Serviceguide Curve lifts

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Contents Van Gogh/Rembrandt/Vermeer

1. Versions and compatibility of the printed circuit

Print	Remote	Remote	Folding hinge
C1001500 C1001502			Elmeq
C1001520			Elmeq
C1001510 C1001512	C1001410	C1001450	Elmeq
C1001513 t/m J	C1001413	C1001413 1.0 C1001413 1.1	Elmeq
C1001513 K	C1001413	C1001413 1.0 C1001413 1.1	Elmeq/Tornado
C1001513 M/N		C1001413 1.1	Elmeq/Tornado
C1001514 A*	C1001413	C1001413 1.0	Elmeq/Tornado

*This pcb has no softstop, it can be replaced by C1001513 M

Print	Remote	Remote	Remote
C1001513 Q/T		C1001413 1.1	Elmeq/Tornado
C1001515	2,4 Ghz	172001.52027S	Elmeq/Tornado
C1001517	915 Mhz	172001.52068S	Elmeq/Tornado
C1001518-/A	915 Mhz	172001.52082S	Elmeq/Tornado

Software version (Q) printed circuit board for Van Gogh, Rembrandt, Vermeer

From februar 2015 , the Van Gogh, Rembrandt and Vermeer are equipped with a modified printed circuit board version "Q". The item number of the printed circuit board with version number "Q" will continue to be C1001513. The "Q" version can also be used on all previously supplied lifts with printed circuit boards with this item number. Find below the changes made in comparison to the "N" version printed circuit board.The next functions are available:

    1.1   Charge point correction
In the event that the trial run shows that the lift does not stop at a charge point, the technician can correct this manually.

    1.2   Adding/removing an additional charge point
An additional charge point can be added without needing a new data card.

    1.3   Creep to park
After letting go of the control, the lift will creep automatically to the charge point if the lift is within 5cm from that charge point.

    1.4   Beeping sound
When the lift is stopped away from a charge point, it will now start beeping after one second, instead of five seconds in the current version, increasing the chance of the customer hearing this alert prior to walking away.

    1.5   Tap to floor

The automatic swivel function is available for all floors.

Software version (T) printed circuit board for Van Gogh, Rembrandt, Vermeer

Can be used for lifts with more than 2 charge stop points in combination with an automatic hinge.

For any incidents of the "sleeping on charge point" issue.

For Freecurves with T-print v 4.1/4.2, install a Q-print PCB or a T-print v 4.3 "updated". If no replacement print is available, and the lift does NOT have a powered hinge, make a simple adjustment to the wire connections when attending a callout (download instructions 11P00468, _A4_1307214 from www.handicarepartners.com). A free spare parts kit is available from the webshop ref SP003000. For lifts WITH a powered hinge always replace the print by a T-print v 4.3 "updated".

2 Reusing lifts (rail only projects)

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

When curved stairlifts were first introduced (2000) a few modifications were made, as a result of which these units can only be used in certain situations.

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.

It is important to note that the Freecurve 2 unit, for example, cannot be used on a rail with an inside curve.

Initially, 32 and 48 pulse data cards were supplied. We later switched to the so-called V3 cards, which we still supply today.
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.

As of 1 March 2010 we will supply a standard V3 data card if no unit number is specified.

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

C0020057, C0020081, C0020090 and C0020091 are the only units that can be used on a rail with R250 curves

Unit type	Unit	Data card	PCB
C0020000	Freecurve 1	32 pulse (V1)	C1001500/ C1001502
C0020030	Freecurve 1	32 pulse (V1)	C1001520
C0020020	Freecurve 2	32 pulse (V1)	C1001520
C0020021	Freecurve 2	48 pulse (V1)	C1001520
C0020011	Freecurve 2	48 pulse(V1) / **V3**	C1001510 / **C1001512**
C0020012	Freecurve 2	**V3**	**C1001512** / C1001513
C0020051	Freecurve 2	48 pulse (V1)	C1001510
C0020052	Freecurve 2	**V3**	**C1001512** / C1001513
C0020053	Freecurve 3	**V3**	**C1001512** / C1001513
C0020054	Freecurve 3	**V3**	**C1001512** / C1001513
C0020055	Freecurve 3	**V3**	C1001514
C0020057	Freecurve 3	**V3**	C1001513
C0020080 x	Freecurve 3	**V3**	C1001515
C0020081 x	Freecurve 3	**V3**	C1001515
C0020090 x	Freecurve 3	**V3**	C1001517
C0020091 x	Freecurve 3	**V3**	C1001518

X = only USA

3 The print

The printed circuti is the electronic centre of the chairlift and positioned in the unit. There are different types of prints.

3.1 The print FCC1-F8/A1/W1/D3/K6

J2 J3   J6   J7

J8
J9

J12   J13 J14
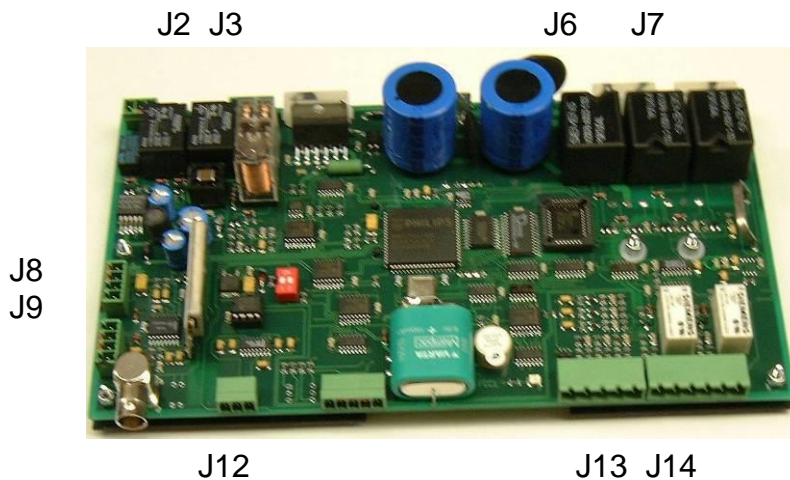
The FCC1-F8/A1/W1/D3/K6 prints function only with tractionmotors with a 32 puls encoder.
The FCC1-F8/A1/W1/D3/K6 prints function only with mechanic tiltswitches C3020000.
The FCC1-F8/A1/W1/D3/K6 prints function only with the wallbuttons 433 MHZ artikelnummer C1001400.


Appropriate grounding measures must be taken when handling the prints because of electrostatic discharge of the components damaging the printed circuit. Loose prints should be transported solely in ESD-proof packaging.

A red LED on the print illuminates once the power is connected to the print..

A retro cable for the chair motor is required. Consequently this cable should be removed when fitting a J4 print to a chair lift which was originally fitted with a K6 print.
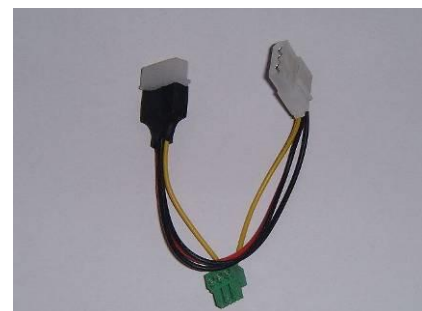
3.2 Print FCC1-J4/H4/T2/X2/K4

J2   J3   J6   J7

J8

J9

J12   J13   J14
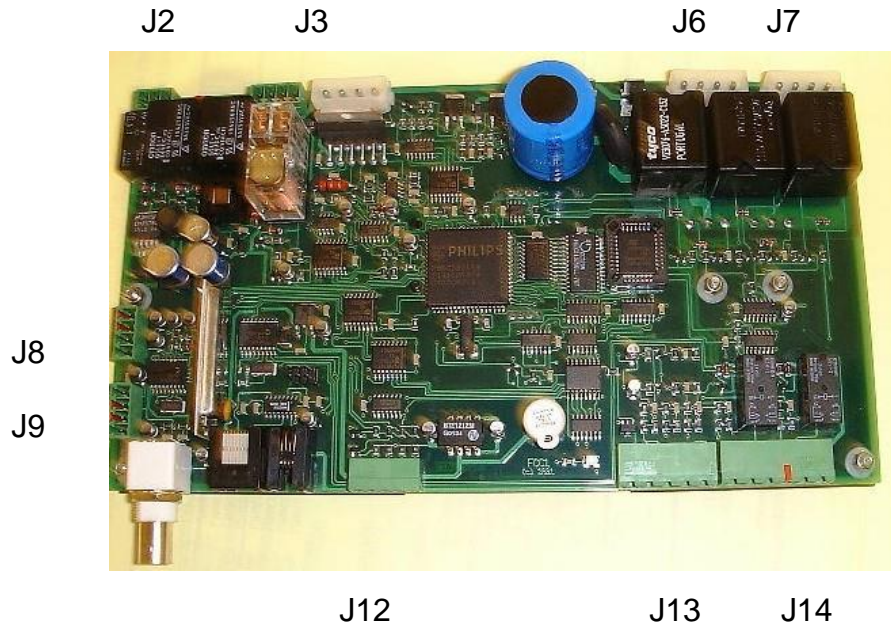
The print is complete retrofittable with the FCC1-F8/A1/W1/D3/K6 and consequently has the same article number: C10001502

Modifications in comparison with the FCC1-F8/A1/W1/D3/K6:

The output 24V= voltage is provided with a self-resetting fuse in the event of short-circuits between the safety line and the frame.
This protects the control system in the event of a short-circuit in the safety line.
The self-resetting fuse cannot be replaced.
The red test button has no function.

3.3 The print FCC2

J3 J2   J4   J5   J6   J7

J 1
J 8

J 9

J10

J11 J12 J13   J14   J15
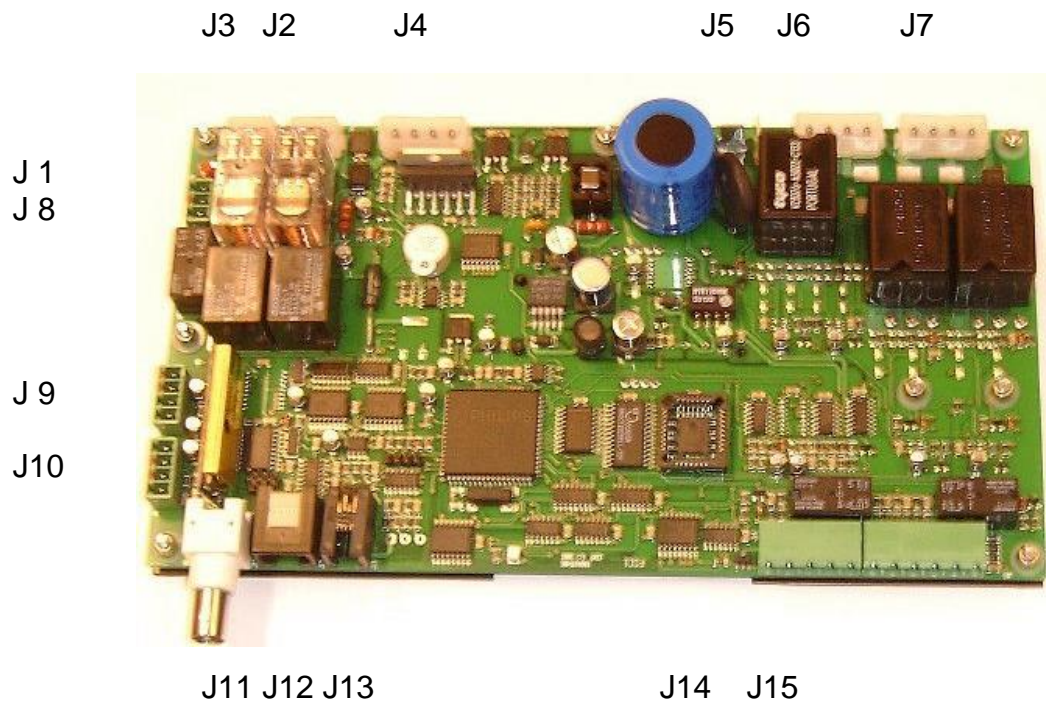
Print FCC2-S5/N5 has been fitted since February 2002.

This print is not interchangeable with its predecessors, and has consequently been assigned a different article number.(C1001520)
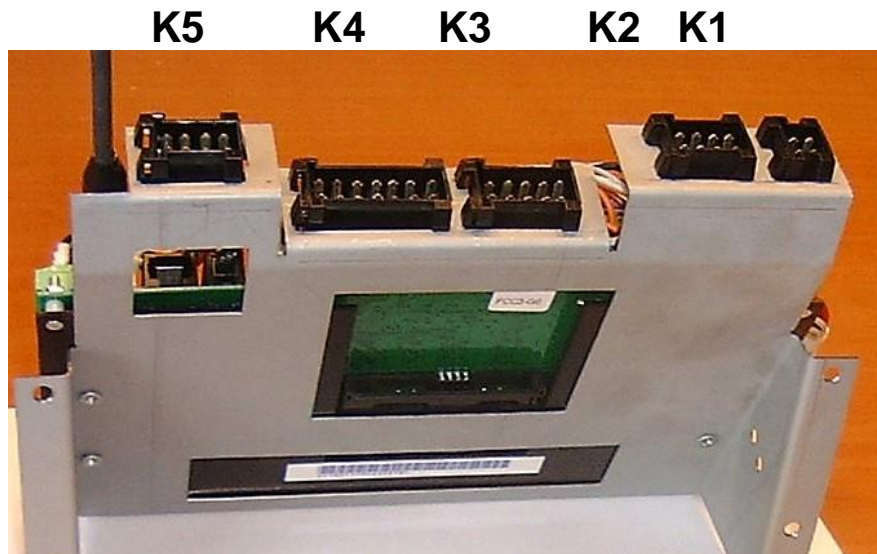
The printed circuit FCC2 is only appropriate for motors with 32 pulse encoders.
The printed circuit FCC2 can be upgradet, so it is also suitable for 48 pulse encoders.
The name will be changed to FCC3.

The printed circuit FCC2 functions together with the tiltswitches C3020000.

The printed circuit FCC2 fuctions with the wallbuttons 433 Mhz article number C1001400.

The FCC2 can in any case be replaced by a printed circuit FCC3

3.4 The print FCC3

K5   **K4**   **K3**   **K2**   **K1**

The FCC3 PCB is similar to the FCC2 PCB but suitable for motors with 48-pulse and 32-pulse encoders.

The FCC2 PCB can be upgraded to make it suitable for 48-pulse encoders. If this is done, their designation will be changed to FCC3.

FCC1 PCB's shall always be suitable for motors with 32-pulse encoders.
The FCC3 printed circuit functions with the tiltswitch C3020030.

The FCC3 printed circuit functions with the wallbuttons 433 Mhz articlenumber C1001400.

When a FCN3 printed circuit is to be changed by a FCC3 printed circuit, also the tiltswitch and wallbuttons have to be replaced.
On the tiltswitchcable you mount a short-circuit.

3.5   The print FCN3/FCN5/FCN6

K5   K4   K3   K2   K1

The FCN3/5/6 printed circuit is valid for motors both 32 and 48 pulse encoders.
The FCN3/5/6 printed circuit functions with the tiltswitches C3020010.
The FCN3/5/6 printed circuit functions with the wallbuttons 866 MHZ C1001410.

When a FCN3/5/6 printed circuit is replaced by a FCC3 printed circuit, also the tiltswitch and the wallbuttons shall be replaced.
The shortcircuit connector at the tiltswitch shall be removed.

		The printed circuit FCN3 REV B shall always be replaced.
tilt/standup/chrg/bat	tract...	
SmartCard ® (chip to back)	R127 Rev:B	H -6.1 RF868 C -3.0 H -2.0 SW-2.3 SW-0.7

C1001513 FCN6

The C1001513 has a longer reach for the remotes. This has caused a number of changes in the article numbers:

	old	new
Printed circuit	C1001512	C1001513
Wall button	C1001410	C1001413
Hand button	C1001450	C1001453

When changing a unit or printed circuit, and the article number of the printed circuit changes, it is necessary to change the wall buttons too.
The article numbers are noted on the printed circuit and the wall buttons.
With this printed circuit it is possible to run away from the foldable rail point, even if the foldable rail motor is not detected. So the user never can get stuck on the staircase.

C1001514 FCN 6

The printed circuit C1001514 has no softstop and is installed in units C0020055 for projects without dropnose.

C1001515

The printed circuit C1001515 is applicable with remotes 2,4 Ghz

C1001517 and C1001518

The printed circuit C1001517 and C1001518 are applicable with remotes 915 Mhz

3.6 Instruction for reading the printed circuit FCN3/FCN5/FCN6
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 Freelift, Newtonstraat 35, 1704 SB Heerhugowaar.
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.

4 Electrical wiring diagram

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.
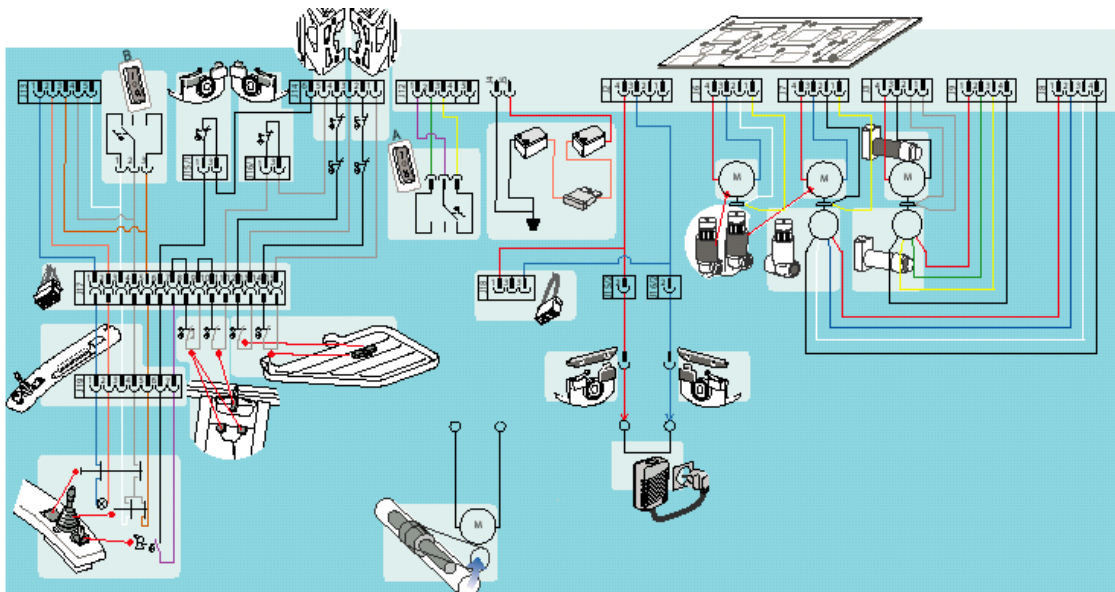The numbers of the connectors are mentioned and correspond to the numbers on the PCB.
The diagram may be divided into a number of sections:
- - The drive
- - The safety lines
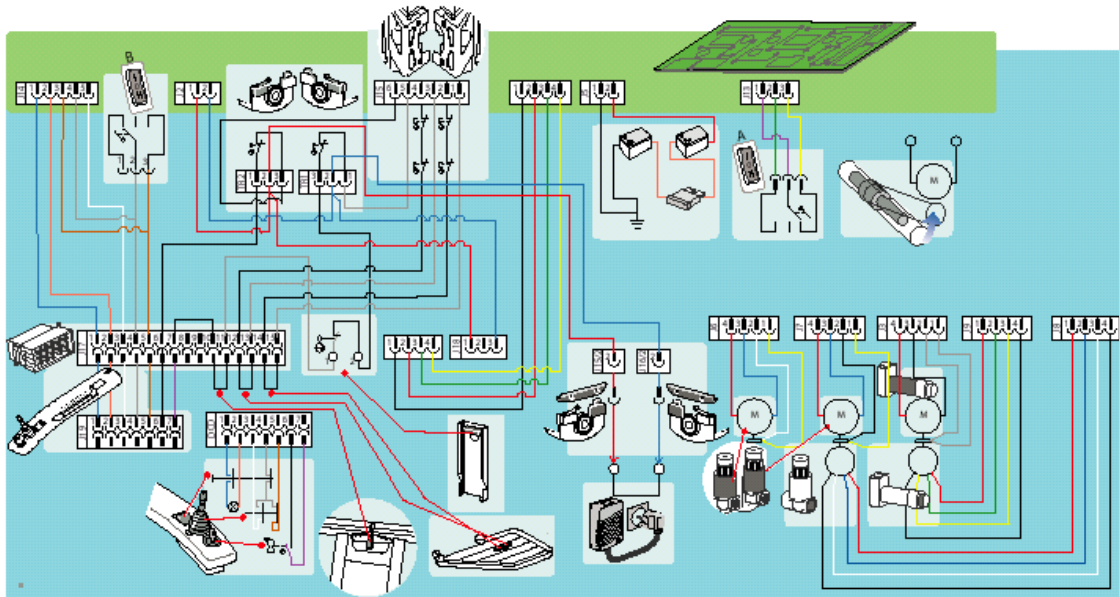- - The armrest
- - The charging part

4.1 Electric scheme FCC1

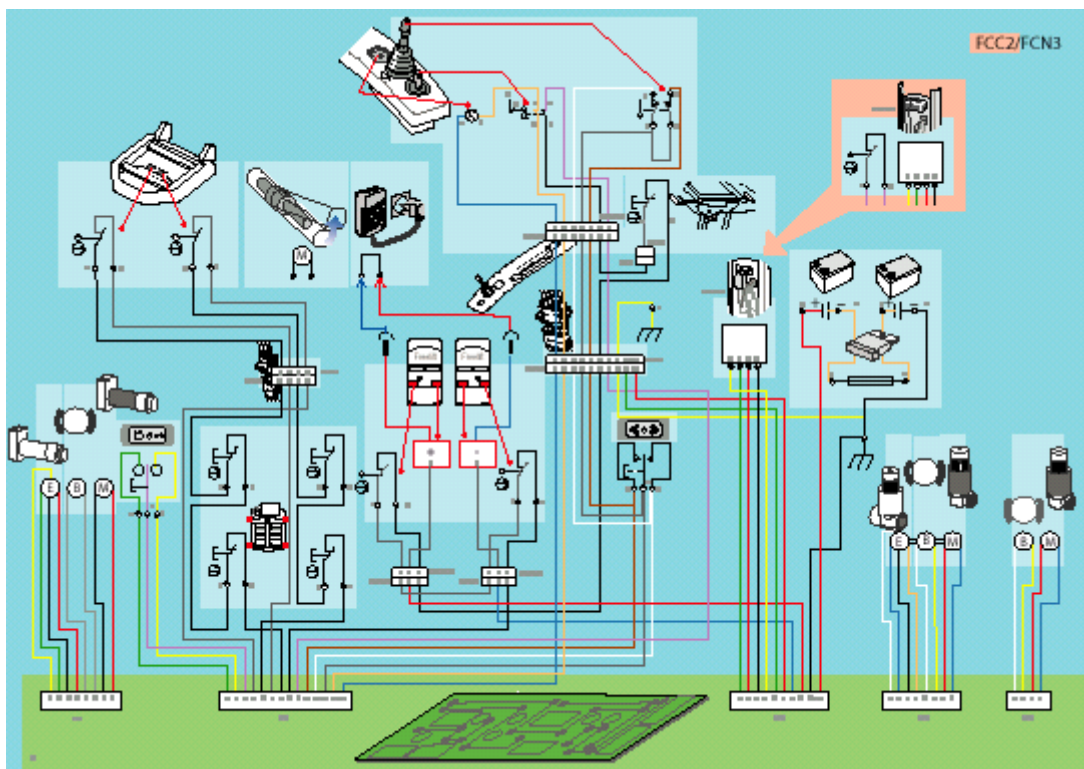The following diagram applies to chair lifts with a mechanical tilt switch and FCC1 PCB's:

4.2 Electric scheme FCC2

The following diagram applies to chair lifts with a electronic tilt switch and FCC2 PCB's, type freecurve 1:
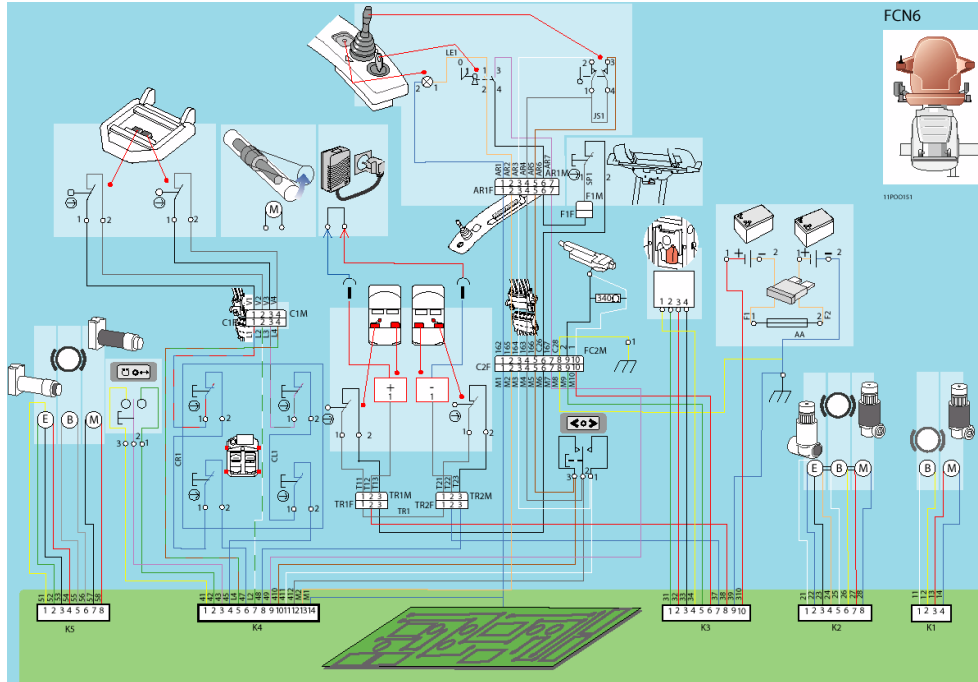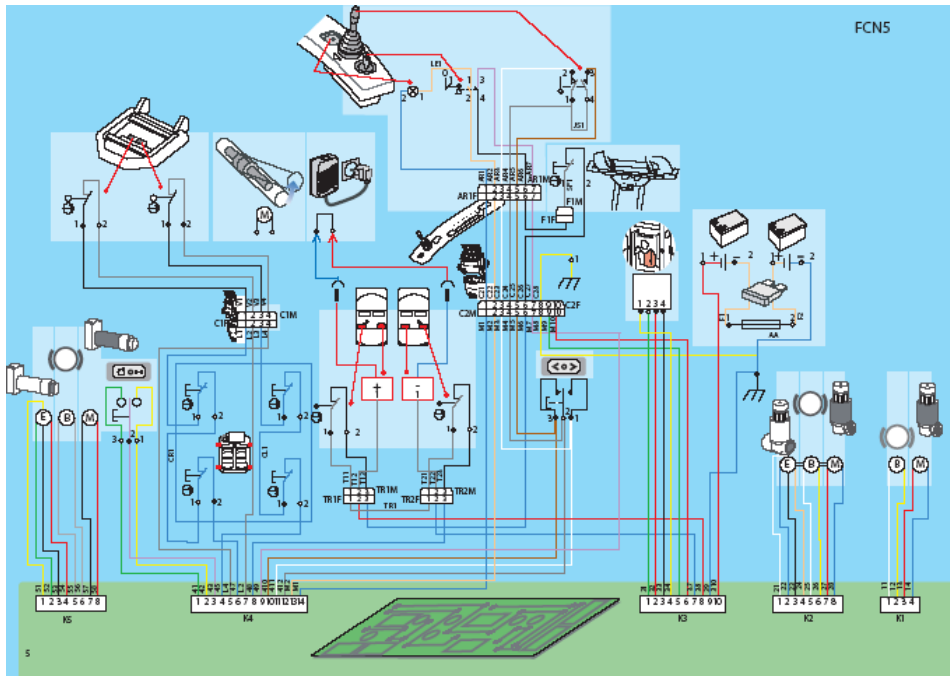

4.3 Electric scheme FCC2 and FCN3

The following diagram applies to chair lifts with a mechanical tilt switch and FCC2 or FCN3 PCB's, type freecurve 2:
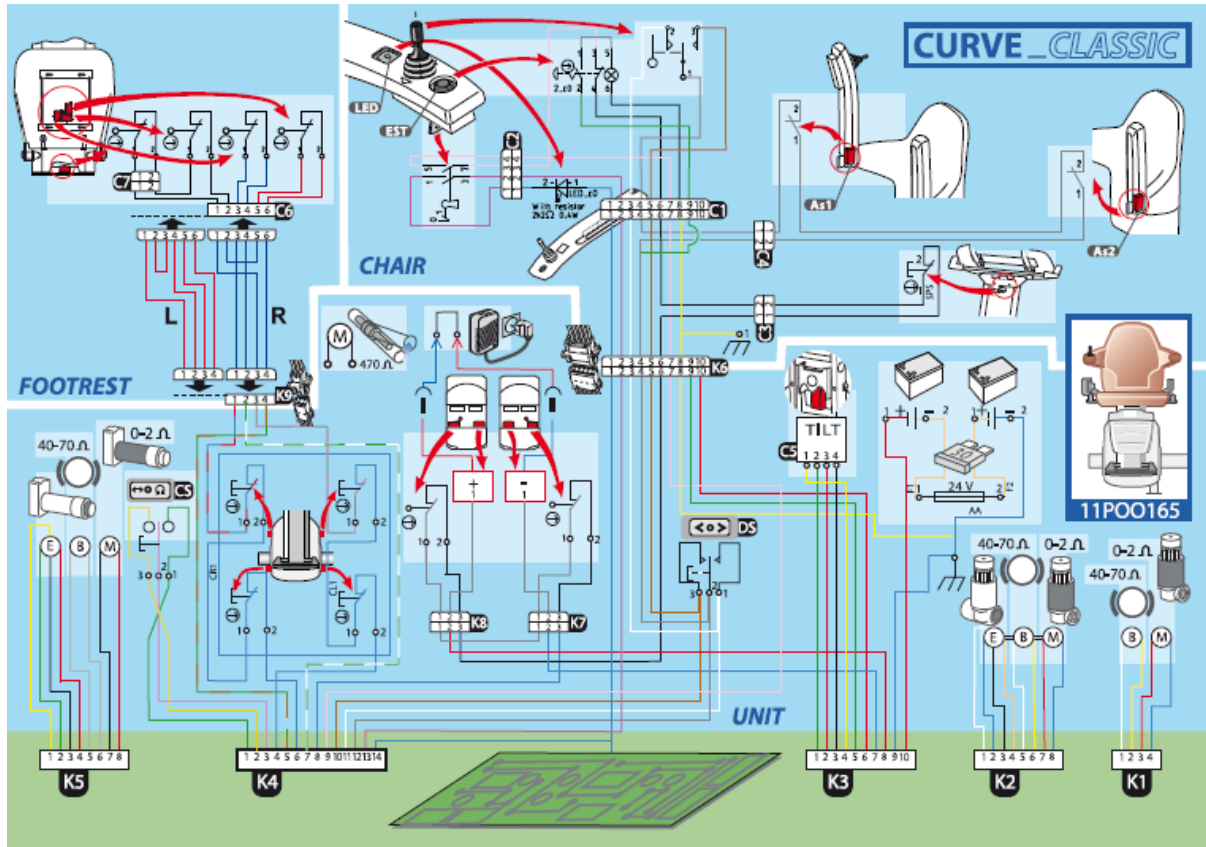
4.4 Electric scheme FCN 5/6

The following diagram applies to chair lifts with a electronic tilt switch and FCN5/6 PCB's,:

4.5 Electrical scheme EN 81-40

This electric scheme applies to lifts with EN 81-40 footrest, emergency stop and armrests switches. In the lifts from 2010: all the features may not always be present.

4.6 Electrical scheme EN 81-40 with automatical swivel till 01.11.2021
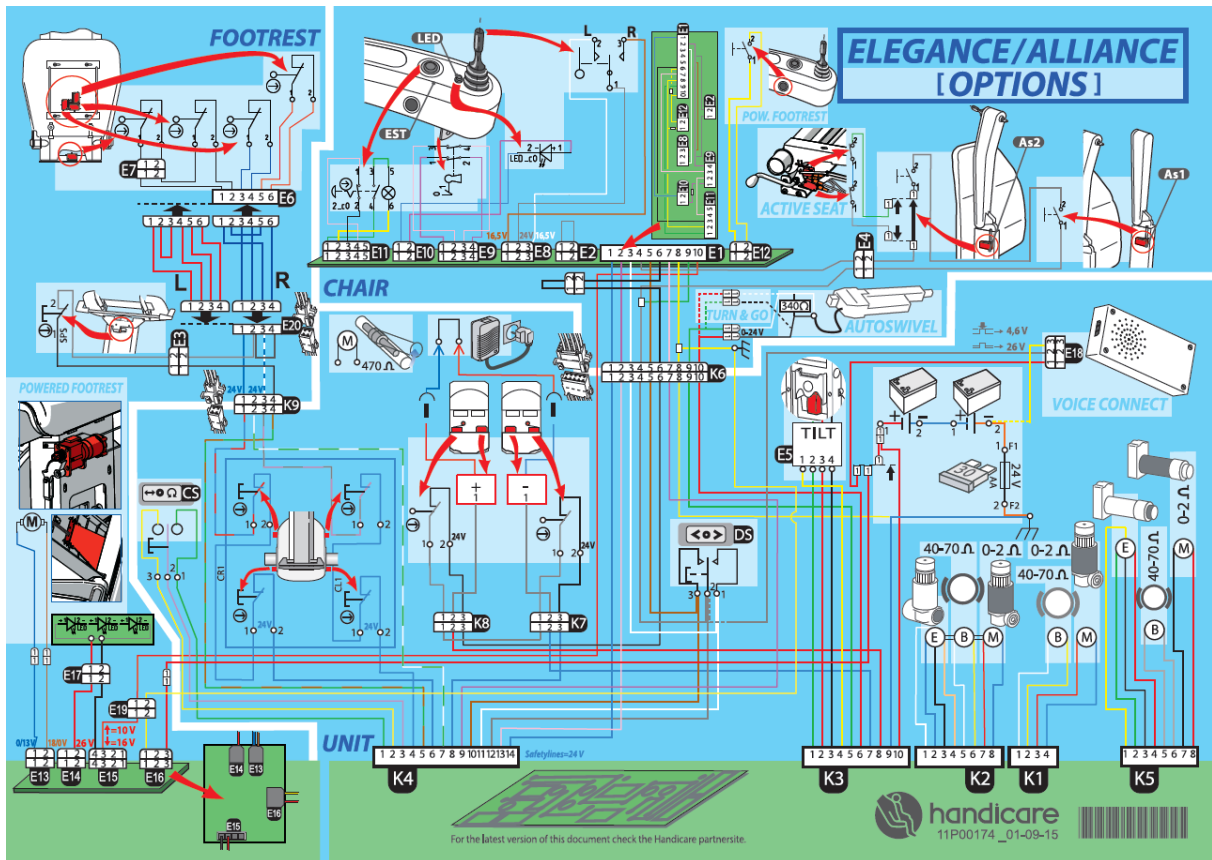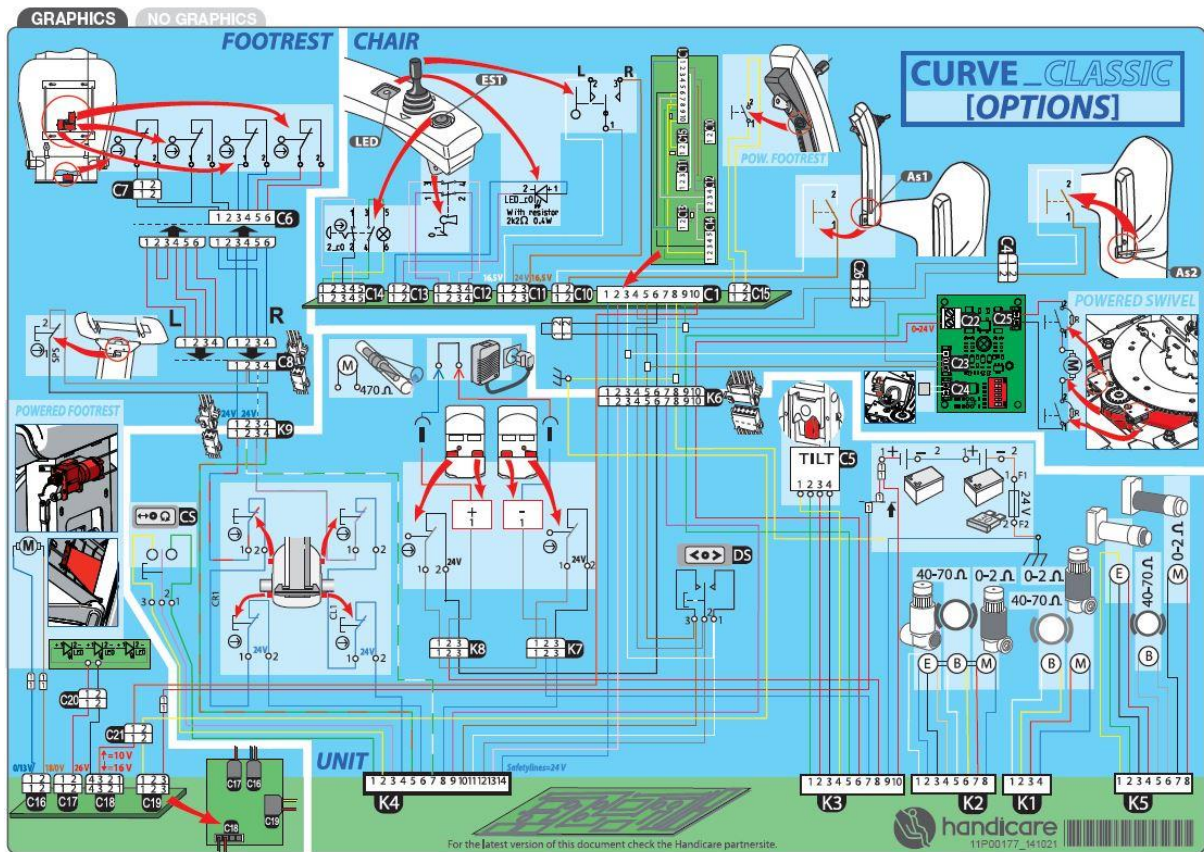
This electric scheme applies to lifts with EN 81-40 footrest, emergency stop and armrests switches. In the lifts from 2010: all the features may not always be present.

4.7 Electrical scheme EN 81-40 with one-way and two-way powered swivel

5 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.

5.1 Mechanical tilt switch C3020000

The mechanical tilt switch is fixed on the chair.
This tilt switch functions with the following PCB's:
All FCC1 PCB's.
The articlenumber is C3020000.
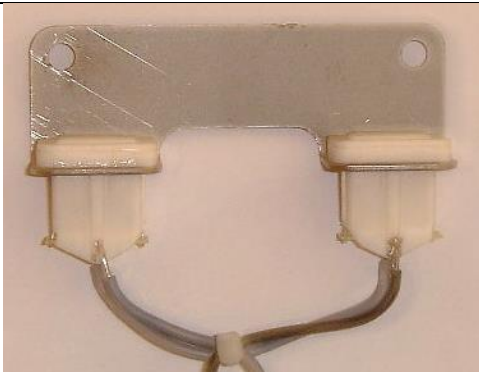
	This tiltswitch shall be measured at every service visit. When an unfused safetyline has made short circuit to the frame, the tiltswitch shall also be measured. When the contact in the tiltswitch has burned together, the tiltswitch shall always be replaced.

5.2 Elektronic tiltswitch C3020030

The electronic tilt switch is fixed on the unit.

This tilt switch works with all FCC2 and FCC3 printed circuits.This tiltswitch is only used in combination with the wallbuttons on 433 MHZ 433 MHZ (C1001400).

The articlenumber of the tiltswitch is is C3020030.

A grey cable is connected to the tilt switch; this is the general safety line.
A black telephone cable is connected to the tilt switch; this is a control line.
There is a green control lamp on the tilt switch.

The green control lamp will light up briefly when the telephone cable is connected. It will continue to be lighted when the tilt switch is activated.

When the chair lift is at the end of the rail, the PCB will check the tilt switch.
The lamp lights up briefly during the checking.

If the telephone cable is not connected, the chair lift will make one trip, and at the end of travel, the PCB will detect the absence of a signal and the chair lift will not move thereafter.
The green lamp on the tilt switch will not light up.

If the safety line is interrupted because the tilt switch comes into operation or because the grey cable has come loose, the chair lift will not move.
The lamp in armrest will flash continuously.

When the tilt switch lights up, the telephone cable should be disconnected before the chair can be operated with the calibration switches "1" and "2".

5.3 Electronic tiltswitch C3020010

The electronic tilt switch is fixed on the unit.
This tilt switch works with all FCN PCB's.
This tiltswitch is used in combination with wallbuttons 866 MHZ (C1001410).
The articlenumber of the tiltswitch is C3020010.
On the connector of the safetyline at the tiltswitch (purple cable) a shortcircuit connector C1060640 is mounted.

	Check if the tiltswitch is connected to the groundplate correctly. If not glue this with loctite superglue 401

5.4 Change of tiltswitch

The mechanical tiltswitch C3020000 can not be changed with the electronic tiltswitches.

The electronic tiltswitches can be exchanged when also the printed circuit and the wall buttons are changed.

5.5 Tiltswitch AA29946 in FC3

The new tiltswitch can only be used with a control box C1001513 with software "T4.3 updated". Tiltswitch AA29946 has a red backside and a label with the text T4.3 UPDATED ONLY! The former tiltswitch C3020010 had a green backside. The tiltswitch AA29946 (red) is not compatible with the tiltswitch C3020010 (green). Service In case you replace a tiltswitch C3020010 for a tiltswitch AA29946 you have to replace the printed circuit for control box C1001513 with software "T4.3 updated" as well. In case you replace a printed circuit C1001513 with software "T4.3 updated" for a printed circuit with version T or lower you have to change the tiltswitch to C3020010. On the webshop www.handicarepartners.com you can find below articles: C3020010 (former tiltswitch), AA29946 (new tiltswitch) North America The above is the same for North America but C1001513 (868 Mhz) shall read C1001518 (915 Mhz).

Chapter 6 Remote control

6.1 type legrand (433,92 Mhz)

This type of wallbutton (art. nummer C1001400) is delivered until week 32 in the year 2002. These wallbuttons function with all printed circuits FCC1/2/3.

The unit is a radiographic control, and operates at a transmission frequency of 433.92 MHz. The operating range is approximately 25 metres.

The power supply for the control is comprised of two 12V – MN 21 batteries. The client can replace the batteries when required, i.e. when the pilot lamp in the pushbutton flashes.

The pushbuttons will not operate if they are installed on a metal surface.

With chair lifts fitted with a FCC1-W1, FCC1-D3 or FCC1-K6 print the pushbuttons are not linked to the print..

6.2 type RC5 (433,92 Mhz)
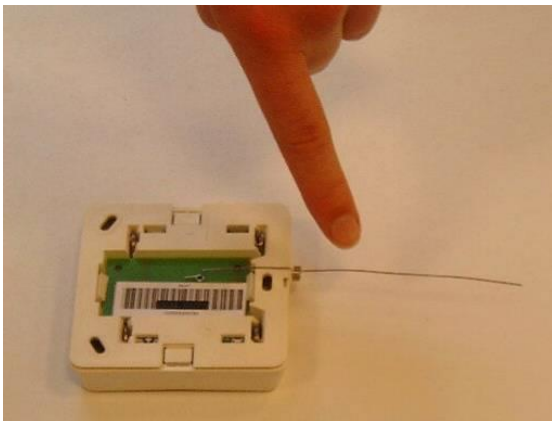
Wallbuttons with articlenumber C1001430 send on 433,92 Mhz and can be exchanged with the wallbuttons C1001400 type Legrand. These wallbuttons function with all FCC1, FCC2 and FCC3   printed circuits.
The wallbuttons have an antenne, otherwise the wallbutton has too low reach.

When the chairlift has a printed circuit **FCC1-F8/A1/W1/D3/K6** execution, the wallbuttons are not coupled to the printed circuits.

6.3 type RC3 (868 Mhz)

Wallbuttons with articlenumber C1001410 send on 868 Mhz and are not exchangable with the wallbuttons C1001400 type Legrand and the wallbuttons C1001430.

These wallbuttons function with all FCN3/5/6 printed circuits. The wallbuttons have no antenna

6.4 REMOTES SINCE MAI 2007

Remote Control Article No.: C1001413

PCB Article No.: C1001513

The PCB can be identified by the revision letter J.

6.5 Remotes in combination with Printed circuit Revision M or higher

To meet the latest requirements for stairlifts, the pcb's and remotes have been upgraded.

The new version of the printed circuit is rev M.
The new version of the remotes is rev 1.1

The older version of the remotes rev 1.0 can not be used with the printed circuit C1001513 rev M.

The new version of the remotes rev 1.1 does also function with eldery printed circuits.

Underneath you will find an overview of the possible combinations.

PCBC1001513	Remote	Conmbination possible
Rev. M	New (rev 1.1)	Ok
Rev. M	Old (rev 1.0 and older)	Not OK. stop and go behaviour on the remotes or inprogammable
Rev. K and eldery	New (rev 1.1 and older)	Ok, or even better than the eldery ones
Rev. K and eldery	Old (rev 1.0)	Ok

The versionnumbers can be find on the backside of the remotes and the frontside of the printed circuits.

6.6 Unlinking of the wallbuttons

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

The datacard should be taken for 3 seconds from the cardreader.

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

7 **Preventive maintenance**

Periodic preventive maintenance is necessary for long-term correct functioning. The stairlift must be serviced at least once a year. If the stairlift runs over more than 2 floors and/or has more than 2 users, it needs at least 2 maintenance inspections a year.

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.

Underneath is an overview of the recommended grease to be used:

Van Gogh / Rembrandt:

Molykote G4500 (articlenumber 11J00059) is used for:

- ➢ the toothrack
- ➢ the chairsupport
- ➢ the guidediscs of the motor on units delivered until week 39 of 2011 the units are indicated by a white sticker on the frame

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
The units are indicated by a yellow sticker on the frame.

Interflon thin grease is be careful when a so the chance on leakage

more fluid than Molykote, so applying. Use a small brush 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.

11J00059

11J00060

11J00114

Picasso

Molykote DX is used to grease the toothrack of the Picasso .

11J00096

11J00097