

Ropox Vario

User manual

This manual should always be in close proximity of the product.

Table of content

1. Symbols used in this manual	4
2. General safety	4
2.1 Product Unit label	6
3. General requirements	7
3.1 Product information	7
3.2 Product description	8
3.3 Intended purpose	8
3.4 Intended operator	8
3.5 Essential performance	8
3.6 Complaints and adverse events.....	8
3.7 Product dimensions.....	9
3.7.1 Without bed guard	9
3.7.2 With bed guard	10
4. Instructions for use	11
4.1 Installation of product	11
4.1.1 Placement of power socket outside of lifting unit	11
4.1.2 Placement of power socket behind lifting unit	11
4.1.3 Receiving the Changing Bed	12
4.1.4 Remove the cover	12
4.1.5 Mounting to the wall.....	13
4.1.6 Mounting the wires	14
4.1.7 Re-mount the plastic cover.....	15
4.1.8 Mount the Tabletop on the Lifting unit.....	16
4.1.9 Mount the middle cover plate	17
4.2 Operating the product	18
4.2.1 Actuation of the product	18
4.2.2 Operation of the bed guards.....	19
4.2.3 How to fold changing bed up and down	20
4.3 Electrical component diagram	21
4.3.1 Wire diagram	21
4.3.2 Connecting cables	22
4.3.3 Placement of the hand control.....	22
4.4 Residual risk	23
5. Trouble shooting	24
6. Maintenance	24
6.1 Periodic maintenance	24
7. Cleaning	25
8. Environmental protection	25
9. Spare parts	26
10. Accessories	27

10.1	Bed guard.....	27
10.2	Cushion for bed guard.....	27
10.3	Mattress.....	27
11.	Electromagnetic compatibility	28
11.1	Suitable Environments.....	28
11.2	Basic safety and Essential performance	28
11.3	Adjacent and stacked use	28
11.4	Cables.....	28
11.5	Compliance levels for emissions and immunity.....	28

1. Symbols used in this manual

Warning Symbol Indication of potentially hazardous situation. If not avoided it can result in serious injury or death.	
Caution Symbol Indication of potentially hazardous situation which may result in minor or moderate injury. It may also be used to alert against unsafe practices.	
Notification Symbol This symbol is used to notify correct use and handling of the product.	

2. General safety

	<p>This manual must be read and understood before use. Always keep this manual in close proximity of the product.</p> <p>The use, installation and service of this product must be in compliance with this manual to avoid accidents and serious personal injury.</p> <p>Never use or handle this product in other ways specified in this manual as it can result in personal safety hazards and/or cause damage to the product.</p> <p>Persons installing and/or using this product either as operator or user should have the necessary safety information and access to this manual.</p> <p>If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified designated persons in order to avoid a hazard.</p>
---	--



Do not perform repairs, disassembly or assembly operations, add-ons, re-adjustments or modification of the product beyond what is described in this manual. These must be carried out by Ropox or Ropox authorized personnel. Do not perform service while in use.

This appliance can be used by adults who have read and understood the user manual. Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

Do not use the product if it has defects or have become damaged before being repaired or replaced.

If the control box makes unusual noise or smells, switch off the mains voltage immediately.

Take care that the cables are not damaged.

The products must only be used in an environment that corresponds to their IP protection.



The information in this manual is based on correct installation in accordance with installation instructions for this product.

Ropox cannot be held liable if the product is used in any way that differs from stated in this manual and/or installation instruction.

Ropox reserve the right to amend this manual and reference documents without prior notice.

2.1 Product Unit label

ROPOX WEB.: www.ropox.dk
 Ropox A/S,
 Ringstedgade 221, DK-4700 Naestved
 TLF: +45 5575 0500, E-mail: Info@ropox.dk













Duty cycle max. 10% Transport & storage

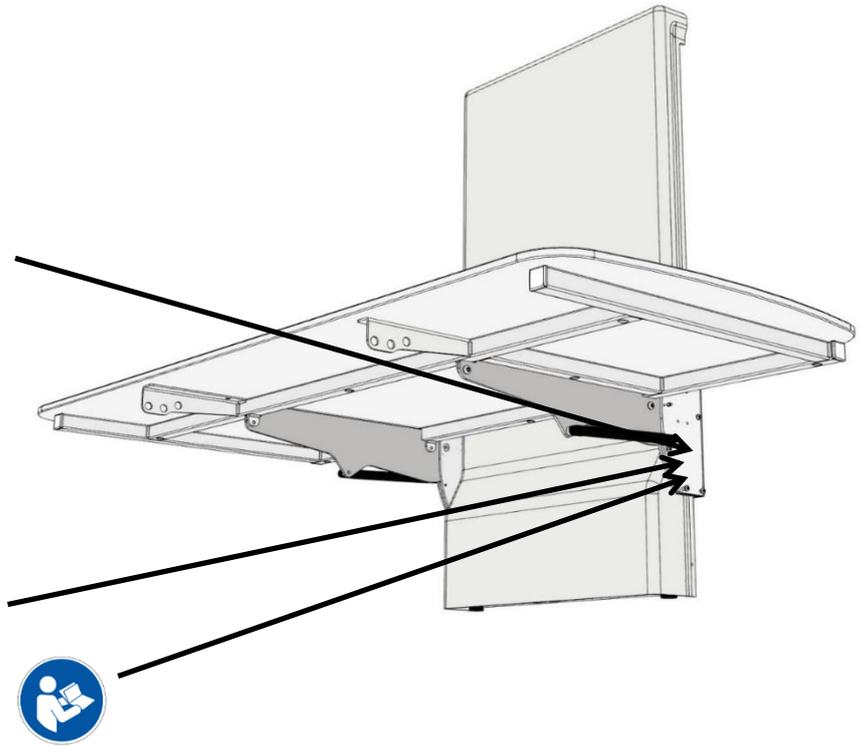
 XX-XX-XX
 REF 40-306xx-x  N43-xxxx 

IP X6

U In: 100-240VAC - 50/60Hz - P In: 223-285VA
 Ropox Vario changing Bed 120 x 70 cm
 Wall mounted with tiltable tabletop
 Max user load: 200 kg Mass of product: 72 kg



05707581000492+N43-XXXX



	This product is UKCA-marked in accordance with: UK SI 2002 No. 618 - <i>The Medical Devices Regulations 2002</i> , and its amendments
	This product is CE-marked in accordance with: European Medical Device Directive 93/42/EEC, including amendments incorporated in Directive 2007/47/EEC. European Medical Device Regulation (EU)2017/745 Council Directive 2011/65/EU, RoHS
	Manufacturer name and address
	Date of production
	Stock number
	Serial number
	Operating interval of electrically operated equipment. The use of electrical height adjustable equipment can run at maximum 2 minutes, followed by an 18-minute break.
	Type BF applied part. The product complies with IEC 60601-1 requirements to provide protection against electric shock
	Consult manual for important safety related information, warnings and safety precautions.
	Class II, double isolated electrical components.
	Do not dispose as unsorted municipal waste. Product must be returned to a designated recycling station.
	Mobile phones or other portable RF emitting equipment should be no closer to the product than 30cm.
	Operating and storing temperatures may not exceed 5-40°C°
	Consult manual before use

3. General requirements

3.1 Product information

Manufacturer	Ropox A/S Ringstedgade 221 DK-4700 Naestved +45 55 75 05 00 Info@ropox.com	UK Responsible Person	Qserve Group UK, Ltd 49 Greek Street, W1D 4EG London United Kingdom +44 740 885 936 3 info@qservegroup.com
Product models	Part number	Model	Configuration
	40-30604 40-30606 40-30608 40-30610 40-30611 40-30804 40-30806 40-30808 40-30810 40-30811	Vario 120x70cm Vario 140x70cm Vario 160x70cm Vario 180x70cm Vario 190x70cm Vario 120x70cm Vario 140x70cm Vario 160x70cm Vario 180x70cm Vario 190x70cm	With bed guard With bed guard With bed guard With bed guard With bed guard
Expected service life	5 years		
MDD Class 93/68/EEC MDR Class 2017/745	Class I		
Applied part classification 60601-1	Type BF applied part		
MEE Class 60601-1	Class II		
Intended environments	This product is to be used only in: Professional Healthcare Environment Homecare Environment <i>The device is not intended for use in special environments as defined by IEC 60601-1-2</i>		
Maximum user weight according to DS/ISO 17966:2016	200kg		
Power supply	100-240V ~50/60Hz		
I in	Max 2.0A		
Intermittence	2min use / 18min pause		
Height adjustment	30-100cm		
Speed of actuation	≈ 17 mm/s		
IP rating	IPX6		
Ambient temperature	-10 °C to +50 °C Transport and storage +5 °C to +40 °C Operation		

Materials in contact with patient	Component	Material description
	Unit Cover	ABS
	Tabletop surface	Compact laminate surface.
	Mattress (accessories)	Dahlia fabric Backing: 100% polyester Coating: 100% Polyurethane ISO 10993-10 Non-Allergic
	Bed guards (accessories)	St37 tube construction with powder coating.
	Lifting unit	St37 tube construction with powder coating. Aluminum anodized with powder coating

Accessories	Item Number	Component	Model/Specification
	40-25760-1	Mattresses	For L= 120cm
	40-25795-1		For L= 140cm
	40-25796-1		For L= 160cm
	40-25764-1		For L= 180cm
	40-25765-1		For L= 190cm
	40-30196-2	Bed guards	For L=120cm, 140cm
	40-30197-2		For L=160cm, 180cm, 190cm
	40-25782-1	Cushion for bed guard	For L=120cm, 140cm
	40-25783-2		For L=160cm, 180cm, 190cm

3.2 Product description

Vario is a fixed, height adjustable & foldable changing bed that can be used for care of children and adults up to 200kg.

3.3 Intended purpose

The changing bed is intended for use in private homes, institutions, day care centers and similar institutions and for people with physical or mental disabilities. The product is designed to provide optimum working conditions for caregivers. The changing bed can be used in both dry and wet rooms (conditions) but must not be used as a shower bed.

The height of tabletop (changing bed) can be adjusted from 30-100 cm using the hand control and can be folded up for space saving when not in use.

3.4 Intended operator

Reading and understanding this manual will be sufficient training for an intended operator. Children and patients are not considered intended operator.

3.5 Essential performance

The device does not have any function related to basic safety or essential performance. In case of loss or degradation of performance, the user can be lifted off the device.

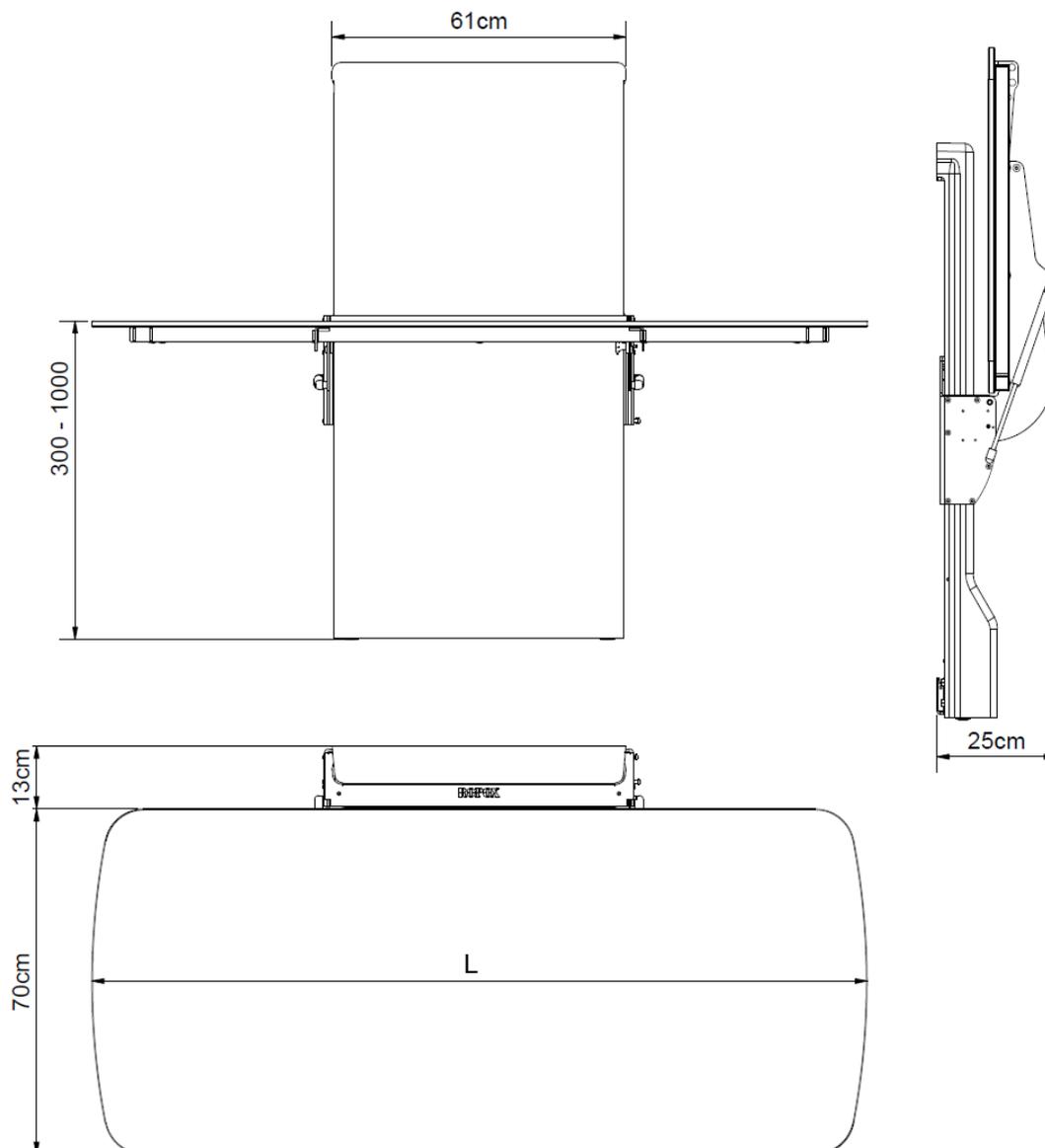
3.6 Complaints and adverse events

Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is located.

3.7 Product dimensions

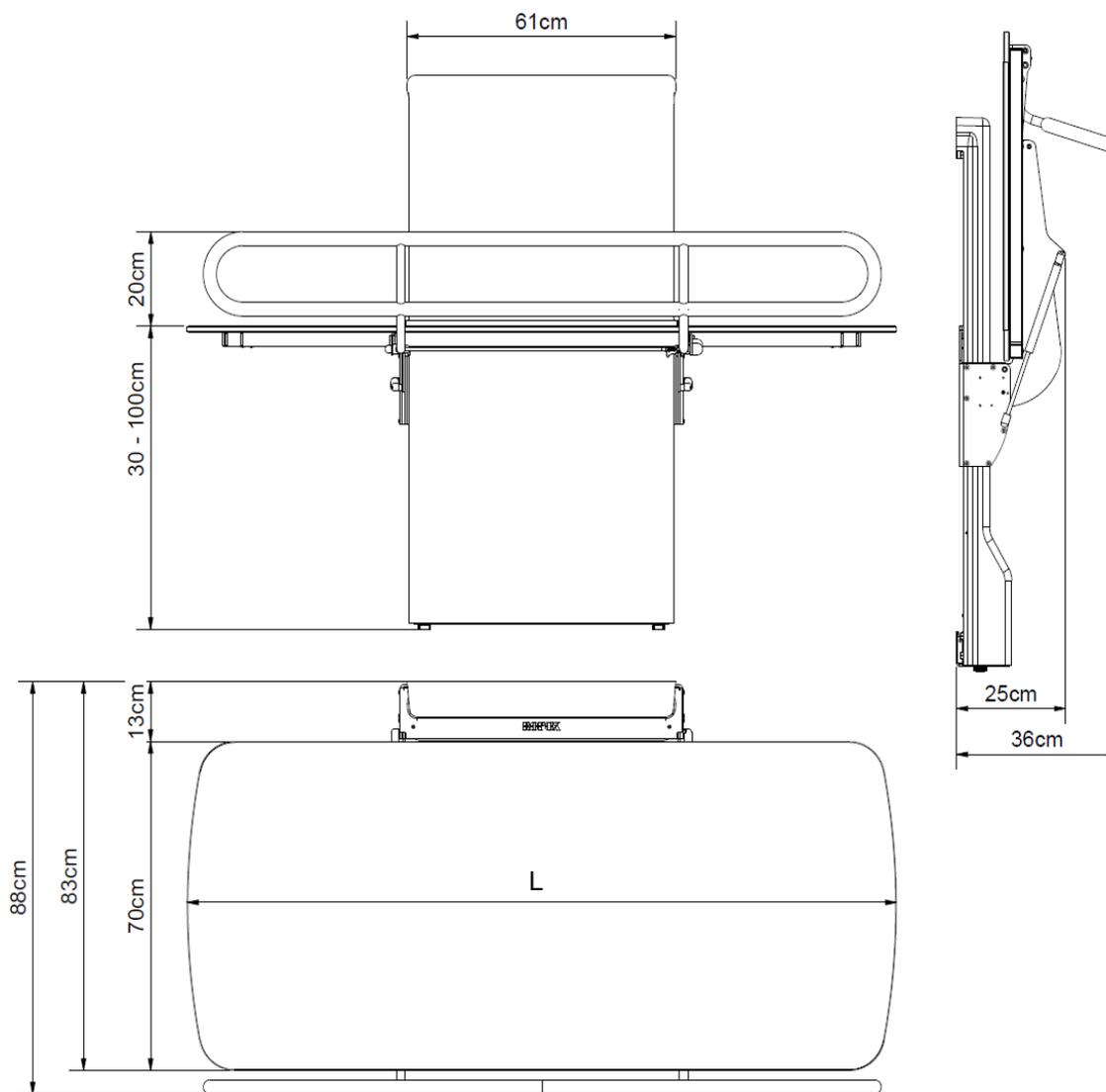
3.7.1 Without bed guard

Model	Length (L)
40-30604	120cm
40-30606	140cm
40-30608	160cm
40-30610	180cm
40-30611	190cm



3.7.2 With bed guard

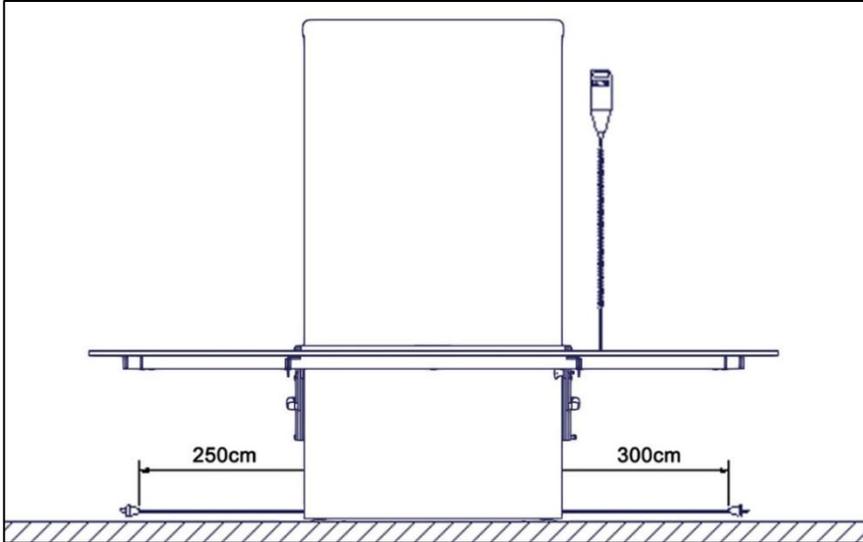
Model	Length (L)
40-30804	120cm
40-30806	140cm
40-30808	160cm
40-30810	180cm
40-30811	190cm



4. Instructions for use

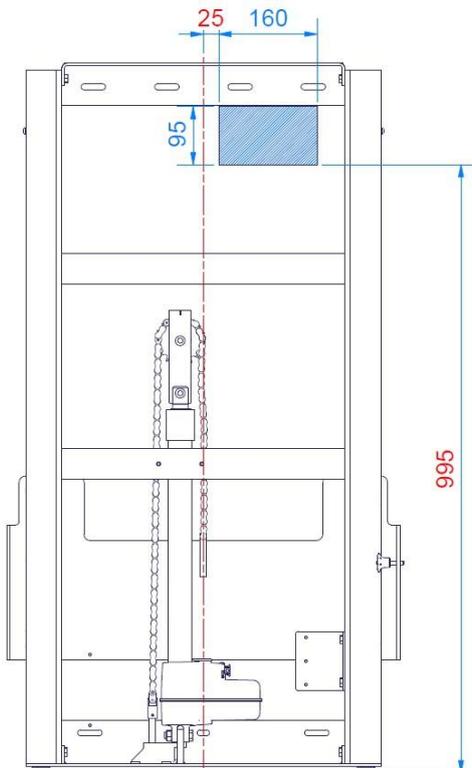
4.1 Installation of product

4.1.1 Placement of power socket outside of lifting unit



The main power cable has a total length of approx. 320cm of which 250cm is outside the lifting unit. The cable can be pulled out in either left or right side.

4.1.2 Placement of power socket behind lifting unit



The following drawing illustrates the space that can be allocated for an electrical outlet without interfering with the movement of the unit. The blue-hatched area is the safe area for placing an electrical outlet and cover. Placing the outlet and/or cover outside of this area may result in product damage and malfunction.

If possible, hold off on the final position of the mains cable and cover in the wall, until the lifting unit has been fully placed and fixed to the wall (steps for mounting the unit are detailed later in this manual). Then raise the sled to the top-level position and use the cutout to ensure a safe fit of the electrical cable and cover with proper clearance all around.

Note: Depth of electrical outlet (incl. wire) must not exceed 65mm from the wall

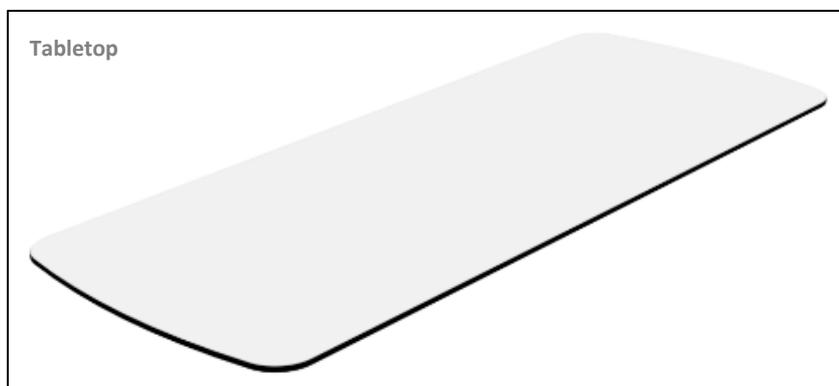
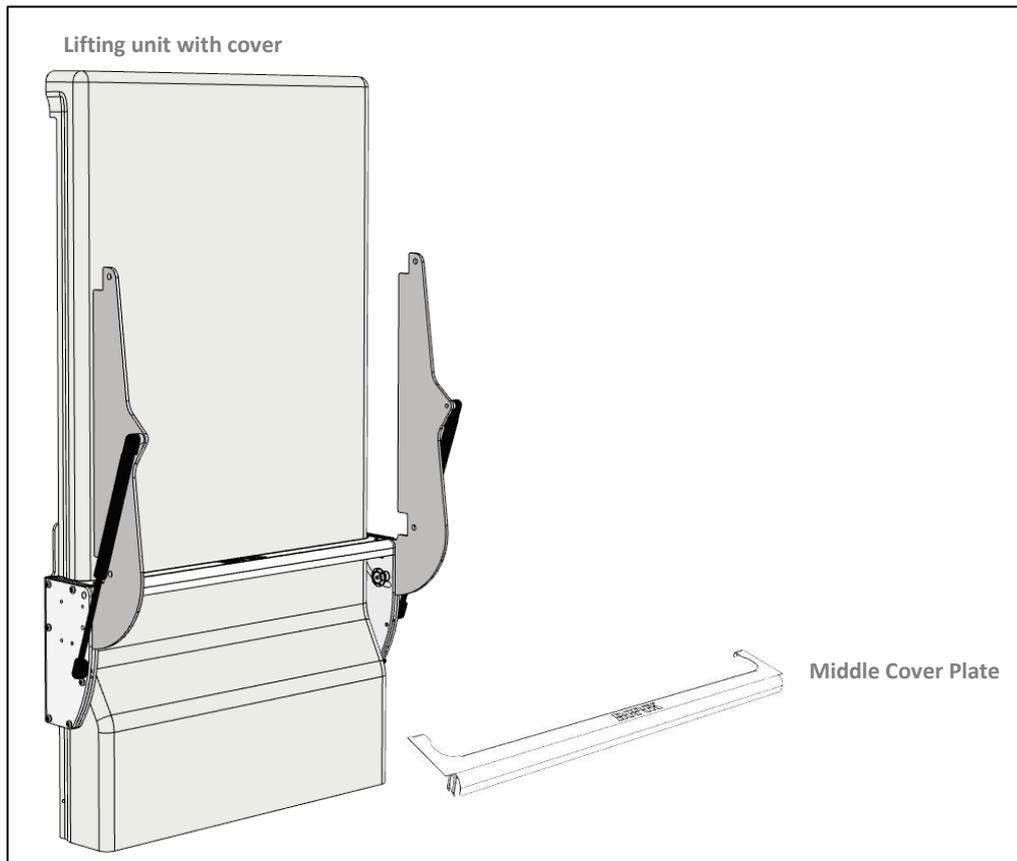


Caution!

If you have other objects mounted right next to this changing bed, you have to consider the risk of trapping, and therefore consider a safe distance to the other objects.

4.1.3 Receiving the Changing Bed

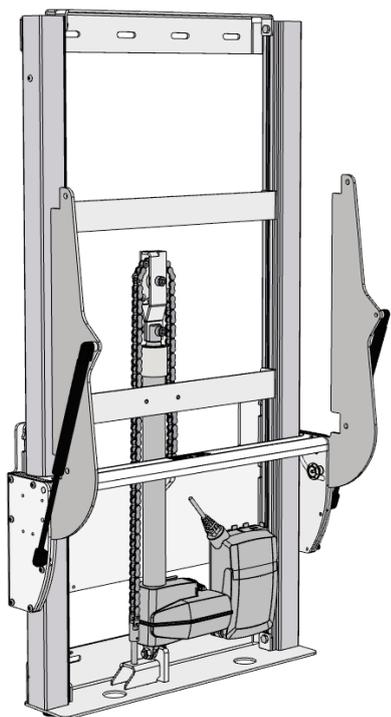
The Ropox Vario Changing Bed will come in two packages. One for the “Lifting unit” and one for the “tabletop”.



4.1.4 Remove the cover

The plastic cover can slide up and released from the lifting unit, or it can be clicked out by pulling it forward.

!! Take care not to scratch the plastic cover in the process !!



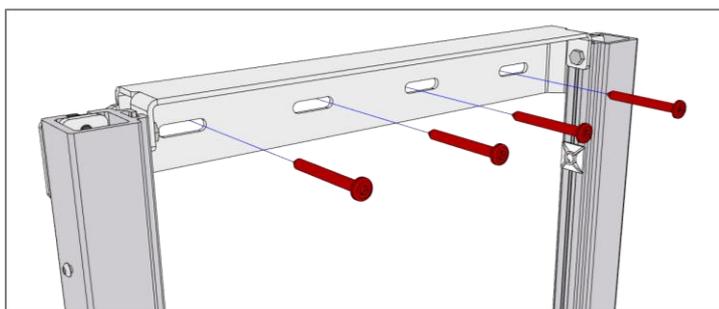
4.1.5 Mounting to the wall

Place the lifting unit in the desired location. Be especially aware of any items on the floor and wall that might be in the way of the product during its full movement (30-100cm from the floor)

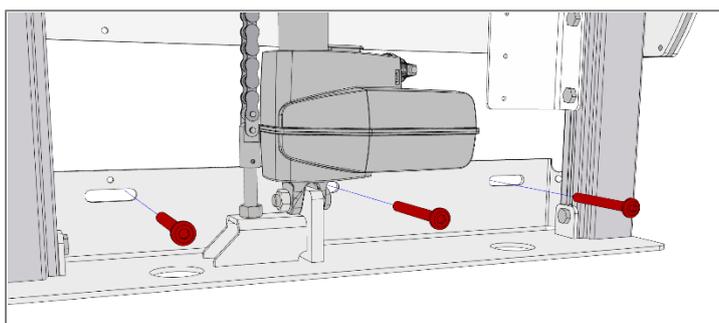
Attach the frame securely to the wall by using adequate bolts and rawlplugs suitable for the type of wall construction / material on site.

The changing bed is supplied with a set (7 pcs) of screws and rawlplugs, which are ONLY intended for mounting the unit in a concrete wall. If the unit is to be mounted on another kind of wall, suitable plugs and screws for that wall type must be used. The Ropox Changing bed is tested according to a load of up to 200kg applied to the changing bed.

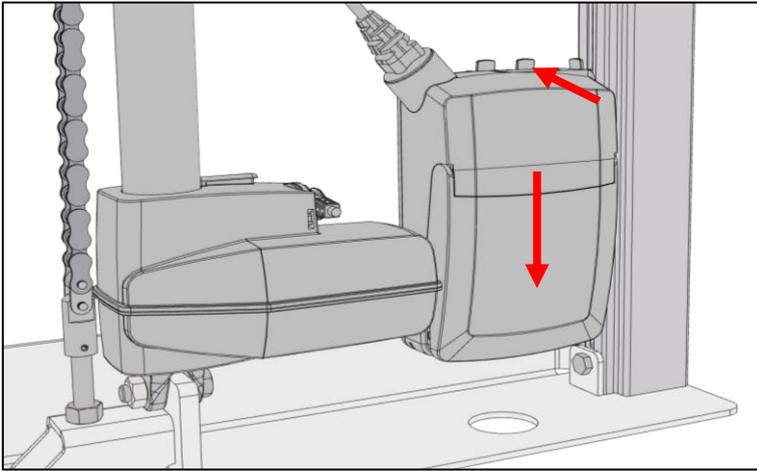
The attachment holes can be marked up on the wall, four possibilities in the top, and three in the bottom of the frame. Place the frame against the wall and make sure it is horizontal. The frame is standing on two adjustable feet. Adjust these if the floor is uneven or has a tilt, until the top of the lifting unit is level. Mark out the hole locations. Remove the frame and drill the holes.



Maximum pull force for each of the four screws in top of the unit: 40kg



	<p>Note!</p> <p>Make sure that no dust or other obstacles are interfering with the rollers, chain, sprocket, or gas springs. This can cause malfunction and damage the system.</p>
	<p>Caution!</p> <p>It is important that the frame is screwed securely to the wall. If the frame comes loose, a person may fall off the changing bed.</p>



To gain access to all the bottom holes, the control box will need to be temporarily removed. This is done by unlocking it from the holder at the top, pressing it back and sliding the control box down.

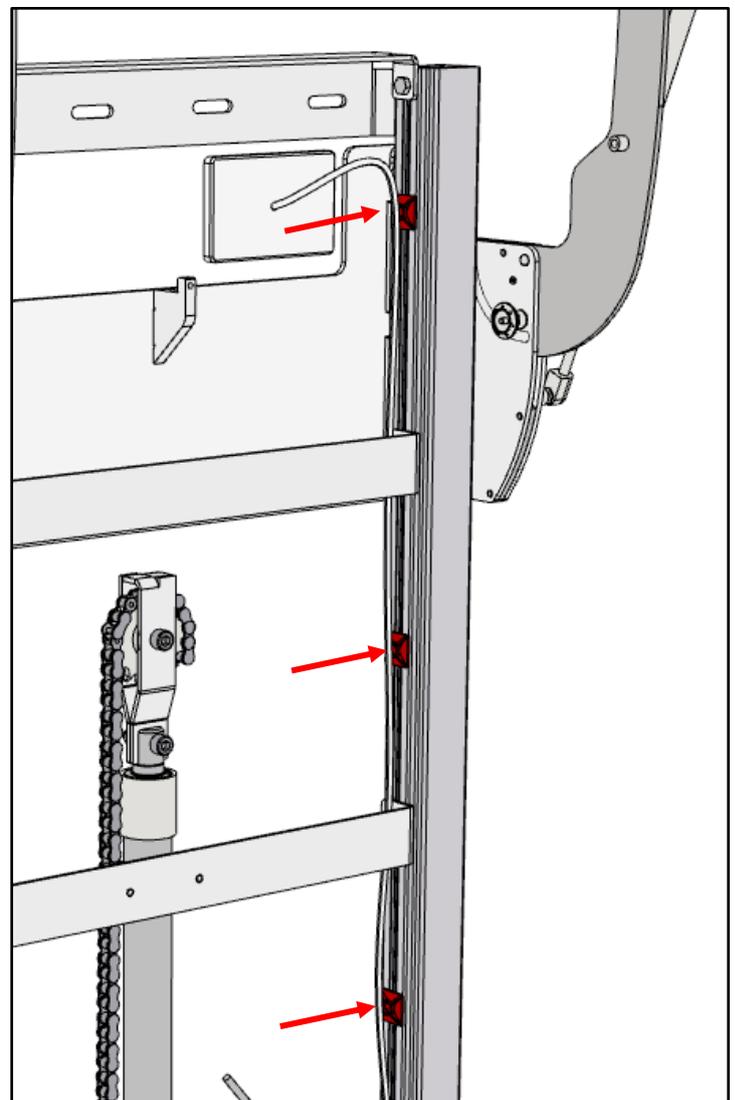
Remember to securely re-attach the control box, before putting the cover back on the lifting unit.

4.1.6 Mounting the wires

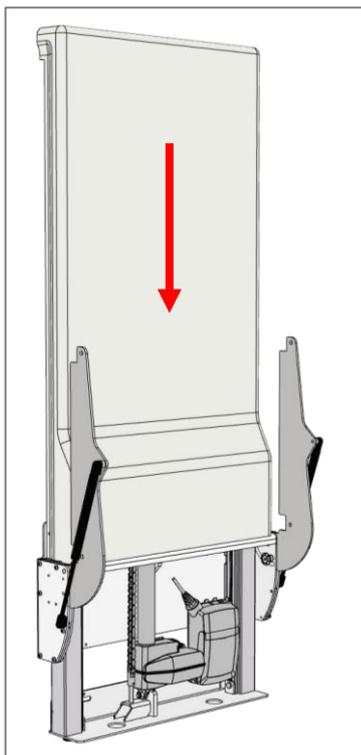
If the electrical outlet is placed behind the unit, It is crucial to control the cable from the outlet, down to the control box. This is to ensure that the sled will not squeeze, cut or otherwise damage the cable during product use.

Fix the mains cable to the brackets (highlighted by the arrows) using the included zip-ties, making sure the cable is tight with no loose parts that could get trapped by the moving sled.

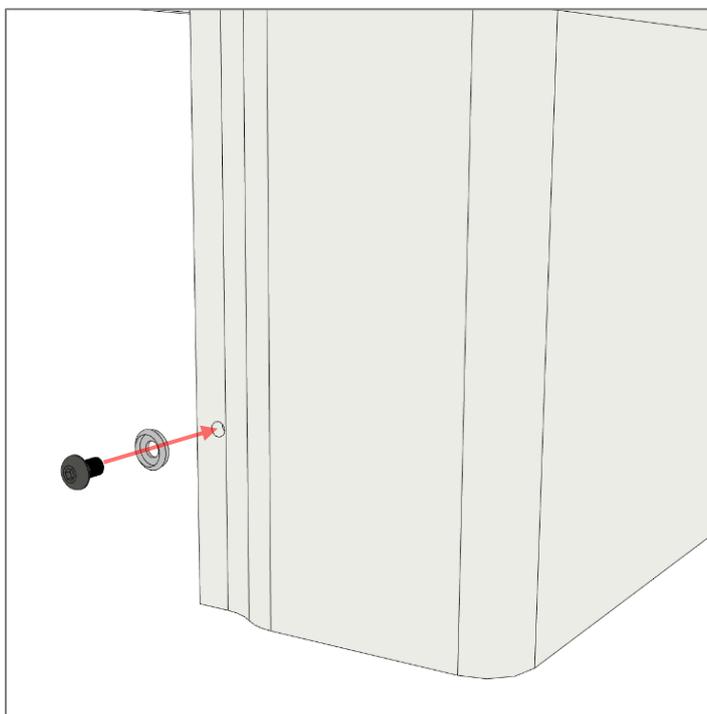
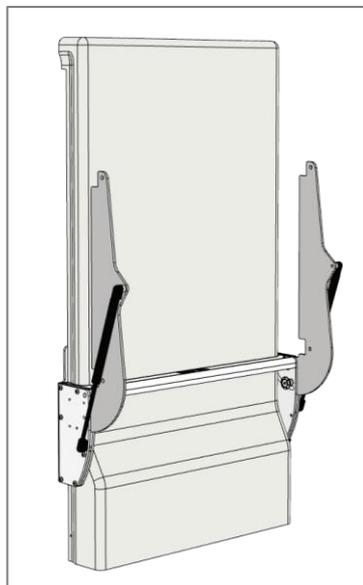
Once everything is placed, perform a test-run of the full length of travel down and up again to ensure that nothing is in danger of entrapment or collides with the moving sled.



4.1.7 Re-mount the plastic cover

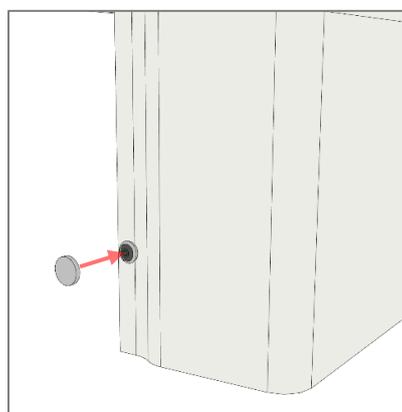


The cover can either be clicked in place from the front or slide down from above. Make sure that the cover reaches the floor and is in contact with the wall at the top. This step can also wait until the end of the installation process if ease of access to the electrical components is required.

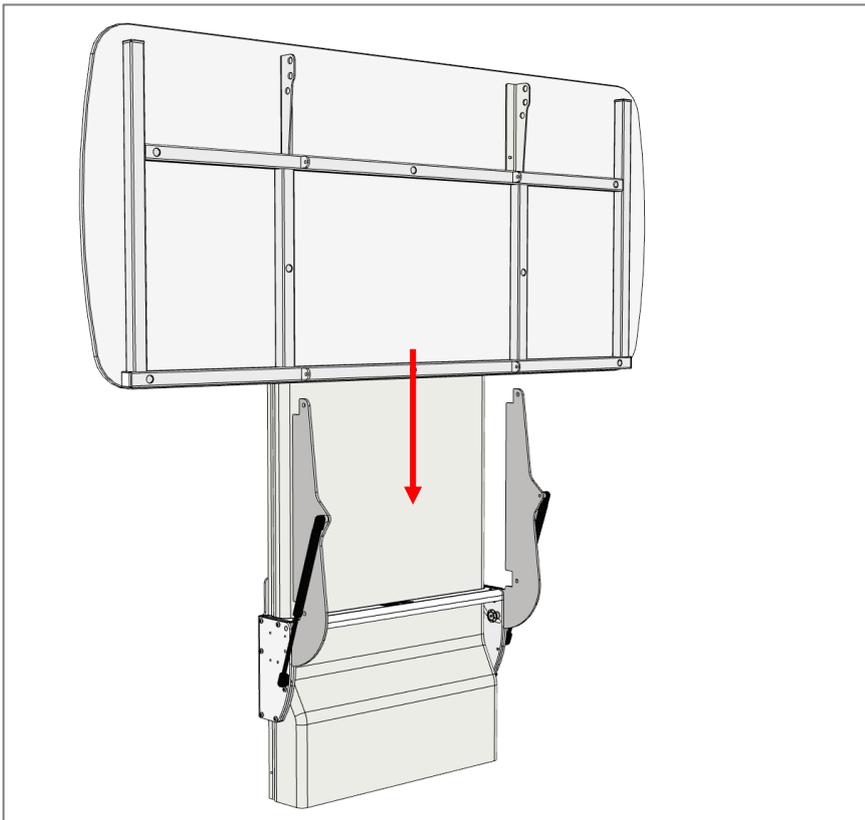


When all the wires have been attached and screws fastened, the cover must be fixed in place. Use the attached M5x8 screws and screw button cover. This step can wait until the end to make it easier to access the control box and wires if needed.

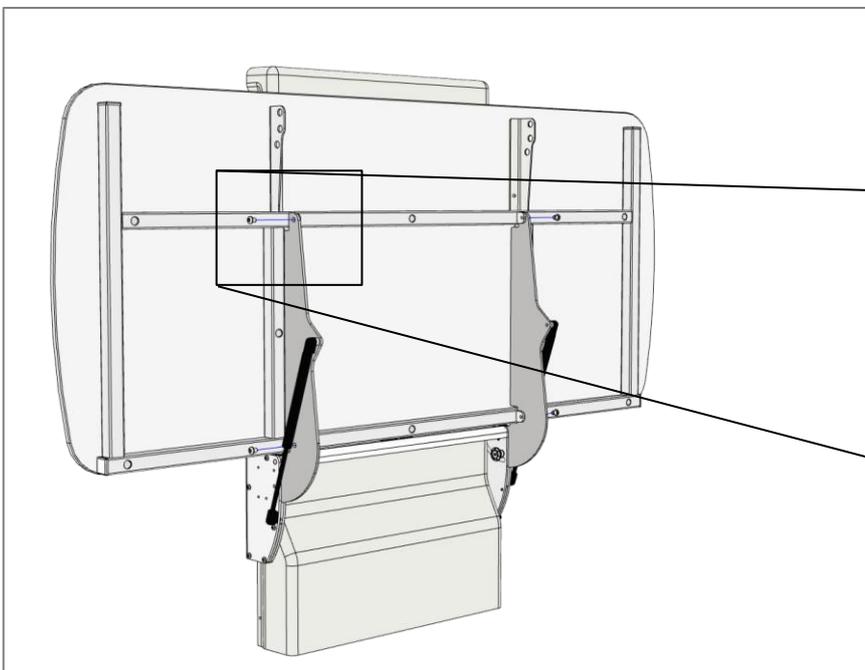
Once the screw is tightened, click on the white button plastic cover.



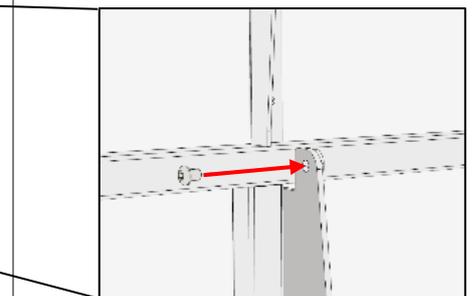
4.1.8 Mount the Tabletop on the Lifting unit



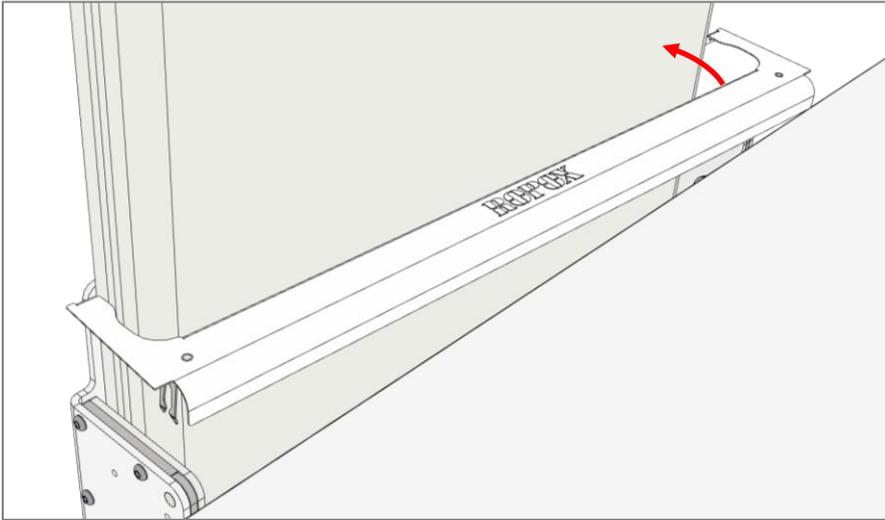
Slide the tabletop in between the lifting unit and the support arms on the lifting unit. It is an advantage to be two persons when doing this.



Fasten the tabletop to the Lifting unit with 4 pcs. M8x12 through the bushings in the support arms.



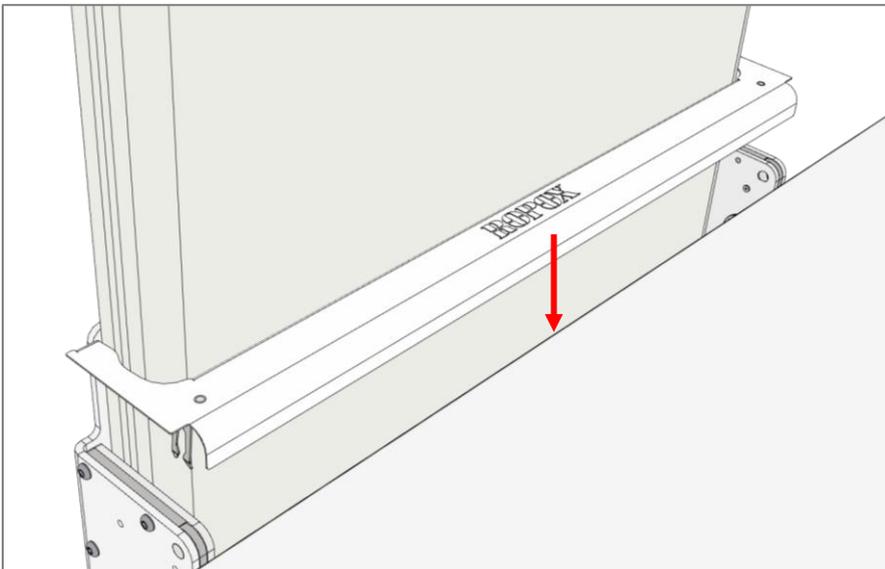
4.1.9 Mount the middle cover plate



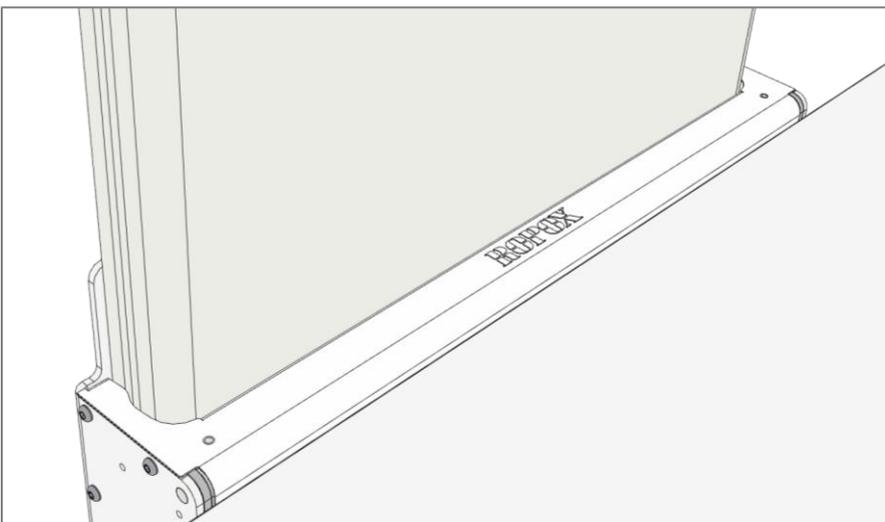
If the large plastic cover has not yet been installed, do this before starting this step.

Set the middle plate against the plastic cover at an angle, as shown.

Rotate the cover into place



Push it down until you hear the locks snap into place



Double check that it sits flush and firmly on the lifting unit



Warning!

The product should always be able to travel the full range of actuation without colliding with objects. Failing to do so will compromise the product stability. Special care should be taken in ensuring that no children or adults are sited under the product as severe injury from entrapment may occur.

- After mounting, with the cover off, make sure that the chain is in correct position on the sprocket, also check that cable plugs are connected correctly to the control box.
- Check that no cables can be trapped or squeezed during the full range of movement of the product
- Connect the main power, and the changing table is ready to be used.

4.2 Operating the product

Before starting use of this product, be sure that “main power” has been connected as described in electrical connections.

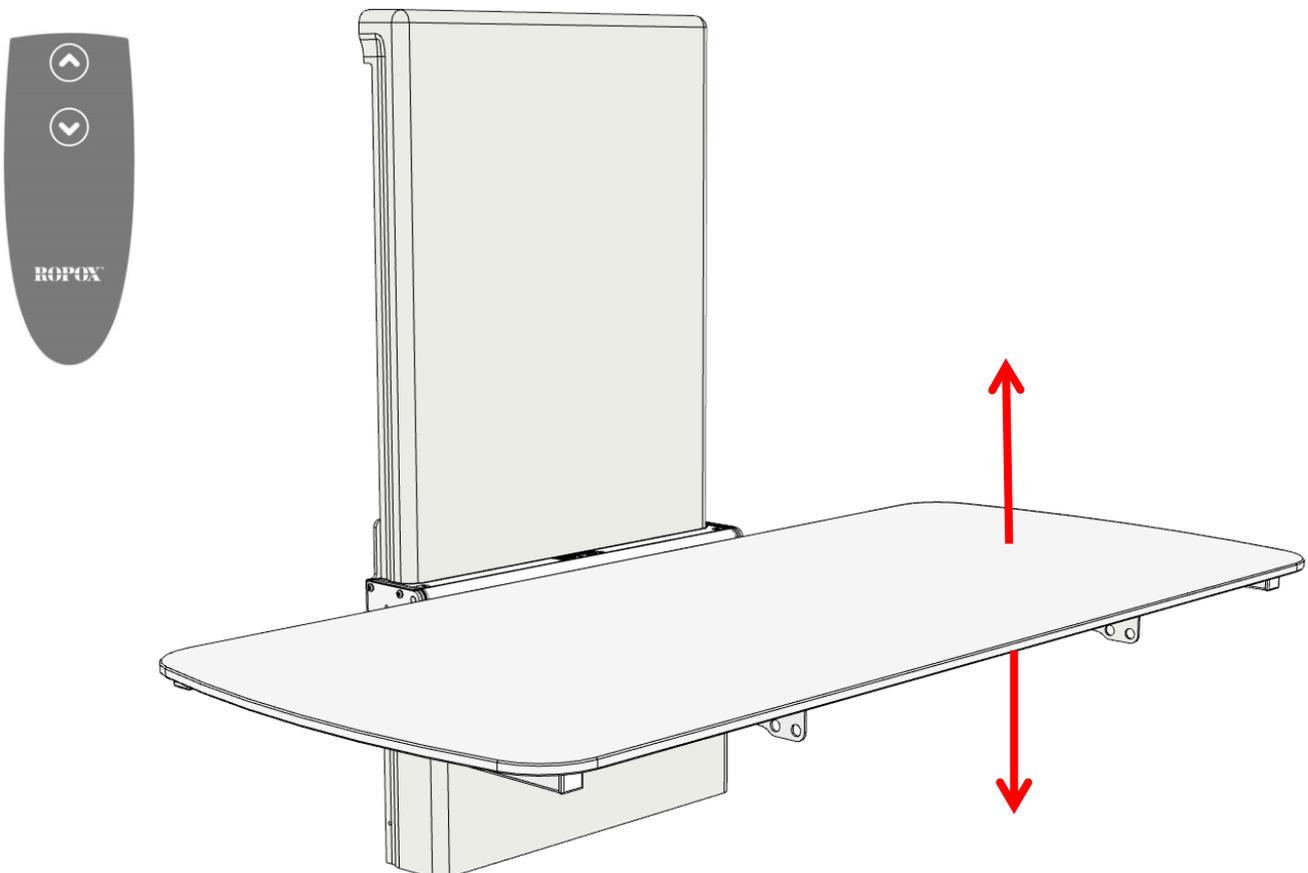


Warning!

Before use always make sure that mains cable and hand control cable will be able to travel freely without the risk of squeezing or disconnecting the product as result of the movement.

4.2.1 Actuation of the product

The product is operated with the spiral cord hand control. Arrow up will move the product upwards, and arrow down will move the product downwards.



	<p>Warning!</p> <p>The product should always be able to travel the full range of actuation without colliding with objects. Failing to do so will compromise the product stability. Special care should be taken in ensuring that no children or adults are sited under the product as severer injury from entrapment may occur.</p> <p>Only adjust the product in height position, when the table-top is in horizontal position</p>
---	--

	<p>Note!</p> <p>The control buttons are «push and hold». Height adjustment stops as soon as the button is released. This is an important safety measure.</p>
---	---

4.2.2 Operation of the bed guards

Vario is not supplied with bed guard as standard. This can be ordered as an accessory.

To operate the bed guards, pull the rubber tubing placed under the tabletop to release the locking mechanism. The bed guard can then be pivoted to the desired mode.



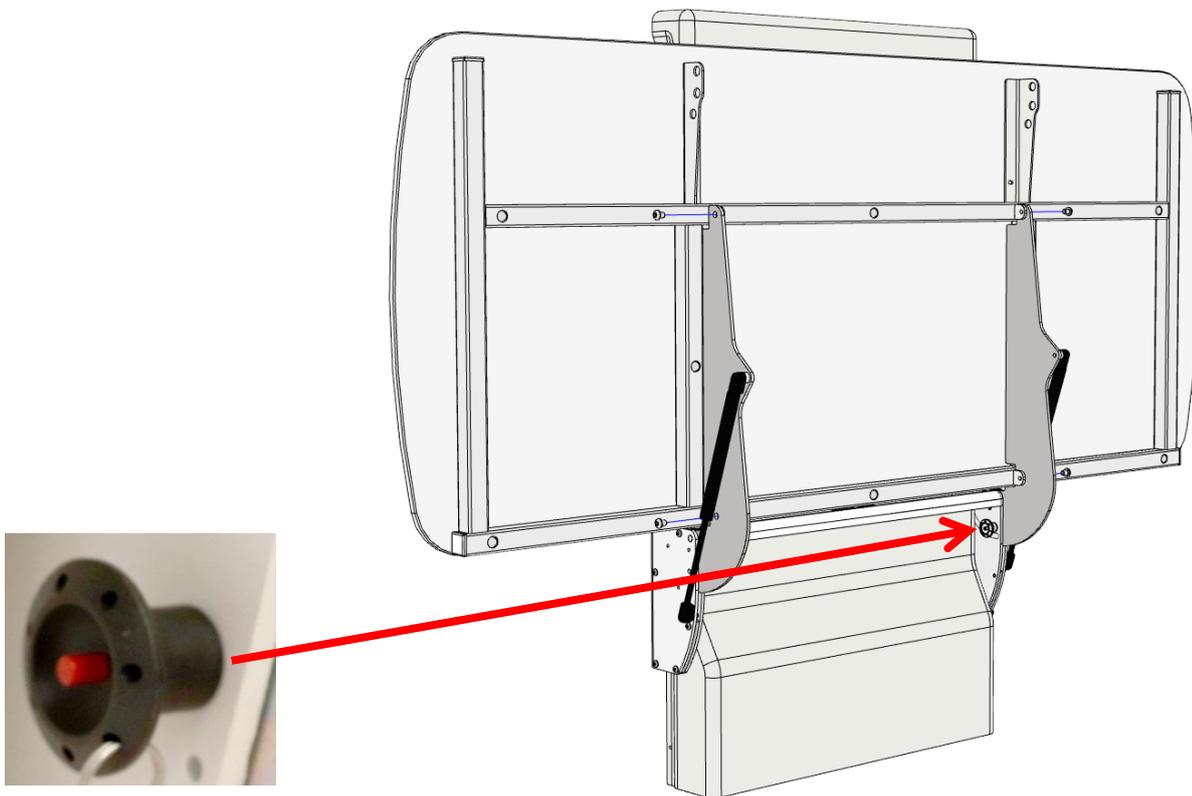
	<p>Warning!</p> <p>Make sure that the bed guard is locked securely in place when in use. Locking is checked by shaking the bed guard back and forth ensuring that the locking pin is fully engaged.</p>
---	--

4.2.3 How to fold changing bed up and down

The changing bed can be secured against inadvertent folding while in the upright position by locking the table with the locking pin.

When worktop is folded up, press and hold the red button while inserting the split. The changing bed is now locked against folding down. Verify that the lock is engaged by pulling the worktop.

For folding changing bed in downwards position, remove locking pin by pressing and holding the red button, while removing the split. The top can now be lowered by hand.



Note!

Prior to folding worktop in upright position, bed guard must be turned underneath worktop.



Warning!

Always make sure worktop is securely locked in upright position with locking pin when left in this position. Check changing table is locked by pulling the worktop to ensure locking pin is fully engaged and worktop cannot be lowered.



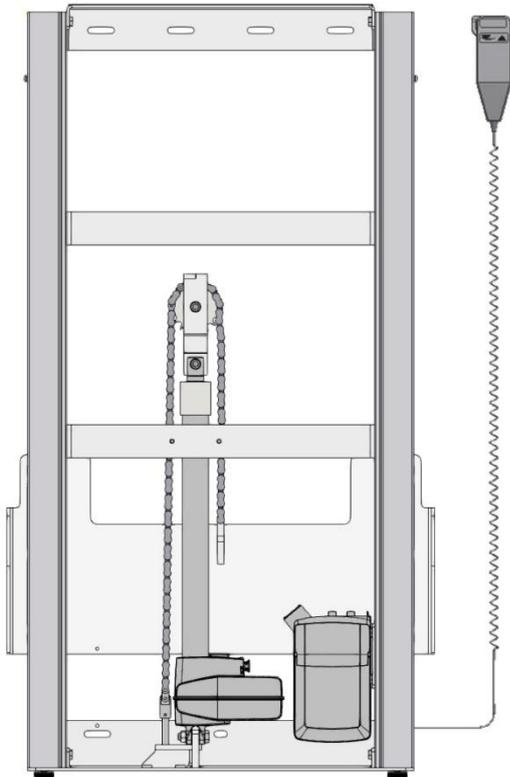
Warning!

NEVER leave a person on the changing bed unattended - not even for a very short period.
If two changing beds are mounted next to each other, it's recommended to mount a side cover between, to avoid the trapping risk.

4.3 Electrical component diagram

4.3.1 Wire diagram

The changing bed is delivered with the control box already mounted on the frame. The diagram shows how the cables which are connected to the control box.

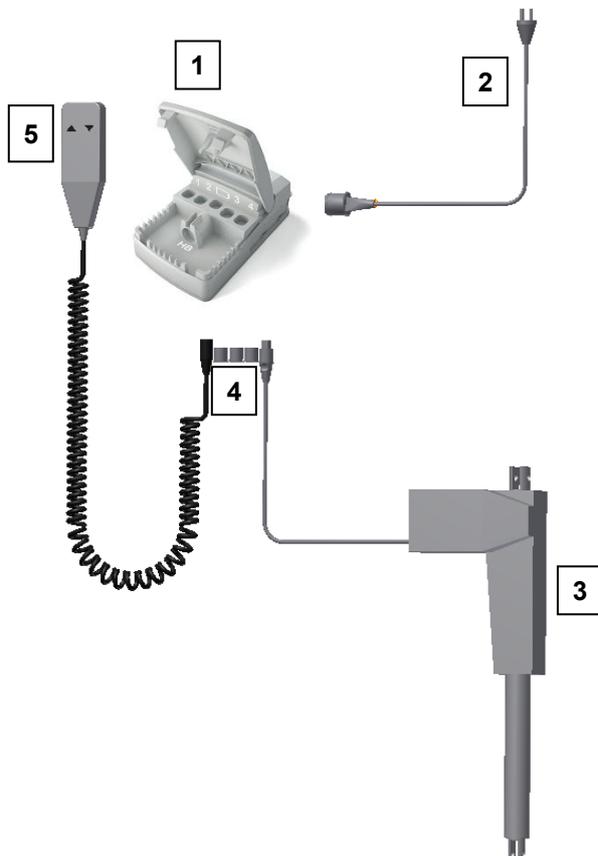


All the plugs are watertight, and therefore they can be a little tricky to connect / disconnect. Make sure that the plugs are positioned correctly before they are pushed into the sockets at the control box. The plugs must be pushed into the sockets until the "O-ring" is no longer visible.

Motor, control box and control switch apply to IP66. This means that they are dust tight and protected against heavy seas, or powerful jets of water.

The electronic system is designed for periodical use only, this means a max. duty cycle of 10%; 2min on /18min off.

1. Control box
2. Mains cable 230V
3. Motor, connects to socket 1
4. End plugs, connects to socket 2, 3 & 4
5. Hand control, connects to HB socket



4.3.2 Connecting cables

The changing bed is delivered with the control box already mounted on the frame.

Motor cable connects to socket 1.

Sockets 2 and battery are not in use and are blocked.

Sockets 3 & 4 are capped from factory

Hand control connects to "HB".

Mains cable connects to the socket at the top of the box.

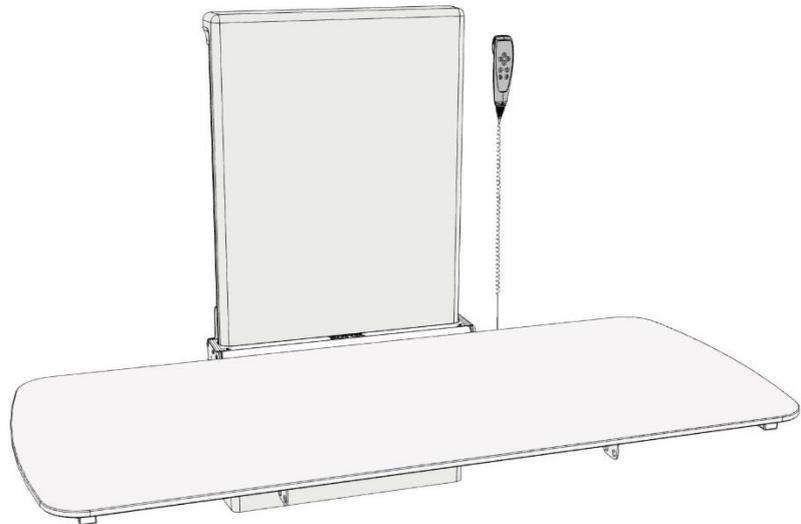


Note!

To obtain the full IPX6 value, it is very important that all the plugs have been pressed firmly into the sockets and the "O-ring" is no longer visible.

4.3.3 Placement of the hand control

Bracket for hand control can be placed on the wall as shown.



Caution!

Hand control should be placed out of reach of children.



Warning!

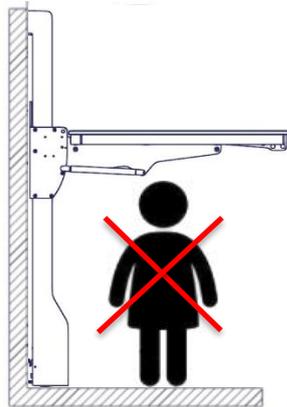
The product should always be able to travel the full range of actuation without colliding with objects. Failing to do so will compromise the product stability. Special care should be taken in ensuring that no children or adults are sited under the product as severer injury from entrapment may occur.

4.4 Residual risk

Warning



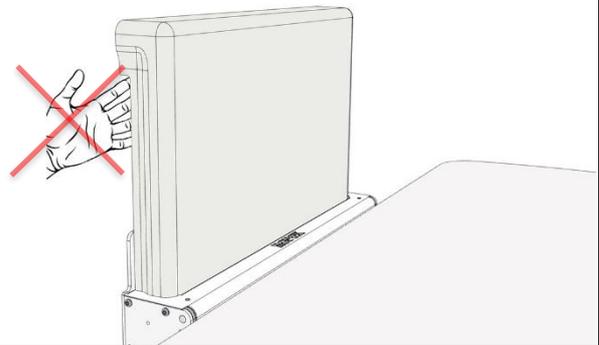
Be aware that there are no persons under the changing bed when it is moving down, as a danger of impact, entrapment and head trauma may occur.



Caution



Do not place the hand in the slits of the cover, as a danger clamping may occur.



5. Trouble shooting

Problem	Solution
The changing bed does not move up or down when pressing the hand control	Check if: <ul style="list-style-type: none"> ➤ 100-230 V is connected, and if the power is on. ➤ The engine is connected to the control box. ➤ The hand control is connected to the control box. ➤ The actuator is overloaded. (NOTE: For every 2 minutes of activity, it needs 18 minutes of rest).
Hand control is defect	Check if: <ul style="list-style-type: none"> ➤ The washbasin is height adjustable by means of another control.
When pressing the UP and DOWN buttons, only "click" sounds come out of the control box – no movement	<ul style="list-style-type: none"> ➤ The plug may not be mounted correctly. ➤ Demount all cables from the control box, and mount again. ➤ A "reset" might be needed. See the instructions below under "Maintenance".
The frame seems loose or unstable	<ul style="list-style-type: none"> ➤ Tighten all screws of the frame, cf. mounting instructions.
The changing table cannot be height adjusted or the adjustment feels very difficult	<ul style="list-style-type: none"> ➤ Check that there are no jammed objects preventing the height adjustment.

6. Maintenance

	<p>Notification!</p> <p>Failing to comply with periodic maintenance may result of degrading of product function and safety.</p>
---	--

6.1 Periodic maintenance

The Vario changing table is maintenance free. For reasons of safety and reliability, we recommend inspection of the unit once a year:

At inspections, the following must be checked:

- Check that all bolts and screws have been tightened securely.
- Check that the frame can move freely and unhindered from bottom to top position without problems.
- **Resetting the Changing Bed:** Press and hold down both buttons on the control. Keep the buttons depressed until the beep tone stops beeping. Then move the frame to bottom position for resetting. Check that the movement is even and smooth.
- Check that all cables are mounted correctly and are in order and undamaged.

7. Cleaning

Cleaning can be done with lukewarm water and a suitable all-purpose cleaning agent. Use a cloth or soft sponge to wash the product. Dry the product with a wrung cloth.

Mattresses and cushions

Cover:

Recommended cleaning detergent: Normal soap or alcohol. The alcohol can be used undiluted. The cover can be removed, and machine washed separately at max 95°.

Foam:

Cannot be washed

	<p>Note!</p> <p>Do not use cleaning agents containing abrasive e.g. scouring powder, steel wool, scouring sponge.</p> <p>This product is not designed to be sterilized, autoclaving and sterilization beyond normal cleaning is may possibly change the product safety and function.</p>
---	---

Disinfection

Pre-approved disinfection products

Name	Resolution
Diversey Suma Tab D4	1 000 ppm
Rodalon ®	Etanol 70 % v/v
Triamin Disinfection Wet Wipes	pH 8,5 – 9,5
Oxivir Excel Wipe	pH 2
Incidin OxyWipe S	

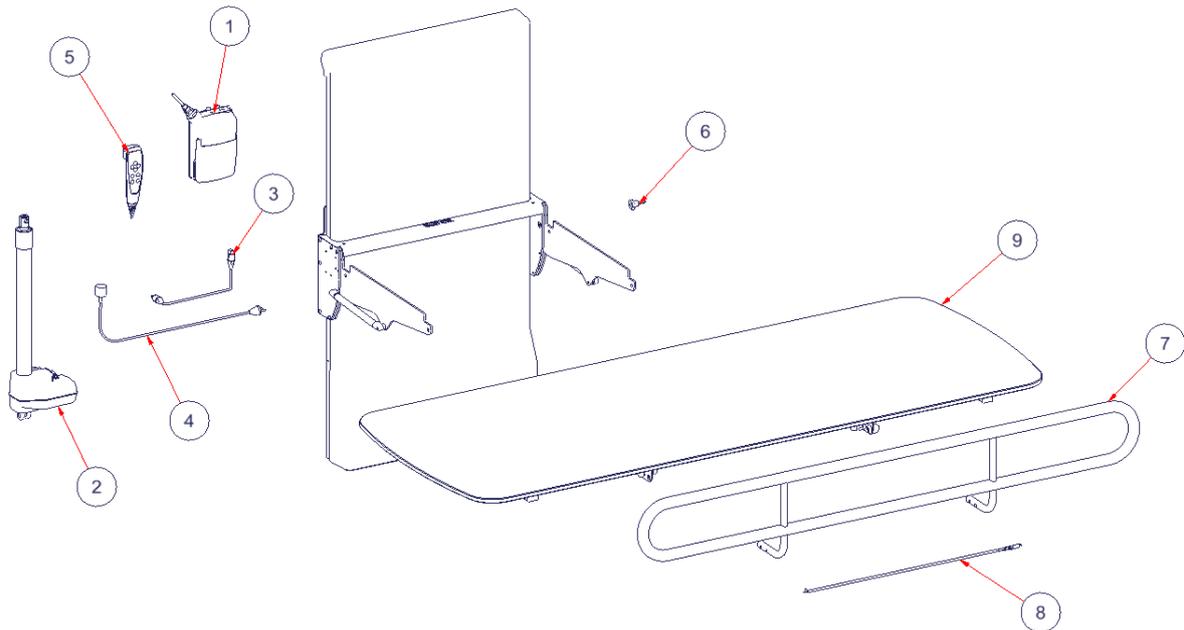
8. Environmental protection

The product is not intended to be disposed as municipal waste. Proper disassembly, sorting and disposal of components must be done by waste disposal professionals.



Part	Disposal recommendation
Tabletop	Hard plastic or phenolic composites
Bed guards	Steel waste
Lifting unit	Steel and aluminum
Control box	Electronics
Actuator	Electronics
Hand control	Electronics

9. Spare parts



#	Name	Part number
1	Control box CA30	97001691
2	Actuator LA40	97001799
3	Motor cable L=300mm	97001738
4	230V cable	97000427
5	Hand control	97001688
6	Ganter Pallet lock with axial protection	95170115

#	Name	Tabletop Length				
		120cm	140cm	160cm	180cm	190cm
		40-30604-1	40-30606-1	40-30608-1	40-30610-1	40-30611-1
7	Bed guard complete *	40-30196-2		40-30197-2		
8	Parts for bed guards	40-30198-1		40-30199-1		
9	Tabletop Vario	40-30891-1	40-30892-1	40-30893-1	40-30894-1	40-30895-1

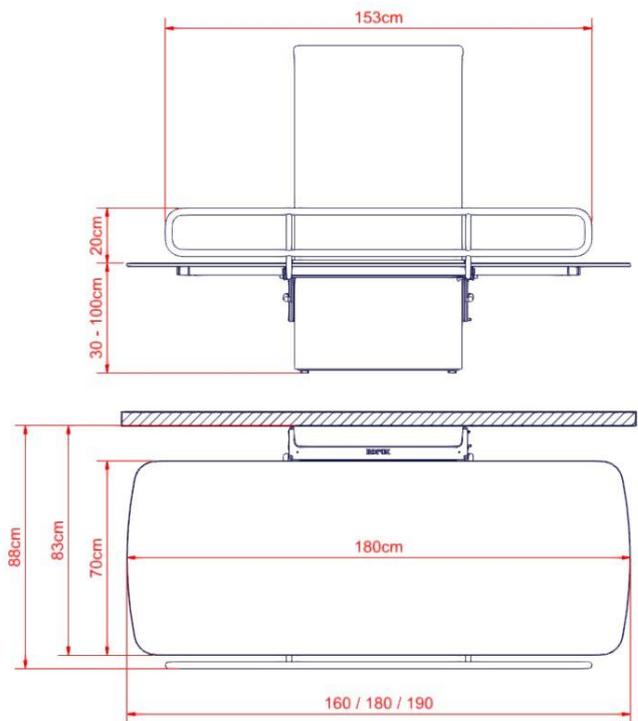
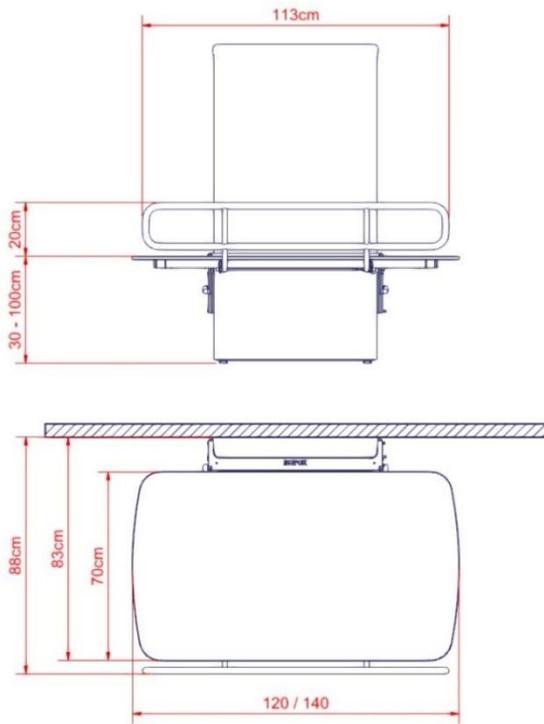
*Bed guards complete contains necessary parts for mounting.

*Bed guards are accessories

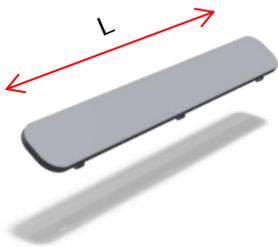
10. Accessories

10.1 Bed guard

Part number	Size	Pcs.
40-30196-2	L= 120cm, 140cm	1
40-30197-2	L= 160cm, 180cm, 190cm	1

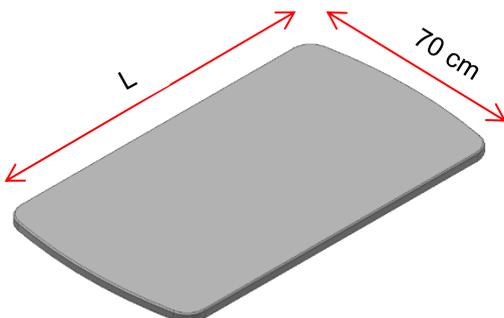


10.2 Cushion for bed guard



Item number	Size	Pcs.
40-25782-1	L= 120cm, 140cm	1
40-25783-2	L= 160cm, 180cm, 190cm	1

10.3 Mattress



Item number	Size	Thickness
40-25760-1	Madras L=120 cm w/underlay	3 cm
40-25795-1	Madras L=140 cm w/underlay	3 cm
40-25796-1	Madras L=160 cm w/underlay	3 cm
40-25764-1	Madras L=180 cm w/underlay	3 cm
40-25765-1	Madras L=190 cm w/underlay	3 cm

11. Electromagnetic compatibility

11.1 Suitable Environments

The device is suitable for use at home, at daycare centers, at day centers for persons with physical or mental disabilities or at hospitals except near active HF surgical equipment and the RF shielded room of a medical electrical system for magnetic resonance imaging, where the intensity of electromagnetic disturbances is high.

11.2 Basic safety and Essential performance

The device does not have any function related to basic safety or essential performance. In case of loss or degradation of performance, the user can get on and off the product.

11.3 Adjacent and stacked use

	<p>Warning!</p> <p>Use of this equipment adjacent to or stacked with other equipment should be voided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally</p>
---	--

11.4 Cables

Cable component	Length
Power cable	2,5m
Hand control spiral cable	Approx. 5 m extended

	<p>Warning!</p> <p>Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.</p>
---	---

11.5 Compliance levels for emissions and immunity

Phenomenon	Test method	Class	Group
Conducted RF emissions	EN 55011	Class B	Group 1
Radiated RF emissions	EN 55011	Class B	Group 1
Harmonic current emissions	EN 61000-3-2	Class A	-
Voltage changes, voltage fluctuations and flicker emissions	EN 61000-3-3	-	-

Phenomenon	Test method	Immunity test level
Electrostatic discharge immunity	EN 61000-4-2	+/- 8 kV contact +/- 2, 4, 8, 15 kV air
Electrostatic discharge immunity – I/O SIO/SOP ports	EN 61000-4-2	+/- 8 kV contact, +/- 2, 4, 8, 15 kV air

Phenomenon	Test method	Immunity test level
Radiated RF electromagnetic field immunity	EN 61000-4-3	10 V/m 80 MHz to 800 MHz 20 V/m 800 MHz to 2.5 GHz 10 V/m 2.5 GHz to 2.7 GHz 80 % AM 1 kHz
Immunity to proximity fields from RF wireless communication equipment	EN 61000-4-3	385 MHz, 27 V/m, 18 Hz PM (50 % duty cycle square wave) 450 MHz, 28 V/m, FM +/- 5 kHz dev., 1 kHz sine 710 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave) 745 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave) 780 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave) 810 MHz, 28 V/m, 18 Hz PM (50 % duty cycle square wave) 870 MHz, 28 V/m, 18 Hz PM (50 % duty cycle square wave) 930 MHz, 28 V/m, 18 Hz PM (50 % duty cycle square wave) 1720 MHz, 28/ V/m, 217 Hz PM (50 % duty cycle square wave) 1845 MHz, 28 V/m, 217 Hz PM (50 % duty cycle square wave) 1970 MHz, 28 V/m, 217 Hz PM (50 % duty cycle square wave) 2450 MHz, 28 V/m, 217 Hz PM (50 % duty cycle square wave) 5240 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave) 5500 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave) 5785 MHz, 9 V/m, 217 Hz PM (50 % duty cycle square wave)
Electrical fast transient/burst immunity – AC power ports	EN 61000-4-4	+/- 2 kV 100 kHz repetition frequency
Electrical fast transient/burst immunity – I/O SIO/SOP ports	EN 61000-4-4	+/- 1 kV 100 kHz repetition frequency
Surge immunity – AC power ports	EN 61000-4-5	Line-to-line: +/- 0.5, 1 kV line to line/neutral
Immunity to conducted disturbances induced by RF fields – AC power ports	EN 61000-4-6	3 V (6 V in ISM bands and amateur radio bands ^a) 0.15-80 MHz 80 % AM 1 kHz
Immunity to conducted disturbances induced by RF fields – I/O SIO/SOP ports	EN 61000-4-6	3 V (6 V in ISM bands and amateur radio bands ^a) 0.15-80 MHz 80 % AM 1 kHz
Power frequency magnetic field immunity	EN 61000-4-8	30 A/m 50 Hz and 60 Hz
Voltage dips, short interruptions and voltage variations immunity	EN 61000-4-11	0 % U _T ; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U _T ; 1 cycle at 0° 70 % U _T ; 10 cycles at 0° 0 % U _T ; 250 cycles at 0°
a) The ISM (industrial, scientific and medical) bands between 0.15 MHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz. The amateur radio bands between 0.15 MHz and 80 MHz are 1.8 MHz to 2.0 MHz. 3.5 MHz to 4.0 MHz. 5.3 MHz to 5.4 MHz. 7 MHz to 7.3 MHz. 10.1 MHz to 10.15 MHz. 14 MHz to 14.2 MHz. 18.07 MHz to 18.17 MHz. 21.0 MHz to 21.4 MHz. 24.89 MHz to 24.99 MHz. 28.0 MHz to 29.7 MHz and 50.0 MHz to 54.0 MHz.		