

Rotadorm Care Rotadorm Max Care

ISK^omed[®]

Spezialbetten



Service manual

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1 Dimensional sketch of the movement space

For the rotating function of the lying surface, it is essential to keep the following space free for movement outside the nursing bed.

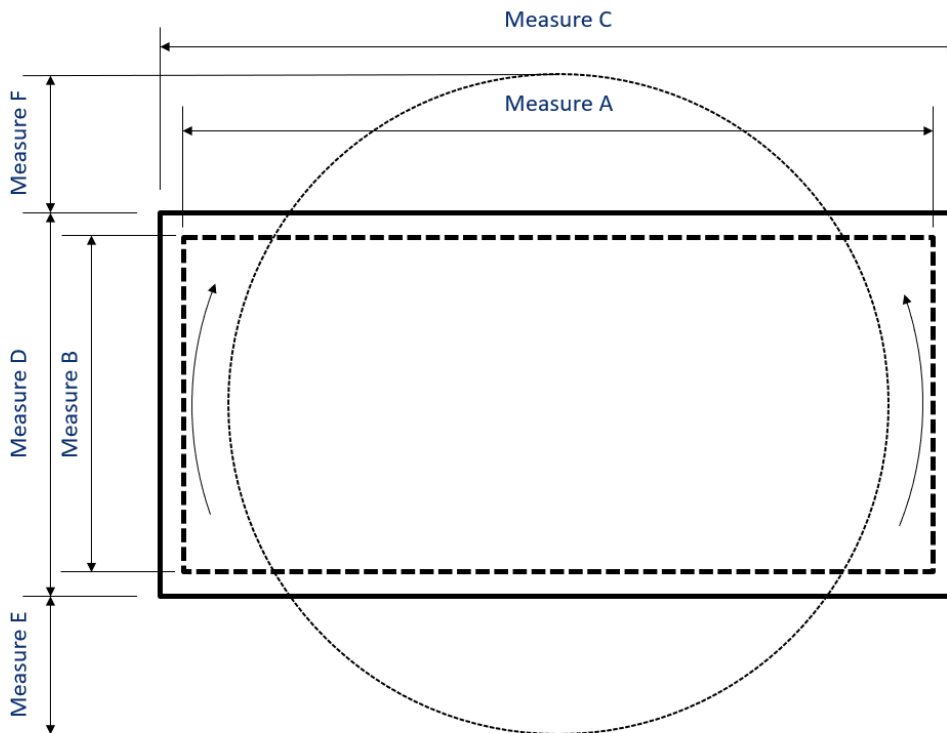


Figure 1: Dimensional sketch of the movement area of the Rotadorm Care

Type	SI-011-1
Measure A ^{*)}	200 cm
Measure B ^{*)}	85 cm
Measure C	205 cm
Measure D	99 cm
Measure E (head end)	30 cm
Measure F (foot end)	50 cm

Table 1: Dimensions to the dimensional sketch of the movement space



No objects, pieces of furniture or walls may interfere with the turning function within the specified range of motion. (Danger of crushing)

2 Description of hand controls

For the Rotadorm Care there is a customer hand control for daily use (Figure 2) and a service hand control V1 (Figure 3) for initializing the control box and motors and for programming the stand-up parameters.

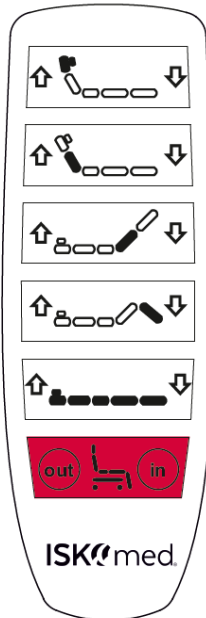


Figure 2: Customer hand control

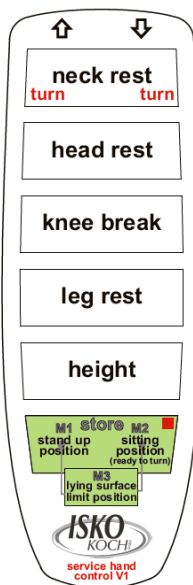


Figure 3: Service hand control

Press the M2 key (red square) and the first row of keys simultaneously to set the rotation.



Before turning, the head and foot sections must be raised so that no collision can occur!

2.1 Function of the customer hand control

The bed is controlled by a 6-row customer hand control.

The upper five rows support the individual motors and the last row controls the program sequence for getting out of bed and changing the sitting/lying position in bed.

The extended end position for getting up and the sitting position during the turning process can be programmed in detail with the V1 service hand control.

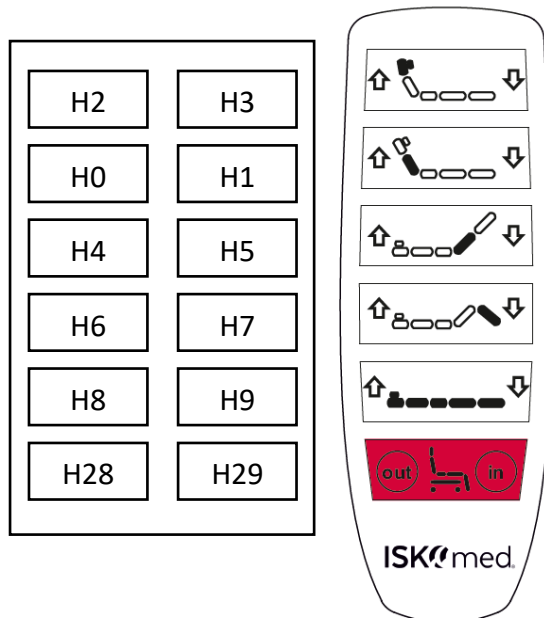


Figure 4: Key description of customer hand control

Reset:

Press and hold the second row of keys (head rest - up and down, H0 + H1) simultaneously (really simultaneously) and together until the interrupted signal tone changes to a continuous tone (after approx. 5 seconds). Then an initialization must be carried out directly.

A reset must be performed in case of an error in the system, this will reset all errors.

Initialization:

For initialization, simultaneously press the first row of keys (neck rest - up and down; H2 + H3) until a long signal tone sounds. During this process, the motors may search for their end position.

2.2 Function of the service hand control

When starting up the bed for the first time or after replacing the control box, motors or other electrical components, the bed must be reinitialized. To do this, you must start each motor (not the turning motor) for 5 seconds and return it to each end position. (The control must learn where the motors are located).

Reset – Initialization:

Press and hold the second row of keys (head rest - up and down, H10 + H11) simultaneously (really simultaneously) and together until the interrupted signal tone changes to a continuous tone (after approx. 5 seconds).

Immediately after the reset (simultaneous pressing of the 2nd row of keys), the first row of keys (neck rest - up and down; H12 + H13) is pressed simultaneously for initialization until a long signal tone sounds. During this process, the motors may search for their end position.

Factory setting (resetting the changed memory values):

To reactivate the factory settings, press the third row of keys (knee break - up and down, H14 + H15) simultaneously (really simultaneously) and together until a short signal tone sounds (after approx. 5 seconds).

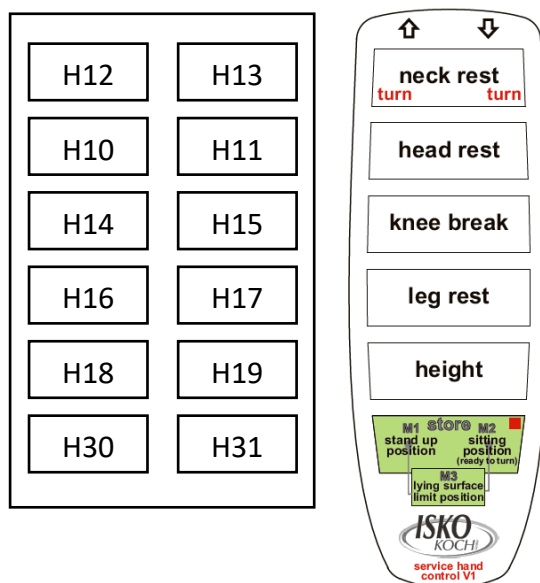


Figure 5: Key description of service hand control

3 Programming

3.1 Programming the parameters of the sitting position

The V1 service hand control can be used to move the head, knee and leg section motor and the height motor. (Upper four rows of the hand control).

The turning motor must not be moved for the exit and must remain in the end position, the lying surface is turned in the direction of the bed!



Figure 6: Sitting position

Save the preset sitting position (M2):

The fifth row of keys is pressed on the left M2 (H31) until the signal tone goes out after 5 seconds. The customer-specific values now set for the sitting position are now fixed and can be controlled by the customer hand control.

3.2 Programming the parameters of the stand-up position 1

The V1 service hand control can be used to move the head, knee and leg section motor and the height motor. (Upper four rows of the hand control).

The turning motor must not be moved to extend and must remain in the end position. 90° to the bed direction.



Figure 7: Stand-up position 1

Save the preset stand-up position 1 (M1):

The fifth row is pressed to the right until the signal goes out after 5 seconds. The customer-specific values now set for the stand-up position 1 are now fixed and can be controlled by the customer's hand control.

3.3 Programming the parameters of the lying position

The V1 service hand control can be used to move the head, knee and leg section motor and the height motor. (Upper four rows of the hand control).

The turning motor must not be moved for the exit and must remain in the end position. The lying surface is rotated in the direction of the bed.



Figure 8: Lying position

Save the preset lying position (M3):

The bottom row must be pressed left and right at the same moment until the signal goes out after 5 seconds. The now set customer-specific values for the lying position are now fixed and can be controlled by the customer hand control.

3.4 Programming SLS - limit switch

After reprogramming, the software is set with limit switch. If the limit switch for the bed lift is detected once, it must still be present.

Detected limit switches can be deactivated via the service hand control V1 (cf. Figure 5). However, they must be disconnected from the system after being programmed out.

Use of no limit switch (factory default)

Press H31 + H16 simultaneously. This version is indicated by a short beep (100ms) after plugging into the mains.

2 SLS for use with side grid monitoring

Actuate H31 + H18 simultaneously. This version is indicated by 2 beeps (1s) after plugging into the mains.



Figure 9: Pressed pushbutton/limit switch through lowered side rail

3.5 Mounting the bed extensions

The Rotadorm Care can be used in lengths of 200 cm, 210 cm and 220 cm. For this purpose, in addition to wooden side rails of different lengths, it is also necessary to ensure correct assembly of the footrest extension. (cf. Table 2)

Option	Lying surface length	Side rail length
1	200 cm	199 cm
2	210 cm	209 cm
3	220 cm	219 cm

Table 2: Extension options

3.5.1 Option 1



Figure 10: Assembly of the foot traverse (200 cm lying surface length)

For the 200 cm version, the foot section extension is to be inserted into the lying surface tube according to Figure 10. The springwood strip points downwards.

3.5.2 Option 2



Figure 11: Assembly of the foot traverse (210 cm lying surface length)

For the 210 cm version, the foot section extension must be inserted into the lying surface tube as shown in Figure 11. The springwood strip points upwards. The foot section extension must be inserted all the way to the end. The two upper drill holes for the screw connection are provided here. These are exactly reversed compared to the 200 cm variant. You can see whether the foot section extension has been mounted correctly when mounting the wooden side rails.

3.5.3 Option 3



Figure 12: Assembly of the foot traverse (220 cm lying surface length)

For the 220 cm version, the foot section extension must be inserted into the lying surface tube as shown in Figure 12. The springwood strip points upwards. The foot section extension is to be mounted at a distance of 5 cm. The two upper drill holes for the screw connection are provided here. These are exactly reversed compared to the 200 cm variant. You can see whether the foot section extension has been mounted correctly when mounting the wooden side rails.

In addition, the 220 cm version has an extension attached to the headboard. This is to be attached centrally to the headboard end (cf. Figure 13).



Figure 13: Assembly of the head traverse (220 cm lying surface length)

4 Changing the direction of rotation

With the Rotadorm Care, the direction of rotation can be changed from left to right or vice versa by a few simple assembly steps. To do this, please proceed as follows.

Figure 14 shows a Rotadorm Care with the direction of rotation on the right. This is now to be changed to the left-hand direction of rotation (see Figure 15). To do this, first loosen the screw connections of the wooden plate. Then press the Out key on your V0 hand control until the bed has turned halfway outwards (approx. 45° between the lying surface and the chassis). Now you can loosen the motor retaining bolt as well as the screw connection to remove the motor from its position. Unscrewing is important because it allows you to now lever out the loosened motor. When doing this, loosen the bolt first, as this will allow you to manually twist the bed. This will make it easier to disassemble the motor. Now you have disassembled the motor. For assembly on the other side, follow the steps just described in reverse order.

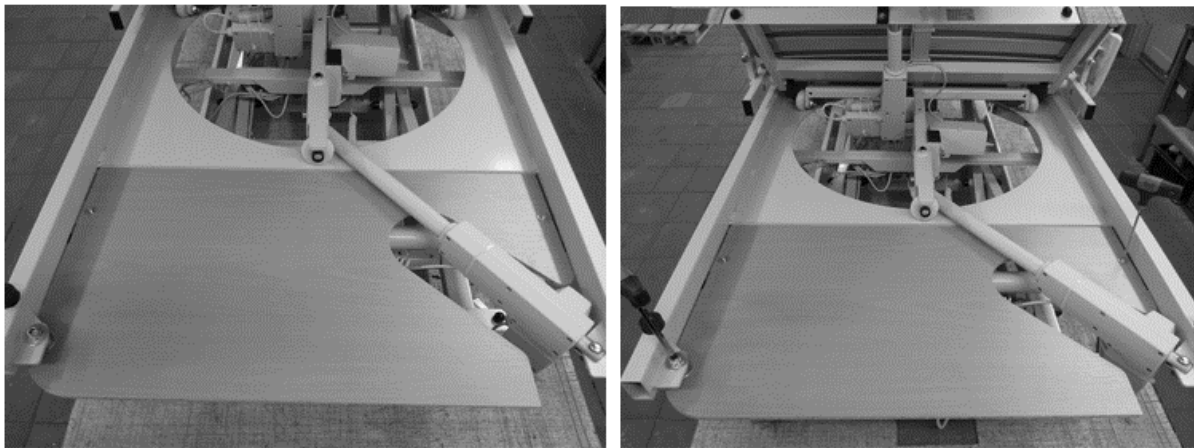


Figure 14: Direction of rotation right

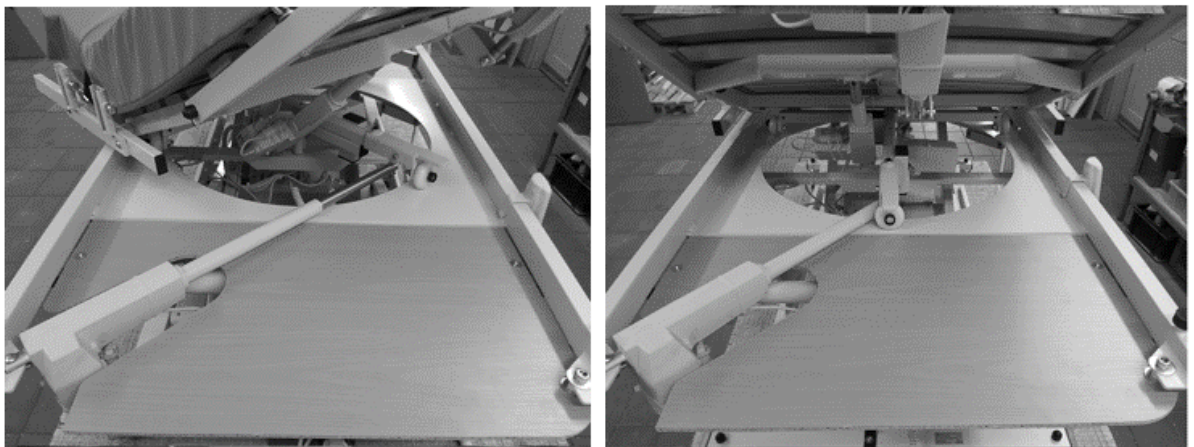


Figure 15: Direction of rotation left

5 Mounting the limit switches

If the Rotadorm Care is delivered with a special mattress of height 14 cm (article number: SI-500-3, SI-500-4, SI-500-5), the side rails must not be used as protection against the patient falling out. The side rails are supplied, but must not be used. In this case, the side limit switches are mounted below the lying surface, as they are not used. The limit switches when connected ensure that the bed can only turn out when both limit switches are moved. Otherwise the bed would collide with the side rails when turning.

In the following, we will describe the steps to be taken when switching from the special mattress back to a standard mattress with a height of 12 cm. This allows the standard side rails to be used again.

Figure 16 shows the actual state of your bed. Here, the limit switches are mounted below the lying surface. In addition, the limit switches are electrically separated from the system.



Figure 16: Mounting method of the limit switches at the mounting frame or 14 cm thick mattress

Now plug the Minifit cables (2x) into the free slots of the MJB. This reconnects the limit switches to the system. The software must now be reprogrammed in order to be able to use the limit switches again. Follow the instructions in 3.4 Programming SLS - limit switch (2 SLS for use with side grid monitoring). Mount the left and right limit switch still to the outside, so that the lowered side rails can trigger them (see Figure 9).

6 Troubleshooting

6.1 Operation via the hand control not possible

You try to control the functions of the bed via the hand control, but the bed does not react at any of the available keys? Then the guideline for error detection is as follows:

Initial situation: Bed does not move at all when the buttons of the hand control are pressed.

1. Check the connection of the power cord.
The power cord may have lost contact either at the outlet or at the plug which is connected to the bed's controller.
2. Check whether the ACL shut-off box is "On" or "Off".
The ACL locking box locks out operation via the hand control when "Off". The lock-off box is located underneath the lying surface.
3. Check the hand control cable for pinch points.

Incorrect operation of the hand control cable can result in crushing, which can be caused by jamming in the lying surfaces.

4. If an acoustic signal sounds when the hand control is actuated, please check all motor connections. If all drives are properly connected and an acoustic signal still sounds, perform a reset (s. chapter 2.2).

6.2 Operation via the hand control only partially possible

You are trying to control the functions of the bed via the hand control, but the bed only reacts when the individual components are actuated? The keys "out" and "in" do not work? Then the guideline for error detection is as follows:

Initial situation: Only the get-up "out" and "in" buttons do not work (continuous beep when pressed). The individual motors can still be operated individually.

1. Perform a reset or initialization of the rotating seat bed (see chapter 2.1 and 2.2)

7 Spare parts

7.1 Electrical components

Pos	Qty	ISKO Art.-No.	Beschreibung	Description
1	1	SI-011.80.820	Verstellantrieb LA31 Nacken	Neck actuator LA31
2	1	SI-011.80.815	Verstellantrieb LA31 Drehen	Turning actuator LA31
3	1	SI-011.80.810	Verstellantrieb LA31 Rücken	Back actuator LA31
4	1	SI-011.80.820	Verstellantrieb LA31 Knieknick	Knee actuator LA31
5	1	SI-011.80.822	Verstellantrieb LA31 Beinteil ohne Spline	Lower leg actuator LA31
6	1	ZLI-00022	Stromversorgung CP20	Power Supply CP20
7	1	SI-011.80.834	Steuereinheit CU20	Controlbox CU20
8	6	SI-011.80.825	Sicherungsring	Locking ring
9	1	ZLI-00005	Verstellantrieb LA40 Höhe	Height actuator LA40
10	1	SI-011.90.010	Absperrbox	Locking box
11	1	NS-011.80.903	Netzkabel	Power cable
12	1	SI-011.80.895	Modular Junction Box MJB	Modular Junction Box MJB
13	1	SI-011.80.898	Modularkabel	Modular cable
14	1	SI-011.80.725	Sicherungsclip für Modular Junction Box	Locking clip for Modular Junction Box
15	1	SI-011.85.041	Kundenhandbedienung V0	Customer hand control V0
16	1	SI-011.85.042	Service-Handbedienung V1	Service hand control V1
17	1	SI-011.80.850	Anschlusskabel Mini-Fit 1250 (Beinteilmotor)	Connection cable Mini-Fit 1250 (lower leg actuator)
18	2	SI-011.80.855	Anschlusskabel Mini-Fit 1000 (Kopfteilmotor, Knieknickmotor)	Connection cable Mini-Fit 1000 (back actuator, knee actuator)
19	2	SI-011.80.860	Anschlusskabel Mini-Fit 400 Spirale (Höhenmotor, Drehmotor)	Connection cable Mini-Fit 400 spiral (height actuator, turning actuator)
20	1	SI-011.80.870	Anschlusskabel Mini-Fit 1600 (Nackentmotor)	Connection cable Mini-Fit 1600 spiral (neck actuator)
21	1	SI-011.80.880	Sicherheitsschalter SLS4X0-398	Safety switch SLS4X0-398
22	1	SI-011.80.890	Sicherheitsschalter SLS4X0-399	Safety switch SLS4X0-399

Table 3: Spare parts electrical component

7.2 Other components

Po s	ISKO Art.- No.	Beschreibung	Description
1	SI- 011.80.701	Oberer Kopfteilrahmen (Nacken)	upper head-part frame (neck)
1a	SI- 011.80.702	Holzleiste Kopfteil (810 mm)	wooden slat for head-part
1b	SI- 011.80.703	Kunststoffkappe Holzleiste	plastic holder for wooden slat
2	SI- 011.80.705	Liegeflächenrahmen	lying surface frame
2a	SI- 011.80.706	Sterngriff	star grip
2b	SI- 011.80.707	Halteschraube	fixing screw
2c	SI- 011.80.708	Holzleiste Liegeflächenrahmen (840 mm)	wooden slat lying surface frame
2d	SI- 011.80.710	Holzleiste Verlängerungsstück (825 mm)	wooden slat for extension part
3	SI- 011.80.711	Rückenstütze Rahmen	back rest frame
3a	SI- 011.80.704	Holzleiste Rückenstütze (760 mm)	wooden slat for back rest
4	SI- 011.80.712	Drehgestell	bogie frame
4a	SI- 011.80.713	Wippe	rocker
4b	SI-049-0	Laufrolle Polyamid 58 mm	roller polyamid 58mm
4c	SI- 011.80.714	Holzleiste Drehgestell (855 mm)	wooden slat bogie frame
5	SI- 011.80.715	Oberschenkelteil	thigh part frame
5a	SI- 011.80.716	Holzleiste Oberschenkelteil (760 mm)	wooden slat for thigh part
6	SI- 011.80.717	Unterschenkelteil	lower leg part frame
6a	SI- 011.80.718	Holzleiste Unterschenkelteil (810mm)	wooden slat for lower leg part
7	SI- 011.80.719	Bodenrahmen / Fahrgestell	chassis
8	SI- 011.80.720	Scherenteil mit Steuerboxhalter	scissor part frame with controll box holder
9	SI- 011.80.721	Scherenteil mit Hubmotoraug	scissor part frame with lifting motor eye
10	SI- 011.85.180	Abdeckplatte Kopfseite mit Ausschnitt 784 x 415 cm	cover plate head part
11	SI- 011.80.722	Matratzenhalter mit Befestigungsteilen Kopfteil	matress holder head part
12	SI- 011.80.501	Matratzenhalter mit Befestigungsteilen Beinteil links	matress holder leg part left
12a	SI- 011.80.502	Matratzenhalter mit Befestigungsteilen Beinteil rechts	matress holder leg part right
13a	SI- 011.80.723	Matratzenband - Bügel links	matress belt - left handle
13b	SI- 011.80.724	Matratzenband - Bügel rechts	matress belt - right handle

14	SI-037-0	Spannband Matratze	matress strap
15	SI-011.85.181	Abdeckplatte Fußseite ohne Ausschnitt 775 x 764 cm	cover plate food part
35	SI-011.85.010	Kopfbrett	headboard
35 a	SI-011.85.009	Fußbrett	footboard
32	KR-100.85.101	Doppel-Lenkrolle mit Totalfeststeller, ø75 mm	double castor with total lock, ø75mm
36	SI-048-0	Gleitstück, Schieberbaugruppe Satz	finger assembly for wooden side-rail
37	SI-011.85.201	Holz-Seitengitter Satz 85 mm, 199 cm	wooden side rail set 85 mm, 199 cm
37	SI-011.85.203	Holz-Seitengitter Satz 85 mm, 209 cm	wooden side rail set 85 mm, 209 cm
37	SI-011.85.205	Holz-Seitengitter Satz 85 mm, 219 cm	wooden side rail set 85 mm, 219 cm
39	SI-011.85.004	Kopfteiltraverse	head traverse
48	SB-009.80.052	Gummipuffer Metall- 30-15-5 M8 IG	rubber buffers metal - 30-15-5 M8 IG
49	SI-011.80.727	POM - Gleiter	POM - slider
50	SI-011.90.018	Fußtraverse montiert, beschichtet	fsoot traverse mounted, coated

Table 4: Spare parts other components

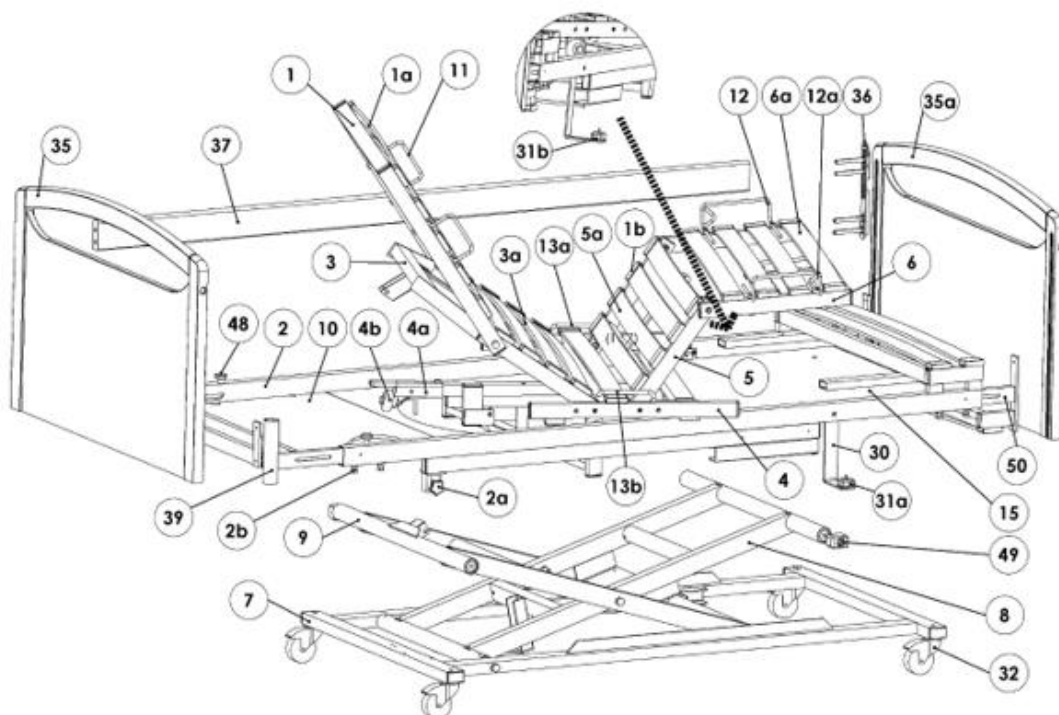


Figure 17: Explosion drawing Rotadorm Care