

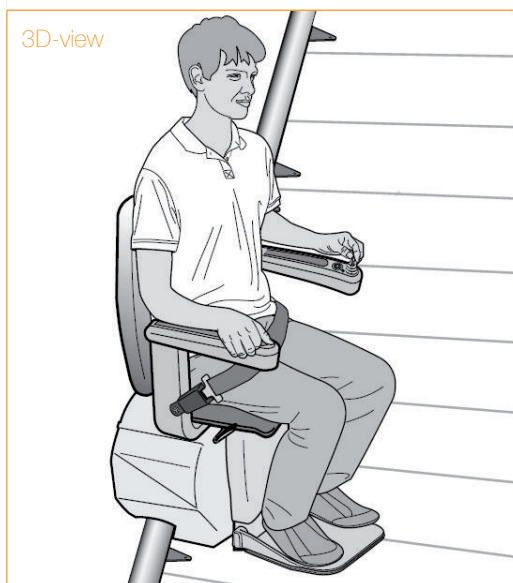
Handicare Freecurve Technical manual



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1 Introduction



General

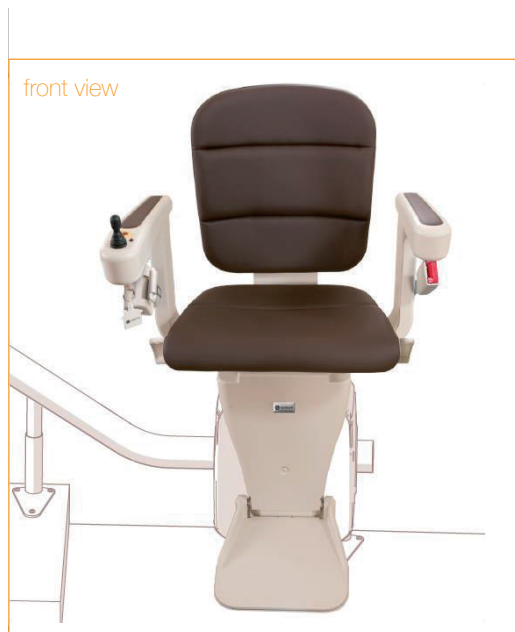
Power supply:	90 V ~ - 240 V ~
Frequency:	50 / 60 Hz
Current:	1 Amp
Power consumption:	360 Watt
Max. weight:	125 kg
Max. speed:	0.11 m/sec (variable)
Tips without recharging*:	10 uninterrupted
Max. angle of inclination:	61 degrees
Min. stair width Van Gogh:	690 mm Classic Elegance Alliance
Max. rail length:	35 metres

* 6 metre trip, with 125 kg load at an angle of inclination 61°



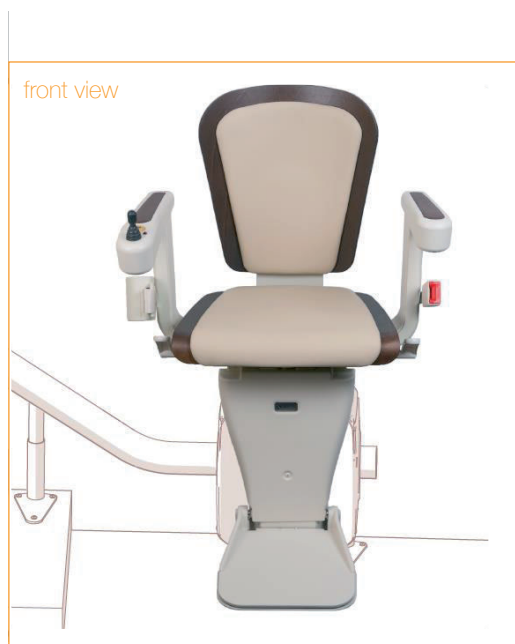
Classic

- The Classic chair can be delivered in 3 colours: beige, anthracite and red. The material has leathergrain finish.
- The armrest, footrest and seat fold up separately.
- The chair can swivel centric in both directions.
- It is possible to ride in a swiveled position.
- Powered seat is optional.
- The powered and illuminated footrest is optional.
- The footrest does not swivel with the seat.
- Standard and offset footrest.
- The height of the backrest can be increased (35 mm).
- The position of the backrest can be adjusted on site to increase the depth of the seat by 50 mm



Elegance

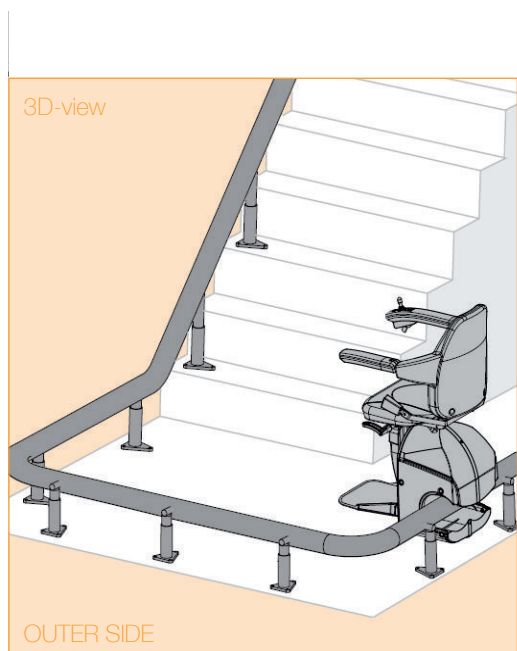
- The Elegance chair can be delivered in cream, bordeaux red and cocoa brown. The material is leatherlook.
- The armrest, footrest and seat fold up separately.
- The chair can swivel centric in both directions.
- It is possible to ride in a swiveled position.
- The footrest does not swivel with the seat.
- Powered swivel seat is optional.
- The illuminated powered footrest is optional.
- Standard and offset footrest.
- The width of the armrests is adjustable (25 mm).
- The height of the backrest (20 mm) can be increased.



Alliance

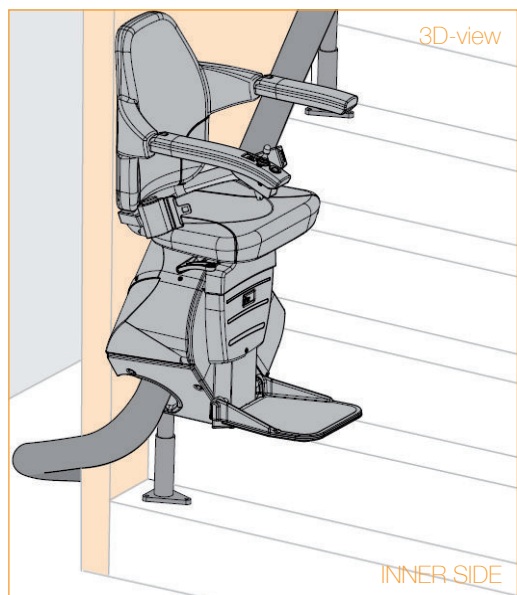
- The Alliance chair can be delivered in 3 colours:
 - Brown wood, cream leather
 - White wash wood, bordeaux red leather
 - White wash wood, cocoa brown leather
- The armrest, footrest and seat fold up separately.
- The chair can be swivel centric in both directions.
- It is possible to ride in a swiveled position.
- The footrest does not swivel with the seat.
- Powered swivel seat is optional.
- The illuminated powered footrest is optional.
- Standard and offset footrest.
- The width of the armrests is adjustable (25 mm).
- The height of the backrest (20 mm) can be increased.

Handicare Freecurve



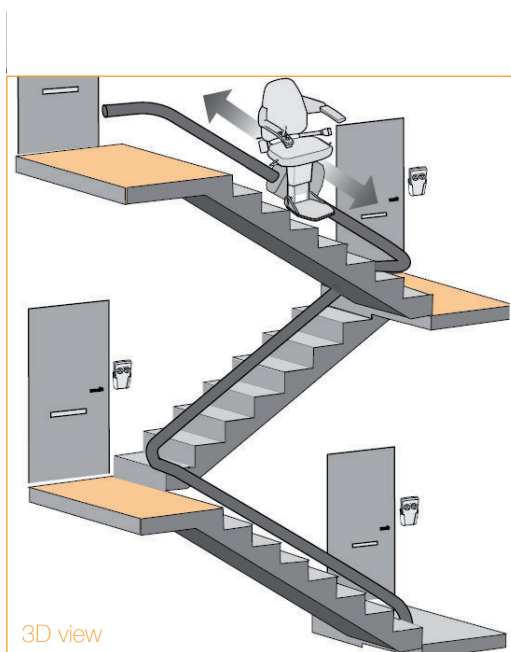
Van Gogh

- The rail of the Van Gogh chair lift is mounted on the outer side of the stairs.
- The maximum rail length is 35 metres.
- Both forward and reverse bends can be incorporated in a single length of Van Gogh and Rembrandt rail.
- The inner side of the stairs can still be used by other users, in particular when a handrail is fitted on the inner side.
- More time required for the trip.
- Lower on the stairs.
- In the event of obstacles on the inner side of the stairs.
- Minimum width of stairs 690 mm.
- Maximum of 2 landings.
- Overhead clearance less critical.
- Installation almost always feasible.
- View on the stairs during the ride.



Rembrandt

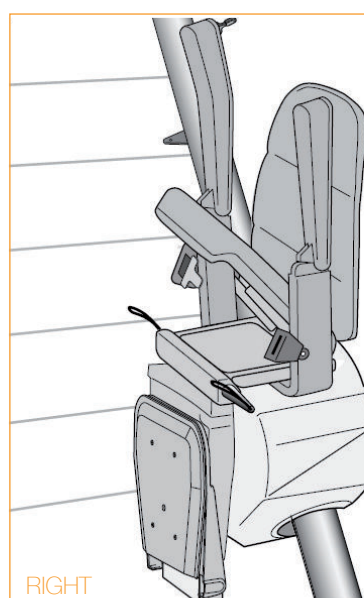
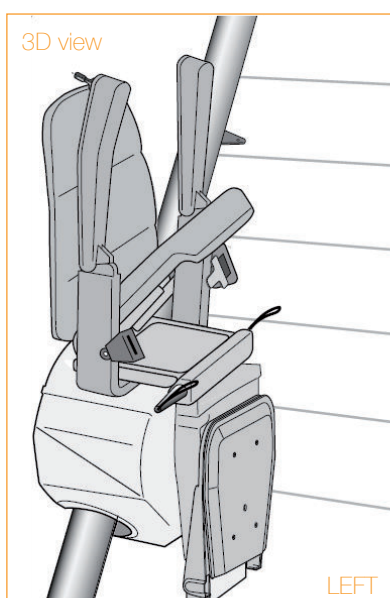
- The rail of the Rembrandt chair lift is mounted on the inner side of the stairs.
- The maximum rail length is 35 metres.
- Both forward and reverse bends can be incorporated in a single length of the Rembrandt rail.
- The outer side of the stairs can still be used by other users.
- Less time required for the trip.
- Higher on the stairs. Maximum allowed distance between footrest and nose of the step is 40 cm (EN 81-40).
- In the event of obstacles on the outer side of the stairs.
- Minimum width of stairs 770 mm.
- Multiple landings (Vermeer).
- Overhead clearance more critical.
- No view on the stairs during the ride.



Vermeer

- The Vermeer is a stairlift, fitted to the inside or the outside of the stairs, which travels to more than one floor. The Vermeer is intended for private and lockable public buildings.
- Max. rail length (EN 81-40): 35 m
- Max. number of charge points/stops: 10
(including charge/stoppoints at the bottom and top of the rail and including folding hinge point)
- Max. number of remotes: 10
- Available with the Classic/Elegance/Alliance seat.
- Optional for all models:
The lift can transmit an acoustic signal when the remote controls are used.

Rail length	Battery	Capacity	Possible meters without charging
< 9 m	Standard	8 Ahr	180 m
9-30 m	Extra Power	12 Ahr	235 m
> 30 m	Ultra Power	20 Ahr	700 m



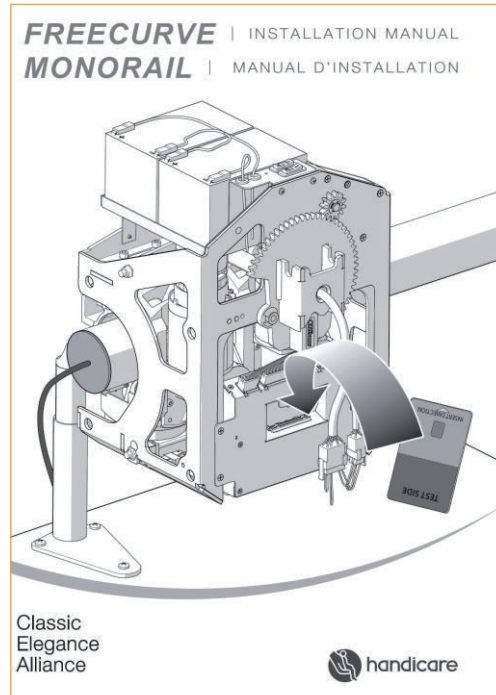
Left/Right Handed

The side on which the rail is mounted when viewed from the bottom of and facing the stairs determines whether the model is a left-hand or a right-hand version.



The position of the joystick is stated when sitting on the chair.

2 | Installation

Installation manual



The installation is done according to the installation manual.

Installation				
11P00045		Installation manual		Explanation drawing

Special attention for:

- Check that other users can safely use the stairs (install support brackets if necessary)
- Check that the stairs can withstand 100N/cm²
- Check that there are no open bannisters
- Check all torque settings have been applied
- Check the safety distances to obstacles are respected
- Check that the upper support has made minimal 4 rotations in the lower support
- Sign off the instructed person declaration, the installation checklist and the declaration of conformity
- The motor bracket shall only be installed if the lift has no outer curves and it shall be installed on the lower motor only.

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Explanation drawing

Below you will find the QR-codes for the installation videos

Installation			
	Track assembly		Rail joints
	Powerpack assembly		Powerpack calibration
	Seat and footrest		Finish installation
	Configuring the footrest		Charge point correction
	Hinged track		

3 | Tools

In the installation manual you will find the standard tools. Below is a list of special tools

Special tools		
		
Fitting kit rail joint C2043800	Torque wrench	Allen cap 5,6,7,8 mm
		
Grinder 11C00112	Electical override C5001000	Spiritleveler 11C00020
		
Allen key 7 11C00074	Install support AA10622	Bit 300 mm
		
Rail angle tool AA12120	Coupling tool C2160000	Body file blade 11C00047

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C2043800 Fitting kit rail joint

Tools for installing the railjoint

C2160000 coupling tool

Tool for installing the railjoint, part of C2043800

11C00112 Grinder

Tool for filing the domex, in case of a bump

11C00047 Body file blade

Blade for tool 11C00112

Torque wrench

Tool for applying the prescribed torques

C5001000 Electrical override

Tool for riding the lift without pcb

11C00020 Spirit leveler

Tool for applying the prescribed railangle

11C00074 Allien key 7

Tool for fixing the railsupports

AA10622 Install support


Tool for installing a Innercurve rail with one engineer

Bit 300 mm

Tool for fixing the railsupport to the stairs

AA12120 Rail angle tool

Tool for applying the prescribed railangle at a 180 degrees bend






Tools			
	Install support		Rail angle tool
	Rail joint		

4 | Electric schemes

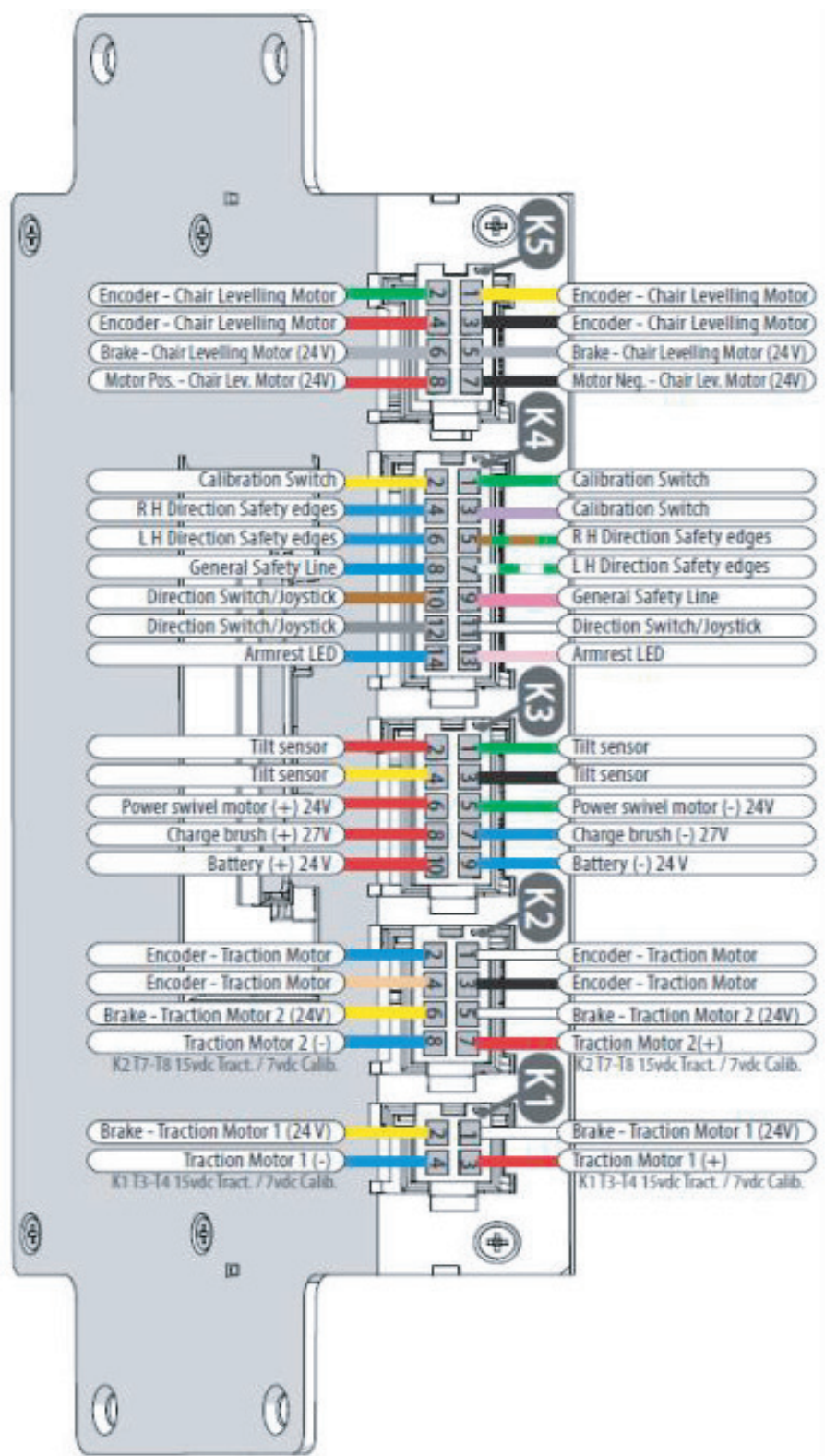
The electrical components are shown in the form of icons.

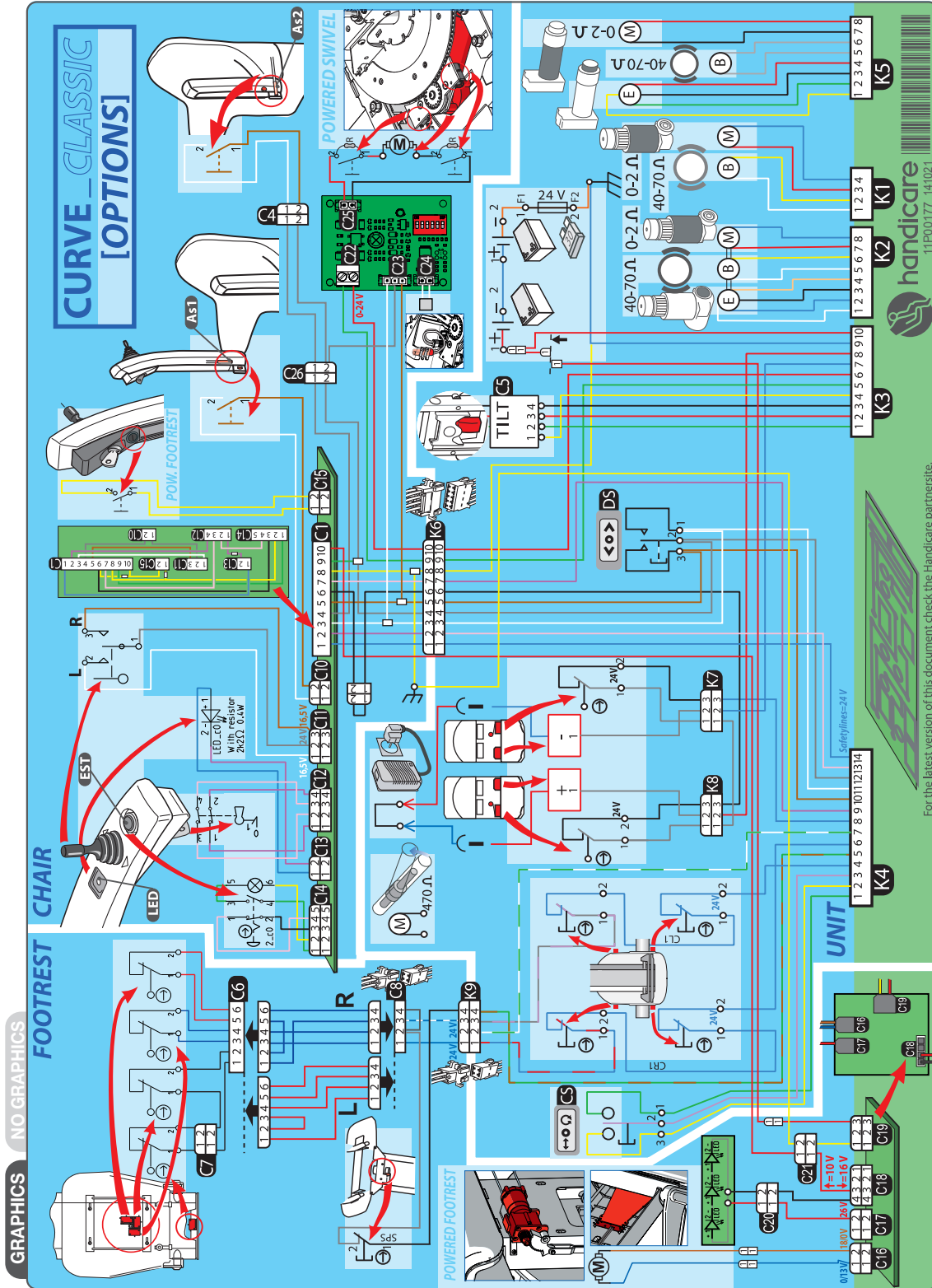
The wire colours appearing in the connection diagram correspond to the wiring in the chair lift.

Each connector has its own number which corresponds with the numbers in the chapter “fault finding”.

Electric scheme			
	Classic		Elegance / Alliance
	Classic options		Elegance / Alliance options
	Overview of all the schemes from the year 2000 on		

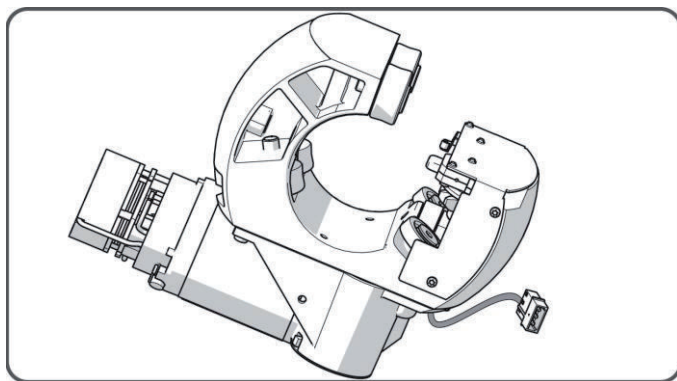
Handicare Freecurve





For the latest version of this document check the Handicare partnersite.

5 | Traction motors



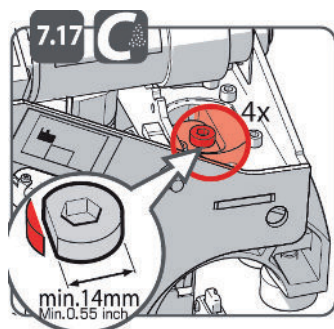
The unit has standard 2 traction motors to ride the unit over the rail which are applied with an electro mechanic brake.

In axial direction the unit is kept horizontal by the tooth rack.

Due to safety reasons the unit has 2 traction motors. When one of the motors breaks down, the other one will take care of a safe situation and is possible to bring the lift to a standstill.

The difference in amperage between the motors is checked by the printed circuit. Too big difference of the motor amperage will stop the lift.

The adjustment of the traction motors is sealed in the factory and it is absolutely prohibited to change this setting.



The bolts on the upper side of the traction motors will be exposed to wear. The minimum measure allowed will be 14 mm. When the wear is more than this, the bolts shall be replaced by new bolts (article number C1001200).

Both the drive motors are equipped with an electro-mechanical brake. The application and the release of the brake can be checked visually, since the brake disks are visible from the outside.

One of the motors is equipped with an encoder to determine the position and the speed of the lift. An encoder is an electronic component on the axis of the motor that generate pulses when the axis turns. The pulses are counted, and, and translated to a movement of the unit or a levelling of the chair.

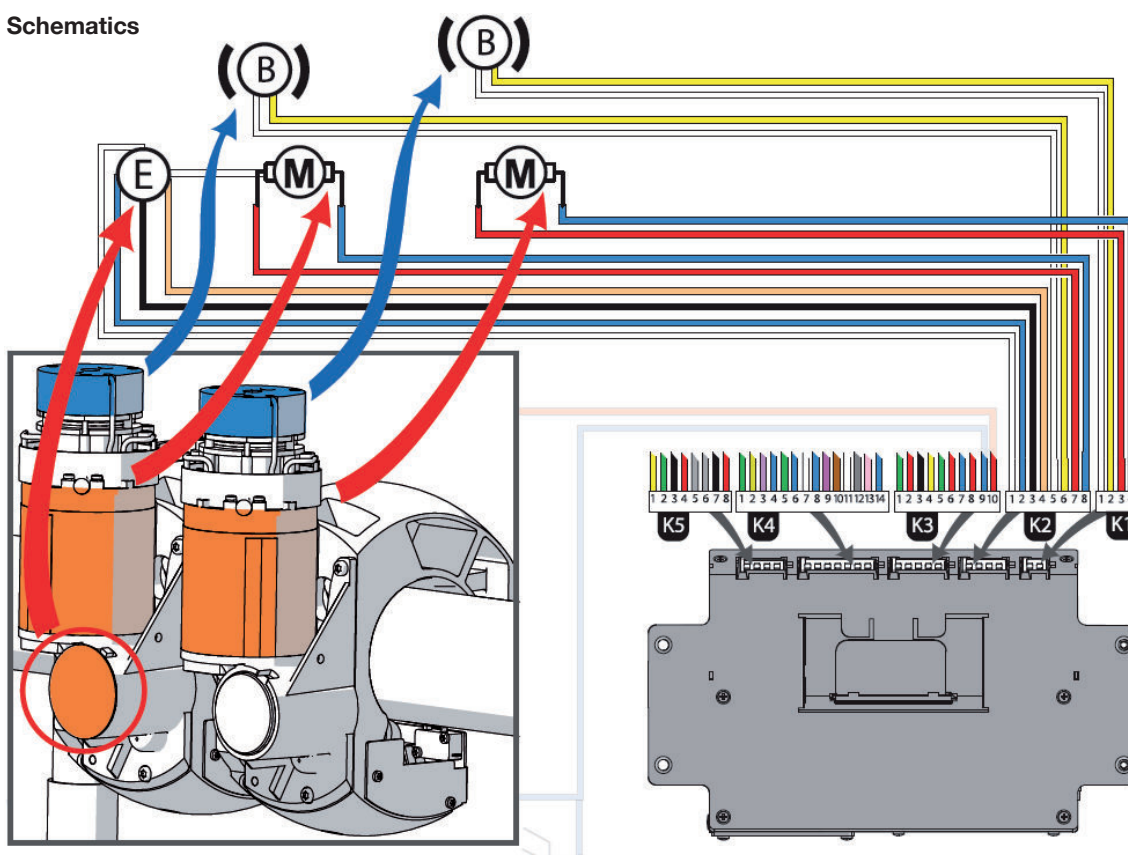
Symptoms of a defective encoder are:

- High speed of the traction motors
- Chair out of level
- Lift moves only a few cm's

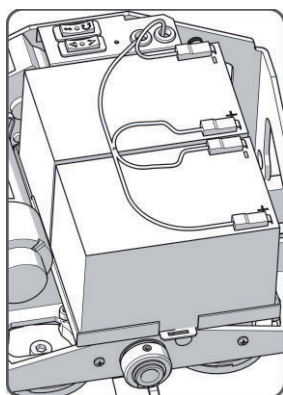
In case of a defective encoder, the printed circuit does not know the position of the lift and will stop the lift.

Traction motors	
	Video principle DC-motor
	Instruction replacement of spareparts

Schematics



6 | Batteries



The Freecurve has 2 maintenance free lead acid batteries of 12V=.

Rail length	Battery	Capacity	Possible meters without charging
< 9 m	Standard	8 Ahr	180 m
9-30 m	Extra Power	12 Ahr	235 m
> 30 m	Ultra Power	20 Ahr	700 m

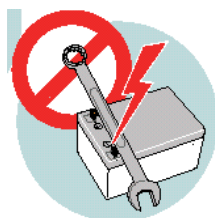
The printed circuit checks the status of the batteries. When the voltage of the batteries has been less than 20V= for more than 5 seconds, the lift will finish its ride to the next charge station. The lift cannot be used for 2,5 hrs by the controls.

This is the minimum charging time, to charge the batteries for the next ride. If in the meantime, one of the controls is used, the lift will start beeping and the led is blinking.

When after 2,5 hours the voltage is not up to 24V= the lift will fall in breakdown modus. The led in the armrest is off and a visit of the engineer is necessary. Tip! Change the batteries with the power off, so the lift does not remain in the charge modus.

Two chargers are delivered on rails longer than 15 meters.

The batteries shall be disposed of by the dealer as small chemical waste.



Safety

The power delivered by the battery can reach up to around 20 amperes. For this reason, avoid short-circuiting. Be careful with steel watchstraps and tools: they could cause a short-circuit.



The Fuse

The fuse is incorporated in the wiring as close as possible to the battery.

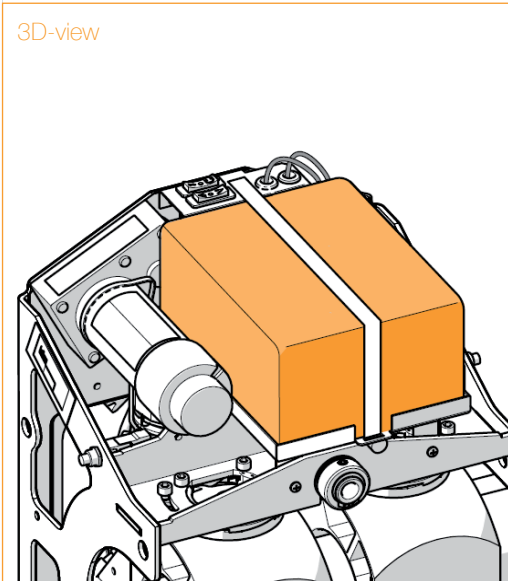
The nominal value of the fuse is 30 Amp.

In view of the specified response time the fuse must always be replaced with an identical type.

Brand Littlefuse ATO 257 (magr. E0006400).

Ultra Power (LiFePo4):

3D-view



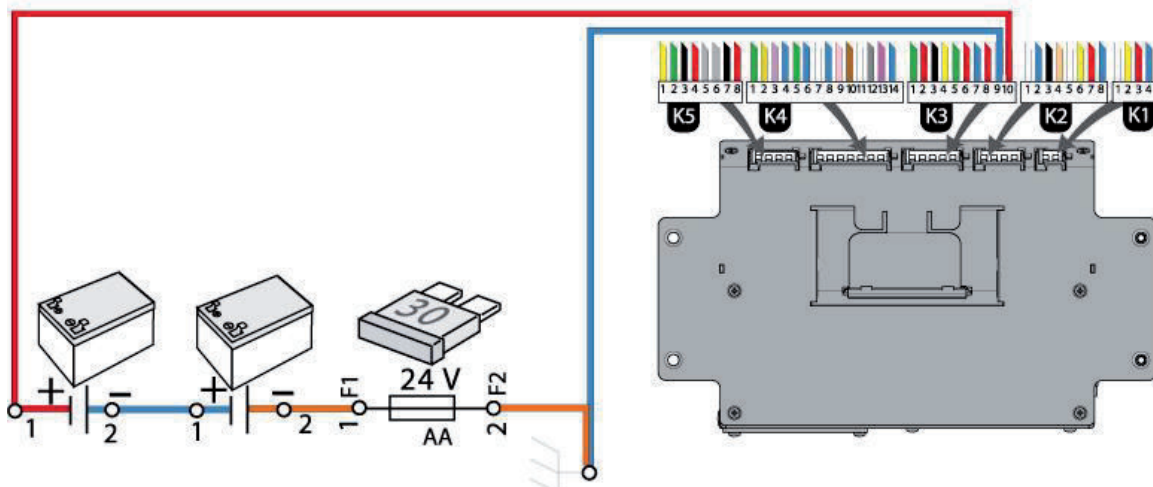
Ultra Power Kit

- The LiFePo battery is an option for the Freecurve for heavy duty use. The lift can ride 700 meters without charging.
- The option is available for the Freecurve in combination with all chairs and options.
- The LiFePo battery is available for new installations and existing installations and can be installed by a certified engineer.
- The LiFePo batteries can only be used in combination with the printed circuit version Q and T. The LiFePo batteries require a datacard on which the option for a LiFePo battery is enabled. If on a unit with standard batteries, the batteries are replaced by LiFePo batteries, the datacard should be replaced.
- The LiFePo batteries only function with a dedicated charger (C2010520).

Service instructions:

Ultra power kit		
	<p>Service instructions ultra power kit</p>	

Electrics



7 | Batteries condition test


ACT chrome 12 V intelligent battery tester



The ACT chrome is an intelligent battery tester, designed for 12 V lead acid batteries from 1.2 Ah to 200 Ah.

The tester enables you to check the voltage and to test the capacity of new batteries straight from the box, as well as used batteries which may show abnormal Ah capacity.

A table on the side of the meter indicates when batteries should be recharged or replaced due to age or operating conditions.

Battery tester		
	Instructions how to use the battery tester	

8 | The Charger



The battery charger is suited to an input voltage of between 100V~ and 240V~.

The output voltage is between 27,4 V= and 27,7 V= when the stairlift is not charging.

The output voltage is between 28,6 V= and 29,1 V= when the stairlift is charging.

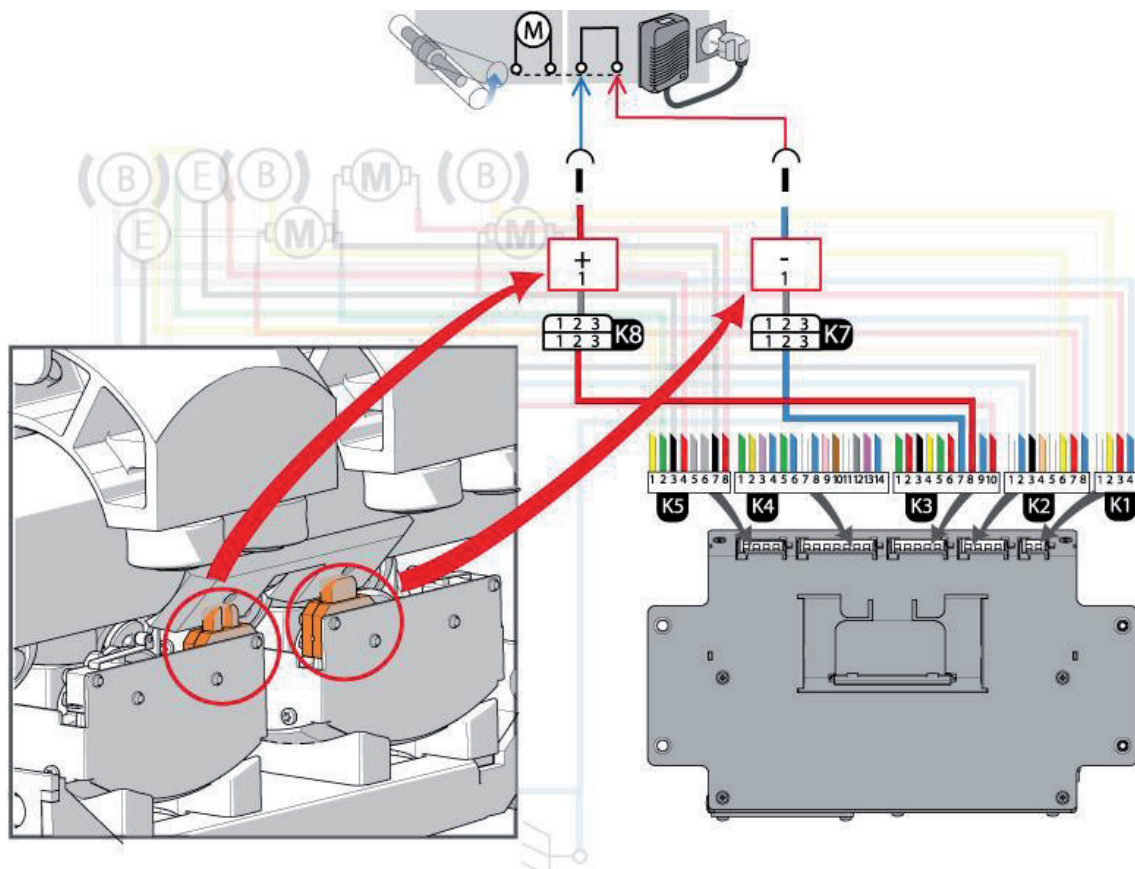
The charging current is 1.5 Amp.

An indicator lamp is fitted to the front of the battery charger:

- Red: the chair lift's batteries are charging with high voltage
- Orange: the chair lift's batteries are charging with low voltage
- Green: the chair lift's batteries are dripped charged

Consequently the indicator lamp should always be red when the chair lift stops at the charging station after a trip.

In due course the lamp turns green, indicating that the batteries are charged.




9 | Holiday switch



Customers are used to switch off the power of their holiday homes, for instance when the home is left for a longer period. When the customers return after some months, the batteries of the stairlift might be empty.

To prevent this from happening, a holiday switch can be installed on the Freecurve lift. By activating this holiday switch the customer can switch off the battery power from the lift. Customers should be aware that the lift does not run when this switch is in the off position.

The holiday switch is not a standard option and can only be ordered as a kit in our webshop on www.Handicarepartners.com. The article number is SP002000.

Holiday switch		
	Instruction how to install the holiday switch	

10 | Safety edges

Two direction-sensitive safety edges and one general safety edge have been included in the stairlift.

The direction-sensitive safety edges



The direction-sensitive safety edge prevents the lift from moving further in the direction that is blocked. However, the lift can still be moved in the opposite direction to remove the block. To indicate a fault, the LED on the armrest is dim, but starts to flash when the joystick is moved in the direction that is blocked.

The following switches have been included in the direction-sensitive safety edge:

- Footrest switch
- Direction switches for the unit

The general safety edge

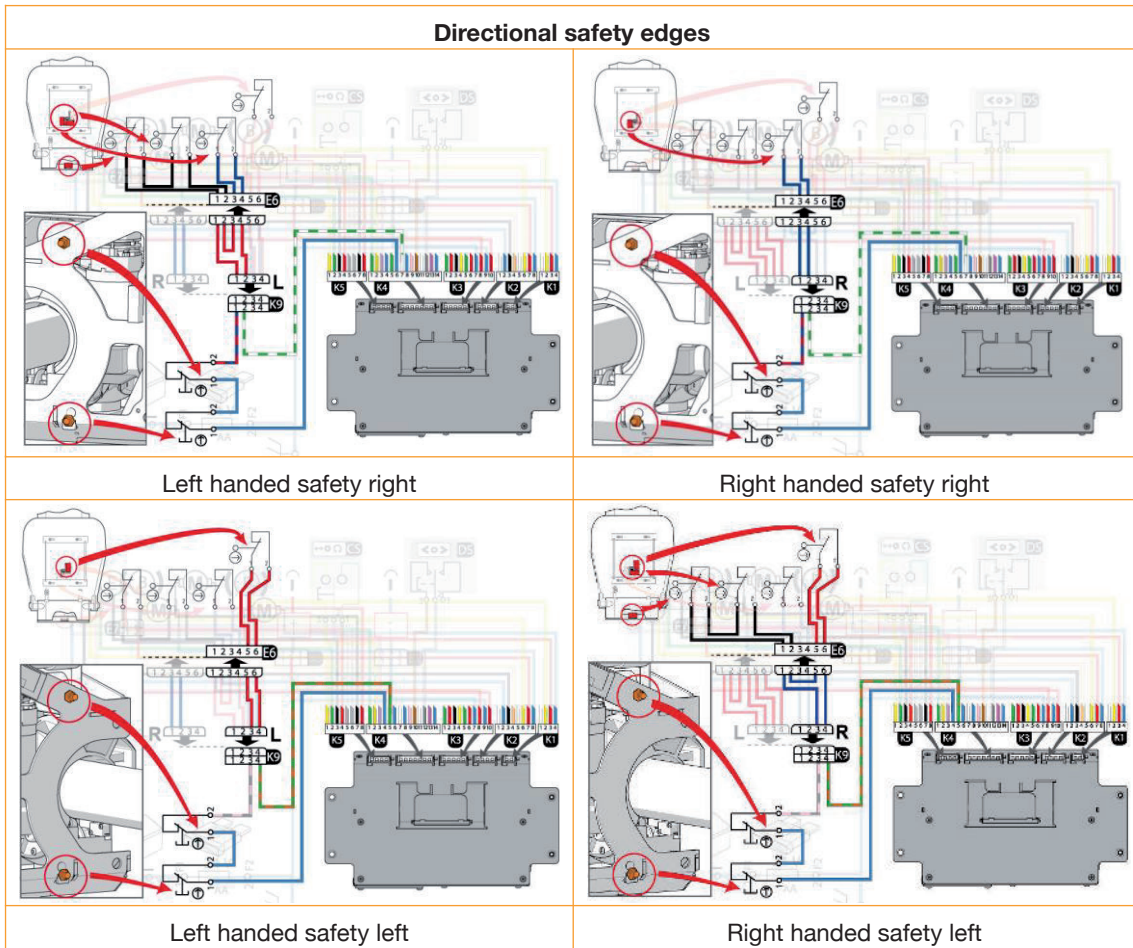
The general safety edge prevents the lift from moving further in both directions. The LED on the armrest flashes when the joystick is moved in either direction if the safety edge is obstructed.

The following switches have been included in the general safety edge:

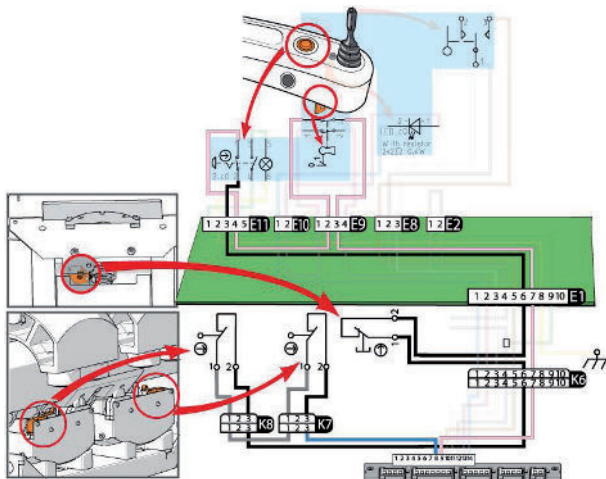
- Seat position switch
- Tilt switch
- Emergency switch
- Key operated switch
- Final limit switch

Handicare Freecurve

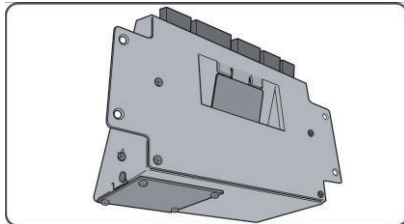
Schematics directional safety



Schematics general safety




11 | Printed circuit



The printed circuit controls all electrical components in the lift.

Since februari 2005 the article number is C1001513. For a short while the pcb C1001514 has been delivered, this one can also be replaced by C1001513.

This means that the printed circuit with the latest software version can replace all printed circuits since 2005. For elderly printed circuits please consult the overview below.

Ultra power kit	
	<p>Service instructions ultra power kit</p>
	<p>Service instructions ultra power kit</p>

Analyzing the pcb-memory.

To learn more about the failure, the memory of the printed circuit can be stored on an empty datacard.

Follow the next steps:

1. Switch the keyswitch in the position "0" and remove the key.
2. Remove the cover.
3. When the fuse has blown, replace the fuse first.
4. Don't disconnect the batteries.
5. Turn away the chair, so the cardreader is reachable.
6. Get the datacard out of the cardreader of the pcb. (it will give one beep)
7. Put the empty datacard in the cardreader of the pcb.
8. Wait for the pcb to give 2 beeps (within 30 seconds)
9. Take the datacard out of the cardreader, note the projectnumber on the datacard and send this form with above information to the customersupport department of Handicare
10. Disconnect the power of the lift.
11. Put the original datacard in the cardreader of the pcb.
12. Connect the power of the lift and horizontalise the chair
13. Switch the keyswitch in position "1" and drive the unit on the calibrationpoint.
14. Recalibrate the unit when necessary.
15. Mount the cover.

12 | Seat leveling

The datacard

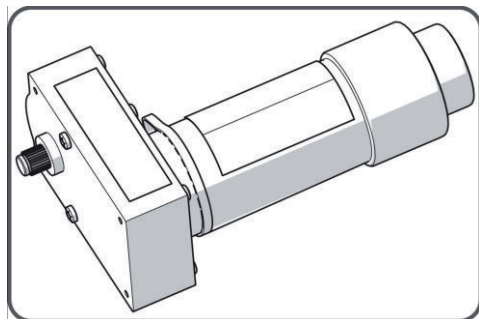


The datacard contains information of the stairlift:

- The projectnumber
- The position of the lift on the rail
- The reference point
- The speed
- The railangles
- The charge/stop stations
- Chair options

The data is transferred to the printed circuit first time the batteries are connected. See also the calibration procedure in the installation manual.

The chair position motor



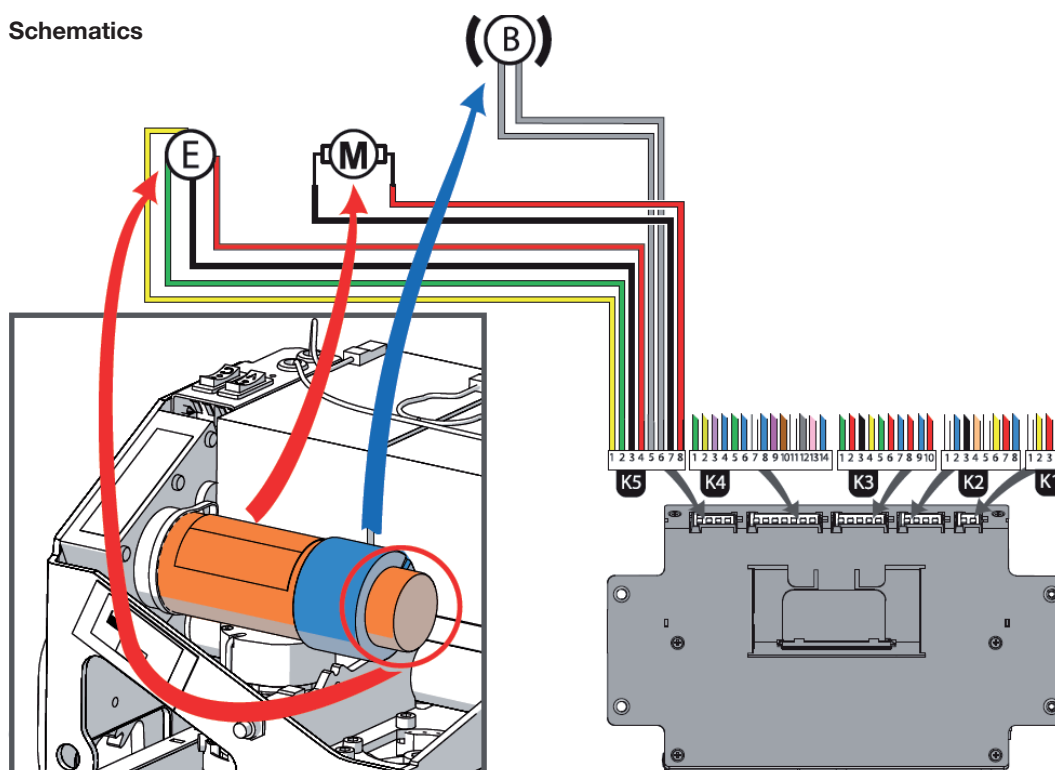
The chair position motor is a 24V= motor including an electromechanical brake, a drive gearwheel and an encoder.

The application and the release of the brake can not be checked visually, since the brake disk is not visible from the outside. The encoder in cooperation with the software of the printed circuit and the data on the datacard steer the chair position motor and check the inclination of the seat.

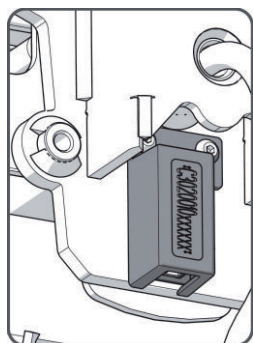
Symptoms of a defective encoder for the chair position motor

- High speed of the chair position motor in the traction mode
- Inclined chair

Schematics



The tiltswitch



The tilt switch has been included in the general safety lines and it interrupts the safety line if the chair tilts 5 degrees with respect to the horizon.

Symptoms in case of a breakdown with the tiltswitch:

- The lift runs in the traction modus
- The lift will not start in the programed modus and the LED in the armrest will blink when using the controls

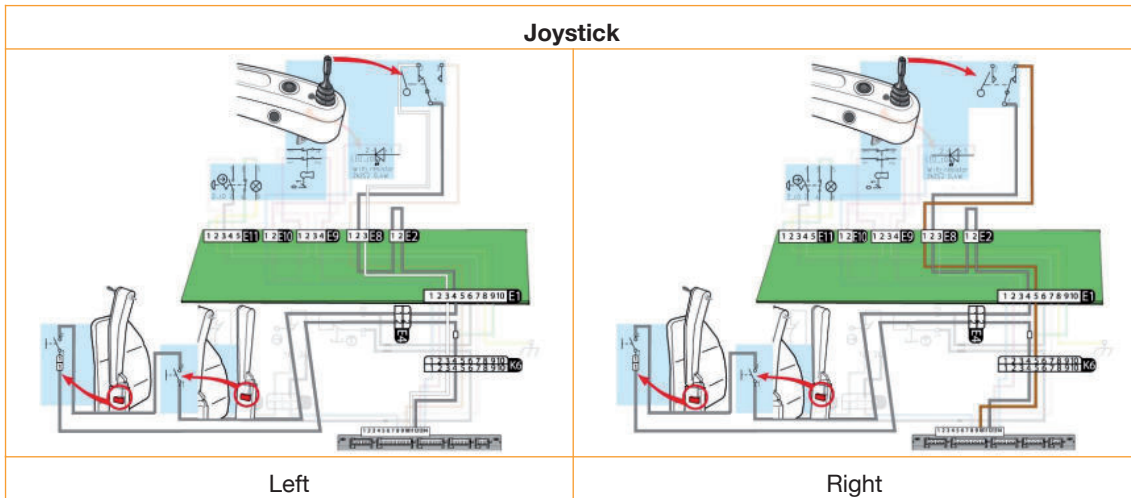
History

An overview of all the tiltswitches can be found in the service guide

Tiltswitches		
	<p>Overview of the tiltswitches</p>	

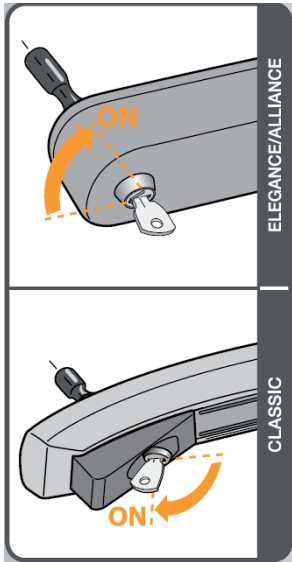
13 | Armrest

The armrest for Classic, Elegance and Alliance are technically identical.





Installation					
11P00213		Change armrest cable Elegance	11P00223		Replace Classic armrest
11P00219		Classic changing left/right	11P00233		Replacing armrest cable
11P00220		Change parts Classic	11P00335		Change parts Elegance
11P00222		Elegance changing left/right			

14 | Keyswitch public building



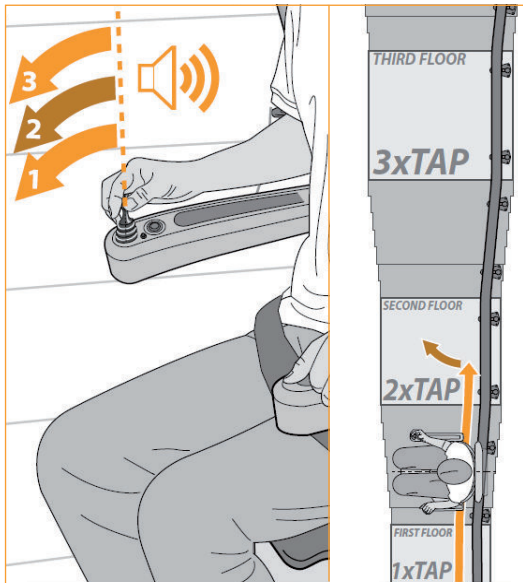
Standard the keyswitch switches off the joystick and the remotes.

Sometimes the owners of a public building request to switch off the joystick only by the keyswitch. In that case the engineer has to change the wiring of the keyswitch in a way that the keyswitch is part of the control line instead of the safety circuit.

Keyswitch in public building					
11P00226		Classic	11P00227		Elegance


15 | Tap to floor

The Tap2Floor



- Stairlift runs on joystick without stopping on any charge/ stop point after tapping (standard).
- Stairlift with powered swivel can swivel automatic on a preferent intermediate landing after tapping (not in combination with turn & go).
- Before the start of the lift, the joystick (not the remote control) is operated in the direction of travel (Tap). The number of operations (taps) indicates the desired floor.
- Tapping is: pressing the joystick in the desired direction and releasing it quickly and pressing it again, etc. The LAST press (when holding the joystick to start driving) is NOT counted as a tap!!
- Tapping must be done rather quickly. After each tap you hear a beeping sound. If it is done too slow it will not work, it will be ignored and treated as a normal drive (without tapping).

Service instructions:

Video tap to floor			
	<p>Video tap to floor</p>		

16 | Powered swivel



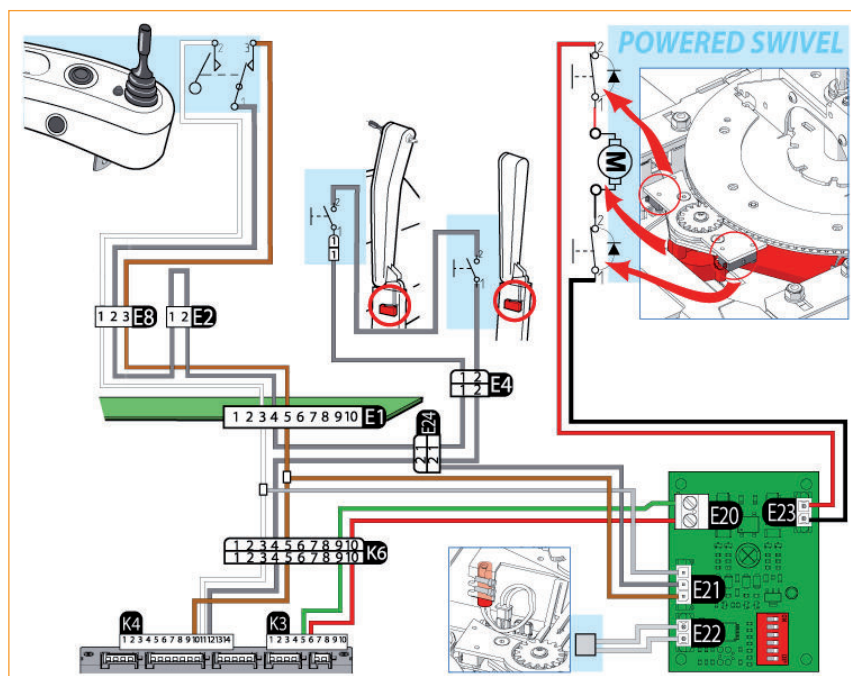
As an option the 'tap2floor can be activated' (see chap. EXTRAS).

The powered swivel chair

- The powered swivel chair can be mounted on the Classic/Elegance/Alliance chair.
- The chair can swivel 45°, 65°, 85° or 90° and can also ride facing downwards in these positions. The positions can be changed on site by the engineer.
- One-way powered swivel: Automatic swivel at the top. The end user rides facing the opposite wall. The chair can swivel on intermediate landings towards the floor.
- Two-way powered swivel: Automatic swivel at the top and the bottom of the stairs. The end user rides facing downwards. The chair can swivel on intermediate landings to a straight position. There is no overrun required on the top floor.
- Minimum stairwidth 690 mm for a van Gogh and 770 mm for a Rembrandt.
- The chair will automatically swivel to the straight position on a charge point when operated by the remote controls.

The chair position switch is part of both the direction-sensitive safety lines. The powered swivel option is activated on the data card.

Schematics



Handicare Freecurve

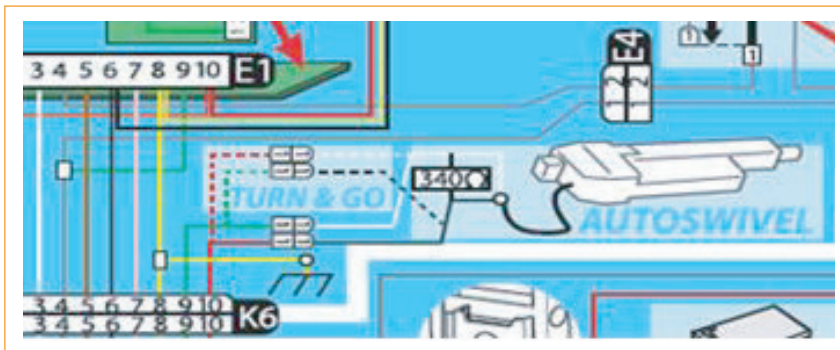
Turn & Go

A special powered swivel chair is the turn & go. By operating the joystick or remote, the chair will swivel automatically at the bottom of the stairs and the user will ride in a swivelled position. The chair can not swivel towards the top floor upstairs, so a rail run out of 500 mm is always required.

A resistance of 340 Ω is installed parallel to the powered swivel actuator. The software on the printed circuit shall recognize this resistance before the lift can ride. The resistance is measured if the actuator is in its end position.

You can only measure this resistance if the wiring of the actuator is cut off from the printed circuit.

Schematics



Powered swivel			
	Swivel motor replacement		Video Turn & Go

This chair is delivered until November 2021.

17 | Active seat



The active seat

- The ActiveSeat supports and follows the movements of the user when sitting down or standing up from the stairlift seat.
- The spring system in the ActiveSeat can be adjusted to suit the users' weight.
- Should the user activate the Active Seat, the ActiveSeat will rise in the same way as a riser chair.
- Should the user sit down on the Active Seat, the user will be supported until the user is in a comfortable sitting position and the seat locks itself.
- The stairlift can only be used when the seat is locked.
- A demonstrator kit (AA13220) is available on the webshop.



The Active Seat is a kit option for the Handicare Elegance and Alliance seat.

The Active is available for new installations and existing installations as a kit and can be installed by the engineer.

When the seat is not in the operable down position, the lift will not run on the joystick, It is possible to call the lift with the remotes with the seat in the up position.

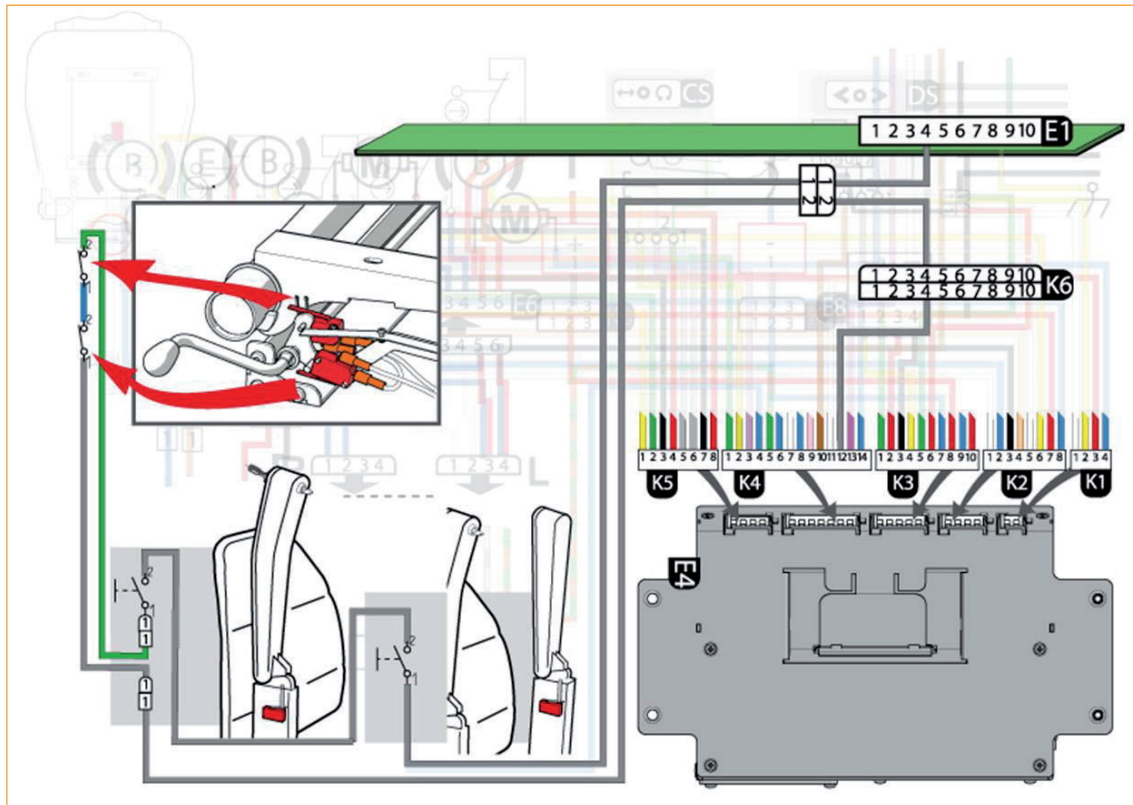
There are 4 different spring cassettes, for 4 different weight ranges

User weight	Article number
45 - 65 kg	AA09808
65 - 85 kg	AA09807
85 - 105 kg	AA09806
105 - 125 kg	AA09805






Handicare Freecurve

Schematics



Service instructions

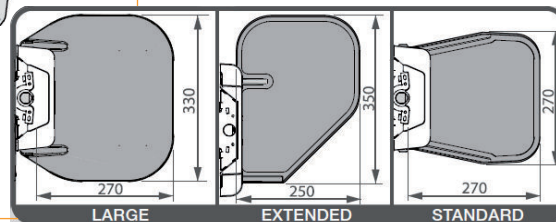
Active seat					
11P00346		Active seat	11P00385		Demonstrator
11P00421		Fold up			

18 | Footrest

The footrest-folding



- Manual folding
- Link with seat on the Classic, Elegance and Alliance seat is an option (footrest-linkage).
- Powered and illuminated footrest on the Classic, Elegance and Alliance seat is an option.
- Folding mechanism also functions if the chair is in a swiveled position.



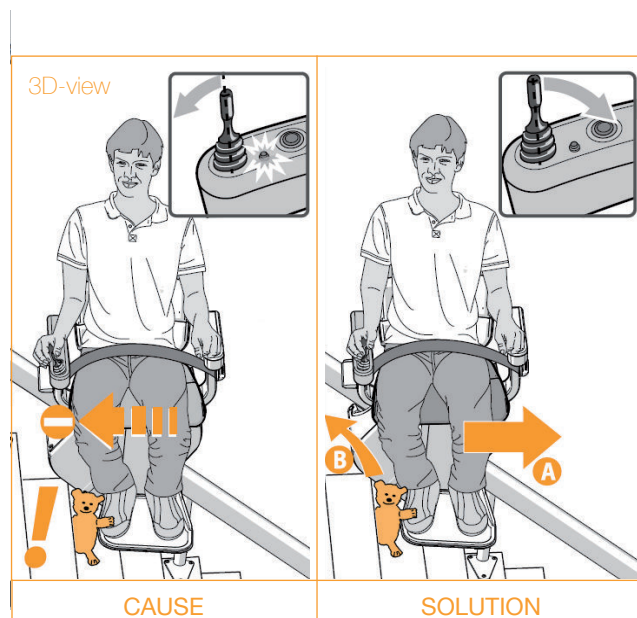
- Optional the powered & illuminated footrest (see OPTIONS).
- The height and angle of the footplate can be adjusted, by the screws on the backside of the footrest.

The powered footrest-(un)folding



- The option is available for the Classic, Elegance and Alliance seat.
- The powered footrest option enables the end user to fold/unfold the footrest automatically.
- The folding of the footrest can be done on any position of the rail.
- The operation of the folding mechanism is done by a bi-stabile button at the outside of the armrest (right operation) and on the inside of the armrest (left operation). (Up is up and down is down). The Classic seat has a button on the underside of the armrest.
- The powered option is available for standard, large and off-set footrest.
- The powered footrest option is available for new installations and existing installations by exchanging the complete seat.
- For existing installations the complete seat needs to be exchanged and a printed circuit version Q is required.

Handicare Freecurve



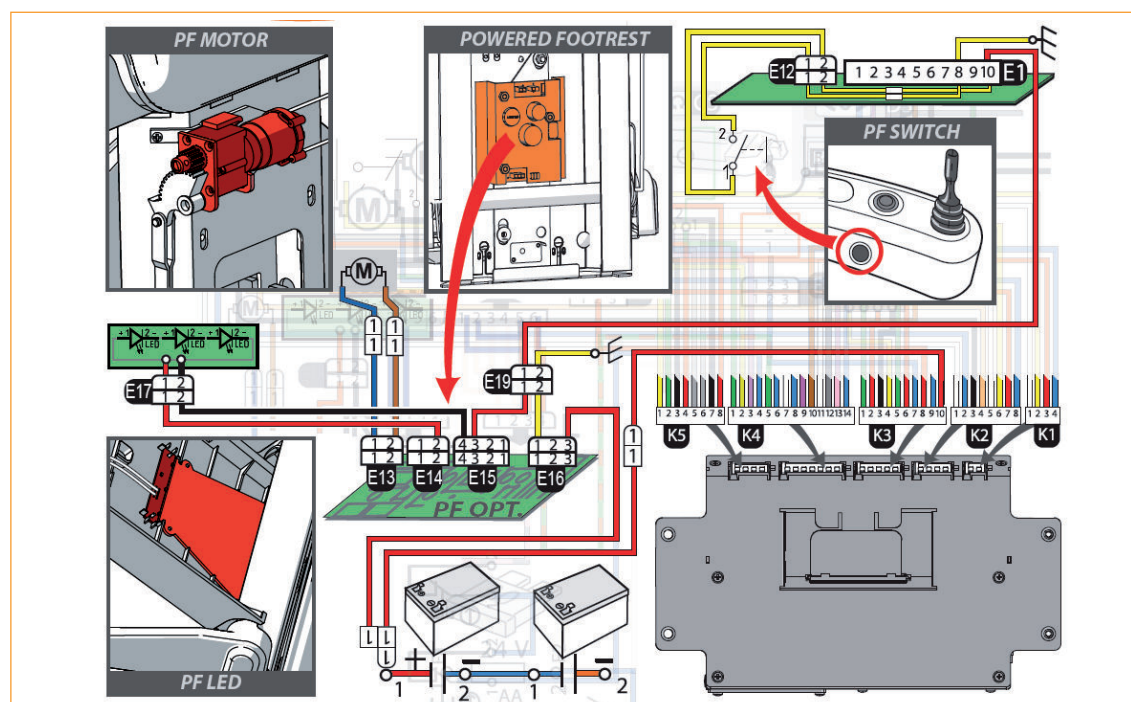
The footrest-detection:








- Footrest detection
 - Both sides
 - Frontside
 - Underside
 - Underside when folded
- The LED in the armrest will blink when the joystick is operated in the blocked direction.
- The chair lift stops automatically in the event that an object becomes jammed between the footrest and the stairs.
- The chair lift can move again only once the control on the chair or the remote control has been used to move the lift in the opposite direction and the obstacle has been removed.

On the webshop you can find a set of springs (art nr. B0020600):

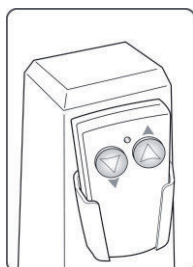
- B5110300/500 for manual folding
- B5110320/520 for footrest linkage

Schematics



Footrest service instructions					
11P00210		Footrest linkage Classic chair	11P00211		Footrest linkage Elegance chair
11P00214		Replace footrest	11P00216		Changing direction (left-right) of footrest
11P00218		Changing footrest cable	11P00349		Powered footrest
11P00350		Powered footrest parts			

19 | Remotes



Remotes are standard delivered with a lift, one for each charge/stopping point.

The remotes operate on 868 Mhz.

The remotes are used to transport a lift without a person.

Stairlift Status

The remote control unit's LED indicates the stairlift's status:

Operation	Situation	LED
when using remote control	stairlift in start-up phase (3 sec)	LED remains off
when using remote control	stairlift travelling	LED turns on
when using remote control	stairlift stopped at an active charging station	LED turns off
when using remote control	stairlift is stopped at the end stop and will not depart until it is called in the correct direction	LED remains off
when using remote control	stairlift is out-of-order and can no longer depart	LED flashes twice a second
when not using remote control	stairlift stopped at an active charging station	LED off
when not using remote control	stairlift is stationary en route, i.e. not at a charging station	LED flashes twice a second for 20 seconds after operation has stopped, LED then turns off

Linking of the remotes

Remotes		
	<p>Video of the linking of the remotes</p>	

Unlinking of the remotes

The pushbuttons can be unlinked from the print in the event of an error in the programming of the push-buttons or the need to replace the pushbuttons.

The datacard should be taken for 3 seconds from the cardreader. Until you hear a beep.

Take care: the lift is not disconnected from batteries or chargestation


915 Mhz remotes

In the USA Stairlifts are delivered standard with 915 Mhz remotes. (2,4 Ghz as back up).



In case of interference of 915 Mhz remotes, a conversion kit is available for 2,4 Ghz.


Repeaters

915 Mhz / 2,4 Ghz			
	915Mhz / 2,4 Ghz service instruction		

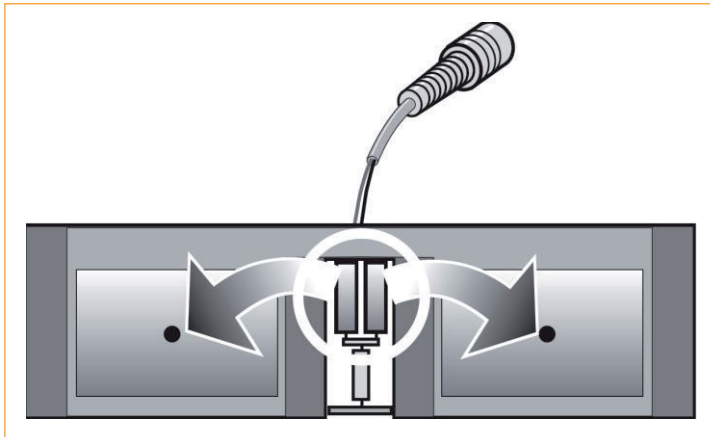
For long lifts, repeater sets are available.

Repeaters			
	Installation instruction repeaters		

History

Overview remotes			
	Overview of the different remotes		

20 | Charge/stop points








Charging contacts are normally installed at the top and the bottom of the rail. Extra contacts can be installed to a maximum of 10. When installed in a spiral it might be necessary to cut the charge station in 2 pieces.

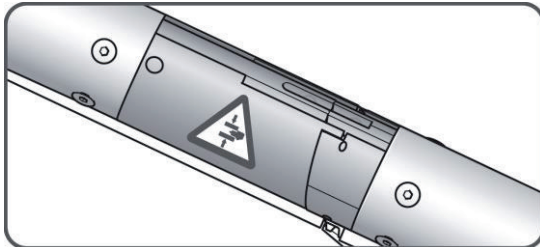
Contacts can also be installed after installation.

Charging contacts that are not necessary any more can be removed.

When a stairlift does not stop correctly on the charge contact, the issue can be corrected. Also if a contact is used for the folding hinge actuation.

Charge contacts			
	Add charge contact		Remove charge contact
	Correct charge point		Correct folding hinge point
	Video charge point correction		

21 | Folding hinge



The folding hinge is used in situations where the lift can not be parked downstairs.

The folding rail's motor receives its power from the unit. The contact between the unit and the folding rail's motor is effected by means of wiper contacts.

These wiper contacts are identical to those of the charging station; however they do not charge the batteries.

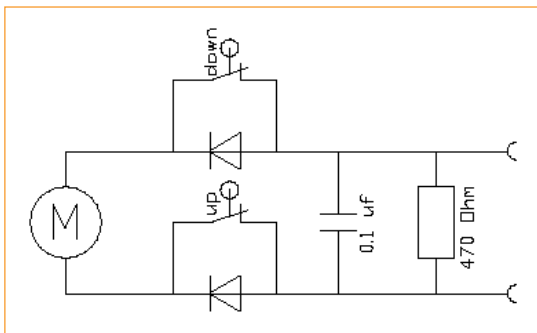
The position of the contact is stated on the data card.

Malfunctions of the mechanism cannot be rectified, and consequently in such instances the entire mechanism will need to be replaced.


The electric control of the folding rail



The folding rail is equipped with two switches. The switches are connected in series with a diode, and consequently determine the direction of rotation of the motor. Also the printed circuit can determine the end positions of the folding hinge.

Below the scheme of the folding hinge.



History

Folding hinge		
	<p>Instruction for replacing the hinge motor</p>	

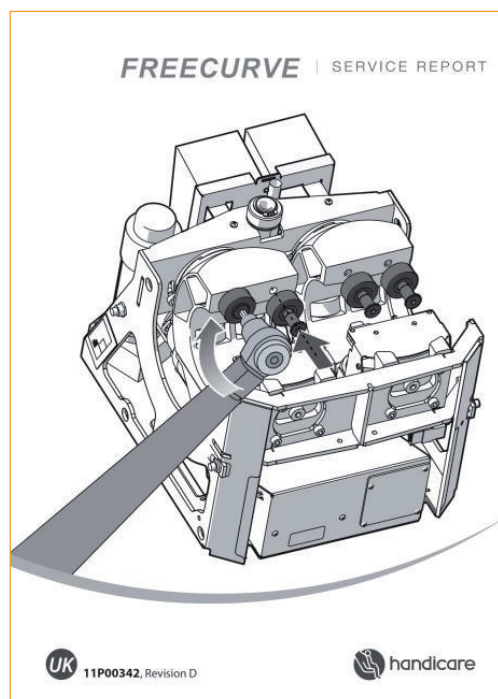
	<input checked="" type="checkbox"/> BASIC	<input checked="" type="checkbox"/> ELEGANCE/ALLIANCE	<input checked="" type="checkbox"/> CLASSIC
CONVERSION KIT HINGE MOTOR		 handicare	
INSTRUCTIE - INSTRUCTION - ANLEITUNG - INSTRUCCION		11P00379 , Revision B	

Article number	Supplier	Fixation holes	Tooth exact	Version pcb	Remarks
C4010000/1	Elmeq	3 x M6	no	C1001520	Sq connect
<ul style="list-style-type: none"> Change hinge motor for C4010004 Adjustment cable C210000 Change unit for unit C0020054 Change remotes for C1001413 Adjust the fix holes as described in the instruction below <div style="text-align: right; font-size: 1.5em; opacity: 0.5; transform: rotate(-15deg);"> Needed actions </div>					
C4010002	Elmeq	3 x M6	no	C1001510 C1001512 C1001513	Rd connect
<ul style="list-style-type: none"> Change hinge motor for C4010004 Change pcb for C1001513K or higher Change remotes for C1001413 Adjust the fix holes as described in the instruction below <div style="text-align: right; font-size: 1.5em; opacity: 0.5; transform: rotate(-15deg);"> Needed actions </div>					
C4010004	Elmeq	4 x M8	no	C1001513	Since 01.01.2006
<ul style="list-style-type: none"> Change hinge motor for C4010004 Change pcb for C1001513K or higher Change remotes for C1001413 <div style="text-align: right; font-size: 1.5em; opacity: 0.5; transform: rotate(-15deg);"> Needed actions </div>					
C4010004	Tornado/Eriks	4 x M8	no	C1001513K or higher	
<ul style="list-style-type: none"> Change hinge motor for C4010004 					
C4010005	Tornado/Eriks	4 x M8	yes	C1001513K or higher	
<ul style="list-style-type: none"> Change hinge motor for C4010005 					
C4010010	Elmeq	5 x M8	no	C1001510 C1001512 C1001513	No longer available
<ul style="list-style-type: none"> Change hinge motor for C4010004 Change pcb for C1001513K or higher Change remotes for C1001413 Adjust the fix holes as described in the instruction below <div style="text-align: right; font-size: 1.5em; opacity: 0.5; transform: rotate(-15deg);"> Needed actions </div>					


UK From the year 2000 on, there have been a few versions of hinge motors. Before changing the motors, take notice of the table above.

5 of 9

22 | Maintenance



Periodic preventive maintenance is necessary for long-term correct functioning. The stairlift must be serviced at least once a year. If the stair lift runs over more than 2 floor and/or has more than 2 users, it needs at least 2 maintenance visits a year. The service must be carried out by a qualified person.

Maintenance		
	<p>Maintenance checklist</p>	

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Maintenance video's			
	Stairlift maintenance		Rail
	Unit mechanical		Unit electrical
	Chair		Finish

23 | Lubrication



During installation and maintenance it is always necessary to check if moving parts operate smoothly. If they don't this may cause damage to the lift.

As most parts of a stairlift rotate or move slowly, grease is preferable to oil. Also oil might start dripping and pollute the stairs. The effectiveness of the grease is 5 years under normal conditions. When grease is applied during servicing it is preferable to remove the old grease first so that any dirt present is also removed.

Surfaces that require lubrication during maintenance are stipulated in the handbook. When you use a grease other than that recommended by Handicare the mixture of the 2 grease types may result in inferior lubrication and hence extra wear.



Molykote G4500 (articlenumber 11J00059) is used for:

- The toothrack
- The chairsupport
- The guidediscs of the motor on units delivered until week 39 of 2011



Interflon thin grease og (article number 11J00114) is used only for the guide discs of the motor on units produced after week 39 of 2011

Interflon thin grease is more fluid than Molykote, so be careful when a applying. Use a small brush so the chance on leakage is minimal



For the internal rollers which can not be dismantled there is a can available with Molykote G4500 spray. This can has article number 11J00060

24 | Spareparts

Spareparts can be ordered from the webshop on www.handicarepartners.com.
 For parts that are not on the webshop, you can contact dealerservice for price and availability.

8A C0030021 D1002010

12A C0030011 C0040000

20A Set: SP001500 C0040010 (BATTERY) C2010520 (CHARGER) C0030011

E0005100 E0005200 E0006100 C3020900 C3020010 C0020310 E0004300 C1061010 SP000100 C1010800

172001.52065 (915 Mhz) 172001.52066 (2.4 Ghz) C1001413 (868 Mhz) SP001900 (915 Mhz) SP000800 (2.4 Ghz) C1001513 (868 Mhz)

UNIT	868 Mhz	2.4 Ghz
R250	C0020054	C0020080
R350	C0020057	C0020081







SP001000 REPEATER SET SP001400 VOICE CONNECTION KIT

H0013183

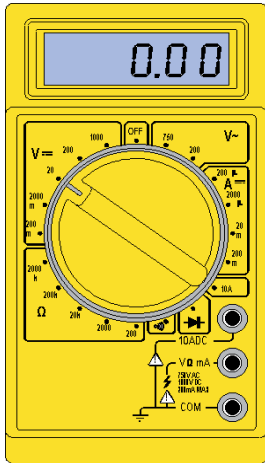
FR095410 FR093100 FR010000 FR099100

B5030120 11K00014 C3002100 B0020500

H0013194 H0013191

Spareparts			
	Classic		Alliance
	Elegance		Unit
	Hinge		Sparepart book complete

25 | Multimeter




A multimeter is an indispensable tool to measure voltage, current and resistance.

The circuits should be tested as follows:

- Use the electrical diagram to see which circuit you need to test
- Disconnect the lift from the power supply
- Set the multimeter to the 'beep' or resistance test mode
- Remove the correct connector from the printed circuit board
- Push the measuring pins into the back of the connector
- Check that you are testing between the correct connector pins/numbers
- No beep or a high resistance indicates that the circuit is broken

If there is a short circuit with the frame, hold one of the measuring pins against the unit's earth pin of the seat and push the other measuring pins into the back of the connector.

Nb. Make sure the lift is not positioned on a charging point during the tests!

Multimeter		
	Video how to use the multimeter	

26 | Electronic parts

Resistor

A resistor is a component that resists the flow of current. It's one of the most basic components used in electronic circuits. Resistors come in a variety of resistance values (how much they resist current, measured in units called ohms and designated by the symbol Ω) and power ratings (how much power they can handle without burning up, measured in watts).

The value of a resistor can be calculated with below table:

Standard EIA Color Code Table 4 Band: $\pm 2\%$, $\pm 5\%$, and $\pm 10\%$

1st Band 2nd Band 3rd Band 4th Band

Color	1st Band (1st figure)	2nd Band (2nd figure)	3rd Band (multiplier)	4th Band (tolerance)
Black	0	0	10^0	
Brown	1	1	10^1	
Red	2	2	10^2	$\pm 2\%$
Orange	3	3	10^3	
Yellow	4	4	10^4	
Green	5	5	10^5	
Blue	6	6	10^6	
Violet	7	7	10^7	
Gray	8	8	10^8	
White	9	9	10^9	
Gold			10^{-1}	$\pm 5\%$
Silver			10^{-2}	$\pm 10\%$

Chart Provided By XICON

Encoder

A rotary encoder, also called a shaft encoder, is an electro-mechanical device that converts the angular position or motion of a shaft or axle to an analog or digital code.

There are two main types: absolute and incremental (relative). The output of absolute encoders indicates the current position of the shaft, making them angle transducers. The output of incremental encoders provides information about the motion of the shaft, which is typically further processed elsewhere into information such as speed, distance and position

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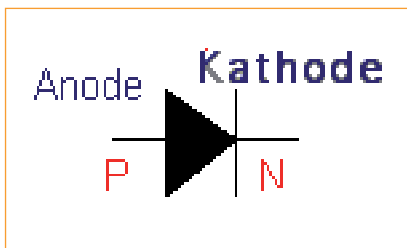
Capacitor

A capacitor is made up of two metallic plates. With a dielectric material in between the plates. When you apply a voltage over the two plates, an electric field is created. Positive charge will collect on one plate and negative charge on the other.

Therefore a capacitor is a device that can temporarily store an electric charge.

The amount of capacitance of a given capacitor is usually measured in microfarads, abbreviated μF .

Diode

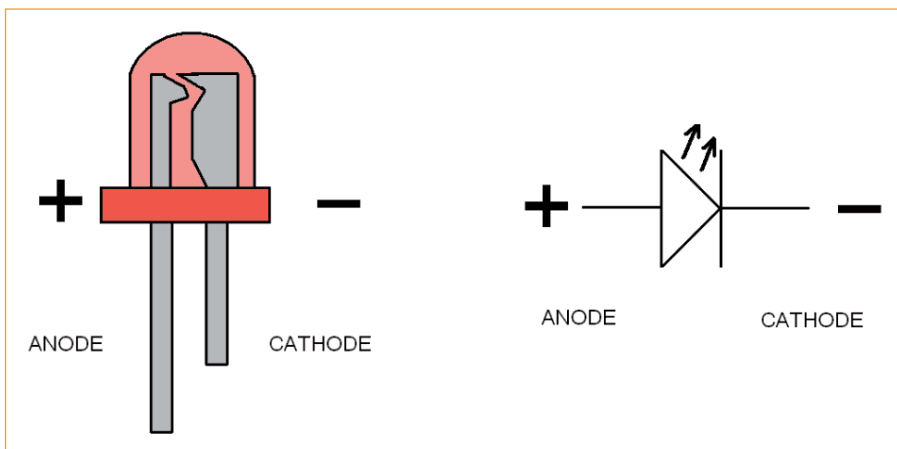


A diode is a device that lets current flow in only one direction. A diode has two terminals, called the anode and the cathode. Current will flow through the diode only when positive voltage is applied to the anode and negative voltage to the cathode. If these voltages are reversed, current will not flow.

LED

LED stands for Light-Emitting Diode. It's a type of diode that emits light when it has a current flowing through itself.

The LED has two pins called anode and cathode.



The anode is the longest pin. This is the pin you connect to the most positive voltage. The cathode is the pin you connect to the most negative voltage. They must be connected correctly for the LED to work.


27 | Torque settings

Bolts shall always be secured with the prescribed torque settings.
If no torques are mentioned, you can use below table to find the correct setting.

If bolts are overstressed this will lead to a stress fracture of a bolt.
If the bolts in a dynamic situation are not tightened enough, this will lead to a fatigue fracture.



Dimensione nominale	Classe	Torque in Nm
M4	8.8	2,8
	10.9	4,1
	12.9	4,8
M5	8.8	5,5
	10.9	8,1
	12.9	9,5
M6	8.8	9,5
	10.9	14
	12.9	16,5
M7	8.8	15,5
	10.9	23
	12.9	27
M8	8.8	23
	10.9	34
	12.9	40
M10	8.8	46
	10.9	68
	12.9	79
M12	8.8	79
	10.9	117
	12.9	135

Torque setting		
	Video how to use the torque wrench	

28 | Circlip



Figure 1 – The Two Sides of Circlips

A circlip has a side with sharp corners and a side with rounded corners. The clips must be installed so that the “rounded” side faces the item being retained. A clip that is installed in the wrong way won’t be able to carry as much load and will fail more easily.

The circlips must be compressed by the minimum amount possible during assembly.

Circlips can never be reused.

As the clip slips into the groove, listen for a crisp “snap” sound, indicating that it has dropped fully into place.

Always inspect a circlip after installation. Use the circlip pliers to check that the circlip is tightly in place and does not rotate in service.

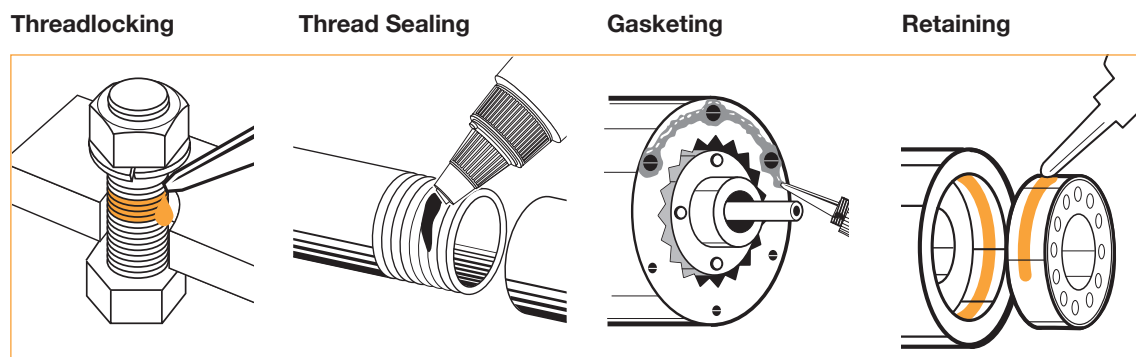
29 | Threadlocking

Introduction to anaerobic adhesives and sealants.

Anaerobic adhesives and sealants were developed by the founder of the Loctite Corporation, now the Henkel Corporation, in 1953 and, since then, they have significantly evolved to meet the highest requirements of vehicle manufacturers and vehicle maintenance and repair.

Anaerobic adhesives and sealants are resins that convert from liquid to a tough structural solid in the absence of air and the presence of metal.

The primary functions of anaerobic resins are:



Each one of these functions is based upon control of five major variables: strength, viscosity, adhesion, flexibility and temperature resistance. These five parameters give anaerobic users considerable latitude in adjusting properties for optimum performance in specific application areas.

Another variable that should be considered is the surface on which the adhesive will be applied. For certain surfaces or other special requirements, the use of a primer is recommended.

Why use a primer?

1. Primers activate inactive surfaces.
2. Primers speed cure times for faster return to service.
3. Primers speed curing through larger gaps and deep threads.
4. Primers substantially speed cure times on cold parts.
5. Primers act as cleaning agents.

Active surfaces (Primer optional):

Brass, copper, bronze, iron, soft steel, nickel.

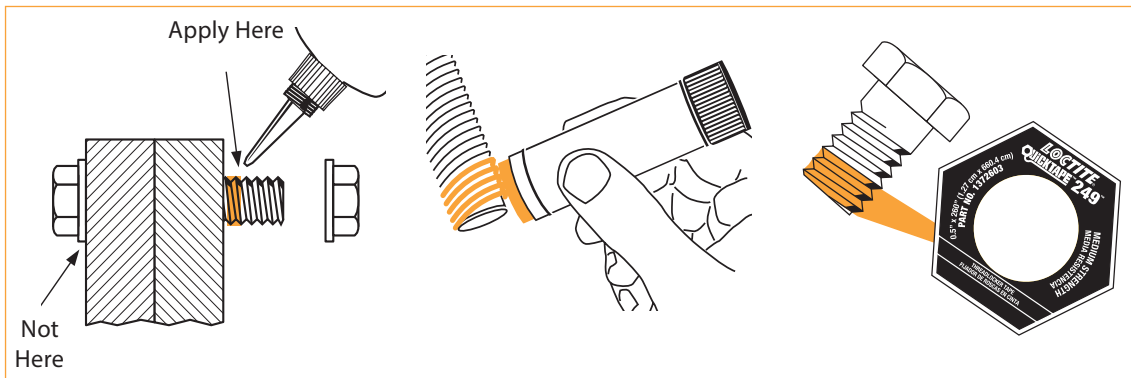
Inactive surfaces (Primer required):

Aluminum, stainless steel, magnesium, zinc, black oxide, cadmium, titanium, others.

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Thru holes (bolts and nuts)

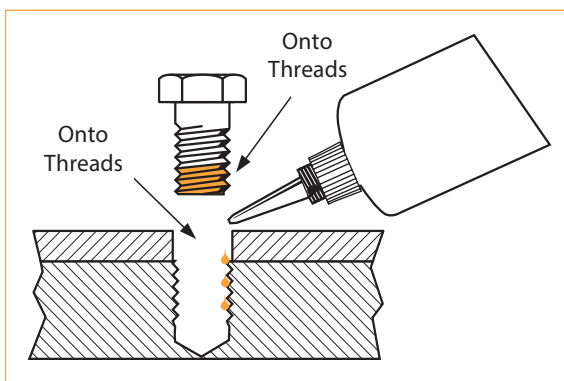
Liquid, semi-solids and dry-to-touch tape.



1. Clean all threads (bolt and nut) with a cleaner.
2. If necessary, spray all threads with LOCTITE® Primer. Allow to dry.
3. Select the proper strength LOCTITE® threadlocker.
4. Insert bolt into thru hole assembly.
5. Apply several drops of liquid threadlocker onto bolt at targeted, tightened nut engagement area or, when using the stick product, completely fill the root of the threads at the area of engagement.
6. Assemble and tighten nut as usual.

Blind holes (cap screws, etc.)

Liquid only.

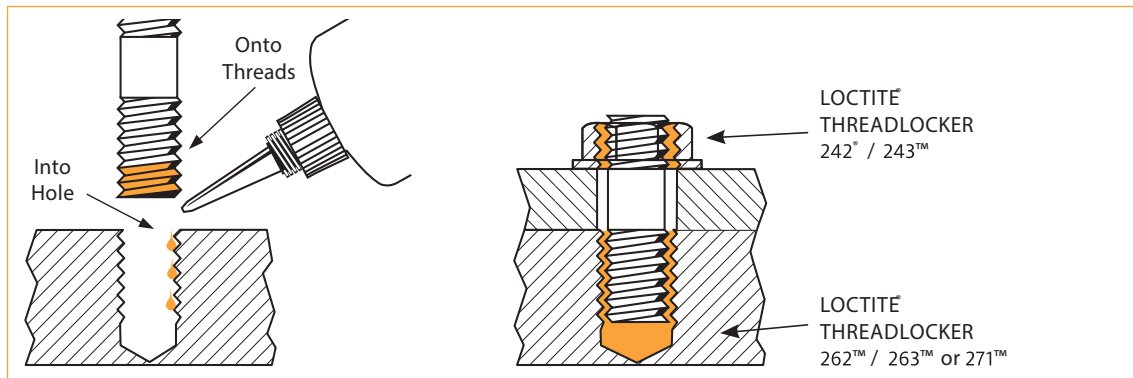


1. Clean all threads (bolt and hole) with a cleaner.
2. If necessary, spray (bolt and hole) with LOCTITE® Primer. Allow 30 to 70 seconds to dry.
3. Select the proper strength LOCTITE® threadlocker.
4. Squirt several drops down the sides of the female threads.
5. Apply several drops to bolt.
6. Tighten as usual.

NOTE: Using LOCTITE® threadlockers will virtually eliminate stripped threads, in aluminum or magnesium housings, caused by galvanic corrosion.

Blind holes (studs, etc.)

Liquid only.



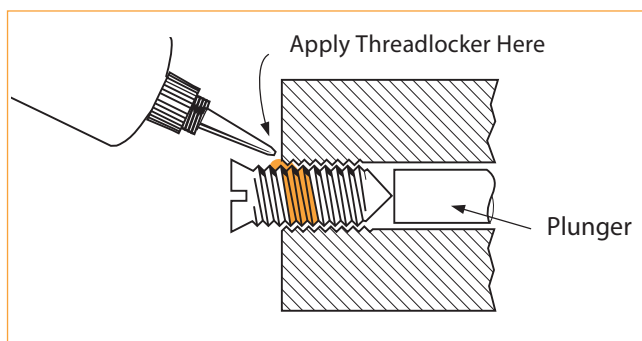
1. Clean all threads (bolt and hole) with a cleaner.
2. If necessary, spray all threads with LOCTITE® Primer. Allow to dry.
3. Squirt several drops of LOCTITE® Threadlocker 262™/ 263™ or 271™ down the sides of the female threads.
NOTE: Use LOCTITE® Threadlocker 277™ if stud is over 1" diameter.
4. Apply several drops of LOCTITE® Threadlocker 262™/ 263™ or 271™ onto stud threads.
5. Install studs.
6. Position cover, head, etc.
7. Apply drops of LOCTITE® Threadlocker 242®/ 243™ onto exposed threads.
8. Tighten nuts as required.*

* 243™ may be used in place of 242® and 263™ may be used in place of 262™. Their primerless formulations eliminate the need for LOCTITE® Primer in most applications.

Adjustment screws

1. Adjust screw to proper setting.
2. Apply several drops of LOCTITE® Threadlocker 290™ at screw and body juncture.
3. Avoid touching bottle tip to metal.

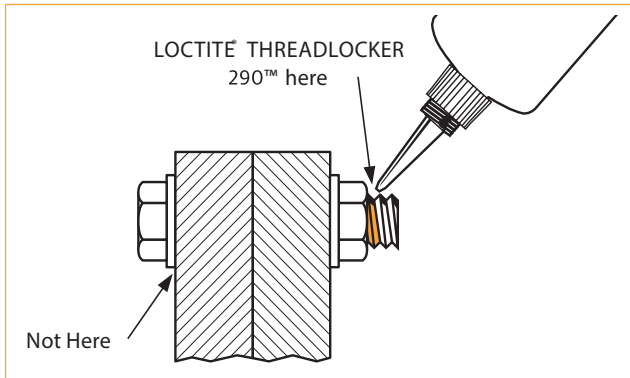
NOTE: If re-adjustment is difficult, apply heat to screw with soldering gun (500°F).



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Pre-assembled fasteners

Liquid only.



1. Clean bolts and nuts with a cleaner.
2. Assemble components.
3. Tighten nuts.
4. Apply several drops of LOCTITE® Threadlocker 290™ at the nut and bolt juncture.
5. Avoid touching bottle tip to metal.

NOTE: For preventive maintenance on existing equipment: RETIGHTEN nuts and apply LOCTITE® Threadlocker 290™ at the nut and bolt juncture.

LOCTITE® THREADLOCKER QUICK SELECTOR			
Use	Strength	Loctite® Product	Color
Small screws	Low	222™	Purple
Nuts & Bolts	Medium	242® / 243™ / Blue Threadlocker Stick	Blue
Pre-Assembled*	Medium	290™	Green
Overhead	Medium	249™ Tape or Stick	Blue
Pre-Applied up to 30 days	Medium	249™ Tape	Blue
Nuts & Bolts	High	262™ / 263™ / Red Threadlocker Stick	Red
Studs (up to 1½")	High	271™	Red
Studs (up to 1")	High	272™	Red
Studs (over 1")	High	277™	Red

* Wicking Grade

30 | Handover/approval

The Freecurve stairlift applies:

- Machine directive 2006/42/EC
- Low voltage directive 2014/35/EC
- EMC-directive 2014/30/EC

Handicare has the next certificates for the Freecurve Van Gogh / Rembrandt / Vermeer:

- Type approval: NL 99-400V-1001-015-06
- ASME approval: NA12-0842-1004-012-01
- TÜV certificate

On behalf of this information an approval on site is not necessary.

Handicare has made a risk analysis and a technical construction file. Due to confidential information, this will not be published.

Because the chairlift complies with the machine directive and is type approved, it is not permitted to make any changes on the chairlift, which affects the safety, the construction and/or the functionality of the chairlift.

A certified engineer shall install the chairlift with original parts according to the delivered installation manual.

Handover procedure by the engineer:

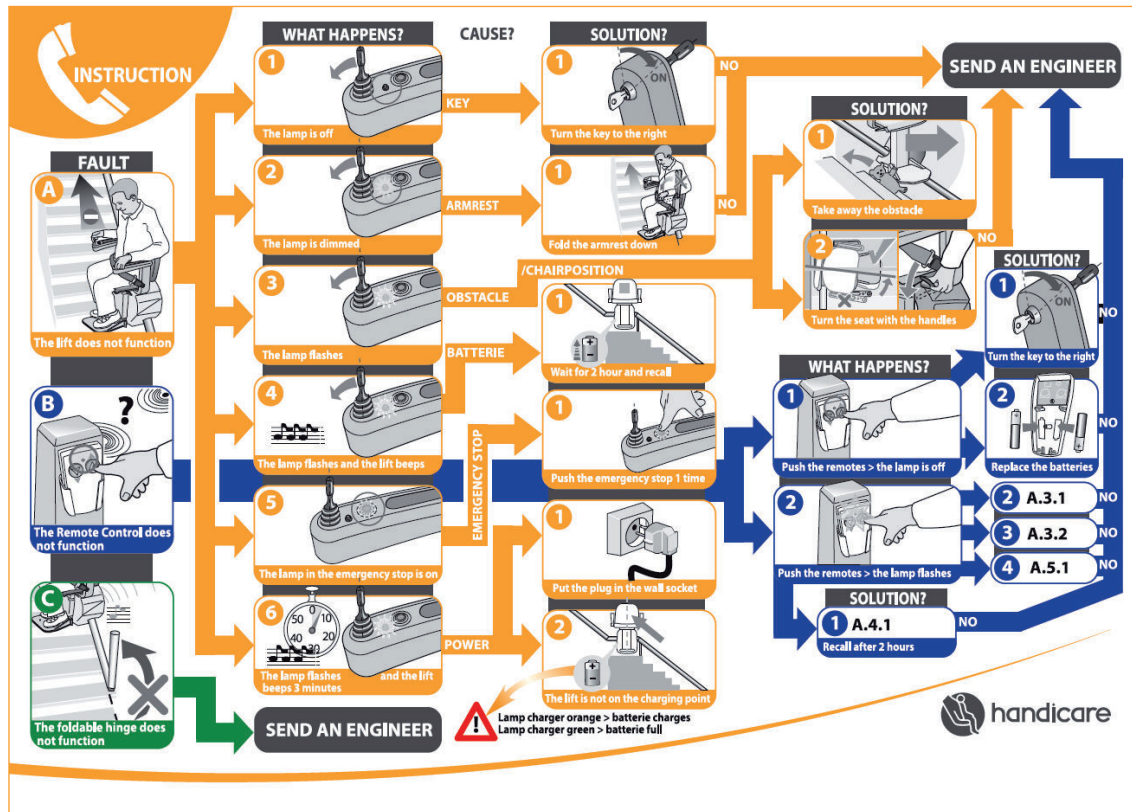
- Fulfil checks according to the checklist 11P00394.
- Show the functions and the safety aspects of the stairlift to the user.
- Sign instructed person declaration by both the engineer and the customer.
- Note the project number and date of installation on the declaration of conformity.
- After approval the CE sticker is put on the stairlift by the engineer.
- Handover the user manual and the key to the user.


Handover / approval	
	<p>Checklist</p>
	<p>Type approval certificate</p>

One form is for the user, the other form shall be returned to Handicare. This can be done digitally by scanning or making a photo of the form.

31 | Telephone instruction

For the service desk there is a script available how to deal with service calls.



Telephone instruction		
	Telephone instruction	

32 | Rescuing the user



Instructions for rescuing a user seated on a chair lift of the type Van Gogh or Rembrandt that is still at the top of the stairs.

Check the status of the chair lift via the lamp in the on/off switch. Remove faults in the chair lift that could pose a danger to the user. For example, faults in the footrest safeguard, in the operation, detection strips or the chair position switch.

Never ride with the user on the lift when a safety measure is switched off.

If it is not possible to remove the fault without danger to the user, first release the user:

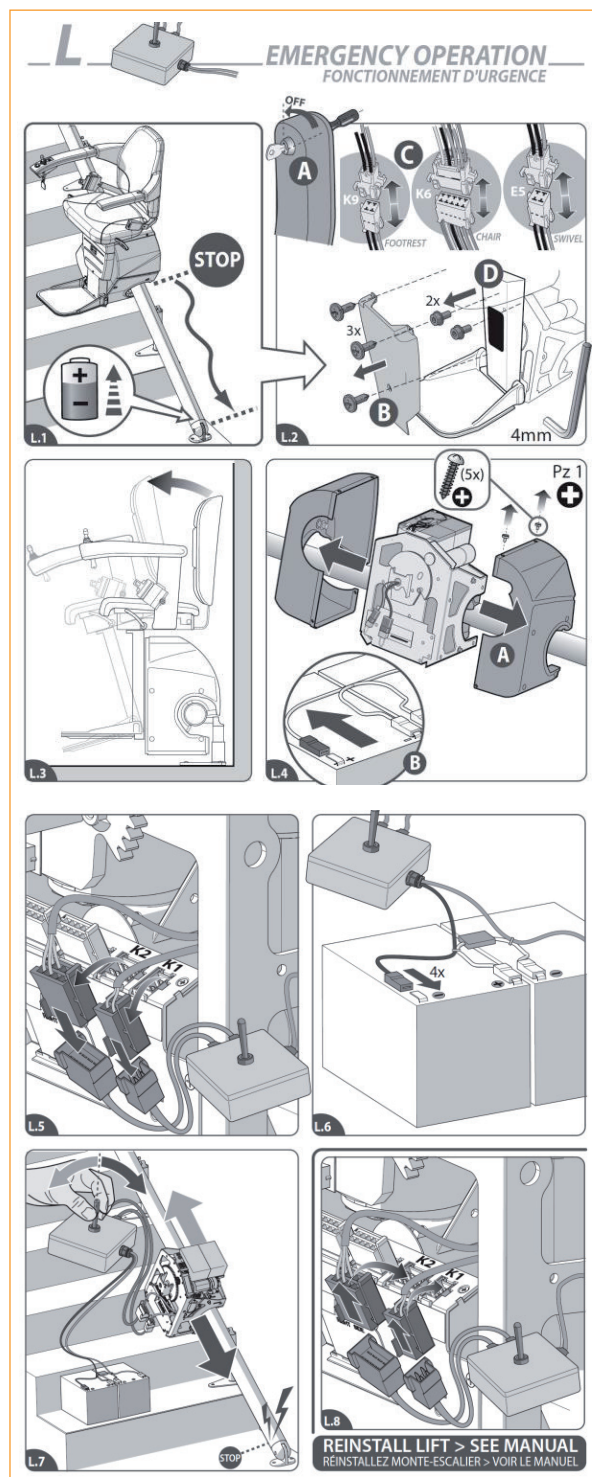
In such case ensure that you are positioned above the user and the chair lift at all times.

Move the user to safety by turning the chair in the direction of the stairs. Lock the chair in place. Unfasten the safety belt. The client may now step in the direction of the stairs and proceed to the floor above.

Remove the fault; if necessary, you may ride the chair lift to the floor level using the calibration switches, for which please refer to the manual.

Handicare Freecurve

If you cannot remove the fault and the chair lift is to be removed from the rail, you may do this using the test box, Article number C5001000, in accordance with the instructions provided.



33 | Compatibility

All (spare) parts in the Freecurve including the complete unit have a unique article number. The article number has 8 digits and can be found on a lot of parts on the barcode sticker. When changes are made, the part remains the same article number if the part is downwards compatible. It will only get a higher version number.

If the part is not downwards compatible, the part will get a new article number.


Freecurve units are universal for inside and outside curves, both left-hand and right-hand. They are consequently ideally suitable for reuse.

When placing an order for a “rail only” project please specify which unit you plan to reuse. The article number is marked on the sticker on the side of the unit. The unit number you specify will enable us to verify that the unit is indeed suitable for the new project and supply the appropriate data card.

The table below may also be useful if a unit is to be reused.

Freecurve 2 unit, cannot be used on a rail with an inside curve C0020057, C0020081 and C0020090 are the only units that can be used on a rail with R250 curves.

Art nr	Type unit	PCB	Remote
C0020000	Freecurve 1	C1001500 / C1001502	C1001430
C0020030	Freecurve 1	C1001520	C1001430
C0020020	Freecurve 2	C1001520	C1001430
C0020021	Freecurve 2	C1001520	C1001430
C0020011	Freecurve 2	C1001510 / C1001512	C1001410
C0020012	Freecurve 2	C1001512 / C1001513	C1001410
C0020051	Freecurve 2	C1001510 / C1001512	C1001410
C0020052	Freecurve 2	C1001512 / C1001513	C1001413
C0020053	Freecurve 3	C1001512 / C1001513	C1001413
C0020054	Freecurve 3	C1001512 / C1001513	C1001413
C0020055	Freecurve 3	C1001514	C1001413
C0020057	Freecurve 3	C1001513	C1001413
C0020080 X	Freecurve 3	C1001515	172001.52027S
C0020081 X	Freecurve 3	C1001515	172001.52027S
C0020090 X	Freecurve 3	C1001517	172001.52068S
C0020091 X	Freecurve 3	C1001518	172001.52082S

Compatibility		
	<p>Detailed information in the service guide</p>	

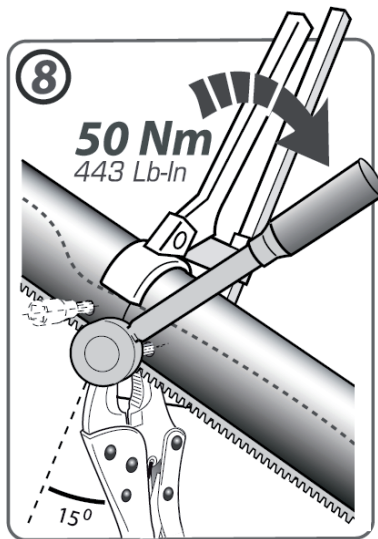
34 | Rework-procedure

This procedure is meant for applying a rework.


You can get an RA-number for a rework by contacting dealer support. Always mention this number on the outside of the returned rail parts.

Return only the rail parts, without supports, charge points, folding hinge motors, joints etc.

New rail parts will not have the alignment blocks.



Reworked rail sections do not have rail alignment blocks so it is best to use pliers in the same way as you would when installing rails without alignment blocks.

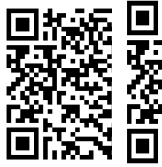

Joint		
	Video installing joint without alignment blocks	

Folding hinge

The folding hinge section comes with a standard length of domex, and shall be cut to length by the engineer during installation.

35 | RA-procedure

For returning material to Handicare for guarantee or repair, contact dealer service for obtaining a RA-number. The RA-number should be visible on the outside of the return box. For returning seats and unit, use the special boxes.

Footrest service instructions					
11P00354		Pack a unit	11P00355		Pack a seat

Claim for transport damage

In case of a call for transport damage we need the following information before we can replace the damaged items:

- Pictures of the damaged goods
- Project number
- Copy of the delivery sheet from the transport company where the dealer has noted down the damaged goods.

36 | Incident reporting

Incidents that concern the safety of the user, the engineer or other people shall be reported to Handicare as soon as possible.

To have all information available, the incident form shall be filled in as complete as possible.

The form is available under the chapter technical support/forms on www.handicarepartners.com.

Incident report		
	Incident report	

37 | Faultfinding

The lift does not move in both directions

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The lift does not move in one direction

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1 | The lift does not move in both directions

The LED flashes upon joystick operation in both directions

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- The seat position switch is switched off/faulty
- Wire break between K6-6 and E1-6 (K6-6 and C1-6)
- Wire break between K6-7 and E1-7 (K6-7 and C1-7)
- Wire break between E11-3 and E11-4 (C14-3 and C14-4)
- Wire break between E9-2 and E9-3 (C12-2 and C12-3)
- Wire break between C8-2 and K4-5 (powered swivel only)
- Earth short at K6-6, K6-7, K9-1, K9-2, K9-3, K9-4

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

The lift does not operate in the traction mode

- A final limit switch is off/activated
- Wire break between K5-5 and K5-6
- Wire break between K4-8, K7-3, K7-1, K8-1, K8-3 and K6-6
- Wire break between K4-9 and K6-7

The lift does operate in the traction mode

- The tilt switch is activated/faulty/not connected
- Wire break between K3-1/2/3/4 and the tiltswitch C5 (E8)
- Earth short K3-1, K3-2, K3-4, K4-4, K4-5, K4-6, K4-7, K4-8, K4-9, K5-4, K2-4

2 | The lift does not move in both directions

The LED remains dim upon joystick operation

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- One of the armrests is not folded down
- The armrest switch AS1 or AS2 is faulty
- The active seat switches are faulty
- Earth short at K6-4
- Wire break between K6-4 and the joystick

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

The lift does not operate in the traction mode

- The data card is not inserted correctly
- Wire break between K4-12 and K6-4
- Wire break between K1-3 and K1-4
- Wire break between K2-7 and K2-8
- Wire break between K2 and the encoder
- The over-current protection on the printed circuit is in operation
- Earth short at K1-1, K1-2, K2-5, K2-6, K4-12, K2-1, K2-2
- The chair is inclined

Option 1: If the lift stops and freezes in the middle of the rail

Probable cause	Grease on brakes levelling motor
Applicable for	Levelling motors with production date 15 Dec 2022 to 7 Jul 2023
Solution	Clean levelling motor with brake cleaner according to work instruction AA30566 or replace unit

Option 2: If the lift stops and freezes around the lower or higher charging points

Probable cause	Encoder count issue / wrong encoder code in software
Applicable for	T-print, 4.1, 4.2, 4.3, 4.3 Updated, Q-print
Solution	Replace the PCB with 4.3 Updated V2. The new software is backwards compatible so when replacing a PCB in the field (Q / 4.1 / 4.2 / 4.3 / 4.3 Updated) with the new version the tilt that is in the lift does NOT have to be changed. The PCB T4.3 Updated V2 works with both tilt switches.

3 | The lift does not move in both directions

The LED remains off upon joystick operation

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- The key switch is off or faulty
- The LED is faulty
- Wire break between K6-1 and E1-1 (K6-1 and C1-1)
- Wire break between K6-2 and E1-2 (K6-2 and C1-2)
- Wire break between E10-1 and E10-2 (C13-1 and C13-2)
- Wire break between E9-1 and E9-4 (C12-1 and C12-4)
- Earth short at K6-1

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

No voltage between K3-9 and K3-10:

- Wire break between the batteries and K3-9 or K3-10
- The fuse has blown (check the wiring of the motor brakes K1-1 and K1-2 or K2-5 and K2-6)

Voltage between K3-9 and K3-10 around 26 V=:

- Wire break between K4-13 and K6-2
- Wire break between K4-14 and K6-1
- Earth short at K4-14

The lift does not move when the LED is not functioning

4 | The lift does not move in both directions

The LED flashes upon joystick operation in one direction and remains dim in the other direction (the lift beeps upon operation of the joystick). The lift is on the charge station.

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- The seat position switch is switched off/faulty
- Wire break between K6-6 and E1-6 (K6-6 and C1-6)
- Wire break between K6-7 and E1-7 (K6-7 and C1-7)
- Wire break between E11-3 and E11-4 (C14-3 and C14-4)
- Wire break between E9-2 and E9-3 (C12-2 and C12-3)
- Wire break between E20-2 and K4-5 (C8-2 and K4-5) (pow sw. only)
- One of the footrest edges is activated
- One of the footrest switches is faulty
- The seat frame bottom detection is activated
- The seat frame bottom switch is faulty
- Wire break between K9-1 and K9-2
- Wire break between K9-3 and K9-4
- Earth short at K6-6, K6-7, K9-1, K9-2, K9-3, K9-4

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

The lift does not operate in the traction mode

- A final limit switch is off/activated
- Wire break between K5-5 and K5-6
- Wire break between K4-8, K7-3, K7-1, K8-1, K8-3 and K6-6
- Wire break between K4-9 and K6-7
- One of the cover safety edges is activated
- The cover detection switch is faulty
- Wire break between K4-4 and K9-3
- Wire break between K4-5 and K9-4
- Wire break between K4-6 and K9-1
- Wire break between K4-7 and K9-2

The lift does not operate in the traction mode

- The tilt switch is activated/faulty/not connected
- Wire break between K3-1/2/3/4 and the tiltswitch C5
- Earth short K3-1, K3-2, K3-4, K4-4, K4-5, K4-6, K4-7, K4-8, K4-9, K5-4, K2-4

5 | The lift does not move in both directions

The LED lights up upon joystick operation and becomes weak after 3 seconds

Connect the short-circuit connectors K6 and K9

The lift does not move after operation of the direction switch (DS)

- One of the motors is faulty
($< 2 \Omega$ between K1-3 and K1-4 or K2-7 and K2- 8)
- One of the brakes is faulty
(resistance shall be 40-70 Ω between K1-1 and K1-2 or K2-5 and K2-6)

6 | The lift does not move in both directions

The lift is on the charge station. The LED remains dim upon joystick operation in one direction, in the other direction the Led lights up and gets dimmed, the lift gives one beep.

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- Wire break between K6-3 and the joystick
- Wire break between K6-5 and the joystick
- Joystick is defect

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

- Wire break between K6-3 and K4-11
- Wire break between K6-5 and K4-10
- Directions switch DS is faulty

7 | The lift does not move in both directions

LED illuminates bright, the lift does not move upon operating the joystick

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- Earth short at K6-2

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

- Earth short at K4-13:

8 | The lift is on the charge station and does not move in both directions

When the lift beeps intermediate in user mode, it is in the obligatory charging cycle, because battery charge was below 20V for a few seconds during the ride

9 | The lift does not move in one direction

The LED remains dim upon joystick operation in the faulty direction

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- Wire break between K6-3 and the joystick
- Wire break between K6-5 and the joystick
- Joystick is defect
- Earth short at K6-3, K6-5

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

- Wire break between K6-3 and K4-11
- Wire break between K6-5 and K4-10
- Directions switch DS is faulty
- Earth short at K4-10, K4-11

10 | The lift does not move in one direction

The LED flashes upon joystick operation in one direction

Connect the short-circuit connectors K6 and K9

A. The lift moves after operation of the direction switch (DS)

The fault is located in the chair

- One of the footrest edges is activated
- One of the footrest switches is faulty
- The seat frame bottom detection is activated
- The seat frame bottom switch is faulty
- Wire break between K9-1 and K9-2
- Wire break between K9-3 and K9-4

B. The lift does not move after operation of the direction switch (DS)

The fault is located in the unit

- One of the cover safety edges is activated
- The cover detection switch is faulty
- Wire break between K4-4 and K9-3
- Wire break between K4-5 and K9-4
- Wire break between K4-6 and K9-1
- Wire break between K4-7 and K9-2

11 | Charging

The batteries are not charging

The red wire of the charge contacts is the "+", the black wire is the "-".

When looking at the unit from the front side:

the carbon brush on the right is the "+", the one on the left is the "-".

Check the voltage on the charging station of the rail:

The voltage is "0 V="

- No network voltage or plug is not in the socket
- The battery charger is defective
- Wire break in the cables from the charge stations
- Jack plug in the rail has loosened

Check the voltage on the charging station of the rail:

The voltage is around "27,6 V="

- Wire break between K3-7/K7-2 and the carbon brush
- Wire break between K3-8/K8-2 and the carbon brush
- Earth short at K3-7, K3-8
- No contact between charging point and carbon brushes, check the plastic pin

12 | The hinge

The resistance on the hinge contacts is 470 Ω when the motor is in the endposition.

The resistance on the hinge contacts is 15 Ω when the motor is not in the endposition.

Ride the lift to a charge contact

The lift does not charge when it is on a charge contact

The problem is in the unit

- Wire break between K3-7/K7-2 and the carbon brush
- Wire break between K3-8/K8-2 and the carbon brush
- Earth short at K3-7, K3-8

The lift does charge when on a charge contact

The problem is in the rail

- No contact between carbon brush and hinged rail contact
- Jack plug in the rail has loosened
- Wire break in the cables from the folding hinge contact on the rail (dirhee mctly)ot or can be tested by putting 24V= on the hinged motor

13 | The seat inclines during the ride

The seat inclines in program mode

- Incorrect datacard
- The calibration has not be done on the calibration point
- The linking of the remotes have not be done on the calibration point
- Wire break between K5-1/2/3/4 and the encoder
- Wire break between K2-1/2/3/4 and the encoder
- The traction motor encoder is faulty
- The seat leveling motor is faulty
- Wire break between K5-5 and K5-6 (standard between 40 - 70 Ω)
- Wire beak between K5-7 and K5-8 (standard between 0 - 2 Ω)
- Earth short at K5-1, K5-2
- Low/weak batteries
- Poor rail installation that has not been set to the correct angles on the drawing

14 | Calibration

The lift continues to function in the user mode, were it should operate in the traction mode

- Wire break between K4-1/2/3 and the calibration switch (CS)
- Earth short at K4-1, K4-2, K4-3

15 | The remotes

The lift does not move and the LED in the remote control does not illuminate upon operation

- The remote control batteries are flat, do not make contact or have been inserted the wrong way round
- The child lock is activated (press and hold both buttons for 3 seconds)

The lift does not move and the LED in the remote control illuminates upon operation

- The range of the remote is insufficient. Install a repeater
- The remote control is not linked to the lift

The lift passes the extra charge point without stopping

- This is correct if a lift is called
- If this happens when the lift is sent away, the remote controls have been interchanged

The LED on the remote control flashes upon operation

- See the section the LED flashes upon joystick operation in one or both directions

The LED on the remote control flashes when not in use

- The lift is not on top of a charging station or has problems with charging

16 | The powered swivel seat

The powered swivel operates when the directional safety line is interrupted.

The powered swivel does not operate when the general safety line is interrupted.

The powered swivel does not function; the lift can ride

- The lift is making its first ride since calibration

The LED lights up and becomes dim upon joystick operation to activate the automatic swivel feature.

- The powered swivel function is not programmed on the data card.
- Wire break between K3-5 /K6-9 and the swivel motor
- Wire break between K3-6

The powered swivel does not function; the lift cannot ride

The LED flashes upon joystick operation in one direction and remains dim in the other direction (the lift beeps upon operation of the joystick). The lift is on the charge station

- See chapter 4

17 | The two-way powered swivel seat (Q4 2021)

The powered swivel operates when the directional safety line is interrupted.

The powered swivel does not operate when the general safety line is interrupted.

The powered swivel seat does not swivel

- The lift is making its first ride since calibration
- Wire break between K3-6/K3-5 and C22/E22
- Break in the motor wiring
- Defective motor end switches
- The powered swivel is not activated on the data card
- The general safety line (final limit switch, e-stop, keyswitch) is interrupted

The powered swivel seat does not stop in the centre position and swivels towards the stairs

- The sensor C24/E24 is defective

The powered swivel seat only swivels in one direction

- A diode or a motor endswitch is defective

The powered swivel seat swivels towards the stairs

- Check the dipswitch setting on the swivel option printed circuit
- Change the red and the green wire on C22/E24

The lift starts only after two commands from the remotes

- Check the dipswitch setting on the swivel option printed circuit

18 | The powered footrest

Voltage Elegance/Alliance		
E16-3	24 V=	always
E16-1	0 V=	always
E15-3	10 V=	up
	16 V=	down
E15-4	0 V=	always
E15-2	24 V=	down
E13-1/2	0 V=	no movement
	13 V=	down
	18V=	up

Voltage Classic		
C19-3	24 V=	always
C19-1	0 V=	always
C18-3	10 V=	up
	16 V=	down
C18-4	0 V=	always
C17-2	24 V=	down
C16-1/2	0 V=	no movement
	13 V=	down
	18V=	up

A powered footrest requires PCB version Q or higher.

The powered footrest doesn't function

The Voltage on E15-3 (Elegance) or C18-3 (Classic) is 0V=

- Wire break between E1-10 and E15-3 (C1-10 and C18-3)
- The emergency stop is activated
- Wire break between E11-3 and E11-4 (C14-3 and C14-4)
- The key switch is off
- Wire break between E9-2 and E9-3 (C12-2 and C12-3)
- No power from the batteries

Interruptions in the chair position switch and the final limit switch and interruptions in the direction safety lines will not affect the functioning of the powered footrest

The powered footrest doesn't function

The voltage on E15-3 (Elegance) or C18-3 (Classic) is 10V= or 16 V=

- Wire break between the batteries and E16-3 (C19-3)
- Wire break between E13-1 and E13-2 (C16-1 and C16-2), (The light on the Power opt printed circuit illuminates green for a few seconds)
- Powered footrest control is faulty

The Lighting in the powered footrest does not illuminate; the powered footrest does function

- The LED lighting is faulty
- Wire break between E14-2 and E15-4 (C17-2 and C18-4)

19 | Stairlift rides sometimes slowly at some positions

- 1) Drive lift to calibration position
- 2) Enable chair calibration mode (for rotating the chair motor only)
- 3) Press 3 switches at the same time for at least 2 seconds
 - a. One bottom side cover switch (with the knee)
 - b. One top side cover switch (with a hand)
 - c. Joystick DOWN (with the other hand)
- 4) After 2 seconds you should hear 2 beeps to confirm
- 5) Finish calibration in the usual way
- 6) Drive lift downward a short distance (10 cm or so)
- 7) Drive back up to the top
- 8) Finished. The slow driving behavior must have disappeared now

Explanation: apparently sometimes this slow driving mode (it is for preventing tilt) is accidentally enabled.

20 | Stairlift beeps 6 times after calibration

If the power pack beeps 6 times, check whether the seat support is indeed horizontal, the tilt switch is in the horizontal position, or whether the tilt switch is faulty. After correction, the power pack must be calibrated again.

References for faultfinding

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Handicare Freecurve





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