick, Parallelforskyrning venstre R-net	Swing away joystick bracket left R-net

## Motorer / Motors



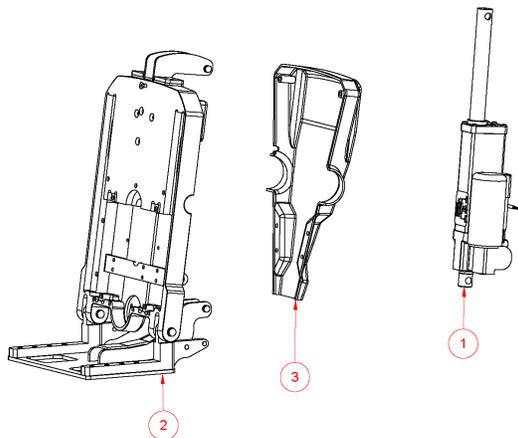
Splittegning/Exploded view

Motorer LS-300  
Motors LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102377	1	Motorbrakett venstre LS-300	Drive motor bracket, left LS-300
2	102378	1	Motorbrakett høyre LS-300	Drive motor Bracket, right LS-300
3	102279	1	Drivmotor, LS-300 høyre 450W	Drive motor right 450W LS-300
4	102278	1	Drivmotor, LS-300 Venstre 450W	Drive motor left 450W LS-300

## Rygg elektrisk / Backrest



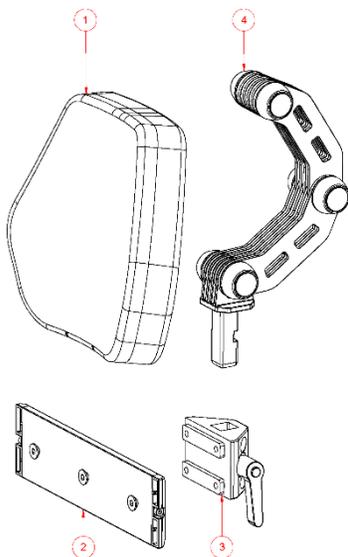
Splittegning/Exploded view

Rygg elektrisk LS-300  
Backrest LS-300



Pos.	Art.	Ant./NO	Beskrivelse	Description
1	102023	1	Aktuator, rygg LS-300	backrest recline actuator LS-300
2	102243	1	Ryggramme LS-300 glidenygg	Backrest frame with anti sheer LS-300
3	102163	1	Deksel rygg LS-300	Cover backrest LS-300

## Nakkestøtte sidejustering / Headrest with lateral adjustment



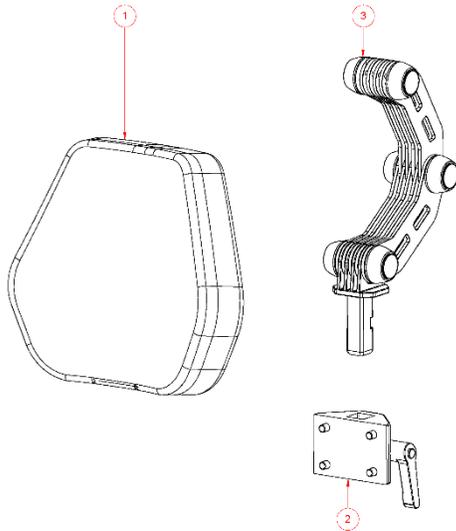
Splittegning/Exploded view

Nakkestøtte sidejustering LS-300  
Headrest with lateral adjustment LS-300



Pos.	Art.	Ant./NO	Beskrivelse	Description
1	102353	1	Nakkepute, standard	Headrest, pad standard
2	102354	1	Nakkestøtte, skinne sidejustering	Headrest, mountingplate lateral adjustment
3	102352	1	Nakkestøtte, rygginnfestning sidejustering	Headrest, mounting bracket lateral adjustment
4	102355	1	Nakkestøtte, justeringsbøyle	Headrest, adjustable bracket

## Nakkestøtte / Headrest



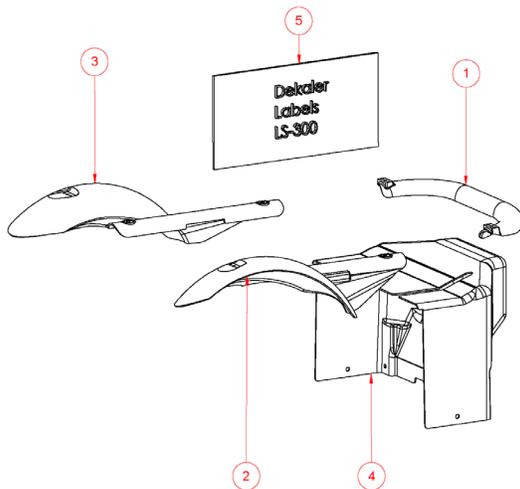
Splittegning/Exploded view

Nakkestøtte, LS-300  
Headrest LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102353	1	Nakkepute, standard	Headrest, pad standard
2	102351	1	Nakkestøtte, rygginnfestning fast	Headrest, mounting bracket standard
3	102355	1	Nakkestøtte, justeringsbøyle	Headrest, adjustable bracket

## Deksler / Covers



Splittegning/Exploded view

Deksler LS-300  
Covers LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102142	1	Deksel, baklamper LS-300	Rear cover LS-300
2	102052	1	Skjerm, venstre LS-300	Side cover, left LS-300
3	102051	1	Skjerm, høyre LS-300	Side cover, right LS-300
4	102053	1	Deksel, bakre chassis LS-300	Rear chassis cover LS-300
5	102361	1	Lablesett LS-300	LS-300 Decal kit

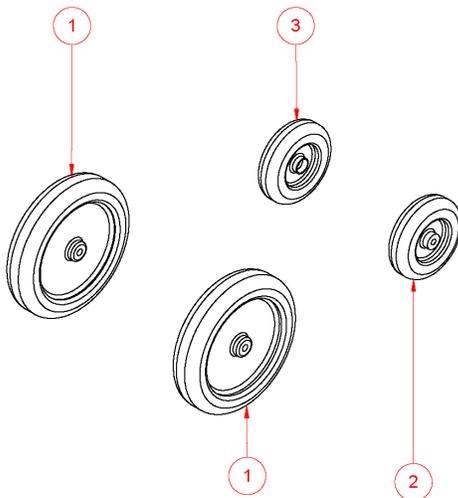
## Hjul / Wheels

Hjul LS-300  
Wheels LS-300



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102185	2	Hjul, Komplett grå luft drivhjul LS-300	Front wheel with tyre air, grey LS-300
2	102187	1	Hjul, Komplett grå luft slavehjul venstre LS-300	Rear wheel with tyre air, left grey LS-300
3	102186	1	Hjul, Komplett grå luft slavehjul høyre LS-300	Rear wheel with tyre air, right grey LS-300

### Tilvalg/Options



Pos.	Art.	Ant./No	Beskrivelse	Description
1	102182	2	Hjul, komplett grå kompakt drivhjul LS-300	Front wheel with tyre puncture proof, grey LS-300
2	102184	1	Hjul, komplett grå kompakt slavehjul venstre LS-300	Rear wheel with tyre puncture proof, left grey LS-300
3	102183	1	Hjul, komplett grå kompakt slavehjul høyre LS-300	Rear wheel with tyre puncture proof, right grey LS-300

Pos.	Art.	Ant./No	Beskrivelse	Description
1	102188	2	Hjul, komplett sort kompakt drivhjul LS-300	Front wheel with tyre puncture proof, black LS-300
2	102190	1	Hjul, komplett sort kompakt slavehjul venstre LS-300	Rear wheel with tyre puncture proof, left black LS-300
3	102189	1	Hjul, komplett sort kompakt slavehjul høyre LS-300	Rear wheel with tyre puncture proof, right black LS-300

Pos.	Art.	Ant./No	Beskrivelse	Description
1	102191	2	Hjul, komplett sort luft drivhjul LS-300	Front wheel with tyre air, black LS-300
2	102199	1	Hjul, komplett sort luft slavehjul venstre LS-300	Rear wheel with tyre air, left black LS-300
3	102198	1	Hjul, komplett sort luft slavehjul høyre LS-300	Rear wheel with tyre air, right black LS-300