INNOVA™

Yesterday's challenge
Today's solution

Integralift

HIDDEN HOIST

Installation Manual

innova.uk.com

Contents:

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Introduction

1. Safety

IMPORTANT: Integralift™ must only be operated by personnel with the necessary training to do so. Read the User manual before operating the Integralift™ and keep the user manual at hand for everyone using Integralift™. Don't leave the user suspended in the sling. This product must be installed by authorised personnel only.

Prior to first time use ensure that:

- Installation is correctly done, tested and signed by authorised personnel.
- The Lifting bar is correctly mounted
- User manual is read and completely understood
- The emergency lowering switch is working

Prior to lifting ensure that:

- The Lifting bar is fastened correctly to the lift strap
- The lift strap is not twisted or worn
- The lifter can be run up and down
- There are no visible damages on Integralift™ or the sling
- The sling is the correct type; adapted to both the user and lifting bar
- The sling is mounted correctly around the user
- The sling is fastened correctly to the lifting bar, both before the lift strap is tensioned and before the user is lifted

⚠

Max user weight

Max user weight for Integralift™ is **230 kg**

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2. Product description

The Integralift™ is a non-intrusive patient lifter that offers a safe and efficient lifting experience

Non-intrusive - Integralift™ creates a more attractive room for the user and gives a subtle appearance. The Integralift™ appears as an item of fitted furniture which encloses the user's bed and becomes a natural part of the room's interior.

- Cabinets can be bespoke manufactured in different wood colours to fit different decors
- Down lighters: Personalise the top cabinet with this option

Safe & efficient - Integralift™ is designed to ease the whole transfer process.

- Everything in place- always. The lifting bar, sling and remote in dedicated places
- No charging routines. Connected to mains and always fully charged
- Flexible hoisting points

Easy installation - Integralift™ can be easily fitted in most homes or institutions as part of a new build or retro fitted during a refurbishment

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3. Technical Data

Warranty	2 years
Lifecycle	10 years with service agreement (10.000 lifting cycles)
Maximum load	230 kg
Battery	24 V DC, 4.5 Ah, sealed lead battery, 40 lifting cycles
Battery charger	100-240 VAC, 50-60 Hz, max 1.300 mA
Lifting speed	50-70 mm/sec.
Lifting interval strap	1.8 m (vertically adjustable)
Diameter of action	3 m
Radius of action	1.5 m
Soft start and soft stop	Yes
Emergency stop	Electrical
Emergency lowering	Electrical and mechanical
Operating forces hand Control	4.5 N
Sound level	69 dB
Weight	95 kg Int. op
Protection class	IP 20
Intermittent operation	Int. op 20/80, active operation max 1 min at SWL

Integralift is quality certified in accordance with:

- ISO 10535:2006(E)
- IEC 60601-1 Ed. 3.0 b:2005
- IEC 60601-1-2 Ed. 3.0 b:2007

Product for indoor use only

Type B, in accordance with the electrical shock protection class

Class I equipment in accordance with MDD 93/42/EEC

- Temperature: -10 grd C og+40grd C
- Relative humidity From 10% to 93%
- Lightning level /ambient luminance minimum 300 lux

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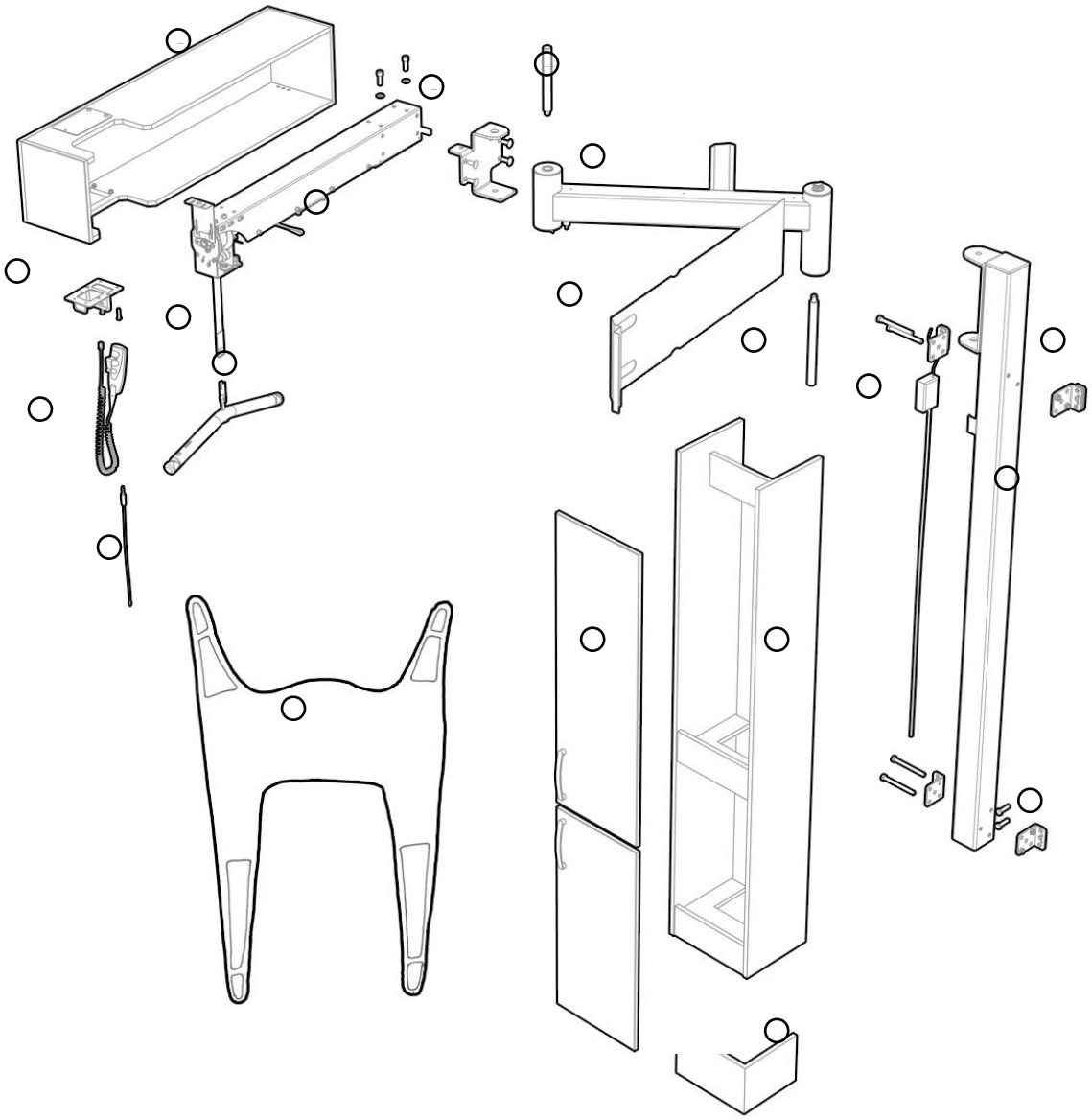
4. Main components



1. Integralift™ structure WM
2. Brackets for structure
3. Back jib
4. Shaft for back jib
5. Front jib with engine
6. Front Jib Bracket
7. Shaft for front jib
8. Top Cabinet
9. Handle
10. Rear cover
11. Charger
12. Vertical cabinet
13. Cabinet base
14. Cabinet front doors
15. Lifting strap
16. Lifting bar
17. Remote control
18. Emergency stop
19. Sling

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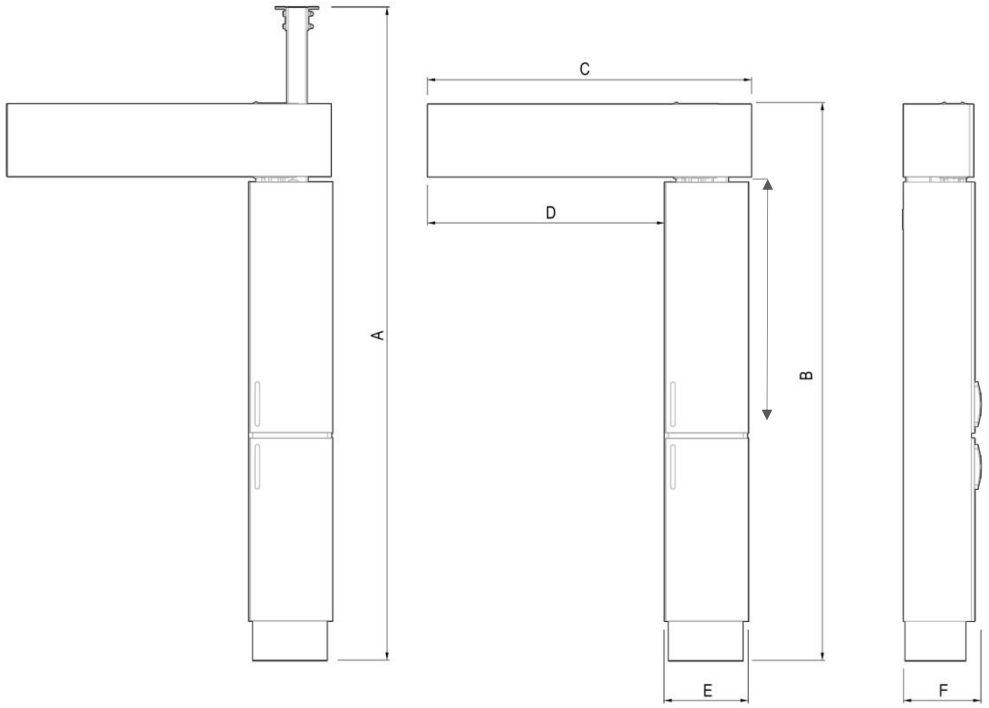
5. Dimensions



Model	Capacity	A	B	C	D	E	F	G
WM-230	230 kg	220(hidden)	226	124	89	35	30	197
FC-230	230 kg	230-330						
IW-230	230 kg	230-500 (hidden)						
CC-230	230 kg	240-260						
CW-230	230 kg	220(hidden)						

All measurements (A-G) in centimeters.

6. 4 steps for installing The Integralift™

1. Design and room layout

2. Technical planning- Assessments and Evaluations
   - Building assessment
   - Choose and verify Integralift™ structure
   - Choose and verify Fasteners

3. Installation
   - Integralift™ structure
   - Integralift™ Lifter Module and Cabinets

4. Control of installation

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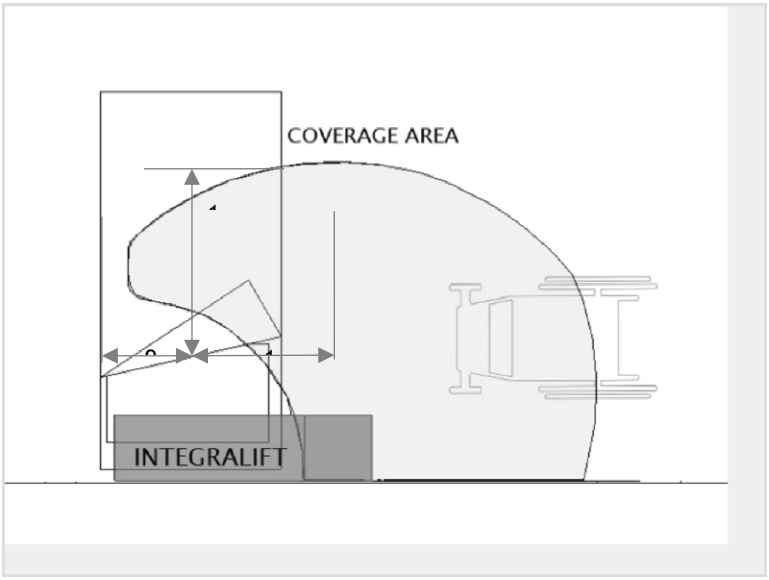
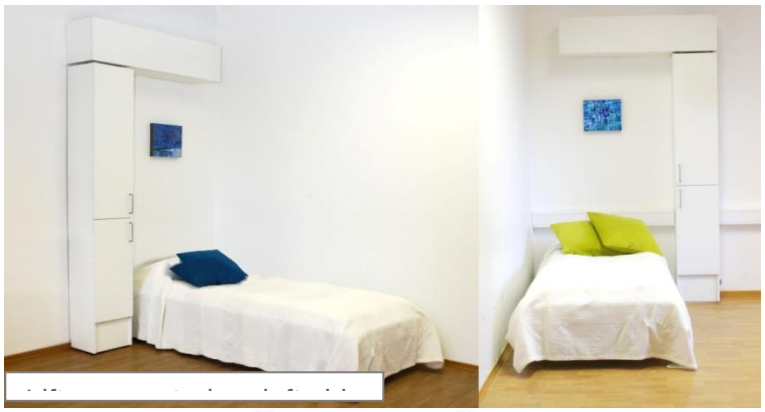
Design and room layout

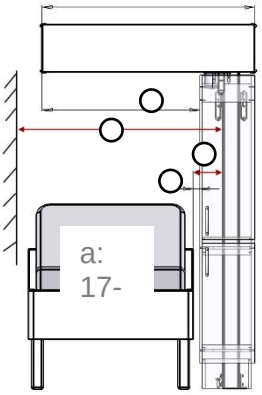


The Integralift™ can be installed differently in accordance with the lifting area needed. The vertical cabinet can be mounted on either side of a bed, *see Integralift™ Planning guide for info on Design and room layout*



IMPORTANT: The structure and the cabinet must mounted on the side of the bed that the user will be moved to and from.

Placement in room



It is recommended to place the bed a bit apart from the wall, as it permits the nurse access from both sides, which makes care and lifting easier.

The lifter is to be placed so that the top cabinet is above the bed and the vertical cabinet is on the side where it is most suited for lifting to a chair.

Cabinet should be 2-12 cm from the edge of the bed (b). This equals a distance (a) from the structure to the bed of 17-27 cm.

NB! Distance to the closest wall (e), must be of at least 125 cm.

- Is there a power-outlet nearby for charger? Check cable length.

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Technical planning - Assessments and Evaluations

Having decided the design and room layout it is time to assess the building structure in the room where Integralift™ will be installed.
Based on that a suitable Integralift™ structure and suitable fasteners can be chosen.

7. Technical Building Assessment

Professional assessment of building structure
The person responsible for installation must perform a professional assessment of the quality of the floor, wall and ceiling. In event of any of these being damaged or otherwise questionable, further investigation is called for – see requirements for fastening points, under.

Locate and evaluate the load bearing parts of the building structure in the room where Integralift™ will be installed

Load bearing wood structure of 2”4 beams or higher.
Ensure the wood structure is load bearing and can withstand the Required Pull/Shear forces: Wood beams can hold bigger forces closer to the end of the beam where it is connected to the rest of the building than in the middle of the beam.

⚠ **Wood beam of 2”4 (49x98mm)** The center of force must be placed no more than 24 cm from the beams connection with the center bracket to profile end (4xSWL)
Wood beam of 2”6 (49x146mm) The center of force must be placed no more than 48 cm from the beams connection with the center bracket to profile end (4xSWL)

When a load bearing 2”4 wall is higher than 240cm the Integralift™ “Floor- to-ceiling” structure must be chosen rather than Integralift™ WallMount structure (upper fastening point 220 cm over the floor) to ensure 4xSWL in building structure.

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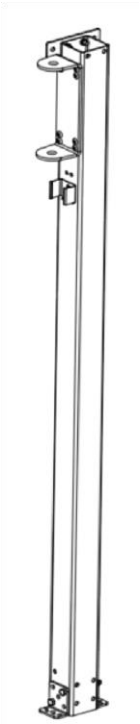
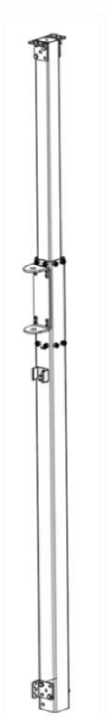
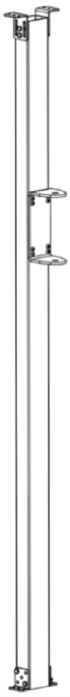
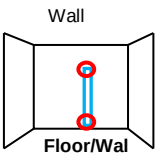
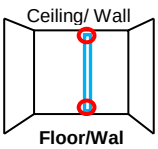
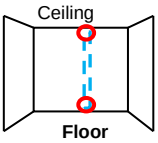
8. Choose and verify Integralift™ structure

Type of Integralift™ structure

The Integralift™ structures with correct fastening brackets and fasteners makes it possible to safely employ Integralift in most rooms that has a load bearing structure of the right dimensions. The person responsible for installation must check that wall/floor/ceiling is suitable for fastening the chosen Integralift™ Structure.

Integralift™ structure selector

Integralift™ structures	INIT0143 Wallmount	INIT0070 Floor-to-Ceiling	INIT Inside Wall
Illustration			
Requirements Loadbearing Connection-points	 2 point	 2 point	 2 point
Total load in Connection-points, 4xSWL	Pull 1000kg Shear1000kg	Pull 1000kg Shear1000kg	Pull 800kg Shear800kg
Loadbearing elements/material	Load bearing wood 2”4 or more, Load bearing metal structure, brick, Concrete		
Special Assessments	Distance from connection-point to ceiling,chap8.1		Mostly for projects (special order

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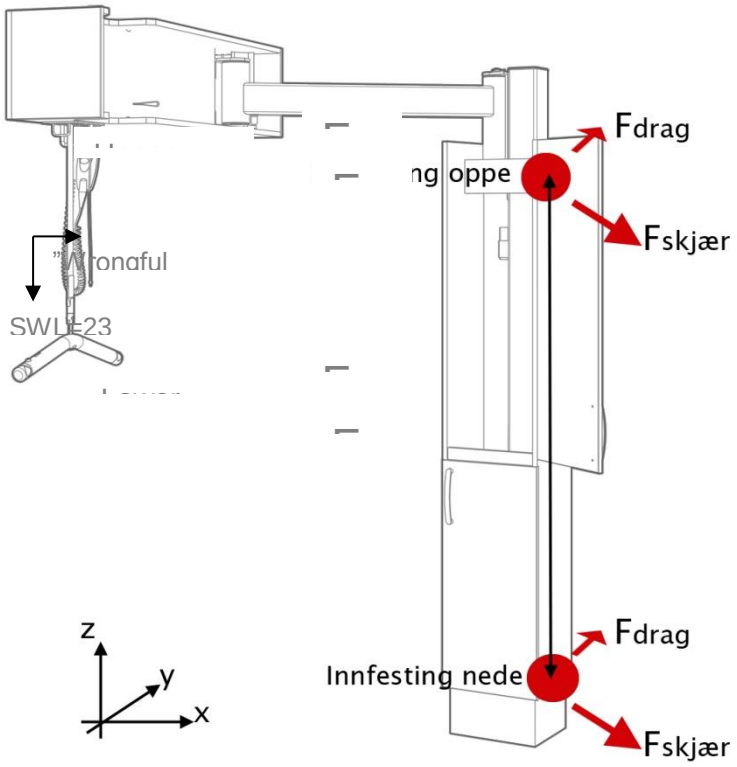
9. Choose and verify fixings (2 point structures)

The Integralift™ structures, ”Wallmount”,”Inside wall” and ”Floor to Ceiling” all have 2 Connection-points with the building structure, as illustrated below , and each Connection-point consist of at least two fasteners
The distance between the Upper and Lower Connection-points must always be 200 cm, but will in many cases be considerably longer (for Inside Wall and Floor-to-ceiling)

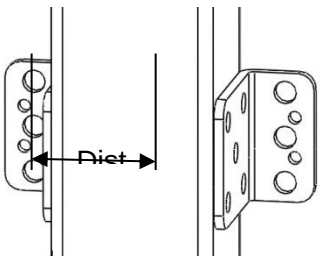


Fastener requirement: 4x SWL.
To ensure safe fastening, each Connection-point needs a safety factor 4.
All fasteners must therefore be able to withstand and be approved for usage 4 x greater than the force which is employed when maximum user weight is being lifted.
Ensure that the fixings are also approved for the particular building material in question.

N= 4xFpull = 1000kg - Pull force in Connection-points which the fasteners and building materials must be able to withstand

V= 4xFshear = 1000kg - Shear force in Connection-points which the fasteners and building materials must be able to withstand

Minimum (horizontal) center distance 150 mm.
In each fastening point there must always be applied 2 screws, 1 at each side of the structure, to absorb induced torque in the structure.
Distance c-c <= 150 mm, (Least center-center distance allowed between screws on each side of the structure (Horizontal)



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Fastener requirement example 1 Concrete

Assessment

Upper Connection-point, concrete structure, 100 mm construction depth, good quality.
Recommended Fixings: HSA M10x95 Hilti anchor bolts
Recommended loads:
N (Pull) 710 kg
V (Shear) 760 kg
Requirement: cc>144mm OK

Calculus

N: Recommended pull = 2 anchor bolts at 560kg= 1.420 kg > N(4xFpull =1000kg) OK
V: Recommended shear = 2 anchor bolts at 760 kg= 1.520 kg >V (4xFshear= 100kg) OK

Other Integralift™ requirements

NB! Horizontal Centre distance 150 mm
Use Locktite to ensure screws stay tightened.

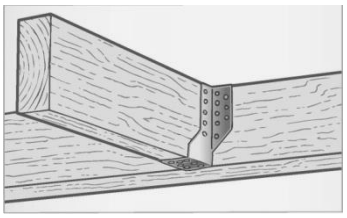
Fastener requirement example 2 Load bearing timber wall

Assessment

Load bearing timber wall 2“4 studs with center to center distance 600mm. Outside plasterboard. High quality upper connection point.

Strengthening of the wall

Opens plasterboard and connects two load-bearing studs with a 4”4 horizontal wood beam, 4”4. Connection between the 4”4 and studs is done with a standard beam-bracket, se illustration. The Bracket has 16 Ø5 Holes for screws against studs.



Recommended loads:
N (Pull) 171 kg (1,71 kN)
V (Shear) 188 kg (1,88 kN)
And several other dimensional requirements of which the bracket fulfills

Calculation Example:

All force is taken up in just one of the connection between the 4”4 and the studs.

N: Recommended pull = 10 wood screws at 171kg= 1.710 kg > N(4xFpull =1000kg) OK
V: Recommended shear = 10 anchor screws at 188 kg= 1.880 kg >V (4xFshear= 100kg) OK

Other Integralift™ requirements

NB! Horizontal Centre distance 150 mm

Fastener requirement example 3 Load bearing timber wall: See 15. “Stw wood”

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Installing Integralift™ structure

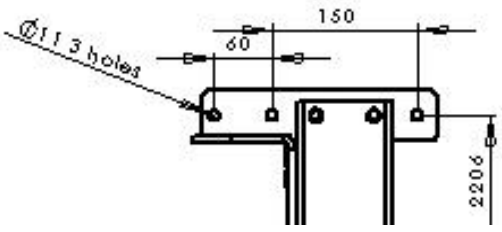
10. Integralift™ Wallmount Structure – INIT0143

The wall mount structure is suitable for concrete and brick walls. (For load bearing wooden wall the floor to ceiling post is recommended)

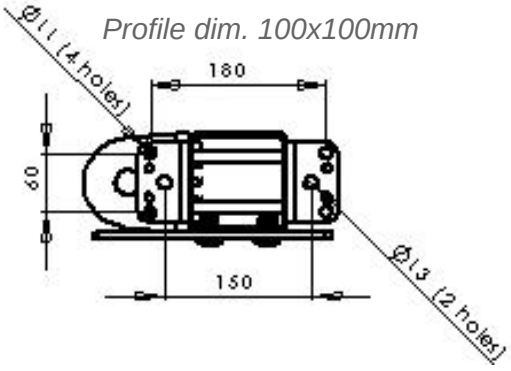
1. Assess whether bottom bracket should be attached to floor or wall.
2. Fasten the suited brackets to the structure, top and bottom. Top bracket double holes on same side as the backjib bracket, as in picture.
3. Place the structure level in designated place (see placement in room, page 10) and mark holes on wall.
4. Assess proper fastening materials needed, incl. possible additional brackets needed for the correct center distances in the building material. Make sure building materials is suited with regard to center distances and the dimensioning forces.
   N=1000 kg/V=1000kg
5. Level using shims and fasten the structure with screws. Ensure appropriate torque and locktite are used.

Pictured: Wall Mount structure mounted on the *right* side of bed. Bottom bracket fastened in floor. Alternatively, the bottom bracket can be rotated 90 degrees and fastened with screws.

Upper Connection Point



Lower Connection Point
Profile dim. 100x100mm



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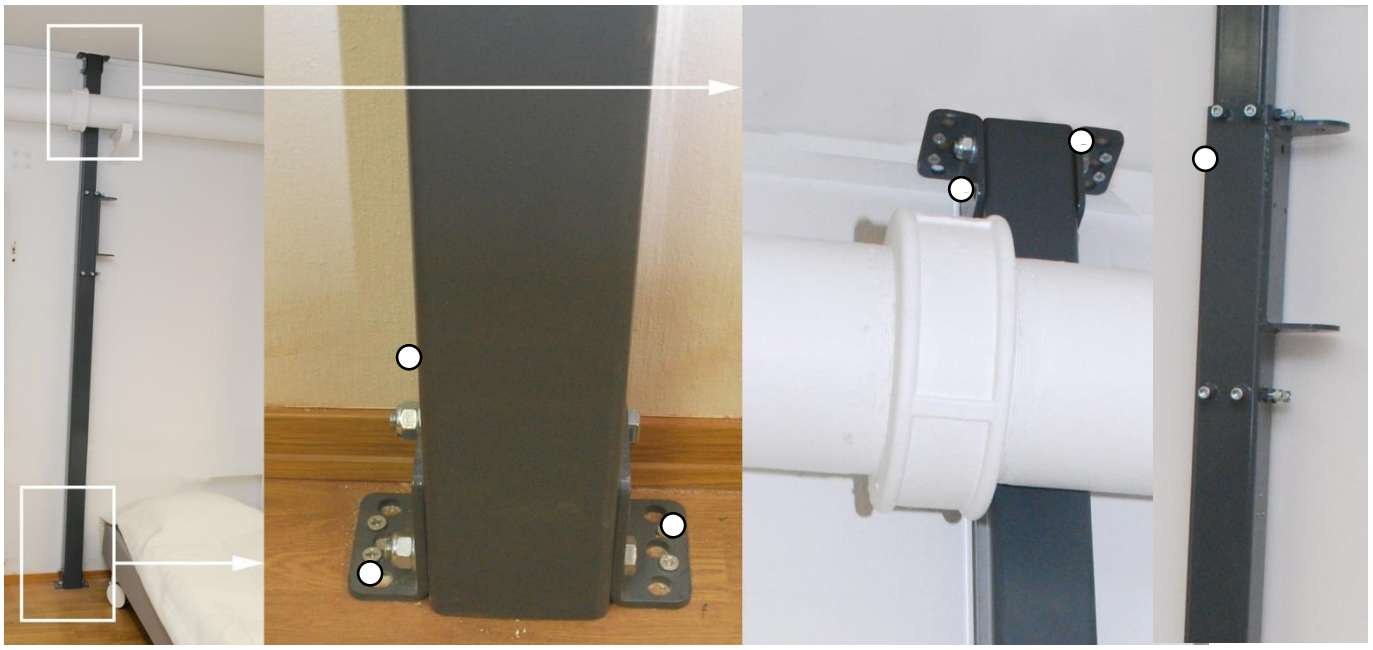
11. Integralift™ floor to ceiling structure – INIT0070

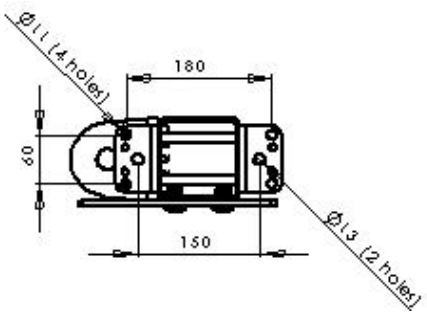
The Floor to Ceiling structure is suitable for most loadbearing structures in wall, floor or ceiling

1. Decide where fastening points are to be fastened; Wall/floor/ceiling.
2. Fasten suitable brackets to the structure, top and bottom.
3. Tighten the 8 M12 set of screws between the structures inner and outside profile to ensure the structure has the appropriate height. Lock screws in place with 15 Mn torque. Mind that total height of structure is less than 3,5 m.
4. Place the structure level in designated place (see placement in room, page 10) and mark holes on wall/floor/ceiling.
5. Assess proper fastening materials needed, incl. possible brackets needed for the building material. Make sure materials is suited with regard to center distances and dimension forces.
   N=1000 kg/V=1000kg
6. Level using shims and fasten the structure with screws. Ensure appropriate torque and locktite are used.



Pictured: Wall Mounted structure mounted on the *left* side of bed. Bottom bracket fastened in floor. Alternatively, the bottom bracket can be rotated 90 degrees and fastened with screws.

Upper/ Lower Connection Point:
Profile dim. 100x100mm and 80x80 mm (inner)



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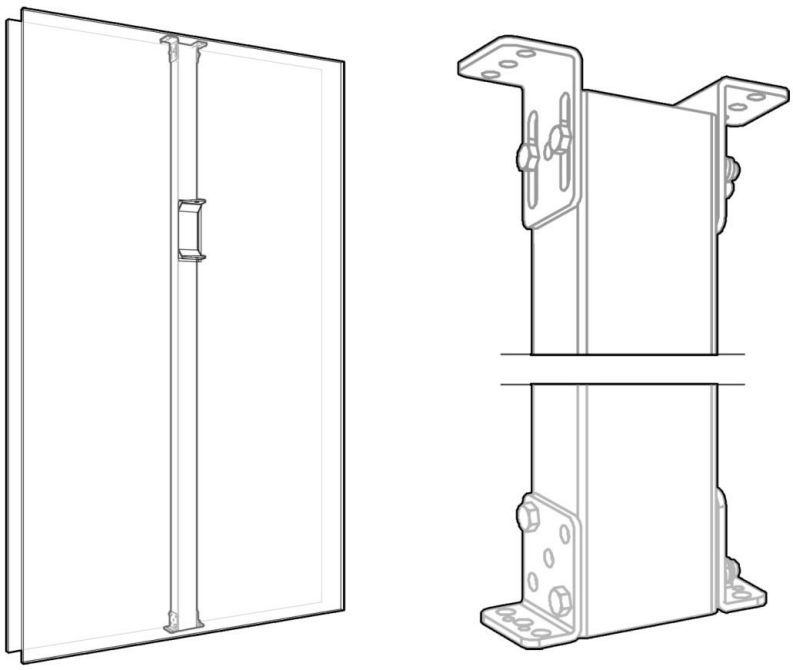
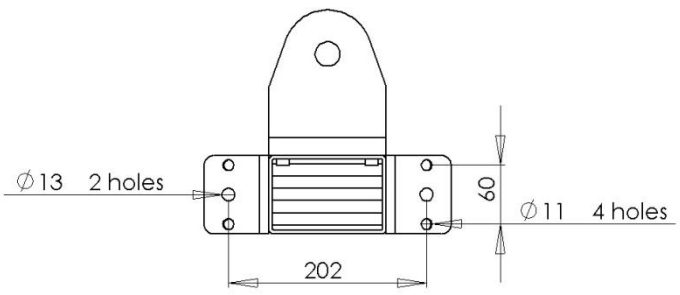
12. Integralift Inside Wall Structure - INIT

The Inside Wall structure is suitable for most load bearing structures in wall, floor or ceiling and is especially suited for new buildings.
The In Wall structure can be ordered in a specified length, or cut and drilled during installation.

1. Decide where fastening points are to be fastened; Wall/floor/ceiling.
2. Fasten suitable brackets to the structure, top and bottom.
3. Place the structure level in designated place (see placement in room, page 10) and mark holes on wall/floor/ceiling.
   (NB! Ensure that the structure is placed directly behind fastening of the back jib, unlike at the sides as with the wall mount and floor to ceiling structures)
4. Assess proper fastening materials needed, incl. possible brackets needed for the building material. Ensure materials are suited with regard to center distances and dimension forces.
   N=800 kg/V=800kg
5. Level using shims and fasten the structure with screws. Ensure appropriate torque and locktite are used.



Upper/ Lower Connection Point
Profile dim. 80x120mm



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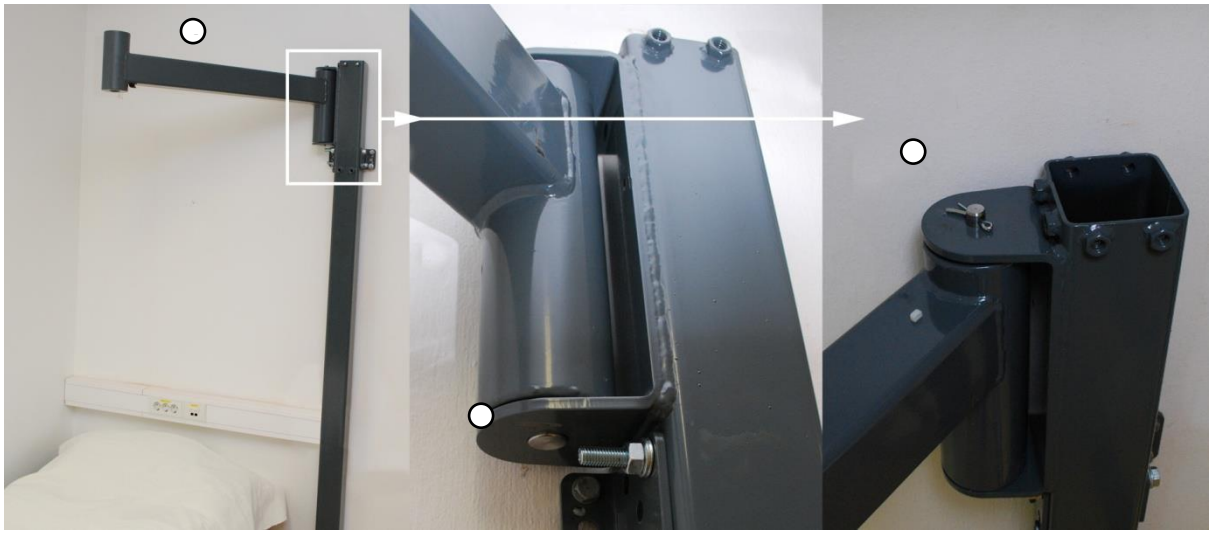
13. Installing Integralift™ Lifter Module and Cabinets

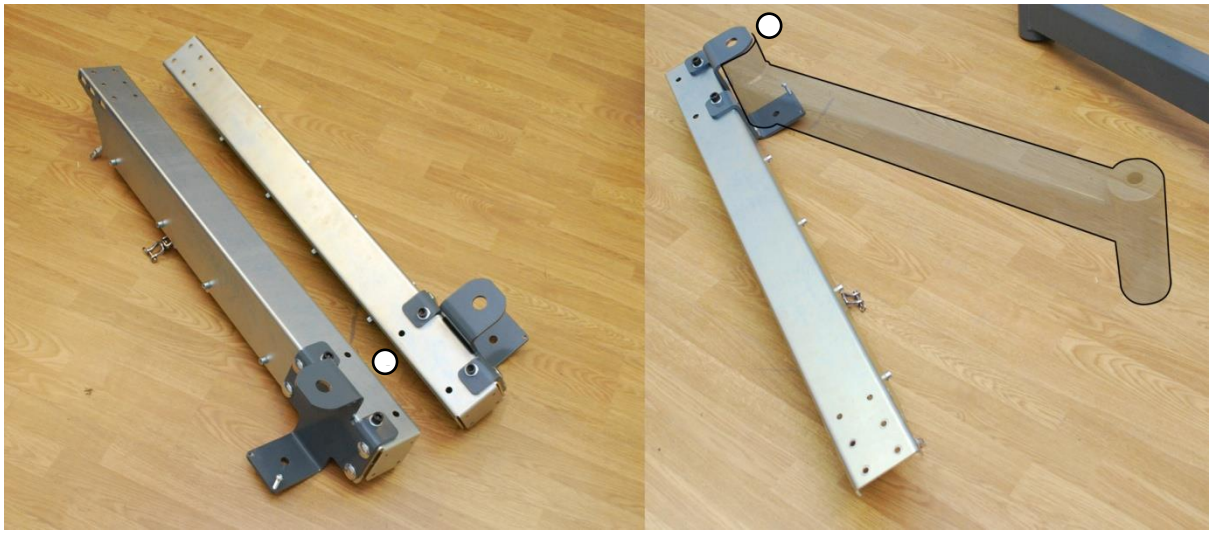
14. Back jib

1. Ensure the back jib is mounted facing the bed
2. Mount front job onto bracket with handle from beneath and safety pin on the top side of the jib.



15. Front jib bracket

1. The Bracket can be attached on both sides of the front jib, depending on the structure being on the left or right side of the bed.
2. Attach the bracket on the appropriate side of the front jib. Bracket is to face the front jib. Torque is 40Nm.



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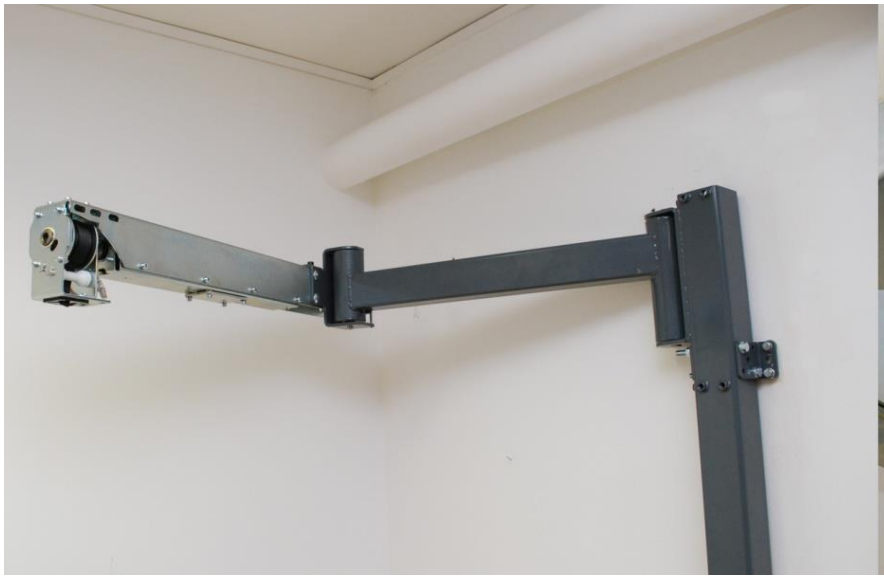
16. Front jib

1. Mount front jib to back jib, place shaft from above.
2. Secure with safety pin
3. Mount a short M8 Screw to limit movement of arm



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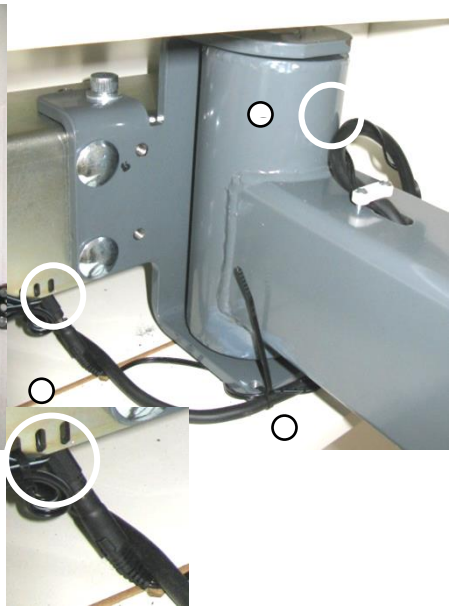
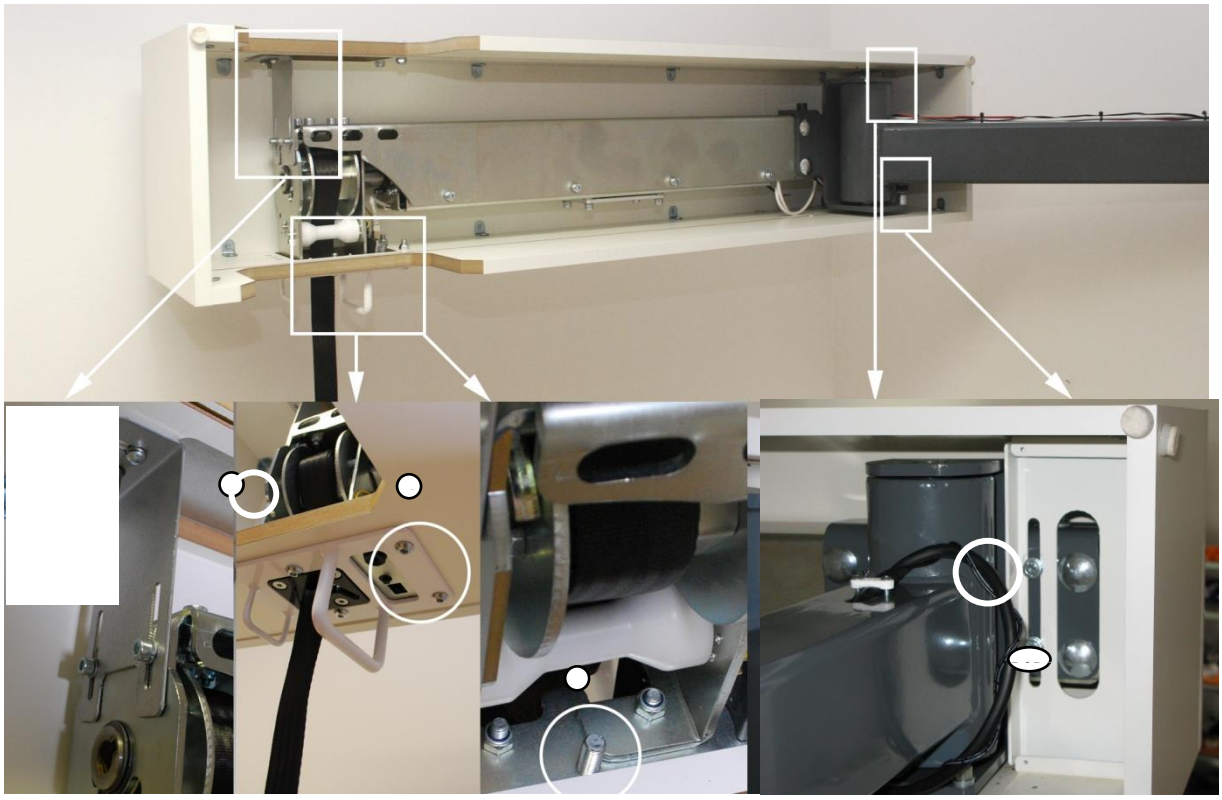
17. Electrical connection

1. Remove the controller card from the front jib and attach the positive battery cable to the card. Check diode is lighting up
2. Fasten the charger holder to the vertical structure and insert the charger. Attach the charger cable around power cable.
3. Ensure charger- and power cables (for down lighters) are properly fitted through back jib. Ensure cables do not get stretched.
4. Connect the charger cable to the extension cable.
5. Insert the plug in the wall outlet and make sure the charger is displaying light.
   (Red= Boost charge, Orange = Normal charge,
   Green = Ready for Use.)
6. If the cable is too short to connect to an outlet, an electrician must place an outlet that is sufficiently close.



18. Top Cabinet

1. Fasten the Grip to the top cabinet using 2x M8 screws.
2. Fasten Top Cabinet Bracket to top cabinet, if applicable.
3. Unscrew small screws from Front Jib Cabinet.
4. Place the top cabinet around the front jib and fasten with 2 x M8 panhead screws in front.
5. Attach the back of the front jib to the metal bracket of the top cabinet using 2x short M8 screws.
6. Level the top cabinet and screw the short M8 screws. Use locktite.



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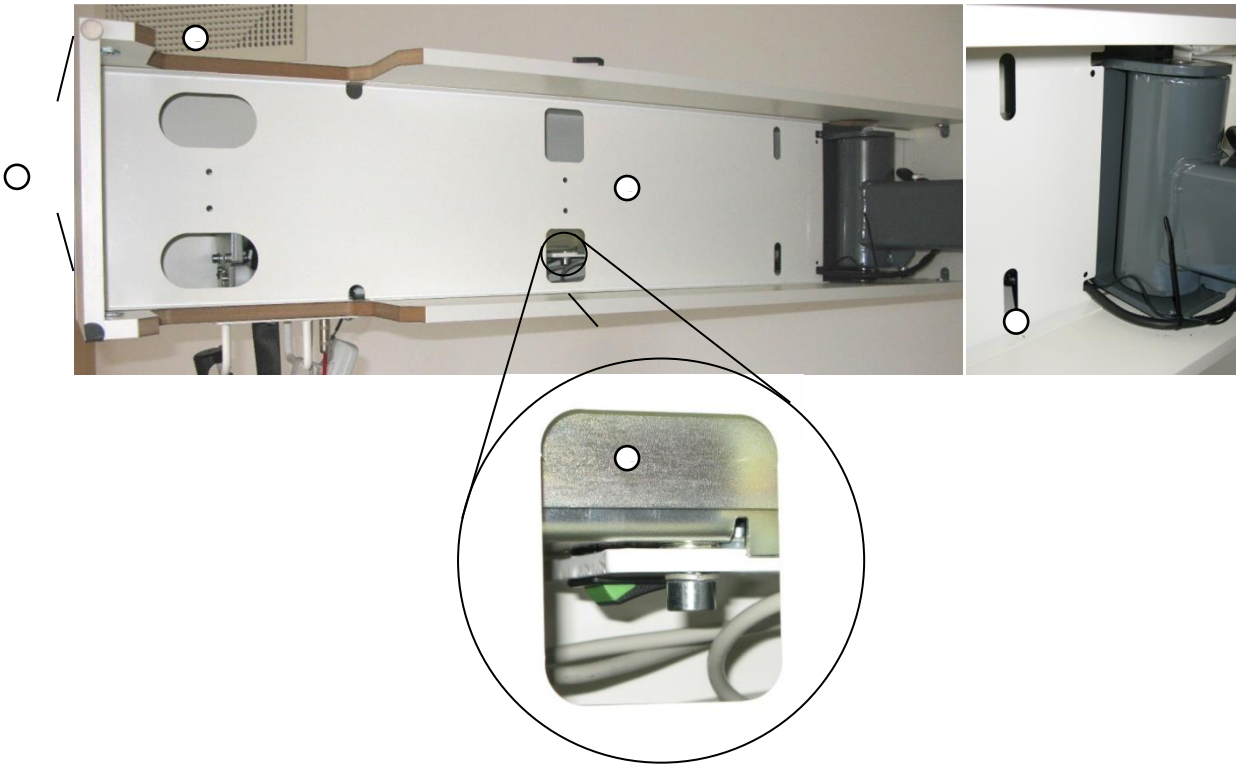
19. Rear cover in top cabinet

1. Mount and fasten rear cover with 3 screws top and bottom, alternatively with double tape and Velcro to be fastened in front and behind front jib.
2. Ensure all cables are correctly positioned, tie wrapped, and do not get stretched.
3. Attach window section to top of cabinet.
4. Ensure that the motor switch is activated (green side visible).
5. Attach Corner dampeners, if applicable.



6. Attach dampening rails to wall, make sure screws do not protrude from the rail.

Top cabinet

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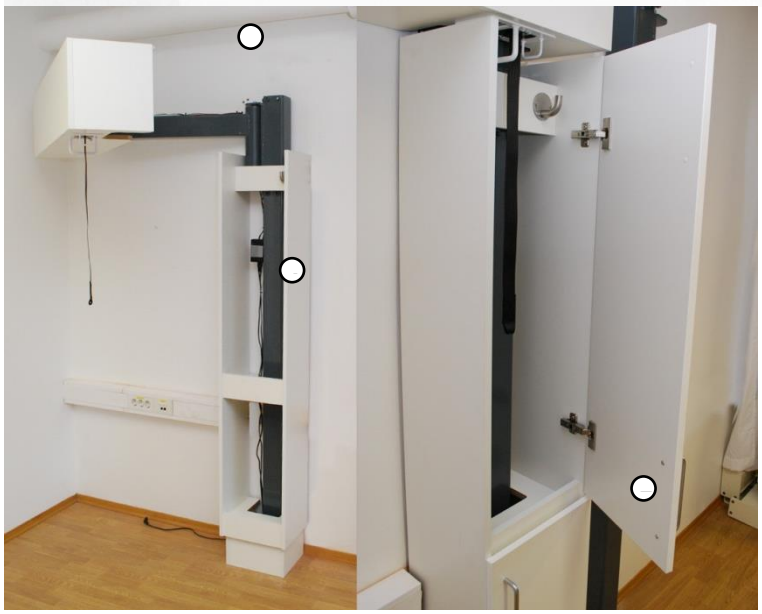
20. Vertical cabinet

1. Front of cabinet (in relation to the bed) is to be aligned with the front of the top cabinet. There should be a 10-15mm space between top and vertical cabinets. (The jib must be in the out position whilst the vertical cabinet is being mounted).
2. Mark wall holes in the appropriate height for the cabinet brackets.
3. Drill wall holes in accordance with suitable fastening materials and place the cabinet.
4. Mount cabinet doors, making the doors open facing away from bed.
5. Mount cabinet door handles.



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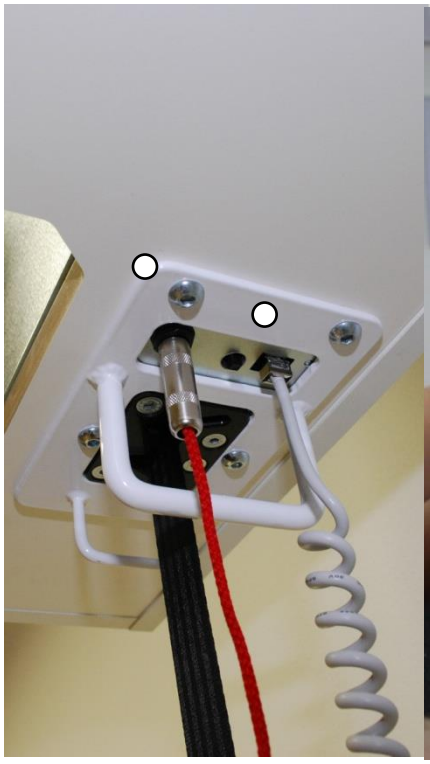
21. Connection and equipment

1. Charger cable fastened in the cabinet.
2. Mount lifting bar on the lift strap. Tighten screw and attach Starlock.
3. Connect emergency stop and remote control.
4. Fasten hook for hanging the patient sling.
5. Hang remote control and lifting bar unto sling handle and place the lifter in rest position in cabinet.
6. Place the easy use user's manual and service log on the inside of the cabinet door.
7. Ensure all warning- and product labels are correctly placed on the Integralift™.



Installation Control

22. End installation control.

1. Ensure the Integralift™ is level. Check all jib positions.
2. Ensure battery is charging: Observe that the light on the charger changes color when lifting under load.
3. Test Integralift™ work with 1 x max load in all positions for 20 minutes with jibs fully stretched.
4. After completing 3. Fully check all wall fastening points, all connection points and the whole installation.
5. If everything is working correctly and no errors are detected: Complete and sign the installation completion sheet.

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23. Installation Sign Off – Annual Service Sheet

Integralifter		**Customer**
Model		Name
Serial number		Adress
(Found on top/bottom of front jib)		
Production year		Zip number
Installed date		Placement (room)

Control	Status	Comment
Fastening		
Location details type of room etc		
Specify loadbearing structure & quality		
Distance from floor to ceiling		
Specify chosen fastening, wall/ceiling		
Fixings used		
Structure		
Wall Mount		
Floor to Ceiling Mount		
In-Wall Mount		
Driving unit and lifter		
Motor		
Band		
Lifting bar		
Remote control		
Electronics		
Cables and connectors		
Battery and charger		
Control board		
Emergency stop		
Emergency lowering		
Documentation		
Product branding with SWL		
User manual		

Status: X = OK, 1 = Observation needed, 2 = Immediate repairs needed, 3 = Withdraw from usage

Tested with 1,0x of SWL for 20minutes
(NB! In some countries this may need
to be 1.5 times the SWL)

Date: Installed By:

Signature:

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INNOVA™

Yesterday's challenge,
Today's solution

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