

**KÄRCHER**

**BD 50/50 C Bp Classic**  
**BD 43/25 C Bp Classic**  
**BD 50/60 C Ep Classic**  
**BD 43/35 C Ep Classic**  
**Service Manual**



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## Preface

Good service work requires extensive and practice-oriented training as well as well-structured training materials. Hence we offer regular basic and advanced training programmes covering the entire product range for all service engineers.

In addition to this, we also prepare service manuals for important appliances - these can be initially used as instruction guides and later on as reference guides.

Apart from this, we also regular information about product enhancements and their servicing.

If you should require supplements, have corrections or questions regarding this document, please address these citing the following subject to:

*international-service@de.kaercher.com*

Subject:	<b>Fall 119210</b>
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The responsible product specialist will take care of your issue.

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## Safety instructions

Service and maintenance tasks may only be performed by qualified and specially trained specialists.

### Observe safety information in the chapters!

- Warning and information plates on the machine provide important directions for safe operation.
- The device may only be operated when the cover and all lids are closed.
- The appliance must only be operated on surfaces that do not exceed the max. permitted incline (see "Technical Specifications").

### **⚠ DANGER**

- *Risk of explosion! Do not put tools or similar on the battery, i.e. on the terminal poles and cell connectors.*
- *Risk of injury. Ensure that wounds never come into contact with lead. Always clean your hands after having worked with batteries.*
- *Risk of injury! When loading or unloading the machine, it may only be operated on gradients up to the maximum value (see "Technical Specifications"). Drive slowly.*
- *Risk of injury! Set the programme selector switch to "OFF" and pull the mains plug of the charger prior to performing any work on the appliance.*

### **⚠ WARNING**

*Danger of causticization!*

- *Adding water to the battery in its discharged state can cause the acid to leak.*
- *Use safety glasses while handling battery acid and follow the safety instructions to avoid personal injury or damage to clothes.*
- *Should the acid spray on to the skin or clothes, rinse immediately with lots of water.*

### **⚠ CAUTION**











- *Risk of damage by electrostatic discharge (ESD)! Take suitable measures for discharging electrostatic charge prior to performing work on the appliance electronics.*
- *When the batteries are installed and removed, the stability of the appliance can be compromised; ensure a safe stance.*

### **ATTENTION**









*Risk of damage!*

- *Use only distilled or desalinated water (EN 50272-T3) for filling the battery.*
- *Do not add any substances (so-called performance improving agents), else warranty claims will not be entertained.*
- *Replace batteries with the same battery type only.*

Please observe the following warning notes when handling batteries:

	Observe the directions on the battery, in the instructions for use and in the vehicle operating instructions!
	Wear an eye shield!
	Keep away children from acid and batteries!
	Risk of explosion!
	Fire, sparks, open light, and smoking not allowed!
	Danger of causticization!
	First aid!
	Warning note!
	Disposal!
 Pb	Do not throw the battery in the dustbin!

## Symbols on the machine

	Battery socket
	Lashing point
	Mop holder **
	Filling level fresh water tank 25%
	Bow brush change
	Vacuum bar lowering lever
	Drain outlet fresh water tank
	Dirt water discharge hose

\*\* option

## Hazard levels

### **⚠ DANGER**

For an immediate danger which can lead to severe injuries or death.

### **⚠ WARNING**

For a possibly dangerous situation which could lead to severe injuries or death.

### **⚠ CAUTION**

For a possibly dangerous situation which can lead to minor injuries or property damage.

### **ATTENTION**

Pointer to a possibly dangerous situation, which can lead to property damage.

### **Note**

Indicates useful tips and important information.

## Description in this service manual

### Service groups

#### **Example:**

Install/uninstall ANRA wheel axle

<b>AN</b>	<b>RA</b>	<b>Install/uninstall wheel axle</b>
Service group	Component	Activity

Observe the allocation of service groups to the appliance components in the overview diagram in Chapter "Overview over the service and functional groups".

### Functional group structure

<b>010</b>	Safety instructions
<b>020</b>	Overview
<b>030</b>	Function
<b>040</b>	Service activities
<b>050</b>	Maintenance and inspection
<b>060</b>	Error diagnosis
<b>070</b>	Peculiarities/ others
<b>080 - 100</b>	Not assigned

### Textual description

➔ Instruction

■ *Preparatory operations*

1

2 Key numerical

A

B Key alphanumerical

– Enumeration / General list

### **⚠ Safety note**

Pointer to hazards, sources of errors.

## Technical Features

The scrubbing vacuum cleaner is used for the wet cleaning of level floors.

- The device can be easily adjusted to the respective cleaning task by adjusting the water volume and the detergent volume.  
The detergent dosing unit can be adjusted via the addition in the tank.
- The device is equipped with a fresh water and a waste water tank. These allow an effective cleaning with a long usage life.
- Homebase system  
Different options are offered to carry along, for example, a mop, cloths or detergent bottles.

## Intended use

- The appliance may only be used for the cleaning of hard surfaces that are not sensitive to moisture and polishing operations.
- The appliance is not suited for the cleaning of frozen grounds (e.g. in cold stores).
- The appliance may only be equipped with original accessories and spare parts.
- The appliance is not suited for the use in potentially explosive environments.
- The machine should not be used to suck in inflammable gases, undiluted acids or solvents.  
This includes petrol, thinning agents or hot oil that can form an explosive mixture when it comes in contact with sucked air. Do not use acetone, undiluted acids and solvents as they are aggressive towards the materials from which the appliance is made.
- The machine has been approved for use on surfaces with max. gradients as listed under "Technical Specifications".

## Field of application

This service manual describes the following appliances:

Appliance type	Part number	Power supply
BD 50/50 C Bp Classic	1.127-001.0	24 V Battery-operated Bp variant:
BD 50/60 C Ep Classic	1.127-002.0	230 V Mains-operated Ep variant
BD 50/60 C Ep Classic	1.127-003.0	120 V Mains-operated Ep variant
BD 43/35 C Ep Classic	1.515-401.0	230 V Mains-operated Ep variant
BD 43/25 C Bp Classic	1.515-400-0	24 V Battery-operated Bp variant:



## Safety installations

Safety devices serve to protect the user and must not be rendered in operational or their functions bypassed.

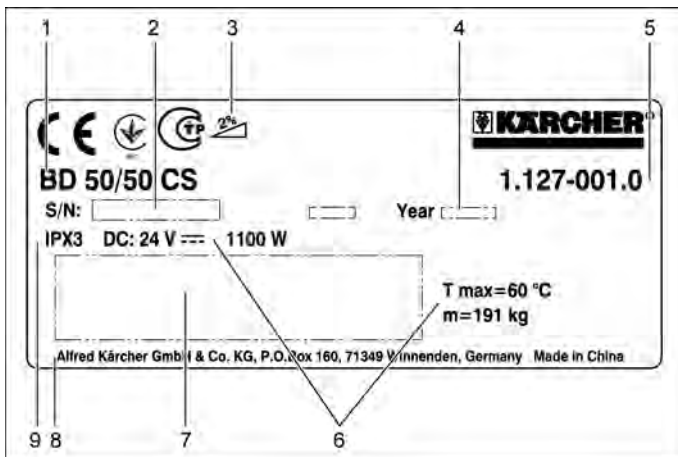
**Observe safety information in the chapters!**

## Type plate



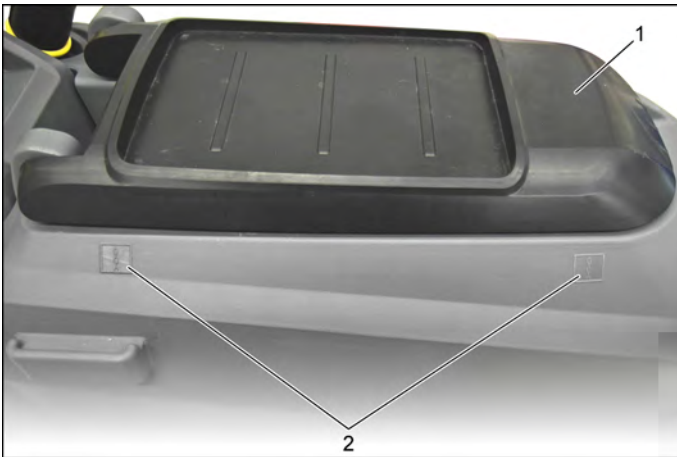
### 1 Nameplate

The type plate is located on the right inside of the fresh water tank.



- 1 Appliance description
- 2 Serial number
- 3 Maximum climbing ability
- 4 Year of manufacture
- 5 Part number
- 6 Specifications
- 7 Bar code. Contains part and serial number.
- 8 Address of manufacturer
- 9 IP rating/ protection class

## Transport



### ⚠ CAUTION

*Risk of personal injury or damage! Mind the weight of the appliance during transport.*

When transporting in vehicles, secure the appliance according to the guidelines from slipping and tipping over.

- 1 Cover waste water tank
- 2 Eyelet points

→ Open the cover of the waste water tank.

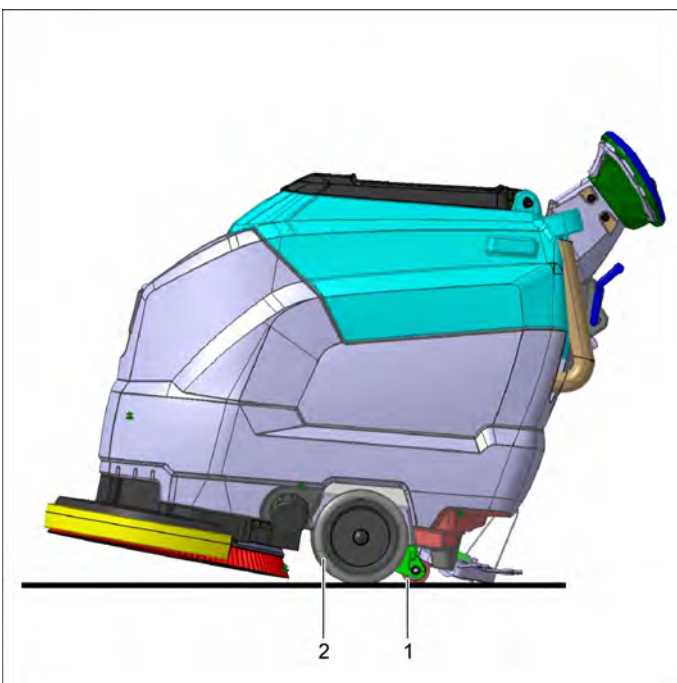
→ Fasten the appliance using the enclosed fasteners:

### Note

Use a suitable base.



## Transport position



- 1 Bearing wheel
- 2 Wheel

→ Tilt the device backwards on the push handle until the transport wheel touches the ground.

→ Push the machine to the place where it is to be used.

# Overview of the appliance

## Front view



- |                              |   |
|------------------------------|---|
| 1 Safety button              | 7 Splash guard                                      |
| 2 Dirt water drain hose      | 8 Disc brush  |
| 3 Holding rail for home base | 9 Scraper roller                                    |
| 4 Fresh water tank           | 10 Fresh water reservoir filler neck                |
| 5 Fresh water tank lock      | 11 Cover waste water tank                           |
| 6 Cleaning head              | 12 Storage surface for cleaning set "Home base box" |

## View from behind



- 1 Holding rail for home base
- 2 waste water tank
- 3 Handle disc replacement
- 4 Fresh water level display
- 5 Height adjustment of suction bar
- 6 Star handle screw
- 7 Scraper roller of suction bar
- 8 Suction lips
- 9 Support roller, suction bar
- 10 Rotary handle to incline the vacuum bar
- 11 Wing nuts for fastening the vacuum bar
- 12 Vacuum bar \*

- 13 Suction hose
- 14 Water quantity regulator
- 15 Bp variant:**  
Main connector
- Ep variant**  
Mains cable with mains plug
- 16 Lever suction bar lift
- 17 Operator console
- 18 Push handle

\* not included in the delivery

## Operator console



### Diagram

Bp variant:

- 1 OFF**  
Device is switched off
- 2 Display**
- 3 Normal mode**  
Wet clean the floor and vacuum up dirt water.
- 4 Intense mode**  
Wet clean the floor and allow the detergent to react.
- 5 Vacuum mode**  
Suck in the dirt fleet.
- 6 Program selection switch**



### Diagram

Ep variant

- 1 OFF**  
Device is switched off
- 2 Normal mode**  
Wet clean the floor and vacuum up dirt water.
- 3 Indicator light voltage supply**
- 4 Intense mode**  
Wet clean the floor and allow the detergent to react.
- 5 Vacuum mode**  
Suck in the dirt fleet.
- 6 Program selection switch**

## AC Service group control panel

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by qualified and specially trained specialists.

#### **⚠ CAUTION**

*Risk of damage by electrostatic discharge (ESD)! Take suitable measures for discharging electrostatic charge prior to performing work on the appliance electronics.*

### 020 Overview

#### Operator console



ACBP Uninstall / install control panel board  
ACBR Uninstall/ install safety switch  
ACPW Uninstall / install programme selector switch  
ACSS Uninstall/ install switch brush motor

### 030 Function

#### Note

Bp variant:

#### Battery display

The charging state of the batteries is shown via the display in the control panel.

Number of bars / display	Battery voltage
6	> 23,9 V
5	23,4 V...23,9 V
4	23,1 V...23,4 V
3	22,8 V...23,1 V
2	22,4 V...22,8 V
1	22,1 V...22,4 V
0	20,8 V...22,1 V
LOW BAT	< 20,8 V

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### ACBP Uninstall / install control panel board



### Note

Bp variant:

- Remove the main connector.
- *ACPW Uninstall / install programme selector switch*

- 1 Operating panel board A1
- 2 Electric socket plug connections
- 3 Nuts
- 4 Connection cables

- ➔ Mark power cables.
- ➔ Separate the electric connectors.
- ➔ Loosen the mounting nuts.
- ➔ Remove the connecting cable.
- ➔ Dismount connection cables.
- ➔ Remove control panel board.

### Installation information

Observe the plug arrangement during installation.  
Mind correct installation of the lines.

Pin assignment

Operating panel board	Program selection switch board
Red	Green
Brown	-
Blue	Yellow
Black	White

### ACBR Uninstall/ install safety switch



- 1 Safety button
- 2 Screws

- ➔ Unscrew the screws.
- ➔ Remove the safety switches

### Installation information

Pay attention to the correct fitting position during reinstallation.

## ACPW Uninstall / install programme selector switch



■ Remove the main connector.

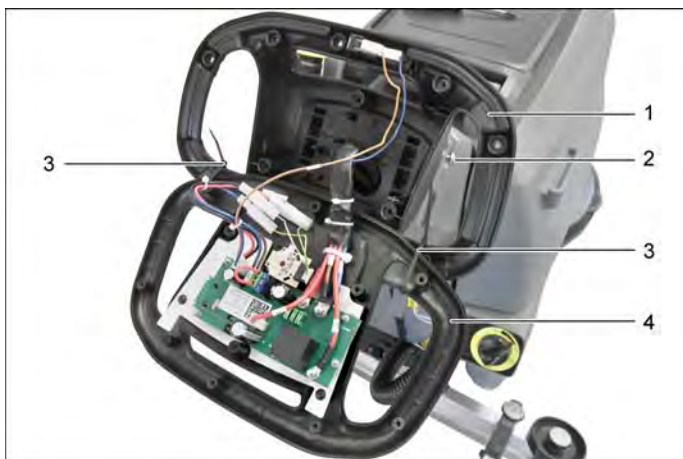
- 1 Screws
- 2 Bottom part push handle

➔ Unscrew the screws on both sides of the appliance.



- 1 Screws
- 2 Bottom part push handle

➔ Unscrew the screws.



- 1 Bottom part push handle
- 2 Screw
- 3 Cable connector
- 4 Top part push handle

➔ Secure the bottom part of the push handle on the device using a screw.

➔ Secure the top part of the push handle to the bottom part of the push handle using a cable tie.

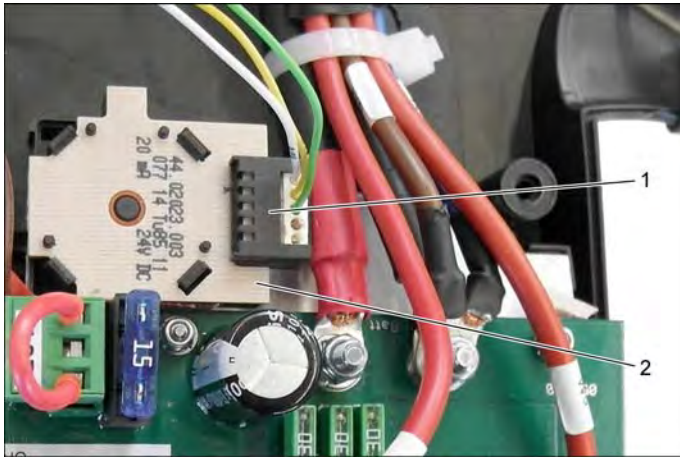


- 1 Screws

➔ Pull off the rotary knob of the programme selector switch.

➔ Unscrew the screws.



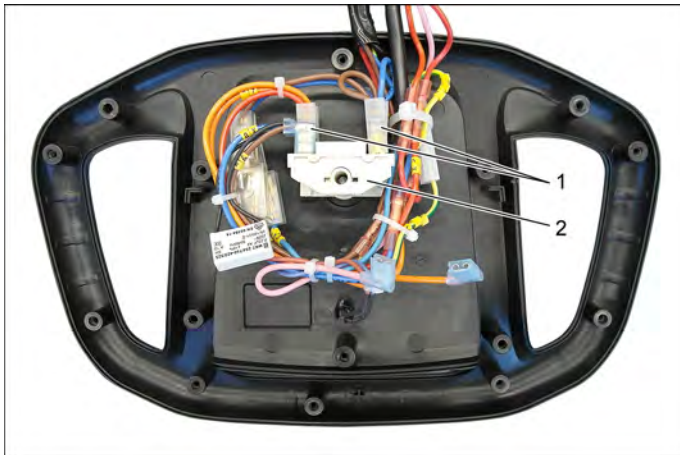


### Diagram

Bp variant:

- 1 Electric connectors
- 2 Program selection switch S1

- ➔ Separate the electric connectors.
- ➔ Remove the programme selector switch.



### Diagram

Ep variant

- 1 Electric socket plug connections
- 2 Program selection switch S1

- ➔ Mark power cables.
- ➔ Separate the electric connectors.
- ➔ Remove the programme selector switch.

### Installation information

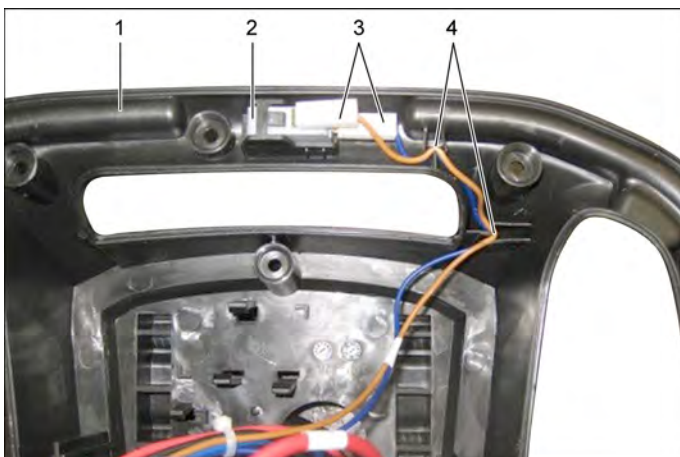
Observe the connection diagram.

## ACSS Uninstall/ install switch brush motor

- Remove the main connector.
- *ACPW Uninstall / install programme selector switch*

### Note

Only loosen the top part of the push handle.



- 1 Bottom part push handle
- 2 Switch brush motor S2
- 3 Electric socket plug connections
- 4 Cable guides

- ➔ Separate the electric connectors.
- ➔ Remove the brush motor switch.

### Installation information

Mind correct installation of the lines.

## 050 Maintenance and inspection

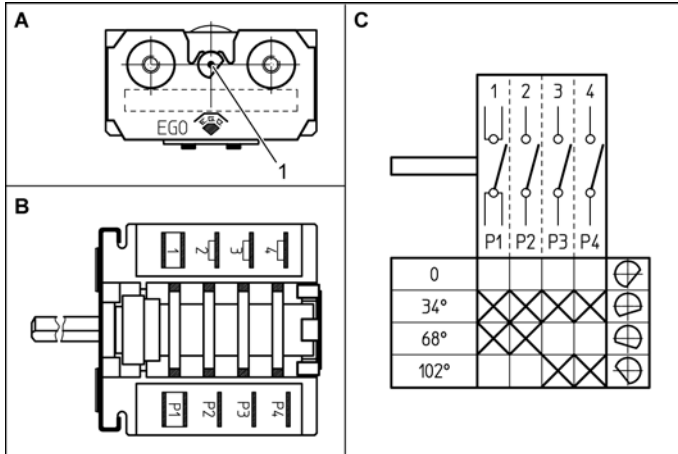
Service group does not contain any maintenance and inspection points.

## 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

### ACPP Check programme selector switch



### Diagram

Ep variant

1 Axle

A Front view, axle in OFF position

B View from above

C Connection diagram

Plugging chart subject to the programme selector switch position.

0°	Off
34°	Scrubbing and vacuuming
68°	Scrubbing
102°	Vacuuming

## 070 Peculiarities/ others

The service group does not contain any peculiarities.

## AD Service group water system

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by  
qualified and specially trained specialists.

### 020 Overview

#### Water system



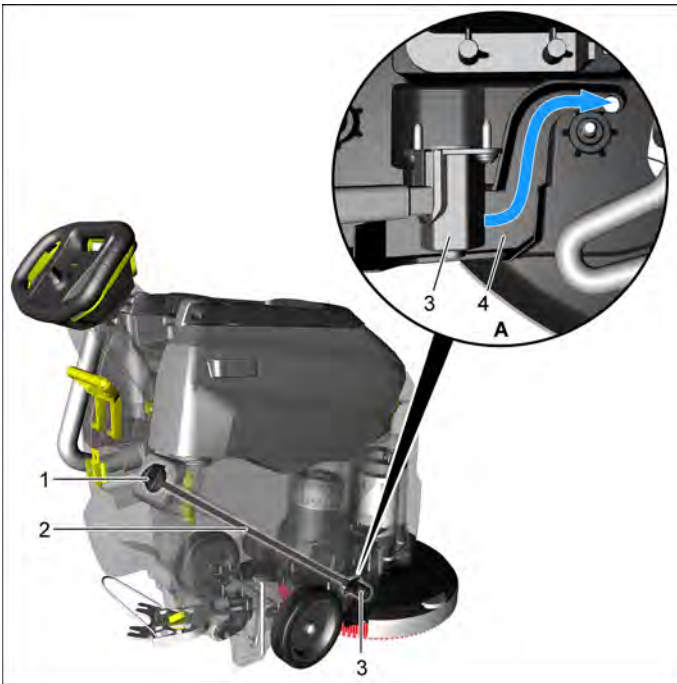
*ADSA Uninstall / install waste water drain hose*

*ADSC Uninstall / install float*

*ADSI Uninstall / install seal float*

*ADWD Uninstall / install water dosing valve*

## 030 Function



- 1 Water quantity regulator
- 2 Square
- 3 Water dosing valve
- 4 Water channel

A View from above

The inflow of the water volume is adjusted via the regulating knob water value.

The square connects the regulating knob water volume with the water dosing valve.

Depending on the position of the regulating knob water volume, the water dosing valve is opened or closed.

The set water volume flows through the water channel to the outlet onto the disc brush.

When the regulating knob water volume is completely opened, the supplied water volume varies between 2.2 l/min with a full and 0.9 l/min with an almost empty fresh water tank.

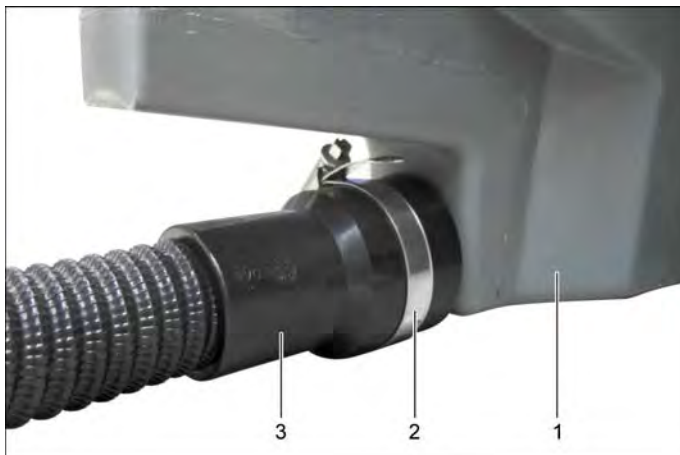
Upon ending the work, the water dosing valve must be closed.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### ADSA Uninstall / install waste water drain hose



- Remove the waste water tank.

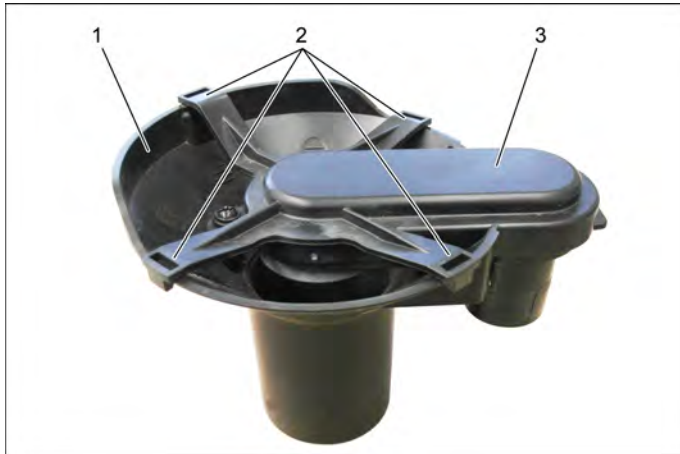
- 1 waste water tank
- 2 Hose clip
- 3 Dirt water drain hose

- ➔ Loosen the hose clip.
- ➔ Remove waste water drain hose.

### Installation information

Secure the hose clip in a way that it does not touch the fresh water tank.

## ADSC Uninstall / install float



- Open the cover of the waste water tank.

- 1 Funnel
- 2 Locks
- 3 Suction turbine air channel

- ➔ Remove funnel.
- ➔ Unlock the locks.
- ➔ Remove the air channel suction turbine.

### Note

Check float function.



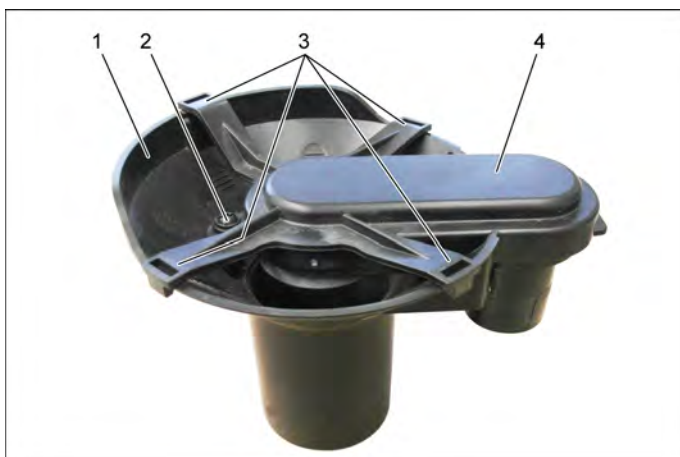
- 1 Funnel
- 2 Float

- ➔ Remove the float.

### Installation information

Pay attention to the correct fitting position during reinstallation.

## ADSI Uninstall / install seal float



- Open the cover of the waste water tank.

- 1 Funnel
- 2 Screw
- 3 Locks
- 4 Suction turbine air channel

- ➔ Remove funnel.
- ➔ Loosen screws.
- ➔ Unlock the locks.
- ➔ Remove the air channel suction turbine.



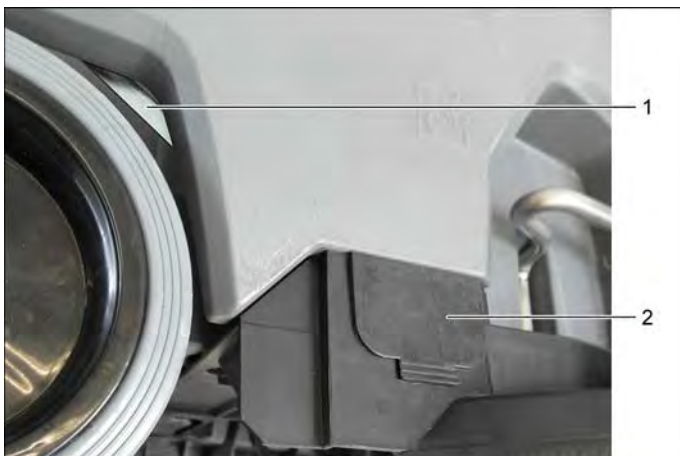
- 1 Suction turbine air channel
- 2 Seal float

- ➔ Remove the air channel suction turbine.
- ➔ Remove the seal of the float.

**Installation information**

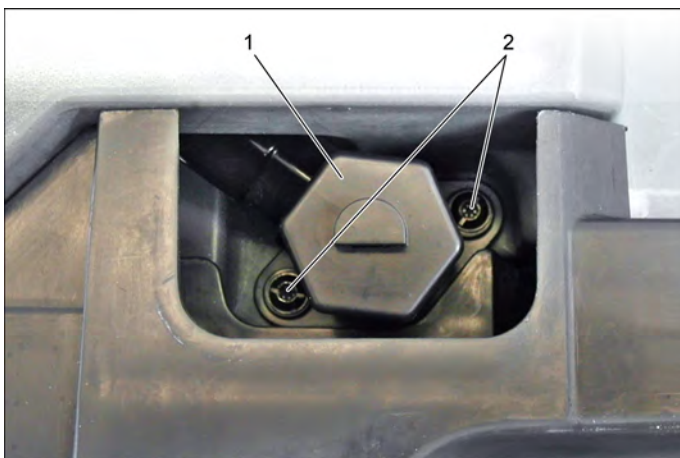
Pay attention to the correct fitting position during reinstallation.

**ADWD Uninstall / install water dosing valve**



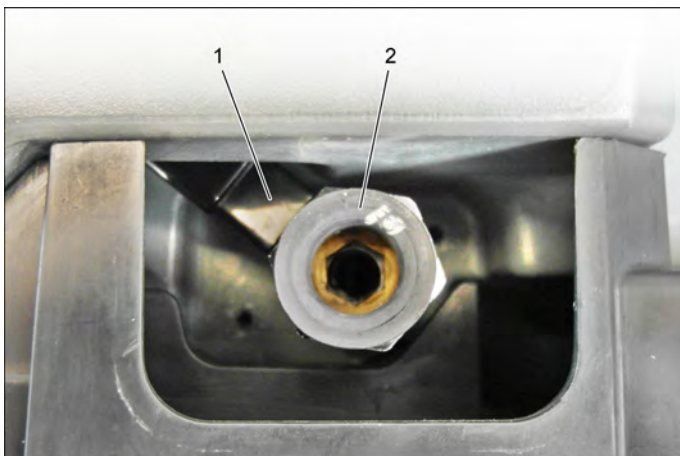
- 1 Square with regulating knob water volume
- 2 Cover

- ➔ Remove cover.
- ➔ Remove square with regulating knob water volume.



- 1 Support
- 2 Screws

- ➔ Unscrew the screws.
- ➔ Remove the holders.

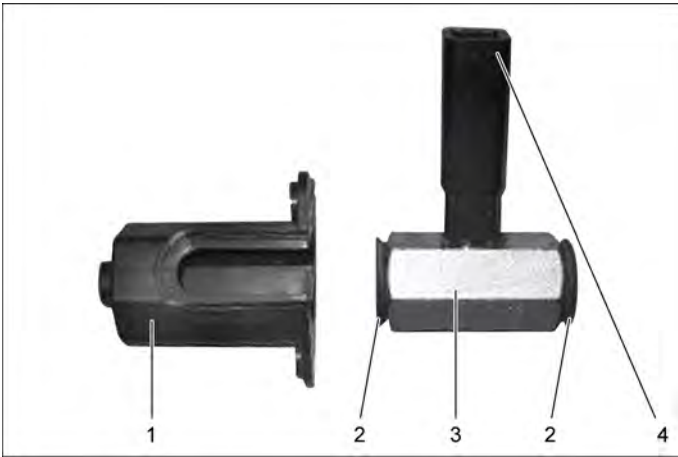


- 1 Water dosing valve
- 2 Seal

- ➔ Remove the water dosing valve.

**Installation information**

Pay attention to the correct fitting position during reinstallation.



#### Design water dosing valve

- 1 Support
- 2 Seal
- 3 Water dosing valve
- 4 coupling

The coupling is secured to the water dosing valve by means of a screw.  
 The seals are attached to the water dosing valve.  
 The set water volume flows via an opening in the holder through the water channel to the outlet onto the disc brush.

### 050 Maintenance and inspection

Service group does not contain any maintenance and inspection points.

### 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

### 070 Peculiarities/ others



#### Fresh water level display

- 1 Swimmer ball
- 2 Fresh water level display

The filling level indicator fresh water must be mounted flush with the fresh water tank.



#### Fresh water tank lock

- 1 Washer
- 2 Fresh water tank lock

In order to securely close the fresh water tank, a seal is installed in the lock of the fresh water tank.

## AE Service group tank system

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by  
qualified and specially trained specialists.

### 020 Overview

#### Tank system



*AEAA Lay the device on its side for maintenance work*  
*AESD Uninstall / install seal of the cover of the waste water tank*



## 030 Function

No special functional characteristics.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

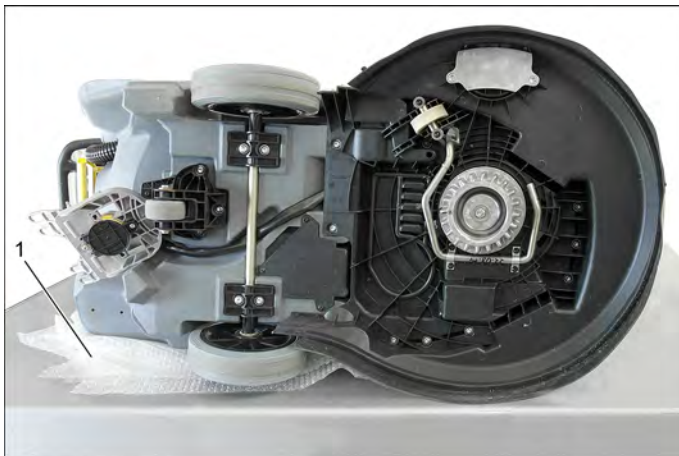
### AEAA Lay the device on its side for maintenance work



- 1 Dirt water drain hose
- 2 waste water tank
- 3 Fresh water tank
- 4 Fresh water tank lock

- ➔ Empty the waste water tank via the waste water drain hose.
- ➔ Remove the waste water tank.
- ➔ Empty the fresh water tank via the cap on the fresh water tank.

- *AGBS Uninstall / install batteries*
- *AFSB Uninstall/ install suction bar*



- 1 Base

- ➔ Lay the device on the side.

### Note

Use a suitable base.



- 1 Cover
- 2 Dirt water drain hose

- ➔ After draining the waste water via the waste water drain hose, close the opening air-tight by means of the cap.

### Note

Otherwise air is drawn in through the leaky opening due to the vacuum in the waste water tank. As a consequence the waste water starts foaming.

This foam is possibly drawn in by the suction turbine and may destroy it.

## AESD Uninstall / install seal of the cover of the waste water tank

- Open the cover of the waste water tank.

- 1 Cover waste water tank
- 2 Seal of cover of waste water tank
- 3 waste water tank

- ➔ Remove the seal of the lid of the waste water tank.

### Installation information

Ensure the correct seating of the seal during installation.  
The seal ends must close without any gaps.



## 050 Maintenance and inspection

Service group does not contain any maintenance and inspection points.

## 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

## 070 Peculiarities/ others

The service group does not contain any peculiarities.

## AF Service group suction system

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by qualified and specially trained specialists.

#### **⚠ DANGER**

*Risk of explosion! Do not put tools or similar on the battery, i.e. on the terminal poles and cell connectors.  
Risk of injury. Ensure that wounds never come into contact with lead. Always clean your hands after having worked with batteries.*

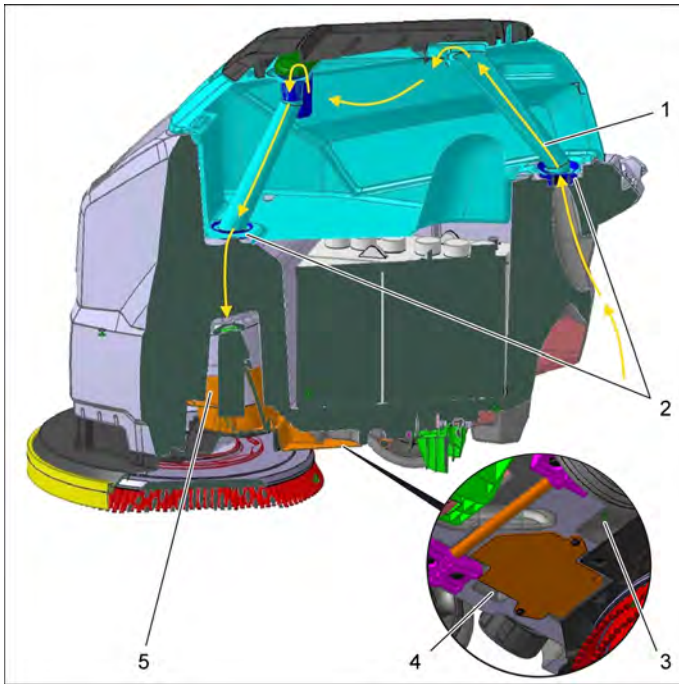
### 020 Overview

#### Suction system



- AFAR Uninstall/ install deflection rollers suction bar*
- AFAS Uninstalling/installing suspension of the suction bar*
- AFES Uninstall/ install end pieces suction bar*
- AFHS Uninstall / install lever suction bar lifting device*
- AFKS Uninstall / install sliding contacts of the suction turbine*
- AFRR Uninstalling/installing support roller of the vacuum bar*
- AFSB Uninstall/ install suction bar*
- AFSD Uninstall / install suction turbine*
- AFSL Uninstall/ install suction lips*
- Uninstalling/ installing AFSE suction hose*

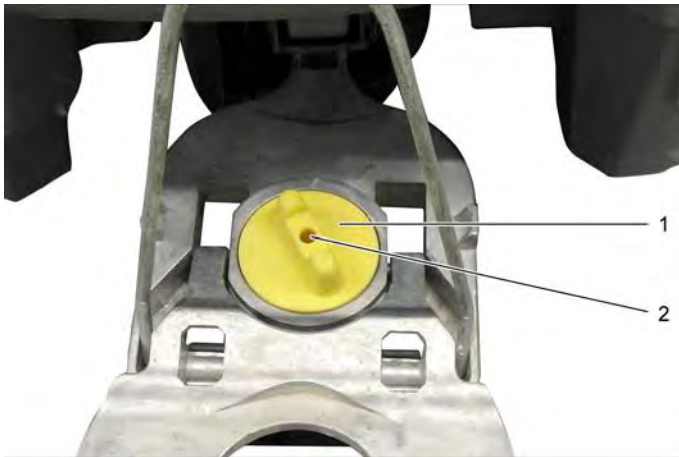
## 030 Function



- 1 Sucked in air from the suction bar
- 2 Sealings
- 3 Air outlet brush motor
- 4 Air outlet suction turbine
- 5 Suction turbine

The way of the process air must not be blocked. Dirt or sucked in objects must be removed regularly. The link air outlet suction turbine is decisive for a low noise level.

The suction turbine must not draw any fluid. For this reason, the function of the float must be checked regularly and the use of non-foaming detergents must be ensured.



- 1 Turning handle
- 2 Screw opening

After adjusting the suction bar inclination via the twist grip, it can be secured with a screw so that it does not change during the operation.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### AFAR Uninstall/ install deflection rollers suction bar

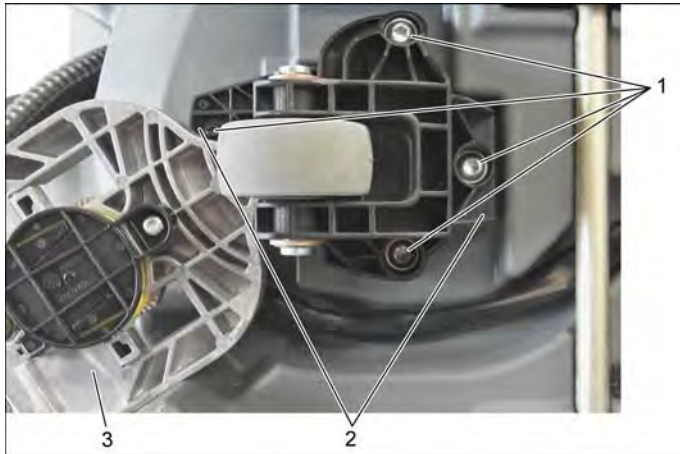


- 1 Star handle screw
- 2 Scraper roller of suction bar

- ➔ Unscrew the star-knob screw.
- ➔ Remove deflection roller suction bar.

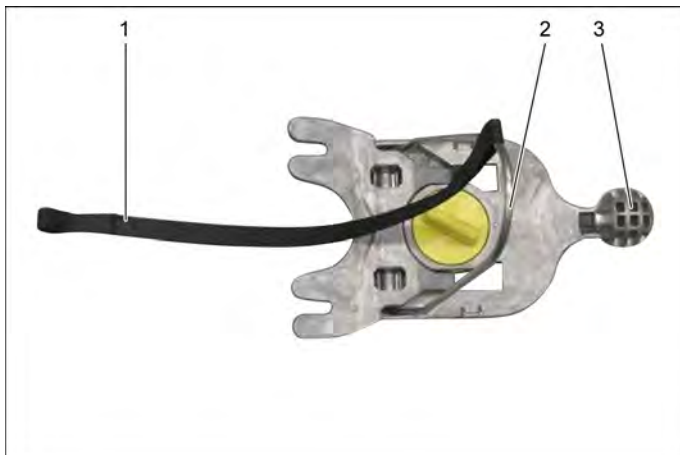
## AFAS Uninstalling/installing suspension of the suction bar

■ *AEAA Lay the device on its side for maintenance work*



- 1 Screws
- 2 Support
- 3 Suspension suction bar

- ➔ Unhook the strap on the lever of the suction bar lifting device.
- ➔ Unscrew the screws.
- ➔ Remove the holders.
- ➔ Remove the suction bar suspension.



Structure suspension suction bar

- 1 Strap
- 2 Metal clip
- 3 Ball head

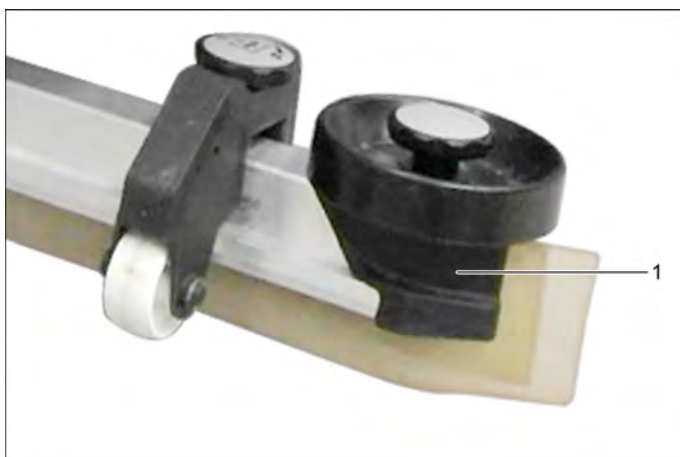
Burr-free ball head.

The strap is sewed up on both ends. The length cannot be changed.

The ball head can be turned and moves the suction bar.

## AFES Uninstall/ install end pieces suction bar

■ *AFAR Uninstall/ install deflection rollers suction bar*



- 1 End piece suction bar

- ➔ Pull off the end pieces of the suction bar on both sides.

## AFHS Uninstall / install lever suction bar lifting device



- 1 Safety ring
- 2 Lever suction bar lift
- 3 Strap

- ➔ Remove the safety ring.
- ➔ Unhook the strap on the lever of the suction bar lifting device.
- ➔ Remove lever suction bar lifting device.

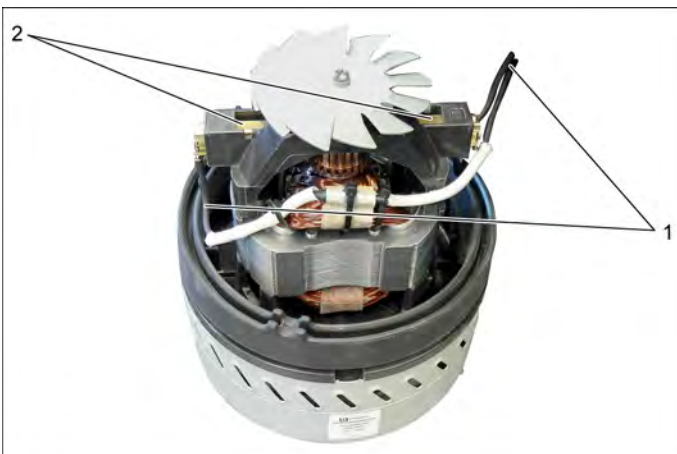
## AFKS Uninstall / install sliding contacts of the suction turbine

### ■ AFSD Uninstall / install suction turbine



- 1 Cover
- 2 Suction turbine M3

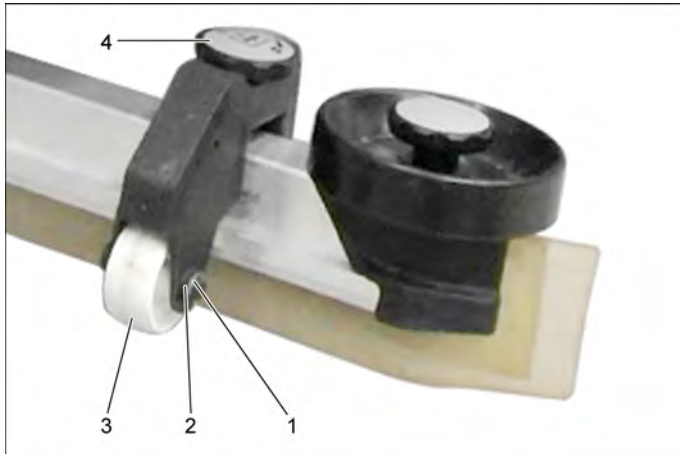
- ➔ Remove cover.



- 1 Electric socket plug connections
- 2 Sliding contacts

- ➔ Separate the electric connectors.
- ➔ Pull the sliding contacts out of the duct.

## AFRR Uninstalling/installing support roller of the vacuum bar



### ■ AFSB Uninstall/ install suction bar

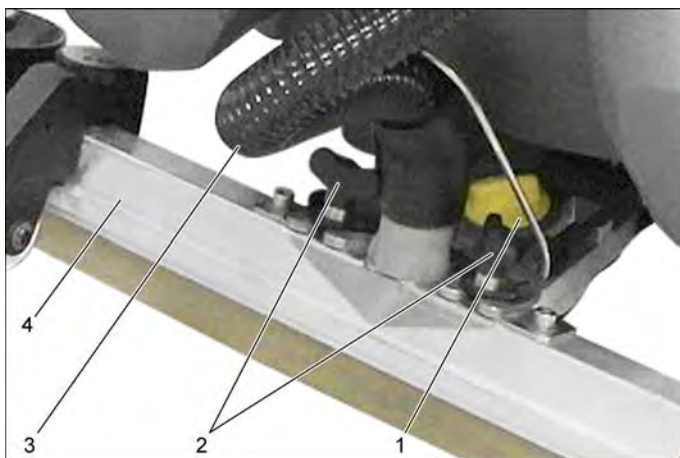
- 1 Axle
- 2 Safety ring
- 3 Support roller, suction bar
- 4 Height adjustment of suction bar

- ➔ Remove the safety ring.
- ➔ Pull out axle.
- ➔ Remove support roller of the suction bar.

### **Note**

Via the height adjustment of the suction bar, the distance of the suction lips to the ground is adjusted. The suction lips must be parallel and rest flush on the floor.

## AFSB Uninstall/ install suction bar



- 1 Rotary handle to incline the vacuum bar
- 2 Wing nuts
- 3 Suction hose
- 4 Vacuum bar

- ➔ Pull off the suction hose.
- ➔ Release the wing nuts.
- ➔ Pull out the vacuum bar.

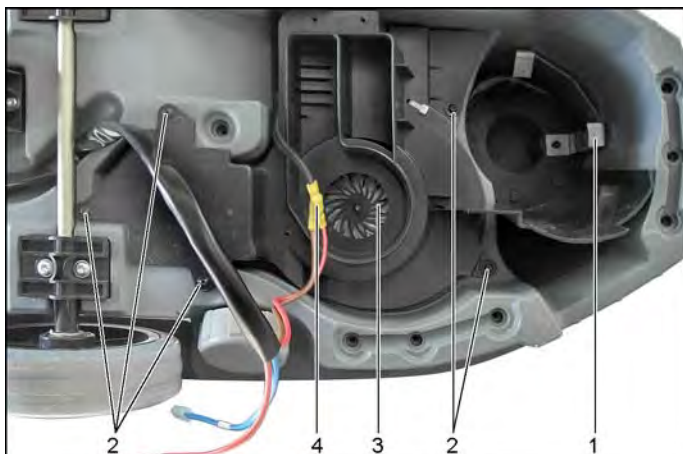
### **Note**

If the vacuum result is unsatisfactory the inclination of the straight vacuum bar can be modified.

- ➔ Adjust the rotary handle to incline the suction bar.

## AFSD Uninstall / install suction turbine

- *AKBE Uninstall / install disc brush*
- *AEAA Lay the device on its side for maintenance work*
- *AKBW Uninstall/ install cleaning head*



### Diagram

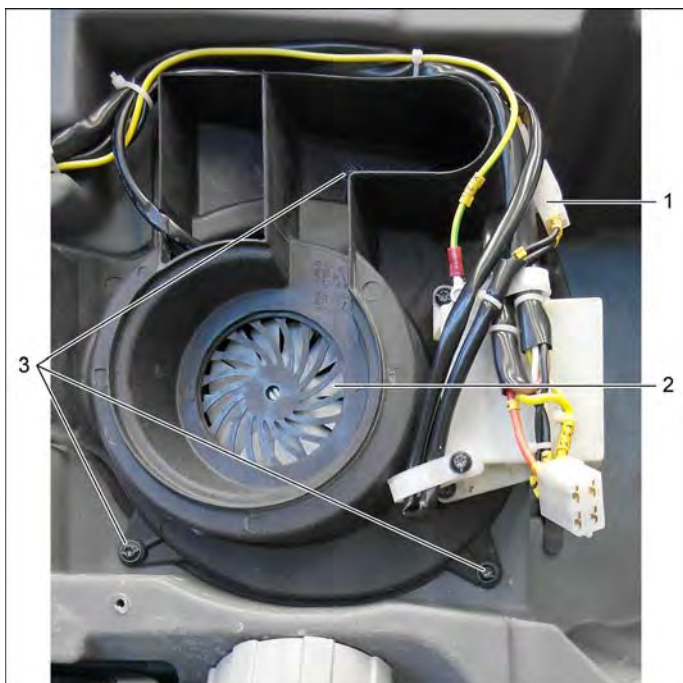
Bp variant:

- 1 Bow
- 2 Screws
- 3 Suction turbine M3
- 4 Electric connectors

- ➔ Unscrew the screws.
- ➔ Separate the electric connectors.

### Installation information

Use the socket plug connections enclosed in the spare parts kit.

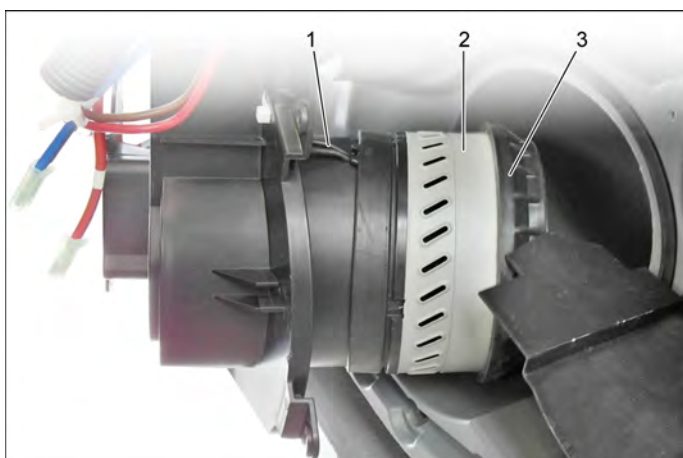


### Diagram

Ep variant

- 1 Electric connectors
- 2 Suction turbine M3
- 3 Screws

- ➔ Separate the electric connectors.
- ➔ Unscrew the screws.



- 1 Connecting cable
- 2 Suction turbine M3
- 3 Seal

- ➔ Remove the suction turbine.

### Installation information

Mind correct installation of the lines.

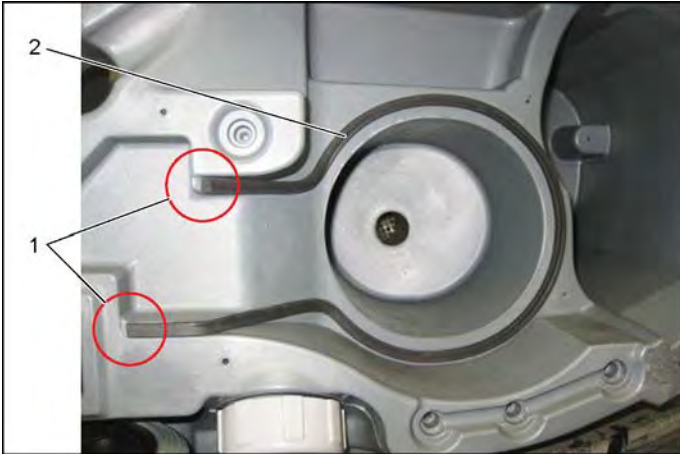




1 Seal

**Installation information**

Ensure the correct seating of the seal during installation. The seal must be sufficiently long. The installation of a seal that is too short is not permitted. The seal must be properly cut to size.



Seal on the fresh water tank

- 1 Beginning and end of the seal
- 2 Washer

**Installation information**

Pay attention to sufficient length of the seal. The seal must be placed in the groove of the fresh water tank.

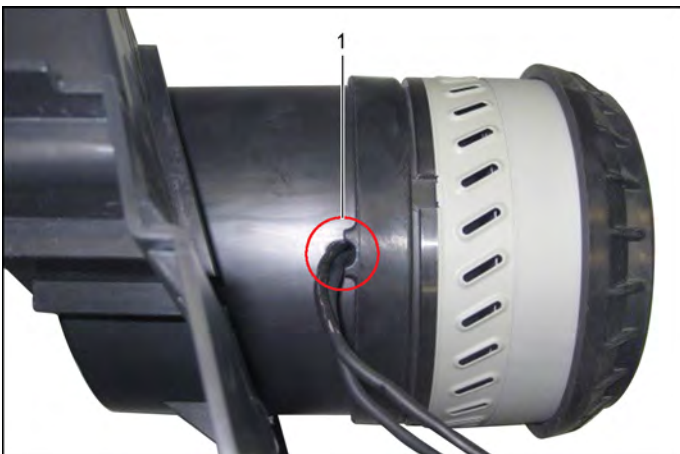


Seals of the suction turbine

- 1 Sealings

**Installation information**

Ensure the correct seating of the seals during installation.



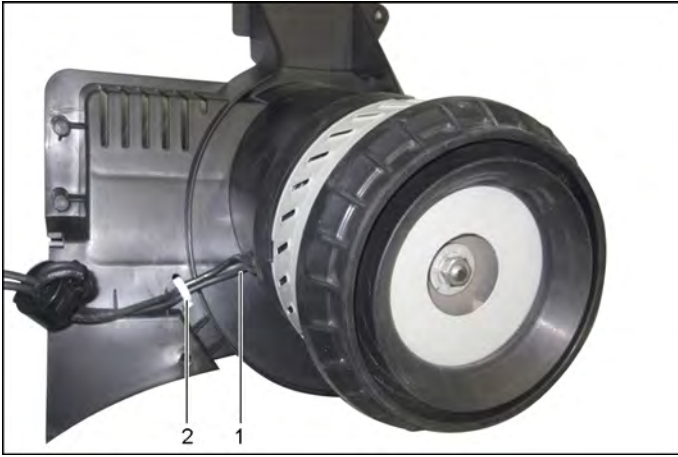
**Diagram**

Bp variant:

- 1 Cable inlet

**Installation information**

Mind correct installation of the lines.



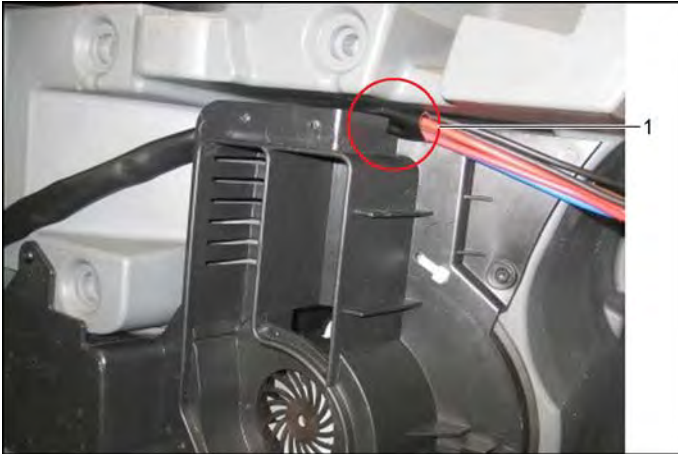
**Diagram**

Bp variant:

- 1 Connection cable
- 2 Cable tie

**Installation information**

Secure the connecting cable using a cable tie.  
Connecting cables must not be tensioned.



**Diagram**

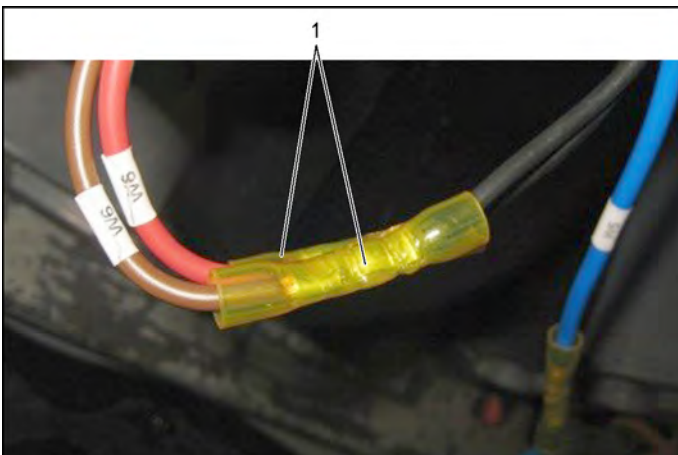
Bp variant:

- 1 Cable conduit of the suction turbine support

**Installation information**

Lay the insulating tube as shown.

**Connect electric socket plug connections of suction turbine and brush motor**



**Diagram**

Bp variant:

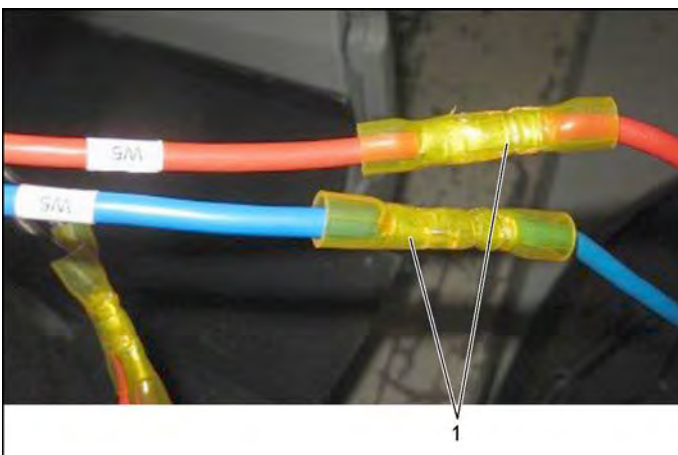
**Suction turbine**

- 1 Electric socket plug connections

- ➔ Slide the protective hose over the lines.
- ➔ Slide shrink hose over the lines.
- ➔ Crimp lines W6 to the lines of the suction turbine.

**Installation information**

The crimping must be performed with suitable tools.



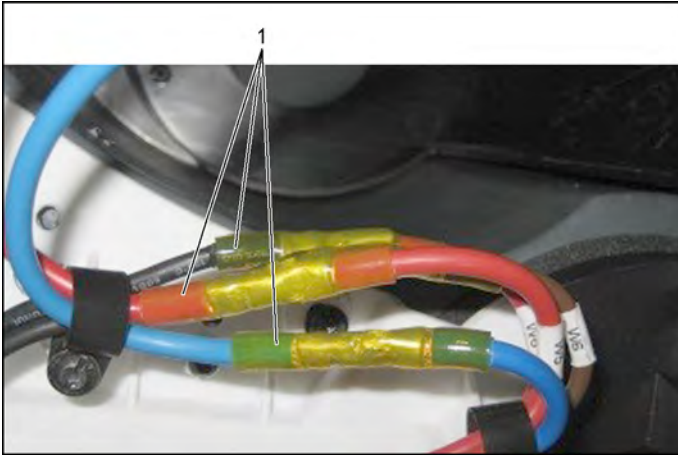
**Brush motor**

- 1 Electric socket plug connections

- ➔ Slide the protective hose over the lines.
- ➔ Slide shrink hose over the lines.
- ➔ Crimp lines W5 to the lines of the brush motor.

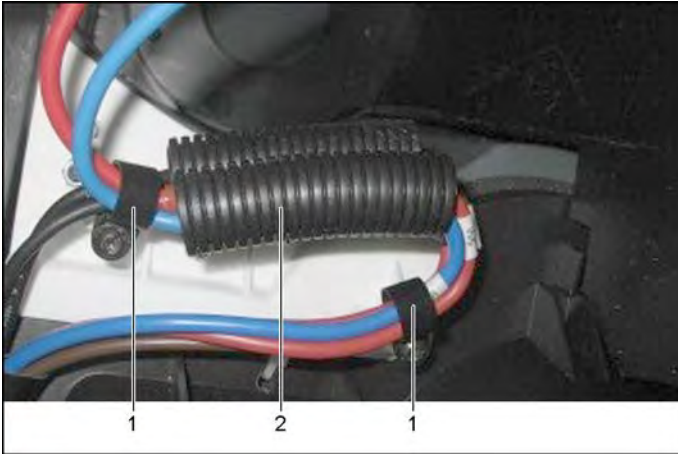
**Installation information**

Connect cable ends with the same colour to each other.  
The crimping must be performed with suitable tools.



1 Shrink hoses

➔ Push the shrinkable hose over the connectors and heat with the hot air blower until it has cleanly enclosed the cable.



1 Plastic clamp

2 Protective hose

➔ Slide the protective hose over the crimp connectors.  
➔ Secure the lines on the suction turbine holder using a plastic clamp.

## Uninstalling/ installing AFSE suction hose

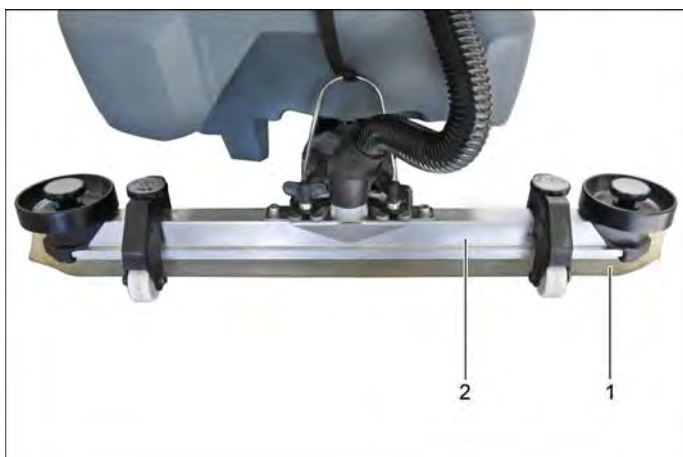


- 1 Suction hose
- 2 Fresh water tank
- 3 Vacuum bar

- ➔ Pull out the suction hose from the vacuum bar.
- ➔ Pull suction hose off the fresh water tank.
- ➔ Remove the suction hose.

## 050 Maintenance and inspection

### AFSL Uninstall/ install suction lips



- *AFSB Uninstall/ install suction bar*
- *AFAR Uninstall/ install deflection rollers suction bar*
- *AFES Uninstall/ install end pieces suction bar*

- 1 Suction lips
- 2 Vacuum bar

- ➔ Pull the suction lips out of the guide grooves on the side.

## 060 Error diagnosis

For detailed fault diagnosis see:  
*Faults*

## 070 Peculiarities/ others

The service group does not contain any peculiarities.

## AG service group energy supply

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by qualified and specially trained specialists.

#### **⚠ DANGER**

*Risk of explosion! Do not put tools or similar on the battery, i.e. on the terminal poles and cell connectors.  
Risk of injury. Ensure that wounds never come into contact with lead. Always clean your hands after having worked with batteries.*

### 020 Overview

#### Energy supply



*AGBS Uninstall / install batteries*

### 030 Function

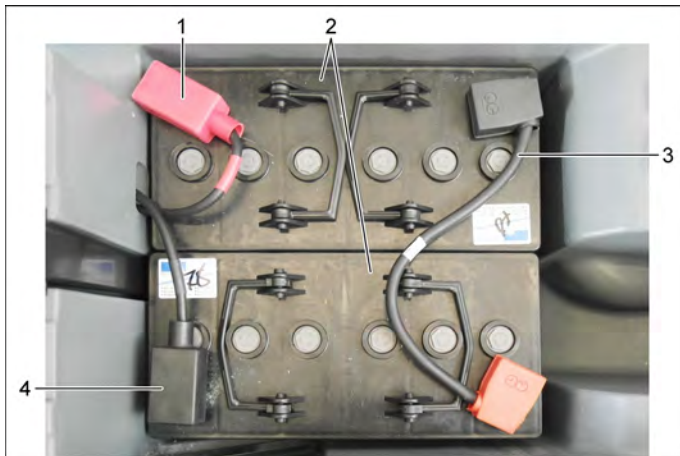
No special functional characteristics.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### AGBS Uninstall / install batteries



### Note

Bp variant:

- Remove the main connector.
- Remove the waste water tank.

- 1 Positive cable
- 2 Batteries G1/G2
- 3 Battery terminal connector
- 4 Negative cable

- ➔ Disconnect the negative cable.
- ➔ Disconnect the positive cable.
- ➔ Disconnect the battery terminal connector.
- ➔ Remove the batteries.

### Note

When removing the battery, make sure that the negative cable is disconnected first.

When reconnecting the battery, first connect the positive and then the negative cable.

Check that the battery poles and pole terminals are adequately protected with pole grease.

Insert a spacer when using smaller batteries.

Ensure sufficient ventilation during the charging process. The ambient air should not exceed a temperature of 40°C during the charging process.

## 050 Maintenance and inspection

### Recommended batteries

	Order No.	Volume [m <sup>3</sup> ] *	Air flow [m <sup>3</sup> /h] **
105 Ah - maintenance-free	6.654-141.0 <sup>1)</sup>	2,64	1,06
76 Ah - maintenance-free	6.654-093.0 <sup>2)</sup>	1,82	0,73
80 Ah, - low maintenance	6.654-290.0 <sup>3)</sup>	6,60	2,64

\* Minimum volume of the battery charging room  
 \*\* Minimum air flow between the battery charging room and the surroundings

Battery type	Charger
6.654-141.0	6.654-333.0
6.654-093.0	6.654-102.0
6.654-290.0	6.654-332.0

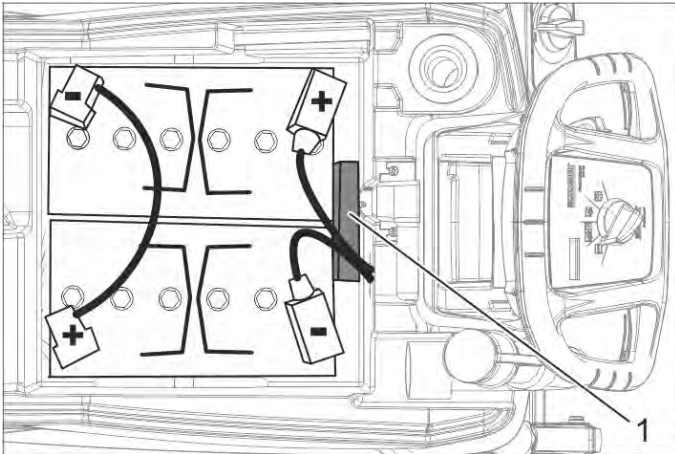
The device requires 2 batteries

<sup>1)</sup> Complete set (24 V/105 Ah) incl. connecting cable, order no. 4.035-449.0

<sup>2)</sup> Complete set (24 V/76 Ah) incl. connecting cable, order no. 4.035-447.0

<sup>3)</sup> Complete set (24 V/80 Ah) incl. connecting cable, order no. 4.035-990.0

## Insert batteries and connect

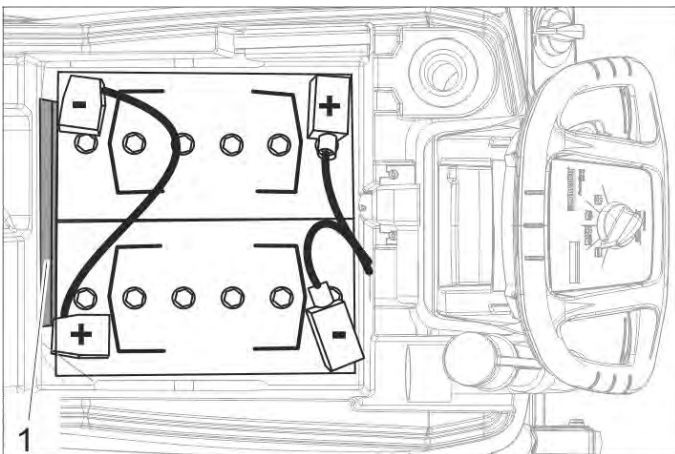


### Battery 6.654-141.0

- Remove the main connector.

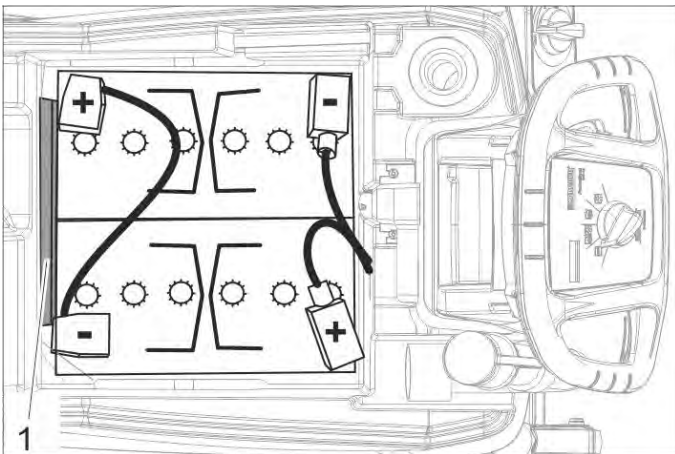
1 Spacer

- ➔ Remove the waste water tank.
- ➔ Insert the batteries into the appliance.
- ➔ Insert the spacer between the battery and the device on the side indicated in the illustration.
- ➔ Connect pole using the enclosed connecting cable.
- ➔ Connect the connection cable to the free battery poles (+) and (-).



1 Spacer

### Battery 6.654-093.0



1 Spacer

### Battery 6.654-290.0

## 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

## 070 Peculiarities/ others

The service group does not contain any peculiarities.

## AH Service group electrics

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by qualified and specially trained specialists.

#### **⚠ DANGER**

*Risk of explosion! Do not put tools or similar on the battery, i.e. on the terminal poles and cell connectors.  
Risk of injury. Ensure that wounds never come into contact with lead. Always clean your hands after having worked with batteries.*

#### **⚠ CAUTION**

*Risk of damage by electrostatic discharge (ESD)! Take suitable measures for discharging electrostatic charge prior to performing work on the appliance electronics.*

### 020 Overview

#### Electrical system



AHBM Uninstall / install capacitor  
AHHF Uninstall / install master fuse  
AHKB Uninstall / install cable harness  
AHNK Uninstall / install power cable  
AHSJ Uninstall / install start electronics

### 030 Function

No special functional characteristics.



## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### AHBM Uninstall / install capacitor

#### Diagram

BD 50/60 C Ep Classic

#### ■ ACBR Uninstall/ install safety switch

- 1 Screws
- 2 Bottom part push handle

→ Unscrew the screws on both sides of the appliance.



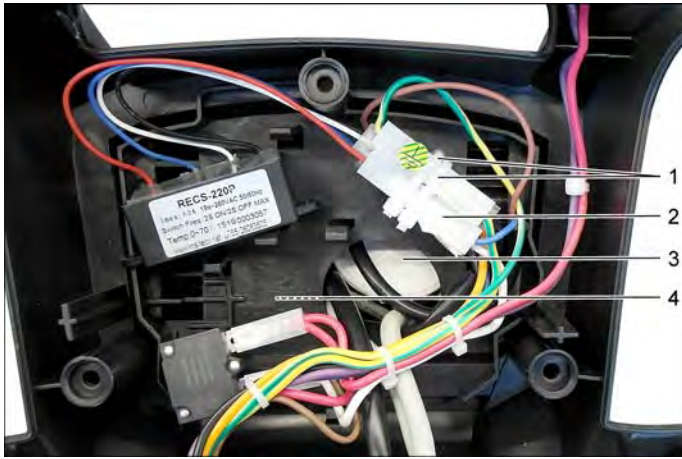
- 1 Screws
- 2 Bottom part push handle

→ Unscrew the screws.



- 1 Startup capacitor C2
- 2 Operating capacitor C1





- 1 Cable connector
- 2 Electric socket plug connections
- 3 Startup capacitor C2
- 4 Operating capacitor C1

- ➔ Remove the cable ties.
- ➔ Mark power cables.
- ➔ Separate the electric connectors.
- ➔ Remove capacitor.

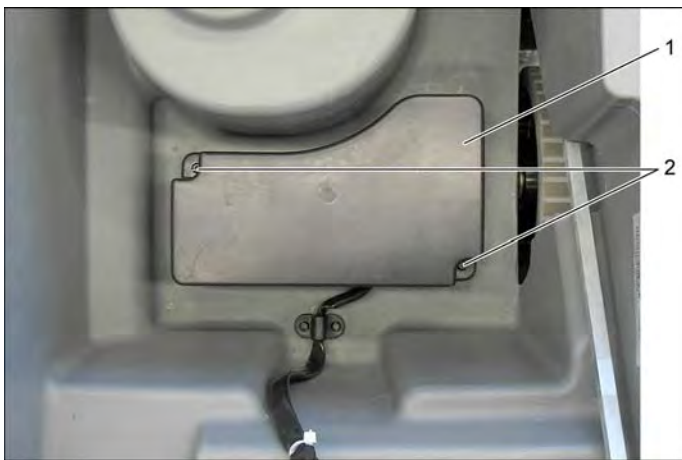
**Installation information**

Observe the connection diagram.

**Diagram**

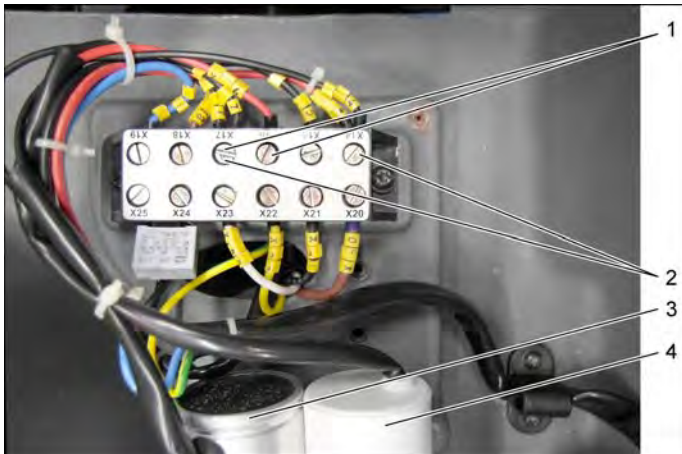
BD 43/35 C Ep Classic

- Remove the waste water tank.



- 1 Cover
- 2 Screws

- ➔ Unscrew the screws.
- ➔ Remove cover.



- 1 Electric socket plug connections  
Startup capacitor C2
- 2 Electric socket plug connections  
Operating capacitor C1
- 3 Startup capacitor C2
- 4 Operating capacitor C1

- ➔ Separate the electric connectors.
- ➔ Remove capacitor.

## AHHF Uninstall / install master fuse

### Diagram

Ep variant

#### ■ ACBR Uninstall/ install safety switch

- 1 Screws
- 2 Bottom part push handle

→ Unscrew the screws on both sides of the appliance.



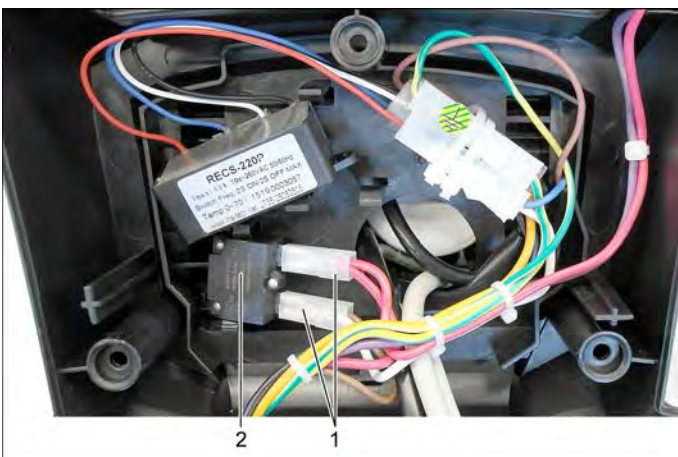
- 1 Screws
- 2 Bottom part push handle

→ Unscrew the screws.



- 1 Electric socket plug connections
- 2 Main fuse

→ Separate the electric connectors.  
→ Remove master fuse.



## AHKB Uninstall / install cable harness

- ACBP Uninstall / install control panel board
- AKBE Uninstall / install disc brush
- AEAA Lay the device on its side for maintenance work
- AKBW Uninstall/ install cleaning head
- AKMG Uninstall / install brush motor

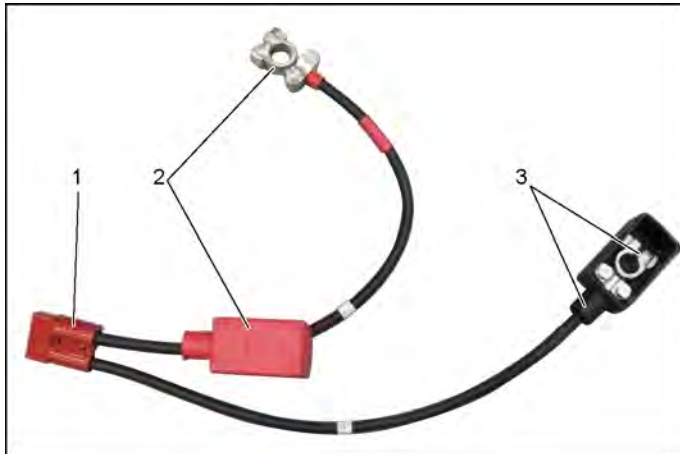


- 1 Screws
- 2 Cover

- ➔ Unscrew the screws.
- ➔ Remove cover.
- ➔ Take the cable harness out of the device.

### Installation information

Mind correct installation of the lines.



### Note

Bp variant:

- 1 Main connector
- 2 Positive terminal with red protective cover
- 3 Negative terminal with black protective cover

### Installation information

Observe the symbols on the main connector.

Assemble the battery cables of the main connector accordingly.

## AHNK Uninstall / install power cable

### Diagram

BD 50/60 C Ep Classic

- Remove the waste water tank.
- *ACBR Uninstall/ install safety switch*

- 1 Screws
- 2 Bottom part push handle

➔ Unscrew the screws on both sides of the appliance.



- 1 Screws
- 2 Bottom part push handle

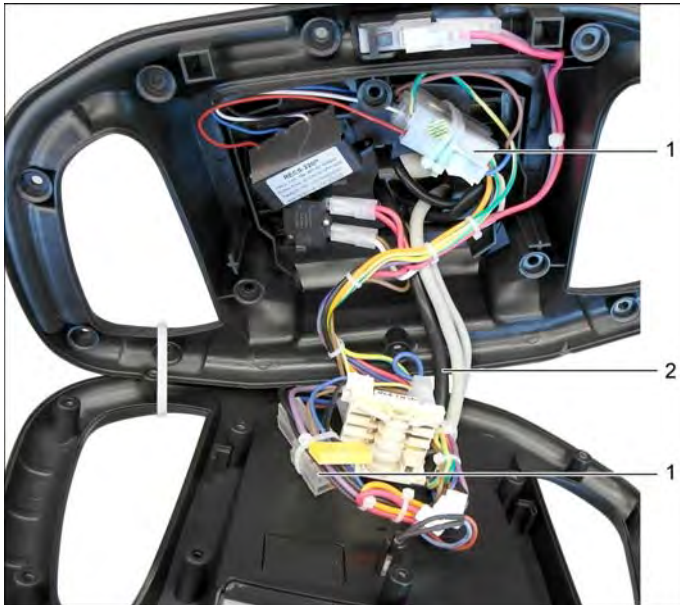
➔ Unscrew the screws.



- 1 Supply Cord
- 2 Cable connector
- 3 Screws
- 4 Plate

➔ Remove the cable ties.  
➔ Unscrew the screws.  
➔ Remove metal sheet.





- 1 Electric socket plug connections
- 2 Supply Cord

- ➔ Remove the cable ties.
- ➔ Separate the electric connectors.
- ➔ Remove power cord.

**Diagram**

BD 43/35 C Ep Classic

- Remove the waste water tank.
- *ACBR Uninstall/ install safety switch*



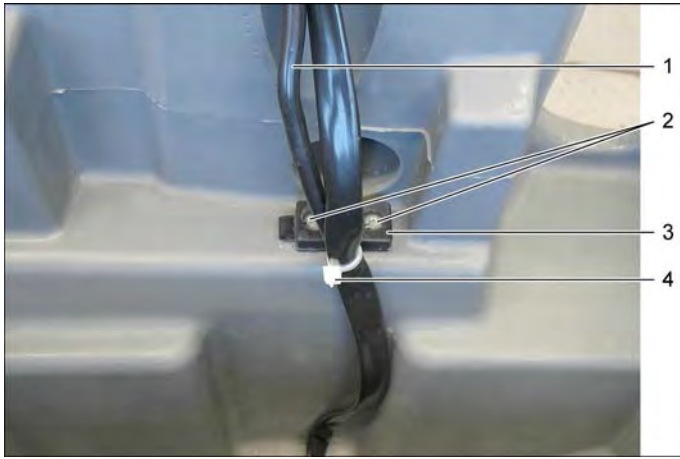
- 1 Screws
- 2 Bottom part push handle

- ➔ Unscrew the screws on both sides of the appliance.



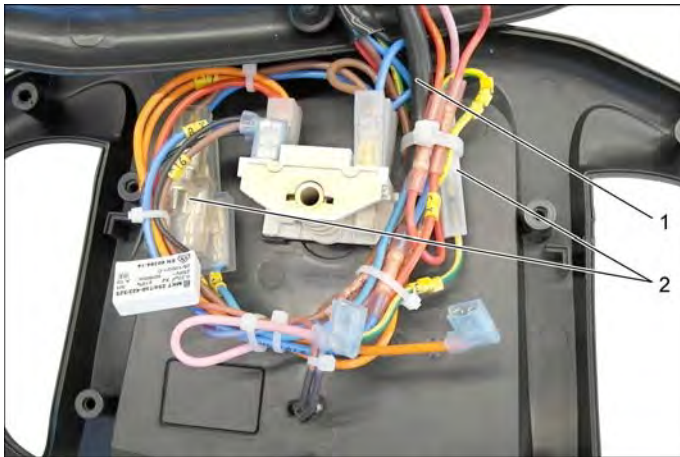
- 1 Screws
- 2 Bottom part push handle

- ➔ Unscrew the screws.



- 1 Supply Cord
- 2 Screws
- 3 Support
- 4 Cable connector

- ➔ Remove the cable ties.
- ➔ Unscrew the screws.
- ➔ Remove the holders.



- 1 Supply Cord
- 2 Electric socket plug connections

- ➔ Remove the cable ties.
- ➔ Separate the electric connectors.
- ➔ Remove power cord.

**AHSJ Uninstall / install start electronics**

**Diagram**

BD 50/60 C Ep Classic

■ *ACBR Uninstall/ install safety switch*

- 1 Screws
- 2 Bottom part push handle

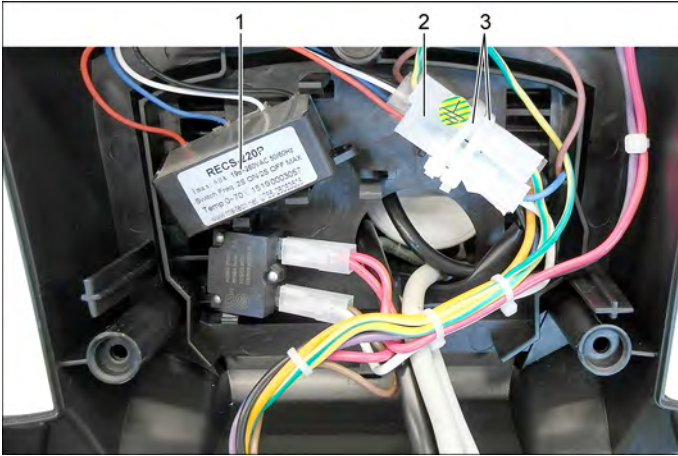
- ➔ Unscrew the screws on both sides of the appliance.





- 1 Screws
- 2 Bottom part push handle

→ Unscrew the screws.



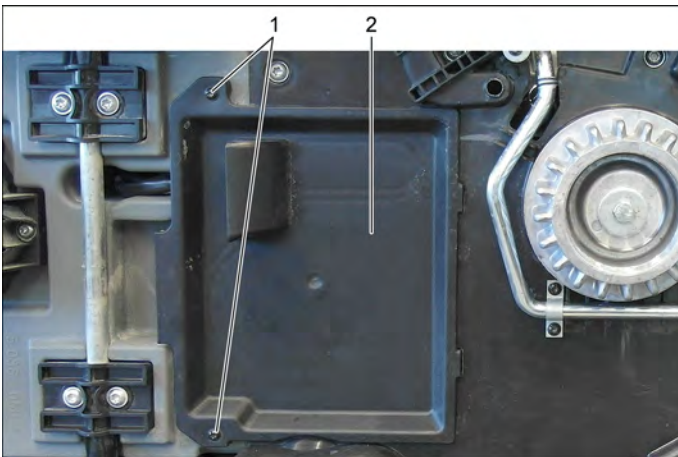
- 1 Start electronics
- 2 Electric socket plug connections
- 3 Cable connector

N1

→ Remove the cable ties.  
 → Separate the electric connectors.  
 → Remove start electronics.

**Diagram**  
 BD 43/35 C Ep Classic

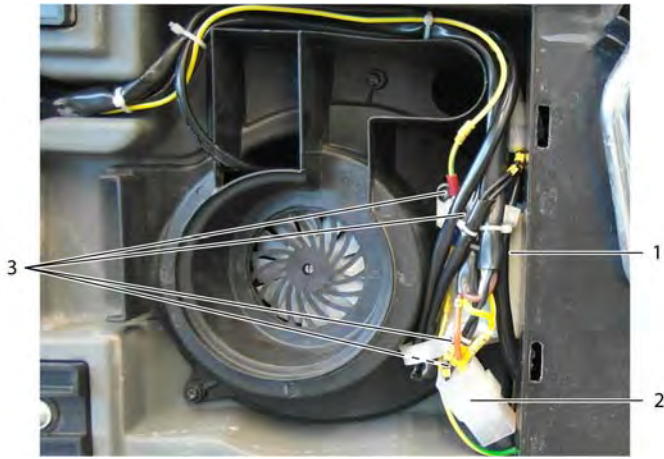
- *AKBE Uninstall / install disc brush*
- *AEAA Lay the device on its side for maintenance work*



- 1 Screws
- 2 Cover

→ Unscrew the screws.  
 → Remove cover.





- 1 Start electronics
- 2 Electric connectors
- 3 Screws

- ➔ Unscrew the screws.
- ➔ Remove the cable ties.
- ➔ Separate the electric connectors.
- ➔ Remove start electronics.

## 050 Maintenance and inspection

Service group does not contain any maintenance and inspection points.

## 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

## 070 Peculiarities/ others

### Note

Ep variant

## Safety test after working on electrical components

### Check connection of protective earth conductor

- All protective conductors must be connected correctly.
- The blade connectors must be double crimped.

### Test of the earth connection



- 1 Retainer disc brush
- 2 Measuring device

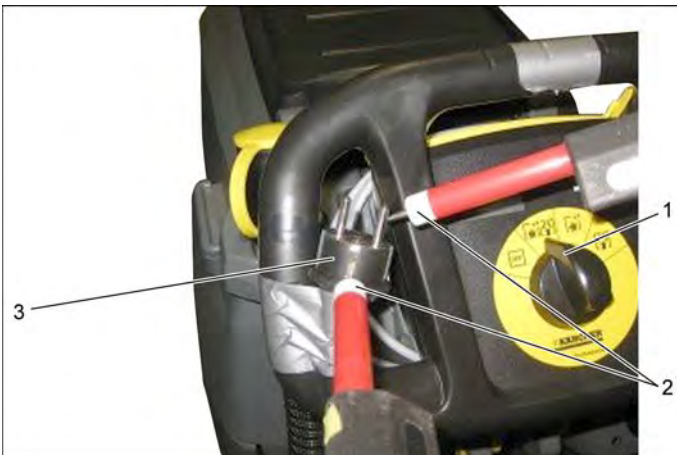
A current of at least 10 A from an AC power source with a maximum voltage of 12 V is applied to every touchable metal part that is connected to the protective conductor for safety reasons one by one via the earth contact of the mains plug.

- Measure the voltage drop between the protective conductor of the mains plug and the touchable metal parts.
- Measure the protective conductor resistance at the retainer of the side brush.

### Note

The protective conductor resistance is calculated from the voltage drop and the current and must be  $\leq 0.1$  ohm.

### High-voltage test



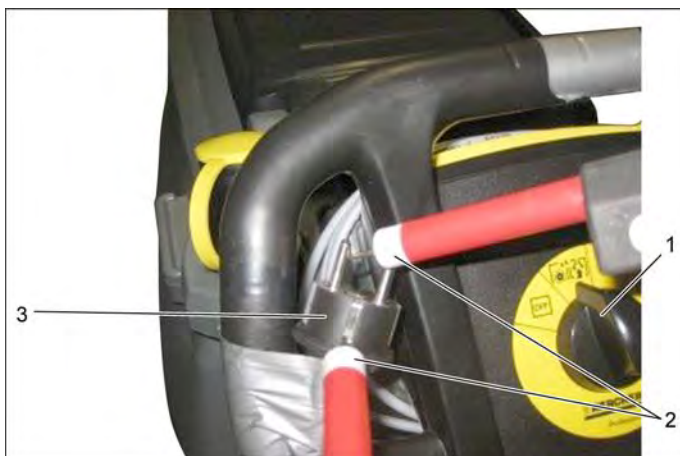
- 1 Program selection switch
- 2 Measuring device
- 3 Power connection plug

The high-voltage test must take place between the protective conductor, live conductor and neutral conductor of the mains plug.

- Turn the programme selector switch to the normal mode position.
- Operate the safety switch.
- Connect the connections of the mains plug to the short-circuit coupling.
- Connect the measuring device to the short-circuit coupling and start the measurement via the manual trigger.

The test voltage must be a homogenous voltage of max. 50 Hz AC or DC voltage.

The measuring current must not exceed 5 mA.



Test voltage	Test time	Test standard
1500 V alternating voltage	1 s	EN 50106
2250 V direct voltage		

## AK Service group cleaning head

### 010 Safety information

Observe general safety information!

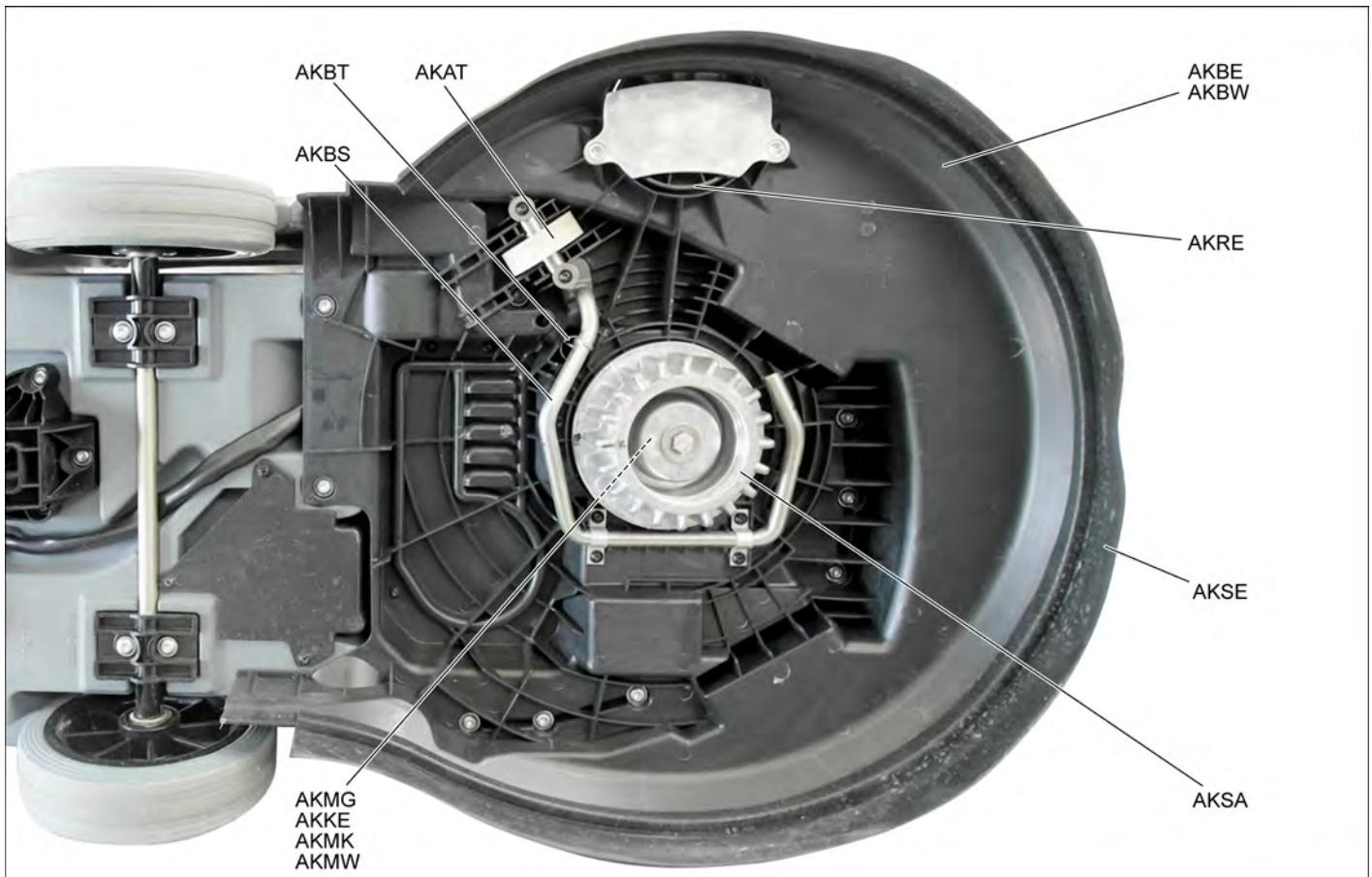
Service and maintenance tasks may only be performed by qualified and specially trained specialists.

#### **⚠ DANGER**

*Risk of explosion! Do not put tools or similar on the battery, i.e. on the terminal poles and cell connectors.  
Risk of injury. Ensure that wounds never come into contact with lead. Always clean your hands after having worked with batteries.*

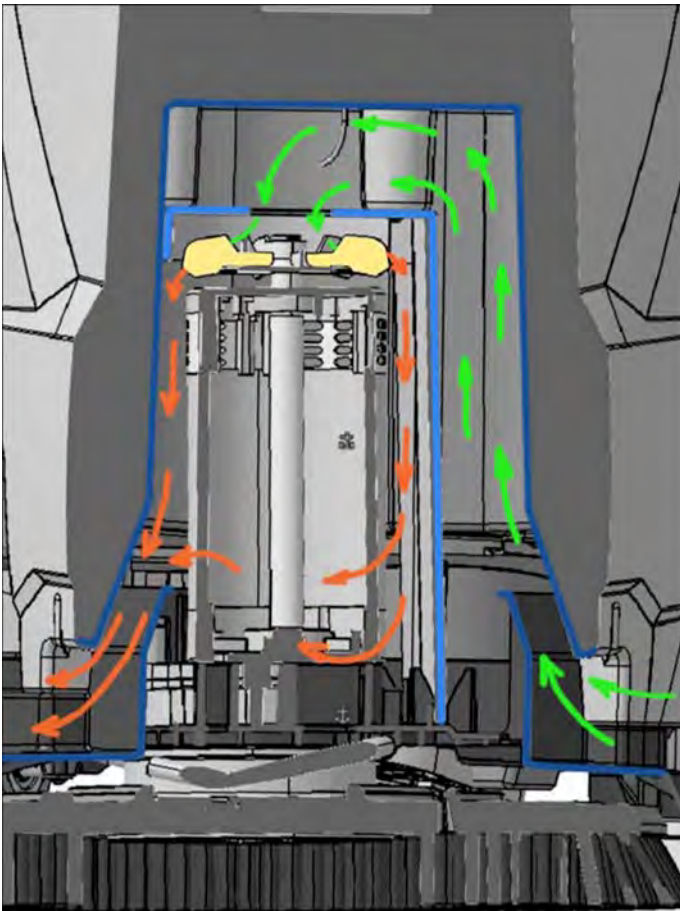
### 020 Overview

#### Cleaning head



- AKAT Uninstall / install contact roller brush plate*
- AKBE Uninstall / install disc brush*
- AKBS Uninstall / install bracket disc replacement*
- AKBT Uninstall / install spring bracket disc replacement*
- AKBW Uninstall/ install cleaning head*
- AKKE Uninstall / install sliding contacts brush motor*
- AKMG Uninstall / install brush motor*
- AKMK Uninstall / install ball bearing brush motor*
- AKMW Uninstall / install shaft seal brush motor*
- AKRE Uninstall / install deflector roller*
- AKSA Uninstall / install retainer disc brush*
- AKSE Uninstall / install splash guard*

## 030 Function



Air duct for the brush motor cooling air

- Cold air (green arrows)
- Warmed air (orange arrows)

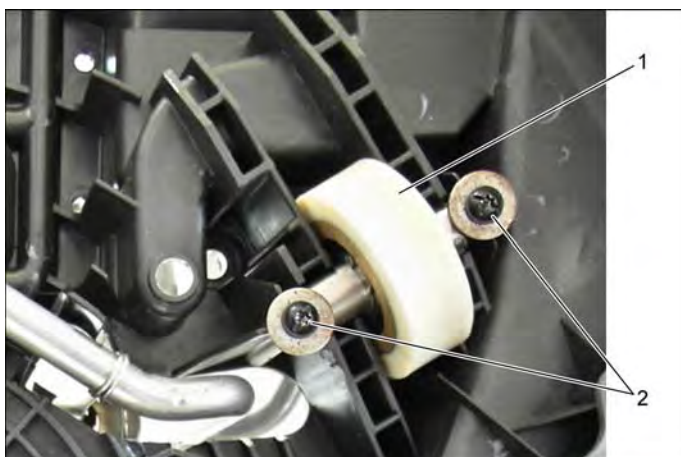
The outlet and inlet for the cooling air must always be kept clear in order to avoid overheating.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

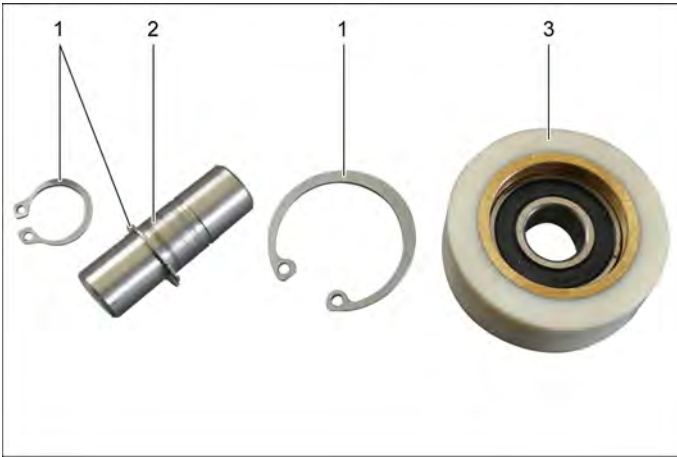
### AKAT Uninstall / install contact roller brush plate



#### ■ AKBE Uninstall / install disc brush

- 1 Contact roller brush plate
- 2 Screws

- Lift the front of the appliance and support it.
- Pull off the splash guard in the area of the contact roller brush plate.
- Unscrew the screws.
- Remove contact roller brush plate.



- 1 Retaining rings
- 2 Axle
- 3 Contact roller brush plate

- ➔ Remove the retaining rings.
- ➔ Pull out axle.

**Installation information**

Pay attention to the correct fitting position during reinstallation.

**AKBE Uninstall / install disc brush**

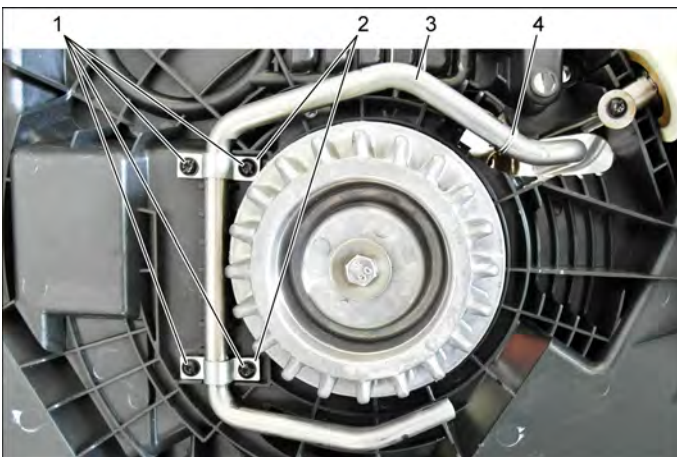


- 1 Disc brush
- 2 Handle disc replacement

- ➔ Push down the device holding the push handle so that the cleaning head is raised.
- ➔ Push down the bracket disc replacement using your foot.
- ➔ Pull the device towards the back so that the disc brush becomes accessible.

**AKBS Uninstall / install bracket disc replacement**

- *AKBE Uninstall / install disc brush*
- *AEAA Lay the device on its side for maintenance work*
- *AKBW Uninstall/ install cleaning head*
- *AKBT Uninstall / install spring bracket disc replacement*



- 1 Screws
- 2 Retaining plates
- 3 Handle disc replacement
- 4 Clamp

- ➔ Unscrew the screws.
- ➔ Remove the retaining plates.
- ➔ Remove the bracket disc replacement.
- ➔ Reinstall clamp.

**AKBT Uninstall / install spring bracket disc replacement**

- AKBE Uninstall / install disc brush
- AEAA Lay the device on its side for maintenance work
- AKBW Uninstall/ install cleaning head

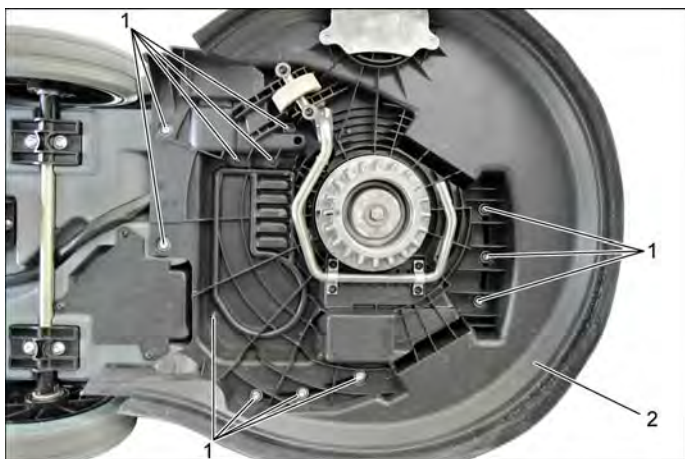


- 1 Spring bracket disc replacement
- 2 Clamp

➔ Unhook spring bracket disc replacement.

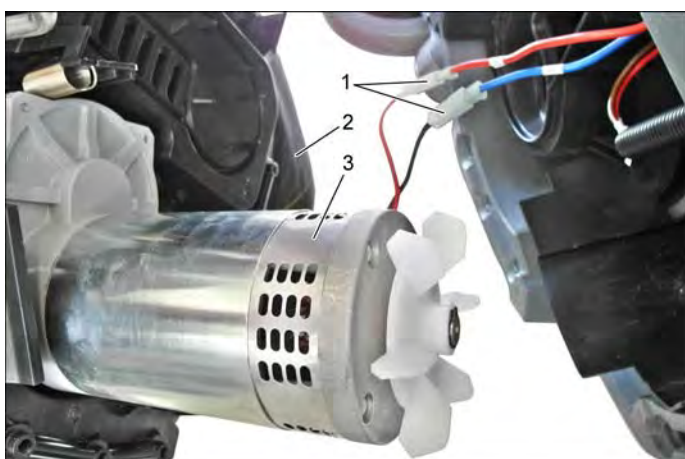
**AKBW Uninstall/ install cleaning head**

- AKBE Uninstall / install disc brush
- AEAA Lay the device on its side for maintenance work



- 1 Screws
- 2 Cleaning head

➔ Unscrew the screws.  
➔ Remove cleaning head.



**Diagram**

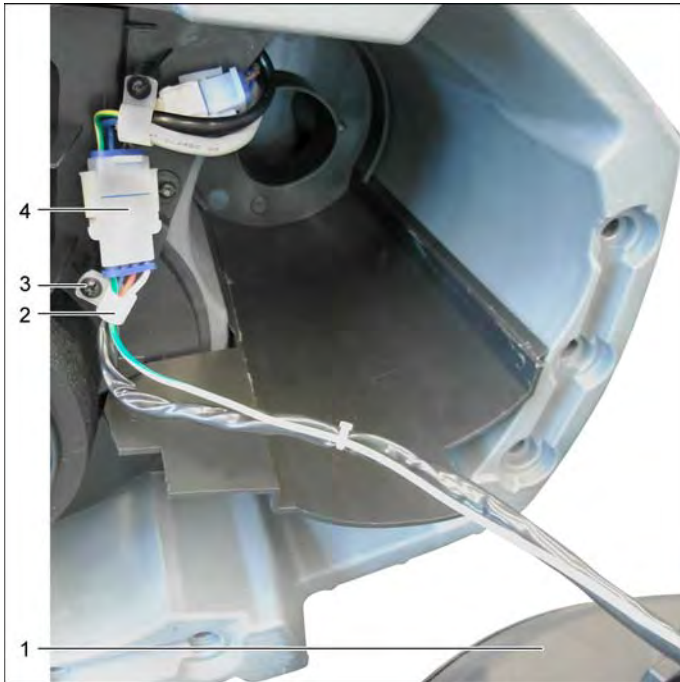
Ep variant

- 1 Electric socket plug connections
- 2 Cleaning head
- 3 Brush motor M2

➔ Separate the electric connectors.  
➔ Remove cleaning head.

**Installation information**

Mind correct installation of the lines.



### Diagram

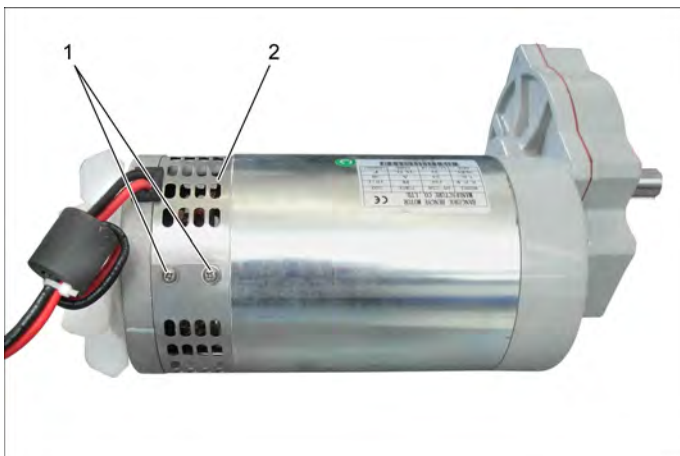
Bp variant:

- 1 Cleaning head
- 2 Clamp
- 3 Screw
- 4 Electric connectors

- ➔ Loosen the screw.
- ➔ Remove clamp.
- ➔ Separate the electric connectors.
- ➔ Remove cleaning head.

### AKKE Uninstall / install sliding contacts brush motor

- *AKBE Uninstall / install disc brush*
- *AEAA Lay the device on its side for maintenance work*
- *AKBW Uninstall/ install cleaning head*



- 1 Screws
- 2 Plate

- ➔ Unscrew the screws.
- ➔ Remove metal sheet.



- 1 Electric connectors
- 2 Glide contact
- 3 Spring

- ➔ Separate the electric connectors.
- ➔ Remove the spring.
- ➔ Pull the sliding contact out of the duct.

## AKMG Uninstall / install brush motor



- AKBE Uninstall / install disc brush
- AEAA Lay the device on its side for maintenance work
- AKBW Uninstall/ install cleaning head
- AKSA Uninstall / install retainer disc brush

- 1 Screws
- 2 Shaft brush motor

- ➔ Unscrew the screws.
- ➔ Remove brush motor.

### Installation information

Apply soluble screw securing adhesive to the screws and tighten them.

Grease the shaft brush motor with copper grease.

The brush motor must not have external damage, the fer-rite core must not be broken.

The stainless steel ring must be used for the installation of the brush motor on the brush head, spring washers must be used for the screw connection.

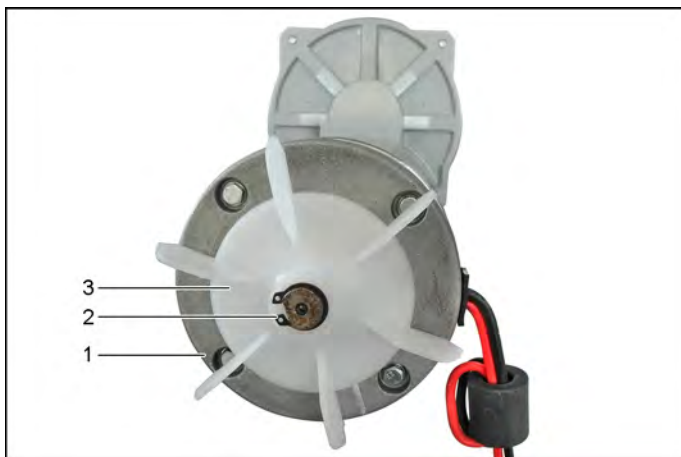
Copper grease	6.869-069.0
---------------	-------------

- 1 Brush motor M2
- 2 Safety ring
- 3 Fan wheel brush motor

- ➔ Remove the safety ring.
- ➔ Remove fan wheel brush motor.
- ➔ Attach fan wheel brush motor to the new brush motor.

### Installation information

- Connect electric socket plug connections of suction turbine and brush motor



## AKMK Uninstall / install ball bearing brush motor

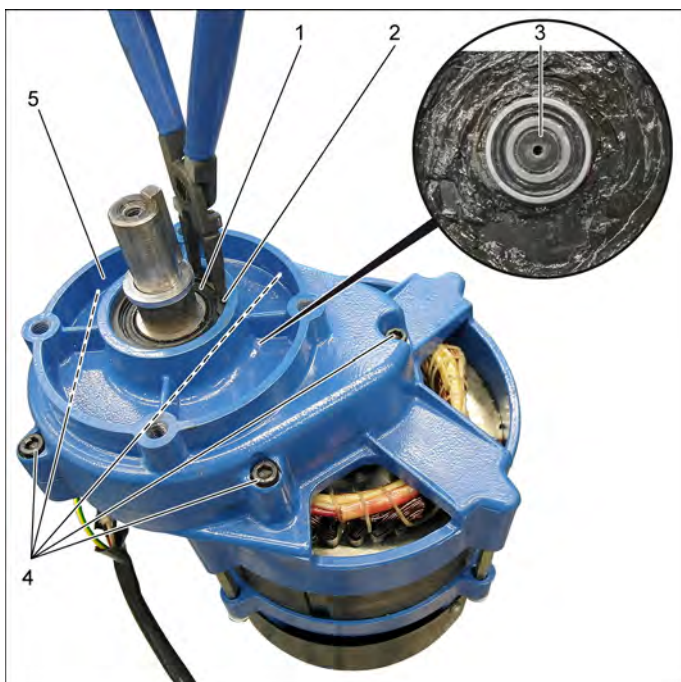
- AKMG Uninstall / install brush motor

### Diagram

BD 43/35 C Ep Classic

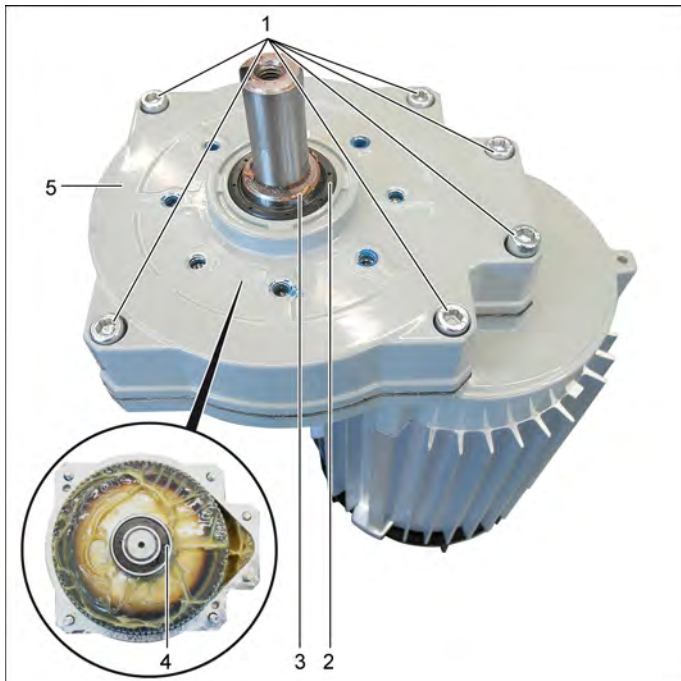
- 1 Outer ball bearing
- 2 Safety ring
- 3 Inner ball bearing
- 4 Screws
- 5 Cover

- ➔ Remove the retaining ring.
- ➔ Unscrew the screws.
- ➔ Remove the lid.
- ➔ Remove ball bearing.



Component	Description
Outer ball bearing	6204-2RS1
Inner ball bearing	6203-2RS1



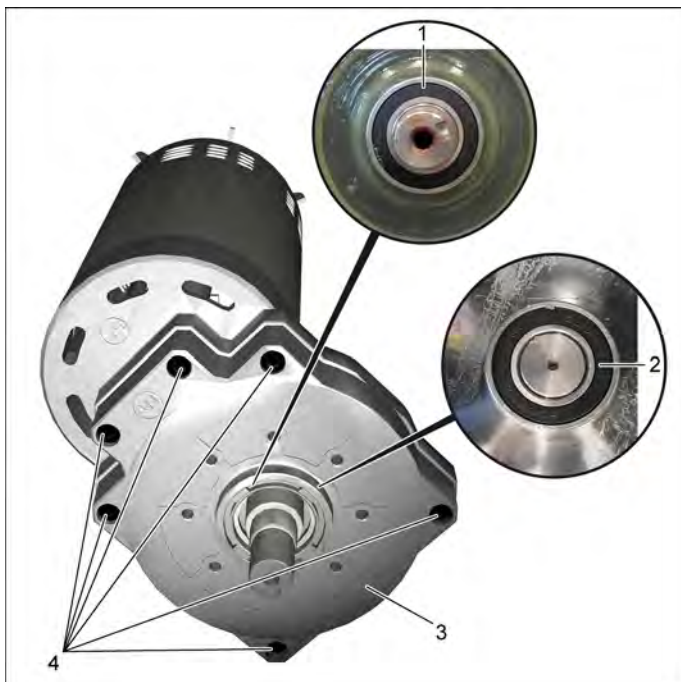


**Diagram**  
BD 50/60 C Ep Classic

- 1 Screws
- 2 Shaft seal ring
- 3 Outer ball bearing
- 4 Inner ball bearing
- 5 Cover

- ➔ Unscrew the screws.
- ➔ Remove the lid.
- ➔ Remove ball bearing.

Component	Description
Outer ball bearing	6005RS E103
Inner ball bearing	6004RZ L007



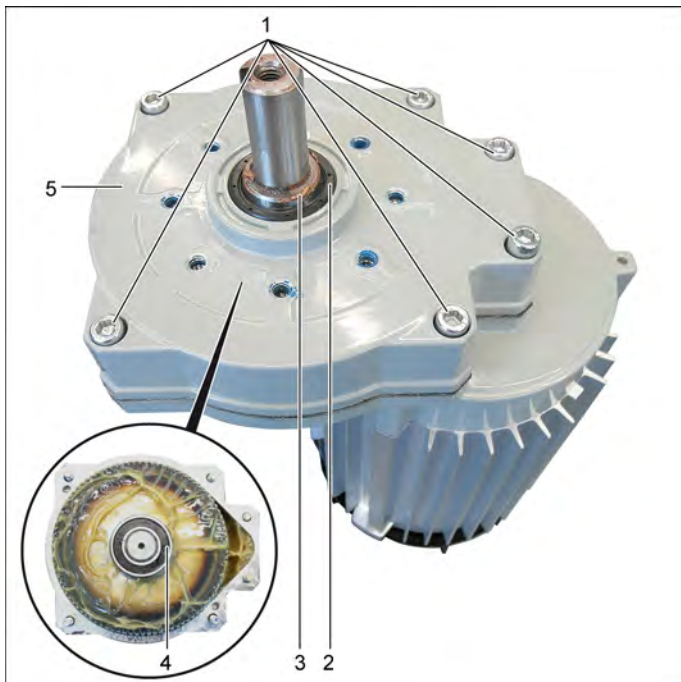
**Diagram**  
Bp variant:

- 1 Outer ball bearing
- 2 Inner ball bearing
- 3 Cover
- 4 Screws

- ➔ Unscrew the screws.
- ➔ Remove the lid.
- ➔ Remove ball bearing.

Component	Description
Outer ball bearing	6005RS E105 C&U
Inner ball bearing	6004RZ L006 C&U

## AKMW Uninstall / install shaft seal brush motor



### ■ AKMG Uninstall / install brush motor

#### Diagram

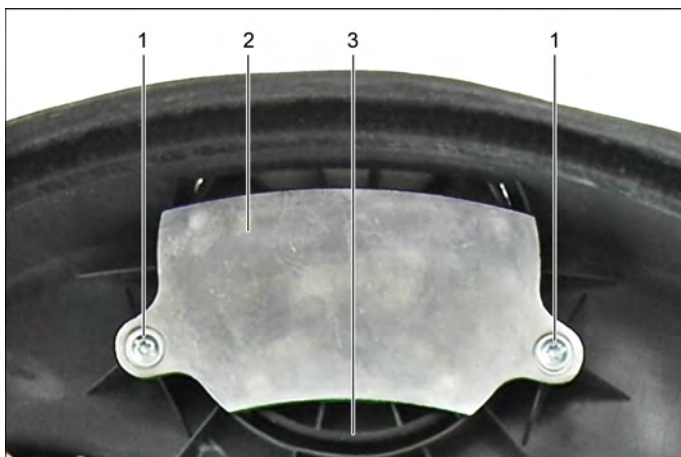
BD 50/60 C Ep Classic

- 1 Screws
- 2 Shaft seal ring
- 3 Outer ball bearing
- 4 Inner ball bearing
- 5 Cover

- ➔ Unscrew the screws.
- ➔ Remove the lid.
- ➔ Remove ball bearing.
- ➔ Remove shaft seal.

Component	Description
Shaft seal ring	NAK 151C TC 25 35 7

## AKRE Uninstall / install deflector roller

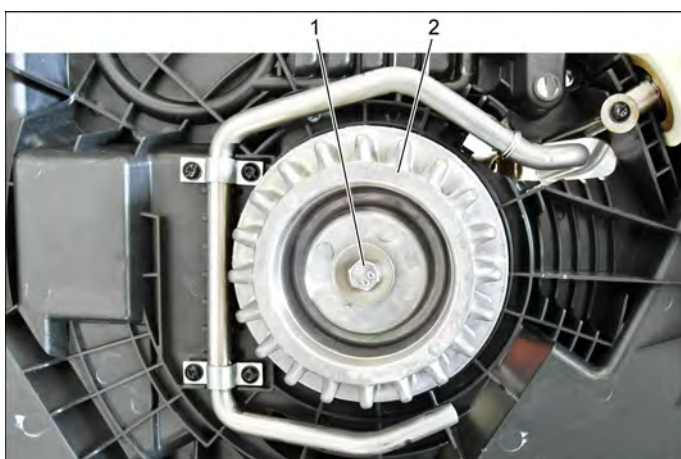


### ■ AKBE Uninstall / install disc brush

- 1 Screws
- 2 Plate
- 3 Scraper roller

- ➔ Lift the front of the appliance and support it.
- ➔ Pull off the splash guard in the area of the deflector roller.
- ➔ Unscrew the screws.
- ➔ Remove metal sheet.
- ➔ Remove the scraper roller.

## AKSA Uninstall / install retainer disc brush

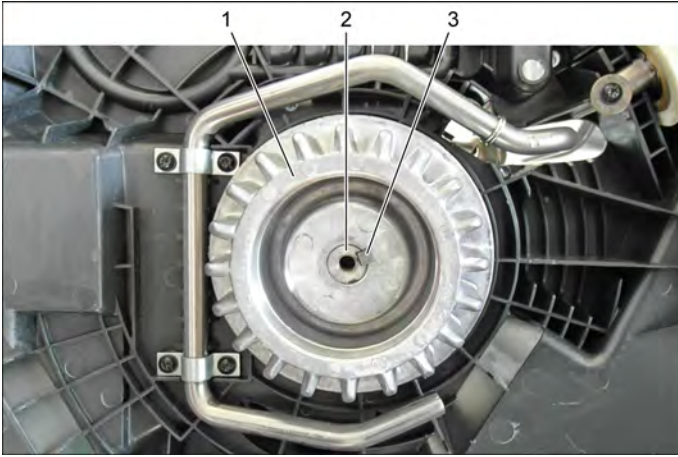


### ■ AKBE Uninstall / install disc brush

### ■ AEAA Lay the device on its side for maintenance work

- 1 Screw
- 2 Retainer disc brush

- ➔ Loosen screws.



- 1 Retainer disc brush
- 2 Motor shaft
- 3 Fitting key

→ Remove the retainer disc brush from the motor shaft.

**Note**

Use puller tool if necessary.

**Installation information**

Ensure the correct seating of the feather key during installation.

**AKSE Uninstall / install splash guard**



- 1 Splash guard

→ Pull off splash guard.

**050 Maintenance and inspection**

Service group does not contain any maintenance and inspection points.

**060 Error diagnosis**

Measurements in case of excessive current consumption of the brush motor.

For detailed fault diagnosis see:  
*Faults*

Overload stage	Power consumption	Switch-off time
1	35...40 A	30...40 s
2	45...50 A	1...10 s
3	> 65 A	0,2 s

**Note**

Bp variant:

After switching off the brush motor, the error message "ERR B" is shown in the display.

**070 Peculiarities/ others**

The service group does not contain any peculiarities.

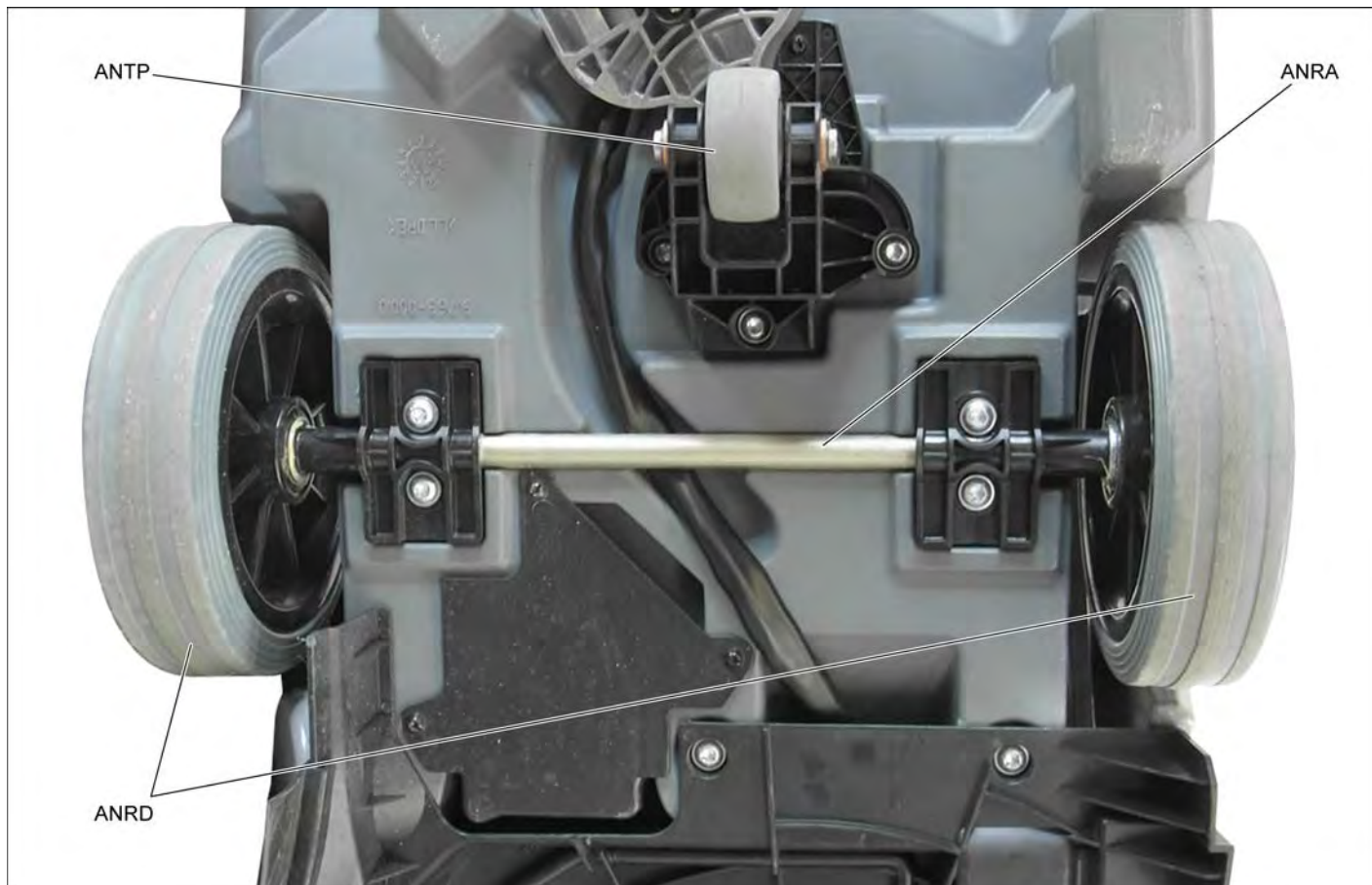
## AN Service group running gear

### 010 Safety information

Observe general safety information!  
Service and maintenance tasks may only be performed by  
qualified and specially trained specialists.

### 020 Overview

#### Chassis



*ANRA Install/uninstall wheel axle*  
*ANRD Uninstall / install wheels*  
*ANTP Uninstall / install transport wheel*

### 030 Function

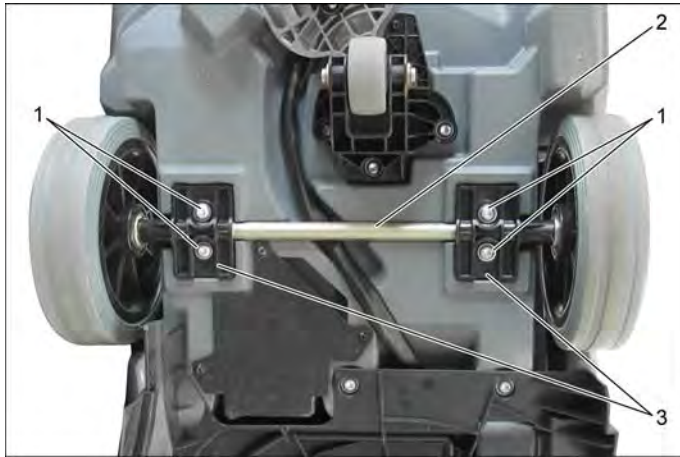
No special functional characteristics.

## 040 Service activities

### Note

Unless otherwise described, the installation takes place in reverse order.

### ANRA Install/uninstall wheel axle

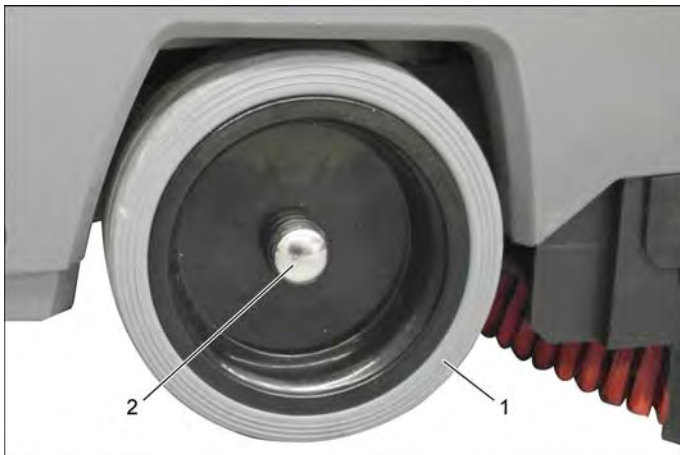


■ *AEAA Lay the device on its side for maintenance work*

- 1 Screws
- 2 Wheel axle
- 3 Support

- ➔ Unscrew the screws.
- ➔ Remove the holders.
- ➔ Remove the wheel axle.

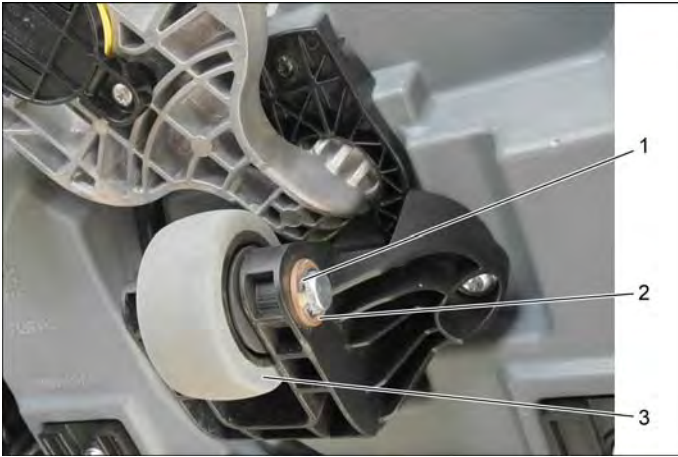
### ANRD Uninstall / install wheels



- 1 Wheel
- 2 Wheel cap

- ➔ Jack up the device.
- ➔ Carefully wedge the wheel cap free.
- ➔ Remove wheel.

## ANTP Uninstall / install transport wheel



- 1 Safety ring
- 2 Washer
- 3 Transport wheel

- ➔ Jack up the device.
- ➔ Remove the safety ring.
- ➔ Remove the washer.
- ➔ Pull out axle.
- ➔ Remove transport wheel.

## 050 Maintenance and inspection

Service group does not contain any maintenance and inspection points.

## 060 Error diagnosis

For detailed fault diagnosis see:

*Faults*

## 070 Peculiarities/ others

The service group does not contain any peculiarities.

## Faults

### Faults with display

#### Note

Bp variant:

Display	Correction
ERR B	Check if foreign objects block the brush; remove foreign object if required.
ERR T	Check the circuit of the suction turbine.
LOW BAT	Charge battery.
ERR TEMP	Allow device to cool down.
HandsOff	Release the safety switch and wait until the operating hours or the battery status are displayed. Then operate the safety switch again.
ERR REL	Set the programme selector switch to "OFF", release the safety switch, wait for 3 seconds, restart.
ERR PWM	Check voltage level.

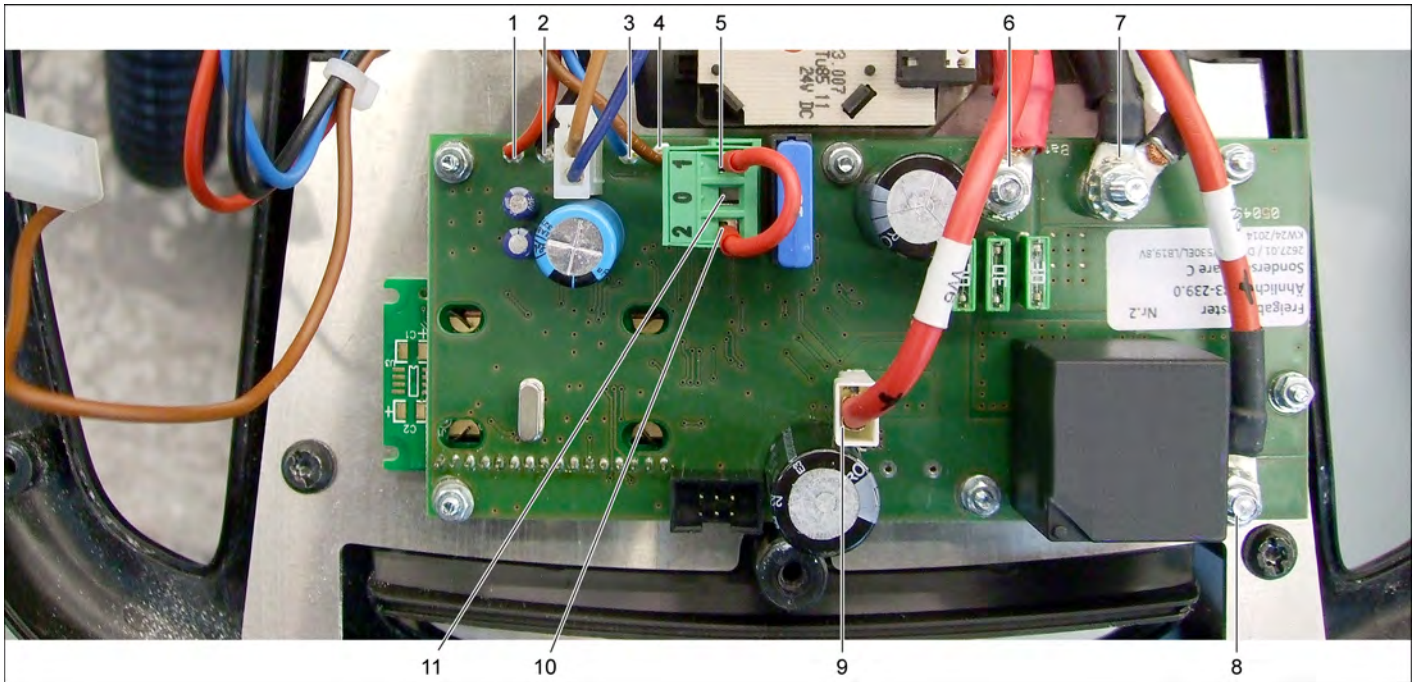
### Faults without display on the console





Failure	Correction
Appliance cannot be started	Turn the program selection switch to the desired programme.
	Operate the safety switch.
	Check battery; charge it if required.
	Make sure that all battery terminals are connected.
Insufficient water quantity	Check fresh water level, refill tank if necessary.
	Increase the water volume on the regulating knob for water volume.
Insufficient vacuum performance	Clean the seals between waste water tank and cover and check for tightness, replace if required.
	Wastewater reservoir is full; shut off the appliance and empty the wastewater reservoir
	Clean the fluff filter.
	Clean the vacuum lips on the vacuum bar, replace if required
	Check if the cover on the dirt water discharge hose is closed
	Check the setting of the vacuum bar.
	Check suction hose for blockages; clean if required.
	Check the suction hose for tightness; replace if required.
Insufficient cleaning result	Check the brushes for wear, replace if required.
Brush does not turn	Check if foreign objects block the brush; remove foreign object if required.
	If over-current switch in the electronics system has been triggered, turn programme selection switch to "OFF". Afterwards, set it back to the desired programme.
Vibrations during cleaning	You might need to use a softer brush.

# Measurements at the control panel

## Note

Bp variant:



Programme selector switch position	Voltage measurement between		Nominal value in volt
	Line	Line	
	Line 6	Line 7	24
	Line 2	Line 7	24
	Line 4		
	Line 5		
	Line 9		
	Line 10		
 + Safety button	Line 1	Line 7	24
	Line 2		
	Line 4		
	Line 5		
	Line 8		
 + Safety button	Line 1	Line 7	24
	Line 2		
	Line 3		
	Line 4		
	Line 5		
	Line 8		
	Line 9		
	Line 10		
Line 11			



## Technical Documentation





Appliance type	Part number	Circuit diagram	Operating instructions	Spare parts list
BD 50/50 C Bp Classic 24 V	1.127-001.0	9.763-075.0	5.965-352.0	5.974-025.0
BD 50/60 C Ep Classic 230 V	1.127-002.0	9.763-124.0	5.965-572.0	5.974-026.0
BD 50/60 C Ep Classic 120 V	1.127-003.0	9.763-125.0	5.965-495.0	5.974-027.0
BD 43/35 C Ep Classic 230 V	1.515-401.0	-	-	-
BD 43/25 C Bp Classic 24 V	1.515-400-0	-	-	-

## Technical specifications

		BD 50/50 C Bp Classic 24 V	BD 50/60 C Ep Classic 230 V	BD 50/60 C Ep Classic 120 V
<b>Power</b>				
Nominal voltage	V	24	230 ± 6%	120 ± 6%
Frequency	Hz	-	50	60
Battery capacity	Ah	105/76/80	-	-
Average power consumption	W	1050	1300	1350
Power consumption	A	45	6,5 - 7	15,7 - 16,7
Rated power suction turbine	W	500	550	550
Current consumption suction turbine (max)	A	22	2,5	4,7
Rated power brush drive	W	550	750	800
Current pickup of brush head, no load	A	1,8 - 2,5	1,6 - 2,6	4,0 - 4,2
Current pickup of brush head, loaded	A	23	4,0 - 4,5	11 - 12
<b>Vacuuming</b>				
Vacuum power, air volume (max.)	l/s	> 19	> 20	> 20
Vacuuming power, negative pressure (max.)	kPa (mbar)	> 12 (> 120)	> 14 (>140)	> 14 (>140)
<b>Cleaning brushes</b>				
Brush speed	1/min	190 - 200	140	170
Brush diameter	mm	510		
<b>Dimensions and weights</b>				
Theoretical surface cleaning performance	m <sup>2</sup> /h	1600 - 1800		
Max. working range incline	%	2		
Fresh/waste water tank volume	l	52/51	62/61,4	62/61,5
Max. water temperature	°C	60		
max. water pressure	MPa (bar)	0,06		
Net weight (transport weight)	kg	57	62	
Total weight (ready to operate)	kg	134/112/114	-	
Dimensions of battery compartment	mm	350 x 350	-	
Weight on the brush head with full fresh water tank	kg	> 28		
Values determined as per EN 60335-2-72				
Total oscillation value	m/s <sup>2</sup>	< 2,5		
Uncertainty K	m/s <sup>2</sup>	0,2		
Sound pressure level L <sub>pA</sub>	dB(A)	66	67	
Uncertainty K <sub>pA</sub>	dB(A)	2		
Sound power level L <sub>WA</sub> + Uncertainty K <sub>WA</sub>	dB(A)	81		
<b>Water dosing valve</b>				
Flow volume with full fresh water tank	l/min	> 2,2		
Flow volume with almost empty fresh water tank	l/min	> 0,9		
<b>Operation and charging process</b>				
Max. ambient temperature	°C	1 - 40		

		BD 43/35 C Ep Classic	BD 43/25 C Bp Classic
<b>Power</b>			
Nominal voltage	V	230	-
Frequency	Hz	50	50
Battery capacity	Ah	-	80/76
Average power consumption	W	1400	1100
Rated power suction turbine	W	550	500
Current consumption suction turbine (max)	A	-	2,5
Rated power brush drive	W	850	600
<b>Vacuuming</b>			
Vacuum power, air volume (max.)	l/s	20	24
Vacuuming power, negative pressure (max.)	kPa (mbar)	> 12 (> 120)	
<b>Cleaning brushes</b>			
Brush speed	1/min	235	155
Brush diameter	mm	430	
<b>Dimensions and weights</b>			
Theoretical surface cleaning performance	m <sup>2</sup> /h	1800	1600
Max. working range incline	%	2	
Fresh/waste water tank volume	l	35/35	25/25
Max. water temperature	°C	60	
max. water pressure	MPa (bar)	-	
Net weight (transport weight)	kg	56	109
Total weight (ready to operate)	kg	91	137
Dimensions of battery compartment	mm	-	350 x 350
Values determined as per EN 60335-2-72			
Total oscillation value	m/s <sup>2</sup>	< 1,3	< 2,5
Uncertainty K	m/s <sup>2</sup>	0,2	
Sound pressure level L <sub>pA</sub>	dB(A)	70	66
Uncertainty K <sub>pA</sub>	dB(A)	2	1
Sound power level L <sub>WA</sub> + Uncertainty K <sub>WA</sub>	dB(A)	86	81

## Special tools

			
Clip-on ammeter	6.803-022.0	Voltage regulator deep discharge protection	6.803-025.0
			
Hebe acid meter for low-maintenance batteries	6.803-015.0	Tester electric Metra tester	6.803-034.0

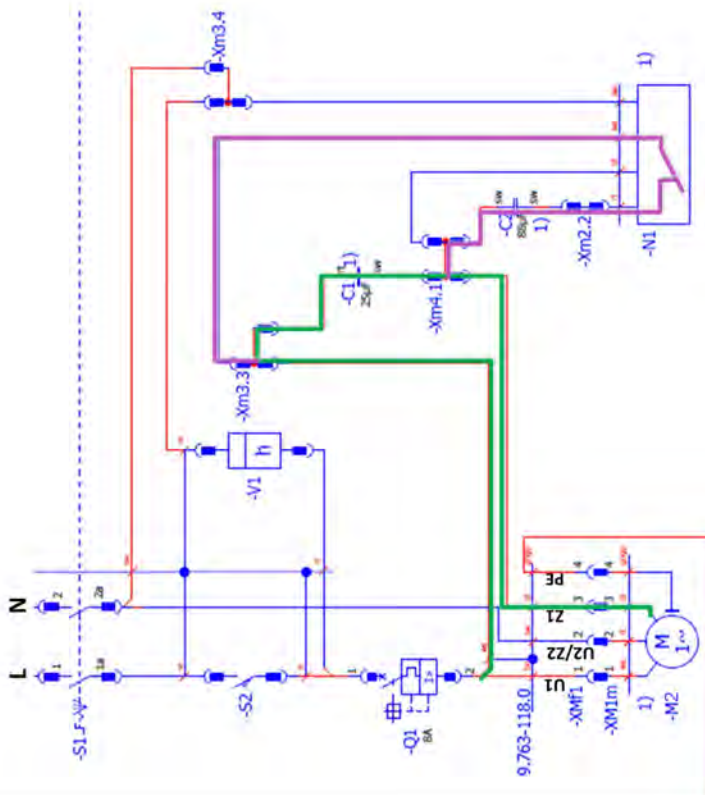
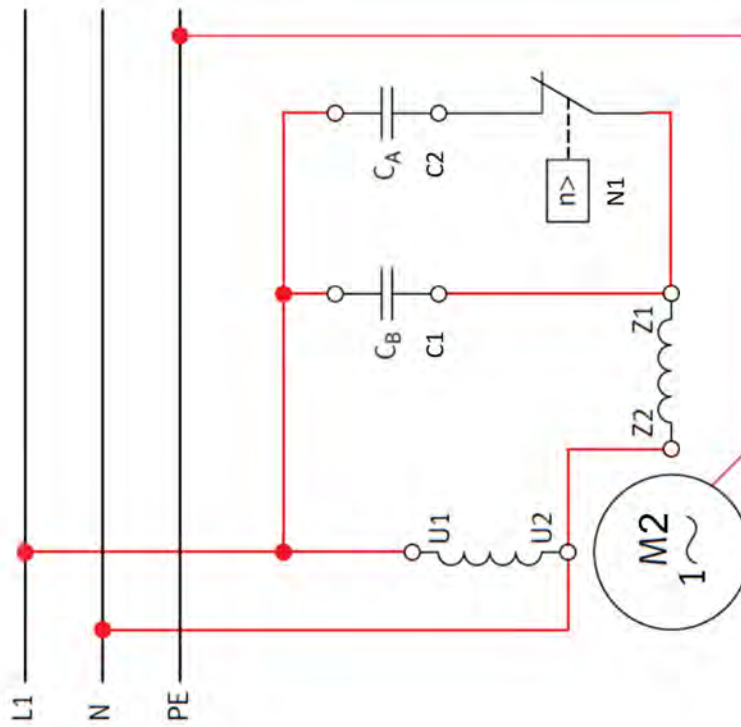
## Expected run times / load changes with regular load

Suction turbine	850 h
Brush motor	1000 h
Gear	2000 h
Disc brush	200 h
Program selection switch	> 40000 operations

## Start-up circuit

### Note

Ep variant



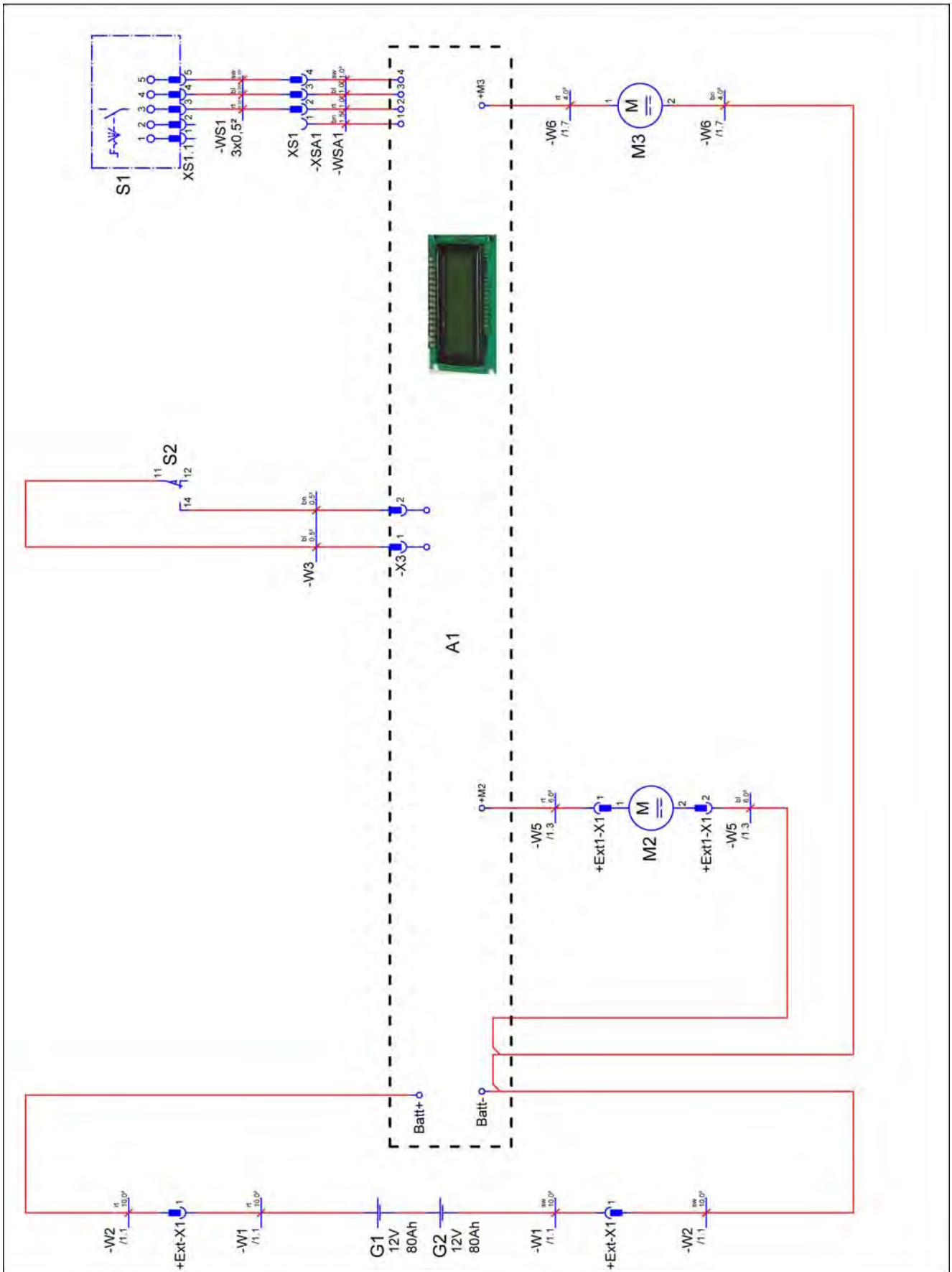
C1	Operating capacitor
C2	Startup capacitor
M2	Brush motor
N1	Start electronics
S1	Program selection switch
S2	Switch brush motor

## Circuit diagram

### Note

Bp variant:

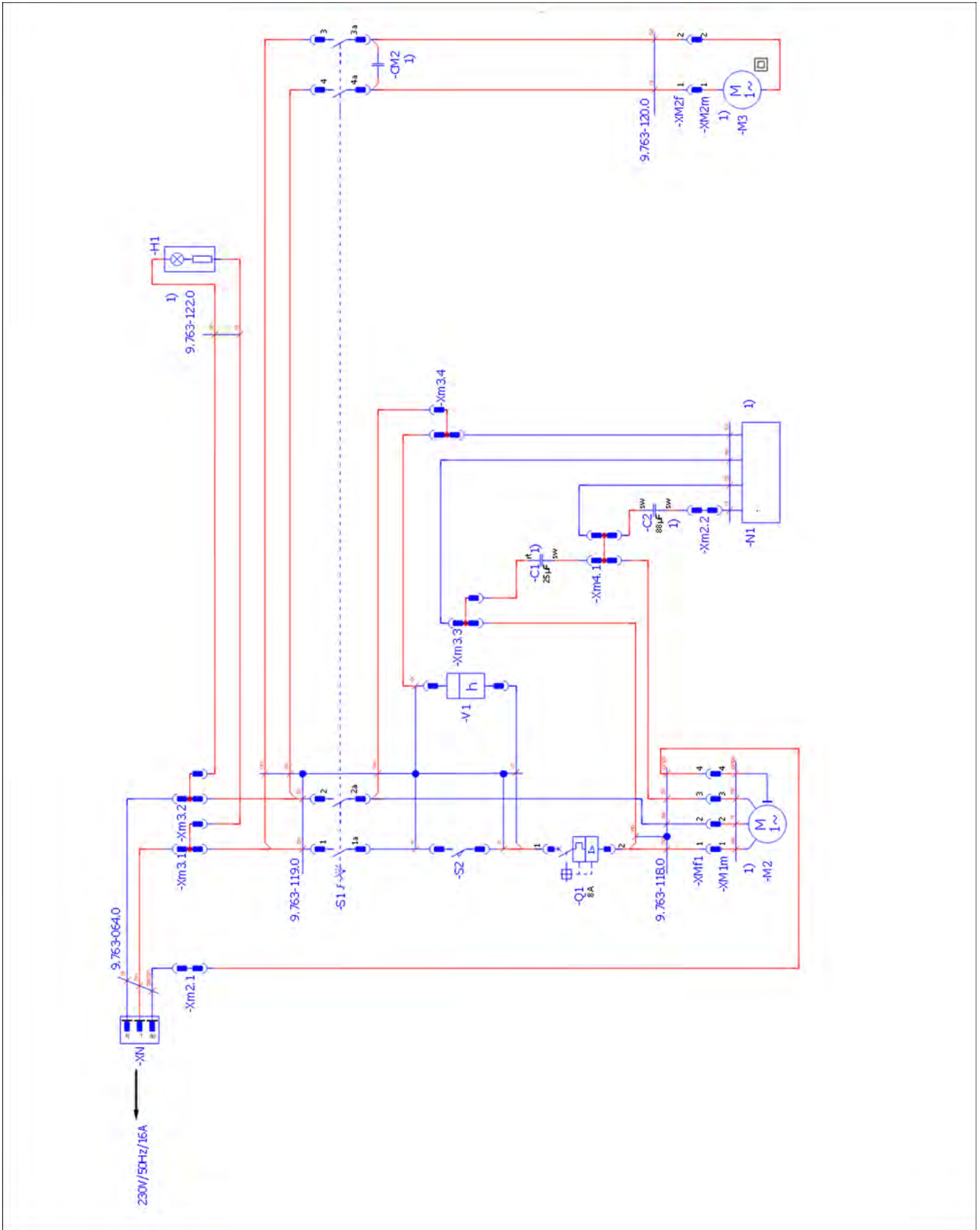
When working on the device, please always use the current circuit diagram in DISIS.



A1	Operating panel board
G1/G2	Batteries
M2	Brush motor

M3	Suction turbine
S1	Program selection switch
S2	Switch brush motor

**Note**  
Ep variant

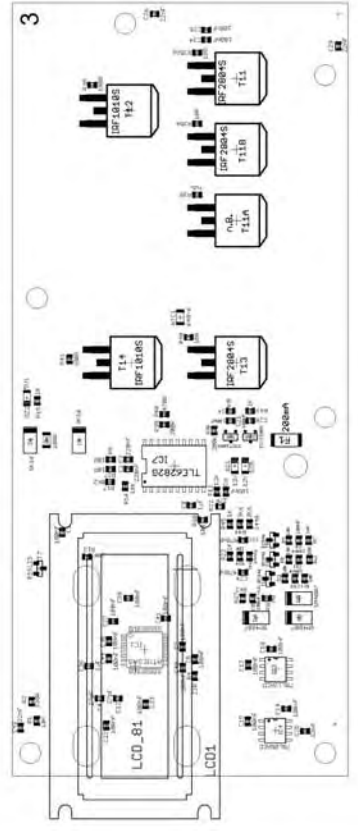
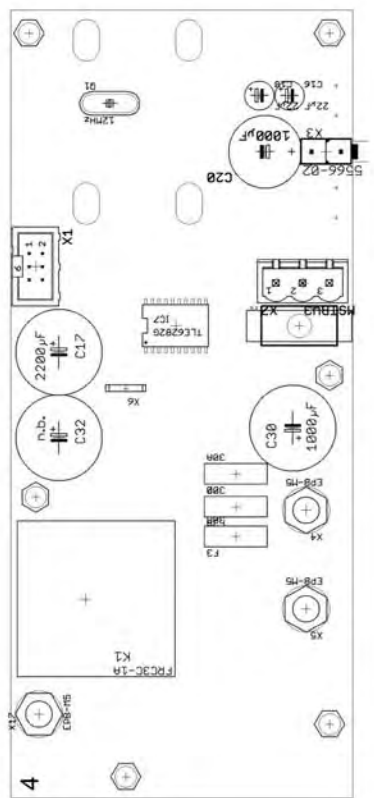
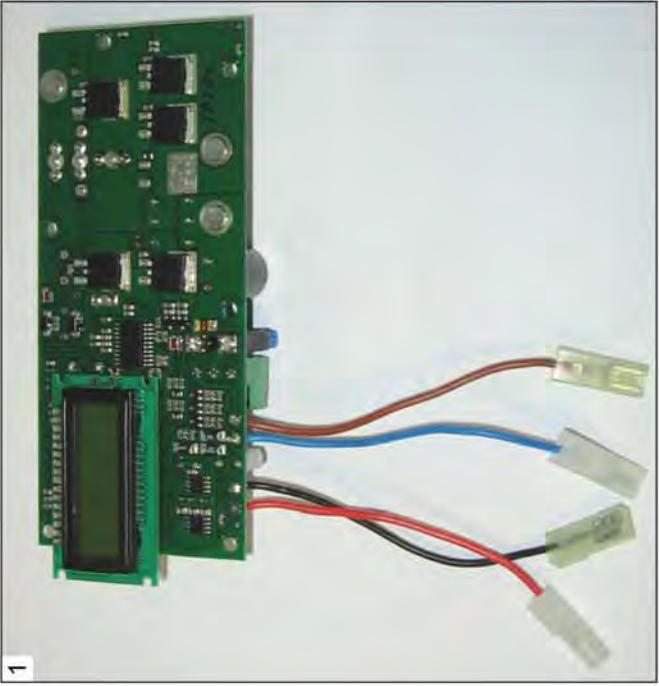
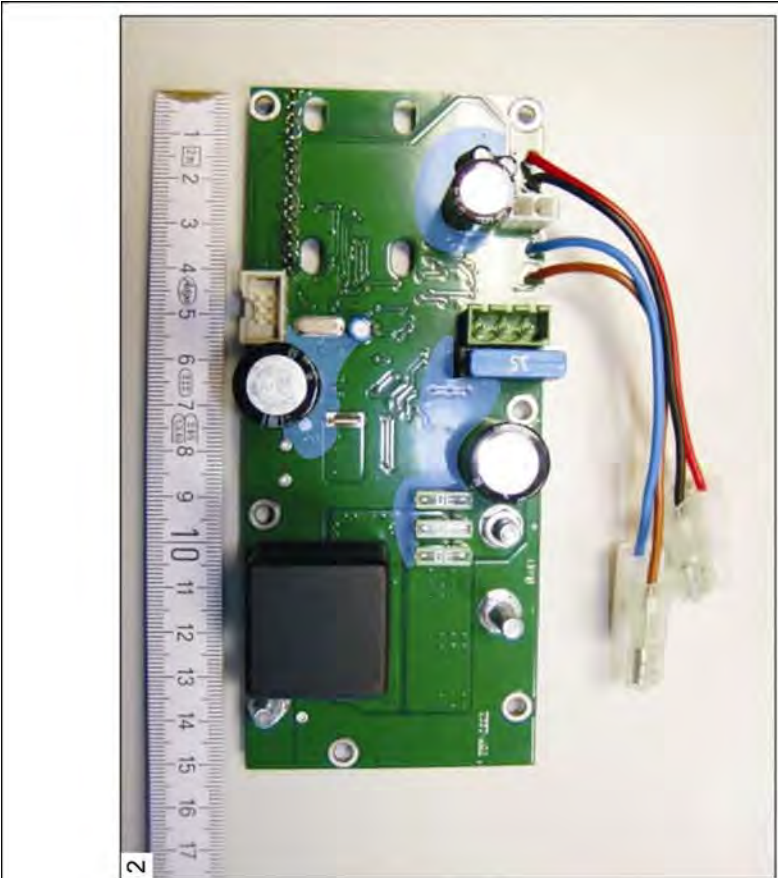


C1	Operating capacitor
C2	Startup capacitor
H1	Indicator light voltage supply
M2	Brush motor
M3	Suction turbine

N1	Start electronics
S1	Program selection switch
S2	Switch brush motor

# Board design

Note  
Bp variant:



1	Control panel board rear
2	Control panel board top

3	Component diagram control panel board rear
4	Component diagram control panel board top

## Cable harness

### Note

Ep variant

