PRONOMIC

Operator’s manual

Lift & Drive®130PRX
200942B Lift&Drive DC 09 U42
200952B Lift&Drive DC 09 U52

Lift & Drive®175PRX
191542B Lift&Drive DC 15 U42

Lift & Drive®225PRX
191560B Lift&Drive DC 15 U60

Contents

1 Introduction

1.1 Product description

With a Lift & Drive® data centre lifter, server handling becomes a safe, efficient, and ergonomic one-person job. Lift&Drive lifters provide easy manoeuvring along narrow aisles, thanks to lightweight design with a compact footprint and tight turn radius. With precise, stepless control and unparalleled height span, the specially designed lifting platform reaches from the lowest rack units fo the very top positions. This makes it easier and smoother than ever to mount or removea server or battery, with perfect alignment at every rack position.

The lift trolley is only to be used indoors in well-lit environments on level surfaces.

This manual describes lift trolleys for lifting and transportation server units inside data centers.

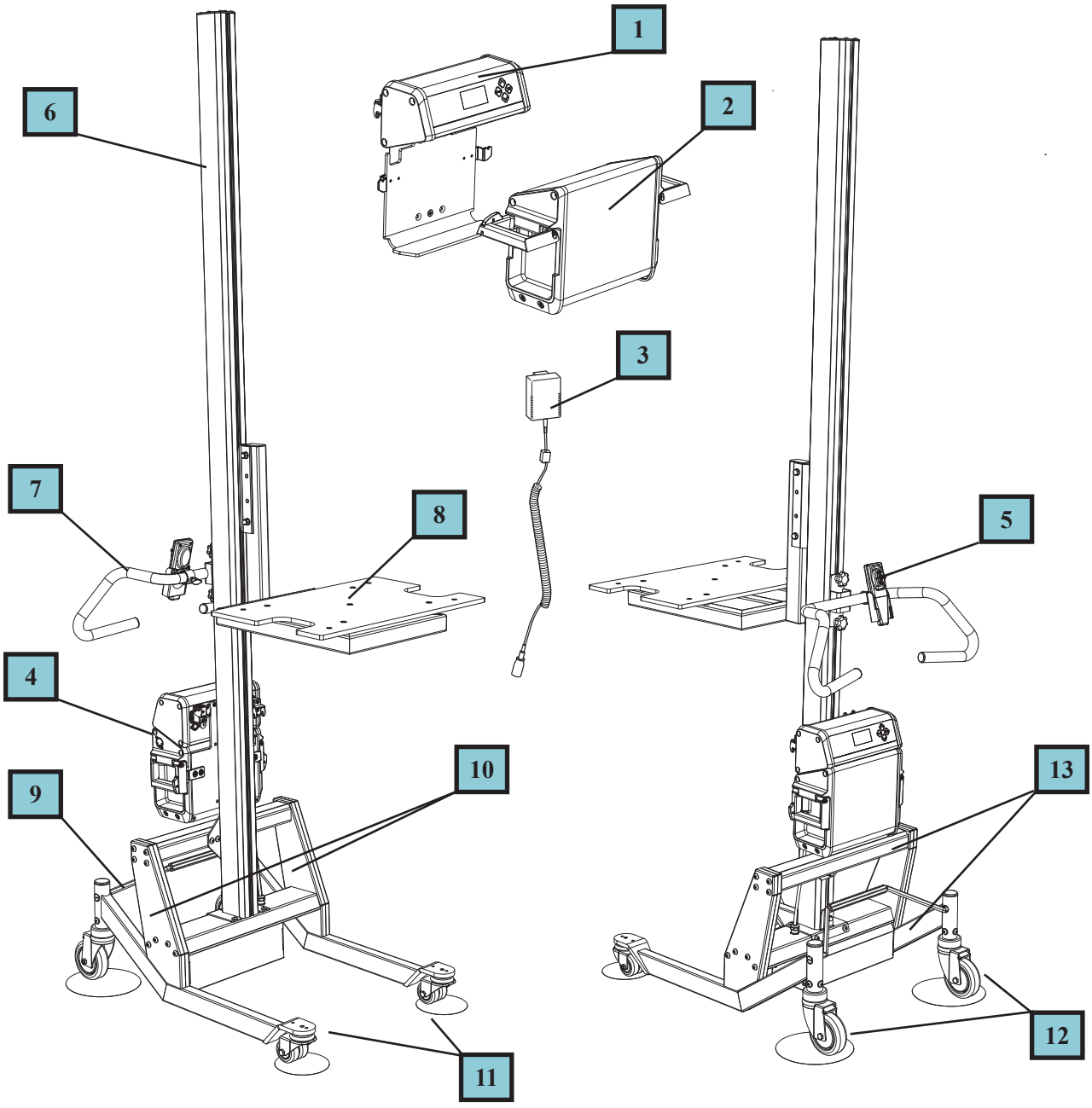
Additional technical documentation can be ordered from the manufacturer.

1.2 Warranty

The warranty is valid for one (1) year from the date of delivery for defects in material and manufacturing. For the warranty to be valid maintenance must have been carried out in accordance with this manual. The warranty does not cover normal maintenance, settings, adjustments or associated labour costs. Damage due to misuse or incorrect use of the equipment will void the warranty.

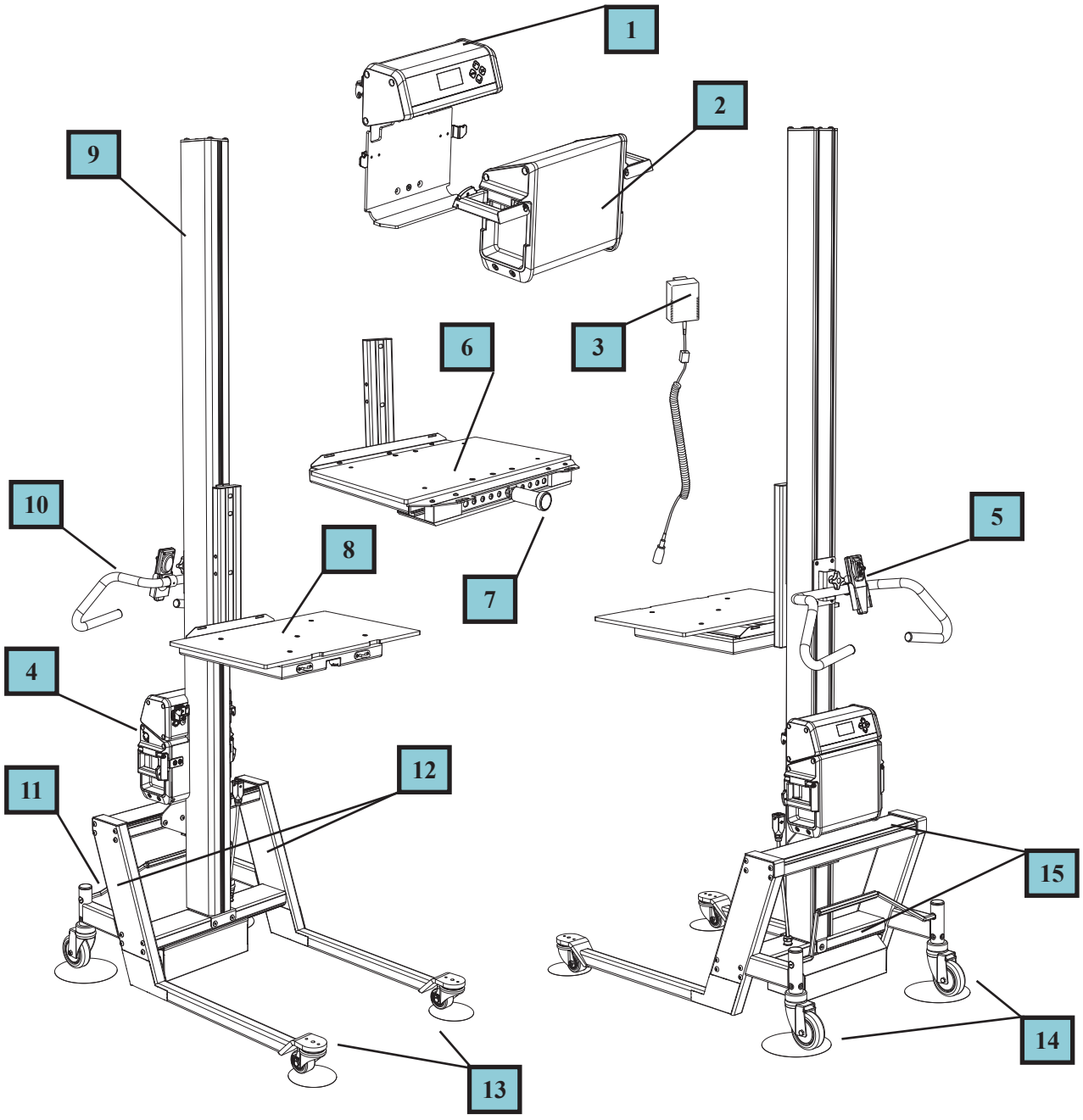
1.3 Components

Model Lift & Drive®130PRX 200942B Lift&Drive DC 09 U42



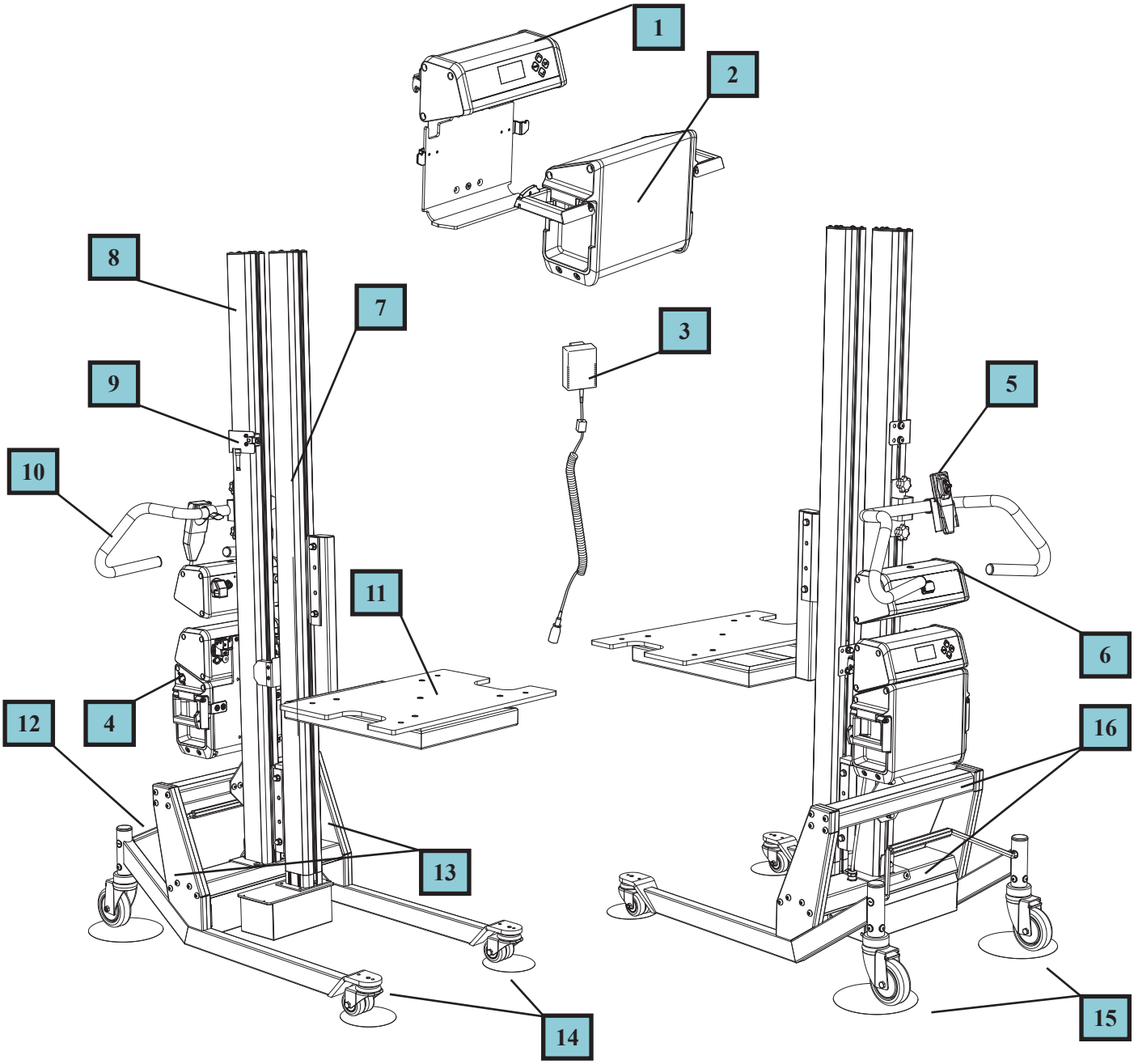
1. Control unit
2. Battery unit
3. Battery charger
4. Charger plug
5. Hand control
6. Column
7. Hand control
8. Fixed platform
9. Brake rod
10. Wheel frame
11. Front castor
12. Rear castor
13. Cross-member

Model Lift & Drive®175PRX 191542B Lift&Drive DC 15 U42



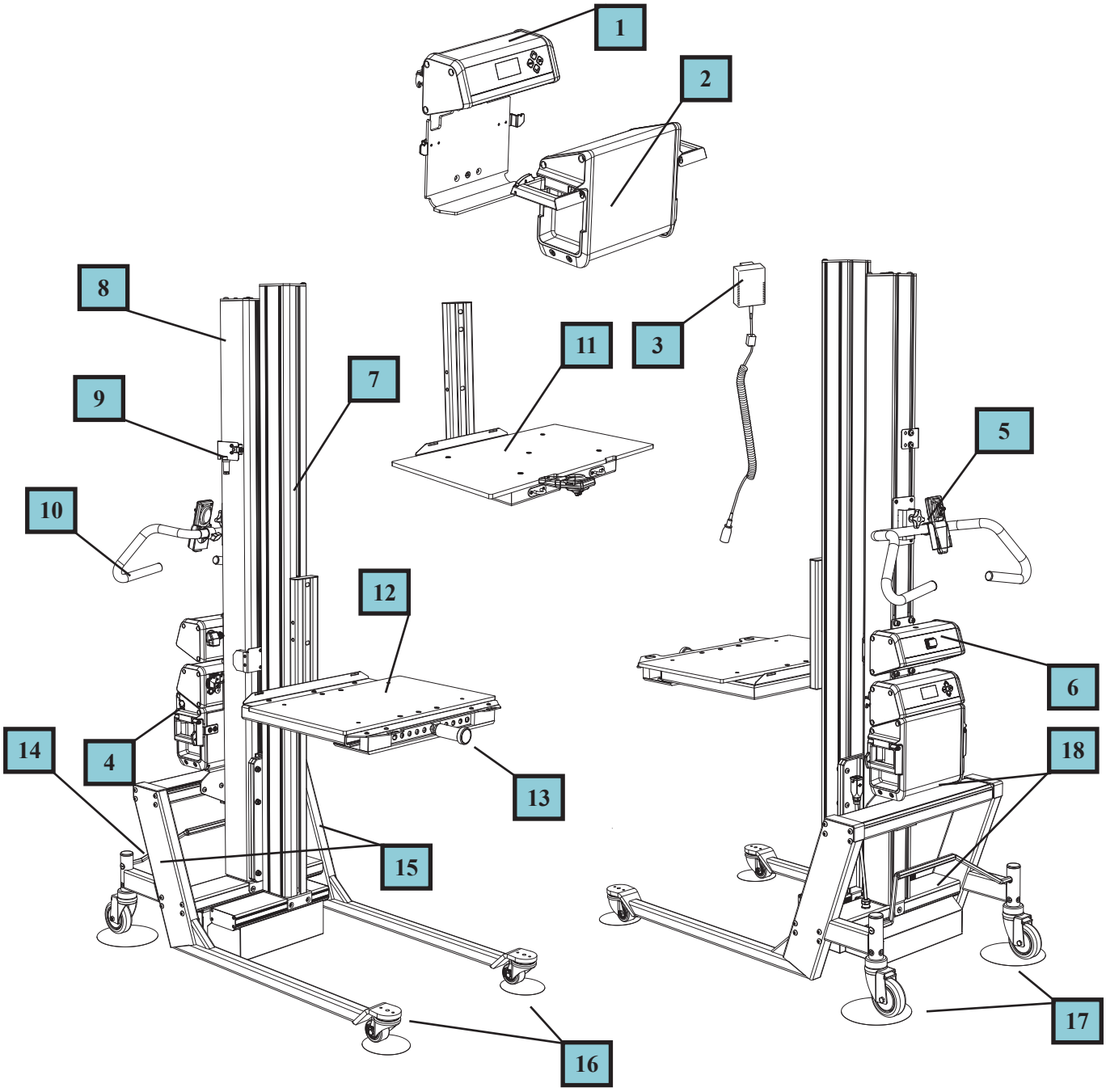
1. Control unit
2. Battery unit
3. Battery charger
4. Charger plug
5. Hand control
6. Sliding platform (option)
7. Release handle
8. Fixed platform (option)
9. Column
10. Handlebar
11. Brake rod
12. Wheel frame
13. Front castor
14. Rear castor
15. Cross-member

Model Lift & Drive®130PRX 200952B DC 09 U52



1. Control unit
2. Battery unit
3. Battery charger
4. Charger plug
5. Hand control
6. Control box
7. Telescopic column
8. Main column
9. Upper limit switch (option)
10. Handlebar
11. Fixed platform
12. Brake rod
13. Wheel frame
14. Rear castor
15. Front castor
16. Cross-member

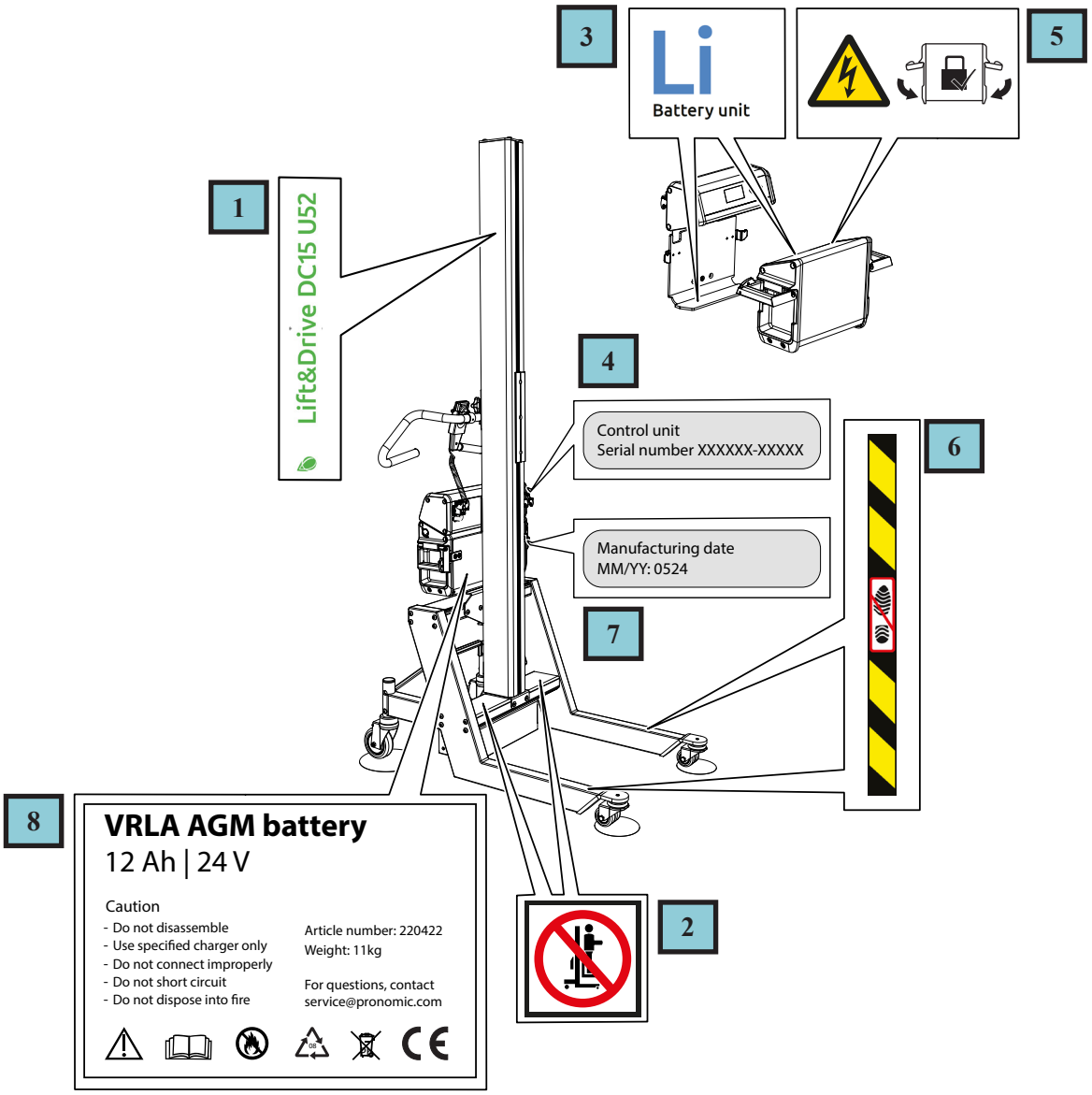
Model Lift & Drive®225PRX191560B Lift&Drive DC 15 U60



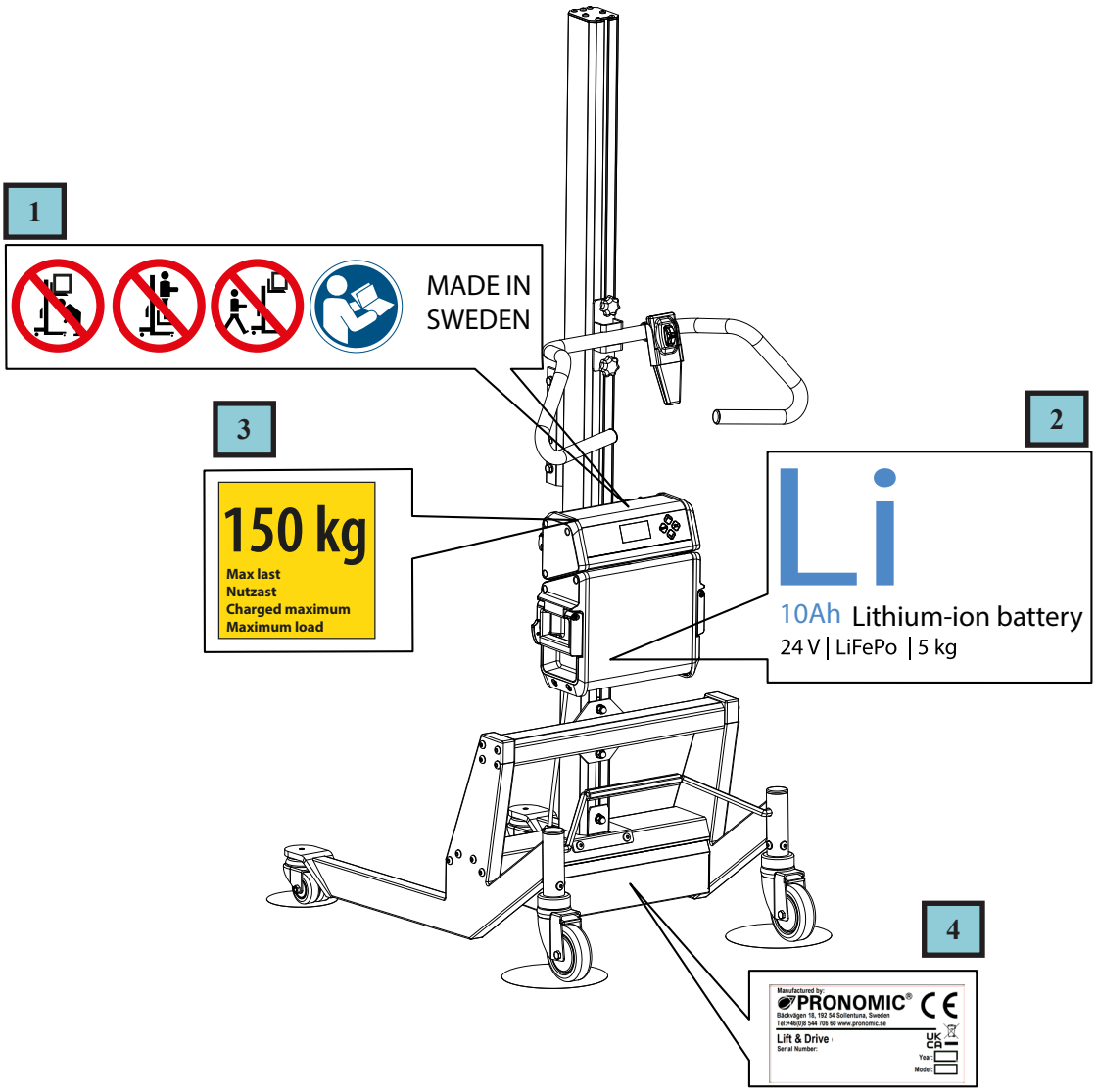
1. Control unit
2. Battery unit
3. Battery charger
4. Charger plug
5. Hand control
6. Control box
7. Telescopic column
8. Main column
9. Upper limit switch (option)
10. Handlebar
11. Fixed platform (option)
12. Sliding platform (option)
13. Release handle
14. Brake rod
15. Wheel frame
16. Front castor
17. Rear castor
18. Cross-member

1.4 Signs

Verify that the following plates and decals are attached and fully readable.

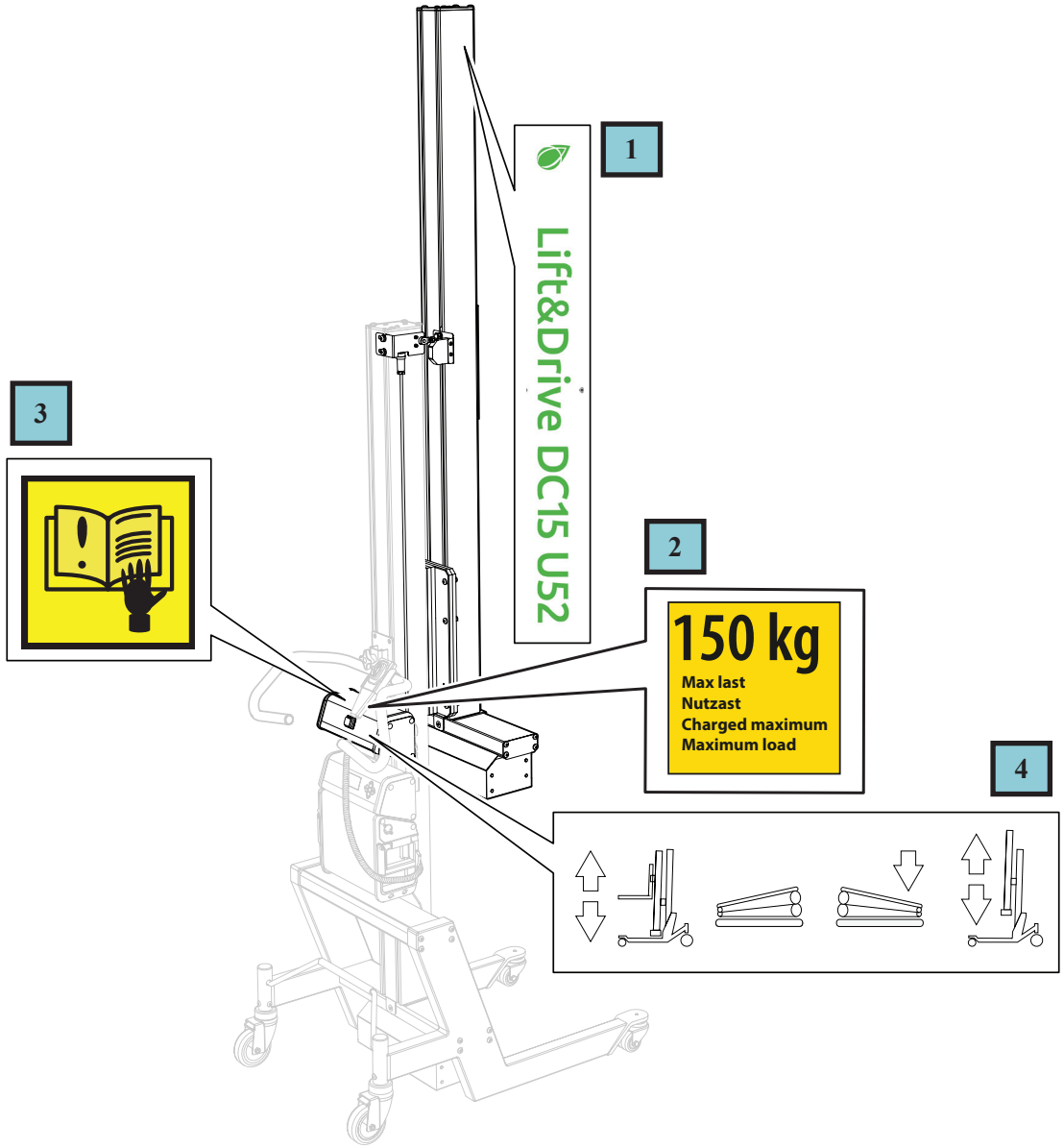


	Signs	Description	Placement
1	**Information**	Model and type of trolley	2 pcs each side of the column
2	**Safety symbol**	Do not use this trolley for people	2 pcs each end of lower cross-member
3	**Instruction**	Battery type Pb (VRLA AGM)	2 pcs one on shelf and one on upper side of battery unit
4	**Information**	Serial number control unit	Back side of the control unit
5	**Safety symbol and instruction**	Electrical hazard of battery terminals. Make sure that the handle locks when insert the battery unit to the shelf.	Clearly visible on upper side of the battery unit when needed
6	**Safety symbol**	Do not stand on the frame	2 pcs on the wheel frame
7	**Information**	Battery unit date of manufacture	Back side of the battery unit
8	**Safety symbol / Information**	Battery type, caution information, caution symbols	Back side of the battery unit



	Signs	Description	Placement
1	**Safety symbols and instruction**	Do not stand under the load platform. Do not use this lifter for people. Keep platform in lower position when moving. Read the manual.	On the upperside of the control unit
2	**Information**	Battery type Pb (VRLA AGM)	On the front side of the battery unit
3	**Information**	The maximum load of trolley	On the upper side of the control unit
4	**Information**	Nameplate with trolley serial no etc	On the front side of the cross-member

Additional signs for model Lift & Drive®130PRX 200952B DC 09 U52



	Signs	Description	Placement
1	**Information**	Model and type of trolley	2 pcs each side of the telescopic column. (It is the same decal from the main column that is now moved to the telescopic column.)
2	**Information**	The maximum load for the trolley with telescopic columns	One, on top of the controlbox telescopic column (It is the same decal from the control unit that is now moved to the tool control box.)
3	**Instruction**	Read the manual	On the upperside of the control unit
4	**Instruction**	Icons for the telescopic buttons	On the front side of the control box

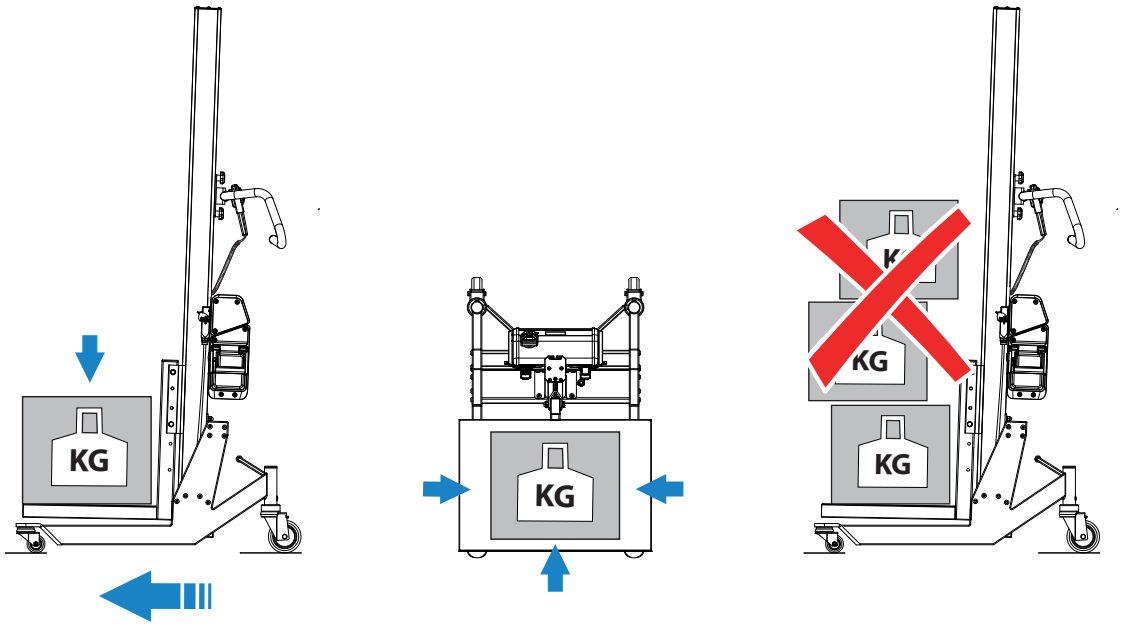
1.5 Platform

Depending on the rack types and mounting procedures at current data center, there is different platforms that corresponds to different needs.

- Sliding platform to bridge the gap between server position and lifter: +/–150 mm
- Fixed platform for easy handling

Model Lift&Drive	DC 15 U42 191542B	DC 15 U60 191560B	DC 09 U42 200942B	DC 09 U52 200952B
Platform type	Sliding platform / fixed aluminium	Sliding platform / fixed aluminium	fixed aluminium	fixed aluminium

1.6 Handling goods



WARNING: Heavy load!
Always wear protective shoes when operating the lift.

When handling goods on the trolley engage the central brake.
Use the hand control to position the loadcarrier with the tool to the pick up position. If it is a manual loading (platform) use a ergonomic pick up position.
Make sure the load is centered and stands safe on the tool. Do not stack the goods.
Raise or lower the tool with the load. Always keep the tool in the lowest position when moving a loaded lift trolley.
Deactivate the central brake and move the trolley to the unloading place.

2 Safety

To make sure the lift trolley is used in a safe way please read this additional safety information.

2.1 Safety definitions

WARNING: A warning is used where there is risk of serious personal injury or death.

CAUTION: A caution is used where there is risk of minor personal injury or risk of damage to the product.

NOTE: A note is used to provide additional information that is good to know.

2.2 Hazards

2.2.1 Handling goods hazards

WARNING

- Do not use the lift trolley as support for ladders.
- Always center the load before raising or lowering the load carrier or when transporting goods.
- Never stand, work or keep body parts under a suspended load.
- Never exceed the maximum load.
- Do not move the load or touch moving machine parts while the load carrier is lowered or raised.
- Do not leave the lift trolley with a suspended load unsupervised.
- Make sure the trolley is braked before lifting and lowering loads and when handling a load on the load carrier.
- Never reach arms through the handlebar to reach something on the load carrier.
- Mind your colleagues and surroundings when moving the lift trolley in narrow spaces.
- Do not stack the load.

CAUTION

- Be careful when raising or lowering the load carrier- do not bump into any fixed object.
- Always use lower speed when approaching positions near objects.

2.2.2 Transportation hazards

WARNING

- Always keep the load carrier in the lowest position when moving the lift trolley.
- Always use the lift trolley on a level floor. Uneven floors or level variations can cause the lift trolley to become unstable. Goods can fall from the lift trolley if it becomes unstable.
- If objects hang from the ceiling, make sure that they cannot collide with the lift column while moving the lift trolley.
- Pay attention to obstacles on the floor, such as cables or thresholds.
- Be aware of the machine height in spaces with low ceiling or when passing through doors.
- Reflect an inner placement of your hands on handlebar when passing edges, doors, walls or protruding objects.

2.2.3 Environmental hazards

WARNING

- The lift trolley is to be used indoors only.
- Only use the lift trolley in well-lit environments.
- Only charge the battery unit in a dry and ventilated space.

CAUTION

- Do not use running water to clean the lift trolley.

2.2.4 Improper use hazards

WARNING

- Do not use the lift trolley if there is suspicion of damaged or faulty components.

2.2.5 Electrical hazards

WARNING

- Never use a damaged battery charger.
- Never use a damaged battery unit (battery).
- Make sure that no charger is connected to the battery unit when doing maintenance on the battery or electrical components.
- If the battery has been subjected to mechanical shocks (eg dropped), check the status and function of the battery: Make a visual examination, evaluate whether the battery unit can be installed correctly, check that when using the hand control the trolly runs correctly, evaluate whether the charger connector and internal cables are functional by fully charging the battery unit.

CAUTION

- Never use the battery charger with a power outlet that is not matching the specification of the charger.

2.2.6 Replacement parts

WARNING

- Only use original spare parts from an official supplier of the product.
- Do not perform service or maintenance without permission and proper training.

2.2.7 Personal protection equipment

WARNING

- Heavy load! Always wear protective shoes when operating the lift.

WARNING

- Only authorized personnel are allowed to operate the lift trolley.

3 Storage, disposal and transportation.

3.1 Storage

Ensure that the trolley is stored in a dry place and should not have any leakage or corrosive gases entering it.
The trolley is equipped with VRLA AGM batteries. The battery type is maintenance free and need charging regularly to function properly. Aways disconnect battery from electronics unit when storing.
When the battery are at storage, it will always slowly lose it´s charge over time.
The self-discharge in the battery is low.

VRLA AGM batteries:
The recommended storage temperature is 20-25°C (68-77°F). The storage time must not exceed 12 months without charging. This is applicable to fully charged batteries. Empty batteries put in storage will degrade in months.

Temperature	Maximum storage time before charging
20-25°C (68-77°F)	12 month
30°C (86°F)	8 month
40°C (104°F)	4 month

3.2 Disassembly, scrapping and disposal

Disassemble the lift trolley. Use the assemble instructions in reverse order. Refer to the table of contents to locate the relevant chapter for further information.

When the lift trolley is due for scrapping the machine, complete with batteries, it should be handed in to a recycling center or to your supplier. Follow local regulations to ensure reuse and safe handling of all parts.

3.3 Transportation

If the cart is fully assembled, it must stand up during transport/shipping. The hand control is disconnected and the battery unit is lifted out of the trolley. The hand control and battery unit are packed together in a separate carton. Make sure the lift trolley is secured properly when shipping.

4 Set up

The setup function tests and charging must be performed before first use, after transportation or when the lift trolley has been stored for more than a month.

4.1 Unpacking and inspection

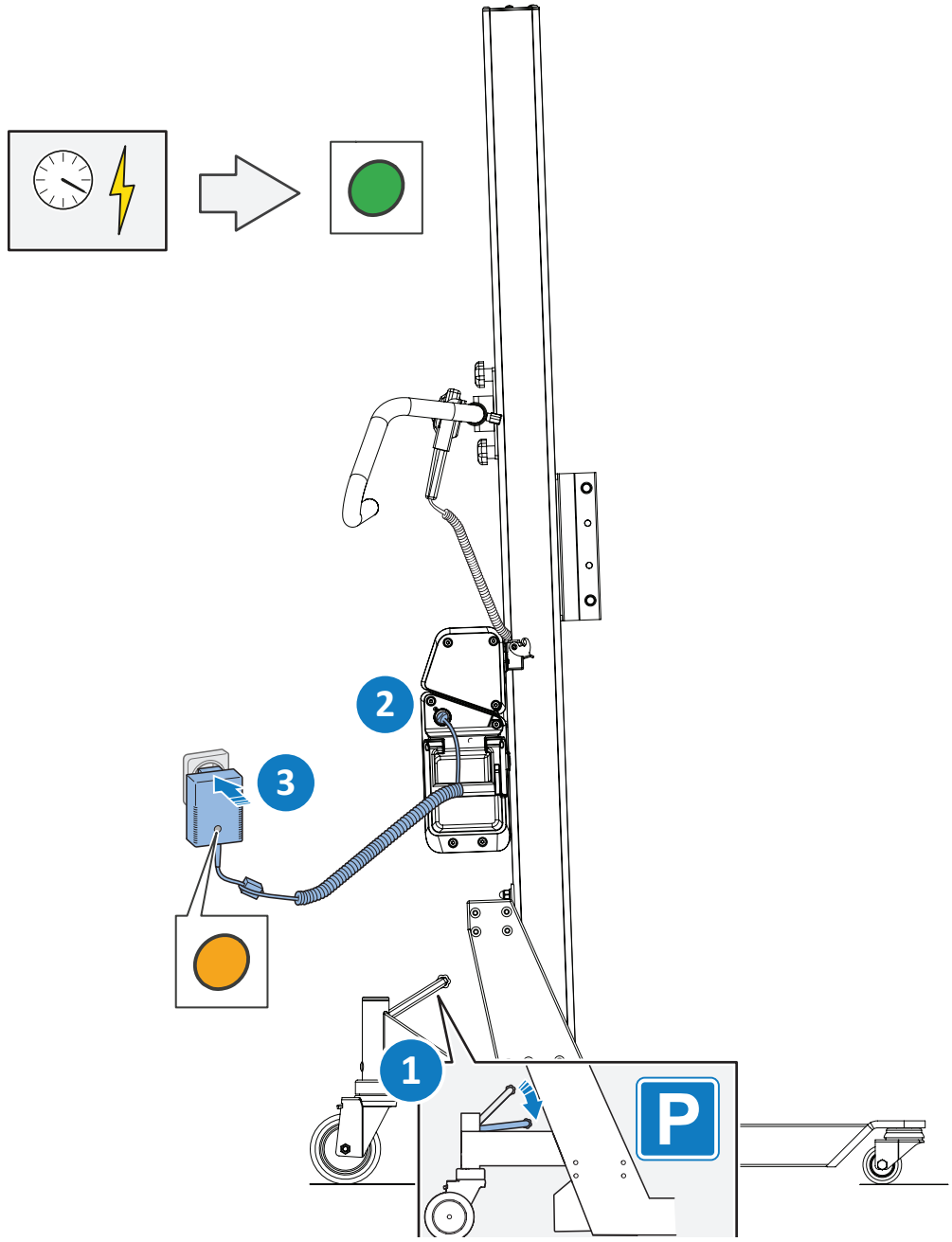
Recycle and dispose of protective packaging correctly in a safe and environmentally friendly way.

Make sure that the delivered goods have no visible damage.

4.1.1 Orderd and deliverd as fully assembled

- Remove the plastic that covers the pallet. If using a knife, make sure to not scratch or damage any part of the lift trolley.
- Cut and remove the plastic straps that hold the lift trolley to the pallet.
- Release the brake by moveing the brake rod to its middle position to disengage/unlock the central brake.
- It is recommended to use ramps when moving the lift trolley from the pallet. Move the trolley forward and down from the pallet on the ramps.
- If no ramps are available, make sure that at least 2 people move the lift trolley from the pallet. Make sure the lift trolley has no visible damage.

4.2 First time charging



WARNING: Make sure that personnel cannot trip over the trolley or its connected cables.

WARNING: Position the lift trolley in a dry and ventilated space when charging the power pack.

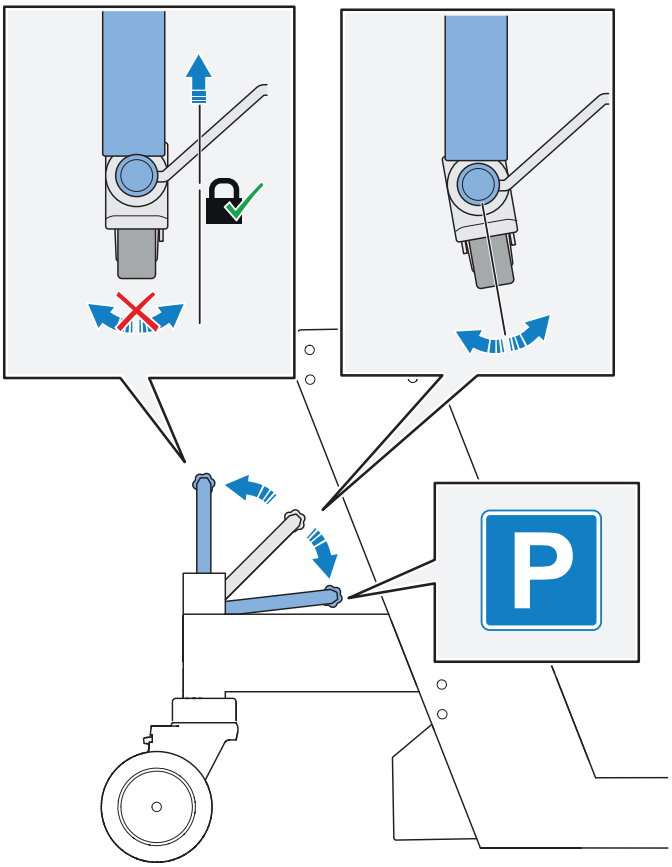
The battery unit should be charged in the trolley after longer transport or storage periods.
The battery unit must be charged for min. 8 hours before performing basic function tests.

1. Engage the central brake.
2. Connect the 4-pin plug to the battery unit.
3. Connect the 2-pin male plug to the wall socket. The indicator lamp on the charger turns orange if the battery unit is not fully charged. The indicator lamp turns green when the battery unit is fully charged.

   Disconnect the charger from the battery unit before using the lift trolley.

4.3 Basic function tests

4.3.1 Testing the brakes



The brake rod has 3 positions:

- Lowest position – central brake
- Middle position – disengaged/unlocked
- Upper position – directional lock

Testing the central brake:

The central brake prevents the lift trolley from moving.

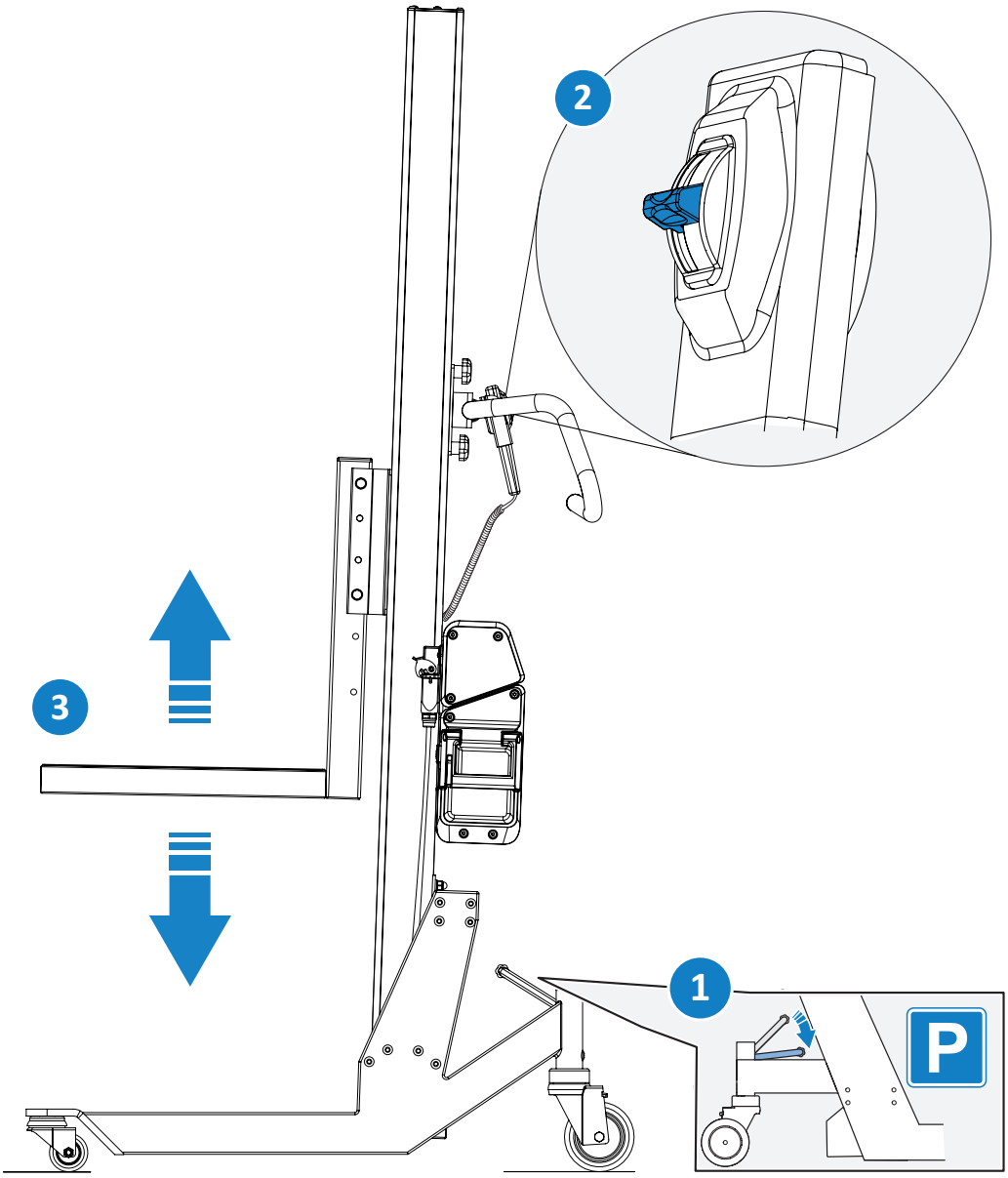
- Move the brake rod forward to its lowest position to engage the central brake.
- Make sure that the rear castor wheels are locked and that the lift trolley cannot move.
- Move the brake rod to the middle position to release the central brake.
- Make sure that the rear castor wheels can move freely and swivel.

Testing the directional brake:

The directional lock locks the position of the rear wheels allowing the lift trolley to travel straight forward or backwards.

- Align the rear castor wheels parallel to the lift trolley frame.
- Move the brake rod to the highest position to engage the directional lock.
- Make sure that the rear castor wheels do not swivel and that the lift trolley only travels straight forward and backwards.
- Move the brake rod to the middle position to release the directional lock.
- Make sure that the rear castor wheels can move freely and swivel.

4.3.2 Testing the lift movement, model 200942B and 191542B



One column:

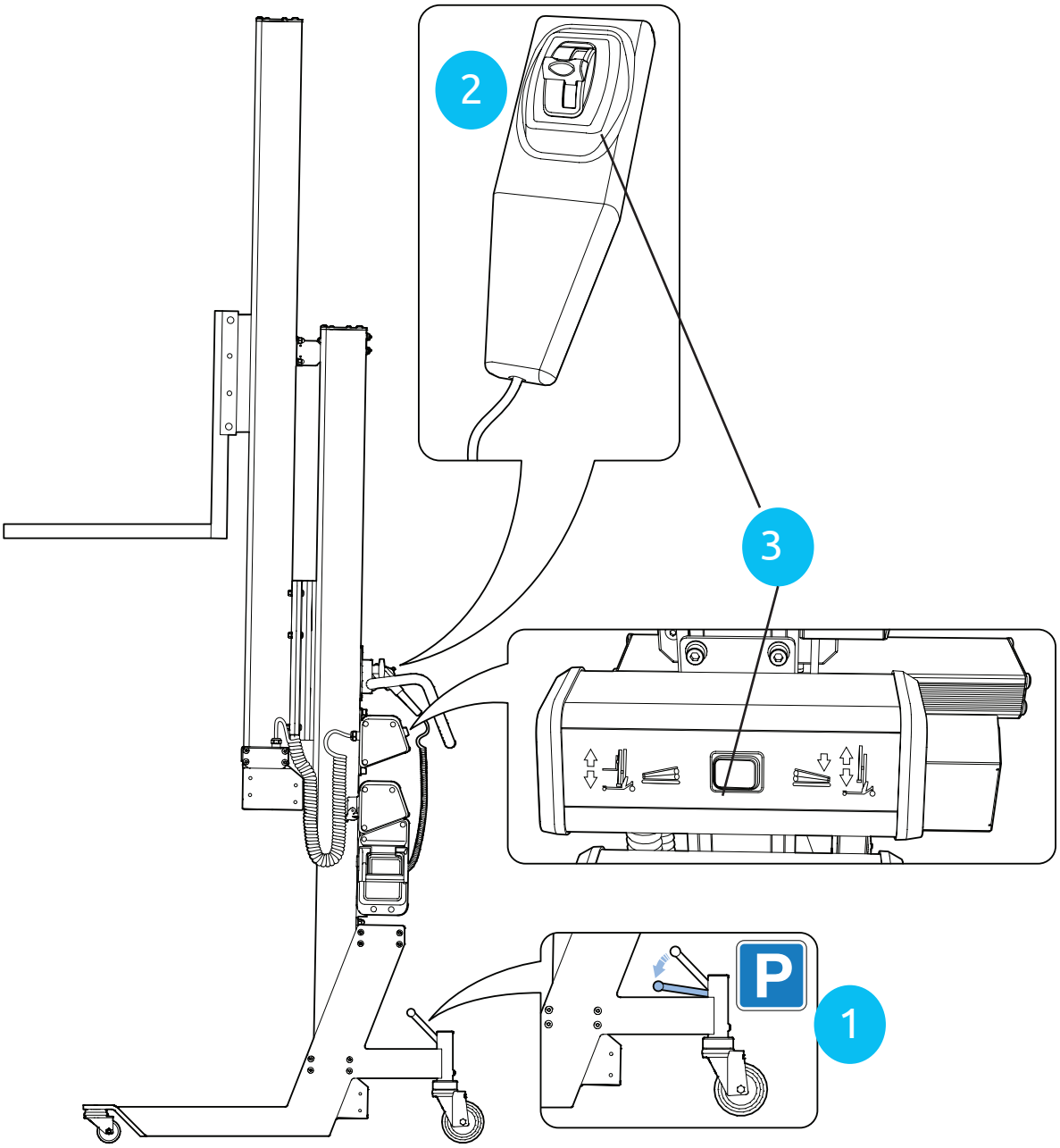
The vertical movement of the load carrier is operated by the hand control. Control both direction and speed with the lever on the hand control.

1. Engage the central brake.

2. A slight push on the lever gives low stepless speed. A hard push on the lever gives high stepless speed. Release the lever to stop motion.

3. When the lever is pushed upwards the load carrier is raised. When the lever is pushed downwards the load carrier is lowered.

4.3.3 Testing the lift movement, model 200952B and 191560B



CAUTION: Consider the ceiling height above the lifting trolley before the main column is driven upwards.

CAUTION: Make sure there is enough space to raise the load carri-er..

NOTE: When the safety coupling is activated, more noise is emitted in the lifting mechanism than during normal operation.

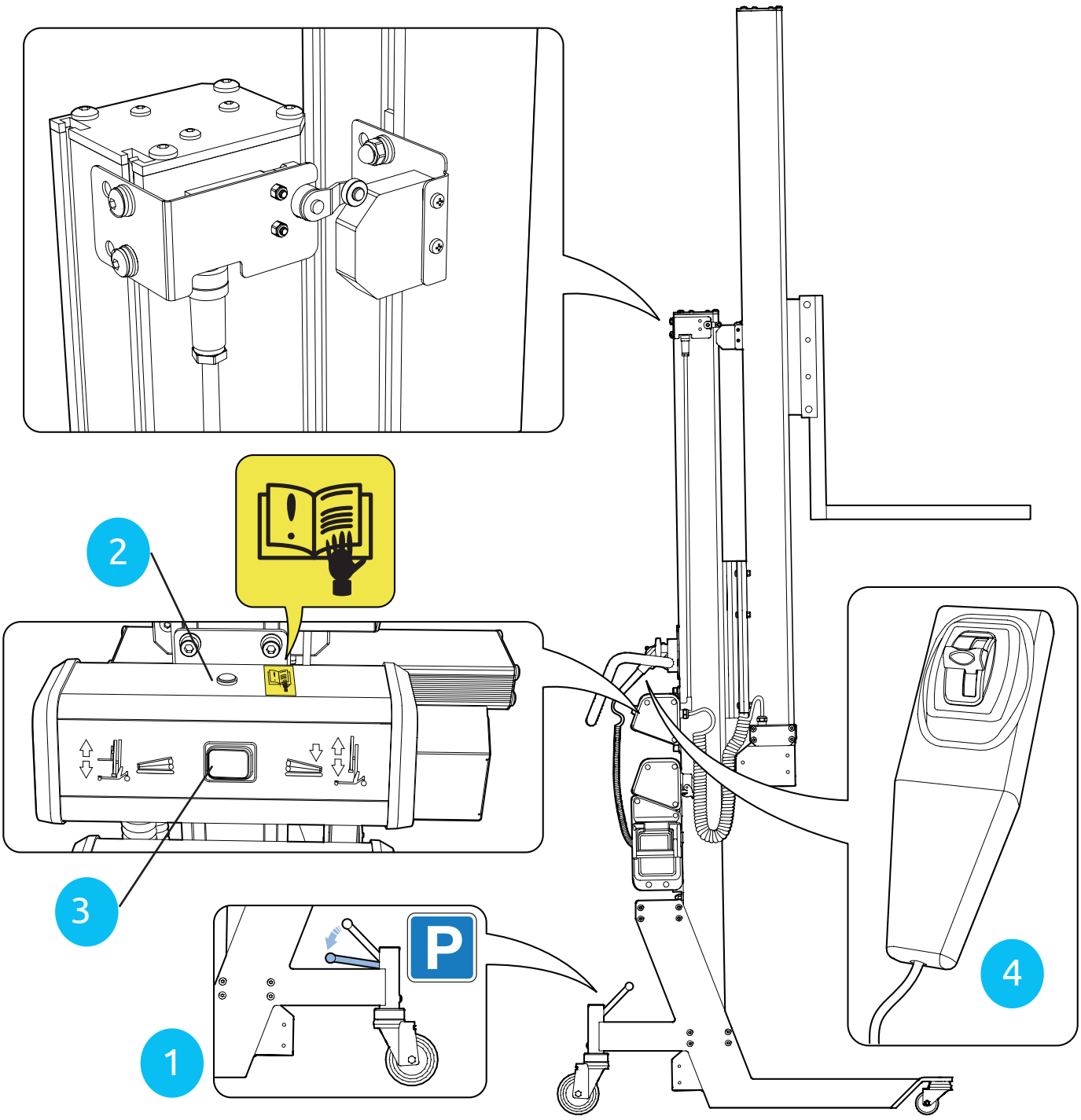
Two columns:
main column and telescopic column.

1. Engage the central brake.

2. Telescopic column:
The vertical movement both direction and speed, of the load carrier is operated by the lever on the hand control. A slight push on the lever gives low stepless speed. A hard push on the lever gives high stepless speed. Release the lever to stop motion.

3. Main column:
The vertical movement is enabled when the spring button on the controlbox telescopic column is pressed at the same time as operateing the lever on the hand control. A slight push on the lever gives low stepless speed. A hard push on the lever gives high stepless speed. Release the lever to stop motion.

4.3.4 Testing the upper limit switch (option), model 200952B and 191560B



CAUTION: Consider the ceiling height above the lifting trolley before the main column is driven upwards.

CAUTION: Make sure there is enough space to raise the load carrier.

NOTE: When the safety coupling is activated, more noise is emitted in the lifting mechanism than during normal operation.

1. Engage the central brake.
2. Press and hold the button on the top of the controlbox telescopic column for temporarily disable the limit switch.
3. Press and hold the button on the front of the controlbox telescopic column to activate opportunity for movement of the main colomn.
4. Drive the main column upwards by pushing the slider upwards on the handcontrol. The upward movement is permitted even though the upper limit switch is activated.

4.3.5 Testing the safety coupling

The safety coupling prevents personal injury and equipment damage when lowering the platform. The safety coupling is released when the load carrier reaches its lowest position or when encountering an obstacle in its downwards traveling path.

NOTE: The lifting mechanics emits more noise when the safety coupling is released than during normal operation.

Test the safety coupling in the lowest position.

- If necessary, raise the load carrier by pushing the lever on the hand control upwards.
- Release the lever to stop motion.
- Lower the load carrier, by pushing the lever on the hand control downwards. When the load carrier reaches its lowest position, the safety coupling is released, and movement stops.
- Release the lever to stop motion.

4.4 Static load test

When column been mounted/remounted perform the static load test. Drive the load carrier to the middle of the column and apply the load with 1.25 x the maximum load. The trolley should hold the load. Conclude this test with visual damage inspection.

5 User instructions

5.1 Battery charge

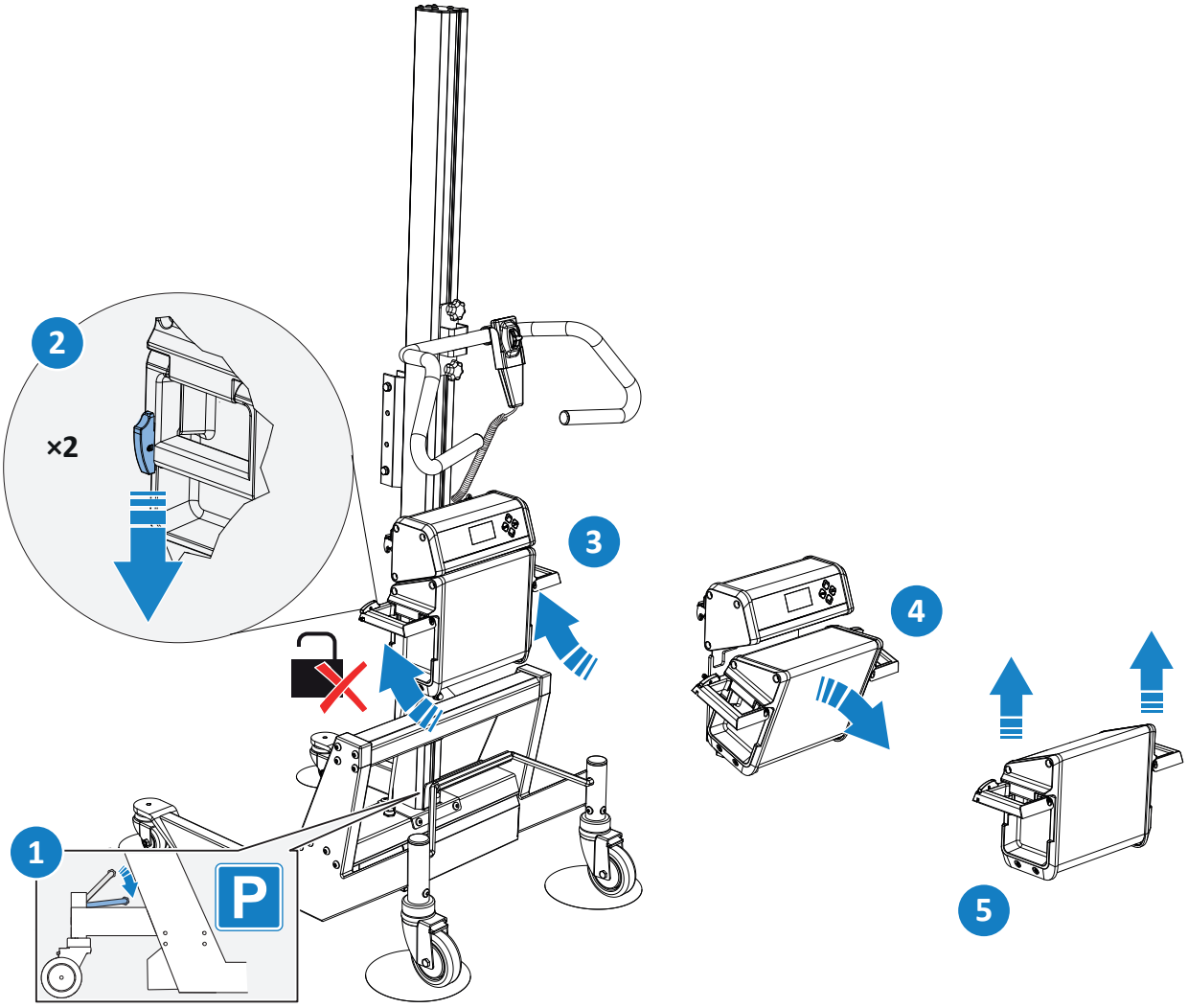
To read out the actual battery voltage (V) use the buttons beside the display. Press “Enter” > “System info”. Line one will show xx% xx,xV.

The main menu of the display shows the state of charge of the battery unit.
A fully charged battery is indicated by a full battery symbol. When the battery charge runs out during use, the symbol shows the degree of discharge.

When it’s time to charge or replace the battery unit the symbol shows empty. It is no longer possible to raise the load carrier. This is to prevent the batteries from getting damaged by extensive discharges. It is still possible to lower the load carrier.

(If the display doesn’t light up raise and low the load carrier or remove and replace the battery unit. Refer to the table of contents to locate the relevant chapters for further information.)

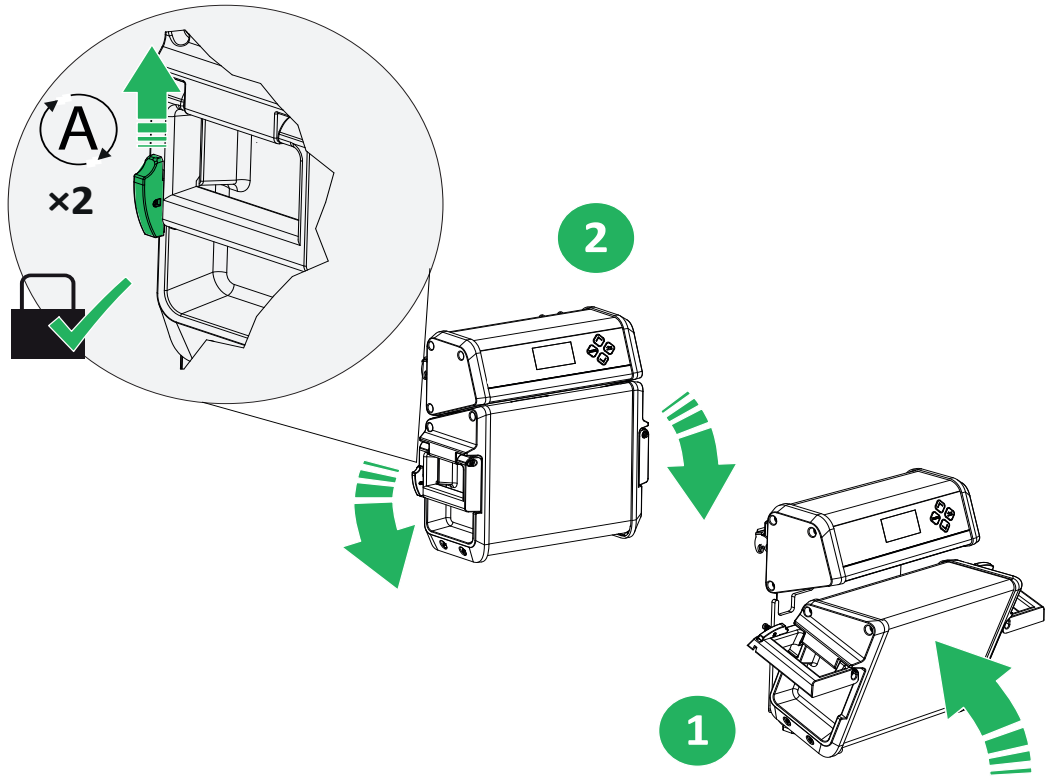
5.2 Remove the battery unit from trolley



WARNING: Heavy load!
Always wear protective shoes when operating the lift.

1. Engage the central brake.
2. Slide down the button on each handle.
3. When hold the button down lift the handles up to unlock the batteries position
4. Angle out the battery unit. Release the buttons.
5. Lift the battery unit by the handles.

5.3 Insert the battery unit to the trolley



WARNING: Heavy load!
Always wear protective shoes when operating the lift.

1. Engage the central brake.
   Lift the battery unit by the handles. Angle the far and bottom side of the battery unit towards the holder.

2. Slide in the battery unit to the shelf. Release the handles all the way down. Make sure the two buttons have locked the battery unit to the shelf.

5.4 Charging function

Table for charging time:

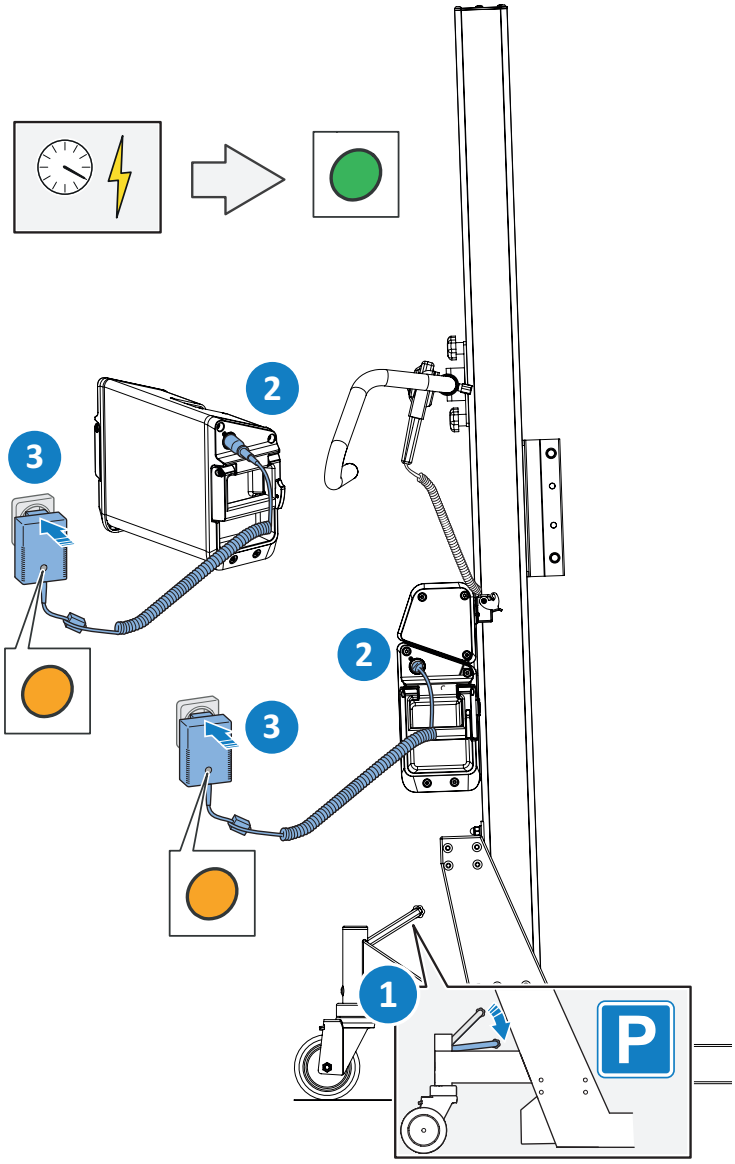
Charging time(h)	
Charger	VRLA AGM 12Ah
1.5A	5.5*
	* D.O.D 60% D.O.D = depth of discharge

If there is one battery for every lift trolley, it is recommended to charge the batteries after every work shift.

When it is possible to charge the batteries disconnected from the lift trolley there is an opportunity to have several battery units to each trolley. Then the lift trolley could be used when charging the next battery unit. No break is needed to use the lift trolley.

The batteries should be charged when the lift trolley is not used for an extended period, e.g., during weekends and holidays. The lift trolley can remain connected to the charger indefinitely without risk of overcharging.

5.4.1 Charging



CAUTION: Do not use the lift trolley or the hand control while charging!

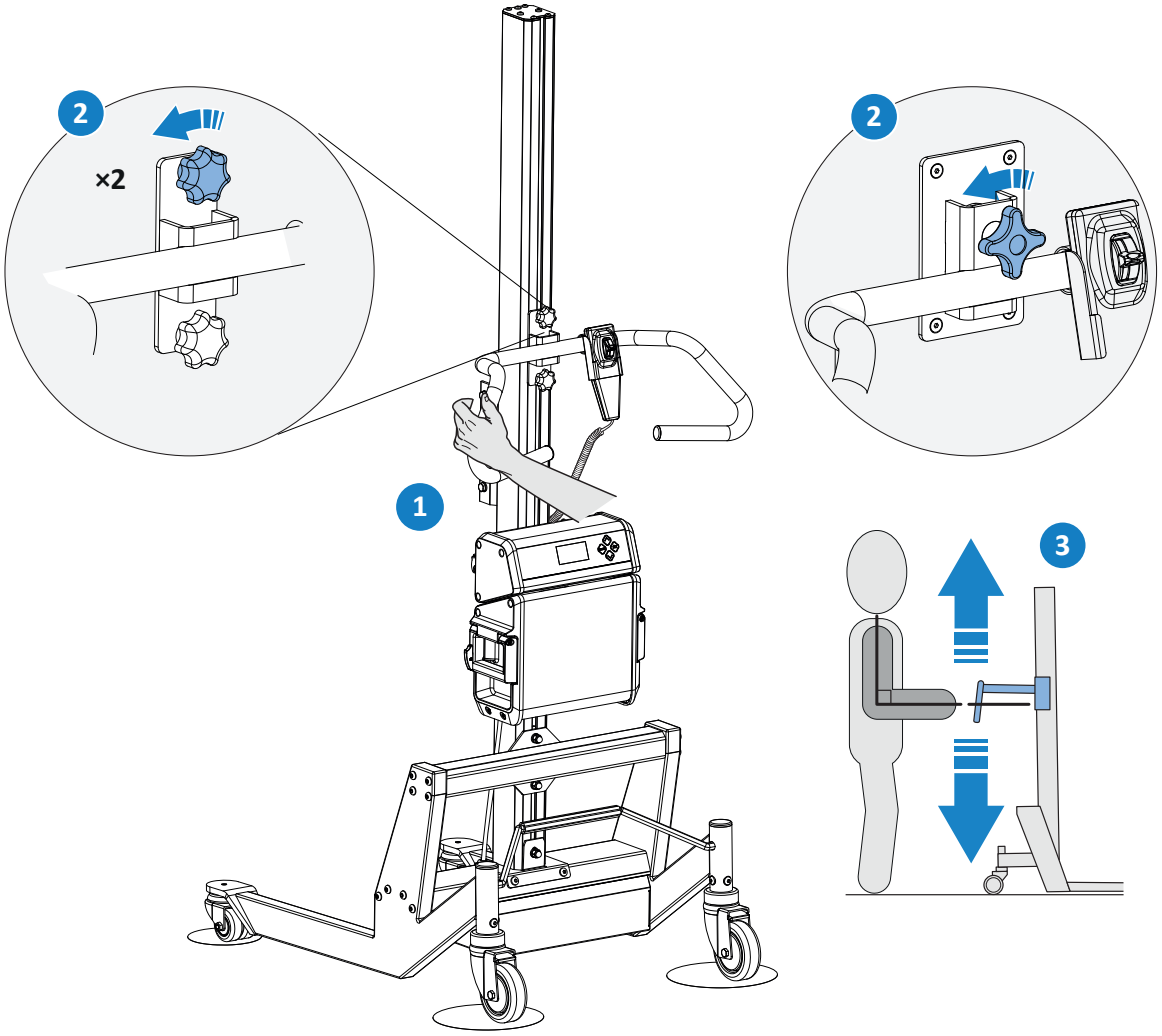
NOTE: When the state of charge reaches minimum level the load carrier will not raise. This function is to prevent damage to the batteries. The load carrier can still be lowered.

1. Engage the central brake.

2. If charging the batteries disconnected from the lift trolley, remove the battery unit from trolley. Refer to the table of contents to locate the relevant chapter for further information.

3. First connect the connector to the battery module, then connect the connector to the wall outlet. The indicator lamp on the charger turns orange if the battery unit is not fully charged. The indicator lamp turns green when the battery unit is fully charged. Don´t stop charging until the indicator turns green. Disconnect the charger from the battery unit before using the lift trolley.
If charging the batteries disconnected from the lift trolley, remount the battery unit of the trolley. Refer to the table of contents to locate the relevant chapter for further information.

5.5 Adjusting the handlebar



To achieve an ergonomic working position the handlebar should be adjusted to a correct height.

1. Use one hand to hold the handlebar in place.
2. With other hand loosen the knob(s), turn counterclockwise.
3. Move the handlebar up or down. It is Recommended position of the handlebar for the user is at least a 90-degree angle between elbow and lower arm. Lock the handle by turning the knob clockwise tightly by hand

5.6 Adjusting the hand control bracket

The bracket for the hand control is mounted on the handlebar. Adjust/move the bracket to achieve a good ergonomic working position.
The bracket can be tilted or placed in any position on the handlebar by loosen the black knob (turn counterclockwise). To fix the position turn the black knob (clockwise). The hand control can be moved from the bracket.

5.7 Loading and unloading

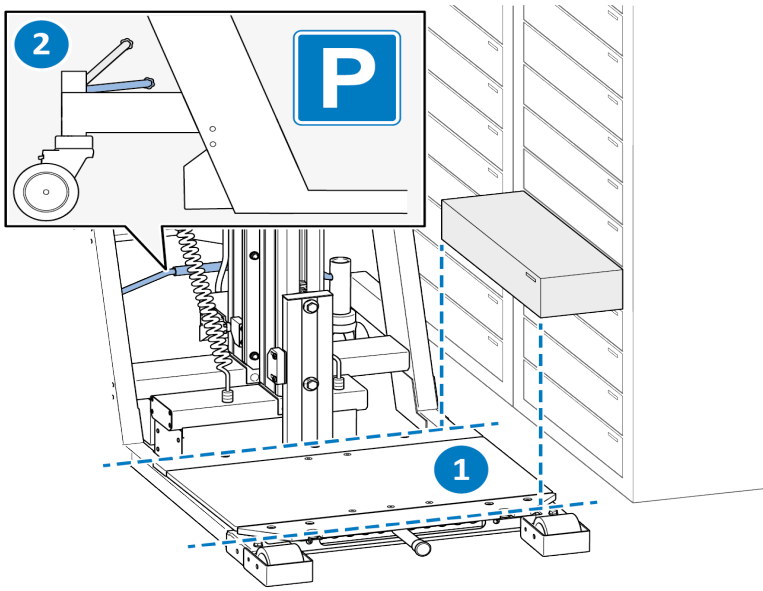
WARNING: Mind your colleagues and surroundings when moving the lift trolley in narrow space.

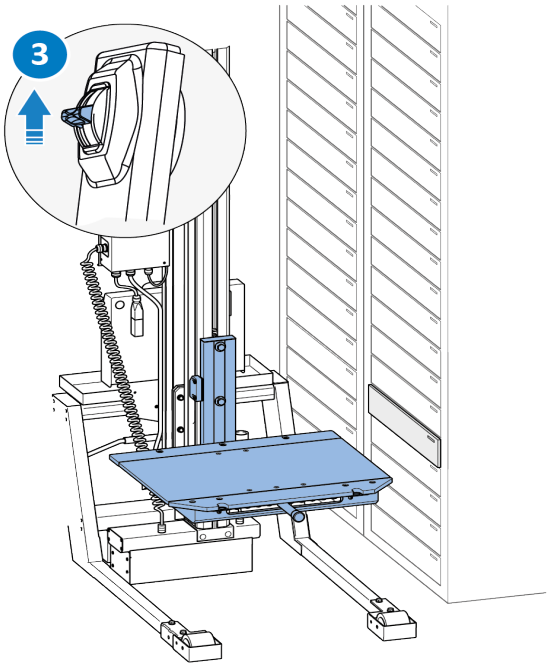
WARNING: Platform should always be in its lowest position when transporting servers.

WARNING: Never keep body parts underneath the platform or on the base frame while lowering the platform.

WARNING: Never put arms through the handlebar to reach something on the load carrier, as this may pose a crush hazard

CAUTION: Mind the server and rack structure. Impact could cause permanent damage on the equment.



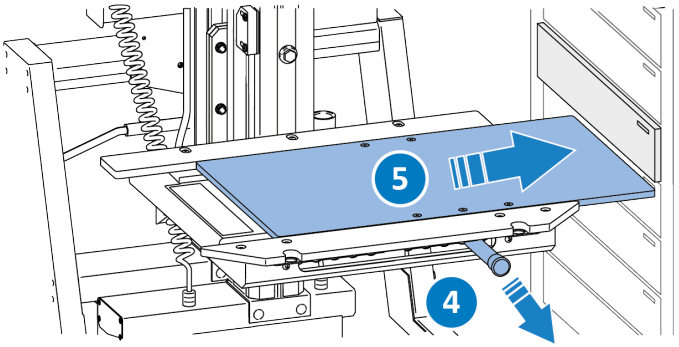


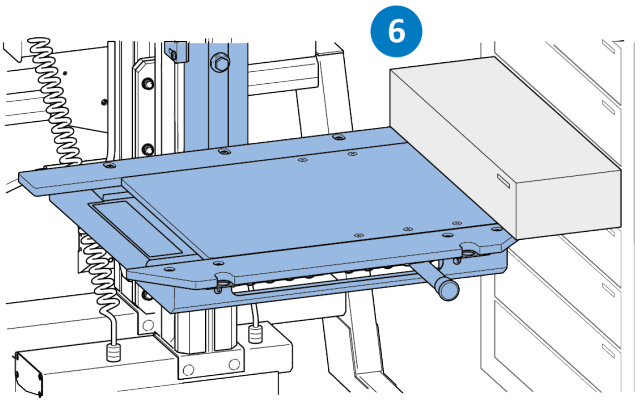
The trolley can be equipped with a fixed or a sliding platform. This description applies to both platforms.

1. Position the trolley against the rack or table were the load is placed.
2. Engage the brakes.
3. Raise the platform to the correct level. When you are closing in use lower speed. Move to a position where you get an optimal view over the platform movement and the fixed server. If nesserary adjust the position.

   If the trolley is equipped with the optional upper limit switch the telescopic column stops moving when the upper limit swith is activated. If the override button of the control box is pushed together the raise button the telescopic column will continue its vertical move and run higher.

CAUTION: Check the space above the trolley before using the override button for bypass the upper limit switch.





4. Sliding platform: Pull the release handle.

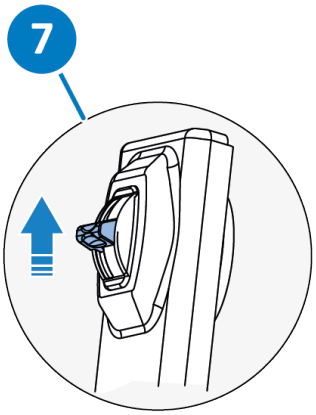
5. Sliding platform: To get close to the server use the realease handle to side shift the tray.

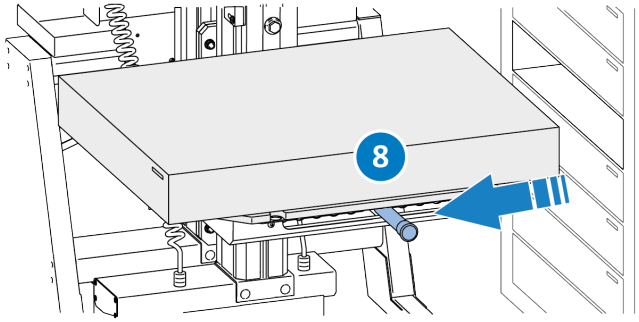
6. Pull the server out from the rack. Check that the server is centered on the platform. If nesserary adjust.

7. Carefully rase the platform under the server until the server reaches the platform. Release the server from the rack.

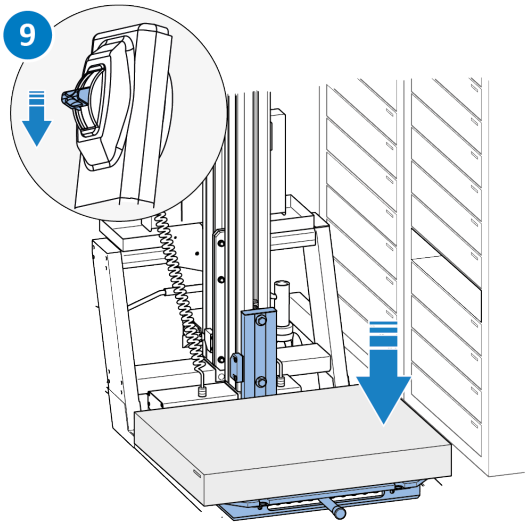
8. Sliding platform: To center the tray of the trolley, pull out and puch the realease handle to the middle.

9. Lower the platform to its lowest position before transportation.
   Place the hand control in its bracket. Release the brake before transportation. Use the directional lock when moving straight forward or backwards.



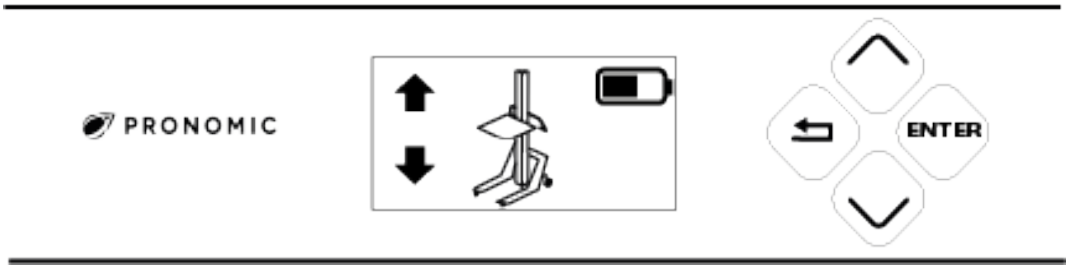


If the server is to be transported over a sloping passageway, fasten the server with straps in the designated fasteners.
f the load is left on the platform for some time it may be necessary to lower the load before it can be raised.
This procedure is done in the opposite way when installing a new server to the rack.



NOTE: Continuous use of lifting up/down with load might cause the gear to make noise. This is normal and does not present any danger. This can also appear when lowering heavy loads.

5.8 Display



The display for the trolley is used to select various settings, functions, retrieve or save information and to configure the trolley. To use the display, use the buttons next to the display.

The ENTER button wakes up the display so that the basic image is shown in the display. Pressing the ENTER button again displays the basic menu. All submenus are PIN-coded. Use the up/down arrow keys to navigate in the list of menus. Press the ENTER button to select a menu.

To return to a previous menu, press the back arrow key repeatedly until you reach the desired menu.

After entering the PIN code, feedback is given about the PIN code. If correct, press the ENTER button to continue to the submenu.

5.8.1 Menu tree

Below is a level of the display's menu tree.

System Info
SERVICE_LEVEL / MASTER_LEVEL
- battery_level *
- active_time **
- motor_running_time ***
- error_log_view
- config_view

*The battery charge in procentage and in volatage
**Trolley in active status
***Motortime running

Service
SERVICE_LEVEL / MASTER_LEVEL
- error_log
- test_bcc
- clear_statistics
- reset_system
- clear_error_log

Factory Config
MASTER_LEVEL
- battery_cfg
- hand_control
- machine_type
- motor_function
- endstop
- 24v_output

Encoder Config
SERVICE_LEVEL / MASTER_LEVEL
- encoder setting
- encoder_counter
- encoder_counter_reset
- encoder_stop_zone
- auto_stop_set
- auto_stop_1
- auto_stop_2
- auto_stop_3
- auto_stop_4

5.8.2 PIN Code

The menus are protected by pincode to avoid changing important settings/configurations that could affect the trolleys performance or security.

Pin code SERVICE_LEVEL

Rolling PIN codes after successful logins

First login 1974
Second login 1964
Third login 1954

5.8.1 Declaration of Compressed Cfg

Compressed Cfg													
X	**X**	**X**	**X**	**/**	**X**	**X**	**X**	**X**	**/**	**X**	**X**	**X**	**X**
A	B	C	D		E	F	G	H		I	J	K	L

A	Batteri type	1= VRLA AGM, 2= LiFePO4
B	Handcontrol	1=Stepless
C	Machine type	1=Single, 2=Telescope (two swiches), 3=Telescope basic (one swich), 4=Parallel, 5=Separate
D	Motor function	1=Standard
E-H	End stop	No end swich: E=0, F=0, G=0, H=0 J100-2 input, Up (accessories): E=1, F=0, G=0, H=0 J100-3 input, Down (accessories): E=0, F=1, G=0, H=0 J101-2 input, Up (tools): E=0, F=0, G=1, H=0 J101-1 input, Down (tools): E=0, F=0, G=0, H=1
I-L	24V	J104-1 output, Always off: I=0, J=0, K=0, L=0 J104-1 output, Follow input J100-1: I=0, J=1, K=0, L=0 J104-1 output, Invert input J100-1: I=1, J=1, K=0, L=0 J104-1 output, Follow input J100-2: I=0, J=2, K=0, L=0 J104-1 output, Invert input J100-2: I=2, J=2, K=0, L=0 J104-1 output, Follow input J100-3: I=0, J=3, K=0, L=0 J104-1 output, Invert input J100-3: I=3, J=3, K=0, L=0 J104-1 output, Follow input J100-4: I=0, J=4, K=0, L=0 J104-1 output, Invert input J100-4: I=4, J=4, K=0, L=0 J104-1 output, Follow input J100-6: I=0, J=6, K=0, L=0 J104-1 output, Invert input J100-6: I=6, J=6, K=0, L=0 J104-1 output, Always on: I=1, J=6, K=0, L=0 J104-2 output, Inactive: N/A

6 Maintenance

6.1 Periodic maintenance

WARNING: Do not use the lift trolley if there is suspicion of damaged or faulty components.

Periodic maintenance should be carried out every year, or when needed.

Always replace broken or suspected broken parts. Use parts supplied and approved by Pronomic.

If needed contact your supplier for advice.

6.1.1 Preparations before maintenance

- Make sure the battery charger is not connected to the lift trolley.
- Park the lift trolley where there is good light and room to walk around the machine to do visual inspections.
- Engage the central brake.

6.1.2 Cleaning the lift trolley

CAUTION: Do not use running water to clean the lift trolley.

Clean the lift trolley using detergent suitable for painted surfaces, aluminum and stainless steel. Follow the instructions on the detergent. Wipe the lift trolley dry after cleaning.

Do not use hose or high-pressure jet as this may damage the electronics and the paint.
Clean the lift trolley using detergent suitable for painted surfaces, aluminum and stainless steel.

Follow the instructions on the detergent. Wipe the lift trolley dry after cleaning.
Do not use hose or high-pressure jet as this may damage the electronics and the paint.

6.1.3 Checklist maintenance

- **Mechanical parts**
  Check the mechanical parts of the lift trolley for wear and cracks.

- **Electrical connectors**
  Remove the battery unit from trolley. Check all the electrical connectors and visible wires for wear and tear. If dirty remove in a safe manner. Refer to the table of contents to locate the relevant chapters for further information.

- **Nuts and bolts**
  Make sure all nuts and bolts are tightened.

- **Brakes**
  Check the brakes are working. Refer to the table of contents to locate the relevant chapter for further information.

- **Wheels**
  The condition of the wheels is important due to ergonomic. Make sure all wheels roll normally and smoothly. Remove dirt and other debris between wheel and castor. Inspect the castors and the tire rubbers on the wheels for wear and tear.

- **Knobs**
  Knobs for handlebar and bracket to the hand control Check the knobs can be loosen and tighten properly.

- **Lift column**
  Clean the brush stripes and wipe the column clean.

- **Battery maintenance**
  Ask the operator who normally uses the trolley if it holds the charge or if it needs to be charged during the work shift.
  Refer to the table of contents to locate the relevant chapter for further information.

6.1.4 Tests

Perform all function tests before the lift trolley is put back into use again. Refer to the table of contents to locate the relevant chapter for further information.

7 Battery unit performance

Damage to the battery can be caused by wear, substandard charging procedures or a faulty charger.

With an empty battery or a low battery level, the battery risks an inferior performance and a shorter lifestime etc. To protect the battery of a rested lift trolley, charging needs to be done at intervals.

Low voltage idle	Acceptable voltage idle
<25V	**>26V**

Even if the battery indicates a full charge, it may be necessary to replace it with a new one. After charge, check the battey by raiseing and lowering the load carrier a few times. Rest the trolley for 5 minutes and then read out the battery voltage. Has the voltage dropped and stayed below 25V replace the battery.
Depending on the amount of lifting and the weight of the load handled, batteries may need to be replaced at a higher idle voltage than 25V.

Used batteries should be handed in to a recycling center.

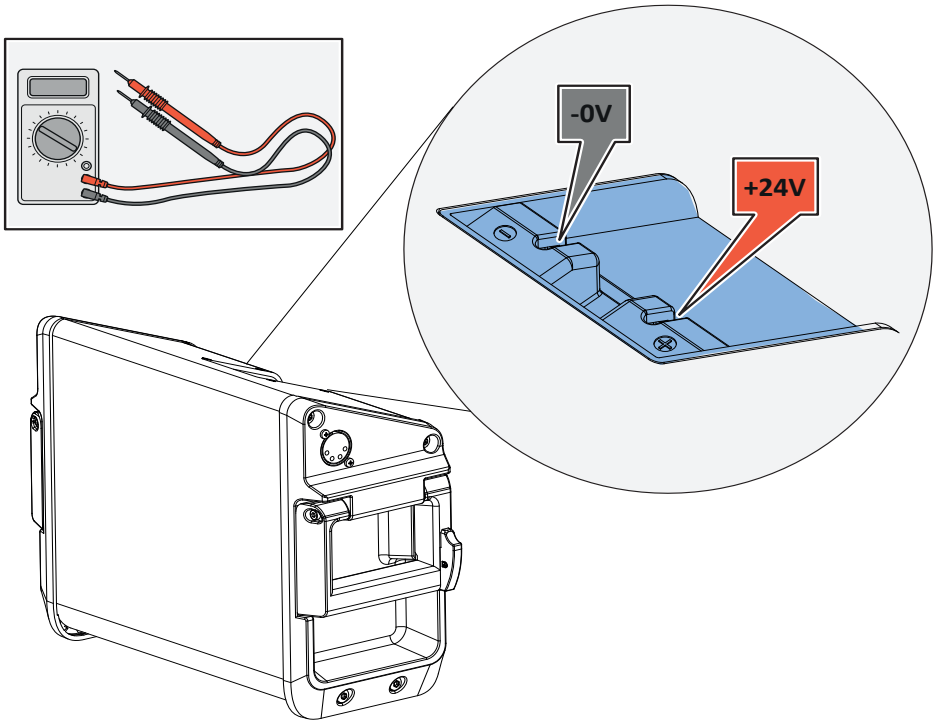
7.1 Checking the Voltage

Checking the voltage by the display:

To read out the actual battery voltage (V) use the buttons beside the display. Press “Enter” >

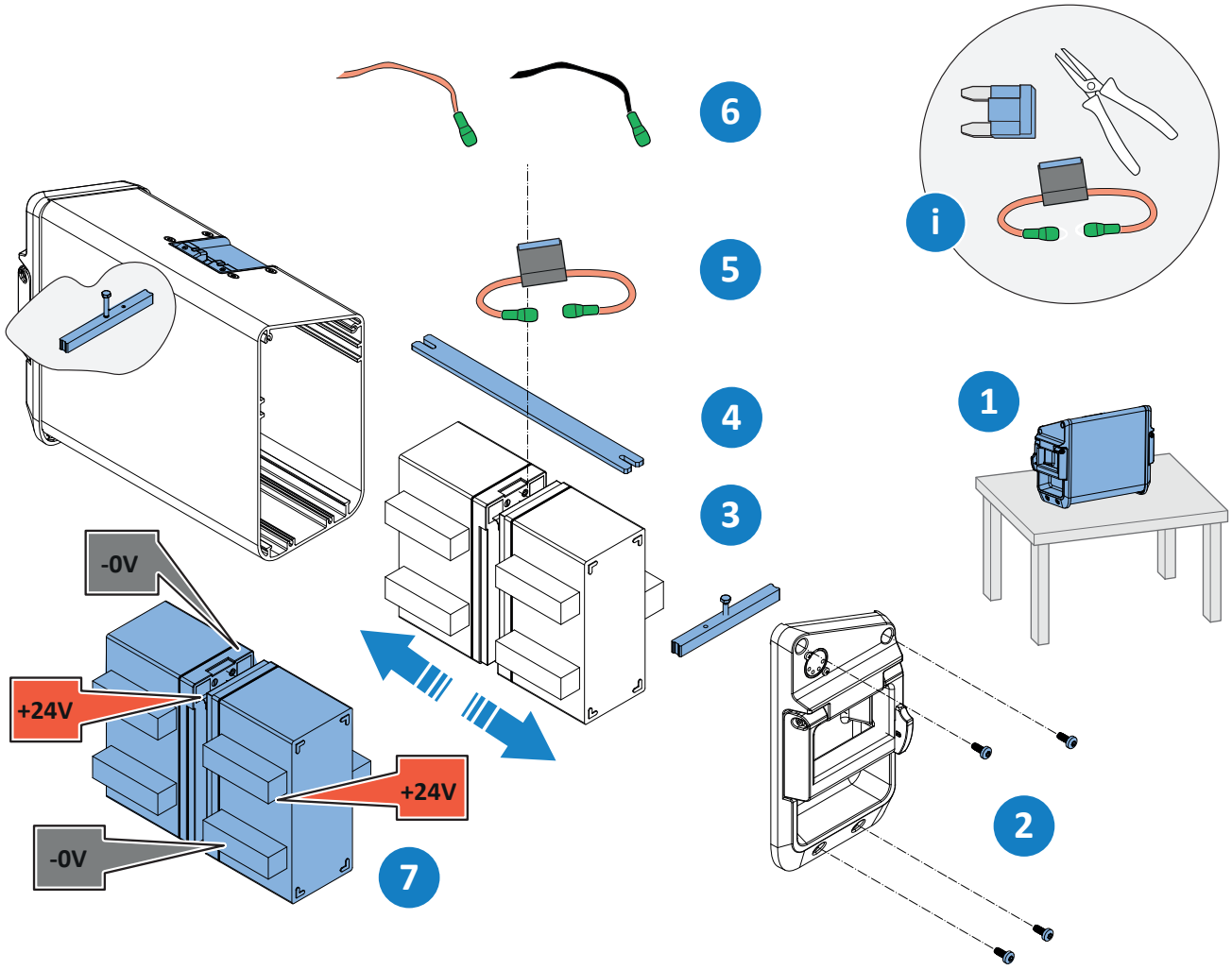
“System info”. Line one will show xx% xx,xV.

Checking the voltage by multimeter:



WARNING: Electrical hazard! Caution when handling the batteries and their terminals.

7.2 Replacing the batteries/fuse VRLA AGM 12Ah



WARNING: Electrical hazard! Make sure that no charger is connected to the battery unit.

WARNING: Electrical hazard! Caution when handling the batteries and their terminals.

For fuse replacement only follow numbers 1-5 and figure i.

1. Place the battery unit securely on a table.
2. Open the battery enclosure by loosening the four screws of the right gable enclosure. Leave the cables connected to the gable enclosure.
3. Remove the short side fixing plate by loosen its screw. Remove the long side fixing plate.
4. Carefully slide out the batteries from the battery enclosure.
5. At the blade receptables of the cables detach the fuse and its holder from the batteries. (For fuse replacement, figure i; replace the fuse in the holder. Reconnect cables. Remount by follow numbers 4-2).
6. At the blade receptables of the cables detach the cables to the connector of the battery enclosure. Remove the old batteries.
7. Arrange the new batteries with the contacts facing each other. Connect the cables in figure 5 and figure 6 to the new batteries. Remount by follow figure 4-2.

WARNING Avoid short circuit, keep distance between batteries terminals.

8 Spare part list

Spare part number	Description	Used for
Hand control		
21450	Stepless remote control	All control units
21462	Stepless remote control +400 chord	All control units
Motor controller		
220007-101	Motor controller 130/175/225PRX (Curtis)	Control units 220412
PCB - Lift controller		
220201	Lift controller, VRLA AGM Settings	Control units 220412
Charger		
220390	Charger 24VDC/1.5Ah, 100-240VAC, UL/CE, EU-plug	All battery units
220391	Charger 24VDC/1.5Ah, 100-240VAC, UL/CE, UK-plug	All battery units
220393	Charger 24VDC/1.5Ah, 100-240VAC, UL/CE, AU-plug	All battery units
220392	Charger 24VDC/1.5Ah, 100-240VAC, UL/CE, US-plug	All battery units
220394	Charger 24VDC/1.5Ah, 100-240VAC, UL/CE, EU/UK/AU/US plugs	All battery units
19045	Fast charger 24V/4A EU-plug	All battery units
19145	Fast charger 24V/4A, US plug	All battery units
19345	Fast charger 24V/4A, UK-plug	All battery units
Battery units		
220422	Battery unit 24V/12Ah, VRLA AGM	Extra battery unit
Batteries		
17547A	Battery, 2x12V/12Ah, VRLA AGM	220422
Wheels		
20011-01	Front wheel, twin, low, with castor, d=60mm	Wheel front Model 200942B, 200952B
19745-02	Heavy Front Swivel, nylon 200kg	Wheel front Model 191542B, 191560B
17557	Rear castor, low built	Wheel rear Model 200942B, 200952B, 191542B, 191560B

9 Troubleshooting

9.1 Remedy

The lift trolley is designed for safe and efficient operation. Follow the provided routine maintenance and instructions. If problems arise, some guidance is provided below. If the problem persists after these actions, contact your dealer or supplier.

	Remedy
	If the load carrier does not move at all, or very slowly
1 2	Verify that the battery unit is correct mounted. Verify that the maximum load is not exceeded.
3	Check all cable connectors. Re-plug and make sure they are fully inserted.
4	Battery charge - has the battery unit been charged recently? The power unit status is shown with the level icon at the display of the control box. When the power of the battery is low, the battery lev-el icon starts flashing. It is no longer possible to raise the load carrier. Charge the battery for 8 hours and check the voltage (24V). Refer to the table of contents to locate the relevant chapters for further information..
5	Check the battery charger is working. When connected to the mains power, a light will be visible on the charger.
6	If the display lights up but there are no movement of the load carrier in any direction, charge the batteries installed on the lift trolley for 30 min and test the lifting functions
7	Check the fuse inside the battery unit, if blown, replace it.
	If the lift trolley sounds strange
1	Make sure the lift trolley is correctly assembled. Refer to the table of contents to locate the relevant chapter for further information.
2	Substandard maintenance? Refer to the table of contents to locate the relevant chapter for further information.
	If the battery level is too low even though charging has been done recently
1	Charge the battery unit for 8 hours. The battery unit must be in the cart (in contact with the control unit). Refer to the table of contents to locate the relevant chapter for further infor-mation. When charging is complete, start the control unit and check that the control unit shows the icon that the battery is charged.
2	When charging is complete, check the battery performance. Refer to the table of contents to locate the relevant chapters for further information.

9.2 Fault codes

The display located centrally on the control unit can show various status ID:s (Fault codes). The Fault codes show upon startup by pressing “Enter” or by accessing the Service meny by using the push buttons. The fault codes disappear from the display as soon as a lifting/lowering motion is started.

Fault codes does not indicate any danger, but if shown repeatedly they can help troubleshooting if the Lift trolley behaves in an unexpected manner.

The fault code history can be cleared from the service menu.

Any reacuring Fault codes will be saved under fault codes.
After a problem has been diagnosed and corrected, clearing the Fault history is advisable. This allows the Lift Trolley to accumulate a new file of faults. By checking the new history file at a later date, you can readily determine whether the problem was indeed completely fixed.

Fault code	Fault description	Trouble shooting
11	Thermal fault	Over-/under-temperature cut-back 1. Temperature >80°C or < -10°C. 2. Operation in extreme environments 3. Electromagnetic brake not releasing.
12	Throttle fault	The Lift trolley is operated by a potentiometer (placed in the Hand control). Fault code will indicate if potentiometer resistance is out of limit or if there is damaged wire(s) between hand control and control unit. Persistent fault will cause lifting motion to stop. Replace hand control if needed.
14	Under voltage	1. Battery voltage <17 volts. 2. Bad connection at battery or controller.
15	Over voltage	1. Battery voltage >31 volts. 2. Intermittent battery connection.
31	Wiring fault	The Lift trolley is operated by a potentiometer (placed on Hand control). Fault code will indicate if potentiometer is broken and no control signal reaches the motor control.
42	Hardware Fail Safe	1. Motor voltage does not correspond to throttle request. 2. Short circuit in motor or in motor wiring.
4A-4D	Lift controller on board temperature and voltage levels	MCU voltage or control signals out of range.
84	BCC STOP (LiFEPo4 batteries only)	If batteries are nearly empty the BCC controller will prevent lifting. When this occurs Falut code 84 I logged. Plan charging the batteries more regularly.

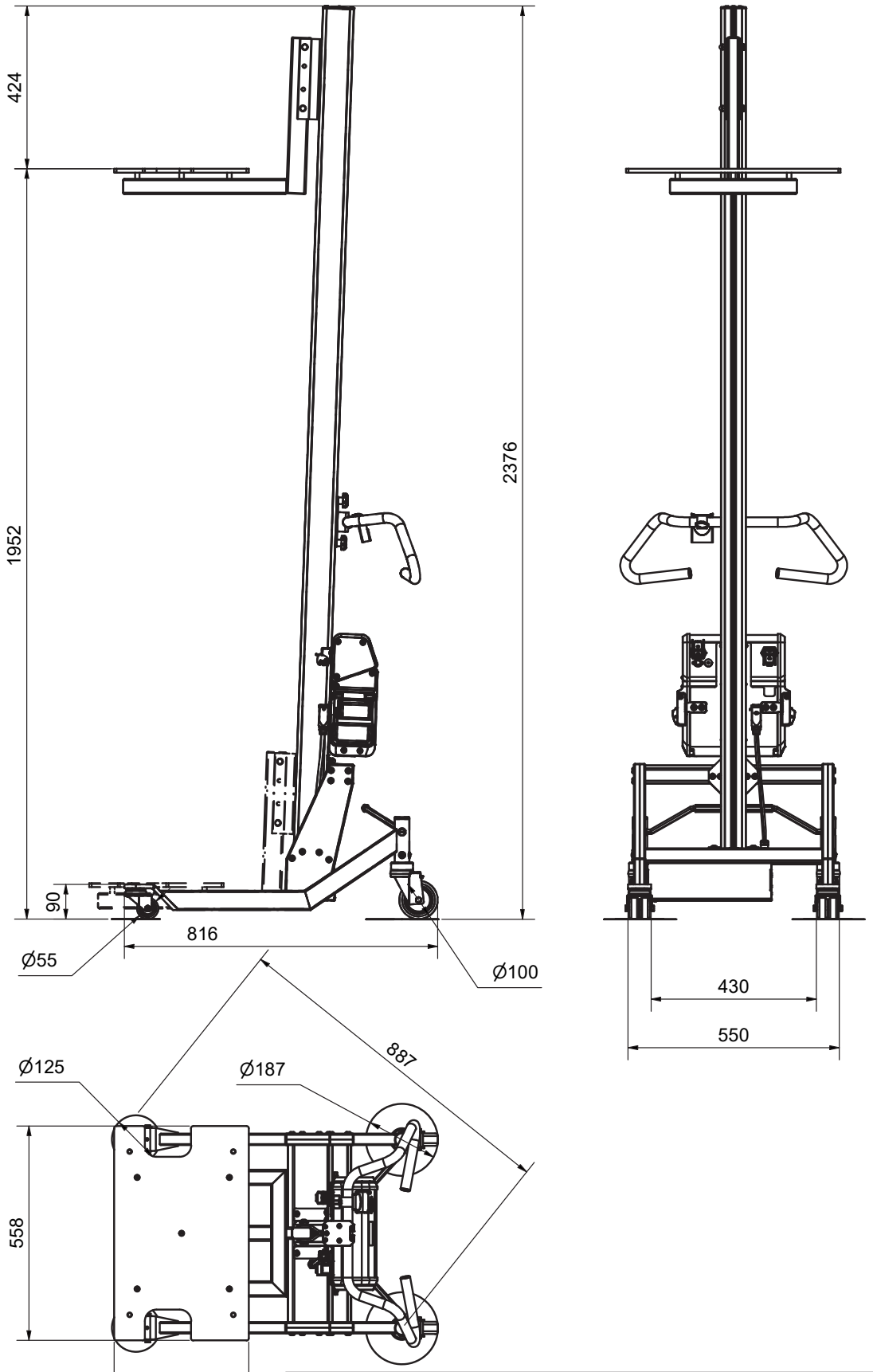
10 Technical data

General	
Machine type:	Electrically operated material lift - Lift trolley
Model	Lift & Drive®130PRX 200942B Lift&Drive DC 09 U42 Lift & Drive®130PRX 200952B Lift&Drive DC 09 U52 Lift & Drive®175PRX 191542B Lift&Drive DC 15 U42 Lift & Drive®225PRX 191560B Lift&Drive DC 15 U60
Mains voltage	230 V AC 50 Hz or 115 V AC 60 Hz
Safety	CE
Motor power	0,2 kw
IP class	IP 2X IP 3X (power pack and control units)
Vibration	Vibrations do not exceed 2.5 m/s²
Noise	The noise level does not exceed 70 dB(A)
Test factor for static testing	1.25
Data	
Lift & Drive®130PRX 200942B Lift&Drive DC 09 U42	
Maximum load	Max 90kg @300mm (400mm) from column
Lifting speed, empty	132mm/s
Net weight	65 kg
Lift & Drive®130PRX 200952B Lift&Drive DC 09 U52	
Maximum load	Max 90kg @300mm (400mm) from main column
Lifting speed, empty main column/telescopic column	132/83mm/s
Net weight	85 kg
Lift & Drive®175PRX 191542B Lift&Drive DC 15 U42	
Maximum load	Max 150kg @400mm from column
Lifting speed empty	78 mm/s
Net weight	91 kg
Lift & Drive®225PRX 191560B Lift&Drive DC 15 U60	
Maximum load	Max 150kg @400mm from main column
Lifting speed (empty) main column/telescopic column	65/78mm/s
Net weight	118 kg

Power electronics	
Control unit	
Part Number	220412
Description	Control unit VRLA AGM, 30A
Motor power / voltage	30A, 0-24V
Power output	30A, 0-24V
Battery unit	
Part number	220422
Description	Battery unit 24V/12Ah, VRLA AGM
Battery Technology	Absorbent Glass Mat AGM, VRLA
Battery Design Life	3-5 years
Battery charger 2- step Lead-acid battery charger	
Battery Charger	27.6V stand-by. 29V max voltage.
Environment	0°C to +40°C at 90 % relative humidity
Output	
Nominal charge voltage	27.6V stand-by. 29V max voltage.
Nominal charge Current	1350mA - 2400mA
Chord length	2000 mm / 6’ 6”
Input	
Nominal input voltage	100-240V AC ±10%
Nominal input frequency:	50-60Hz
Nominal input current	0,700 - 0,500Arms @ max load
Supplied plugs with charger:	Plug Type A – North America Plug Type C – Europe Plug Type G – UK Plug Type I – AU / NZ

10.1 Drawings

10.1.1 Model 200942B



Standard Tolerance: ISO 2768-m SMS 723-A				Material
Surface: 6,3 µm			Date	Name	DC 09 U42 - Fixed platform
Scale: 1 : 10	Quantity	Drawn	2023-02-02	saman.rostami	
		Designed		SP	
		Checked			

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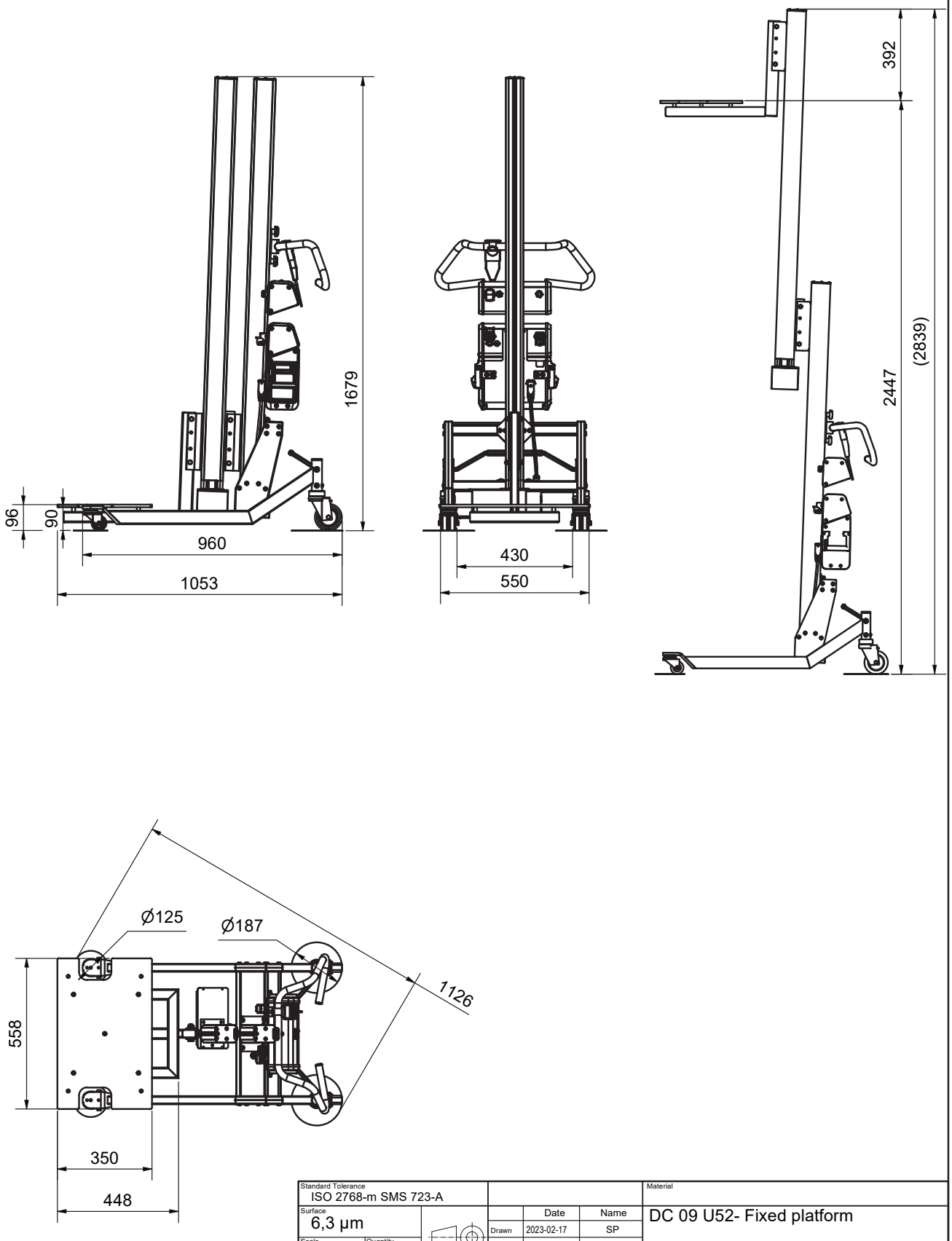
Dwg no.	Rev.	Page
200942-20	2	1
		Size A3

10.1.2 Model 200952B



Standard Tolerance: ISO 2768-m SMS 723-A				Material
Surface: 6,3 µm			Date	Name	DC 09 U52- Fixed platform
Scale: 1 : 13	Quantity	Drawn	2023-02-17	SP	
		Designed		SP	Lift&Drive 130P
		Checked			
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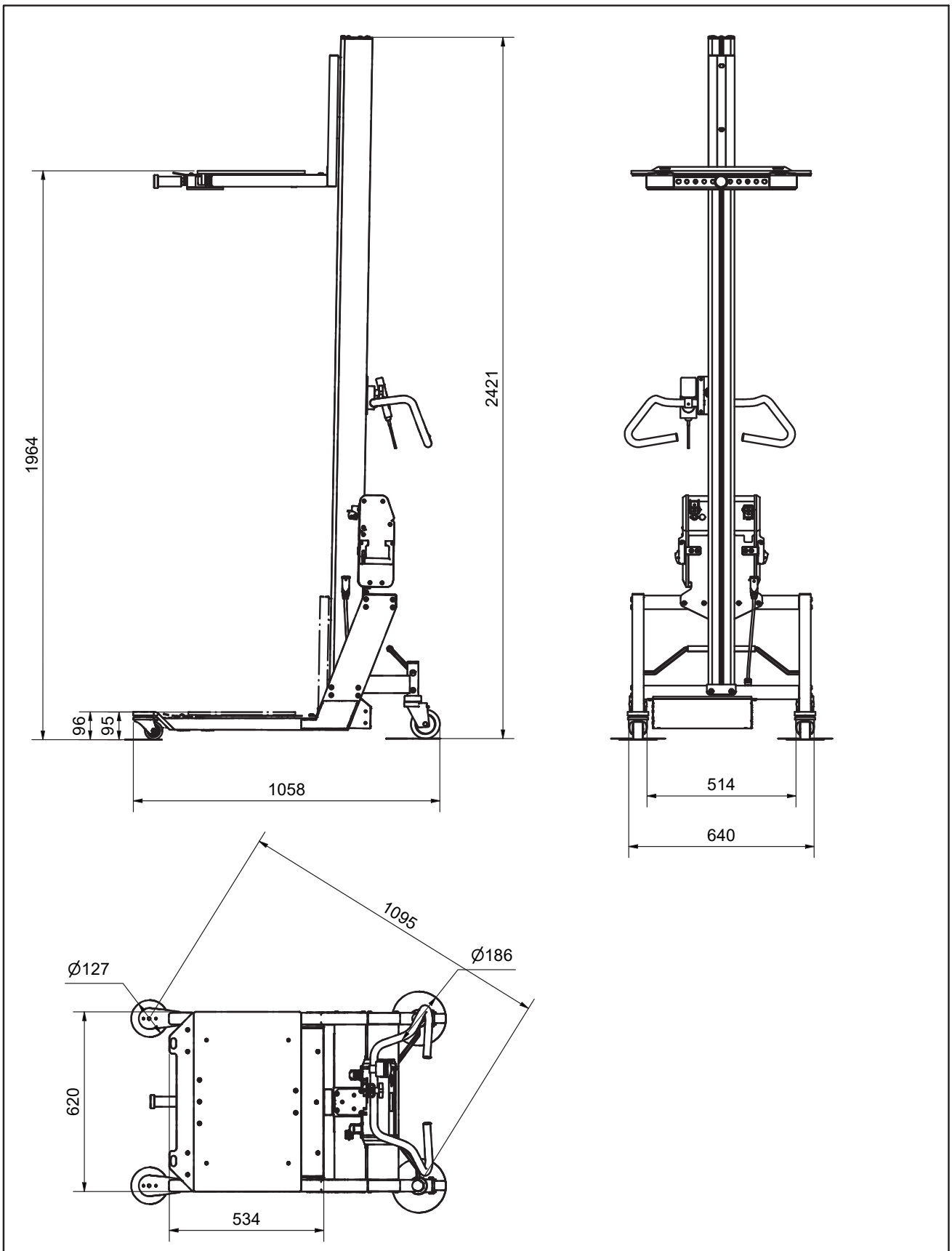
10.1.3 Model 191542B



Standard Tolerance: ISO 2768-m SMS 723-A				Material
Surface: 6,3 µm			Date	Name	DC 15 U42- Sliding platform
Scale: 1 : 12	Quantity	Drawn	2023-03-20	saman.rostami	
		Designed		saman.rostami	Lift&Drive 175P
		Checked			

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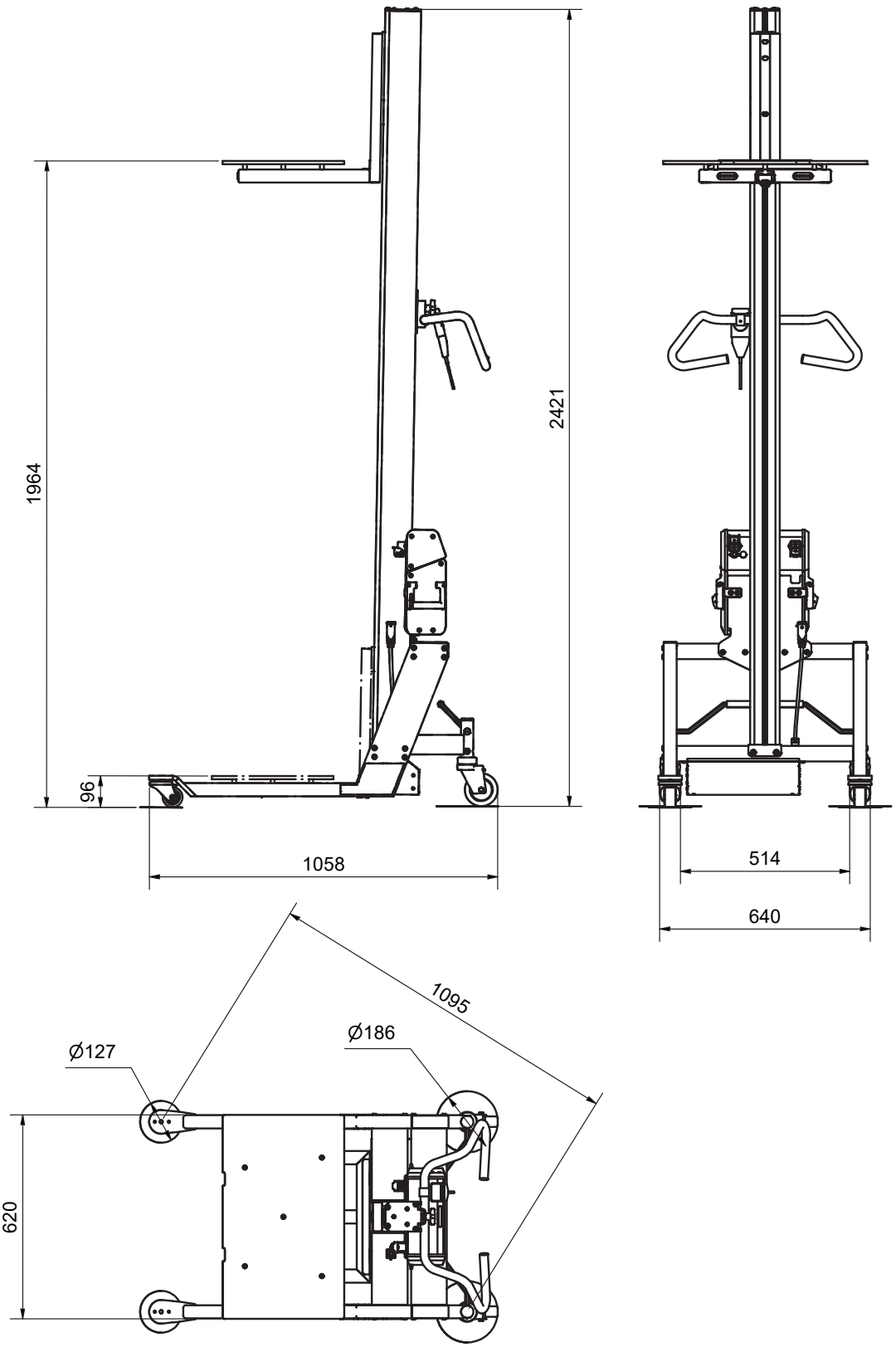
Dwg no.	Rev.	Page
191542-10	2	1
		Size A3



Standard Tolerance: ISO 2768-m SMS 723-A			Material: DC 15 U42- Fixed platform
Surface: 6,3 µm		Date / Name	
Scale: 1 : 12	Quantity:	Drawn: 2023-03-20 saman.rostami	
		Designed: saman.rostami	Lift&Drive 175P
		Checked:	
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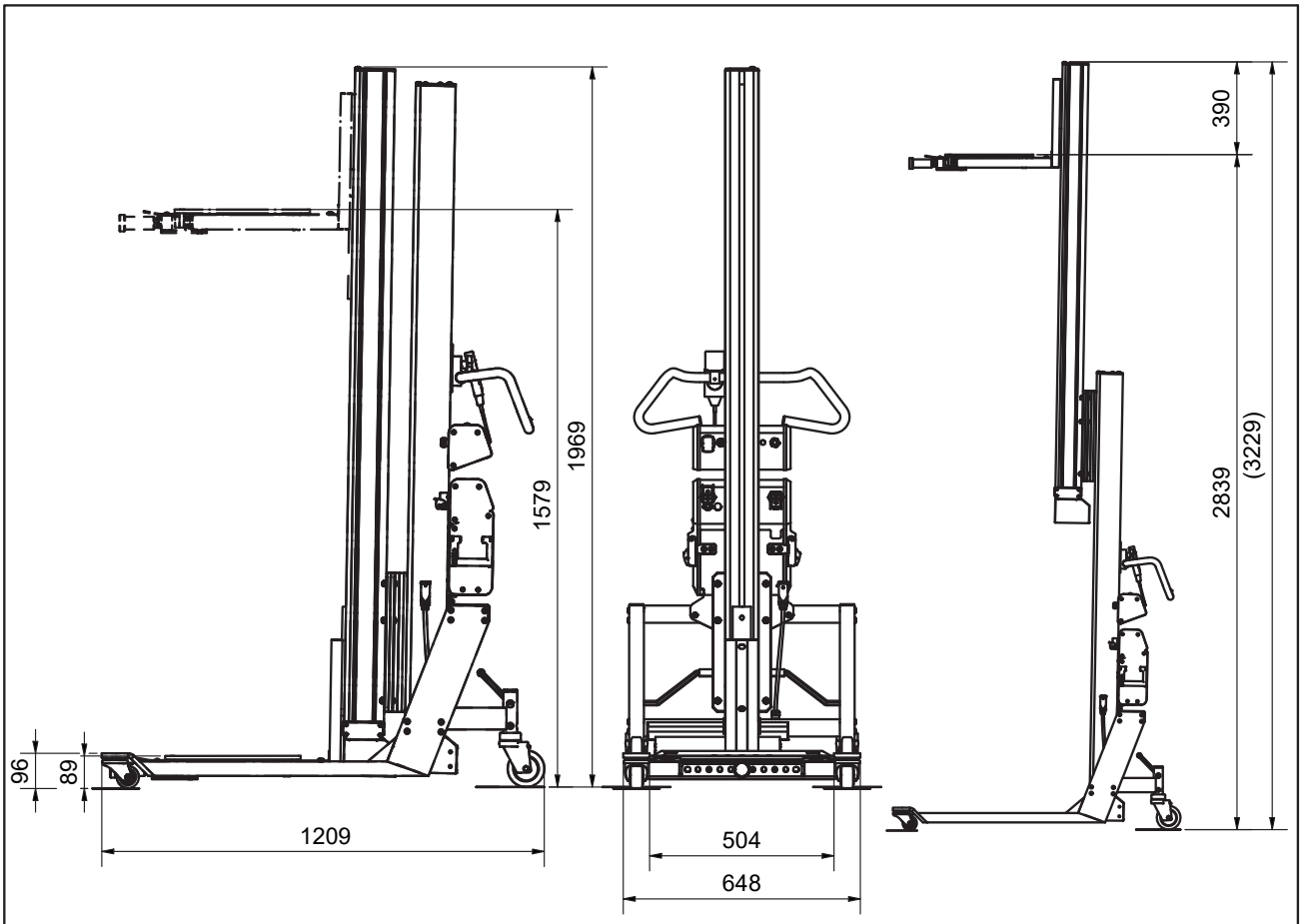
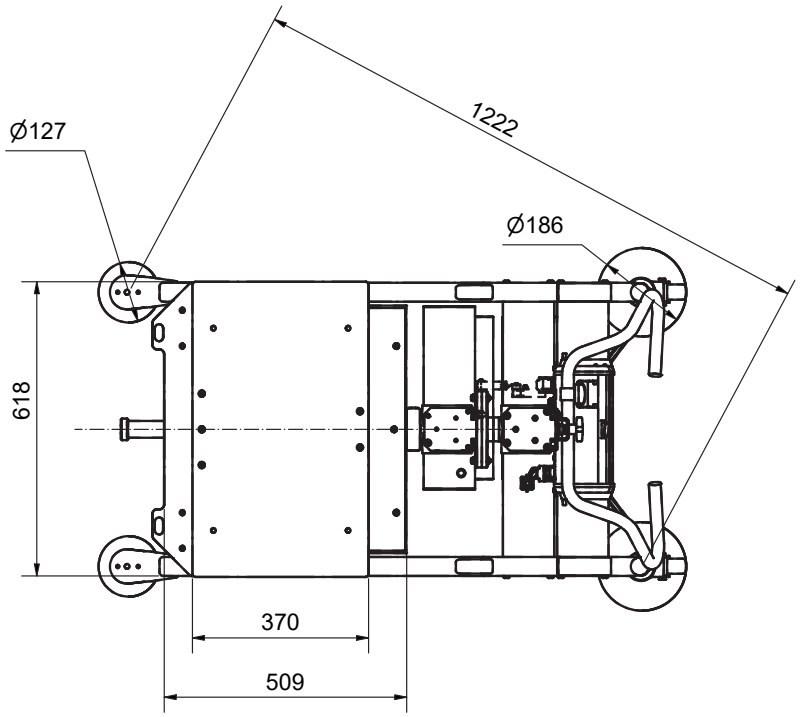
10.1.4 Model 191560B





Standard Tolerance: ISO 2768-m SMS 723-A				Material
Surface: 6,3 µm		Date	Name	DC 15 U60- Sliding platform
Scale: 1 : 10	Quantity	Drawn: 2023-03-20	saman.rostami	
		Designed	saman.rostami	Lift&Drive 225P
		Checked		
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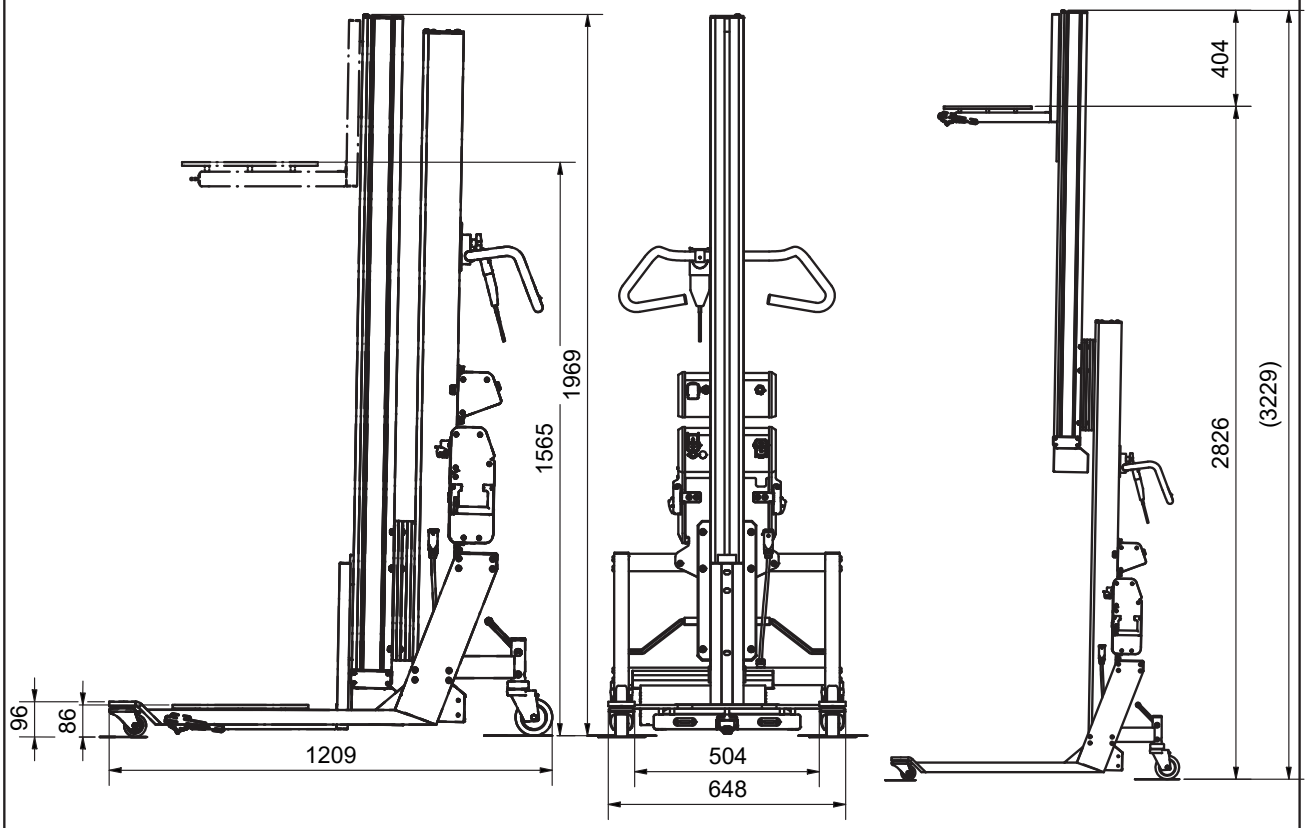

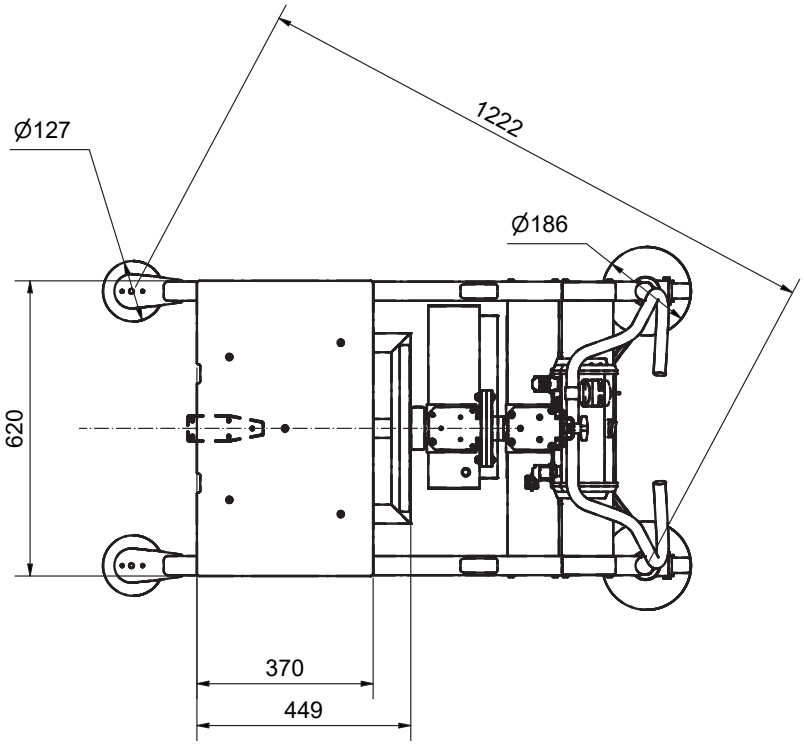

Standard Tolerance: ISO 2768-m SMS 723-A			Material: DC 15 U60- Fixed platform
Surface: 6,3 µm		Drawn: 2023-03-20 saman.rostami	
Scale: 1 : 13	Quantity	Designed: saman.rostami	Lift&Drive 225P
		Checked	
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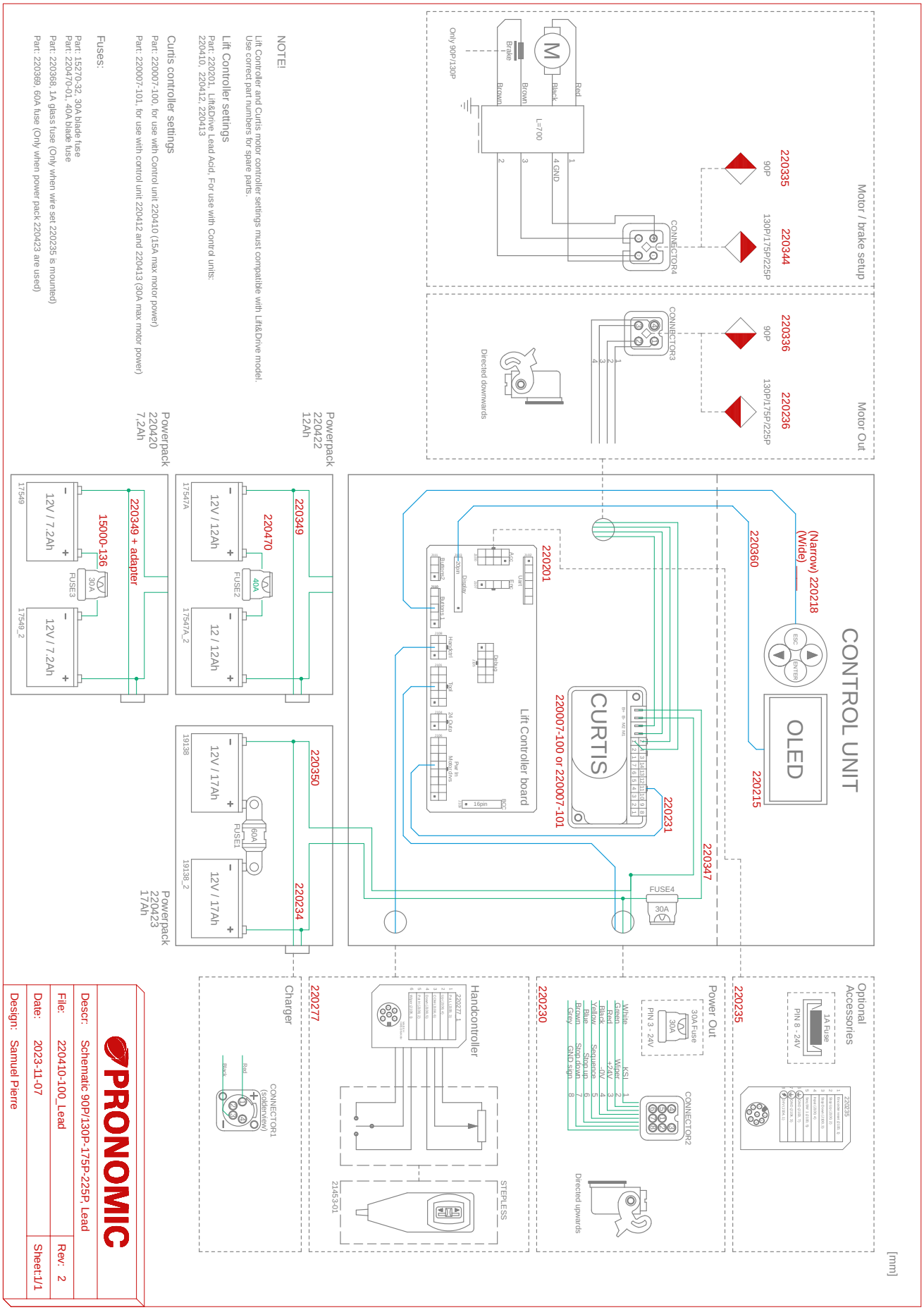
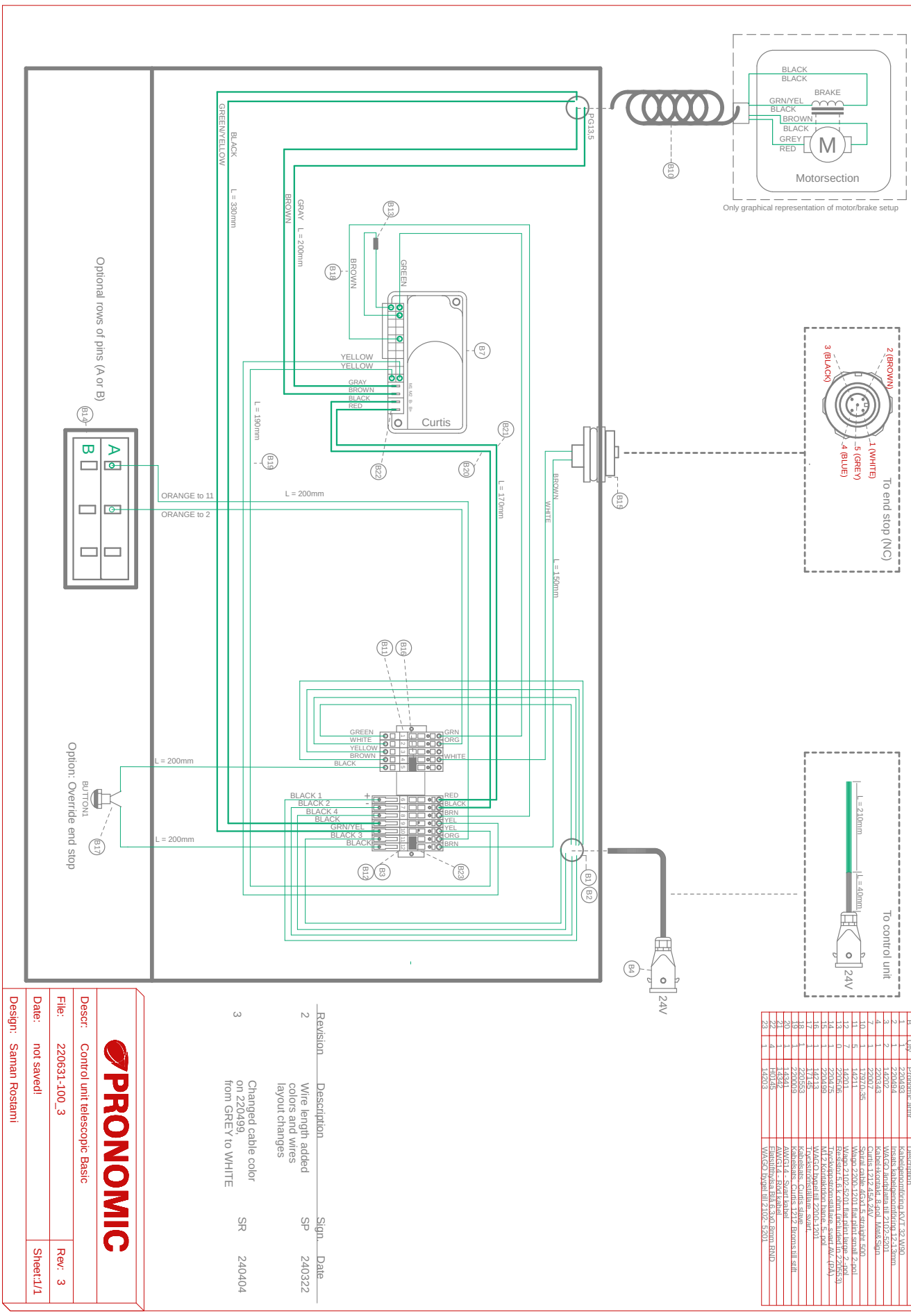
10.2 Electrical schedules

10.2.1 Control unit Model 200942B, 200952B, 191542B, 191560B



2023-11-07 10:23 f=0.96 S:\data\DATA\CAD\STD\# Eagle\Eagle Projects\Eagle - STD\STD - PowerPacks\# Proxima - Lift & Drive 2.0\220410-100_Lead.sch (Sheet: 1/1)

10.2.2 Control box, telescopic column, Model 200952B, 191560B



R	Qty	Pronomic artnr	Description
1	1	220493	Kabelgenomföring KV1.32 W90
2	1	220494	Insats kabelgenomföring 12-13mm
3	2	14202	WAGO anpassla till 2107-5201
4	1	22007	Motor till Mod-Sign
7	1	12970-35	Curtis 1212 45A 24V
10	1	12970-35	Spiral cable 4Gx1.5 straight 500
11	5	14211	Wago 2200-1201 flat plint small 2-pol
12	2	14201	Wago 2102-5201 flat plint large 2-pol
13	1	220175	Trottelomkopplare 3-vägs 40A (PAS)
14	1	220499	M12 kontaktdon hane 5-pol
15	1	14213	WAGO hygel till 2200-1201
16	1	220563	Lastmotorställare - svart
18	1	220009	Kabelsats - Curtis 1212 Bromstill sats
19	1	14341	AWG14 - Svart kabel
20	1	14342	AWG14 - Röd kabel
21	1	14345	AWG14 - Blå kabel
22	1	14205	Fästbygel till 2102-5201 8mm RND
23	1	14203	WAGO hygel till 2102-5201

Revision	Description	Sign	Date
2	Wire length added colors and wires layout changes	SP	240322
3	Changed cable color on 220499, from GREY to WHITE	SR	240404

PRONOMIC

Descr:	Control unit telescopic Basic	
File:	220631-100_3	Rev: 3
Date:	not saved!	Sheet:1/1
Design:	Saman Rostami	

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10.3 CE-Declaration

EC- Declaration of conformity of the machinery

ORIGINAL

(In accordance with 2006/42/EC, Annex II 1A)

PRONOMIC

Manufacturer:	Pronomic AB Box 5504 192 05, Sollentuna, SWEDEN
Machine Type	Electrically operated material lift - Lift trolley

Models and serial numbers:

Lift & Drive®130PRX 200952B Lift&Drive DC 09 U52 200942B Lift&Drive DC 09 U42	Lift & Drive®175PRX 191542B Lift&Drive DC 15 U42	Lift & Drive®225PRX 191560B Lift&Drive DC 15 U60
S/N: 21300- XXXX	S/N: 220312- XXXX	S/N: 220291- XXXX

Authorized to compile the technical file:	Samuel Pierre, Pronomic AB, BOX 5504, 192 05 Sollentuna, SWEDEN
Applied EC directives:	
2006/42/EC	Machinery Directive
2014/30/EU	EMC Directive
Applied standards:	
SS-EN ISO 12100:2010	Safety of machinery- General principles for design – Risk assessment and risk reduction (ISO 12100:2010)
SS-EN ISO 13854:2019	Safety of machinery- Minimum gaps to avoid crushing of parts of the human body
EN/(IEC) 61000-6-2:2019	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
EN/(IEC) 61000-6-4:2019	Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments
FCC Part 15 subpart B, Class A	

We hereby declare that the above-referenced machine, built and equipped with attachments included in this manual, is in conformity with the applicable conditions stated in the directives and standards.

Sollentuna, Sweden, 31-03-2025

.....

Fredrik Dahlborg, Pronomic AB

The lift trolley has been modified and/or equipped with attachments as follows (P/N & Description):

.....

After modification a supplementary risk analysis has been performed and the machine is certified to be in conformity with the directives and standards above.

Name: .....

Place and date: .....

Company: .....

10.4 Approved attachment and load test

Below is a table of approved attachments.

If the lift trolley/tool is modified or trolley is equipped with other attachments a supplementary risk analysis must be carried out according to declaration of conformity with directive 2006/42/EC.

The trolley is marked with a maximum load sign. The maximum load sign is clearly placed on top of the control unit (or on the control box if a telescopic column is used).

The trolley's maximum load is defined according to "Rated capacity (Label) Kg" . The loadtest is made according to the "Test load production (x1,25)".

Approved attachments					
200952B 130PRX DC 09 U52	200942B 130PRX DC 09 U42	191542B 175PRX DC 15 U42	191552 225PRX DC 15 U60		
Rated capacity (Label) Kg Test load production (x1,25)				Partno	Discription
90 113	90 113			220281	Plattform DCL 09, Fast flakskiva
		150 188	150 188	220282	Platform DCL Heavy, Fixed
		150 188		220320	Platform, sideshift DCL
			150 188	220466	Platform, sideshift DCL-52

10.5 Load test certificate

Checkbox for trolley for successful testing:

☐	For trolleys with attachments listed in the 'Approved Attachments' table.

This machine has undergone a dynamic load test with the above mentioned load as well as a static load test with a testfactor of 1.25x its max load.

This machine has performed flawlessly during the load test.

.....

kg

.....

Serial number

.....

Signature, Inspector

.....

Place, date

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