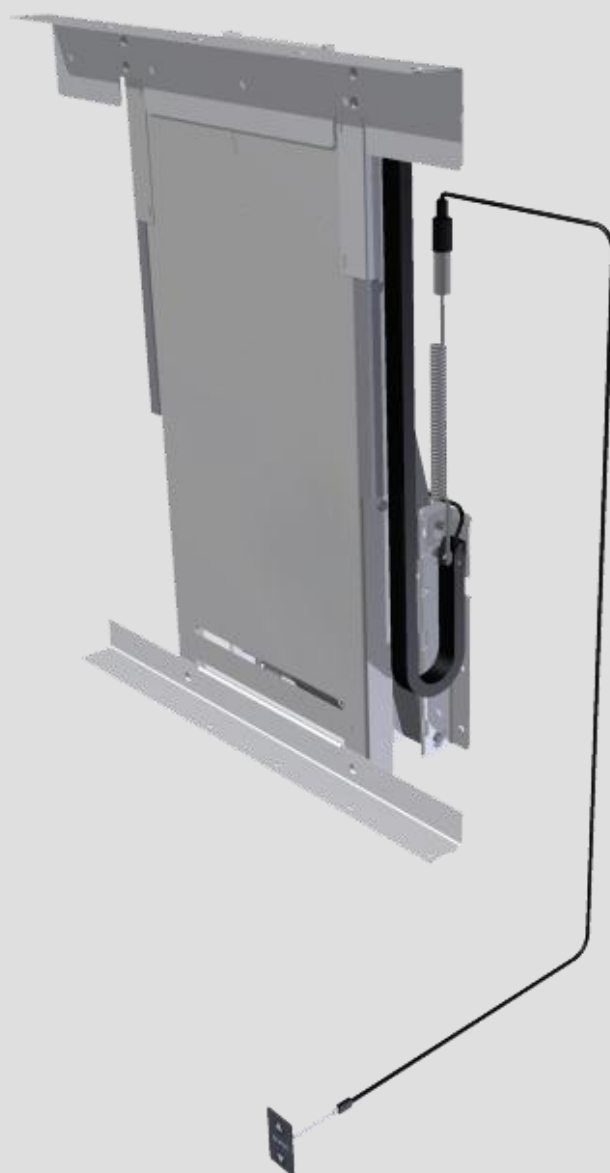




Diagonal, 30-409xx-4

User manual

Mounting instruction

Keep this folder with product at all times!

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1. Introduction

Diagonal is an electric height adjustable frame for wall units.

Diagonal is especially suitable for wheelchair users or persons who normally have difficulties reaching upper shelves in wall units.



This document must ALWAYS accompany the product and be read by and available to users

All users must follow these instructions. It is very important that the instructions have been read and understood prior to operation of the product.

This instruction must be accessible to the user and kept with the product if it is moved to another place.



If this product is electrically adjustable in height there is a risk of trapping. The product must therefore always be operated by or under the guidance of an experienced adult, who has read and understood the importance of section 10 "Safety in use"

The correct use, operation and inspection are decisive factors for efficient and safe performance.

2. Compliance with EU-Directives

This product has CE-marking according to the current Machinery, EMC and Low Voltage Directives and thus complies with the basic safety requirements. See separate CE-declaration, section 13.

If these frames are assembled or otherwise connected with other electrical components, this will be considered a new unit. Consequently, the assembled unit must be subject to a risk assessment, after which the CE mark may be awarded.

3. Application

Diagonal is designed to obtain optimum working height for the user. Diagonal has been designed for height adjustment of wall units. Diagonal must NOT be used as a lifting table or person lifter.

The product must be used indoor, under normal room temperatures and humidity as stated in section 4.



The control unit complies with IP32/II and must always be installed in accordance with the national Heavy Current Regulations or corresponding national or international standards.

4. Technical data

Product name:	Diagonal
Item numbers:	Item numbers: Width of wall units 40-180 cm : 30-409xx- X = 04-18
Material:	Welded steel tubes St. 37 and various plastic components.
Surface treatment:	Blue chromate, powder coating.
Power supply:	230VAC / 2,5A / 50Hz
Standby primary:	1W
Control voltage:	24VDC
Duty circle.:	Max. 4 min. active then 18 min. pause
Max. load of frame:	120 kg evenly distributed over the frame
Speed:	Approx. 2 ^{mm} / _{sec} - Approx. 23 sec for a complete stroke
Temperature:	5-45° C
Air humidity:	5-85% (non-condensing)
Complaints:	See Complaints, page 36
Producer:	Ropox A/S, DK-4700 Naestved, Tlf.: +45 55 75 05 00 E-mail: info@ropox.dk - www.ropox.com

5. Schematic diagram of frame

Its important that electrical connections to control unit are flexible and can move freely within the range of adjustment of frame.

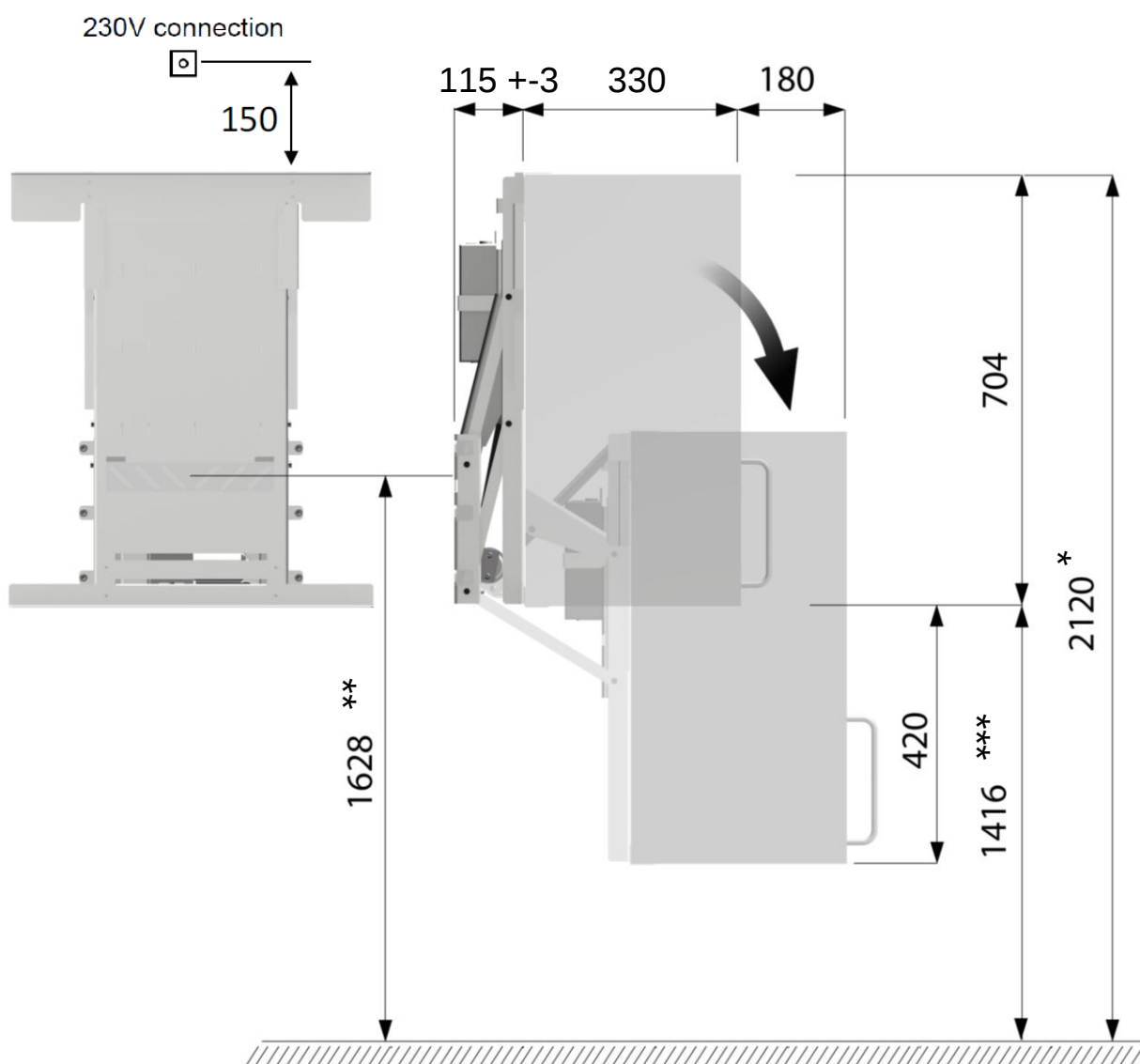
Conditions for schematic diagram:



Height of wall units = **704 mm** – (with another height of wall unit regulate diagram accordingly)

(Wall unit heights that can be used, 704-920 mm)

Height of upper edge of wall unit = **2120 mm** (if another height required, regulate diagram accordingly)



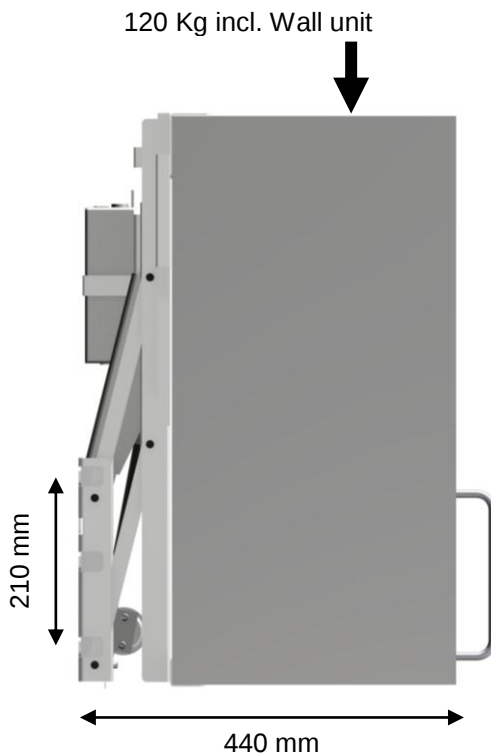
* Height can be individual adjusted

** Depends of height to top of cabinet

*** Depends of height to top of cabinet and cabinet size

5.1 Tips and tricks

5.1.1 Tension of bolt connections to wall



The maximal load must be evenly distributed in the entire wall unit. As example we have put max load in front edge of wall unit. This calculation presupposes fixation of 9 bolts.

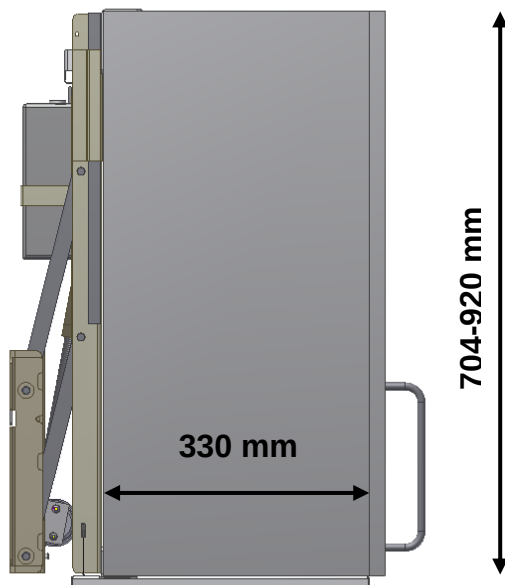
$$\text{Tension upper bolts: } \frac{120 \times 44}{21 \times 9} = 28 \text{ Kg/bolt}$$

Safety factor must be used:

Safety factor 1	⇒	28 Kg/bolt
Safety factor 2	⇒	56 Kg/bolt
Safety factor 3	⇒	84 Kg/bolt

This is subject to min. 9 bolts having optimum fixation to wall.

5.1.2 Wall unit sizes



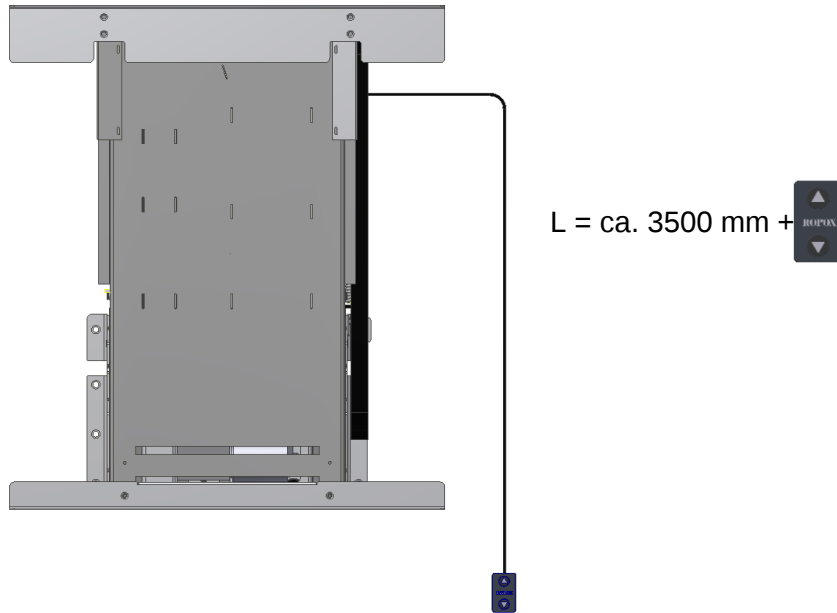
Obs! – If Safety stop plate is not being used, wall units with less depth can be used!

5.1.3 Wiring to control switch

Pull down cable from wall units to edge of worktop for placement of control button.

We recommend a build-in pipe in wall where the cable can be pulled through ($\varnothing 3\text{cm}$).

If a high wall unit is placed right next to a Diagonal, it is an advantage to pull the cable for the control trough wall unit then a pipe in wall can be avoided.



5.1.4 Fixed cupboards

An Installation of Diagonal frame shifts & places the wall cupboards $115\text{mm} \pm 3\text{mm}$ out from the wall. If you require/wish for any existing fixed cupboards to be in line with Diagonal we recommend an installation of the Diagonal first. In this way the best result is ensured.



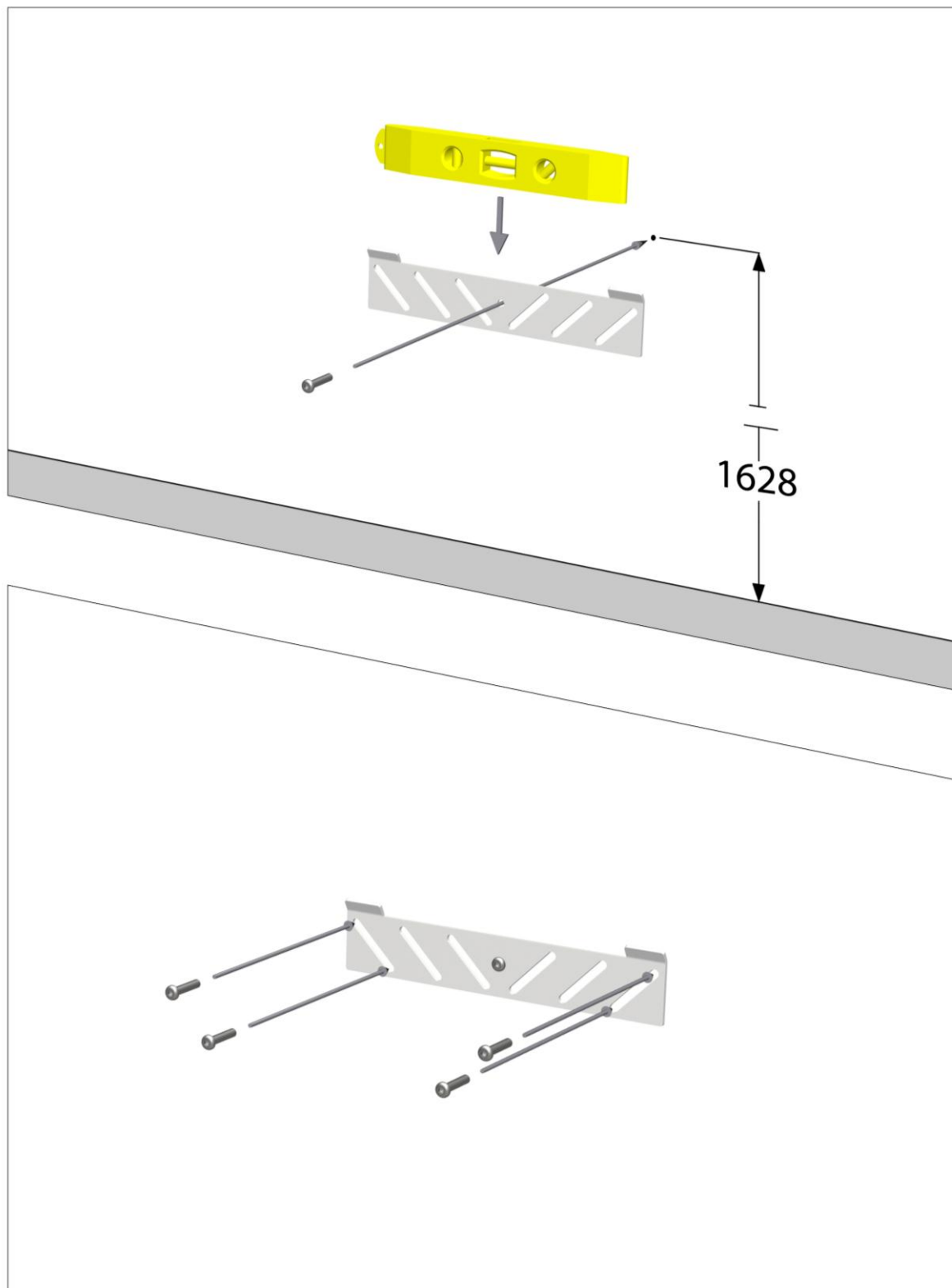
6. Mounting instructions, illustrations

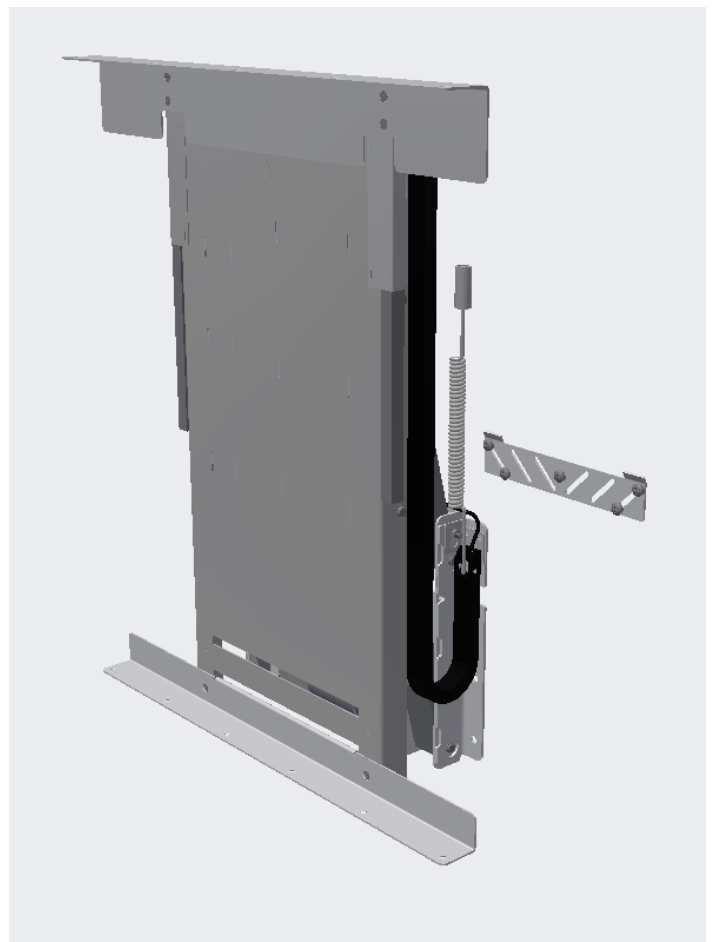


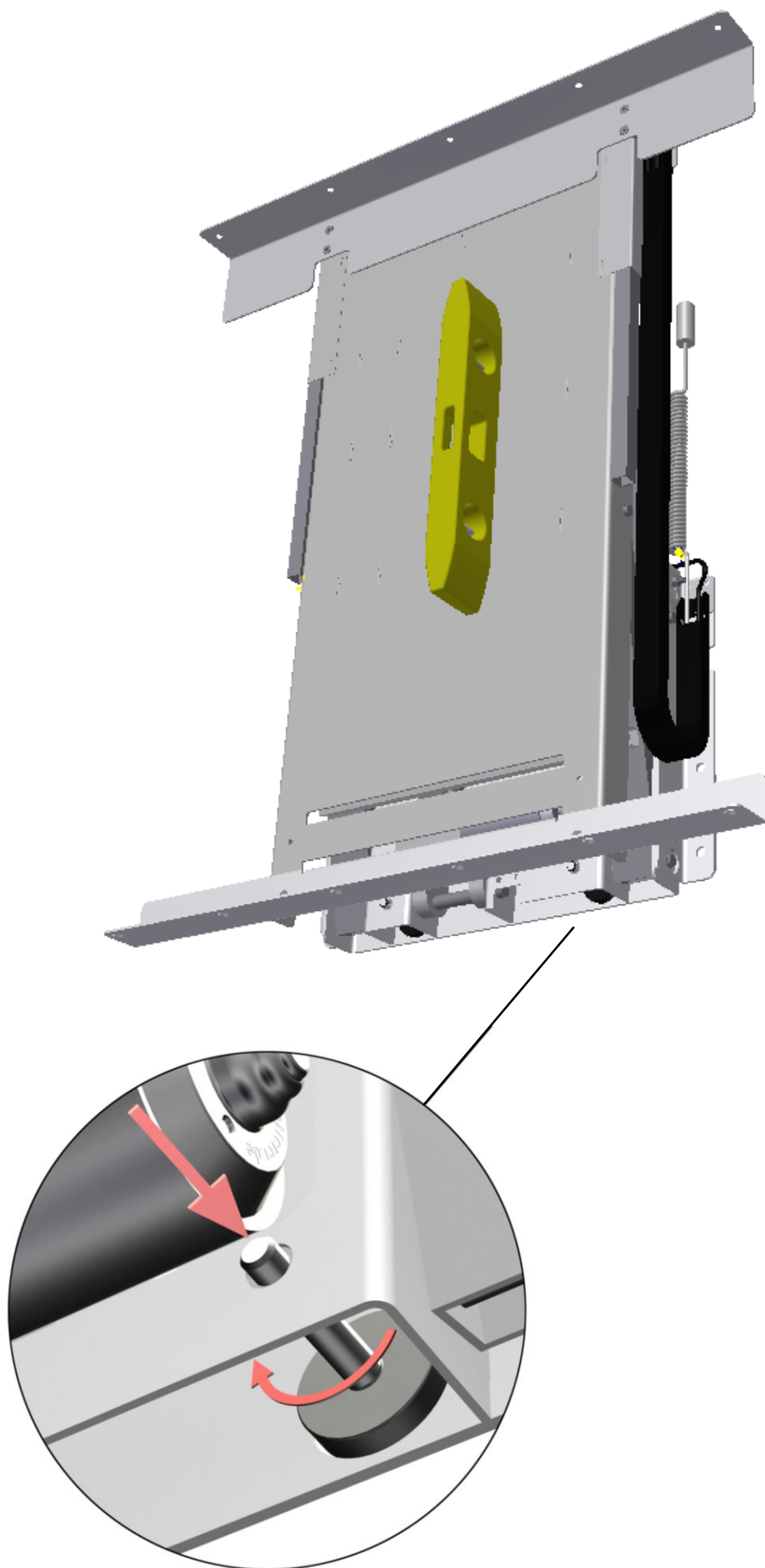
Assembly must always be carried out by competent personnel

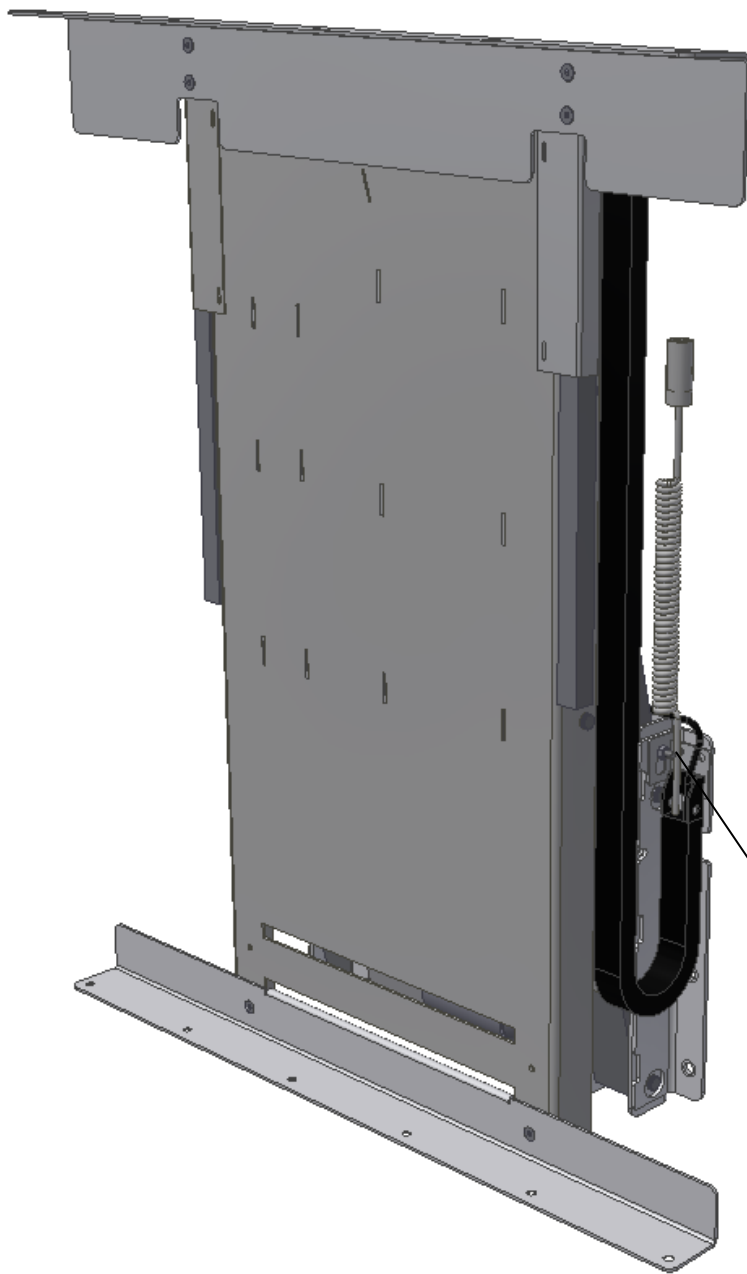
Prior to assembly check that all parts have been provided. See list of components, section 8

Height of top wall unit (edge) = 2120 mm – see schematic diagram page 5

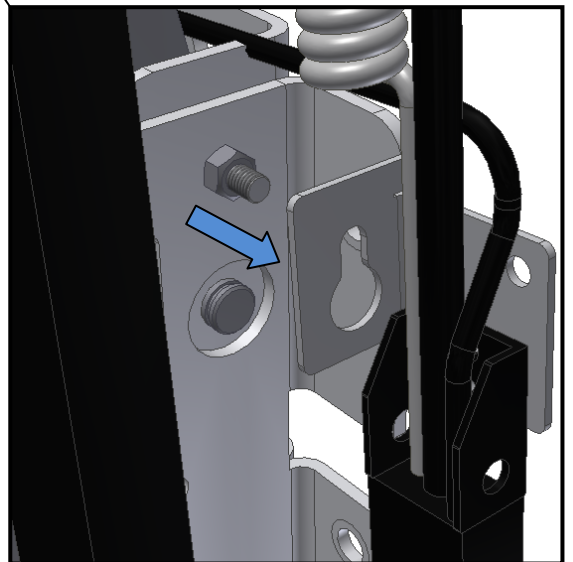


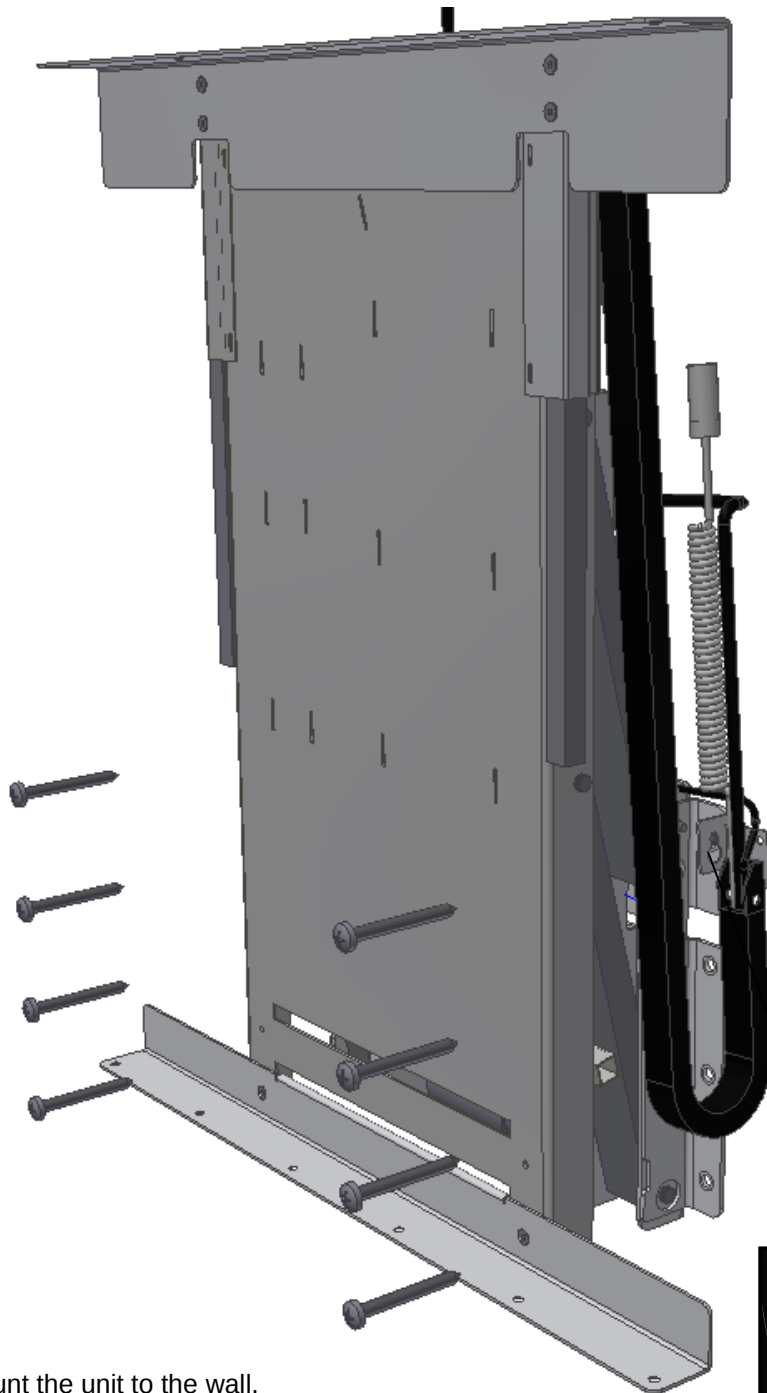






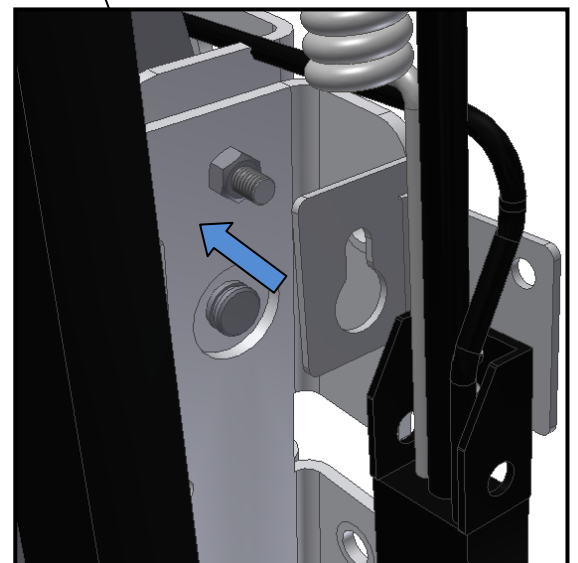
Loosen the nut that keeps the cable track in place, pull cable track aside





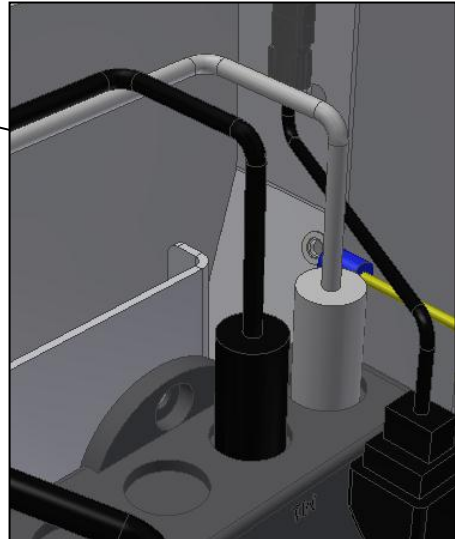
Mount the unit to the wall.

Put the cable track back in place and tighten nut.

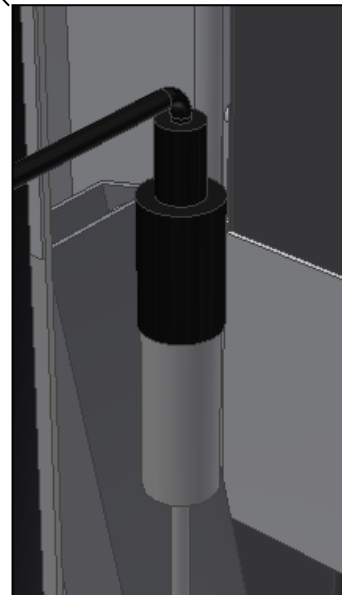


6.1. Connection of cables

1: Connect the net cable and turn on the power

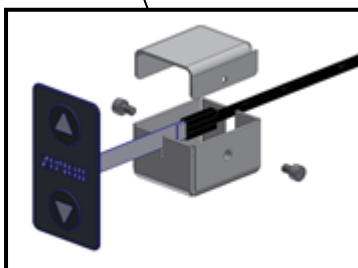
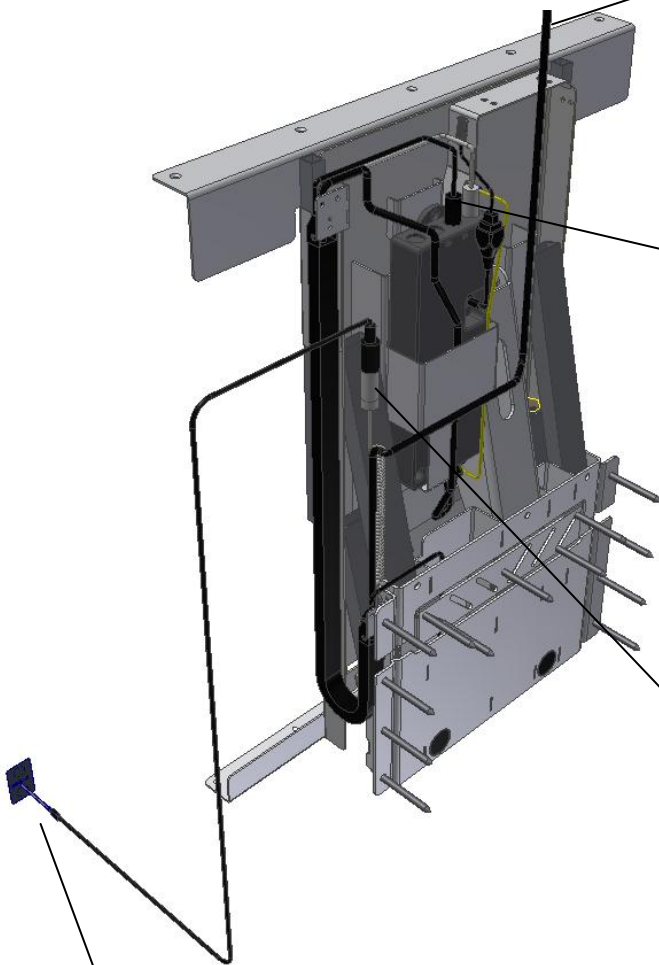


2: Connect the motor cable to M1



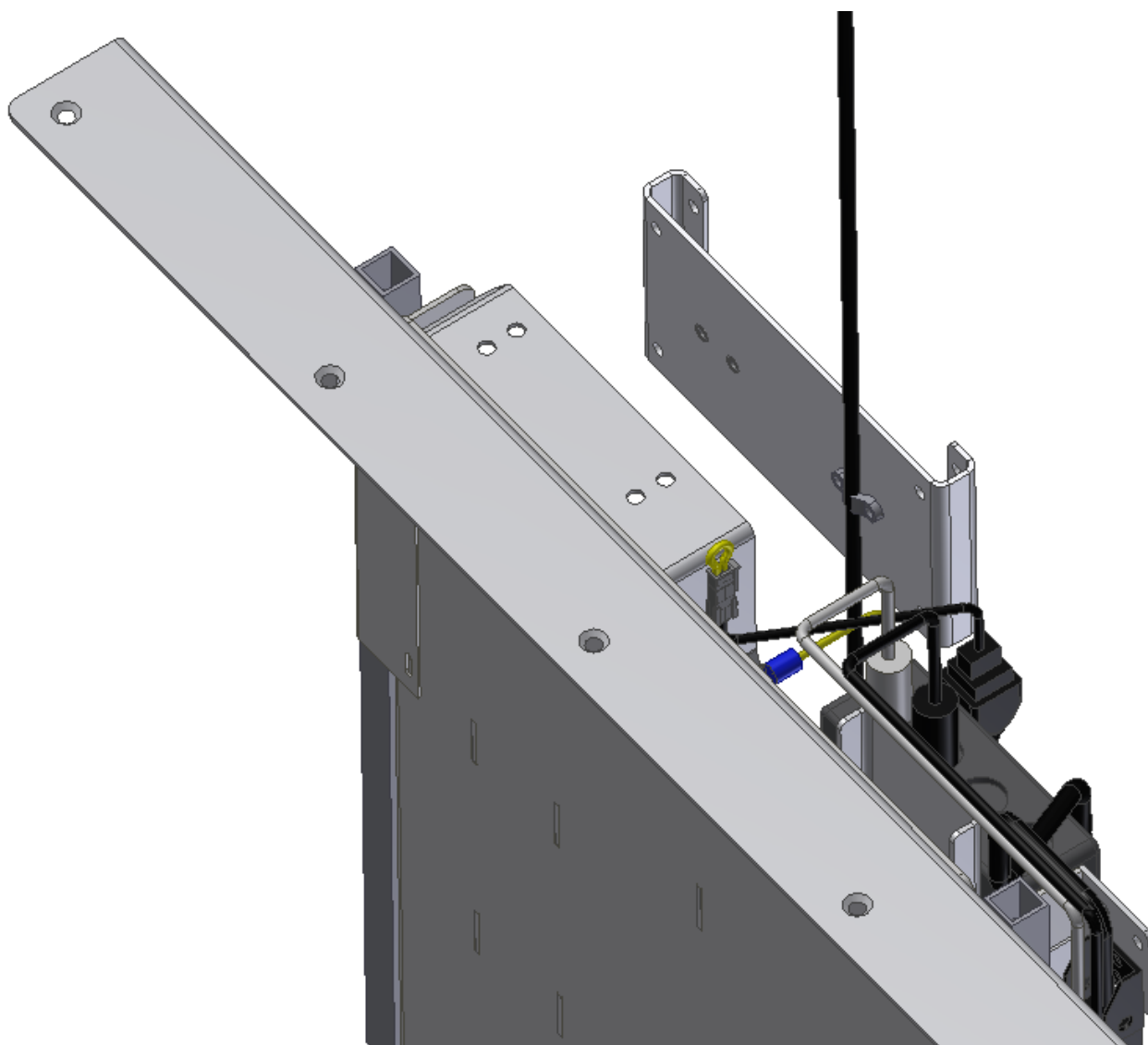
3: Connect the handswitch to white spiral cable.

Move the frame to bottom position for reset



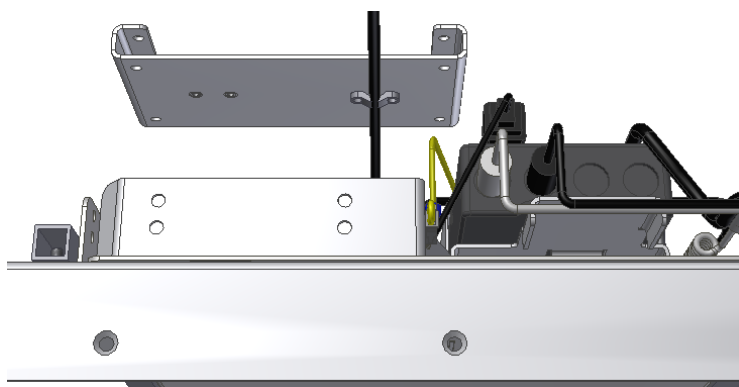
When the handswitch is placed at the desired position, Cable support for control switch can be mounted

6.2 Mounting of cable support for net cable



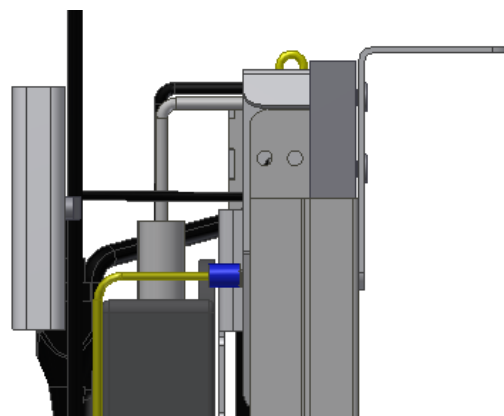
Recommended placement, seen from above:

To the left of the box



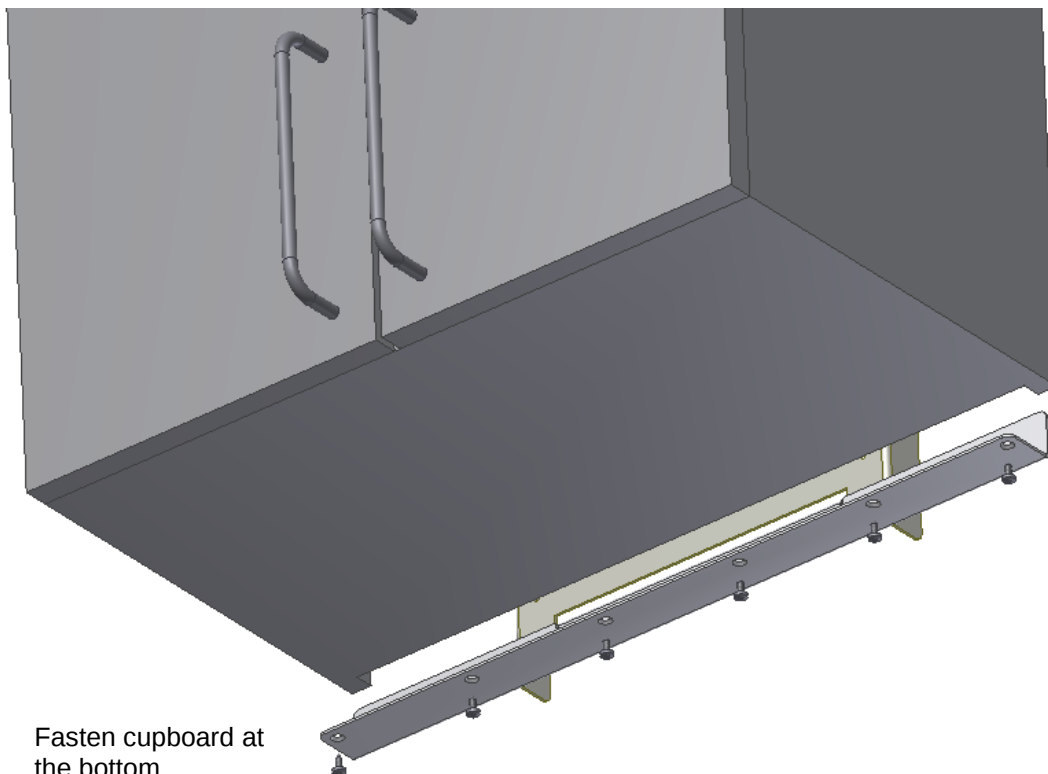
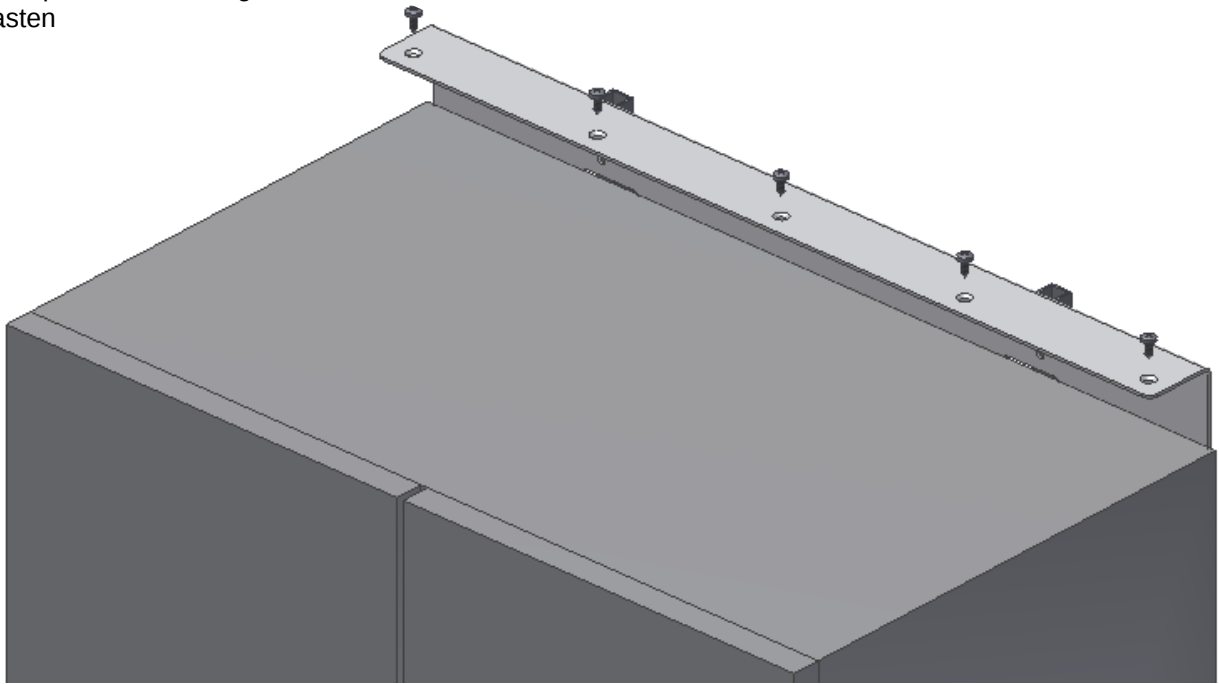
Recommended placement, seen from side:

Lower than the cabinet plate. The cable support will be hidden in top position



6.3 Mounting of cabinets

Attach cupboards to sliding frame and fasten



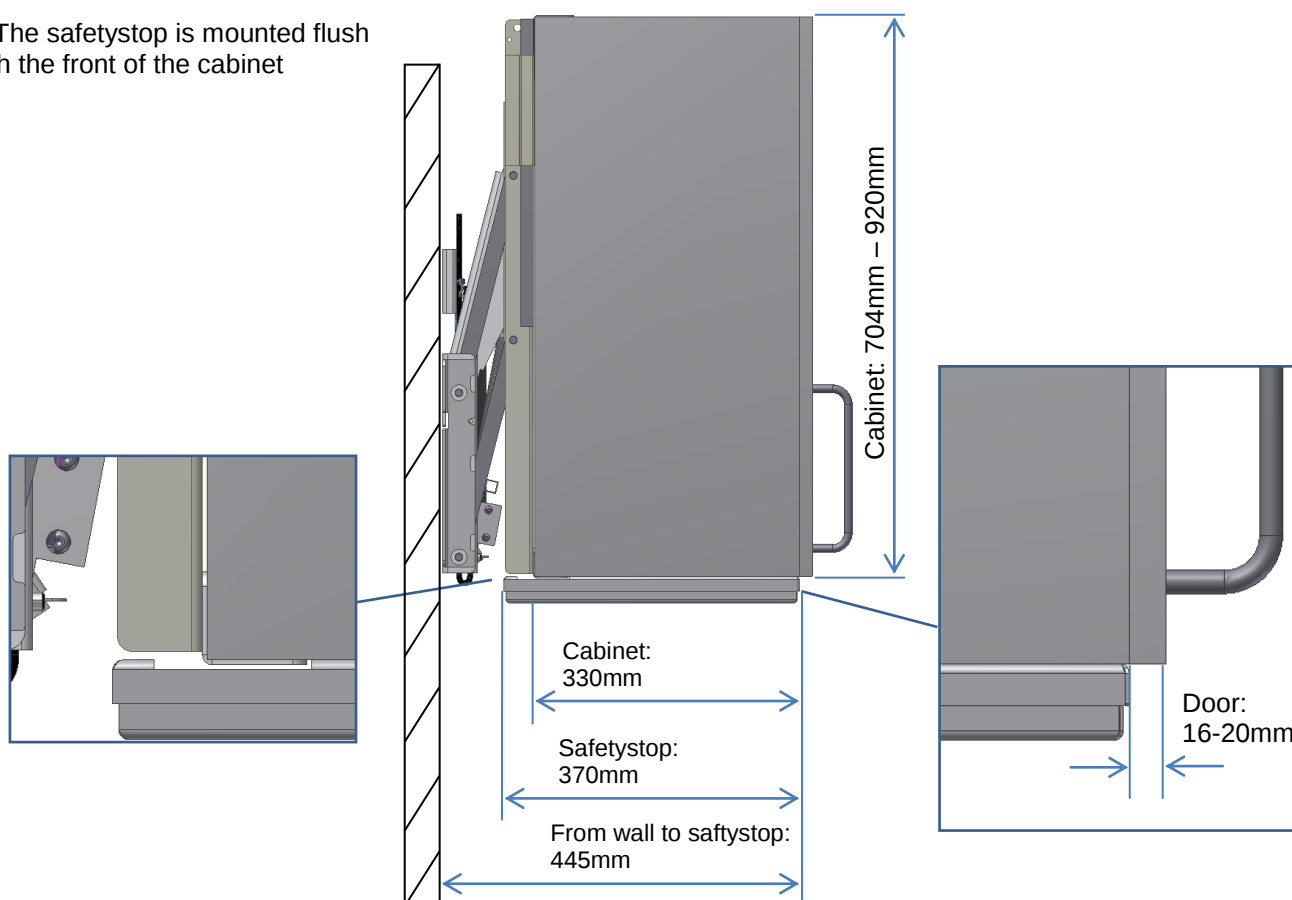
Fasten cupboard at the bottom

6.4 Montage af sikkerhedsstop

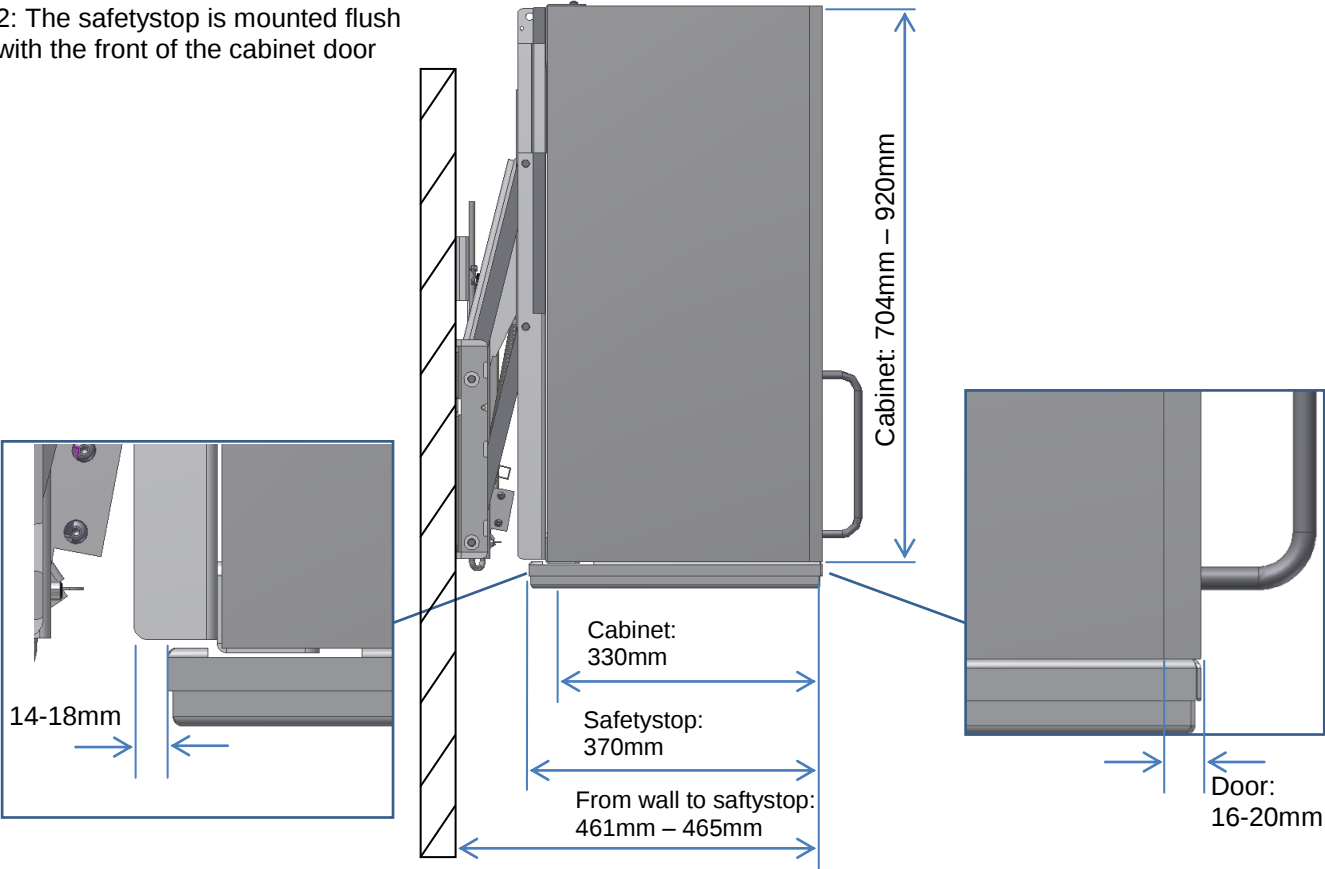
Safety Stop is an accessory for diagonal

6.4.1 Placement possibility's

1: The safetystop is mounted flush with the front of the cabinet

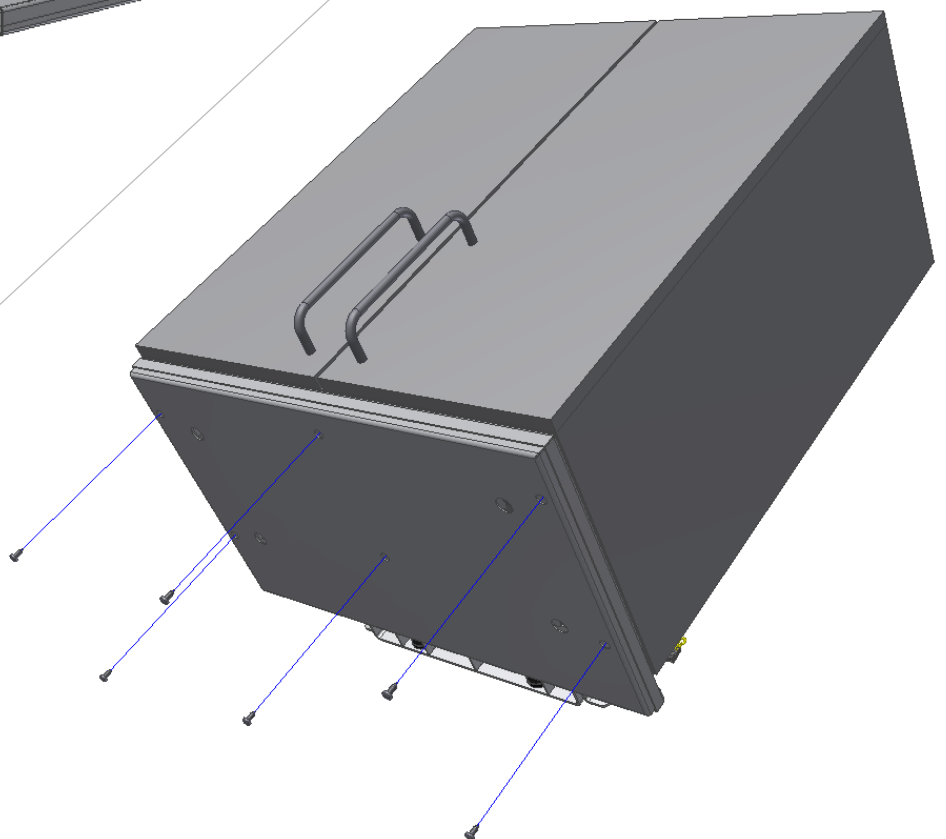


2: The safetystop is mounted flush with the front of the cabinet door



6.4.2 Mounting on cabinet

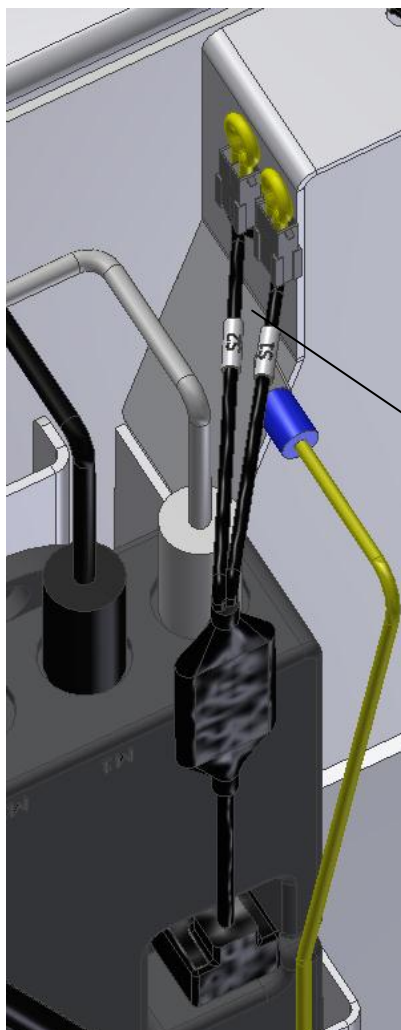
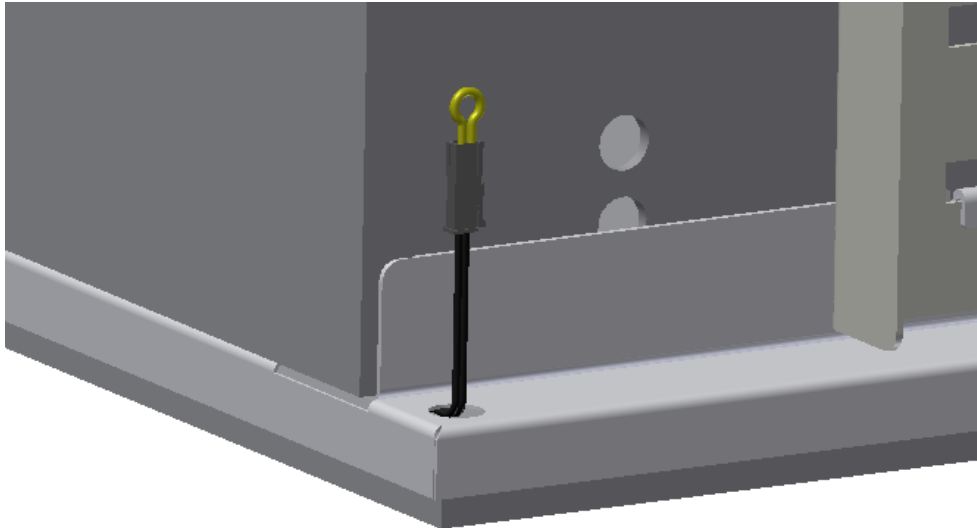
Place the safetystop in center, under the cabinet. The safetystop can be mounted flush with cabinet or cabinet door. Hold the safetystop in place with a clamp.



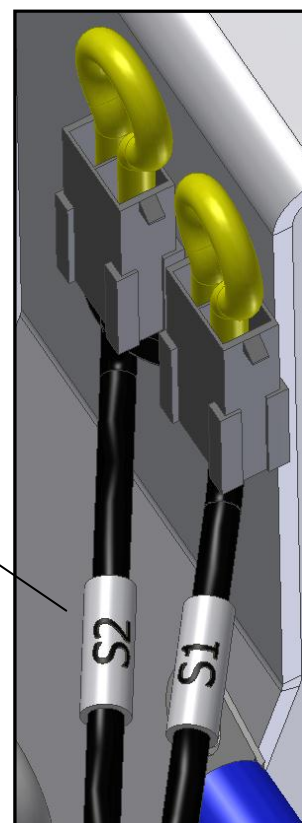
Screw the safetystop to cabinet.

6.5 Connection of safetystop

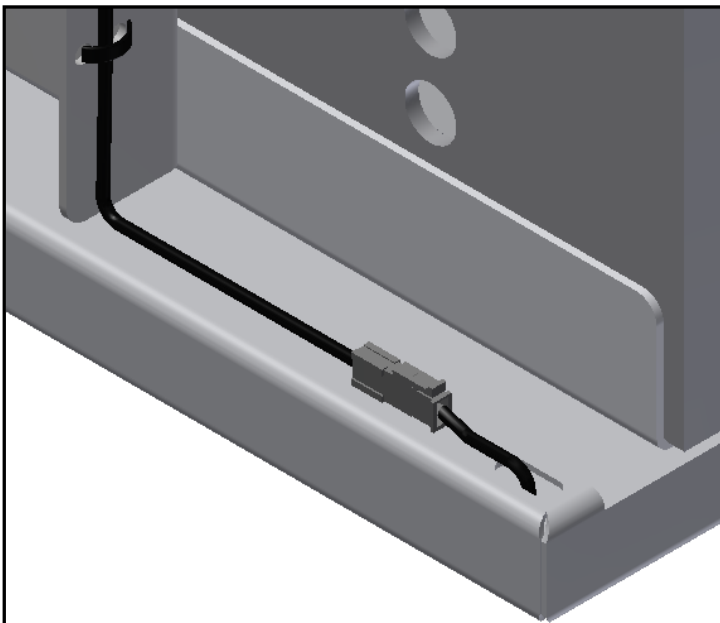
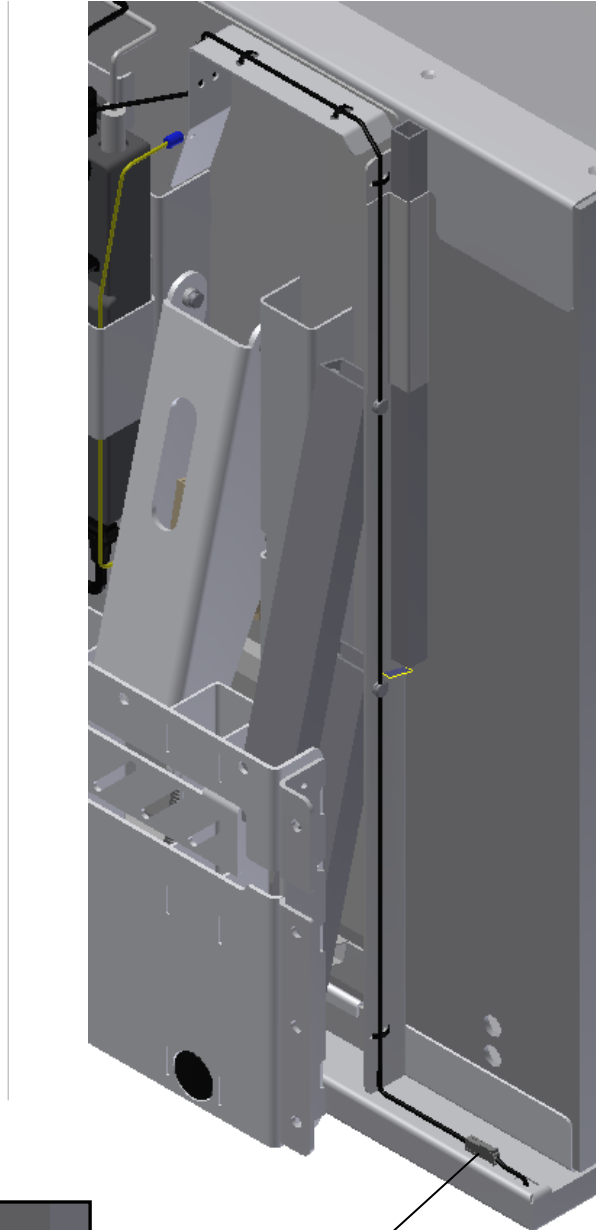
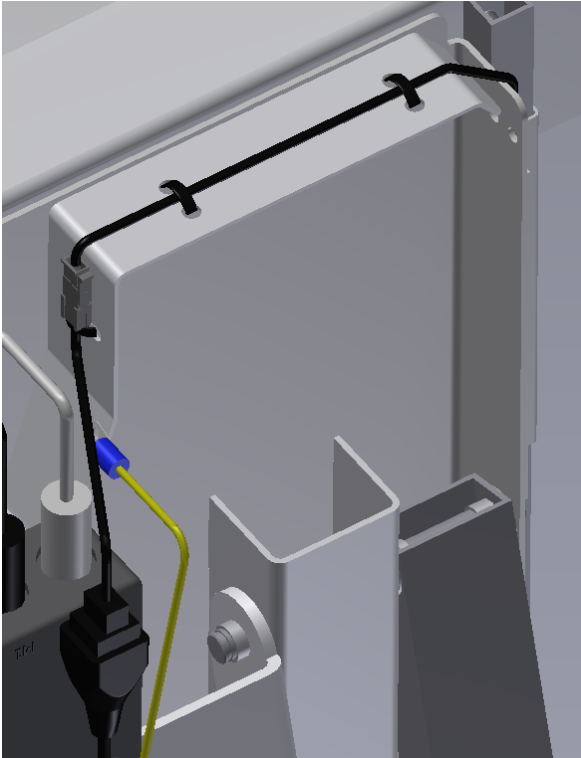
In the right side of the safetystop there is a yellow 2,2k Ω resistor mounted.



Remove yellow 2,2k Ω resistor from the cord marked S2

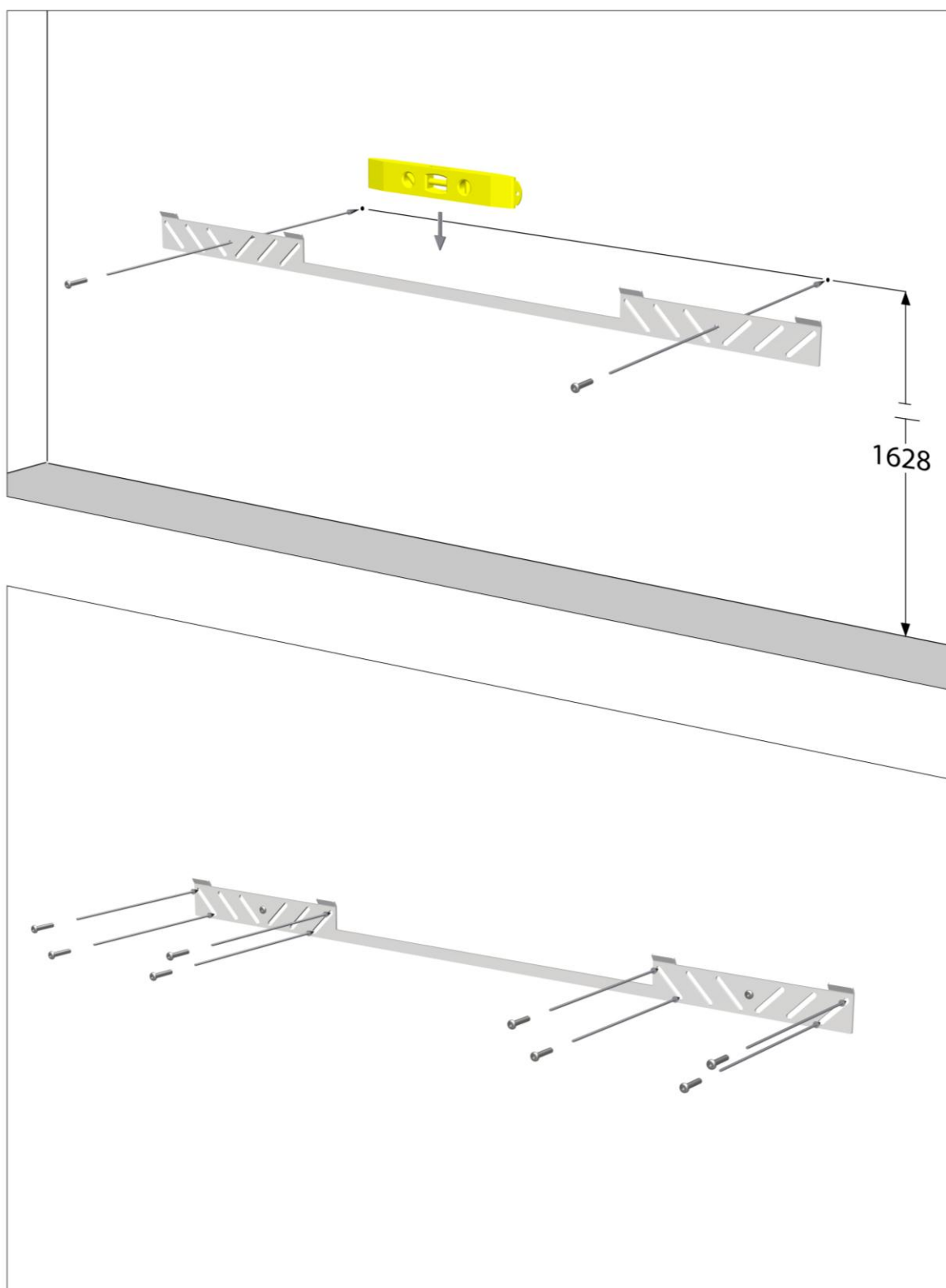


Connect extension cord to the cord marked S2 and fasten it with cable binders as shown.

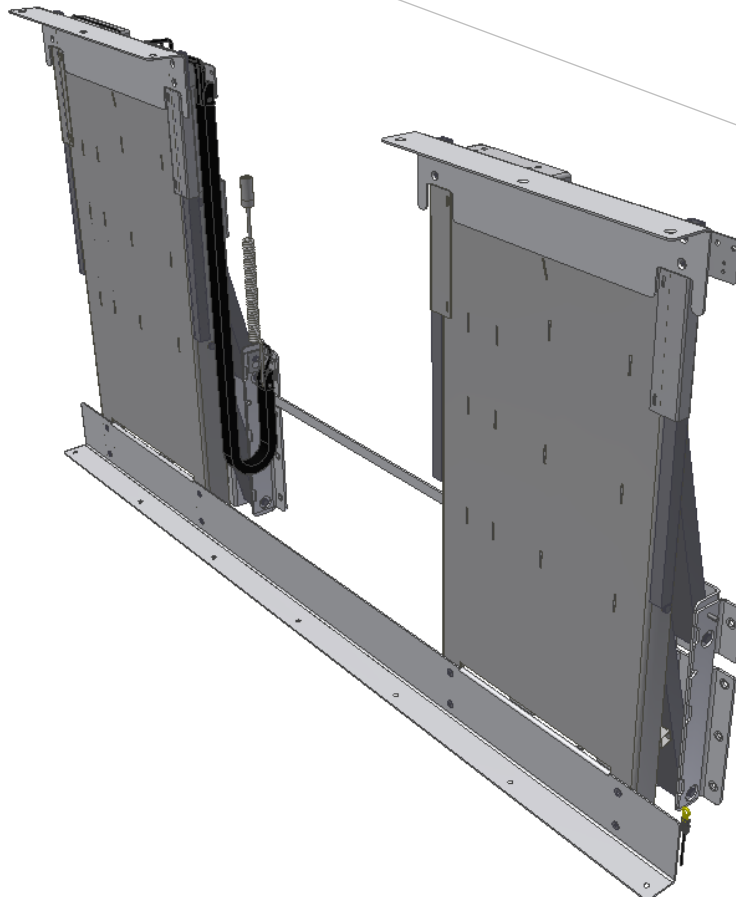
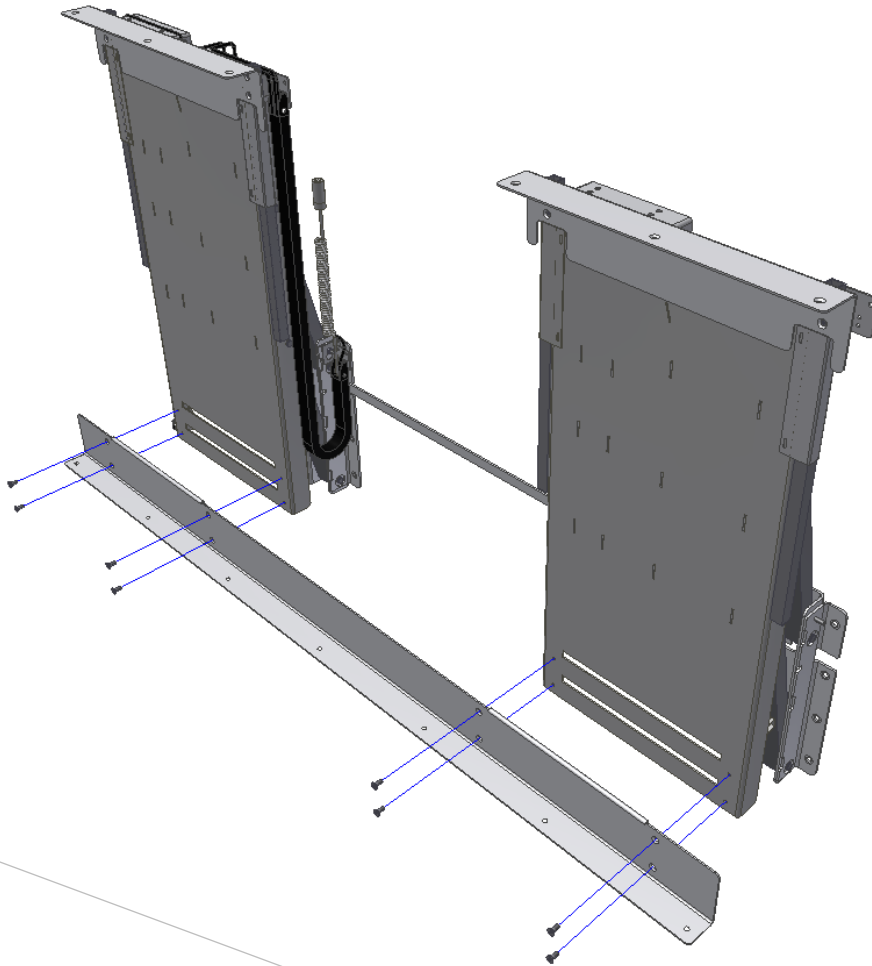


Connect the extension cord to the safety stop.

7. Mounting instructions for 2 units



Mount the 2 units as described on page 9-12

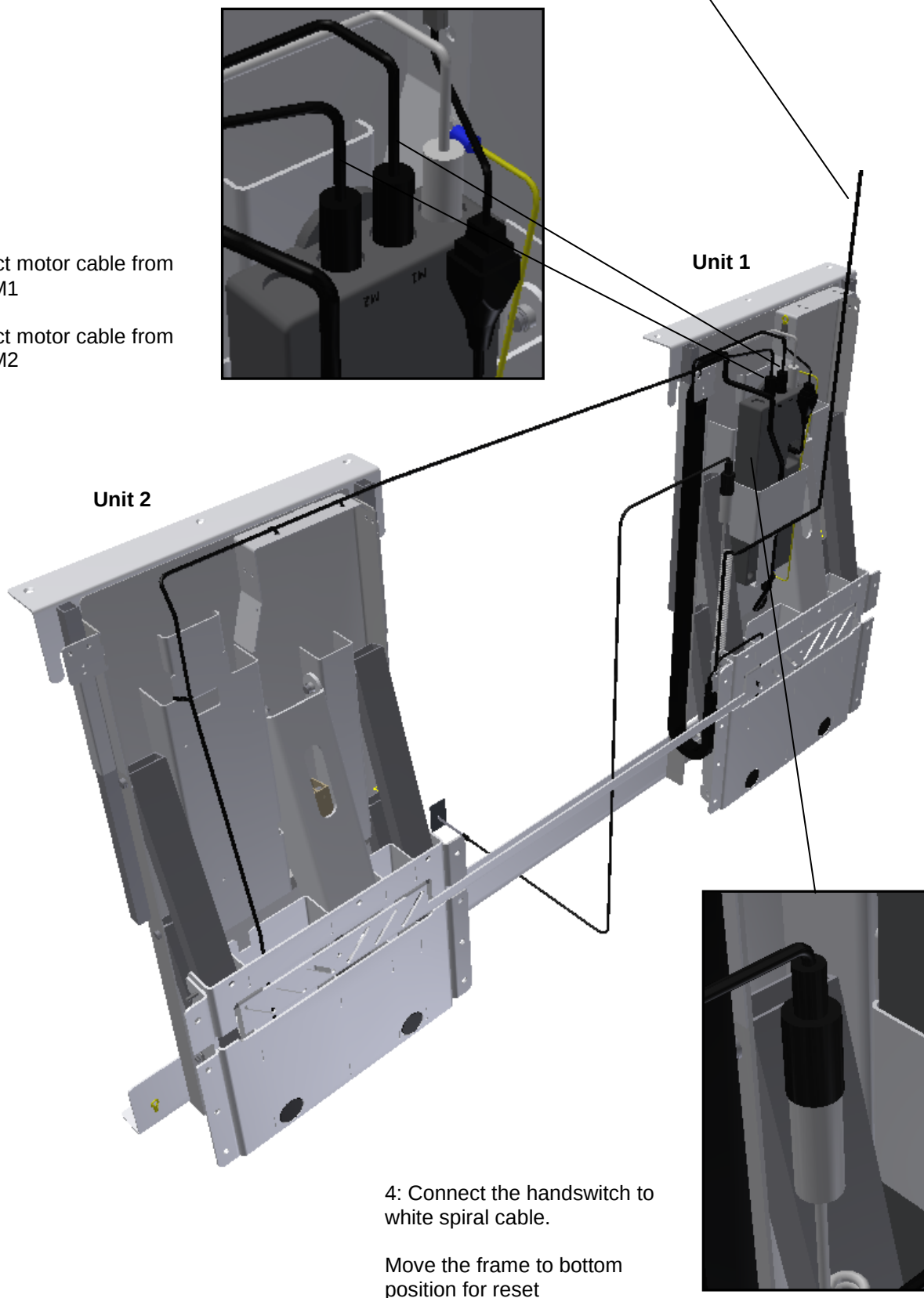


7.1 Connection of cables

1: Connect the net cable and turn on the power

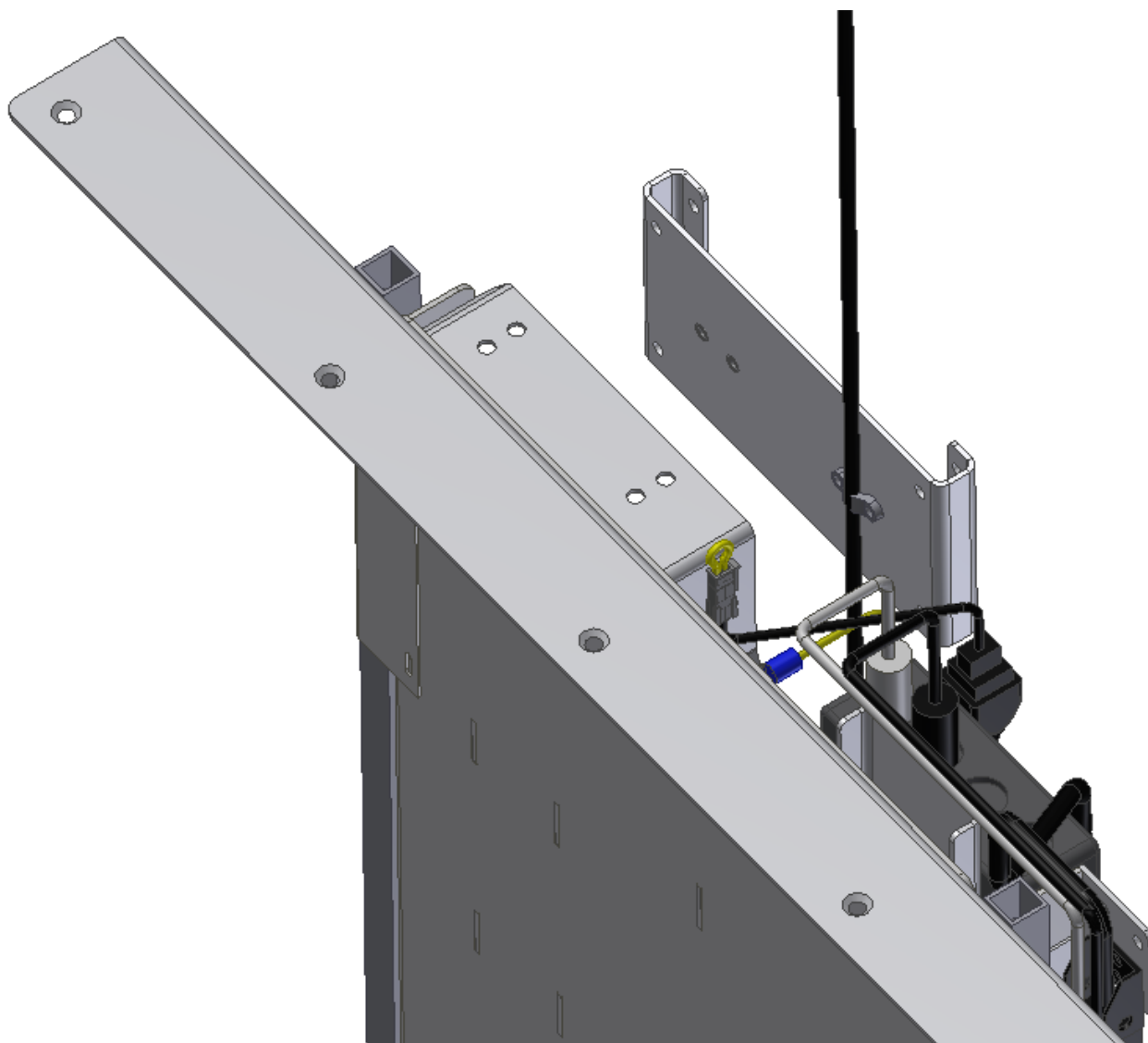
2: Connect motor cable from unit 1 to M1

3: Connect motor cable from unit 2 to M2



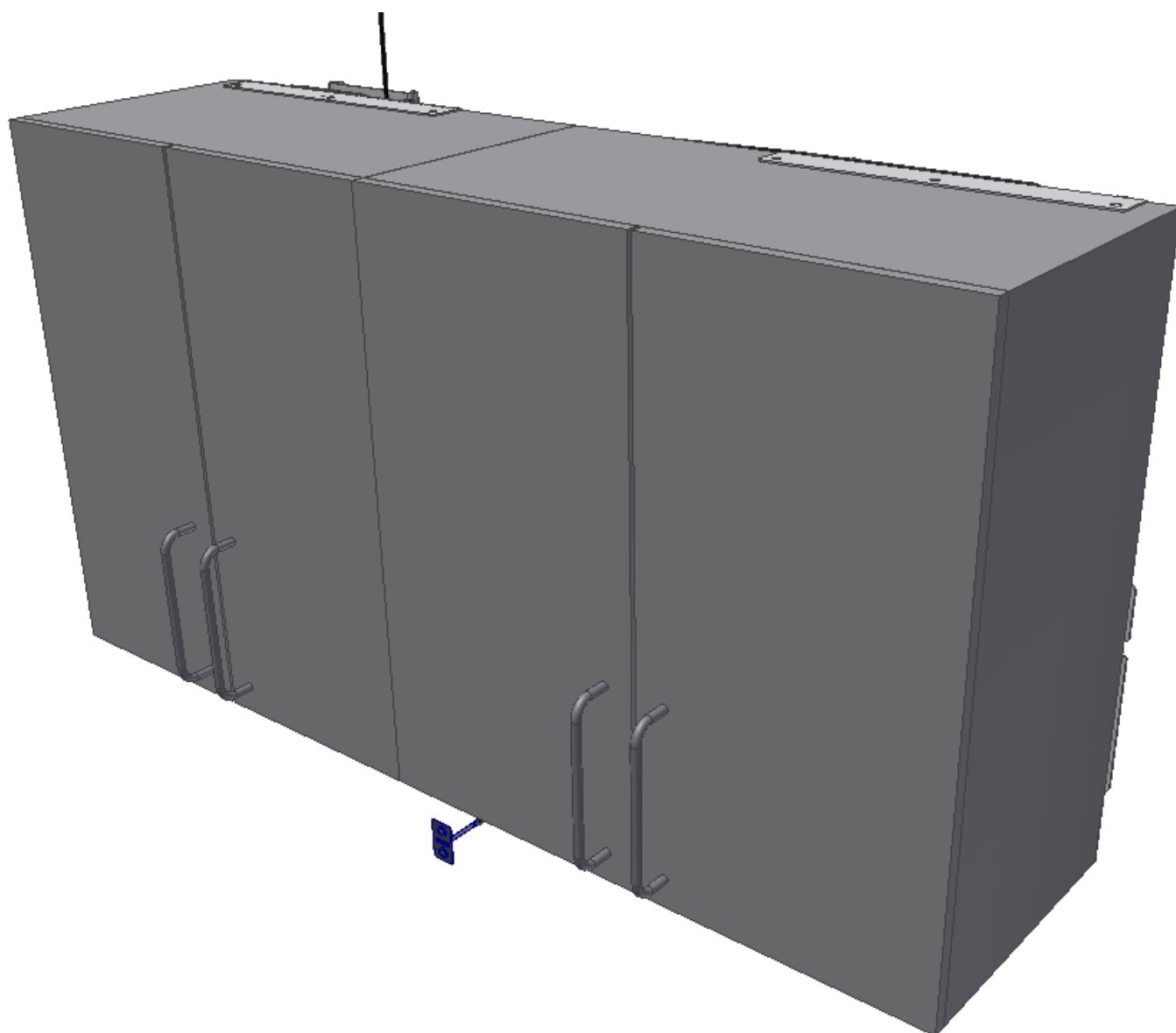
7.2 Mounting of cable support for net cable

See page 14.

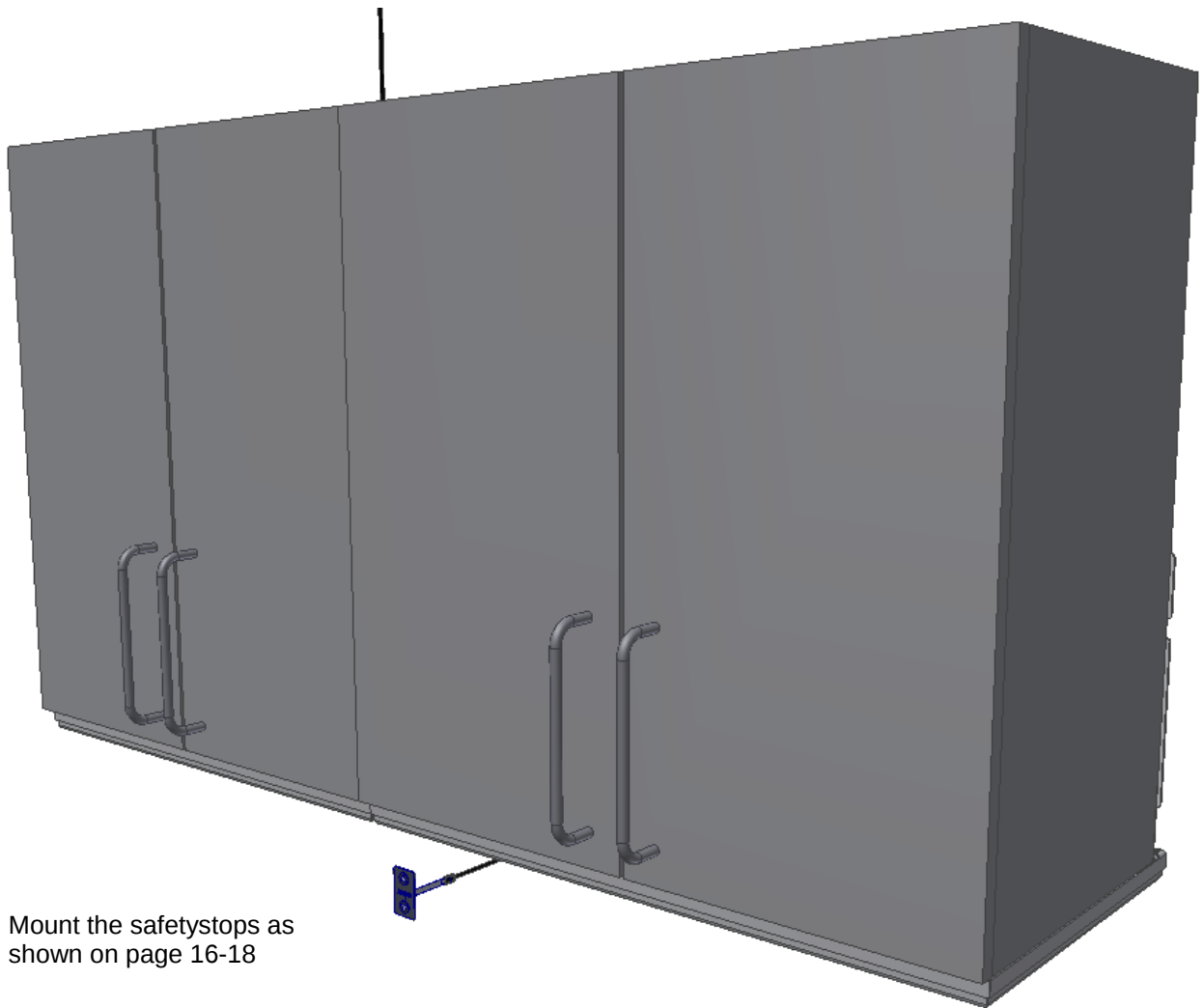


7.3 Mounting of cabinets

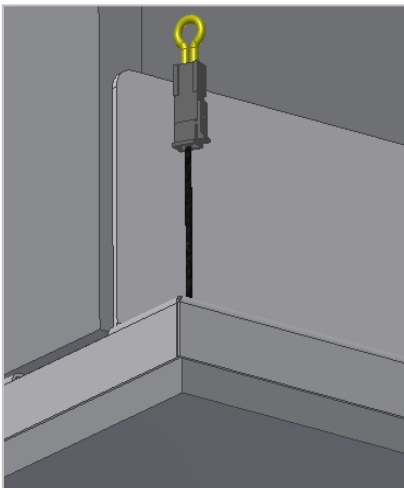
See page 15



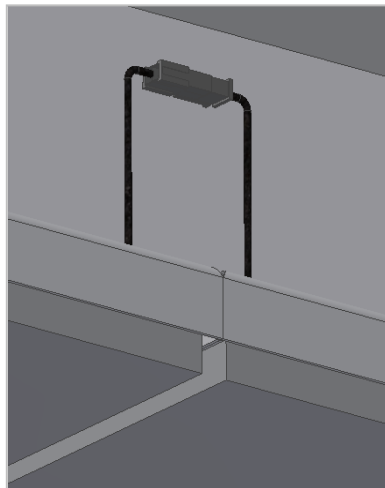
7.4 Mounting of safetystop



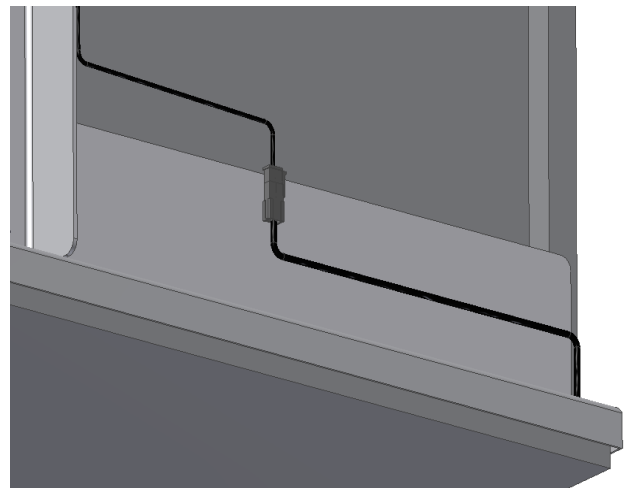
Mount the safetystops as shown on page 16-18



Place plug with yellow 2,2k Ω resistor on the right side of safety stop plate (shown from the front)



Connect the two cables for safety stop plates in the middle



Connect extension cable of control box to safety stop plate on the left side (shown from the front) and fasten it with cable binders as shown on page 20

8. Performance test

After installation and prior to use all functions of unit must be tested. The test must be carried out by competent personnel. Subsequently the test shall be carried out once a year.

Testing prior to connection to mains voltage:

1. Check that mounting instructions have been observed
2. Check that all bolts have been tightened.
3. Check that all cables have been connected correctly and that the plugs have been pressed home.
4. Check that there is no load on the frame.
5. Check that there is nothing preventing the frame from moving freely within the height adjustment range.

Start-up Procedure

1. Connect the net cable and turn on the power
2. Connect the motor cables to M1 (M2)
3. Connect the control switch to HS
4. Press DOWN on the control switch, move the frame to bottom position, check that the movement is even and smooth. Make sure that the hose connections follow the movement of the frame and that they do not get squeezed. The frame is now reset.
5. Press UP on the control switch, move the frame to top position and check that the movement is even and smooth. Make sure that the hose connections follow the movement of the frame and that they do not get squeezed.

If safety stop has been mounted under the wall unit it must be tested as follows:

Press DOWN on control switch and let frame move 2-5 cm downwards, activate the safety stop. The frame must stop downwards movement and move 1-2 cm upwards and stop.

If a smart box has been mounted – (is used if a FlexiElectric has been mounted below this unit) follow additional instructions for smart box.

If all test are ok, the frame is ready for use. See section 10 “Safety in use”.

9. List of components for Diagonal, L=40-180cm

Diagonal unit 30-40904 til 30-40912:

1 pc.

The Diagonal comprises:

30*40999-098 Mounting profile L=40-120cm

1 pc.

30*40999-160 Tube for topprofile

2 pcs.

Top profile according to width of cabinets:

30*40999-133 Top profile, cabinet width 40cm

1 pc.

30*40999-150 Top profile, cabinet width 50cm

1 pc.

30*40999-104 Top profile, cabinet width 60cm

1 pc.

30*40999-135 Top profile, cabinet width 70cm

1 pc.

30*40999-137 Top profile, cabinet width 80cm

1 pc.

30*40999-139 Top profile, cabinet width 90cm

1 pc.

30*40999-141 Top profile, cabinet width 100cm

1 pc.

30*40999-143 Top profile, cabinet width 110cm

1 pc.

30*40999-117 Top profile, cabinet width 120cm

1 pc.

Bottom profile according to width of cabinets:

30*40999-124 Bottom profile, cabinet width 40cm

1 pc.

30*40999-123 Bottom profile, cabinet width 50cm

1 pc.

30*40999-144 Bottom profile, cabinet width 60cm

1 pc.

30*40999-125 Bottom profile, cabinet width 70cm

1 pc.

30*40999-126 Bottom profile, cabinet width 80cm

1 pc.

30*40999-127 Bottom profile, cabinet width 90cm

1 pc.

30*40999-128 Bottom profile, cabinet width 100cm

1 pc.

30*40999-129 Bottom profile, cabinet width 110cm

1 pc.

30*40999-115 Bottom profile, cabinet width 120cm

1 pc.

95091442 Screws for profiles

6 pcs

Diagonal unit 30-40913 til 30-40918:

2 pcs.

The Diagonal comprises:

30*40999-148 Mounting profile L=130-180cm

1 pc.

30*40999-160 Tube for topprofile

4 pcs.

Top profile according to width of cabinets:

30*40999-133 Top profile, cabinet width 130cm

2 pc.

30*40999-150 Top profile, cabinet width 140cm

2 pc.

30*40999-104 Top profile, cabinet width 150cm

2 pc.

30*40999-135 Top profile, cabinet width 160cm

2 pc.

30*40999-137 Top profile, cabinet width 170cm

2 pc.

30*40999-137 Top profile, cabinet width 180cm

2 pc.

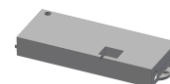
Bottom profile according to width of cabinets:

30*40999-151	Bottom profile, cabinet width 130cm	1 pc.
30*40999-152	Bottom profile, cabinet width 140cm	1 pc.
30*40999-153	Bottom profile, cabinet width 150cm	1 pc.
30*40999-154	Bottom profile, cabinet width 160cm	1 pc.
30*40999-155	Bottom profile, cabinet width 170cm	1 pc.
30*40999-118	Bottom profile, cabinet width 180cm	1 pc.

95091442 Screws for profiles 16 pcs.



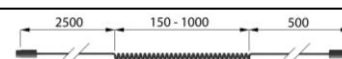
Control box for L=40-120cm(26,5x10,5x3,7 cm) 30*40903-008:



The control box comprises:

96000592 Power cable 1 pc.

93000164 Extension cord 350 cm + spiral
For control switch, white 1 pc.



30-67840 Standard switch, (3x6 cm)
Incl. 150 cm cable 1 pc.



96000155 Adhesive plate 10 pcs.

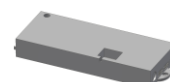


96000165 Strips black 10 pcs.



95134017 Screw countersink 4x17 35 pcs.

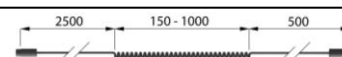
Control box for L=130-180cm(26,5x10,5x3,7 cm) 30*40903-009:



The control box comprises:

96000592 Power cable 1 pc.

93000164 Extension cord 350 cm + spiral
For control switch, white 1 pc.



30-67840 Standard switch, (3x6 cm)
Incl. 150 cm cable 1 pc.



96000155 Adhesive plate 10 pcs.



96000165 Strips black 10 pcs.



95134017 Screw countersink 4x17 35 pcs.

10. Options for Diagonal

Split cable 96000629:

To be used if more than one control

1 pc.



Infra-red control 30-67847:

Remote control via infra-red receiver (cable 250 cm)

Range 150-200 cm

1 pc.



Large press pad (14x7 cm) 30-67841:

For disabled people, incl. 150 cm cable

1 pc.

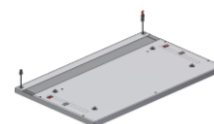


Safety stop plate 30-416xx:

Safety circle with extension cable (cable 250 cm)

Steel plate with mounting parts and plate.

1 pc.



Smartbox 30-69002-1:

Option for safety stop plate

To be ordered if Diagonal is mounted above a FlexiElectric

1 pc.



Extension cord 30-67870:

250 cm (black) for safety stop

1 pc.



Spiral extension 30-67871:

L =25-100 cm (black) for safety stop

1 pc.



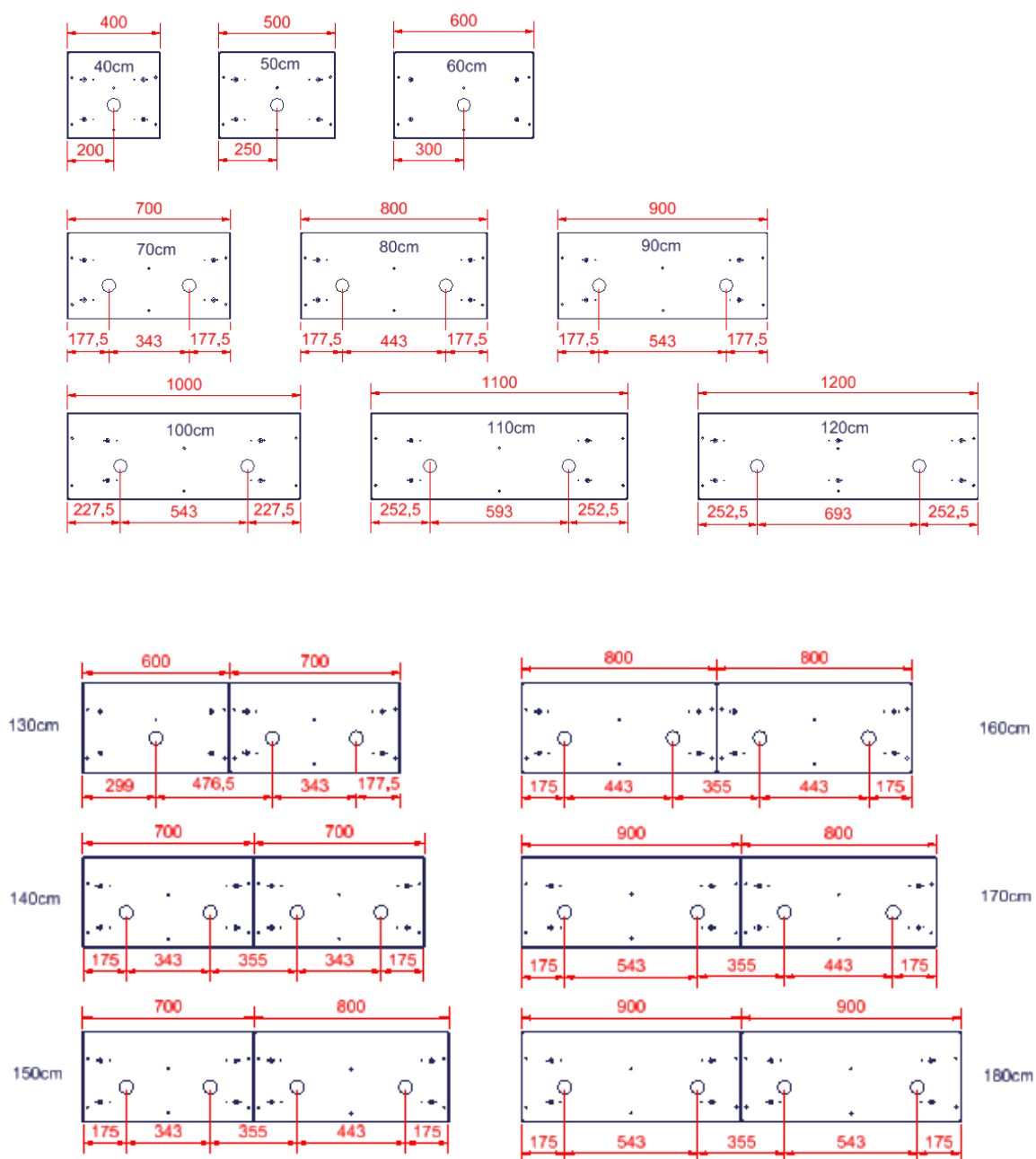
Safety stop with LED spot 12V 10W Inkl. transformer.

Incl. cables

30-42604 Led for 40cm Safetystop	1pc	
30-42605 Led for 50cm Safetystop	1pc	
30-42606 Led for 60cm Safetystop	1pc	
30-42607 Led for 70cm Safetystop	2pc	
30-42608 Led for 80cm Safetystop	2pc	
30-42609 Led for 90cm Safetystop	2pc	
30-42610 Led for 100cm Safetystop	2pc	
30-42611 Led for 110cm Safetystop	2pc	
30-42612 Led for 120cm Safetystop	2pc	
30-42613 Led for 130cm Safetystop	3pc	
30-42614 Led for 140cm Safetystop	4pc	
30-42615 Led for 150cm Safetystop	4pc	
30-42616 Led for 160cm Safetystop	4pc	
30-42617 Led for 170cm Safetystop	4pc	
30-42618 Led for 180cm Safetystop	4pc	

11. Placing of LED spot

If LED spots are purchased, they will be positioned as shown on drawing below.



12. Safety in use

- The VertiElectric should only be used by people who have read and understood these instructions..
- VertiElectric is a height-adjustable frame, and we recommend the filling of a safety stop beneath in order to guard against trapping. Even though a safety stop plate has been mounted always make sure that there are no people, animals or objects under the frame during height adjustment.
- VertiElectric is a wall unit and must not be used as lifting equipment or person lifter.
- Always use the frame so there is no risk of damage to people or property. The person, who operates the frame, is responsible for avoiding damage or injury.
- Children and people with reduced observation must only operate the frame under surveillance.
- If the frame is used in publicly accessible locations where children or people with reduced observation ability may get close to the frame, the person operating the frame must pay sufficient attention in order to prevent dangerous situations.
- Make sure that there is free space above and below the frame to allow height adjustment.
- Do not overload the frame and make sure that the load distribution is correct.
- Do not operate the frame in case of errors or damage.
- Do not use the frame in an explosive environment.
- In case of inspections, service and repairs make sure the frame is not loaded, and that main power is disconnected
- Any modification to the frame, which may influence its operation or construction, is forbidden
- Installation, service and repairs must only be carried out by competent personnel.
- If the frame has not been installed in accordance with these mounting instructions, the guarantee may become void.
- Only use Ropox original spare parts as replacement parts. If other spare parts are used, the guarantee may become void.

13. Cleaning and maintenance

13.1 Cleaning of frame



The frame must not be connected to the mains voltage during cleaning.
Do not flush electrical components with water



Clean the frame with a damp cloth using lukewarm water and ordinary cleaning agents. Do not use Corrosive/abrasive liquids or abrasive cloths, brushes or sponges.

After cleaning dry the frame.

13.2 Maintenance



Inspections, service and repairs must be carried out by competent personnel

The frame is maintenance-free and moving parts have been lubricated for life. For reasons of safety and reliability we recommend inspection of the frame once a year:

- Check that all bolts have been tightened.
- Check that the frame moves freely from bottom to top position without problems.
- Check that all cables have been fitted correctly and are undamaged..

After each inspection the service schedule shall be filled in.

Only use Ropox original spare parts as replacement parts. If other parts are used, the guarantee may become void

13.3 Service schedule, operation and maintenance

Service and maintenance Serial No.:
Date: _____
Sign: _____
Remarks: _____

Service and maintenance Serial No.:
Date: _____
Sign: _____
Remarks: _____

Service and maintenance Serial No.:
Date: _____
Sign: _____
Remarks: _____

Service and maintenance Serial No.:
Date: _____
Sign: _____
Remarks: _____

14. Trouble shooting

14.1 The height of the frame cannot be adjusted

1. Check mains and voltage to the control unit and that the power is switched on.
2. Check cables and plug-in connections between control box and motors.
3. Check cables and plug-in connections between control box and control switch.
4. Check cable connections between safety stop plate, and control box. (see mounting instructions page 12).
5. Check that safety stop has not been activated.

Reset procedure

- 6 If none of the above has helped reset the unit:
 - Disconnect motorcables
 - Disconnect mains cable and wait 5 sec
 - Connect mains cable
 - Connect motor cable
 - Move the unit to bottom position for reset.

15. CE-marking

Product name:

Diagonal

Item no:

Item no:

Width of wall unit 40-180 cm:

30-40904-4 - 30-40918-4

all belong to risk class I and conform to the Directives and Standards mentioned below:

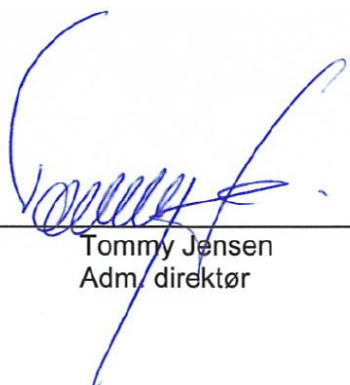
DIRECTIVES

The Machinery Directive 2006/42/EC

STANDARDS

DS/EN 12182: 2012	Assistive products for functionally disabled persons - General requirements and test methods
DS/EN 14971: 2012	Medical devices – Application of risk management to medical devices Risk analyses according to the Machinery Directive 2006/42/EC
DS/EN 60335-1: 2012	Household and similar electrical appliances - Safety – Part 1: General requirements Tested by Nemko, Certificate number: NO72162
DS/EN 9999: 2011:	Assistive products for functionally disabled persons - Classification and terminology

Dato: 03-06-2014



Tommy Jensen
Adm. direktør

16. Complaints

We refer to our general Terms of sale and delivery on our homepage www.ropox.com

Keep this folder with product at all times



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