LEHNER LIFTTECHNIK

Installation Manual

ALPHA

Chair - stairlift

CE

CONTENTS

Observe the following points before installation!

Installation teams must have a general knowledge in:

- working on electric controls
- basic mechanical engineering and providing adequate fixation of the rails and pillars
- reading and understanding circuit diagrams and wiring schematics

The following points are necessary for the installation:

- Have a complete tool kit on hand for mechanical and electrical works

- Check beforehand what fixing materials (screws, anchor bolts, adhesives) are required for the proper fixing of the rails to the wall or the pillars to the floor. These materials are not included in the delivery! The installation company is responsible for the fixing of the rail to the wall or the pillars to the floor/steps!

- Check the packages for shipping damage and missing parts before bringing the lift to the site. Take pictures of damaged parts as soon as these are discovered to provide proof for warranty claims.

- A team of 1 qualified technician and an assisting technician is necessary to install the lift.

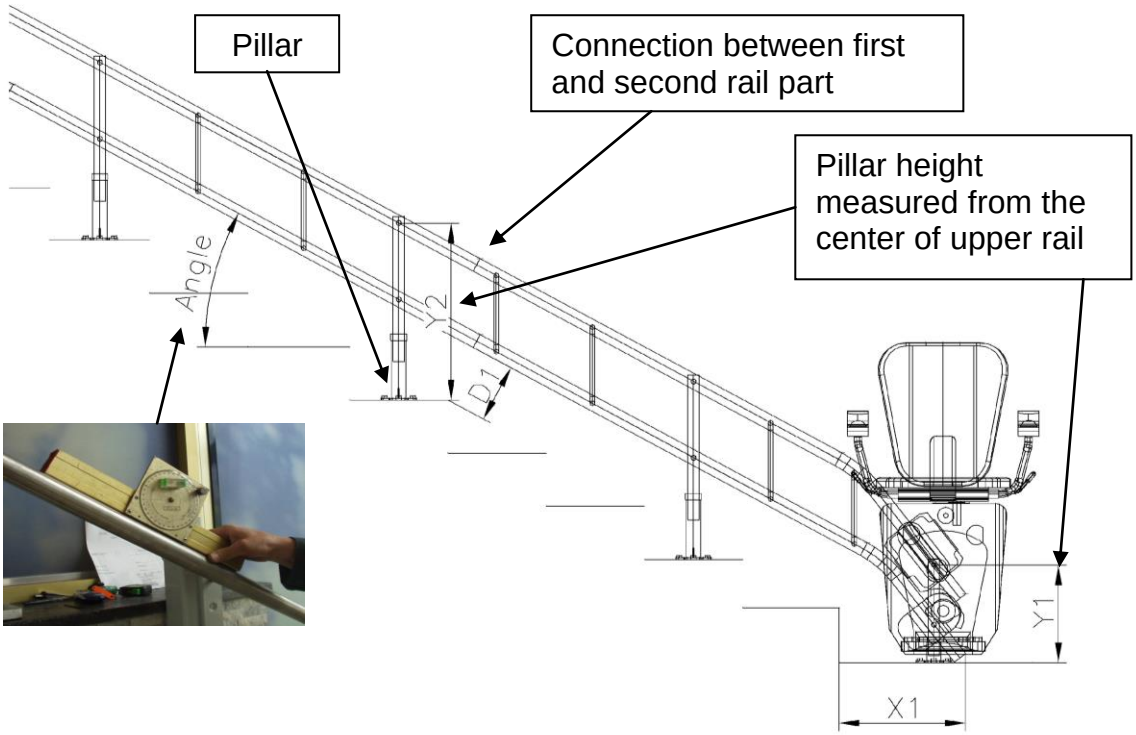
Beginning the Installation

Bring the platform to the upper landing before fixing the rails in order to prevent damage to the rail and platform during transport on the staircase! The platform can only be engaged from the upper end of the rail.

The following tools will be required to finish the installation successfully:

- A complete toolset for mechanical and electrical works
- Voltmeter
- Drilling machines
- Drills, thread cutter
- Fixing material based on on-site requirements
- Spirit lever with angle indication

Installation of the rails



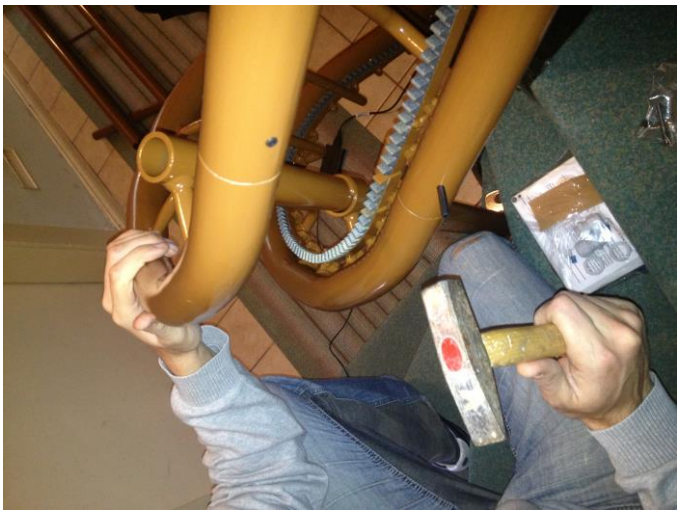
Step 1: Start fixing the rail from the bottom! Do not start installation from the top.
Add the pillar to the rail posts and place the first rail part on the staircase. Fix the post only temporarily with the worm screws. Do not fix too tight so not to leave pressure marks on the paint as you might need to change height of the post during installation.

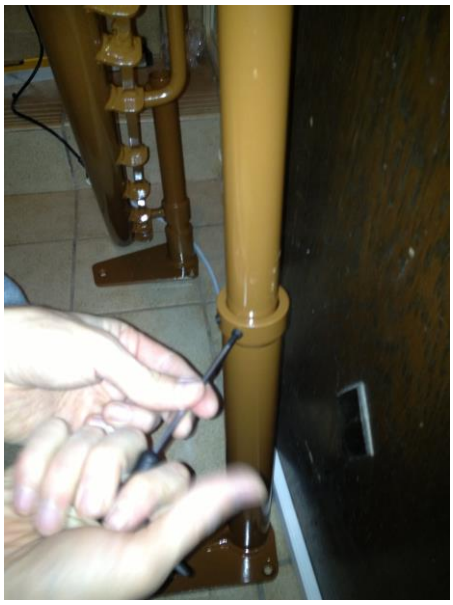
Step 2: In order to later connect both landings stations to the charger it is necessary to insert a single phase (1x1mm²) cable into the lower tube. If the rail is short this can be done at the end of the installation. If the rail is long this should be done while combining the individual rail parts. In this case please enter the cable into the first part and then, before combining the rail part, also into the second rail part and so forth.

Step 3: Add the second rail part. Now make sure the vertical measures from the first pillars Y1 and the first pillar of the second rail part Y2 are correct. Check diagonal measure D1 measured from the step nose to the underside of the lower rail. Check also if the angle indicated in the installation drawing is respected on the installed rail.

Step 4: Make sure all pillars are vertical and also that both rail tubes are aligned vertically above each other.

Step 5: Fix the rail parts with the locking pin. Tighten the other pillars at the correct height with the 3 worm screws.





Step 6: When all rail parts are connected and all pillars a set to the correct height check again all clearance measures and the correct position of the rail according to the installation drawing.

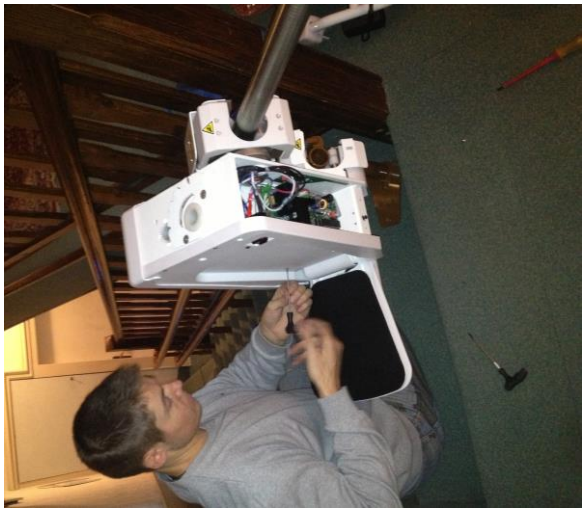
Step 7: If all is ok fix the pillars to the steps. Use appropriate fixing material according to the staircase material.

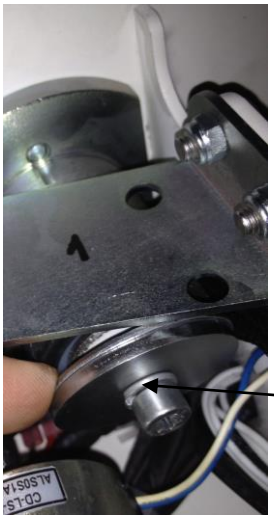
Installation of the drive unit onto the rail

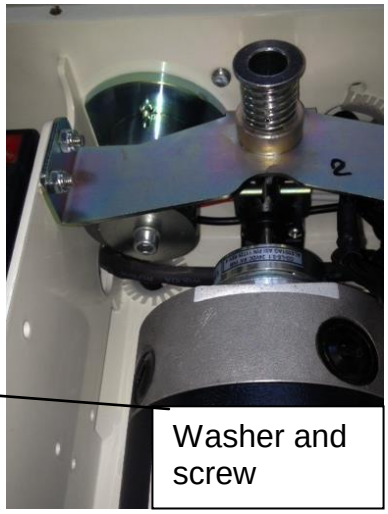
Step 1: Take the box with the drive unit close to the upper end of the rail. Open the box so that the rails and trolleys are on the top of the box. Take out the drive unit and place it on the floor so that it is standing upright

Step 2: Take off the wooden plates on each side. Put the drive unit on the floor (use protection under it so not to scratch it). Then 2 people should lift the drive unit on the rails and attach the installation rails to the top of the installed rail on the staircase. Then slide the drive unit down until it reaches the top of the installed rail. Use the handwheel to drive the unit onto the installed rail so that the lower rail passes entirely through the lower trolley.

Step 3: Take of the side and front plastic covers. Then put the chair into the fixation and fix and lock it with the screw and washer from inside the drive unit.





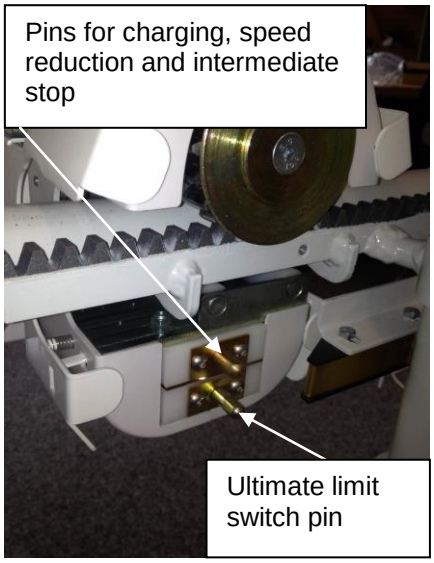


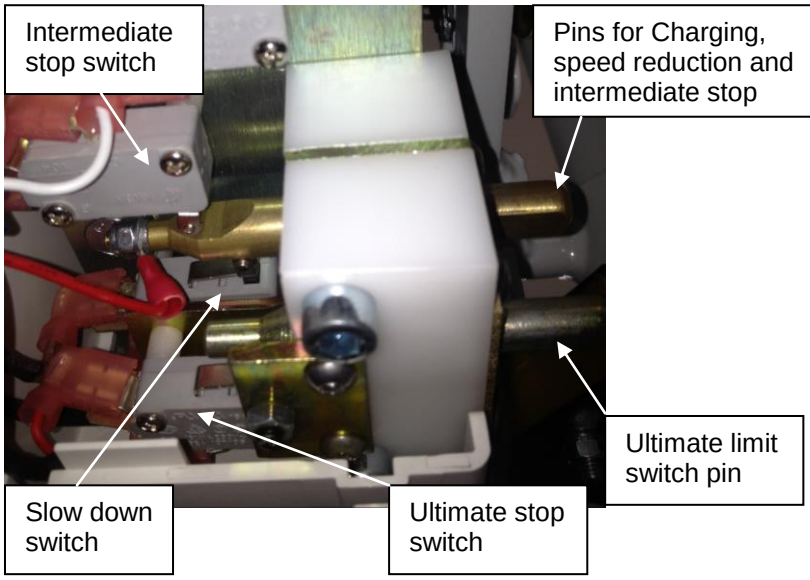
Step 4: Use cable ties to fix the connection cable between from the chair to the drive unit. Makes sure the seat can freely rotate with the cable getting twisted or squeezed. Before fixing the cables rotate the seat to the maximum, then fix cables in place and rotate back and forth to see if the cable moves freely.

Step 5: Now drive the unit down and up to check if the seat passes all steps and if the clearance is ok.

Explanation of upper and lower trolley

The lower pin is the ultimate stop pin. This activates the safety switch at the end of the rail (in case the normal stop would not work). The upper pin is responsible for taking the positive charging current and at the same time activates a slow down switch when at hitting the landing station charging cams. On an intermediate stop assembly this pin is pressed further inside and then additionally activates the intermediate stop switch. This only happens on intermediate stops, not on end stops.

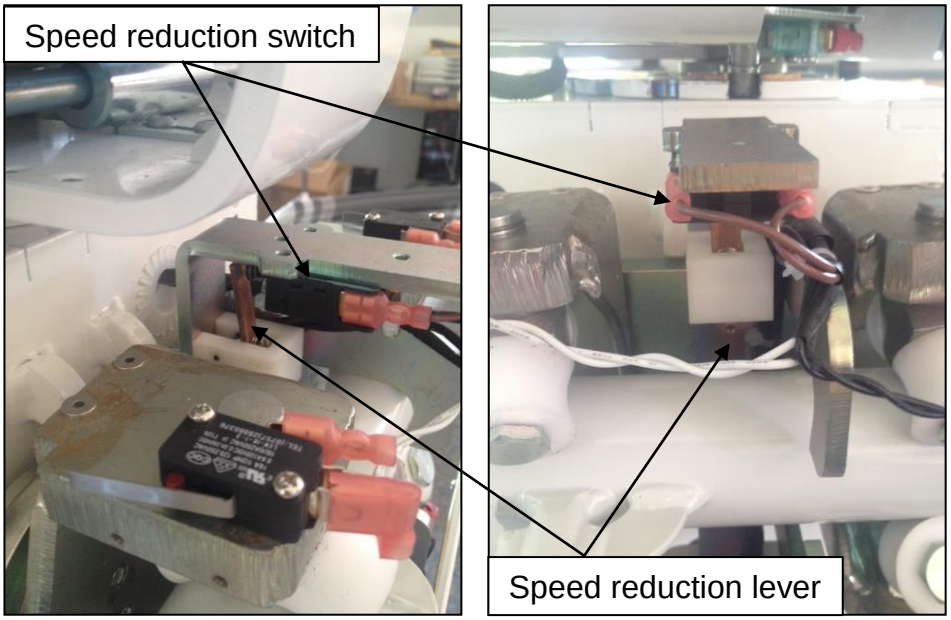




Speed reduction lever (slowdown arm) for curve speed

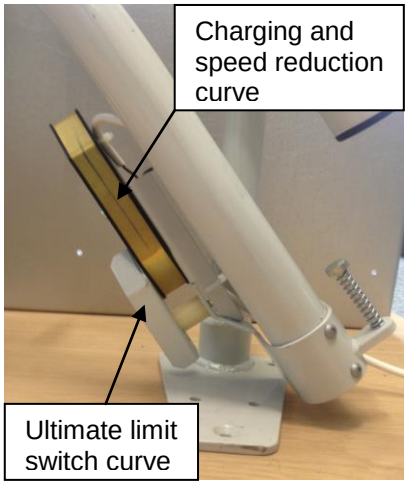
Take of the top metal cover of the upper trolley and take out a foam cube that is located between the speed control pin and the back of the trolley. This foam is there so the speed reduction lever cannot get bent when the drive unit is put onto the rails at the start of the installation. Then check if the unit slows down correctly in the curves and drives fast in the straight sections.

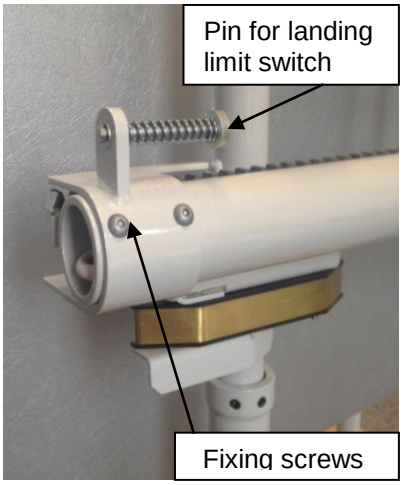
The lever is activated by the rail. When the lift drives into a curve the rail bend presses the lever so that is activates the speed reduction switch. If the unit does not slow down correctly please bend the lever a little so that the speed reduction switch is pressed even more when the lift drives into a curve. Make sure you do not bend it so much that is drives slow also on straight sections.

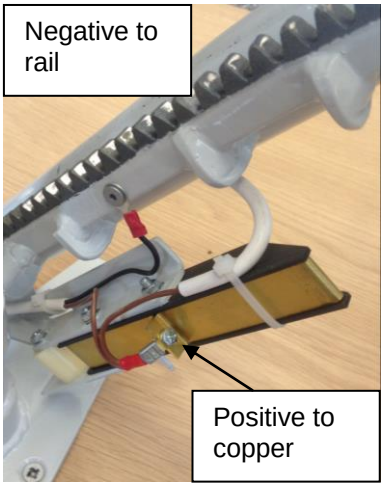


Installing of the charging station/limit assembly

The chairlift is stop when it reaches the end of the charging station by the metal pin pressing the lower carriage contact plate. Make sure the seat stops in the correct place and mark this spot for the charging station. Then fix the charging station by drilling 2 threaded holes (dimension M5) into the pipe. Fix the charger close to the upper or lower landing station, where it is most convenient. Then connect the charger to the landing stations closest to the charger. Connect the negative to the rail and the positive to the copper of the charging station.
Connect all copper plate on all charging stations with 1 cable. Run this cable in the lower tube of the rails and bring it out close to each charging station.





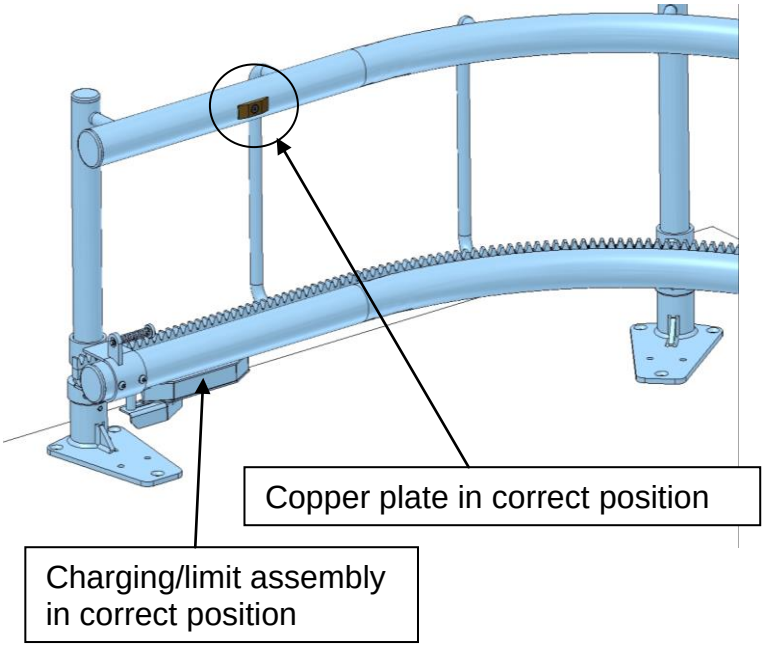


On inclined rail parts the electrical ground is transferred to the board via the rack. But in horizontal section this ground connection can be unstable. Therefore, in case of a horizontal stop or an intermediate landing it is necessary to add a copper plate onto the upper tube. This copper plate ensures the electrical ground connection to the stairlift board.

After the charging stations has been fixed in its final position, please run the seat in this stop and check where the lever for the speed reduction in curves is positioned when the stairlift is in the stop position.

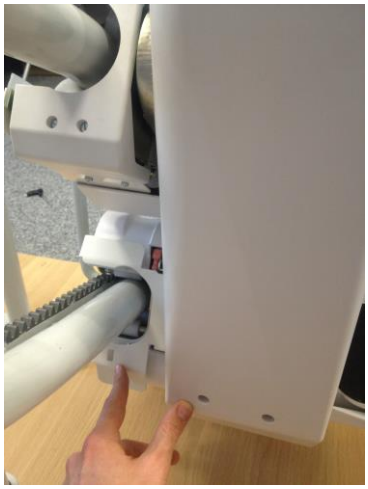
The copper plate now needs to be placed on this exact spot. Drill and tap the upper tube to fix the copper plate.

When the lift is in the stop position the speed reduction lever is pressing against this copper plate in the upper stop.



Checks:

- Check the correct function of all safety contact pads. These are located on the bottom and top trolley, on the side and below the drive unit and under the footrest. These contact pads should top the lift when pressed against the driving direction. See below:



- Check the function of the seat rotation switch and the armrest switch.
- Check the function of the curve speed reduction switch/lever.
- Check the function of the landing stations speed reduction pin/switch.
- Check the function of the intermediate landing pin/switch.
- Check the function of the final stop pin/switch.
- Check the function of the landing limit switch. This is the contact switch in the safety pads of the lower trolley. Check the correct position of the stop pin that activates the safety pads in the landing assembly.
- Check the correct charging of the drive unit in the landings stations.

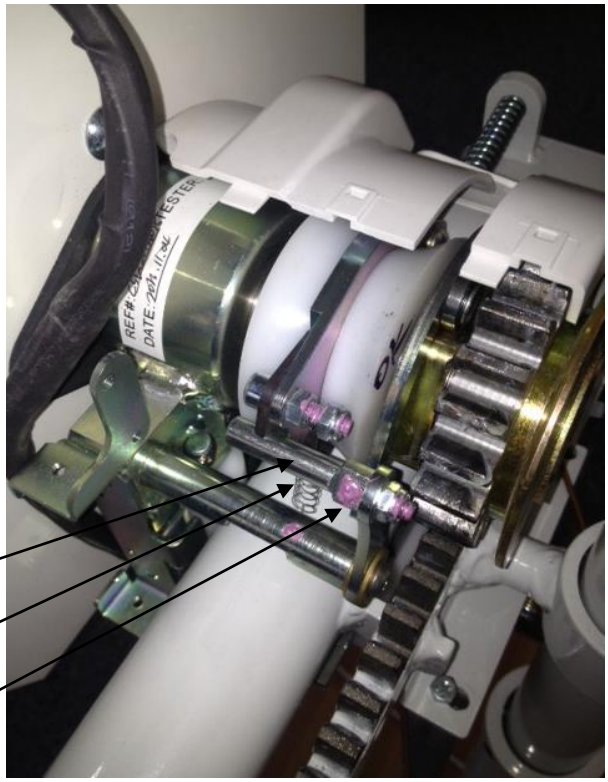
Overspeed governor

Explanation:

The overspeed governor is set to trip at 0,3m/s so of speed.

The tripping point is set via the length of the activation screw. Screws, pins and springs that keep the governor in place are set by the factory and sealed with paint markings.

If the spring is not properly set the overspeed governor could activate too quickly during normal run. In such a case the spring needs to be readjusted accordingly.



Sound indication

- If the lift is parked outside a charging station (not charging!) it will make a beep sound after 5 seconds. The beep sound will appear every second with a 0,3 second long signal.
- If the battery voltage is getting low a beep sound will appear every 2,5 seconds with a 2 second long signal.

Programming of remotes

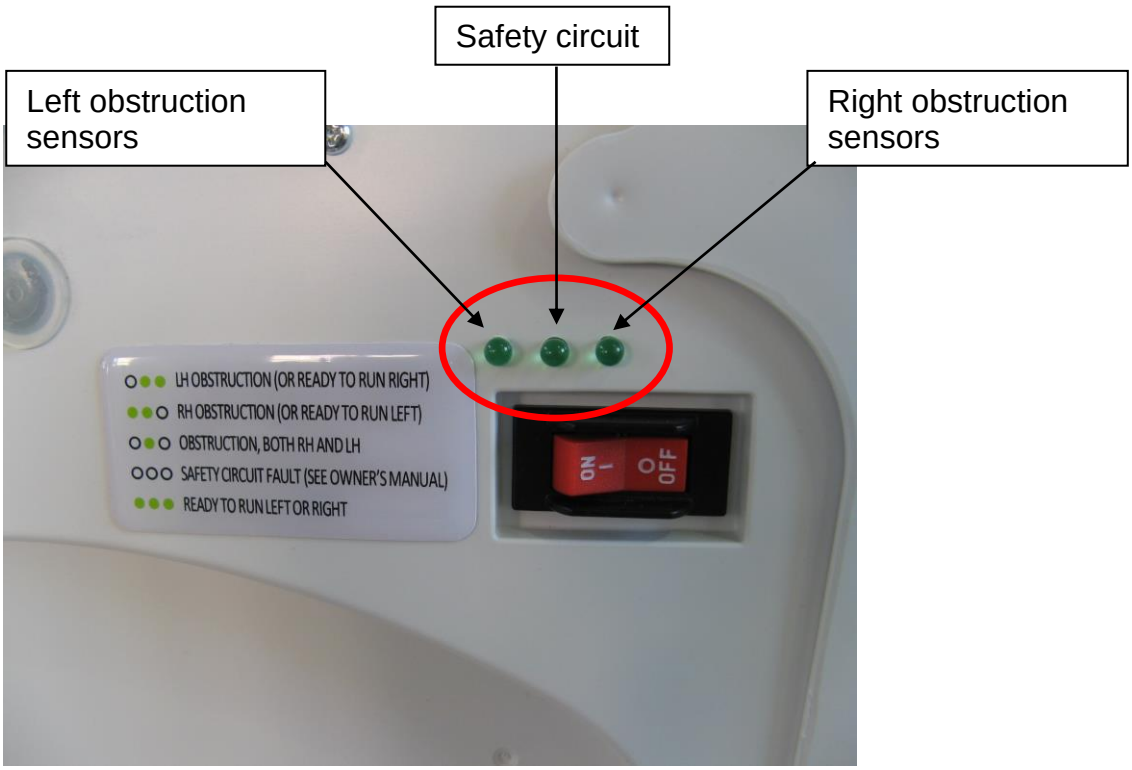
The remotes come already programmed. In case you need to programme new remotes press the programming button on the main board for 2 seconds. The LED on the remote receiver should start flashing fast (every 0,5 seconds instead of every second). Then press the up and down button of the remote sender at the same time.

First the LED on the sender flashes orange, then it should show an orange light and finally show a green light. Now you can programme a second remote sender by again pressing both buttons at the same time.

When finished press again the programming button on the main board for 2 seconds. The LED on the receiver board should return to flash normally (every second)

Basic Troubleshooting

Next to the main power switch are 3 LEDs. The left and the right LED indicate the directional obstruction sensors on the drive unit and trolleys. The middle LED indicates the safety circuit. If all 3 Leds are turned off the safety circuit is open.



The safey circuit consists of the following switches:

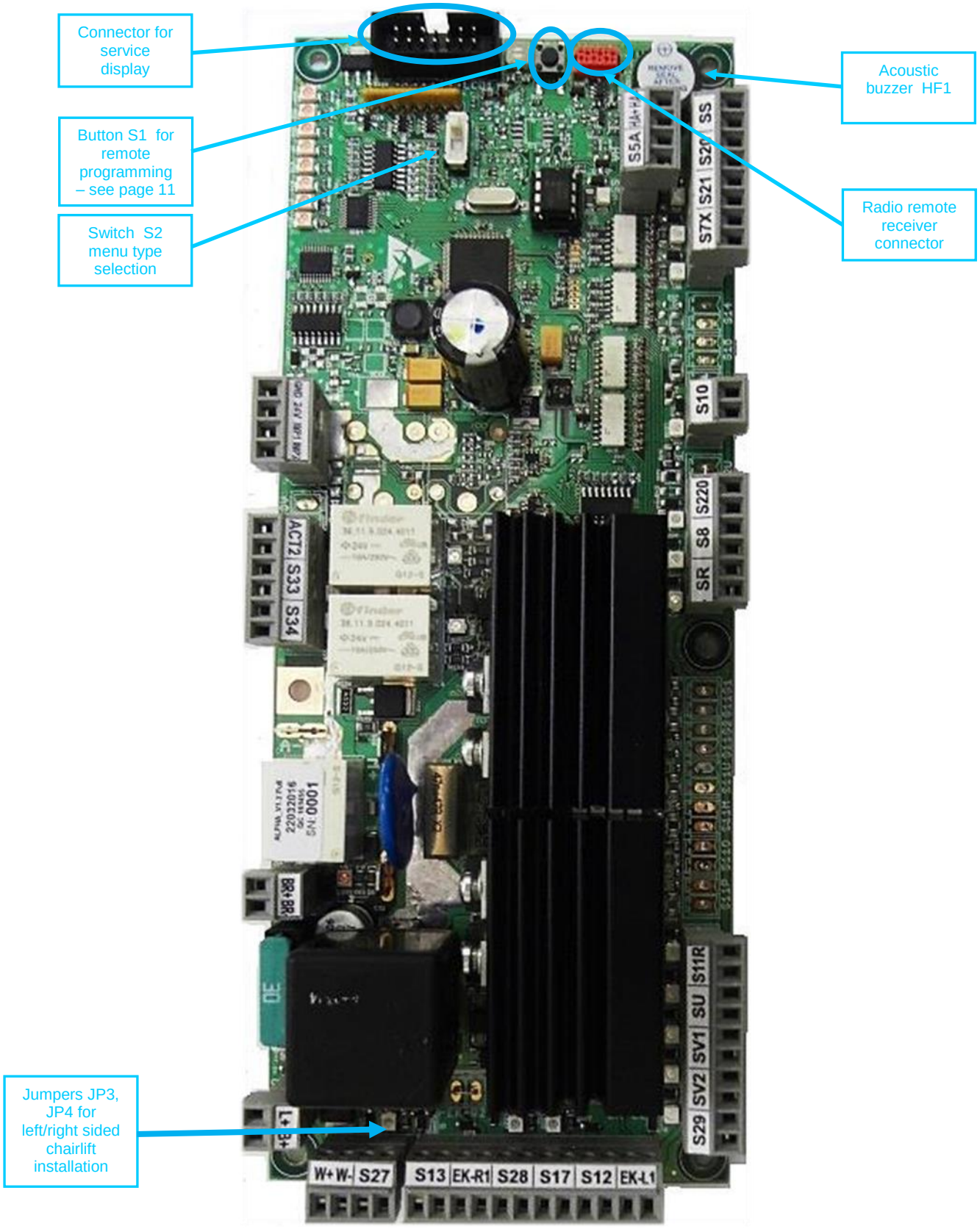
- Overspeed governor switch S10
- Seat rotation switch SR2
- Ultimate limit switch S22
- Handwheel switch SA5

The directional obstructions sensoers consist of the following switches (left/right):

- Upper trolley S13/S12
- Lower trolley S27/S28
- Lateral drive unit SK-1/SK-2
- Footrest (directional) EK-R/EK-L
- Footrest and underside of drive unit (sensitiv only in down direction) S17

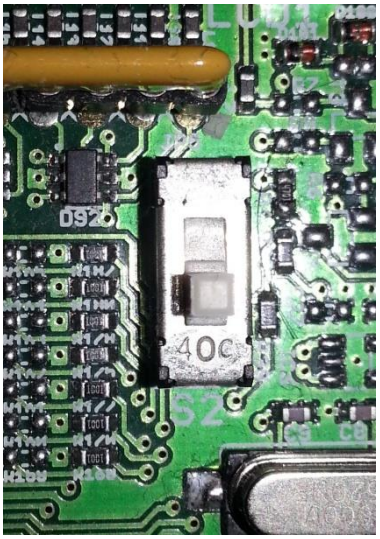
The following pages allow for advanced trouble shooting. This can be done by observing the LED on the board and/or by using the attachable display for parameter setting and detailed error code reading.

Switches and jumpers on the control unit



S2 switch

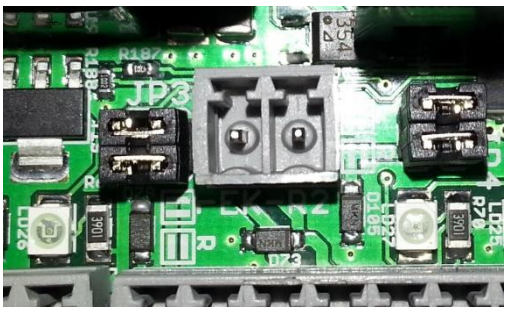
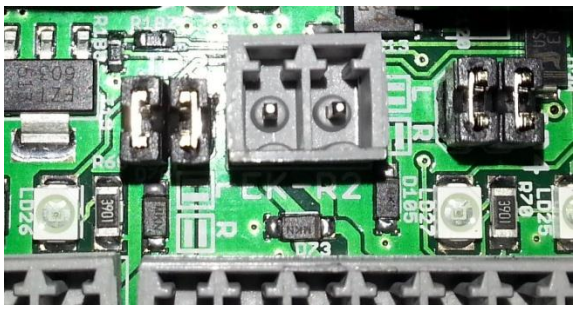
This switch selects between user/service menu types. For the detailed description see chapter 0 Menu.

User mode	Service mode/menu
	

WARNING: After the platform installation and setting all service menu parameters, push the switch S2 to the position for user menu!!!

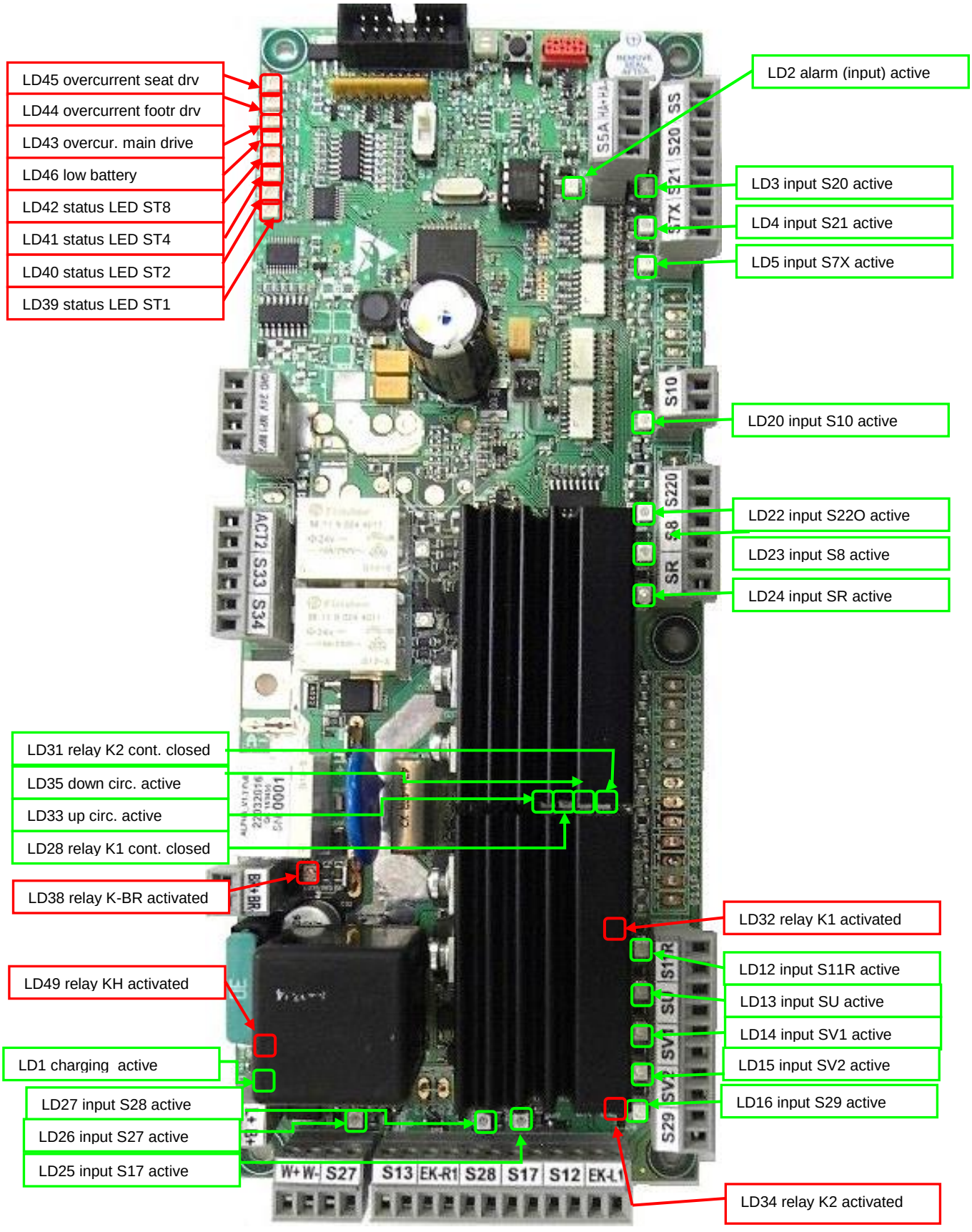
Jumpers JP3 and JP4

Jumpers JP3 and JP4 must be set properly according to left sided and right sided installation.

Left sided – left rail	Right sided – right rail
	

CAUTION: Proper jumper setting is absolutely necessary for the correct and safe function – safety elements in the drive direction.

LED signalization on stairlift control unit



Name	Color		Function
LD1	green		Lights when battery charging is active
LD2	green		Lights when alarm input is activated
LD3	green		Lights when platform controller button UP is active
LD4	green		Lights when platform controller button DOWN is active
LD5	green		S7X; goes off after pushing the STOP-button
LD12	green		S11R; Lights when armrest is up
LD13	green		SU; Lights when the platform is overloaded
LD14	green		SV1; Goes off when platf. enters slowdown before stop
LD15	green		SV2; Goes off when platf. enters slowdown in curve
LD16	green		S29; Goes off when platf. is in MIDDLE STATION
LD20	green		S10; Goes off when overspeed detected and safety gear activated
LD22	green		S22O; Goes off when ultimate limit switch (up/down) opens
LD23	green		S8; Goes off while blocking (manual drive override)
LD24	green		SR; Lights when seat is in closed (locked)position
LD25	green		S17; Goes off when safety bottom activates (press)
LD26	green		S27; Goes off when upper limit switch is activated
LD27	green		S28, S17; Goes off when lower limit switch or sensitive bottom is activated
LD28	green		Relay K1; Lights when relay K1 contact is closed (up direction)
LD31	green		Relay K2; Lights when relay K2 contact is closed (down direction)
LD32	red		Relay K1; Lights when relay K1 is activated (drive up)
LD33	green		Goes off when lateral contact or pad switches in up direction are opened i.e. S12 or EK-L for right-sided rail is opened or S13 or EK-R for left-sided rail is opened
LD34	red		Relay K2; Lights when relay K2 is activated (drive down)
LD35	green		Goes off when lateral contact or pad switches in down direction are opened i.e. S12 or EK-L for left-sided rail is opened or S13 or EK-R for right-sided rail is opened
LD38	red		Relay K-BR; Lights when brake relay is activated (unbraked)
LD39	red		Status LED ST1; see the table in the following chapter
LD40	red		Status LED ST2; see the table in the following chapter
LD41	red		Status LED ST4; see the table in the following chapter
LD42	red		Status LED ST8; see the table in the following chapter
LD43	red		Lights when overcurrent is detected on the main drive 1
LD44	red		Lights when overcurrent is detected on the drive 2 – automatic footrest actuator
LD45	red		Lights when overcurrent is detected on the drive 3 – automatic seat rotation
LD46	red		Lights when battery voltage is low
LD47	red		Lights when quadrature input 2 is activated (not used for Alpha)

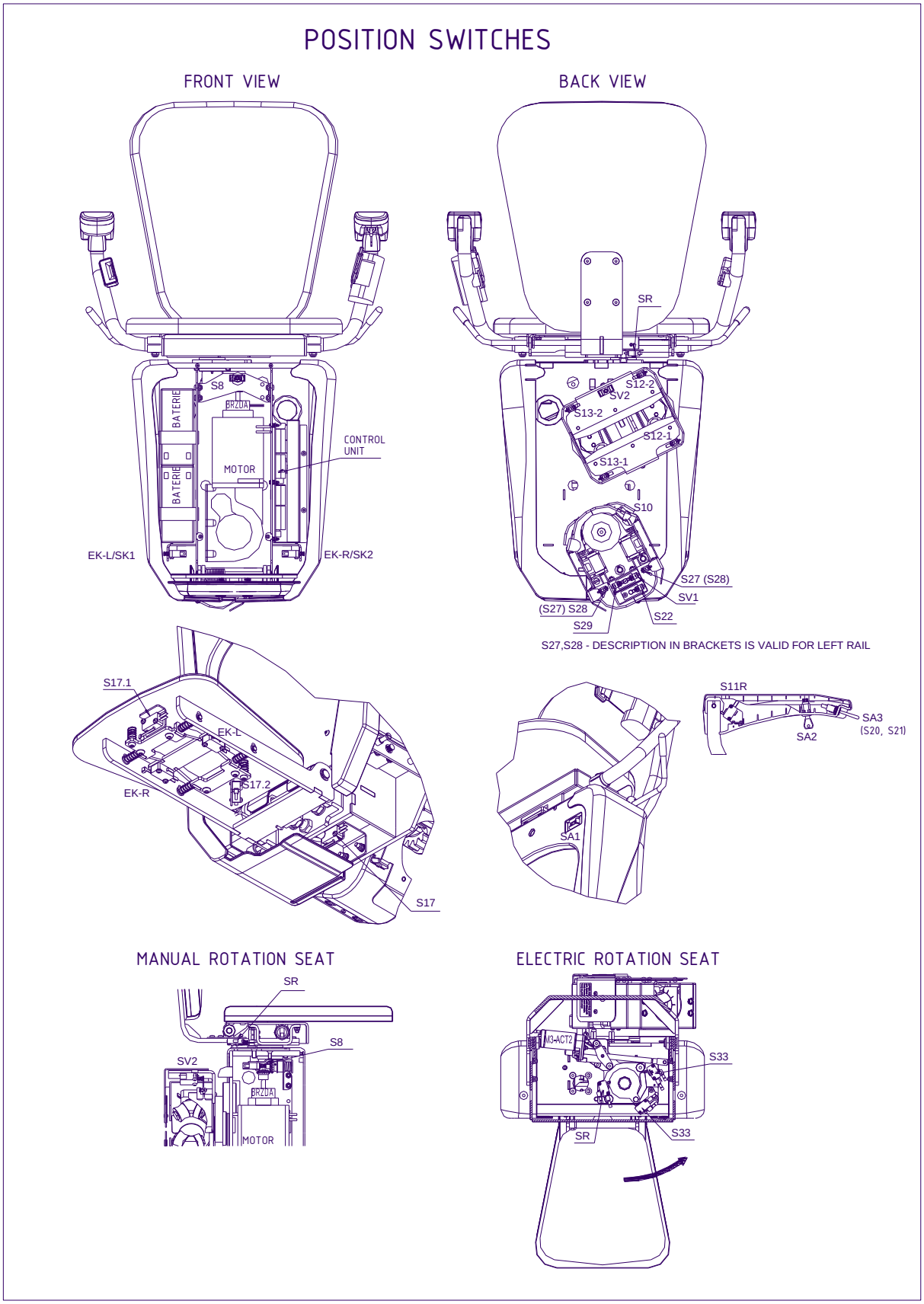
Name	Color		Function
LD48	red		Lights when quadrature input 1 is activated (not used for Alpha)
LD49	red		Relay KH; Lights when main relay is activated

Status LED

In the following table there are all status LED combinations described. These LEDs and the table are useful especially when no display is available and the service worker needs to know the state of the control unit.

ST	1 (LD39)	2 (LD40)	4 (LD41)	8 (LD42)	Description
1	x				drive up by seat controller S20
2		x			drive down by seat controller S21
3			x		drive up by remote RF controllers
4				x	drive down remote RF controllers
5	x		x		rotation/closing of seat
6	x			x	rotation/opening of seat
7	x	x			stairlift is in a station and being charged
8	x	x	x		stairlift out of station and not charged
9	x	x	x	x	error

Position switches on chair stairlift



Menu

For detailed service operation a pluggable display allows to access of the Service Mode/Menu. Here basic parameter can be changed.

Service mode with the information about the battery voltage and the current flowing into the motor/actuator:

WARNING: After installation and setting of all the parameters, set the switch S2 back to user´s mode. Otherwise, after the chair stairlift reaches the final station the entrance into the menu can be blocked – and whole control system can be blocked as well.

Menu activation

1. After attaching the display, set switch S2 (see page 14/15).
2. The chair stairlift must be in the lower station.
3. If the stairlift is in the lower station press drive down on the joystick for a time longer than 5 sec.
4. Now the menu is activated:

Arrow highlights currently selected menu item

5. Now you can switch between main menu points by pressing the joystick in the “up” direction. To confirm a menu item (enter in submenu of this item) or confirm a value inside a sub menu, press the joystick in down direction. The active item is always on the first row of the display – marked with an arrow.
    a. Change item : Press UP
    b. Confirm item: Press DOWN

6. To exit the menu it is necessary to confirm the item “back” by pressing the “down” direction on the joystick.

Menu structure:

Menu item	Description
Device info	This first item shows basic information about the device – version of HW, SW and serial number
Language	Display language can be set via this item
Factory number	This item can store custom factory number.
Error	Shows list of recorded errors, allows also to delete this list.
Ack. error	If activated, clears current error. This is possible only in a station.
Operation-time	This item shows operation time and also allows to clear it.
Factory default	Activation of this item restores all parameters to factory default.
Alert output	Allows setting of used warning elements and frequency of signalization.
Radio version	Allows radio module version setting.
Motor config.	Allows setting of all parameters for motor and actuators, speed limits for the chair stairlift and seat rotation.
Seat rotation	Allows setting manual or electric rotation of the seat and sets for automatic rotation in which station the seat rotates.
Options	Allows to set platform’s special functions

In the following paragraphs some of menu items will be described. Factory default settings are underlined in following lists. These settings can be restored by resetting system to factory default settings. See chapter 0 **Menu** .

Device inf

First row shows the type of device Alpha new and the version of HW and SW. Second row shows factory number – the number which is saved in menu as factory number.

Language

Menu item	Value	Name	Description
Language	CZE	Czech	One of these can be selected
	ENG	English	
	GER	German	
	ESP	Spanish	
	FRA	French	
	PL	Polish	

Factory number

A factory or identification number can be set by this menu item (5 digits). Command for the movement up can change current digit. The currently edited digit is highlighted. Command for the movement down can move onto the next digit.

Errors

Menu item	Value	Name	Description
Error list	Fxxx č/26 h:m:s	-	Shows list of stored errors. First row shows code number of error Fxxx. Second row shows current operation time when error appeared.
Clear errors	Sure? YES	-	By activation and selecting YES all stored errors will be purged from the list. CAUTION: List of errors can be deleted by the authorized technician only.

Acknowledge error

If the menu item is active, all errors that occured are acknowledged. Errors which must be acknowledged by service men are mentioned in the table of errors.

Operation time

Menu item	Value	Name	Description
Show op-time	h:m:s	-	This item shows current operation time in hrs:min:sec format
Reset op-time	Sure? YES	-	By activation and selecting YES operation time counter is cleared. CAUTION: Operation time counter can be cleared by the authorized technician only.

Factory default

Activation of this item restores all parameters to factory default. Factory default settings are underlined in lists.

Movement signalization – signal output

Menu item	Value	Name	Description
Signal ON/OFF	OFF	Signalization off	This parameter enables/disables outside signalization (output on clips W+, W-) for example LED-signalization
	ON	Signalization on during movement on the rail	
Frequency	1…8	fast→slow	Sets signal frequency. Applies for both buzzer and WARN output. 1 → Fast blinking/beeping 8 → Slow blinking/beeping 9 → permanent light/tone
	9	Permanent tone	
Buzzer ON/OFF	OFF	Buzzer off	This parameter sets presence of buzzer tone during the platform movement.
	ON1	Buzzer always on	
	ON2	Buzzer on during movement only with RF controllers	

Radio controller version

Menu item	Value	Name	Description
Radio version	1	TX-OMDE-V-01 (Schmidiger)	Allows radio module version setting.
	2	Reserve for other (future) type of radio controller	

Motor configuration

Menu item	Value	Name	Description
Overcurrent threshold settings			
Main drive	15…40 20	A	Sets overcurrent threshold for the main motor. After exceeding this threshold motor stops, “DRIVE MOTOR CURRENT LIMIT” error is shown on the display and signalized by LEDs on CU board.
Actuator 1 (footrest movement)	0,2…1,0 0,3	A	Sets overcurrent threshold for footrest movement. After exceeding this threshold actuator stops, “ACT1 CURRENT LIMIT” error is shown on the display and signalized by LEDs on CU board.
Actuator 2 (seat rotation)	0,4…1,4 0,6	A	Sets overcurrent threshold for seat rotation.
PW/M speed settings:			
Full speed UP	50…100 100	% PWM	Sets maximum speed for drive up
Full speed DOWN	50…100 80	% PWM	Sets maximum speed for drive down

Menu item		Value	Name	Description
	Slowdown UP	10…60 50	% PWM	Sets speed for drive up into station
	Slowdown DOWN	10…60 25	% PWM	Sets speed for drive down into station
	Curve UP	10…80 75	% PWM	Sets speed for drive up in curves
	Curve DOWN	10…80 75	% PWM	Sets speed for drive down in curves
	Rotation speed	10…100	% PWM	Sets speed for rotation of the seat.

Seat rotation (only available when swivel seat was ordered)

Menu item	Value	Name	Description
Automat/manual	MANUAL	Hand-operated/manual rotation of the seat	This parameter sets up manual or electric rotation of the seat. The change from manual to automatic is possible only if at least one of the inputs S33, S34 is activated, i.e. S33 = 1 and / or S34 = 1 The change from manual to automat is possible only if both inputs S33=0 and S34 = 0 are open.
	AUTOMAT-2BT	Electric rotating seat using a two-button remote control	
	AUTOMAT-4BT with 4-buttons landing controls	Electric rotating seat using a four-button remote control	
IN UPPER STAT.	YES	The seat is rotated in the upper station	This parameter sets up if the seat is rotated in the upper station or if the rotation is blocked.
	NO	Seat´s rotation blocked	
IN MIDDLE STOP	YES	Seat is rotated in the middle station	This parameter sets up if the seat is rotated in the middle station or if the rotation is blocked.

Menu item	Value	Name	Description
	NO	Seat´s rotation is blocked	
IN LOWER STAT.	YES	The seat is rotated in the lower station	This parameter sets up if the seat is rotated in the lower station or if the rotation is blocked.
	NO	Seat´s rotation is blocked	

Operation of footrest

Menu item	Value	Name	Description
Automat/manual	MANUAL	Hand-operated/manual movement of the footrest	This parameter sets up manual or electric movement (open/close) of the footrest.
	AUTOMAT-ST	Electric movement of the footrest in the landing stations only	
	AUTOMAT-ALL	Electric movement of the footrest is allowed also out of the landing stations	
Moving time	A (auto) 1 – 10sec	Time of movement up/down of footrest	This parameter is used to select the maximum lifting / lowering time for the footrest. A – automatic, default time setting depending on the speed setting in the "Footrest speed" parameter.

Options

Menu item	Value	Name	Description
Drive radio	Arm rest up/cl.	Movement with opened (up) and closed armrest	Command for movement from RF controllers according to the position of the armrest

Menu item	Value	Name	Description
	Arm rest up only	Movement with opened (up) armrest	

Foldable rail

Menu item	Value	Name	Description
Installed Y/N	NO	Electrically operated foldable end of rail is not installed	This parameter selects whether an electrically operated foldable end of rail is installed. The seat control unit can communicate to control unit on foldable rail only if YES is set in this parameter. At the foldable rail two ways of control can be selected when you leave upwards the communication point - standard way with the need to raise rail from the external controller and automatic - for a more detailed see chap. **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**
	YES-std	Electrically operated foldable end of rail is installed with basic control way of raising of the foldable rail	
	YES-auto	Electrically operated foldable end of rail is installed with automatic raising of the foldable rail	
Automatic reset of control failure on the foldable rail (FR)	NO	Faults on the communication point are not automatically reset	This parameter enables automatic reset of control failure on the foldable rail end. If the YES value is selected then the control faults F121-F125 are reset automatically after
	YES	Faults on the communication point are	

Menu item	Value	Name	Description
		automatically reset	drive in up direction for 5 sec. - the seat left the communication point

Error and operation diagnostic on the display

Error ID	Shown on display	Description
F101-113	Errors in relay and contacts	Main board failure – replace board

Following errors are recorded in EEPROM but they don't block operation of chair stairlift.

Error ID	Shown display text	Description
F201	EMERGENCY STOP SI: S7X	Emergency STOP-button
F202	Input S16 (and also S14 and S15) shorten	NOT IN USE
F203	OSG OVERSPEED SI: S10	Overspeed gear reacted during drive down, drive is now blocked mechanically
F204	Input S22U shorten	NOT IN USE
F205	DOWN/UP SAF.LIMIT SW SI: S22O	Down/up ultimate limit switch S22O is active – 1 switch for both directions –> drive unit out of landing station with handwheel
F206	EMERG DRIVE SW SI: S8	Blocking during the emergency manual drive -> Remove handwheel
F301	SENSITIVE BOTTOM SI: S17	Sensitive bottom has been pushed while the stairlift was moving down
F302	DOWN SENS. PAD SI: S12/13,EKL/R	Sensitive pads and edges hit an obstacle in the direction down
F303	UP SENS. PAD SI: S12/13,EKL/R	Sensitive pads and edges hit an obstacle in the direction up
F401	OVERLOAD LIFT SI: SU	Overload of the chair stairlift – SU=1 switch is closed – currently not installed
F402	CURRENT LIMIT DRIVE MOTOR	Overcurrent detected on main drive M
F403	CURRENT LIMIT ACT1 – FOOTREST	overload/overcurrent detected on actuator 1 - footrest
F404	CURRENT LIMIT ACT2 - SEAT	Overload/overcurrent detected on actuator 2 – seat rotation
F405	EMPTY BATTERY STOP UP	Battery voltage dropped below 19.4 V, further up direction movement is blocked

F121	COM.P-STOP DOWN SI: SU, OW. LINK	Basic condition: SU = 0, ie switch open and within 0.5 sec. there is no one-wire communication between the seat CU and thefoldalble rail CU. Two situations when this situation may occur: 1. seat is located on a communication point ie SU = 0, (SV1 and S29 any), yet can not be communicated – but there are no one-wire communication between the seat CU and foldable rail CU 2. seat is located outside the communication point ie there is no communication between the the CU´s seat-f. rail and SU = 0, ie the CU´s input SU is open. Exceptionally, this situation may occur even if the seat moves to the communication point with the switches SV1=0 and/or S29=0 open, the seat stops before it reaches properly the communication point. Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.** or **to the automatic reset** (if activated in the menu), drive up is allowed	1. Verify that the foldable rail control unit is switched on and ready for operation, check the connection line, incl. Contacts LIN and GND (rail-seat), check inputs of one-wire communication of individual control units, replacing the main CU in seat, communication unit in seat or CU on foldable rail 2. check the SU switch, interconnection lines, connectors, SU input on the CU Alpha Optionally check the switches SV1 and S29
F122	COM.P-STOP DOWN SI: SU-ON	SU = 1, however, one-wire communication is active (SU switch does not open on the communication point) Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.** or **to the automatic reset** (if activated in the menu), drive up is allowed	check the SU switch, wiring, connectors, SU input on the CU Alpha, mechanical parts of the communication point on the rail - adjustment
F123	COM.P-STOP DOWN SI: SI:S29.SV1-E.S.	Failure of switches S29, SV1, ie both switches S29, SV1 remain on (=1), or remain open (=0), switch SU = 0, open, the seat stops when changing to SU = 1. This error message may also appear during a downward drive if the SU switch has been briefly disconnected outside of the communication point. Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler!**	check switches S29, SV1 - the console with ramps for switches S29 resp. SV1 resp. the communication point – LIN communication and SU-connection

		Verweisquelle konnte nicht gefunden werden. or **to the automatic reset** (if activated in the menu), drive up is allowed	
F124	COM.P-STOP DOWN RAIL NOT DOWN	The seat has left the communication point, but the foldable rail is not in the lower, locked position-critical failure. Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.** or **to the automatic reset** (if activated in the menu), drive up is allowed	check the entire control system of foldable rail - switches S29, SV1 - stop console with ramps for switches S29 or SV1, communication point functionality or SU switch connection, rail folding control system functionality - actuator, position switches etc., or replacement of non-functional components
F125	COM.P-STOP DOWN FOLD. UP UNBLOCK	The seat has left the communication point, but the seat control unit has not received information about the locking of a foldable rail lifting. Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.** or **to the automatic reset** (if activated in the menu), drive up is allowed	it may be a communication failure or - check the functionality of the communication point, whether the CU of foldable rail is on and ready for operation, check the connecting lines incl. contacts, check the inputs of one-wire communication of individual control units, event. replacing the main CU Alpha, seat communication unit or CU on foldable rail, check the switches SV1 and S29 (the switch must open when it enters the intermediate stop point and then close again after leaving it)
Not stored in errors list	MENU–FR: NO SU, OW. LINK	In item „Foldable rail“, parameter „Installed Y/N is set NO, however a communication point is installed and one-line communication is active or switch SU is open. Control response: Drive down is blocked **to the fault confirmation in the menu** chapter **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.** or **to the automatic reset** (if activated in the menu), drive up is allowed	if a foldable rail is installed, set in item “Foldable rail” parameter “Installed A/N” – YES. If the foldable rail or the communication point are not installed, check the bridge on the SU input of CU Alpha.

Errors mentioned above must be acknowledged (reset) in menu.

Reset of error F101-113 is also performed by switching seats's main power switch off and then back on.
Erros F121-125 can be reset automatically during the upwards drive for 5 sec. (if this function is activated in the menu). The automatic reset is signaled acoustically and on the display - message AUTORESET!

Following errors are recorded in EEPROM but they don't block operation of chair stairlift – don't need acknowledgement. They're shown as long as the error is present or/and corresponding control buttons activated.

.Error ID	Shown display text	Description	How to repair
F201	EMERGENCY STOP SI: S7X	emergency STOP-button activated (not in use on the chair stairlifts at the moment)	deactivate emergency STOP-button by rotation in direction of arrows on it; if this button was not activated, check button's NC-contact, connection cable, safety input S7X of CU – this input must be bridged by the lift without STOP-button
F202	Input S16 (and also S14 and S15) shorten	NOT IN USE	
F203	OSG OVERSPEED SI: S10	overspeed gear reacted during drive down, drive is now blocked mechanically,	unblock safety gear by using emergency drive in up direction, WARNING: main power supply switch must be opened while emergency drive is used, perform check of the drive and safety gear; if OSG is not activated, check NC contact of S10 switch, connection cable and CU input S10
F204	Input S22U shorten	NOT IN USE	
F205	DOWN/UP SAF.LIMIT SW SI: S22O	down/up ultimate limit switch is active – 1 switch for both directions	movement of the chair stairlift via emergency drive in the direction down in the upper station (respectively up in the lower station) releases safety switch, check an adjustment of the upper (resp. lower) station, end switches S27, S28 or S22O on the lower carriage (movable cover of the lower carriage must push the end switch S27, resp. S28 firstly and this standardly stops the lift), If the safety limit switch is not activated, check NC-contact of the switch S22O, connection cable towards the CU, safety input S22O

.Error ID	Shown display text	Description	How to repair
F206	EMERG DRIVE SW SI: S8	blocking during the emergency manual drive	remove emergency drive or check its mechanism; if S8 is not activated, check it's NC contact, connection cables and CU input S8
F301	SENSITIVE BOTTOM SI: S17	sensitive bottom has been pushed while the stairlift was moving down or during the opening of the footrest	remove the obstacle near the bottom, or check the adjustment of switches in the bottom; if switches are not activated, check NC contacts of these switches, connection cables incl. connectors and terminals and CU's input S17
F302	DOWN SENS. PAD SI: S12/13,EKL/R	sensitive pads and edges hit an obstacle in the direction down; drive up is allowed only	remove the obstacle near the sensitive pads or edges in the up direction, or check the adjustment of the appropriate end switches of the ramp and of the safety rail in the side wall; if the safety switches are not active, check NC-contact of these switches S12/13 resp. EKL1/R1, their connection cables and appropriate safety inputs of the CU S12, resp.S13 and EKL1, resp. EKR1, (i.e. S12 or EK-L1 for left-sided rail is opened or S13 or EK-R1 for right-sided rail is opened)
F303	UP SENS. PAD SI: S12/13,EKL/R	sensitive pads and edges hit an obstacle in the direction up; drive down is allowed only	remove the obstacle near the senssitive pads or edges in the down direction, or check the adjustment of the appropriate end switches of the ramp and of the safety rail in the side wall; if the safety switches are not active, check NC-contact of these switches S12/13 resp. EKL1/R1, theirs connection cables and appropriate safery inputs S12, resp.S13 and EKL1, resp. EKR1 (i.e. S12 or EK-L1 for right-sided rail is opened or S13 or EK-R1 for left-sided rail is opened)
F304	STOP DRIVE DOWN SI: S28	sensitive pad of lower carriage hit an obstacle during driving down (out of a station and slowdown before station), switch S28=0 became opened while SV1=1 was still closed, drive up is allowed only; this message appear for both cases of operation from seat controller or RF controller	remove the obstacle from the sensitive pad surface (carriage cover) in down direction, eventually check adjustment of S28 switch in lower carriage. If S28 is not activated, check it's NC contact, connection cables and corresponding CU input S28

.Error ID	Shown display text	Description	How to repair
F305	STOP DRIVE UP SI: S27	sensitive pad of lower carriage hit an obstacle during driving up (out of a station and slowdown before station), switch S27=0 became opened while SV1=1 was still closed, drive down is allowed only; this message appear for both cases of operation from seat controller or RF controller	remove the obstacle from the sensitive pad surface (carrige cover) in up direction, eventually check adjustment of S27 switch in lower carriage. If S27 is not activated, check it's NC contact, connection cables and corresponding CU input S27
F306	UNDEF. STATION SW SI: S27,S28, S29	if both S27 and S28 (or S29) switches are opened (=0) and simultaneously stairlift stays in a station i.e. SV1=0 is opened, further stairlift movement is blocked for any of controllers (platform or RF), it is possible from the seat controler after selecting any drive direction (S21 = 1 or S20 = 1), to close the seat (by the automatic seat only) and after full closing, CU attempts to locate the seat; seat closing from the RF-Z remote control is not blocked, this situation occurs even when the power is turned off and the seat is turned/open	check sensitive surfaces on lower carriage and remove obstacles; if they are not activated (ei both S27 and S28 switches not activated) and middle switch S29 is not activated, then it is necessary to check their contacts, connection cables and corresponding c, if the lift was switched off and the seat was turned/open, then it is necessary to close the seat first in the locked position.
F307	FAULT SEAT SW SI:S33, S34	it indicates an incorrect combination of the seat position limit switch positions ie S33 = 0 and S34 = 0 in the electric rotated seat mechanism after command to rotate the seat	check the state of the position switches S33 resp. S34 in the swivel seat mechanism, adjusting, wiring connections and corresponding CU´s inputs
F311	FAILURE COMM.P. SI: S29-E-STOP.	fault of the switch S29; A/ switches SU=0 and SV1=0 are opened, but the switch S29 stays closed S29=1, the seat does not stop on the intermediate stop (S29) but later when SV1 = 1, ie during emergency stop; B/ switch S29 = 0 - the switch is opened before entering or leaving the intermediate stop; it is necessary to release drive button, the next operation is possible after a new command, drive or rail folding	check switch S29, wiring connections, input S29 on the CU, stop console with ramps for switches S29 resp. SV1

.Error ID	Shown display text	Description	How to repair
F312	FAILURE COMM.P. SI: SV1	failure of switch SV1, switches SU = 0, S29 = 0 are open but switch SV1 = 1 remains closed; it is necessary to release drive button, the next operation is possible after a new command, drive or rail folding	check switch SV1, wiring connections, input SV1 on the CU, stop console with ramps for switches SV1 resp. S29

If more inputs of emergency circuit are open, usually the first fault appears on the display and saves in errors list according to the sequence in the electric scheme, ie. in order F201- F305.

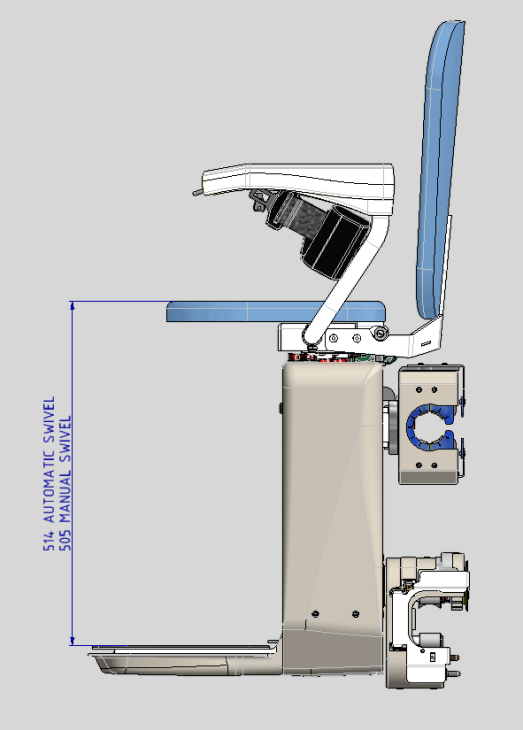
Option: Automatic Swivel Seat

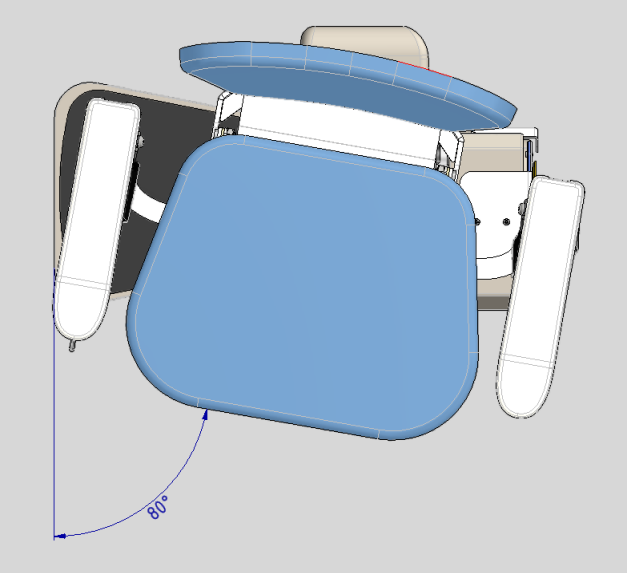
Following pictures can explain how to assemble the chairlift carriage and the upper automatic swivel seat. Main differences to manual version:

Height of the seat: 514 mm (it is 9mm higher than manual swivel)
Rotation range: from 0° to 80° (for rail inclination range 0° - 40°)
from 0° to 67° (for rail inclination range 40° - 52°)

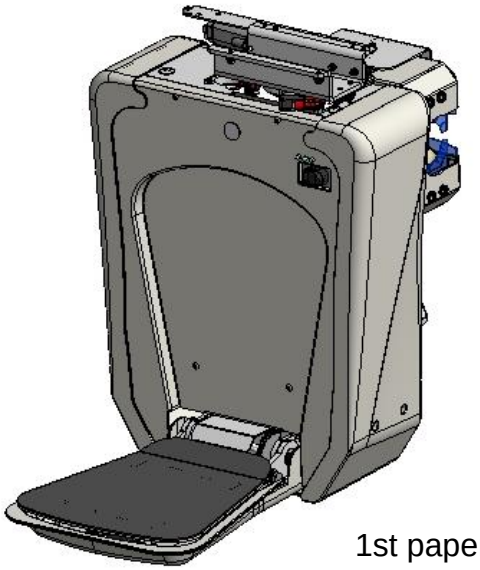
All other parameters are the same.

The automatic swivel can be turned on / turn off for each automatic stop position separately.

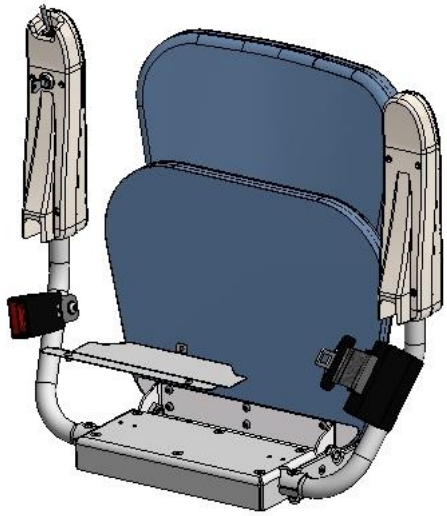




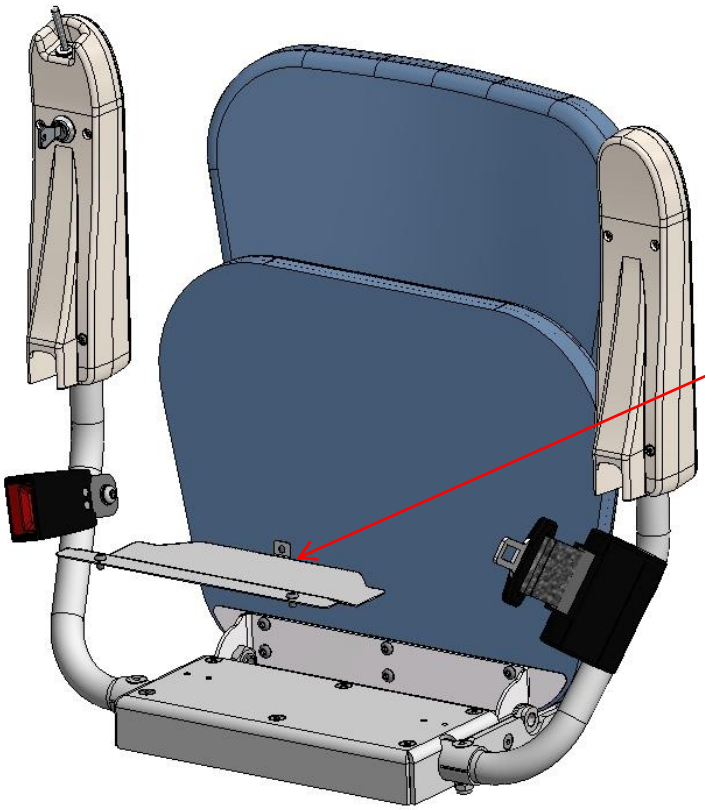
During final assembly on site it is necessary to be careful when connecting the lower and upper parts of the chairlift. The chairlift is delivered in two separate main parts like.
The first step is to hang the carriage on the rail. During second step the upper part is connected.



1st paper box

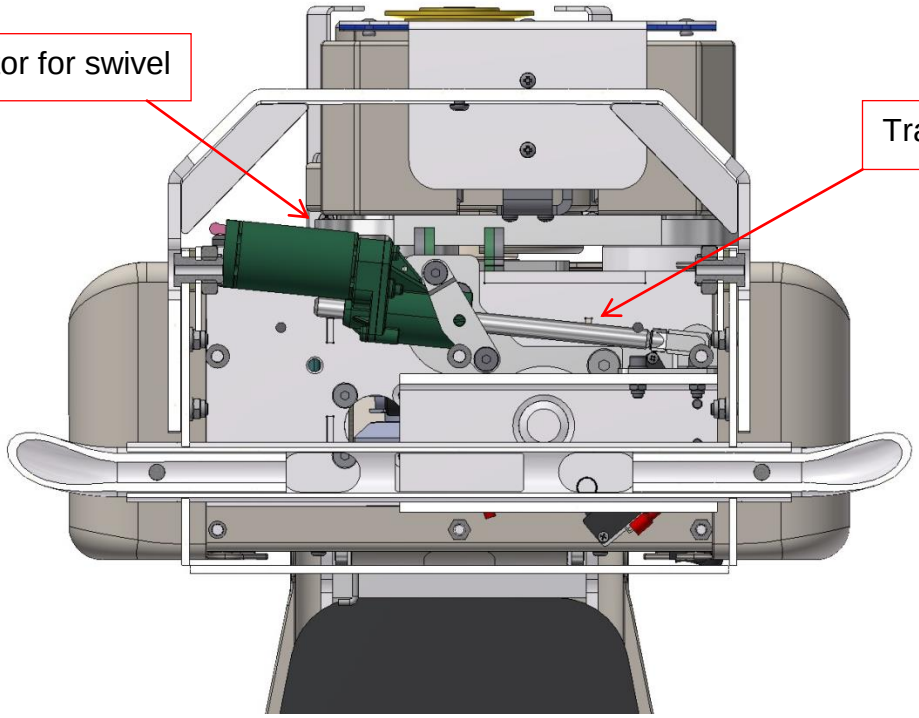


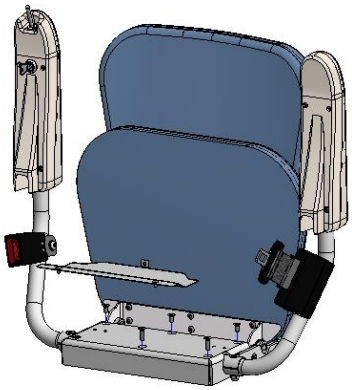
2nd paper box



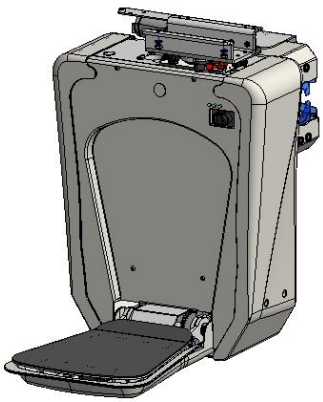
Remove cover with 3 pcs of the screws for better access to drive unit and trapezoidal screw

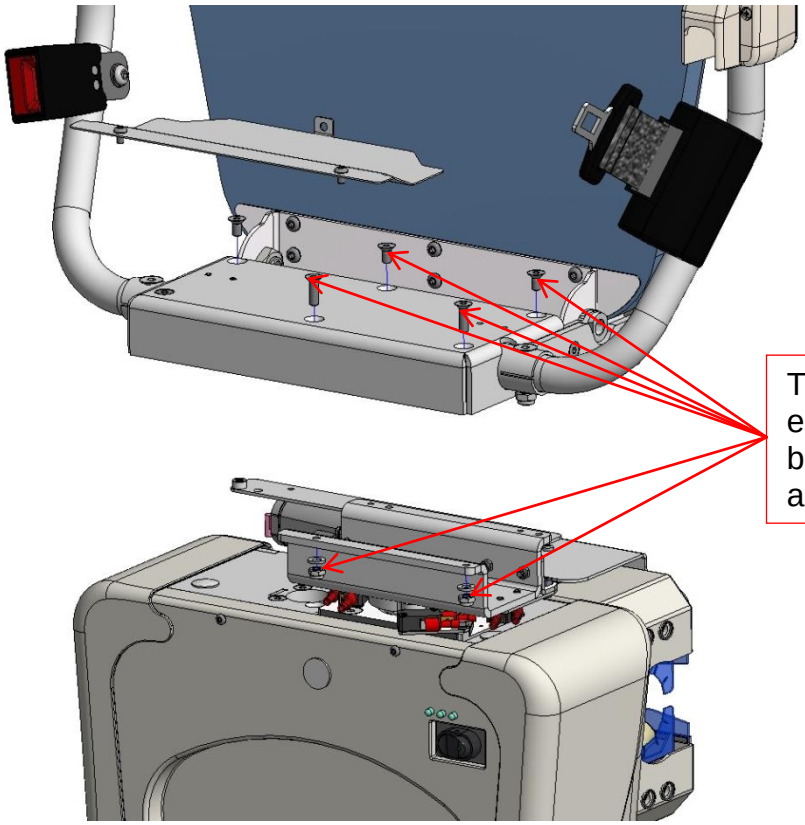
The upper part of the chairlift uses a different console for backrest and some different parts for rotation which are located at the dividing/connection plane.

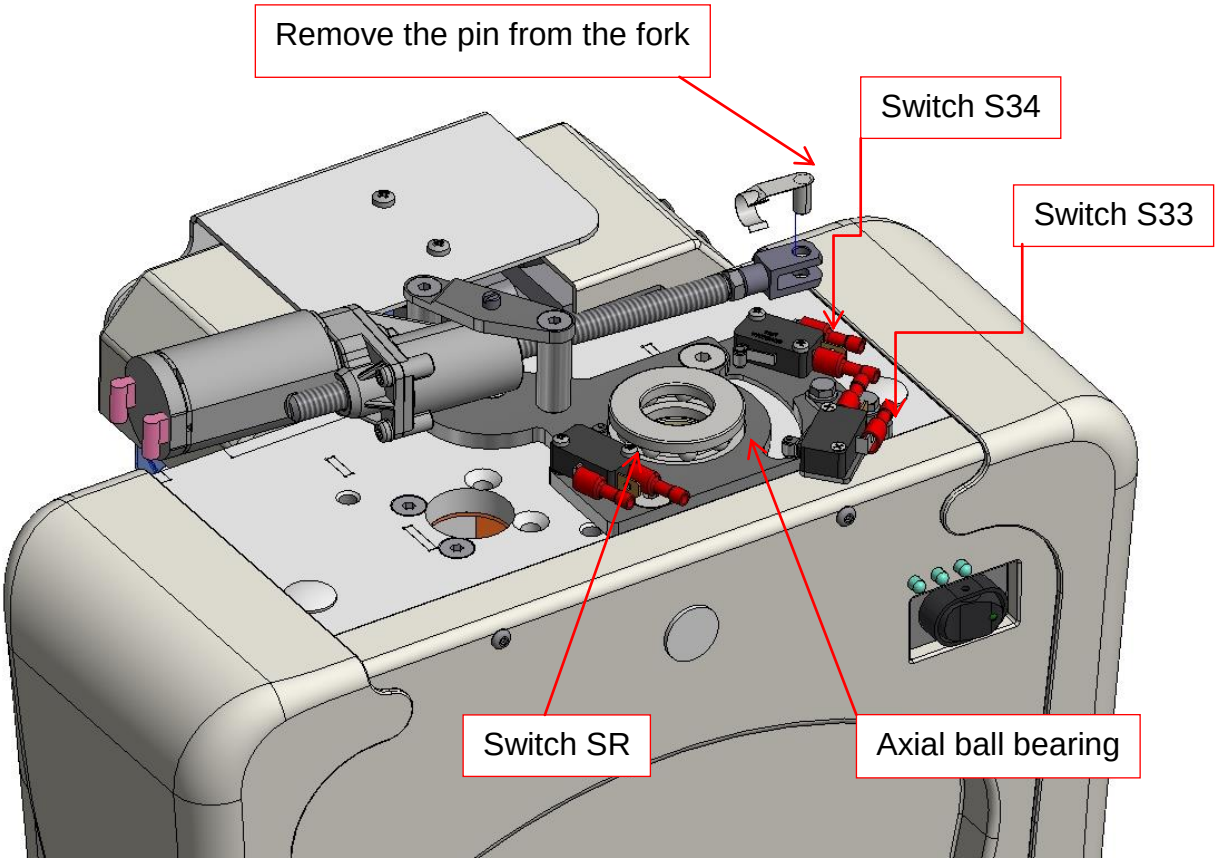


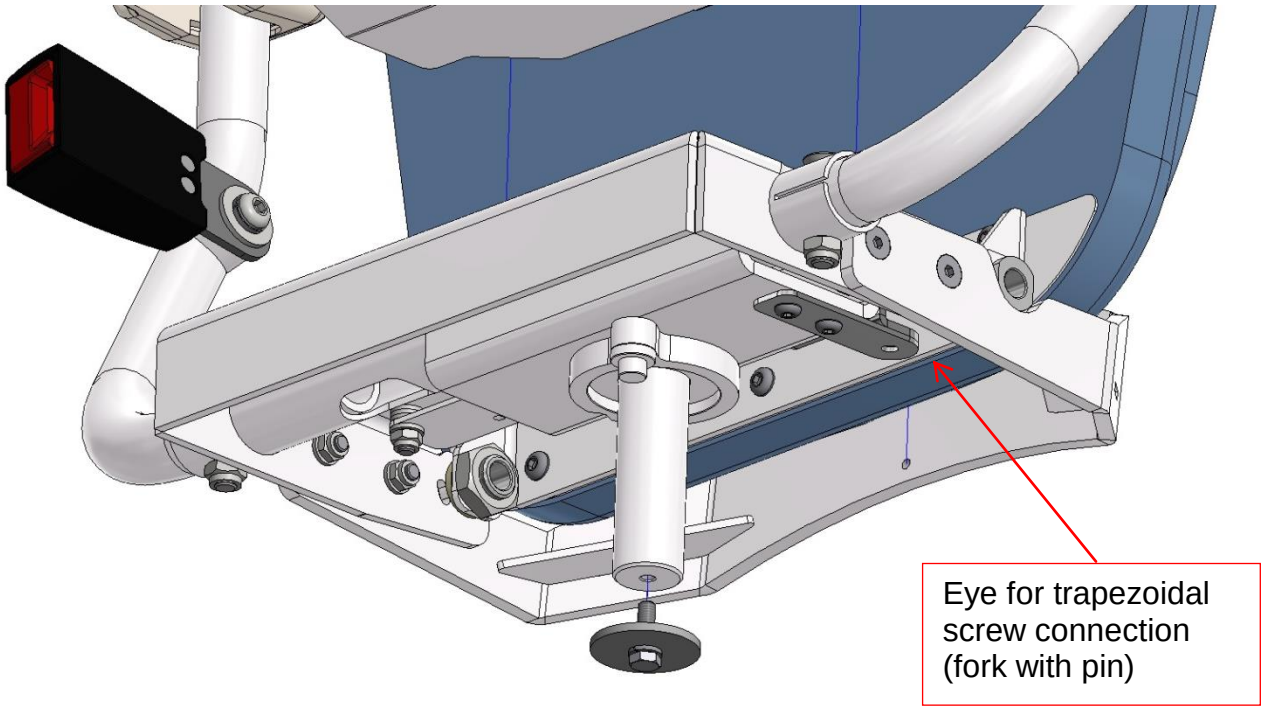


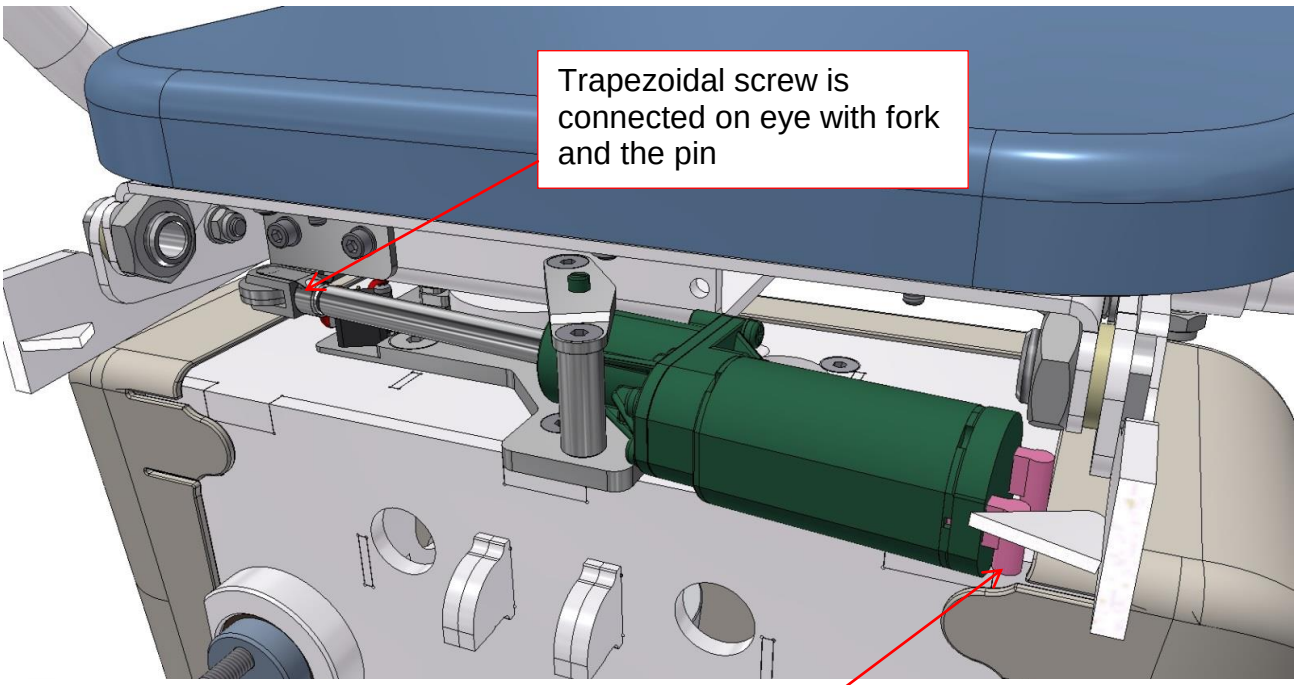
Upper part of the chair is mounted onto „U“ console of the drive unit with screws M6.

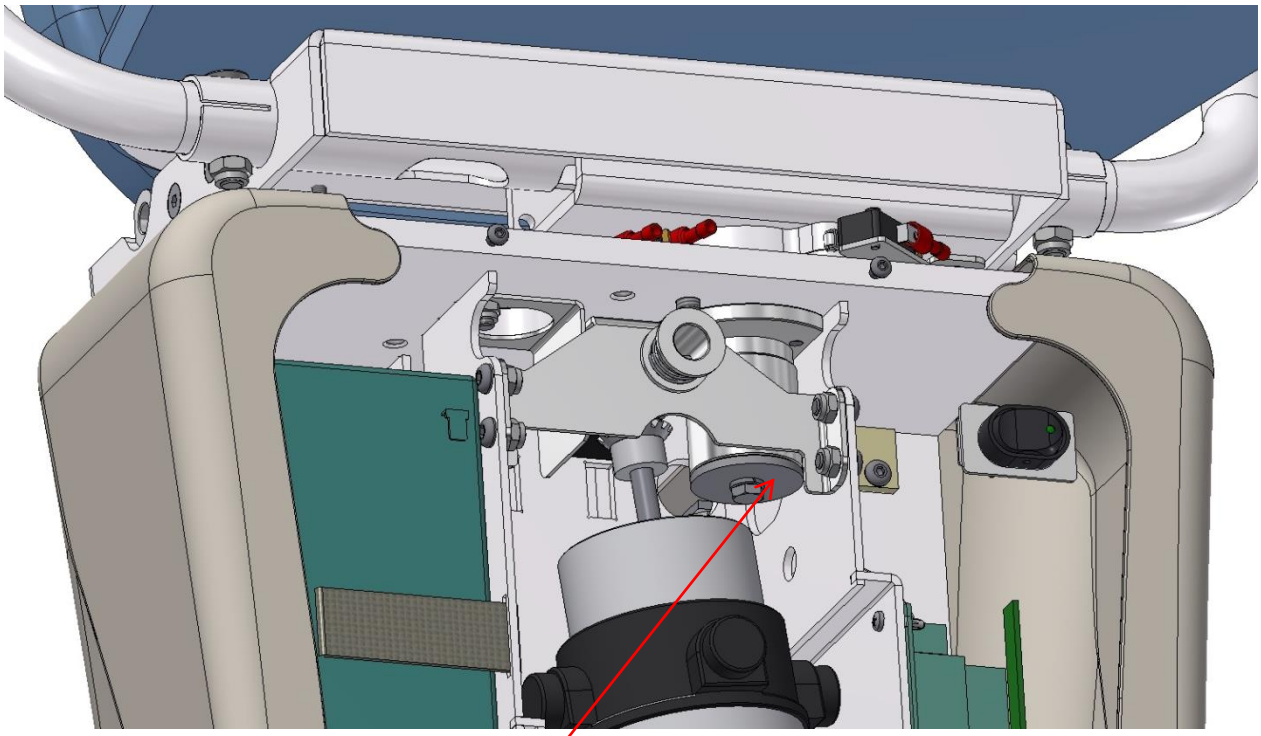



Two screws on front side are ensured with nuts from the bottom. Two screws on rear side are without nuts.


Remove the pin from the fork
Switch S34
Switch S33
Switch SR
Axial ball bearing

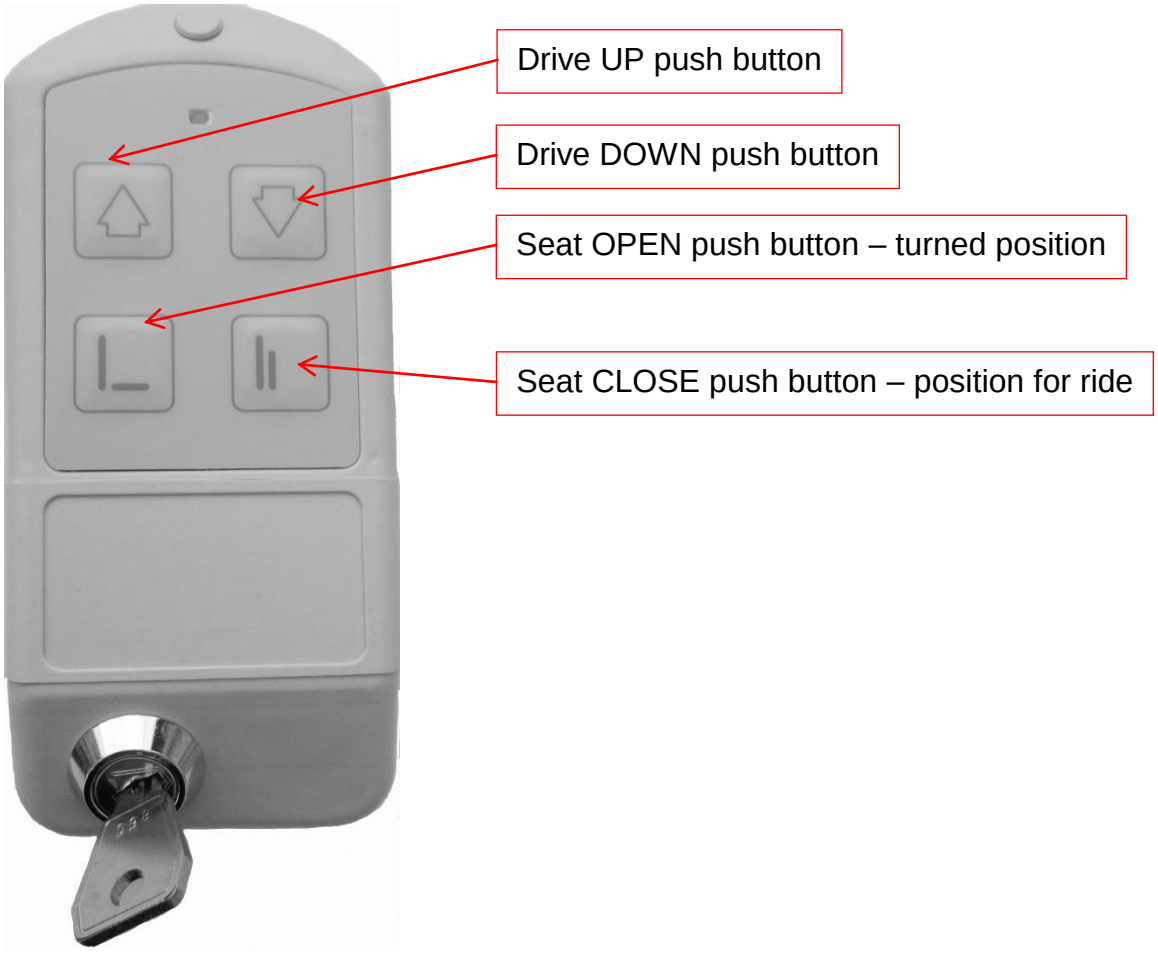

Eye for trapezoidal screw connection (fork with pin)


Trapezoidal screw is connected on eye with fork and the pin
Power supply for motor is connected on motor terminals



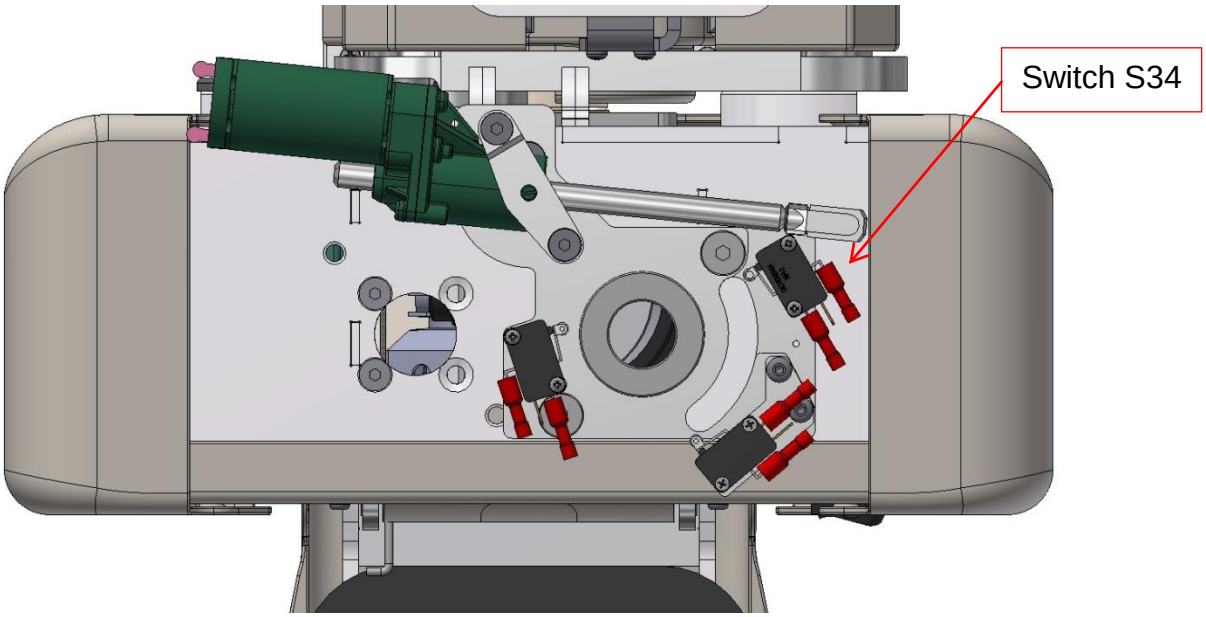
The big washer, spring washer and screw M6x20, DIN 933 are inserted in production factory. It protect the seat for upward movement and disconnection. It is important for good function of the automatic swivel.

When the automatic swivel is used then the landing control with 4 push buttons must be used.

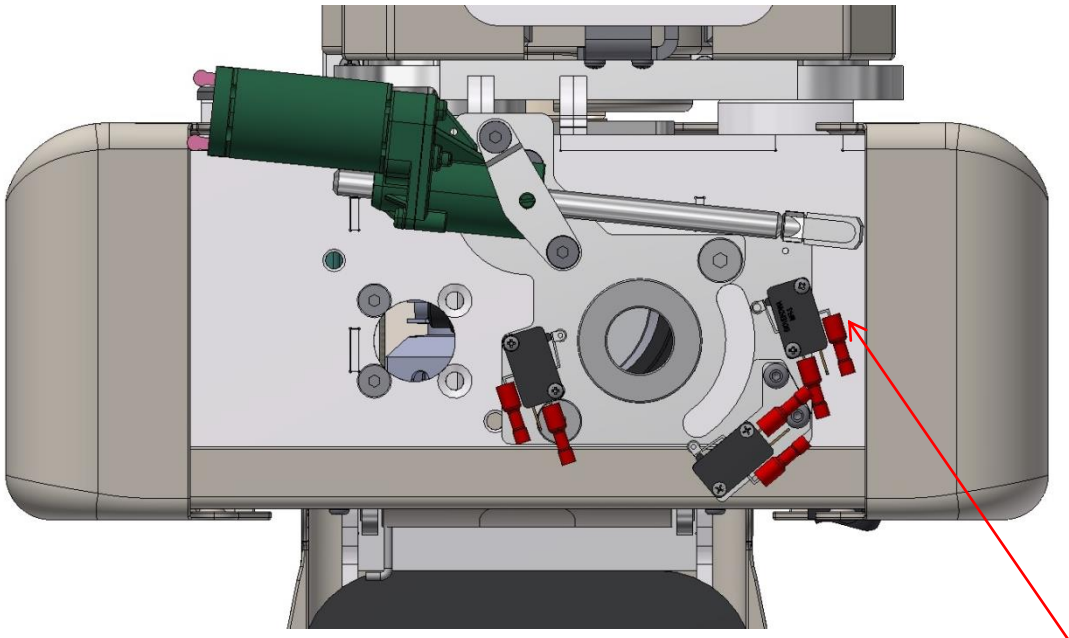


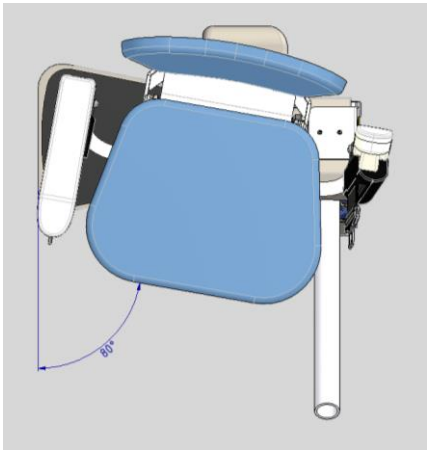
Position of the switch S34 must be chosen in according with rail inclination. Each swivel seat stop position must be checked and adjusted after installation in according with the user requests.

1) For rail inclination in range 0° - 40° full range of rotation can be used. Switch S34 is mounted in according with the following picture.

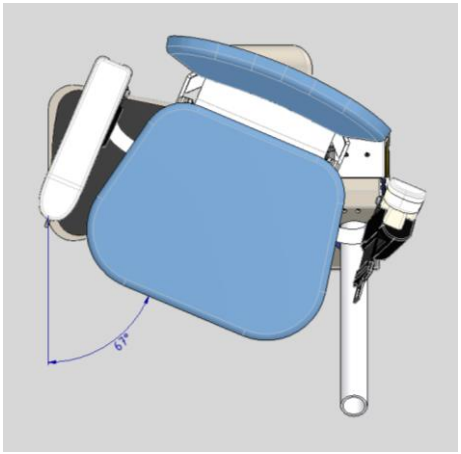


2) For rail inclination in range 40° - 52° only a reduced range of rotation (up to 67°) can be used. Switch S34 is mounted in according with follow picture.





Full rotation range



Reduced rotation range

The main reason why the rotation must be reduced when the rail is steep is to receive a safety gap between seat and upper rail tube for hand or fingers.