Quick Reference Guide

Xclusive

handicare

Contents

1. Introduction

This guide is intended for use as a general reference by engineers repairing faults on the Handicare Xclusive. The guide is structured as follows: the first chapter provides general information about the Handicare Xclusive, including how the Handicare Xclusive should be tested, where the components are located and how they react to certain situations. The subsequent chapters deal with repairing faults. Flow charts are used in some cases, where step-by-step choices have to be made in order to find the cause of the fault.
There is room for improvement in every guide. If you have any tips or suggestions, please let us know so that we can incorporate them. We wish you the best of luck with your tasks and hope that this guide will be of assistance.

2 Display codes

Left hand

Code	Meaning	Page
None	Power off	24
–	Charging	23,26
0	General safety circuit activated	22
1	Requires charge	31
2	Off charge	23,26,31
3	Top track limit activated	27
4	Top safety edge activated	29
5	Bottom track limit activated	28
6	Bottom safety edge activated	30
7	Low battery voltage	31
8	UP travel direction	21
9	DOWN travel direction	21
A		
B	Toggle switch active at power up	21
C	IR address fail	32
d	Relay not open	20
E	Relay not closed	20
F	Brake semi-conductor failed	21
G	Brake not connected	20
H	Relay not open (pre-delay)	20
J		
L	Current limit exceeded	20
n	Low speed	31
o	Default Eeprom	21
r	Power supply fault during charging	31
U	Power supply fault when battery on float	31
y	Main board hardware fault	21

2 Display codes

Right hand

Code	Meaning	Page
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–	Charging	23,26
0	General safety circuit activated	22
1	Requires charge	31
2	Off charge	23,26,31
3	Bottom track limit activated	27
4	Bottom safety edge activated	29
5	Top track limit activated	28
6	Top safety edge activated	30
7	Low battery voltage	31
8	UP travel direction	21
9	DOWN travel direction	21
A		
b	Toggle switch active at power up	21
C	IR address fail	32
d	Relay not open	20
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F	Brake semi-conductor failed	21
G	Brake not connected	20
H	Relay not open (pre-delay)	20
J		
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o	Default Eeprom	21
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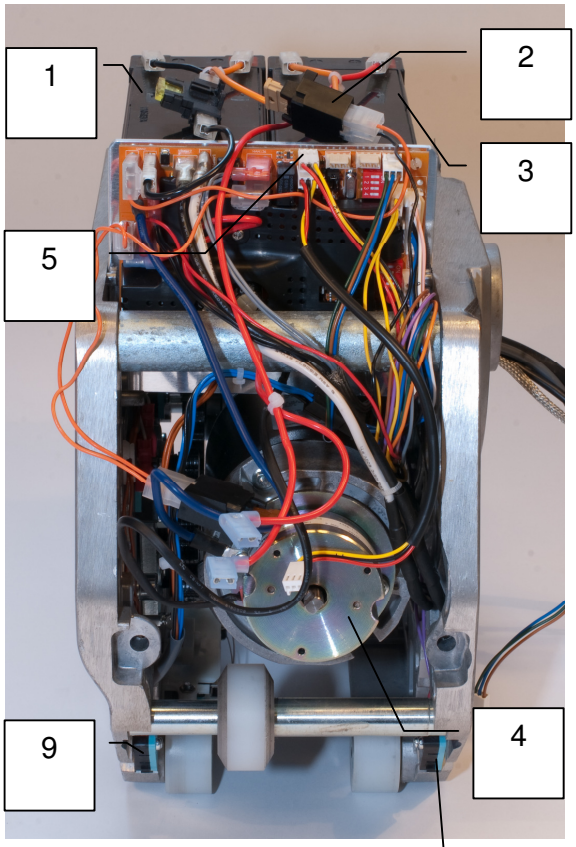
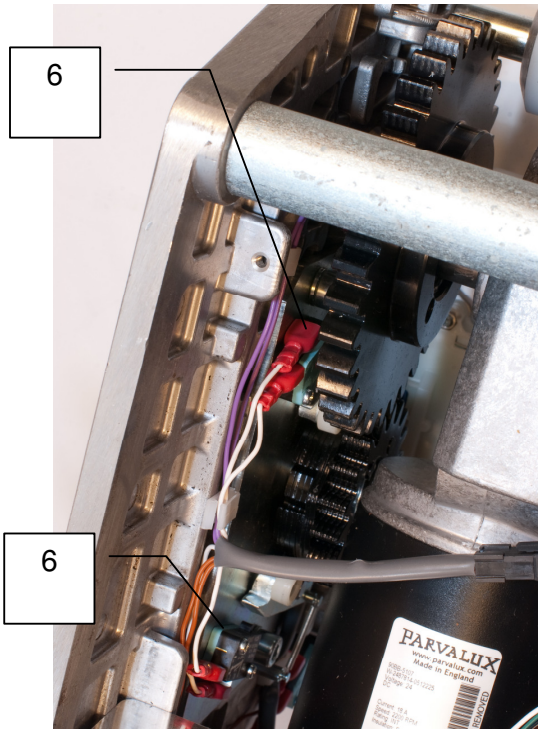
y	Main board hardware fault	21
.||.	Overcurrent	20

3 References **page**

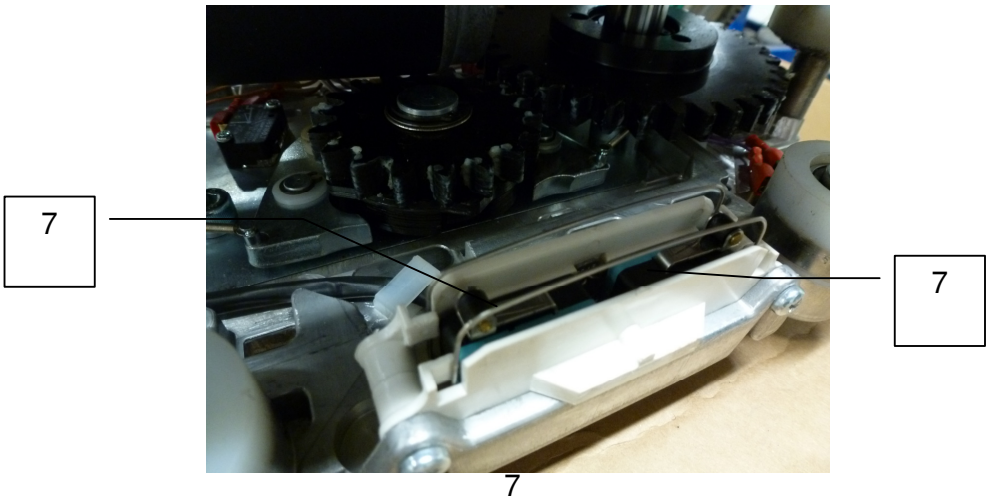
4. Glossary

Unit





1	30 amp fuse
2	5 amp fuse
3	Batteries
4	Motor
5	Main board
6	S8 S9 Overspeed governor switch
7	S2, S3 Limit switch
8	S4, S6 Power pack edge switch
9	S5, S7 power pack edge switch



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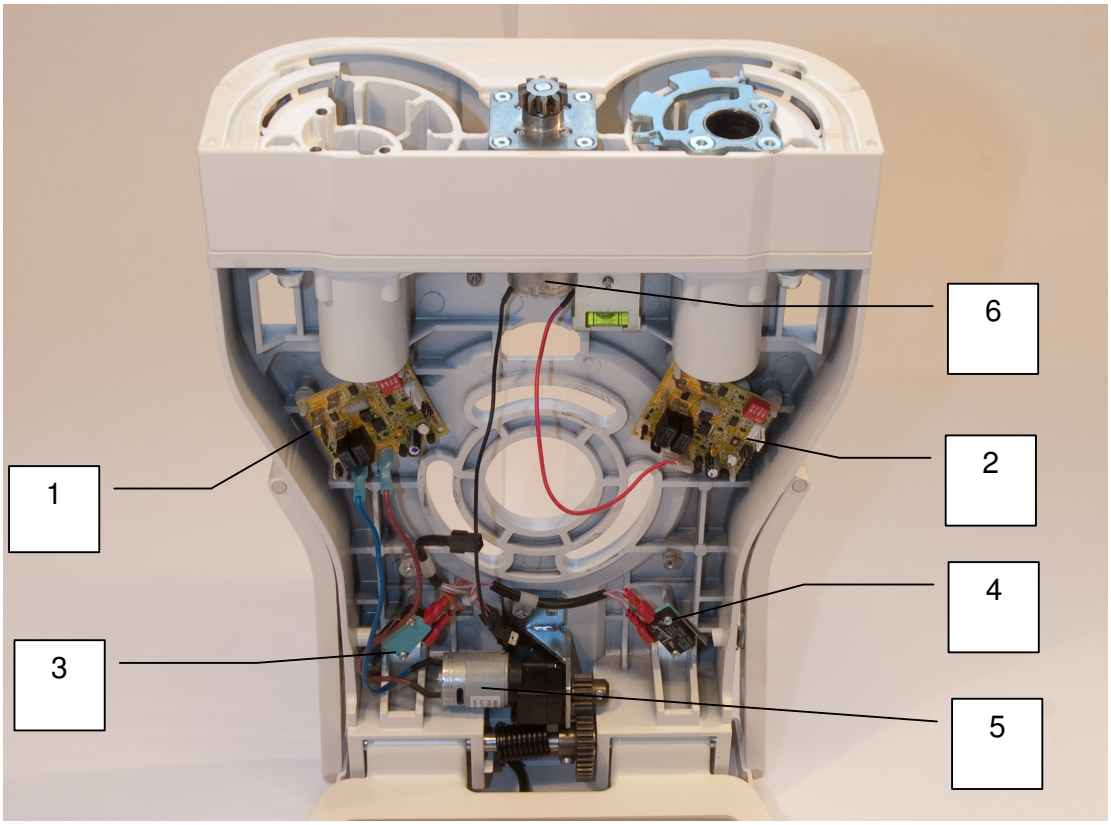
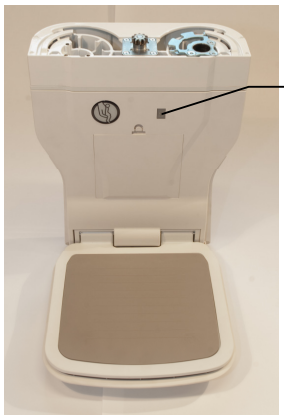
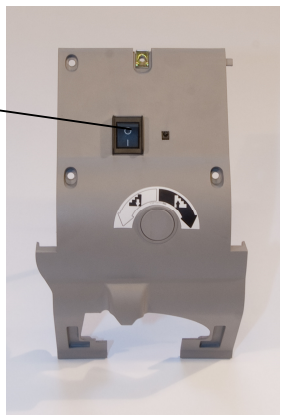
Front chassis

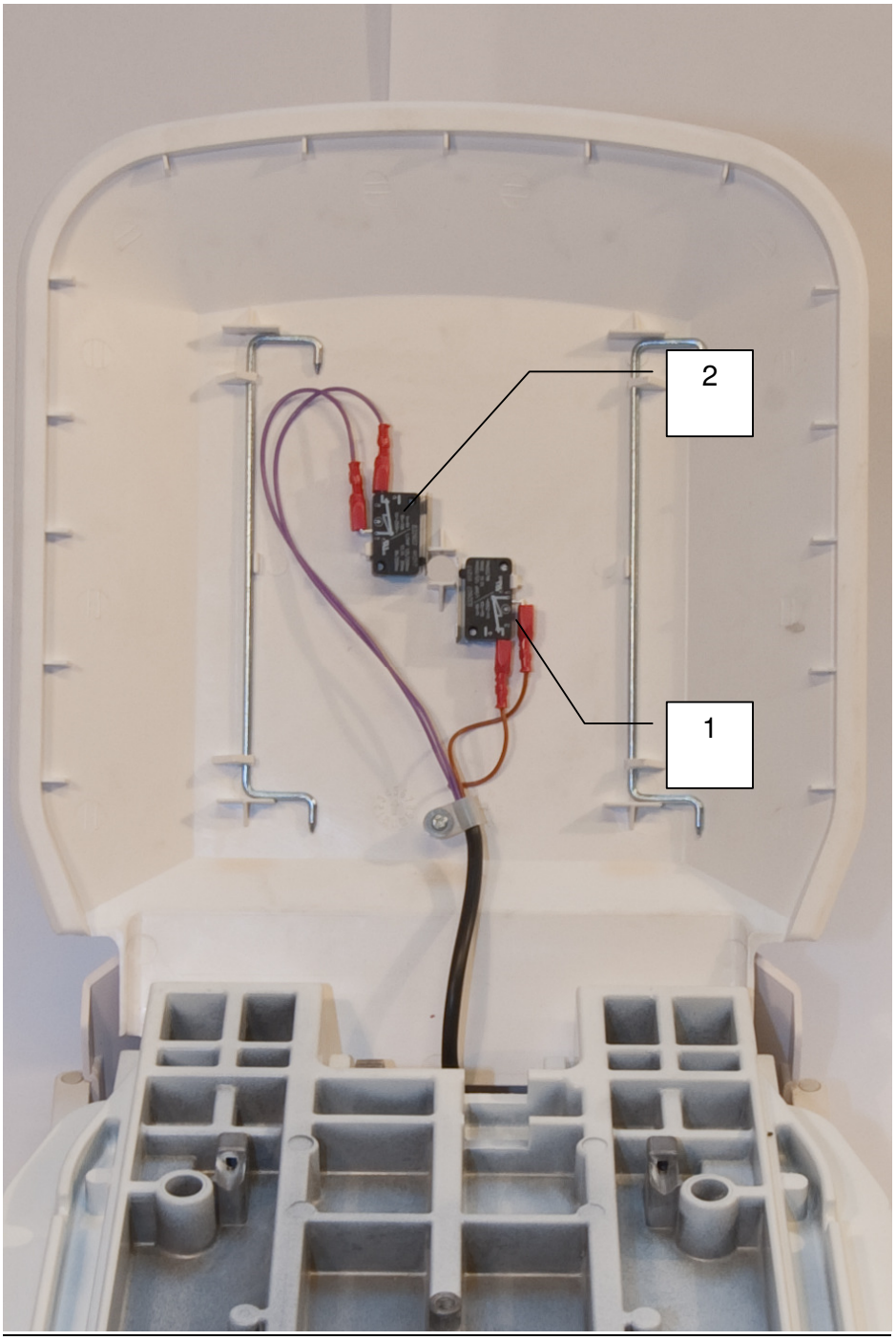






1 Board powered footrest
2 Board powered swivel
3 S10 front chassis top/bottom edge switch
4 S11 front chassis top/bottom edge switch
5 Powered footrest motor
6 Powered swivel motor
7 Display
8 S1 Main switch

Footrest

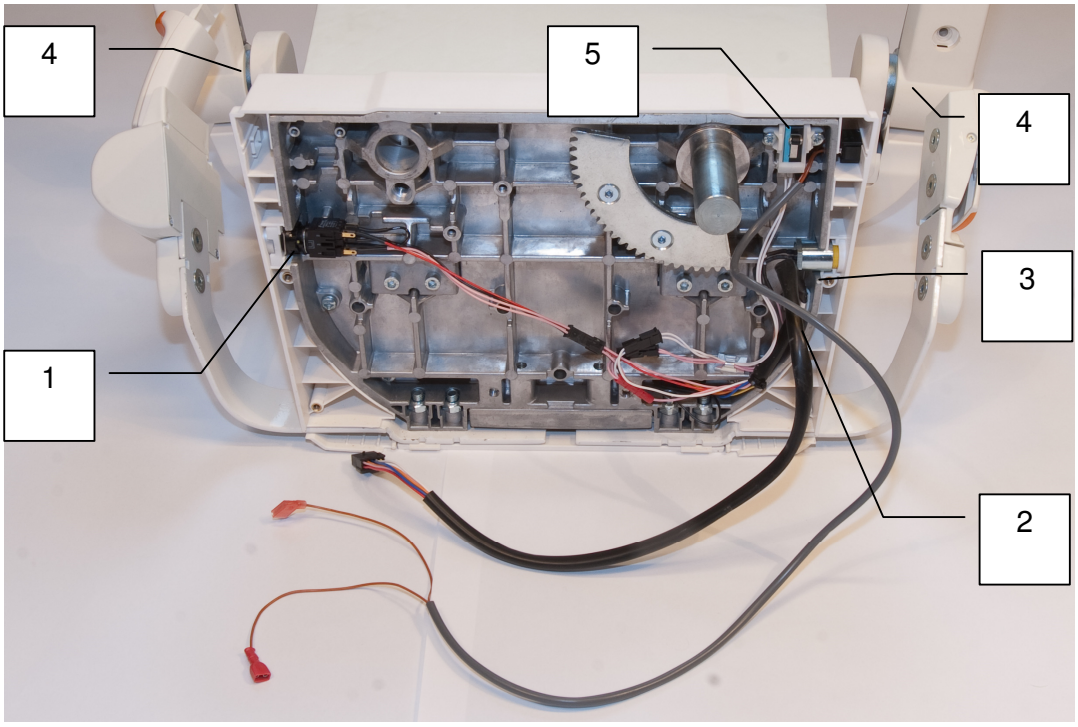


1 Footrest switch S12
2 Footrest switch S13

Chair

S14 Toggle

S15 Control powered footrest



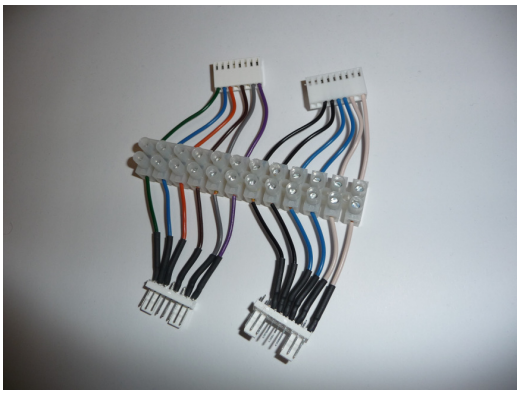
1 S17 Emergency switch
2 S20 Manual overrun autoswivel
3 S18 Keyswitch
4 S21 , S22 Hall sensors
5 S19 Seat swivel switch

5. Testing

The circuits should be tested as follows:

- Use the electrical diagram to see which circuit you need to test
- Disconnect the Handicare Xclusive from the power supply
- Connect the molex testing link to the pcb
- Set the multimeter to the “beep” or resistance or voltage test mode
- Remove the correct connector from the board
- Push the measuring pins into the back of the connector (see photo).
- Check that you are testing between the correct connector pins/numbers.
- No “beep” or resistance means that the circuit being tested is not complete.

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



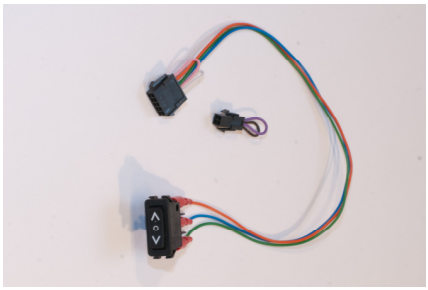
Molex testing link

6. Display

On the lift is a display which shows a diagnostic code to help you locate the cause of the breakdown. The codes can be found in the user- and installation manual. See also chapter 15.

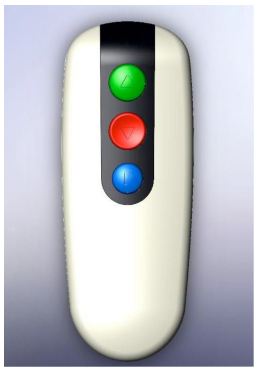
7. The toggle

The lift is operated by the toggle on the armrest. The toggle or the button for the powered footrest raiser can be swapped from right to left on side.
The lift will not ride when the armrests are in the folded position. It does however operate on the remotes. During the ride the diagnostic display show “8” or “9”.



An installation toggle loom can be used to ride the power pack without chair.
In case of a public building when the key switch should switch off the toggle but the remotes should stay operational, the key switch needs to be transferred from the safety line to the control line.

8. The remotes



The remotes function on infrared and they need to be fixed to the walls adjacent to the stairlift. On the backside is a dipswitch for setting a different code.
The lower button is a special button for parking the lift. On the backside is a red or green cover. Green means the remote functions on radiofrequency (2,4 Ghz), red means the remote functions on infrared.
Under this cover you can find a dipswitch to set a different canal.
The infrared remotes work out of the box. If they don’t, they can be linked as follows: Press and hold the red button on the board P1. A yellow light will illuminate on the board. Press any button on the handset and the light will go out.

9. The safety edges

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

The direction-sensitive safety edges

The direction-sensitive safety edge prevents the lift from moving further in the direction that is blocked.
However, the Handicare Xclusive can still be moved in the opposite direction to remove the blockade.
The diagnostic code shows “4” or “6”

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

- Footrest switches
- Detection switches for the power pack
- Detection switches for the front chassis

The handing of the safety edges is when sitting on the lift.

The general safety edges

The general safety edge prevents the lift from moving further in both directions.

The diagnostic code shows “0” when the toggle is moved in either direction when the safety edge is obstructed.

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

- Seat swivel switch
- Overspeed governor switch
- Key switch
- The emergency stop

When the key switch or the emergency switch are activated, nothing will function
When the safety brake or the seat swivel switch are activated the lift won’t move, but the option automatic swivel and powered footrest are still operable.

10. The batteries

Two 12V 7 Ah maintenance-free lead-acid batteries are used. They have an expected life span of three years.

If the output voltage of one of the batteries is at least 5V less than that of the other, it can be assumed the battery is faulty. If the voltage between the batteries varies, there is something wrong with them.

Guarantee
No guarantee is provided for the batteries. However, we do ask that you report any complaints to us, stating the identification number on the battery.

11. Charging power supply

The battery charger is suitable for an input voltage of between 100V and 240V. The output voltage is 33 V=. The charging current is 1 A.

There are different diagnostic codes if the lift requires charge

Code 1 and 7: When the battery voltage is very low (maybe down to 10%capacity left in batteries), this fault code will appear. When the lift docks on to charge contacts, the lift will not drive off the contacts. 1 will flash. Lift will only drive off if battery voltage has recovered approximately three quarter capacity. Another way of driving off the contacts is if lift is powered “off” then back “on” but as soon as lift docks on contacts, process will repeat again. This fault code is linked to fault code 7 but the code 7 is not usually seen as code 1 takes priority.

Code r: This code will occur when the lift is charging. If the power supply is disconnected while the lift is charging, the r code will display. A fault with the 33V power supply where the power supply cannot supply current to charge the batteries will also show this code.

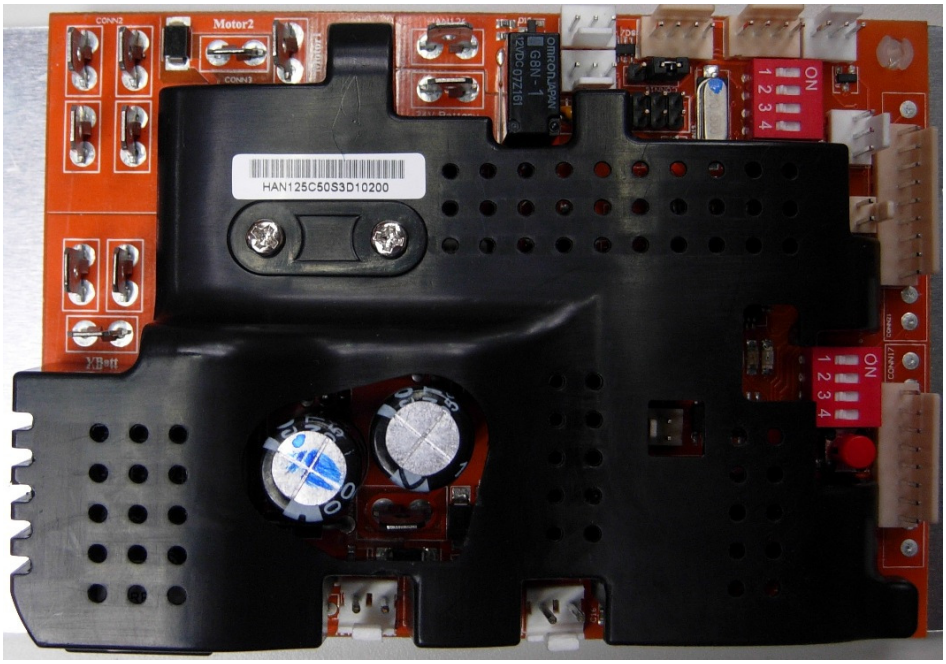
Code U: This code occurs when the lift has fully charged the batteries and is in sleeping mode. When the 33V power supply is disconnected, the U code will display.

Code d and H: This code appears if the batteries are low. The main relay on the board is rated for 24VDC operation so the low voltage will give a false fault condition. Software priority determines whether d or H are displayed.

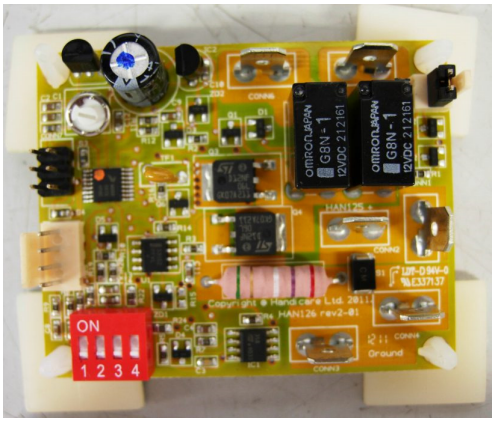
Testing the power supply:

Connect the multimeter between the spade of the red wire and the ground. The voltage raises until 29,5V=. After 5 minutes the voltage it’s 27.5 V=. Make a test ride, if the voltage drops under 20V= there is a problem with the batteries or the power supply.

12. Boards



125 Mainboard



126 Powered swivel
126 Powered footrest

13. Options

The stairlift can be extended with extra powered options:

- Powered swivel chair
- Powered footrest raiser

Logic

The grey communication loom provides a link between the 125 pcb and the 126 pcb. The 126 connection on the MS125 pcb output is 11,5 volts. Each time a 126 pcb is connected, the reading will drop by approximately 0.8 volts as communication between the two pcb's is established.
The 126 pcb dip switch settings tell the MS125 pcb what powered option is connected. Each dip switch setting is looking for different parameters to determine when and where power should be applied to the attached motor.
When the parameters are met, the MS125 pcb passes the battery voltage through the communication loom to the 126 pcb. The 126 pcb then reduces the output to the correct voltage for the attached motor to power the option. Depending on which option is attached, voltage would be applied to the motor for a set time or until the motor has hit a stop, the 126 pcb has a stall current.
In case of a failure on the communication circuit, the lift runs, but the options don't function.

Powered swivel chair

The powered swivel chair swivels at the top and is operated from the toggle. The lift shall be on the upper end limit switch and the board should detect the charge voltage. The powered swivel chair can be operated manually in case of emergency. At the side of the chair is a button for manual override.

Powered footrest raiser

The powered footrest raiser is powered from a button under the armrest. The powered footrest can be activated all along the track.

14. Rescuing the user

Instructions for rescuing a user seated on a chair lift of the type Handicare Xclusive that is still at the top of the stairs.
Check the status of the stairlift via the diagnostic display. Remove faults in the stair 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 your 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 manual hand wheel, for which please refer to the manual.