

AL-KO

QUALITY FOR LIFE

Service Manual ROBOLINHO® 500 / 700

Art. Nr.: 119833, 119834, 127446, 127447





Foreword

This technical manual is a supplement to the operating instructions.
It contains information about the Robolinho robotic mower.
The manual is solely intended for authorized service personnel.

All information, illustrations, guidelines and descriptions provided in
this document correspond to the latest data at the time of publication.

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1 General product information

1.1 General product information for every repair

- Repair work may only be carried out by authorized AL-KO service partners.
- Safety devices should not be bypassed, manipulated or removed.
- Always place the device on a soft and clean surface (risk of scratching).
- Place the device at an ergonomic working height.
- The device should first be roughly cleaned for any repair works:
 - Use a wet cloth without detergents (unless otherwise stated).
 - Do not use a high-pressure cleaner or even running water.
- Always wear cut-resistant gloves during repair work of the device's underside or work near the knives.
- All repair work must be carried out on a weather-protected, clean work surface to prevent moisture and dirt from entering the product.
- Always wear ESD gloves during repair work on the electronics.
- Always disconnect the mainboard from the power supply before carrying out repairs to the electronics (chapter 3.1)
- Repair works have to be carried out in accordance with the service instructions and always use original spare parts.
- The Robolinho has to be switched off during repair works. Unintended switch-on or unauthorized usage may lead to serious injuries.
- Improper modifications and / or the usage of non-original parts may lead to significant damage being caused to the product, injuries or personal damage.
- All screws of the robotic mower must be mounted with the correct tightening torques, as specified.
- Oil, grease and dirt can cause problems with electrical contacts, ensure that all electrical contacts are kept clean and dry.,
- Touch circuit boards only at the edge. Never touch delicate electrical components with the fingers, for example connectors or components on a circuit board.
- Always ground yourself before working on electrical components to avoid damage of electronic components by electrostatic discharge.
- Disconnect supply lines by pulling the connector – Never pull on the cable itself
- If possible, test exchange components before installation
- During installation: Make sure, that none of the cables or components are pinched.
 - A leaking housing could lead to damage or even complete failure.
 - Always use new sealing elements.
- All repairs must be carried out according to the service instructions.
- Only use original spare parts for repairs.

1 General product information

1.2 Upper part



- 1 - "Hidden" front carrying handle (underneath the cover)
- 2 - Cover (fold away)
- 3 - STOP button
- 4 - Charging contacts for base station
- 5 - Drive wheels

1 General product information

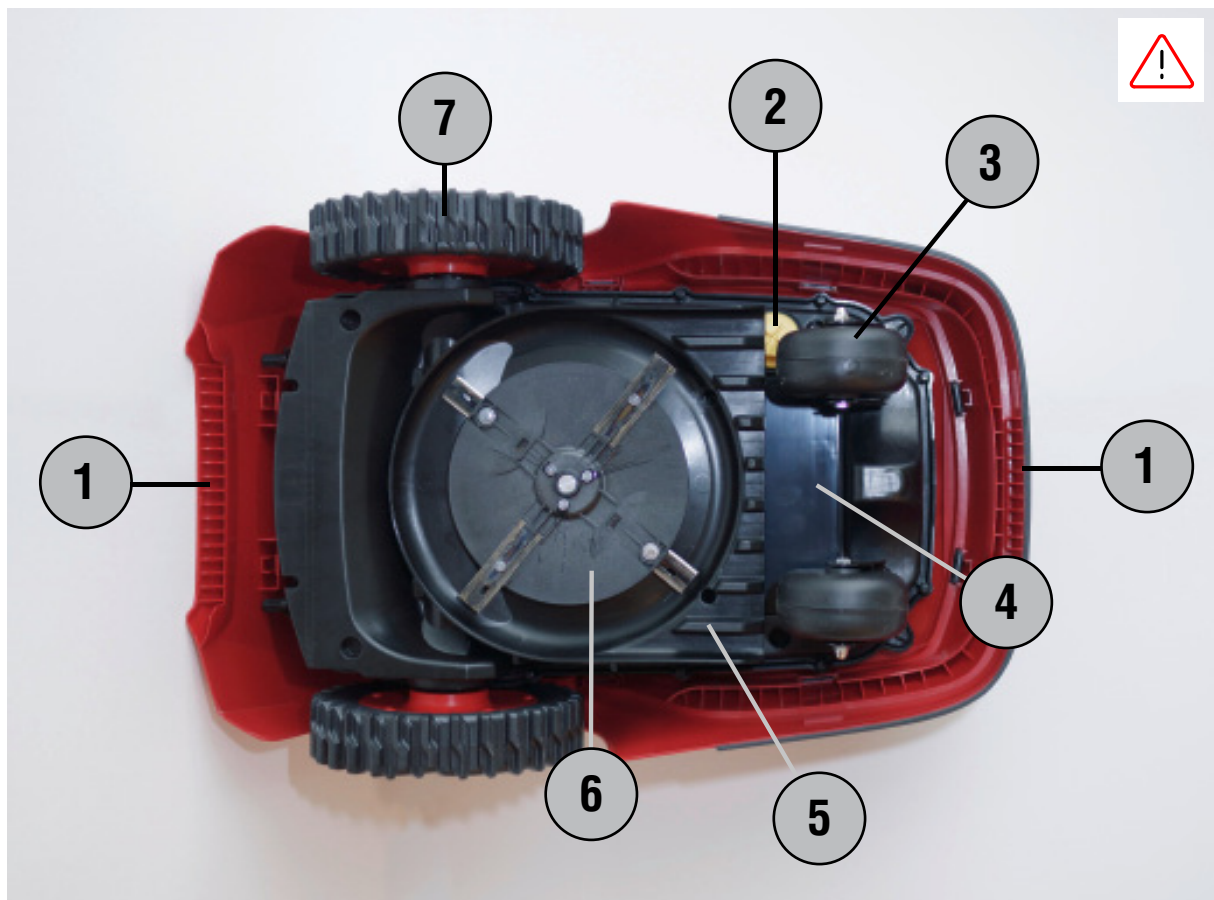
1.2 Upper part



- 1 - "Hidden" backside carrying handle (underneath the cover)
- 2 - Display
- 3 - STOP button
- 4 - Rotary knob for stepless cutting height adjustment

1 General product information

1.3 Lower part



- 1 - "Hidden" carrying handles "front" and "back"
- 2 - Cap for USB connector
- 3 - Front wheels
- 4 - Battery compartment
- 5 - Mower deck / Mower deck cover
- 6 - Blade disc & knives **Attention: Risk of injury!**
- 7 - Drive wheels

2 Disassembly / Assembly of components

2.1 Design cover / Tool-less



Open the lid.



Unclip cover with slight pressure.

2.2 Design cover / With tool



Pull up and lever at the same time.



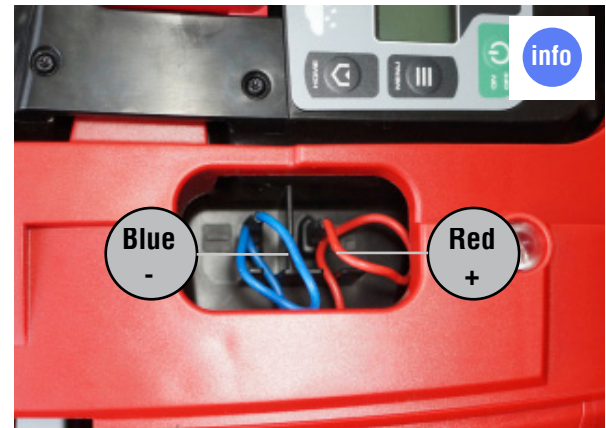
Carefully loosen the clips with a long screwdriver.



For mounting the design cover,
first clip them at the front.

2 Disassembly / Assembly of components

2.3 Charging contacts



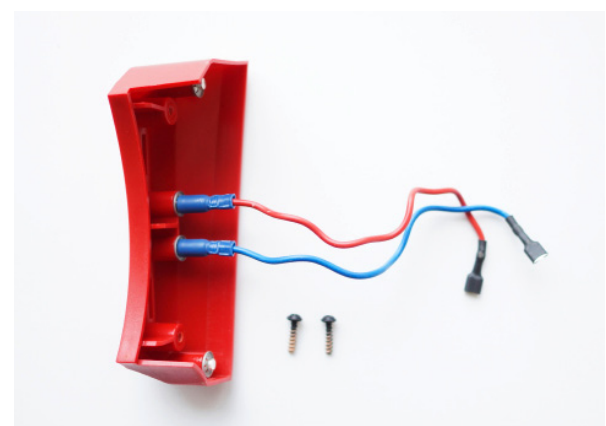
Remove design cover.

Installation note:
Pay close attention to all wiring during assembly.



Carefully separate cable lugs with needle-nose pliers.

Release 2x screws at the charging contacts.



Remove charging contact element.

Charging contact element.

2 Disassembly / Assembly of components

2.4 Drive wheels


3 Min



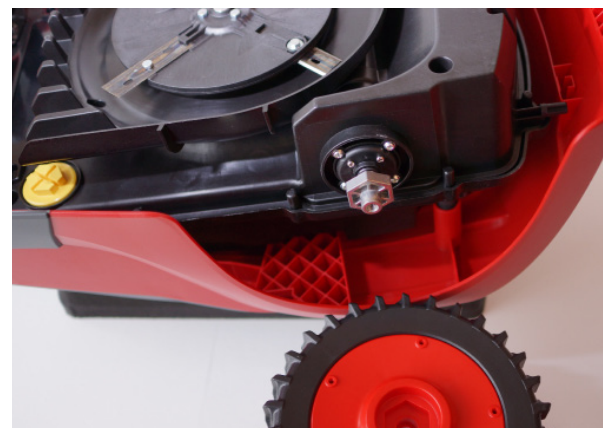
Use a small screwdriver to lever out the hubcap.



Unclip the hubcap.



Loosen the screw.



Remove the wheel.



Screw is provided with a coating against loosening.
It can be used multiple times.

info

2 Disassembly / Assembly of components

2.5 Front wheels / Wheels suspension


6 Min



Turn the device over. Fix screw head and loosen the nut.



Remove axle.



Remove the wheel.



Front wheel.



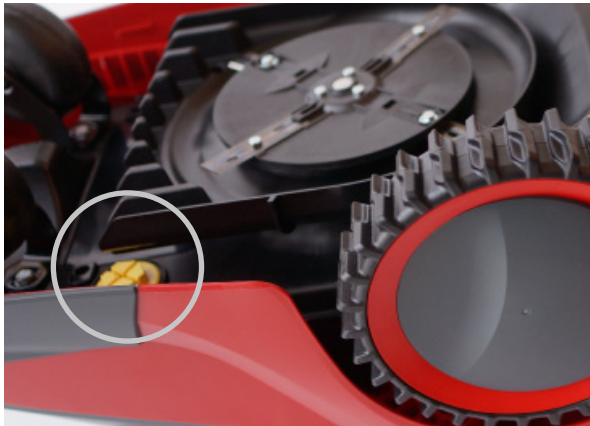
Loosen 2x screws.



Suspension.

2 Disassembly / Assembly of components

2.6 USB connection



Turn the device over.



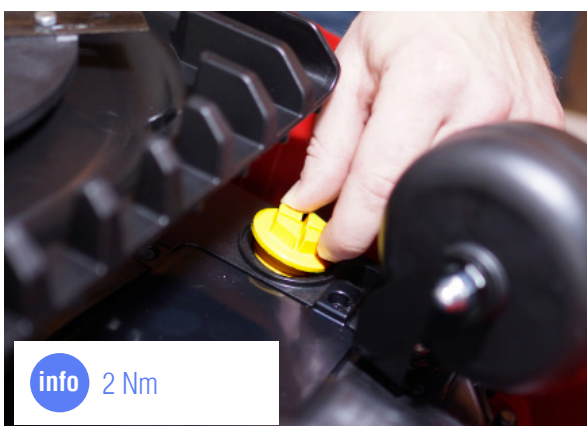
Open the cap by using a coin.



Cover including sealing ring. When installing, please use some grease.



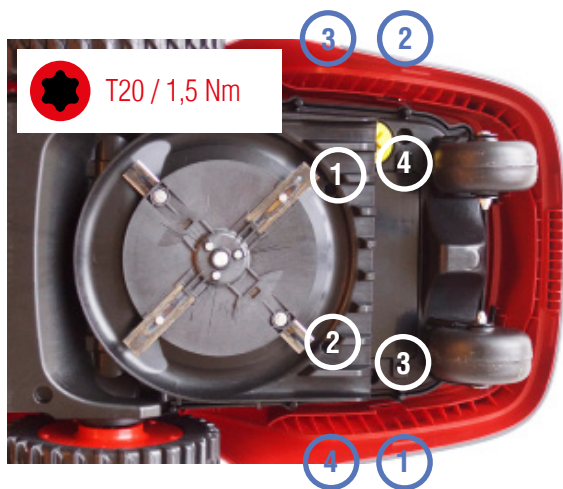
USB connection.



When screwing in, be sure to screw the screw cap straight. Hand-tight.

2 Disassembly / Assembly of components

2.7 Battery



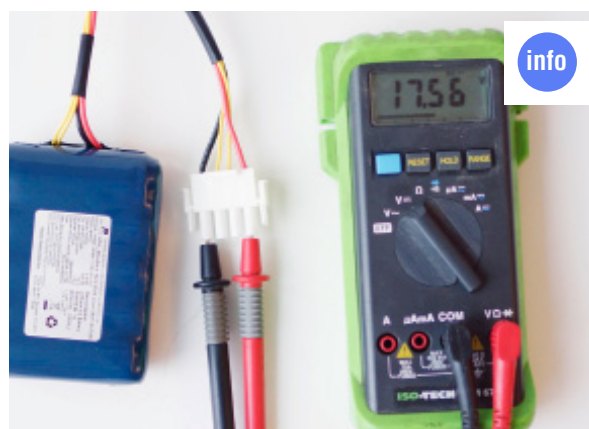
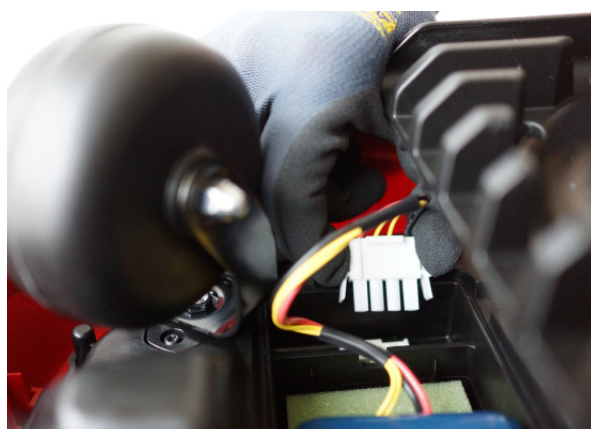
Turn the device, set the cutting height to minimum and loosen the screws in order as numbered above.
Mount and assemble in order (blue numbers).

Attention! Risk of injury!



Clean the battery compartment cover and lift it sideways with a small flat-head screwdriver.

Rubber gasket must be clean!



Push the plug to the battery pack on the right and left side and pull it off.

Rated voltage: 18V / charging voltage: 21V.

2 Disassembly / Assembly of components

2.8 Blade disc


3 Min



Turn the device over. Loosen 3x nuts with a wrench.
Attention risk of injury!

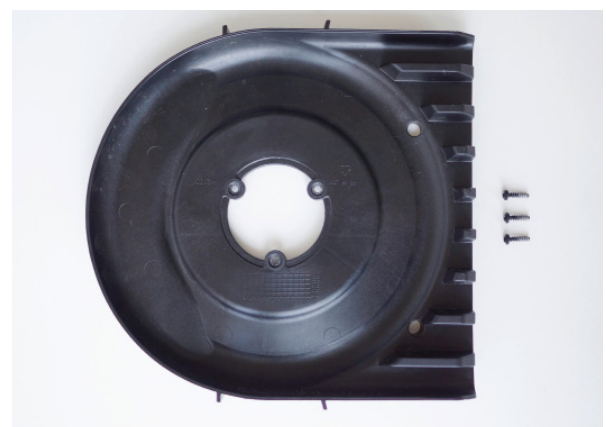
Remove the blade disc. **Attention risk of injury!**



Blade disc.

2.9 Mower deck


4 Min



Loosen 3x screws and remove mower deck.

Mower deck.

2 Disassembly / Assembly of components

2.9.1 Blade Replacement



Turn the device over.



Loosen 3x nuts with a wrench. **Attention risk of injury!**



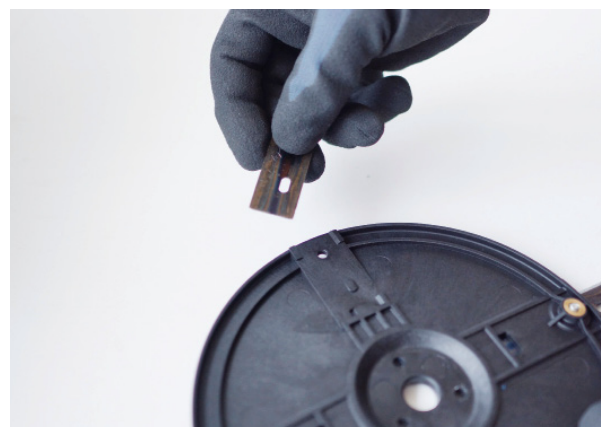
Remove blade disc.



Release knives with wrench.



Use a washer.



Cutting blade.

2 Disassembly / Assembly of components

2.9.2 STOP button / Magnet holder

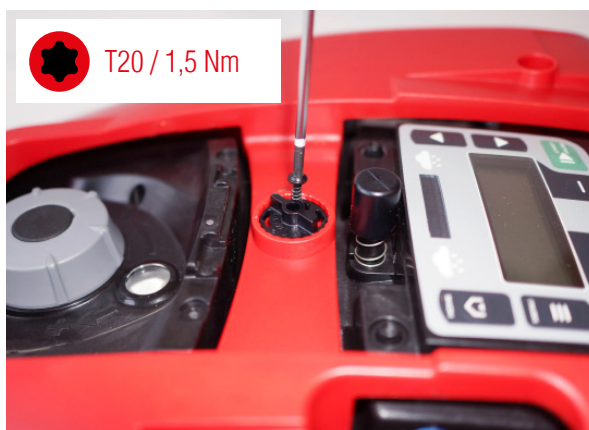

4 Min



Loosen 4x screws



Remove the STOP button.



Loosen the screw and remove it from the magnet holder.



Remove magnet holder.



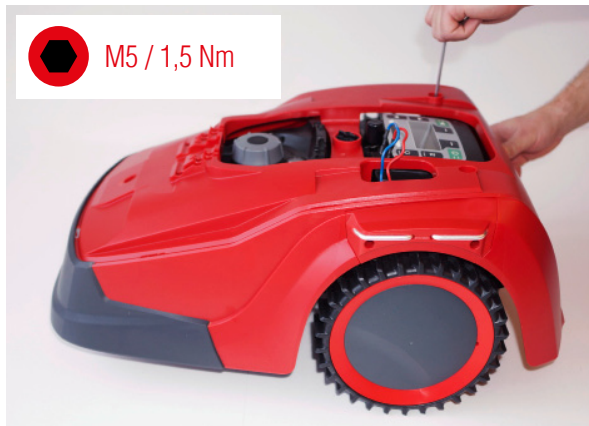
Detailed picture of the magnet holder.



Installation hint: Fix the magnet holder during calibration.

2 Disassembly / Assembly of components

2.9.3 Functional cover



Loosen 3x screws



Carefully lift the cover upwards.

2.9.4 Cover deviation sensor



Positions of the deviation domes.



Loosen 3x screws to remove single deviation dome.
Only necessary if broken!



Pull deviation dome upwards.



Deviation dome.

2 Disassembly / Assembly of components

2.9.5 Chassis upper part

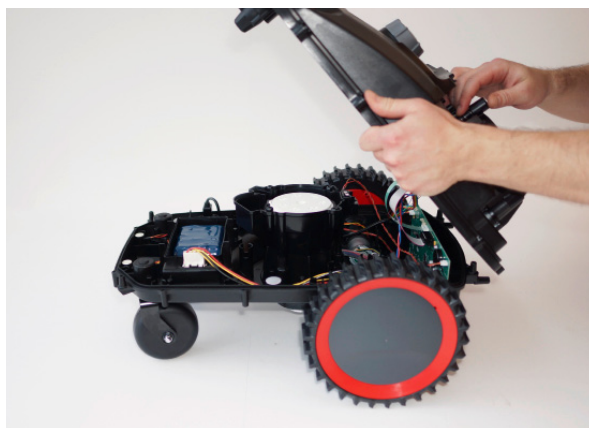

12 Min



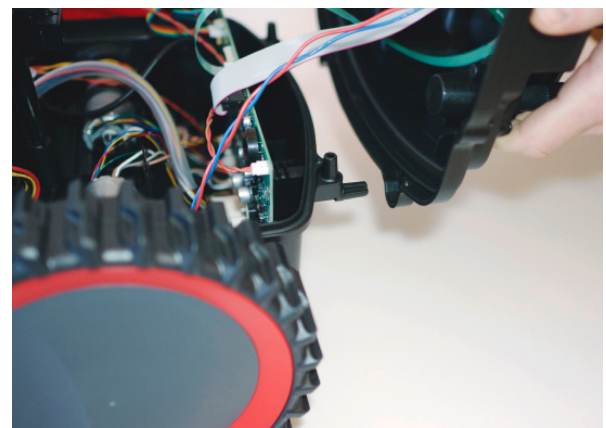
Remove design cover (2.1) and functional cover (2.9.3) then loosen 12x screws.



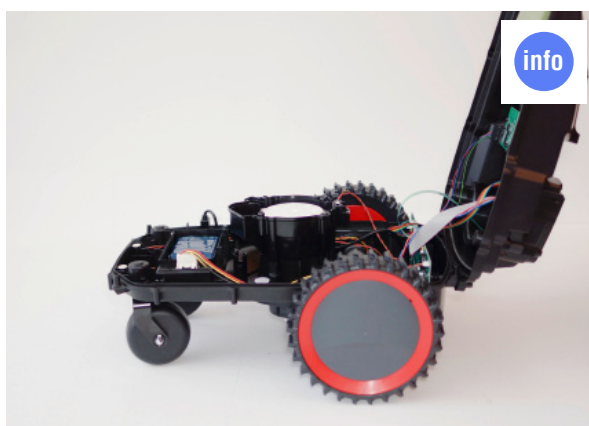
STOP button / Do not lose the spring.



Carefully remove the top of the chassis.



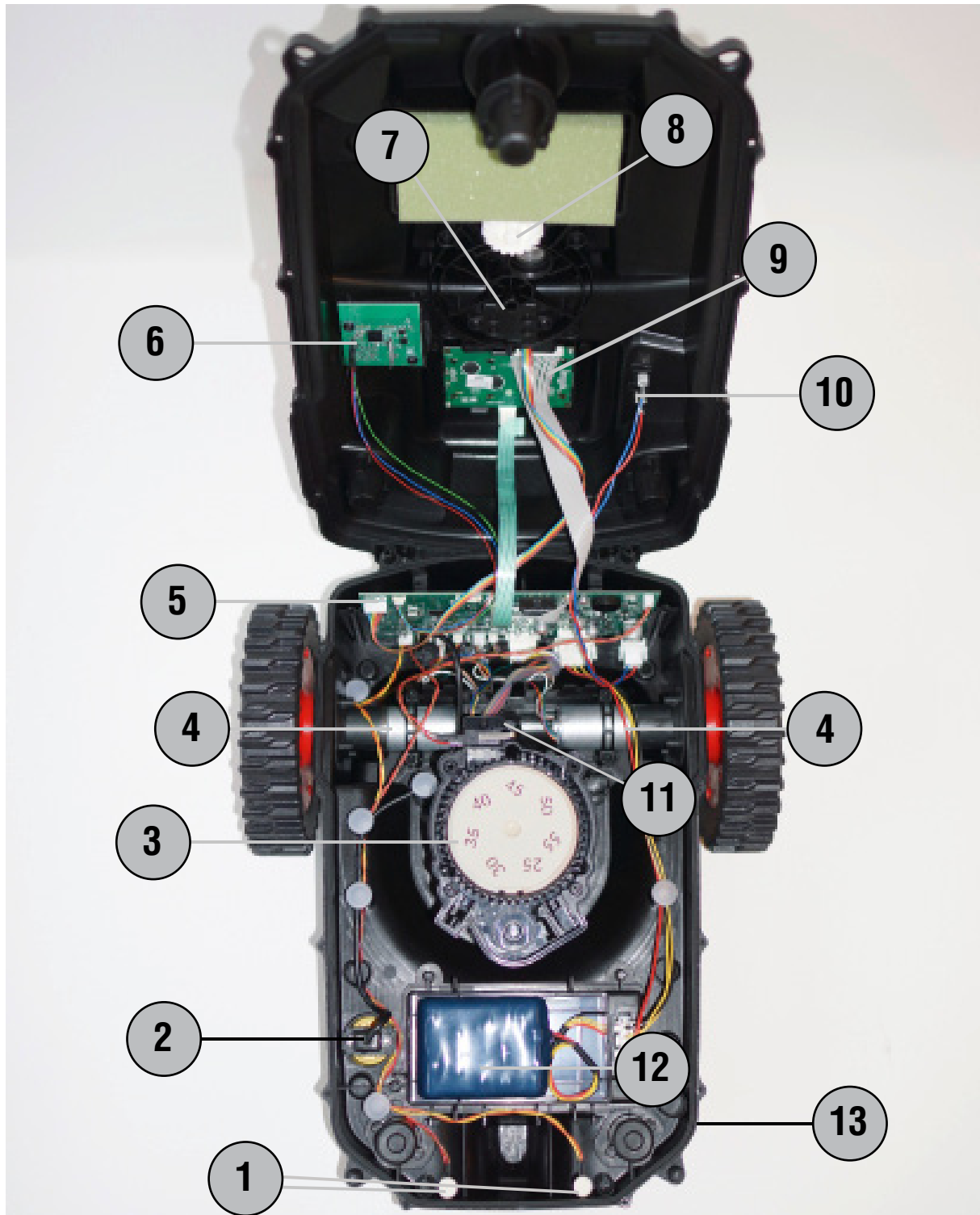
Detail view of chassis hooks.



Chassis upper part can be hooked on the back.

1 General product information

1.4 Electronics



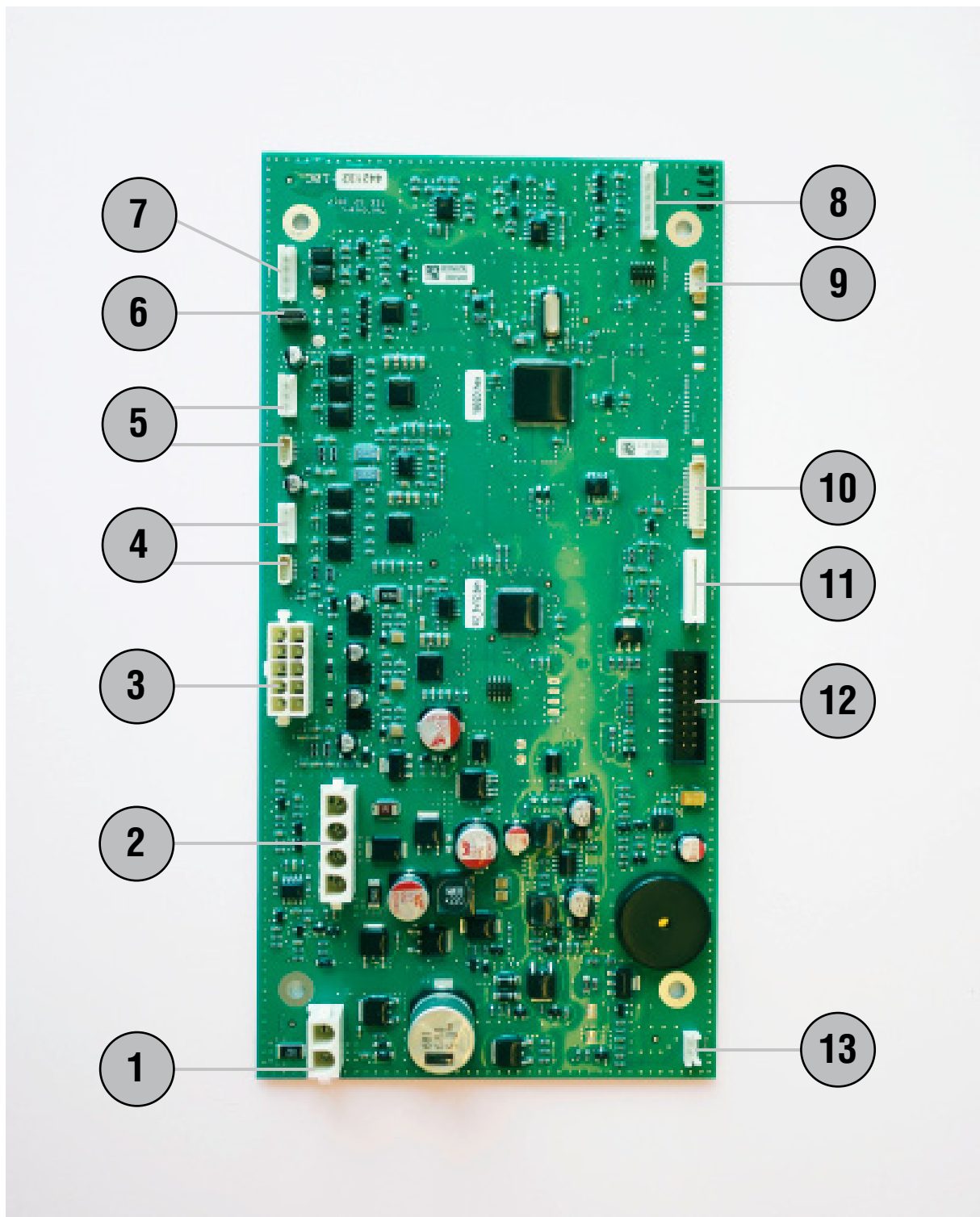
1 - Loop sensors
2 - USB connector
3 - Blade motor
4 - 2x wheel motors

5 - Mainboard
6 - Wireless Smart Homeboard(optional)
7 - Deviation sensor board
8 - Cutting height adjustment

9 - Display
10 - Charging contacts
11 - STOP button
12 - Battery
13 - Sealing gasket

1 General product information

1.5 Connectivity mainboard



- 1 - Charging contacts
- 2 - Power supply for mainboard
- 3 - Blade motor
- 4 - Drive motor - left

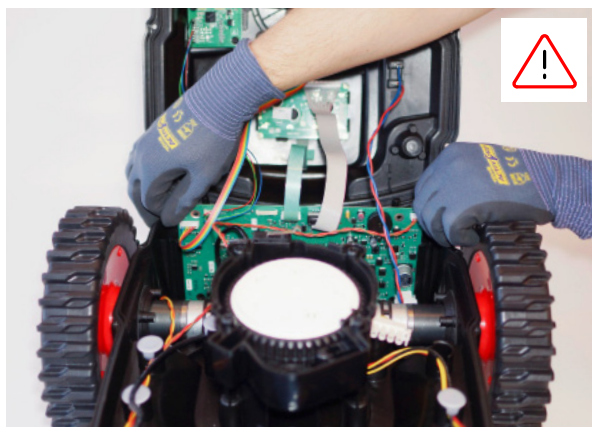
- 5 - Drive motor - right
- 6 - USB
- 7 - Loop sensor
- 8 - Deviation sensor board

- 9 - SmartHome board (optional)
- 10 - Not used
- 11 - Keyboard slide
- 12 - Display
- 13 - STOP button

3 Disassembly / Assembly of electronic components

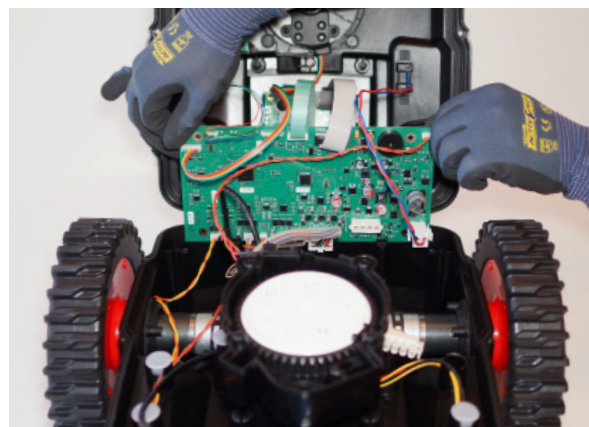
3.1 Motherboard


15 Min

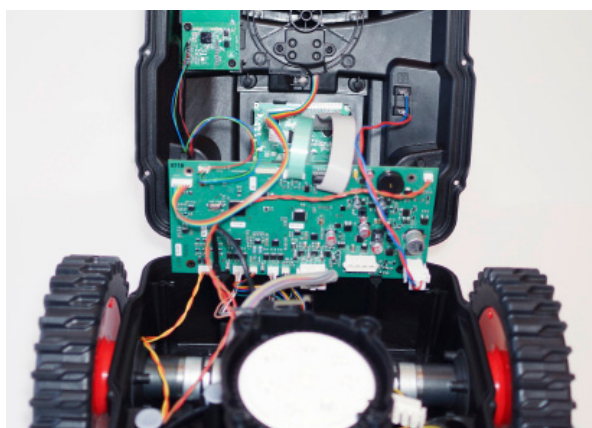


Carefully lift the motherboard.

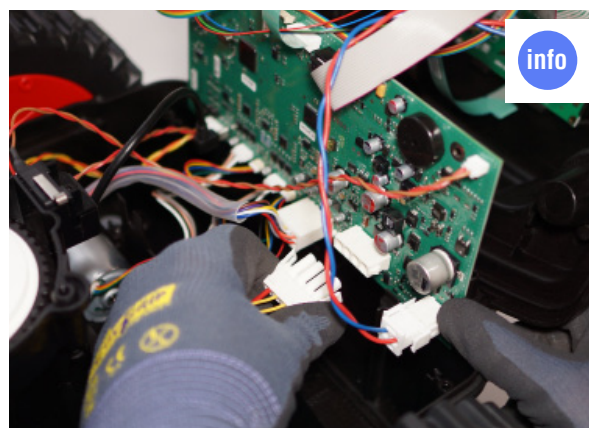
Caution: Use ESD equipment!



... and insert it into the holder provided.



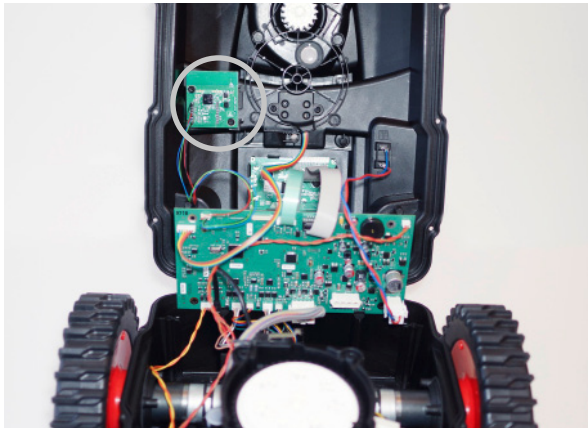
PCB is in maintenance position.



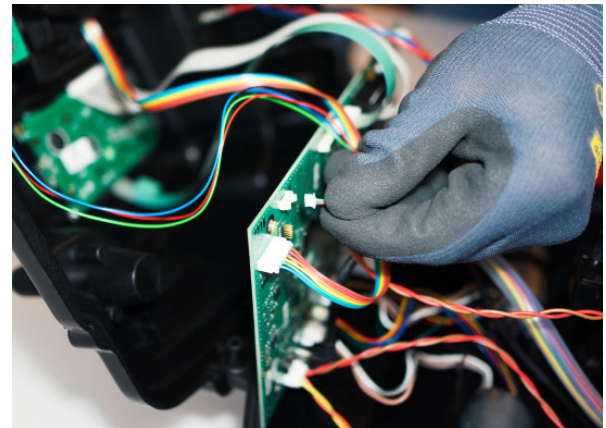
Disconnect the power to the motherboard before any electronics repair. To do this, push in and remove the connector on the right and left side.

3 Disassembly / Assembly of electronic components

3.2 Wireless SmartHome (not on all models)



Position of the radio board.



Release connector on main board.



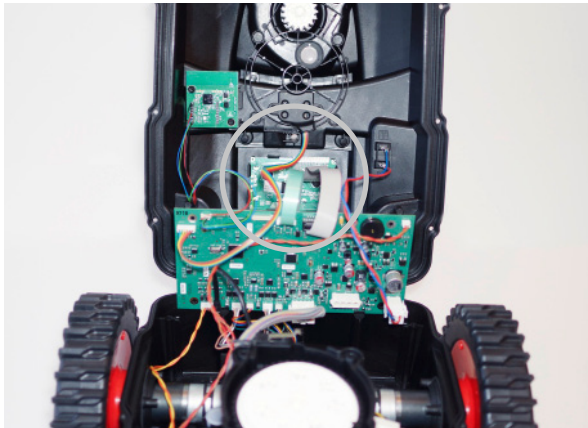
Loosen 2x screws and remove the board.



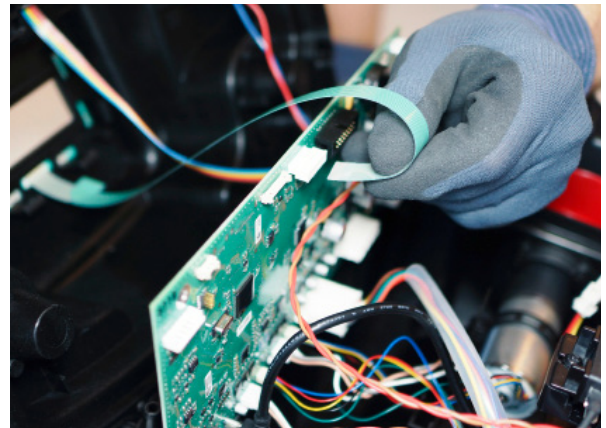
Radio board
Installation note:
Always use insulating washers.

3 Disassembly / Assembly of electronic components

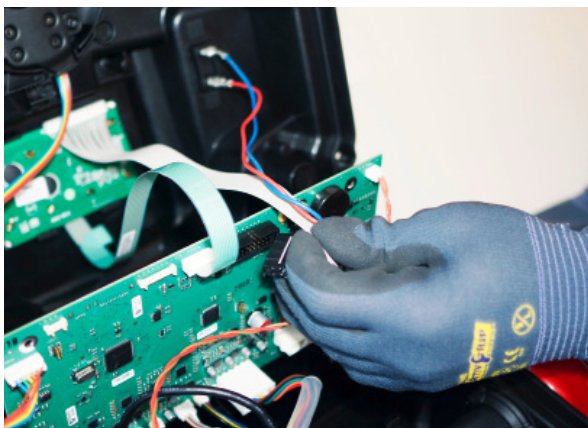
3.3 Display



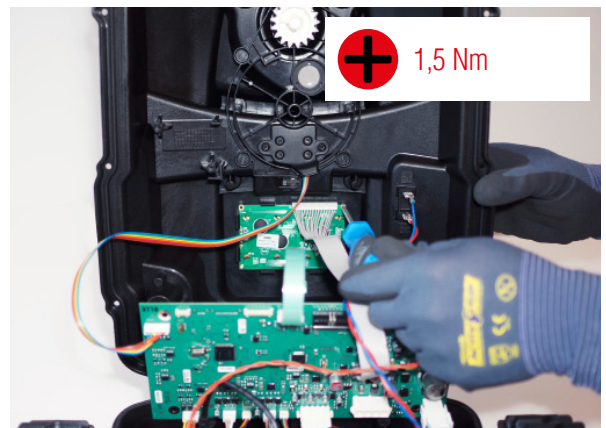
Position of the display board.



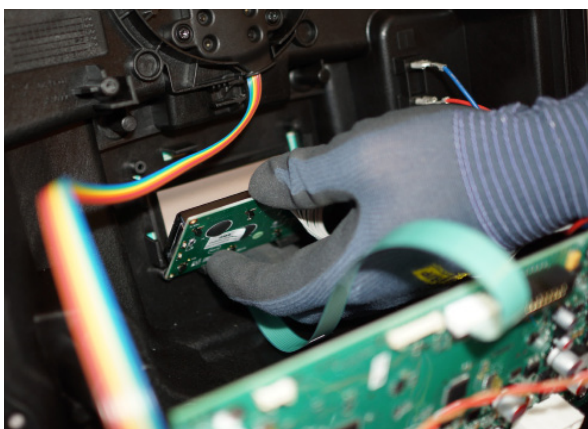
Release plug.



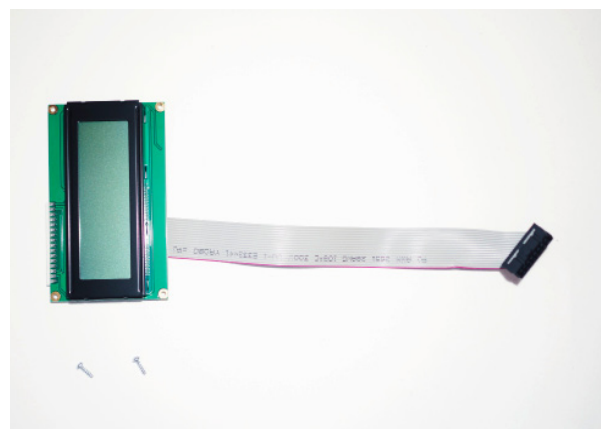
Release plug.



Loosen 2x screws.



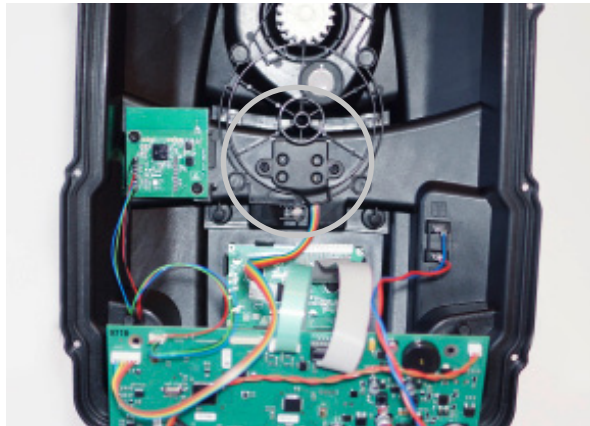
Carefully unclip the display.



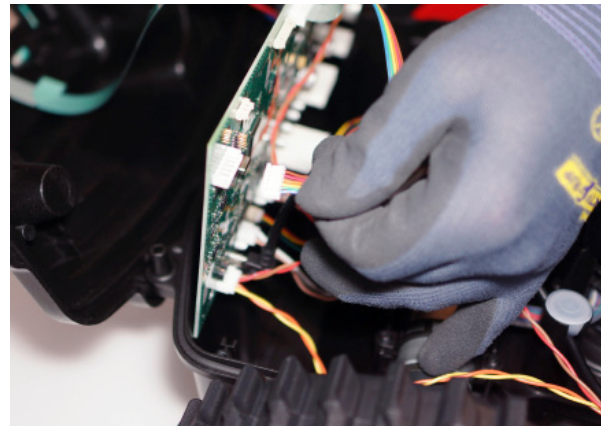
Display board.

3 Disassembly / Assembly of electronic components

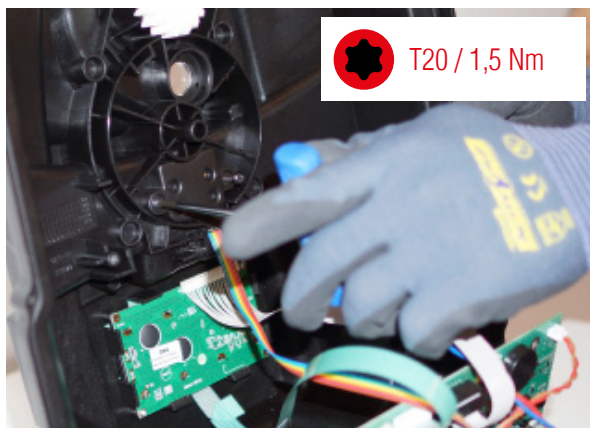
3.4 Cover deviation sensor



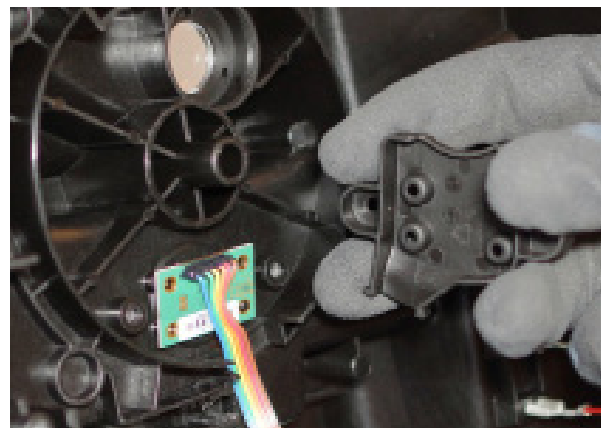
Position of the deviation sensor board.



Release connector on mainboard.



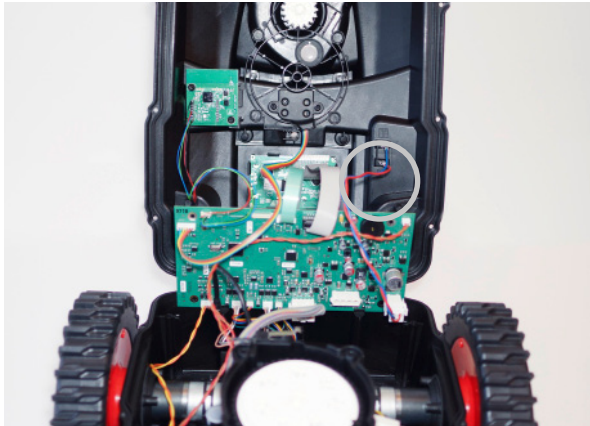
Loosen 2x screws.



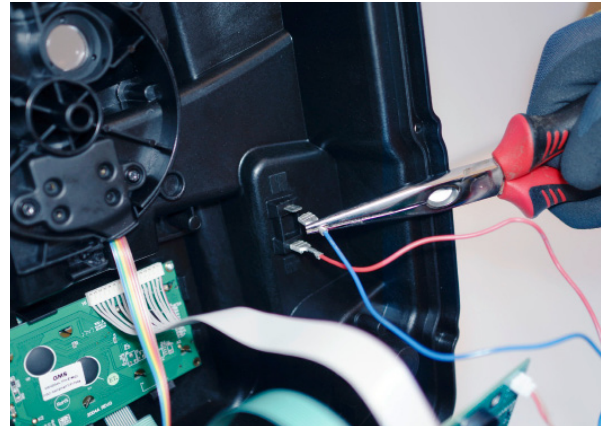
Remove the cover.

3 Disassembly / Assembly of electronic components

3.5 Wiring harness for charging contacts



Position of charging contacts

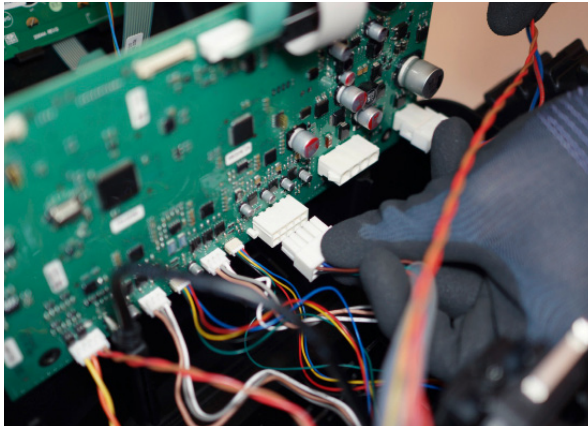


Release cable lugs with pliers.

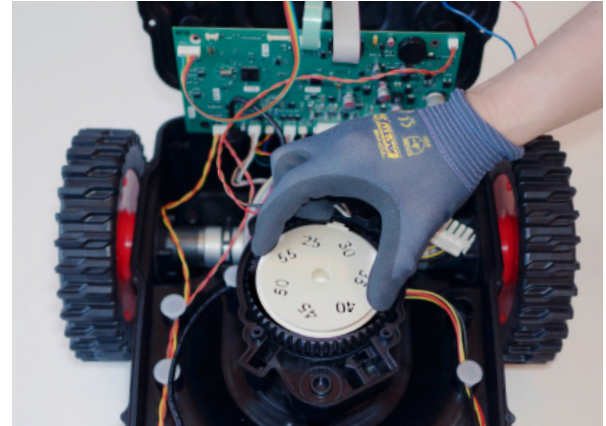
3 Disassembly / Assembly of electronic components

3.6 Blade motor

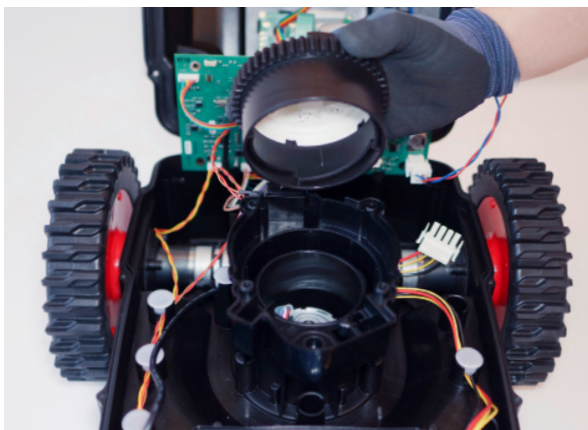

15 Min



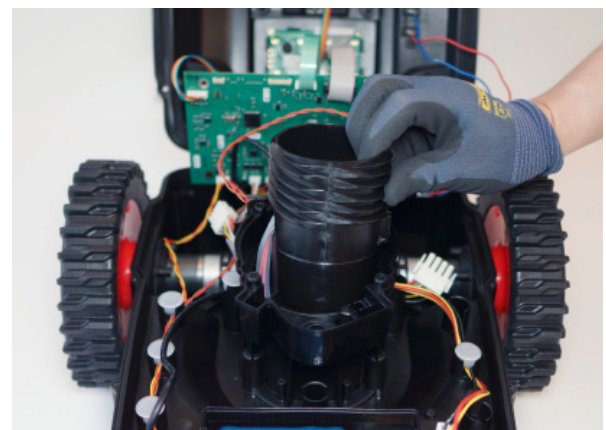
Release plug.



Set cutting height to minimum before disassembly.
Note the position of the height adjustment wheel.



Unscrew height adjustment wheel.



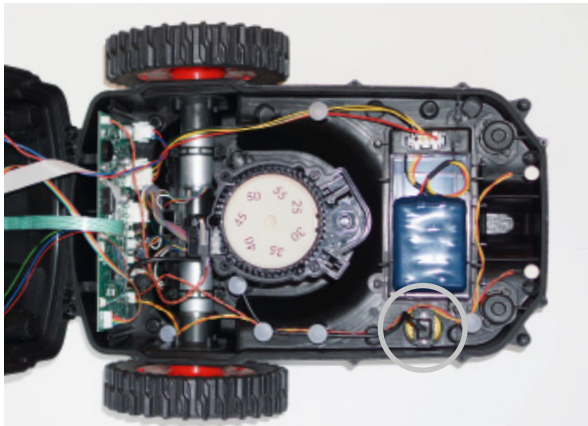
Remove mower motor including mower can.



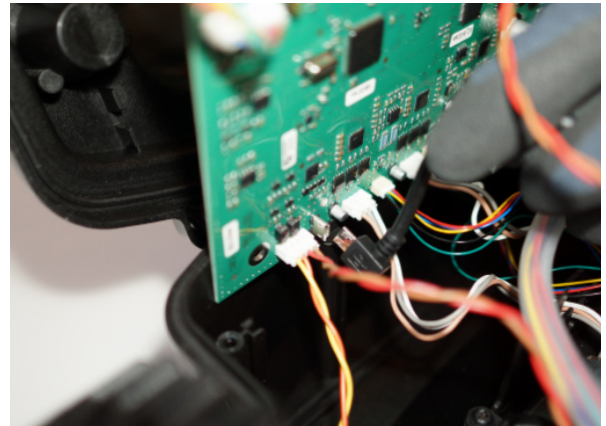
Mowing motor.

3 Disassembly / Assembly of electronic components

3.7 USB socket



Position of the USB socket



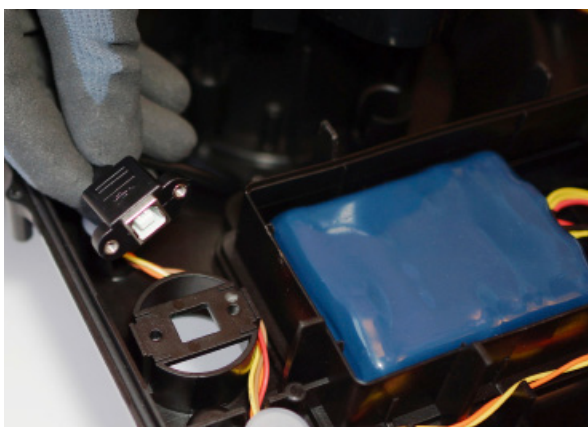
Disconnect micro USB connection to motherboard.



Unscrew USB protection cap.



Loosen 2x screws.



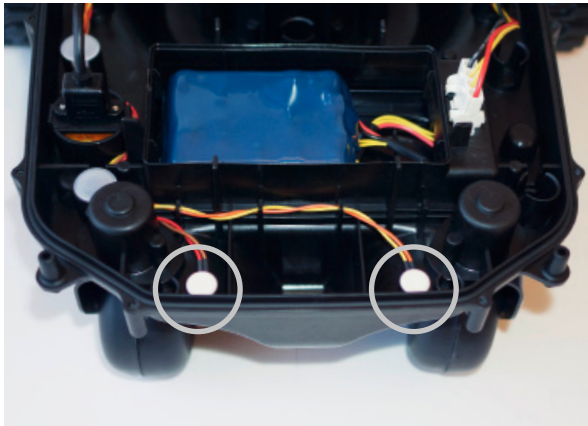
Remove the USB socket.



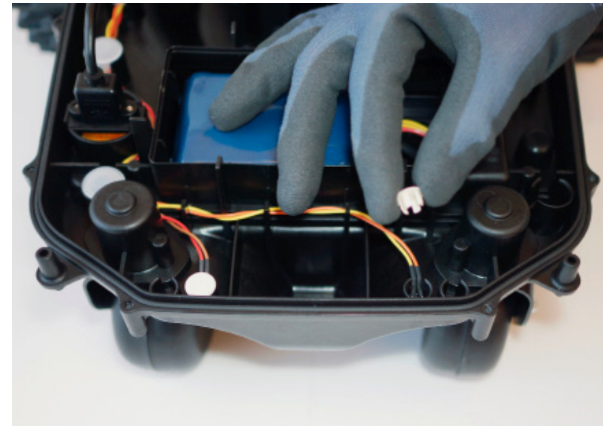
USB socket.

3 Disassembly / Assembly of electronic components

3.8 Loop sensors



Position of the loop sensors (right and left)
When assembling pay attention to color coding.



Remove protective caps.



Gently release sensors in upward direction.
When assembling pay attention to color coding.



When mounting,
be sure to press in the loop sensors
with a soft pin (such as wood).

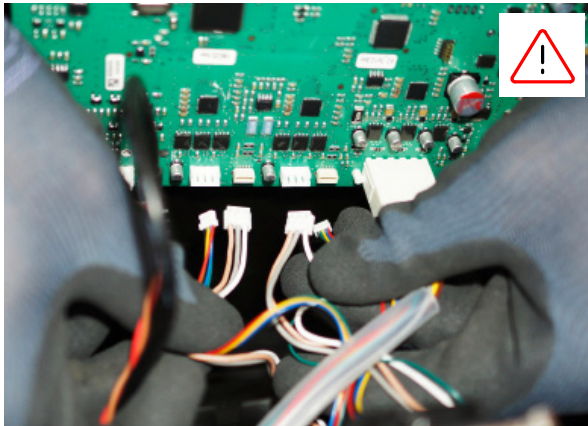


Attention: Risk of damage!

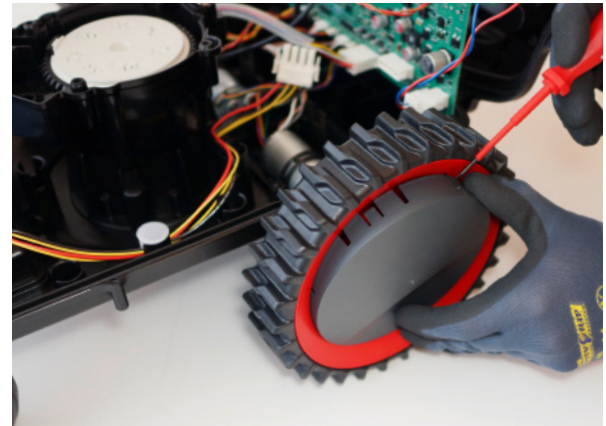
3 Disassembly / Assembly of electronic components

3.9 Wheel motors

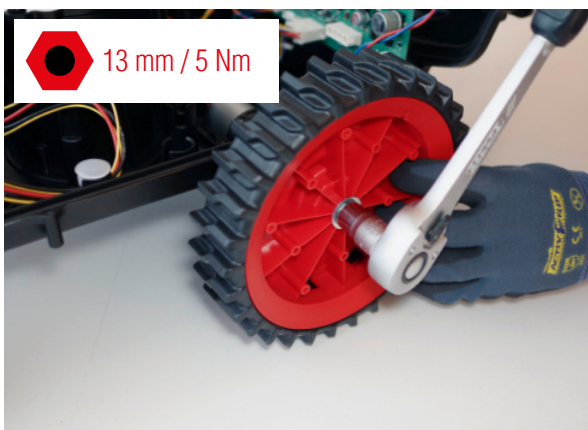

15 Min



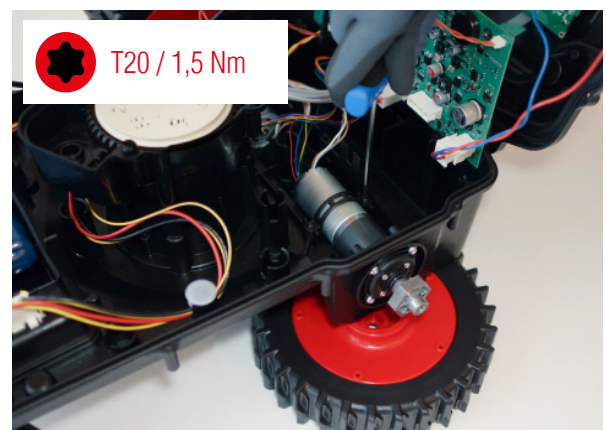
Release connectors.
Risk of confusion right and left.



Remove the wheel cap.



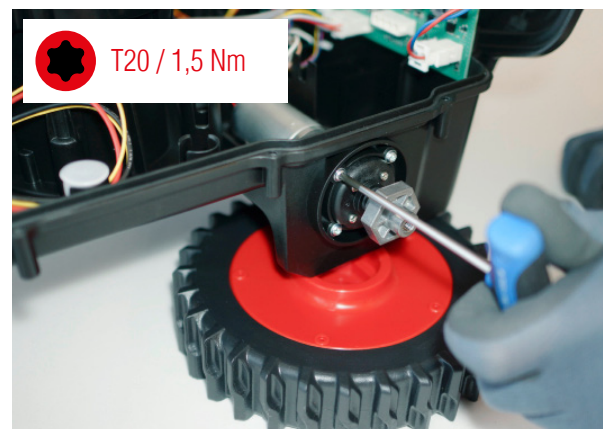
Loosen the screw with a wrench.



Loosen 2x screws (wheel motor bracket)



Remove wheel motor holder.



Loosen 4x screws (continue on next page).

3 Disassembly / Assembly of electronic components

3.9 Wheel motors



Remove wheel motor and gasket.



Wheel motor and gasket.



Installation note:
During assembly, align sealing ring and screw guide.



Detailed view.

3 Disassembly / Assembly of electronic components

3.9.1 Cutting height adjustment



Remove design cover and function cover.
Remove the cover with a small screwdriver.



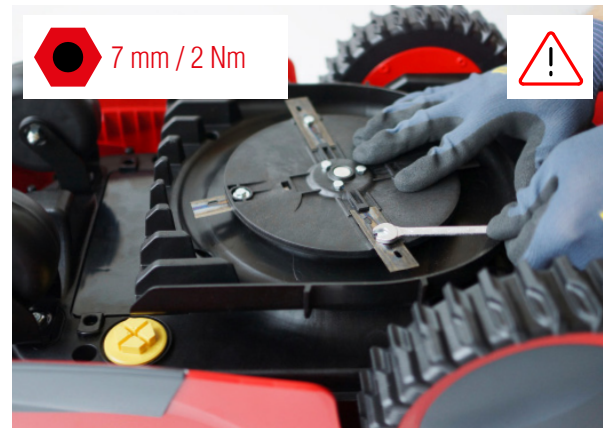
Release 1x screw.



Remove rotary knob with rubber gasket ring.

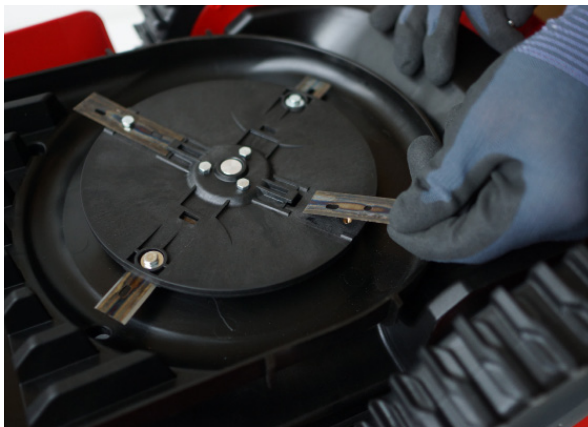
4 Maintenance

4.1 Replace cutting knife



Turn the device over.

Release knife with wrench.
Attention: Risk of injury!



Insert new cutting knives.



Cutting knife.

5 Disassembly / Assembly of base station

5.1 Base station elements



- 1 - Base station plate
- 2 - Connections for loop cable
- 3 - Charging contacts
- 4 - Connection for power supply cable
- 5 - Power supply

5 Disassembly / Assembly of base stationn

5.2 Disassembly / Assembly

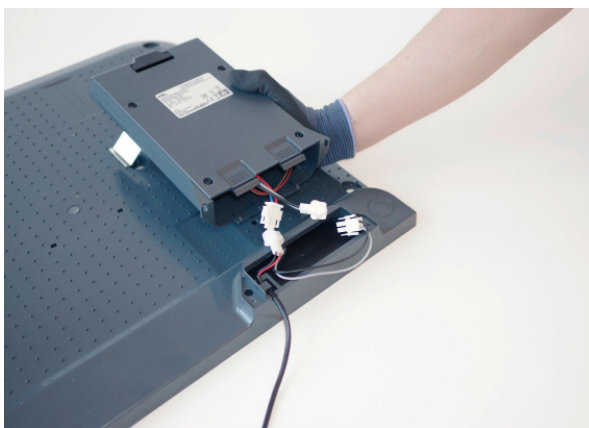

10 Min



Loosen 2x screws.



Unclip tower from base plate.



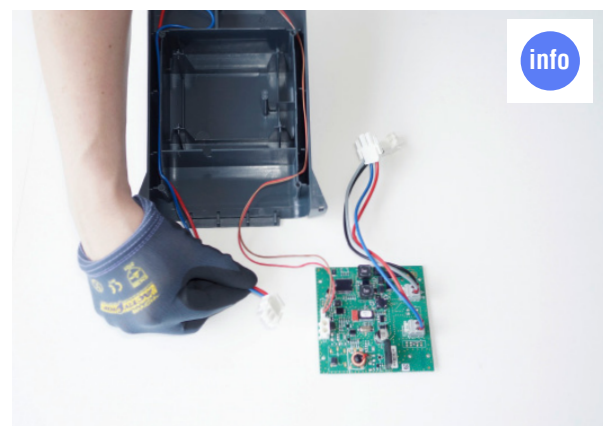
Release cable connector.



Loosen 6x screws.



Base station with circuit board.



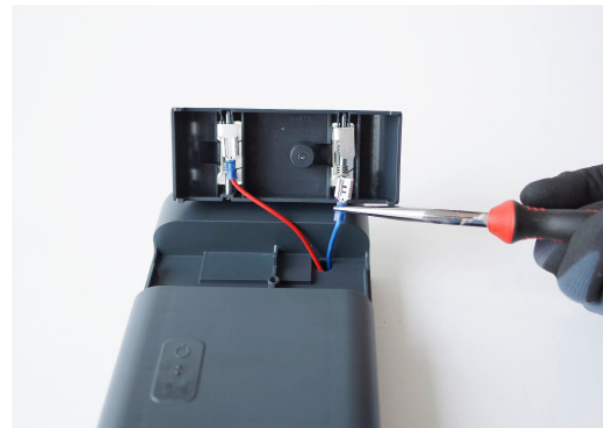
Note: Home button / Do not loose spring.

5 Demontage / Montage der Basistation- Komponenten

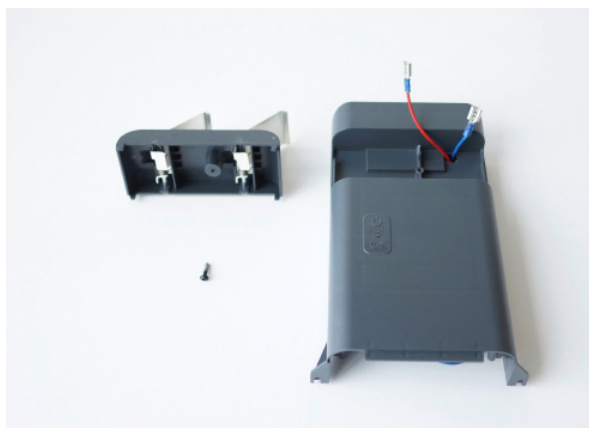
5.3 Charging contacts base station



Release 1x screw.



Pull off cable lugs with pliers.



Charging contacts.

6 Transportation / Shipment

6.1 Packaging



Carton wedge (left) and cardboard insert (right).



Insert cardboard insert into cardboard box.



Insert robot.



Secure with cardboard wedge and insert protective foil.