

Rotadorm Care Rotadorm Max

ISK^{med}

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.

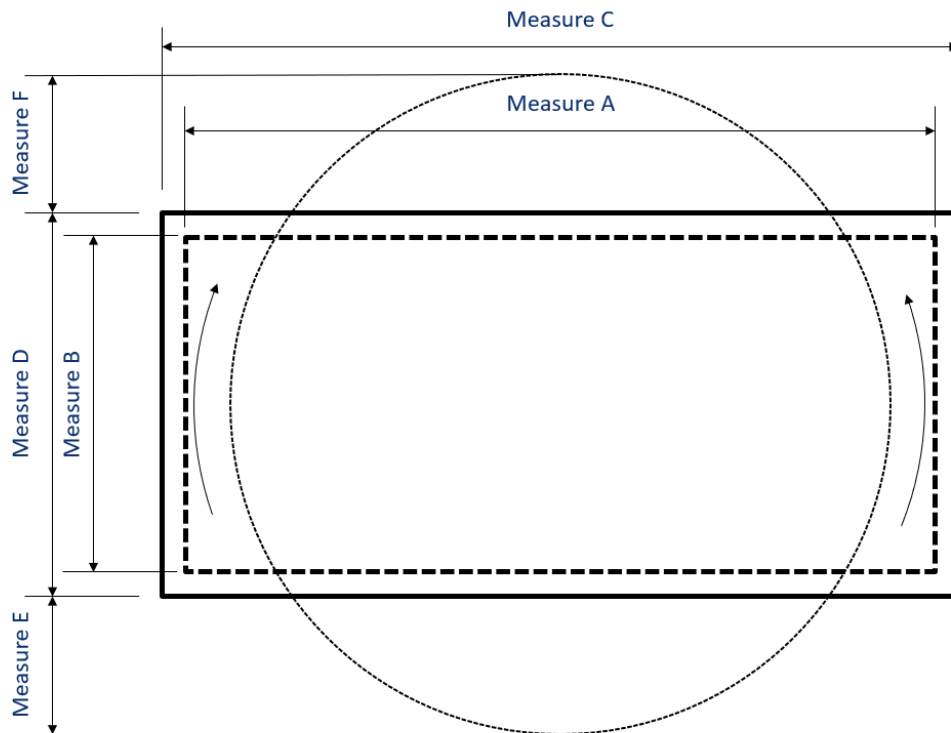


Figure 1: Dimensional sketch of the movement area of the Rotadorm Care

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. (Risk of crushing and damage)

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.

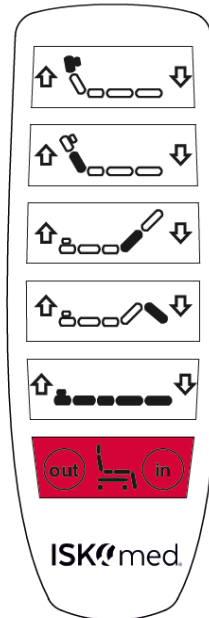


Figure 2: Customer hand control

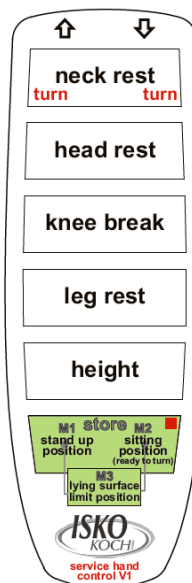


Figure 3: Service hand control

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.

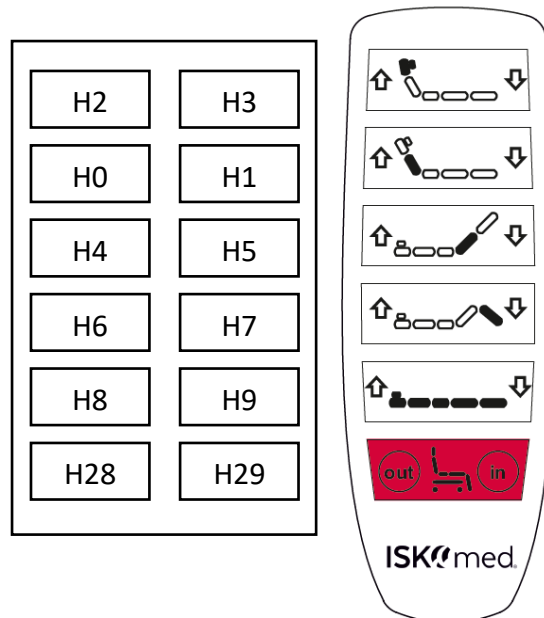


Figure 4: Key description of customer hand control

Reset:

Press and hold the second row of buttons (head rest – up and down, H0 + H1) simultaneously (the buttons must be pressed at exactly the same time) and hold them down until the intermittent beep (after approx. 5 seconds) stops.

If the beep does not sound, no errors were found and no reset was performed.

Initialisation must then be performed immediately.

A reset must be performed if there is an error in the system; this will reset all errors.

Initialisation: (CAUTION: Always perform without a patient)

To initialise, press and hold the first row of buttons (neck rest – up and down; H2 + H3) simultaneously until a long beep sounds. During this process, the motors 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:

Identical to the description in section 2.1.

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).

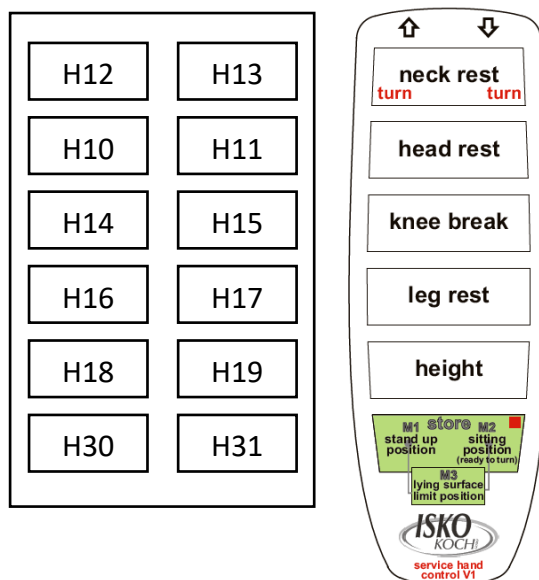


Figure 5: Key description of service hand control

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 sixth row of buttons is pressed on the right M2 (H31). There is no beep while the buttons are pressed. There is only a beep after the settings have been successfully saved. The customer-specific values for the sitting position are now stored 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

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

The sixth row is pressed on the left M1 (H30). No signal tone is emitted while the buttons are pressed. A signal tone is only emitted after the settings have been successfully saved. The customer-specific values for the stand-up position are now stored and can be controlled using the customer 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):

Press the right and left buttons (memory M1 (H30) + M2 (H31)) on the bottom row of buttons simultaneously. No beep sounds while the buttons are pressed. A beep sounds only after the settings have been successfully saved. The customer-specific values for the lying position are now stored and can be controlled using 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	Art.-No.	Lying surface length	Side rail length
1	SI-011-1	200 cm	199 cm
2	SI-011-21	210 cm	209 cm
3	SI-021-22	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.

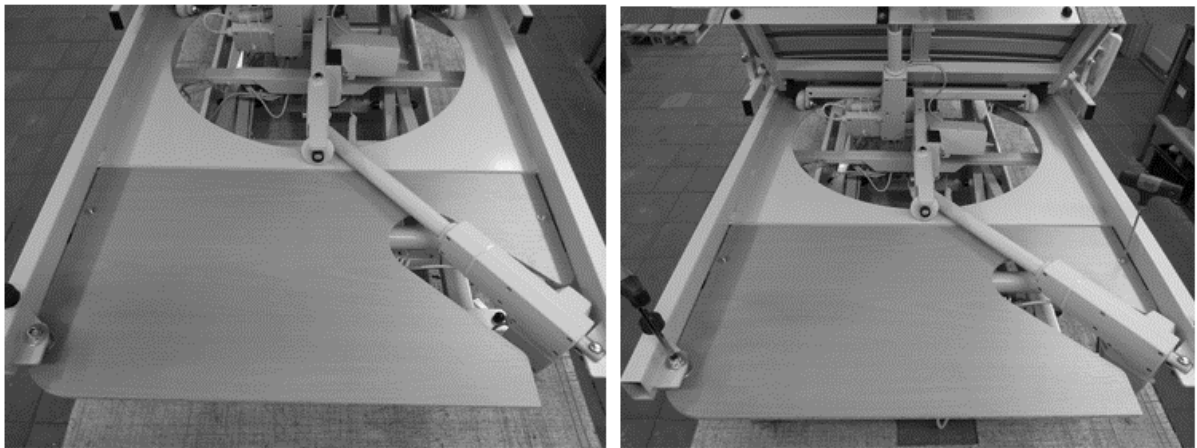


Figure 14: Direction of rotation right

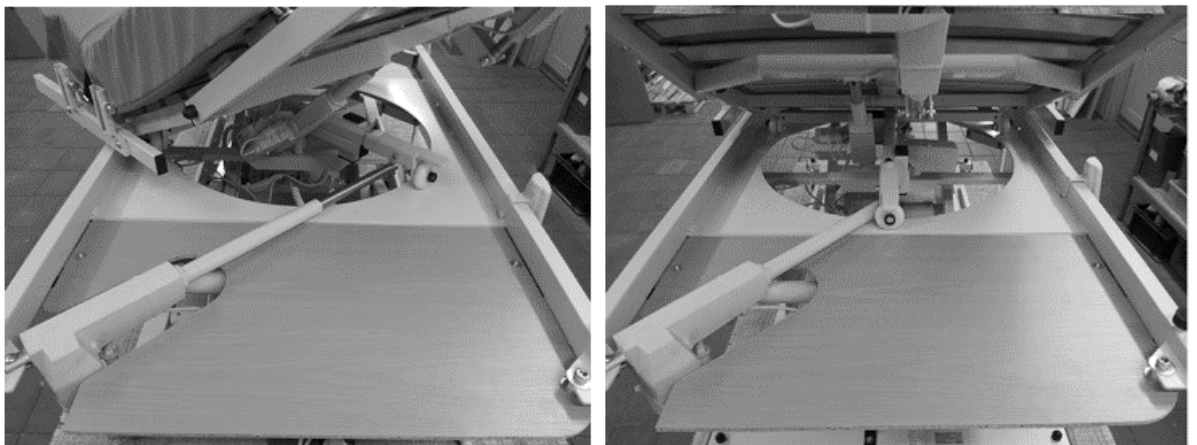


Figure 15: Direction of rotation left

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:

Reset:

Press and hold the second row of buttons (head rest – up and down, H0 + H1) simultaneously (the buttons must be pressed at exactly the same time) and hold them down until the intermittent beep (after approx. 5 seconds) stops.

Initialisation must then be performed immediately.

Initialisation: (CAUTION: Always perform without a patient)

To initialise, press and hold the first row of buttons (neck rest – up and down; H2 + H3) simultaneously until a long beep sounds. During this process, the motors search for their end position.

7 Adjustability of the turning actuator

An adjustable motor mount has been installed to enable precise adjustment of the reclining and sitting positions (see Figure 17). This ensures, among other things, that the reclining surface is positioned precisely parallel to the reclining surface frame.

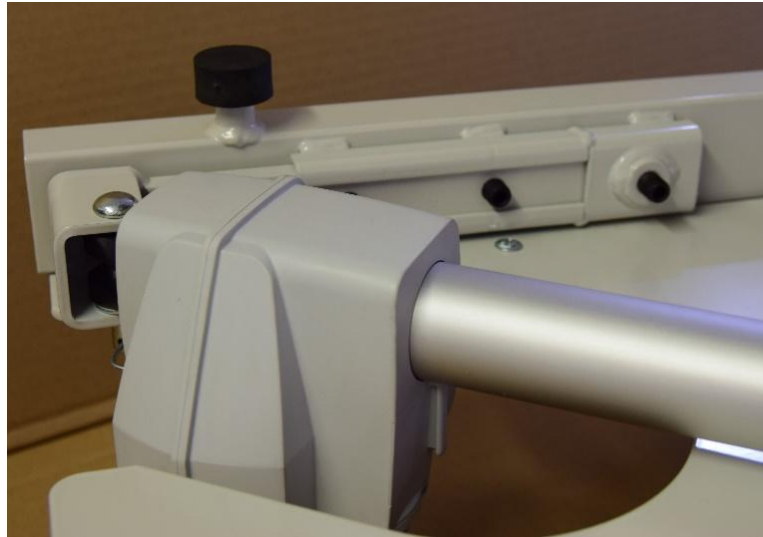


Figure 17: turning actuator mount

8 Spare parts

8.1 Electrical components

Qty	ISKO Art.-No.	Description
1	ZLI-00042	Neck actuator LA40
1	ZLI-00041	Turning actuator LA40
1	ZLI-00043	Back actuator LA40
1	ZLI-00042	Knee actuator LA40
1	ZLI-00040	Lower leg actuator LA40
1	SI-013.80.606	Port Junction Box 1.PJ2+19200S00000
1	SI-013.80.605	Controlbox CO7+13431T29200
6	SI-011.80.825	Locking ring
1	ZLI-00005	Height actuator LA40
1	SI-011.90.010	Locking box
1	NS-011.80.903	Power cable
1	SI-011.80.895	Modular Junction Box MJB
1	SI-011.80.898	Modular cable
1	SI-011.80.725	Locking clip for Modular Junction Box
1	ZLI-00032	Connection cable Mini-Fit 1250 (lower leg actuator)
2	ZLI-00033	Connection cable Mini-Fit 1000 (back actuator, knee actuator)
2	SI-013.80.609	Connection cable Mini-Fit 400 spiral (height actuator, turning actuator)
1	ZLI-00035	Connection cable Mini-Fit 1600 spiral (neck actuator)
1	SI-011.80.880	Safety switch SLS4X0-398
1	SI-011.80.890	Safety switch SLS4X0-399
2	SI-013.80.616	mounting bracket - Frame flat with nuts
1	ZLI-00036	Battery connection cable 300 mm
1	SI-011.80.955	mounting bracket
1	SI-013.80.608	Extension cable for handset 850 mm
1	ZLI-00002	Customer hand control V0
1	ZLI-00004	Service hand control V1

Table 3: Spare parts electrical component

8.2 Other components

ISKO Art.-No.	Description
SI-011.80.701	upper head-part frame (neck)
SI-011.80.702	wooden slat for head-part
SI-011.80.703	plastic holder for wooden slat
SI-011.80.705	lying surface frame
SI-011.80.706	star grip
SI-011.80.707	fixing screw
SI-011.80.708	wooden slat lying surface frame
SI-011.80.710	wooden slat for extension part
SI-011.80.711	back rest frame
SI-011.80.704	wooden slat for back rest
SI-011.80.712	bogie frame
SI-011.80.713	rocker
SI-049-0	roller polyamid 58mm
SI-011.80.714	wooden slat bogie frame
SI-011.80.715	thigh part frame
SI-011.80.716	wooden slat for thigh part
SI-011.80.717	lower leg part frame
SI-011.80.718	wooden slat for lower leg part
SI-011.80.719	chassis
SI-011.80.720	scissor part frame with controll box holder
SI-011.80.721	scissor part frame with lifting motor eye
SI-011.85.180.1	cover plate head part
SI-011.80.722	matress holder head part
SI-011.80.501	matress holder leg part left
SI-011.80.502	matress holder leg part right
SI-011.80.723	matress belt - left handle
SI-011.80.724	matress belt - right handle
SI-037-0	matress strap
SI-011.85.181	cover plate food part
SI-011.85.010	headboard
SI-011.85.009	footboard
KR-100.85.101	double castor with total lock, ø75mm
SI-048-0	finger assembly for wooden side-rail
SI-011.85.201	wooden side rail set 80 mm, 199 cm
SI-011.85.203	wooden side rail set 80 mm, 209 cm
SI-011.85.205	wooden side rail set 80 mm, 219 cm
SI-011.85.004	Head traverse
SB-009.80.052	rubber buffers metal - 30-15-5 M8 IG
NS-011.85.230	POM – slider 50x30x31,5mm
SI-011.90.018	Foot traverse mounted, coated

Table 4: Spare parts other components