

Puzzi 30/4 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:	Case 117515
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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!

⚠ DANGER

First pull out the plug from the mains before carrying out any tasks on the machine.

CAUTION

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

Danger or hazard levels

⚠ DANGER

Pointer to immediate danger, which leads to severe injuries or death.

⚠ WARNING

Pointer to a possibly dangerous situation, which can lead to severe injuries or death.

⚠ CAUTION

Pointer to a possibly dangerous situation, which can lead to minor injuries.

ATTENTION

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

Description in this service manual

Service groups

Example:

Install/uninstall ANRA wheel axle

ON	RA	Install/uninstall wheel axle
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

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

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

General



This spray extraction device is used as a wet cleaning device for carpets.

It can be adapted to the relevant cleaning task by setting the rotary switch.

The wastewater tank can be removed for easier emptying. A capacity of the fresh and waste water tank of 30 l allows effective cleaning with long action times.



An additional socket is available for the connection of the additional brush washing head PW 30/1.

Tools used

- | | |
|-------------------|------|
| – Screwdriver | T15 |
| – Screwdriver | T20 |
| – Screwdriver | T25 |
| – Screwdriver | T27 |
| – Screwdriver | T30 |
| – Open-end wrench | SW8 |
| – Open-end wrench | SW17 |
| – Open-end wrench | SW19 |
| – Open-end wrench | SW22 |
| – Open-end wrench | SW27 |
| – Hexagon key | 8 |

Field of application

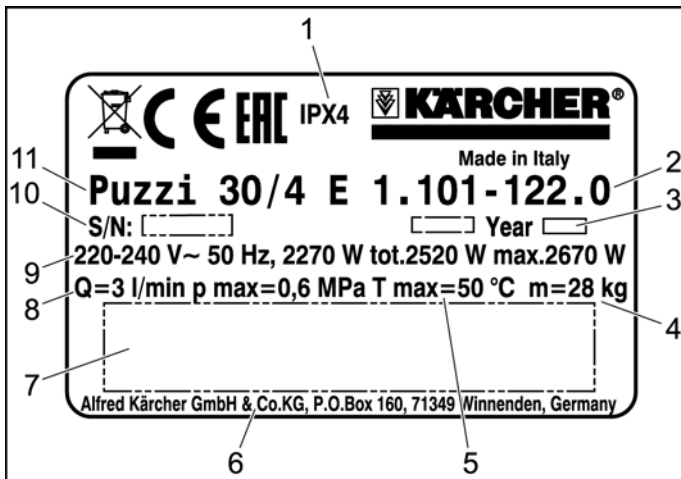
This service manual describes the appliance Puzzi 30/4.

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



The type plate is located at the back on the service cover.

- 1 IP rating/ protection class
- 2 Part number
- 3 Year of manufacture
- 4 Weight
- 5 Admissible temperature range
- 6 Address of manufacturer
- 7 Bar code. Contains part and serial number.
- 8 Specifications
- 9 Performance data
- 10 Serial number
- 11 Appliance description

Overview of the appliance

Front view



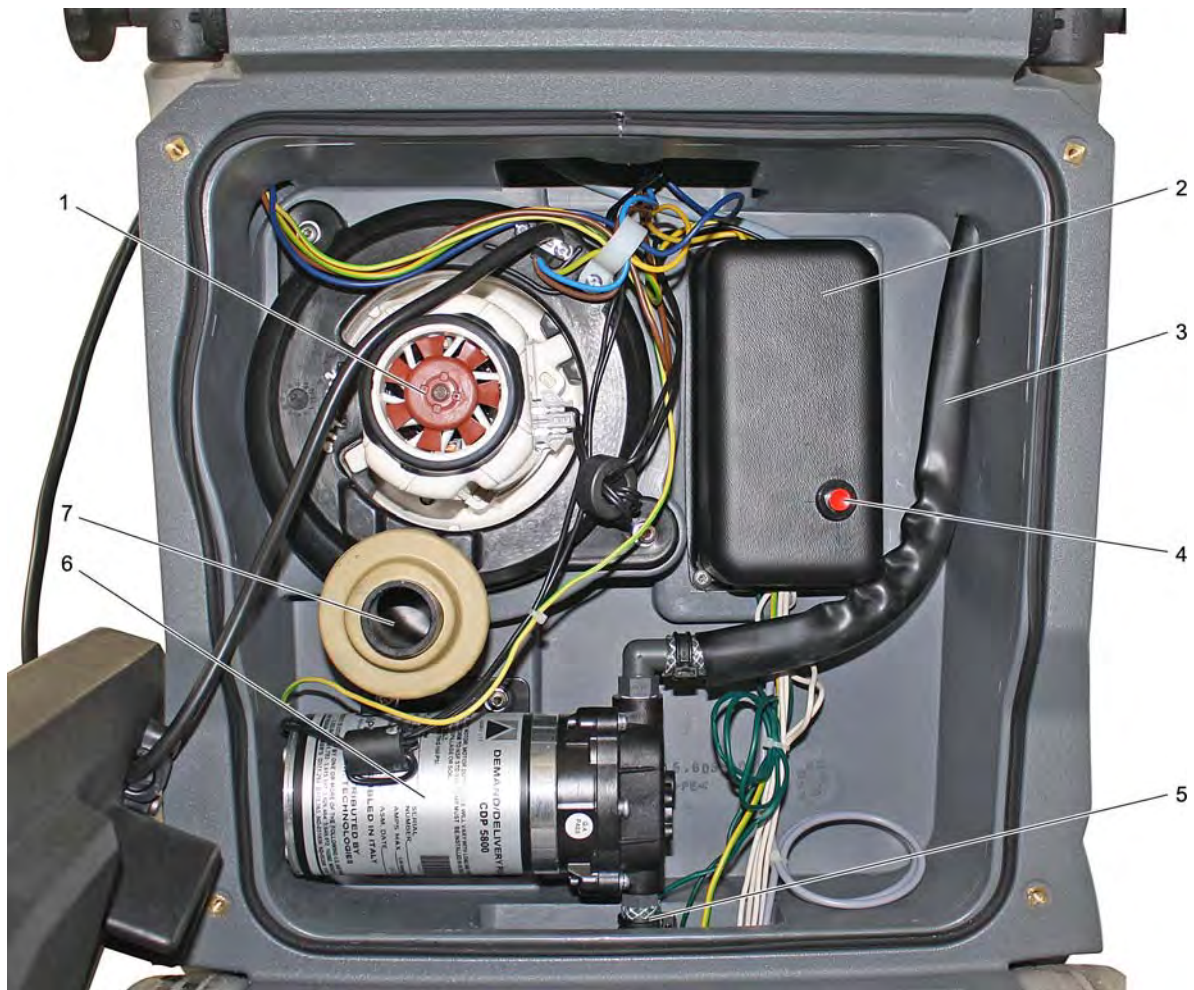
- 1 Suction hose
- 2 Pushing handle, adjustable
- 3 Rotating knob S1
- 4 Fastening screw for push-handle
- 5 Socket for additional brush washing head PW 30/1 X2
- 6 Holder for suction pipe
- 7 Impeller
- 8 Fresh water sieve
- 9 Steering roller with fixed position brake
- 10 Floor nozzle for carpet cleaning
- 11 Lid of the fresh water tank
- 12 Dirt water reservoir, detachable
- 13 Carrying handle of the wastewater container
- 14 Suction pipe
- 15 Spray hose
- 16 Suction hose connection
- 17 Spray hose connection
- 18 Bender

View from behind



- 1 Nameplate
- 2 Adapter for accessories (homebase) including cable hooks
- 3 Power cord X1
- 4 Service cover
- 5 Filling level display

Overview service cover removed



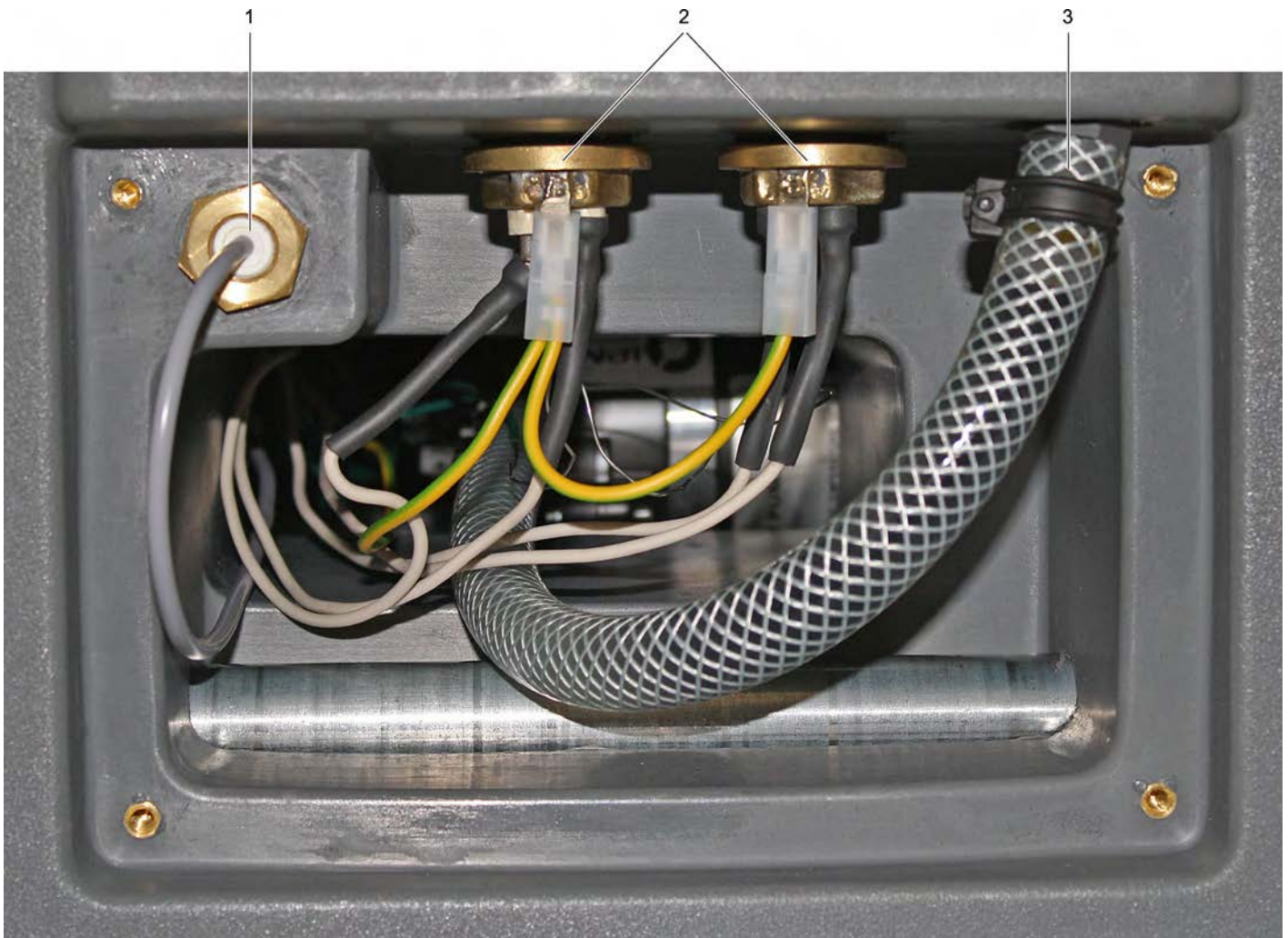
- | | | |
|---|-----------------------------------|----|
| 1 | Suction turbine | M1 |
| 2 | Appliance electronics | |
| 3 | Hose to the spray hose connection | |
| 4 | Reset button | |
| 5 | Hose from the fresh water tank | |
| 6 | Water pump | M2 |
| 7 | Suction air tube | |

Reset button

When filling in hot water from approx. 65-70°C, the heat sensor switches off the electronics.

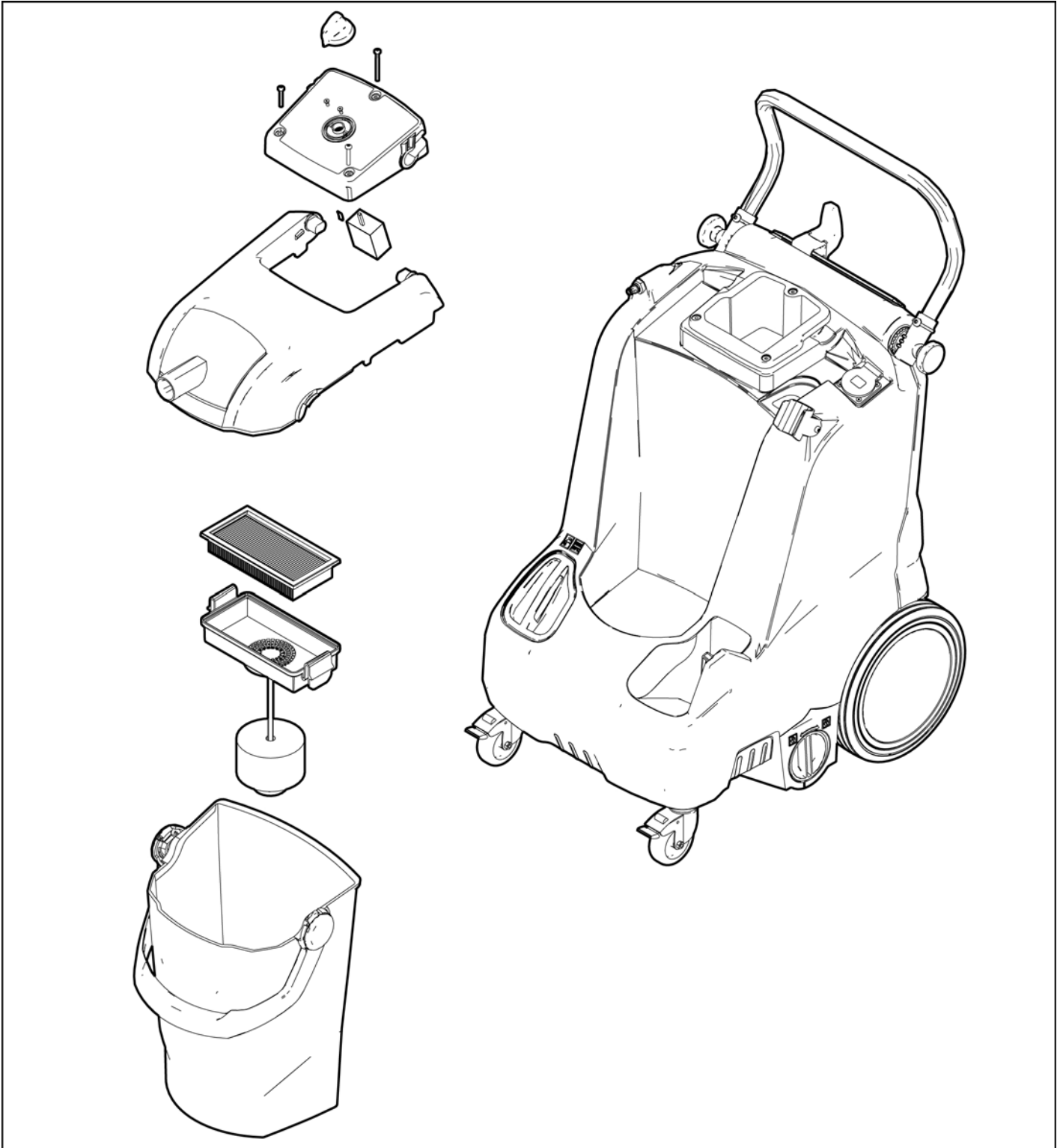
The electronics can be reset with the reset button.

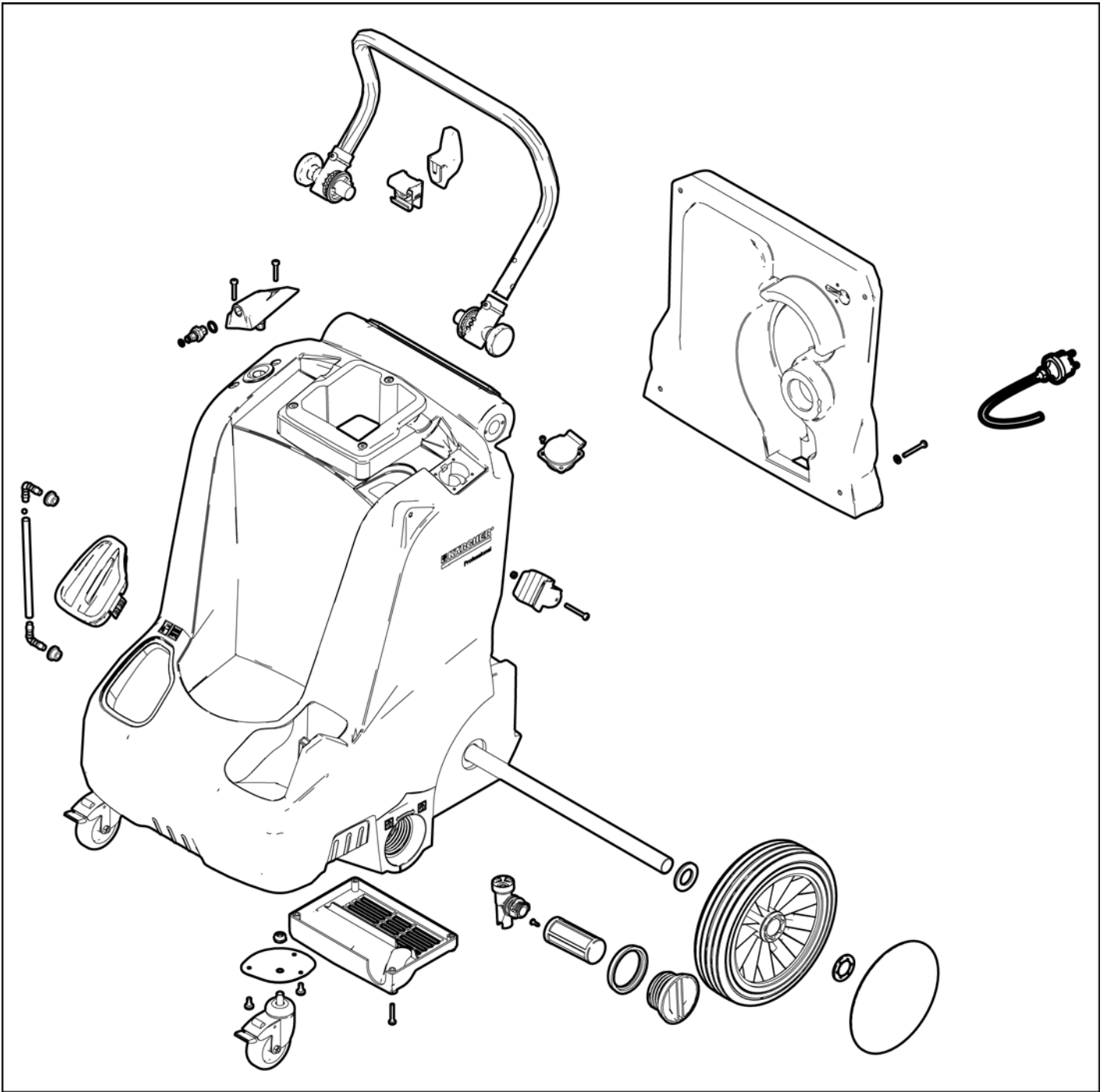
Overview cover at the bottom removed

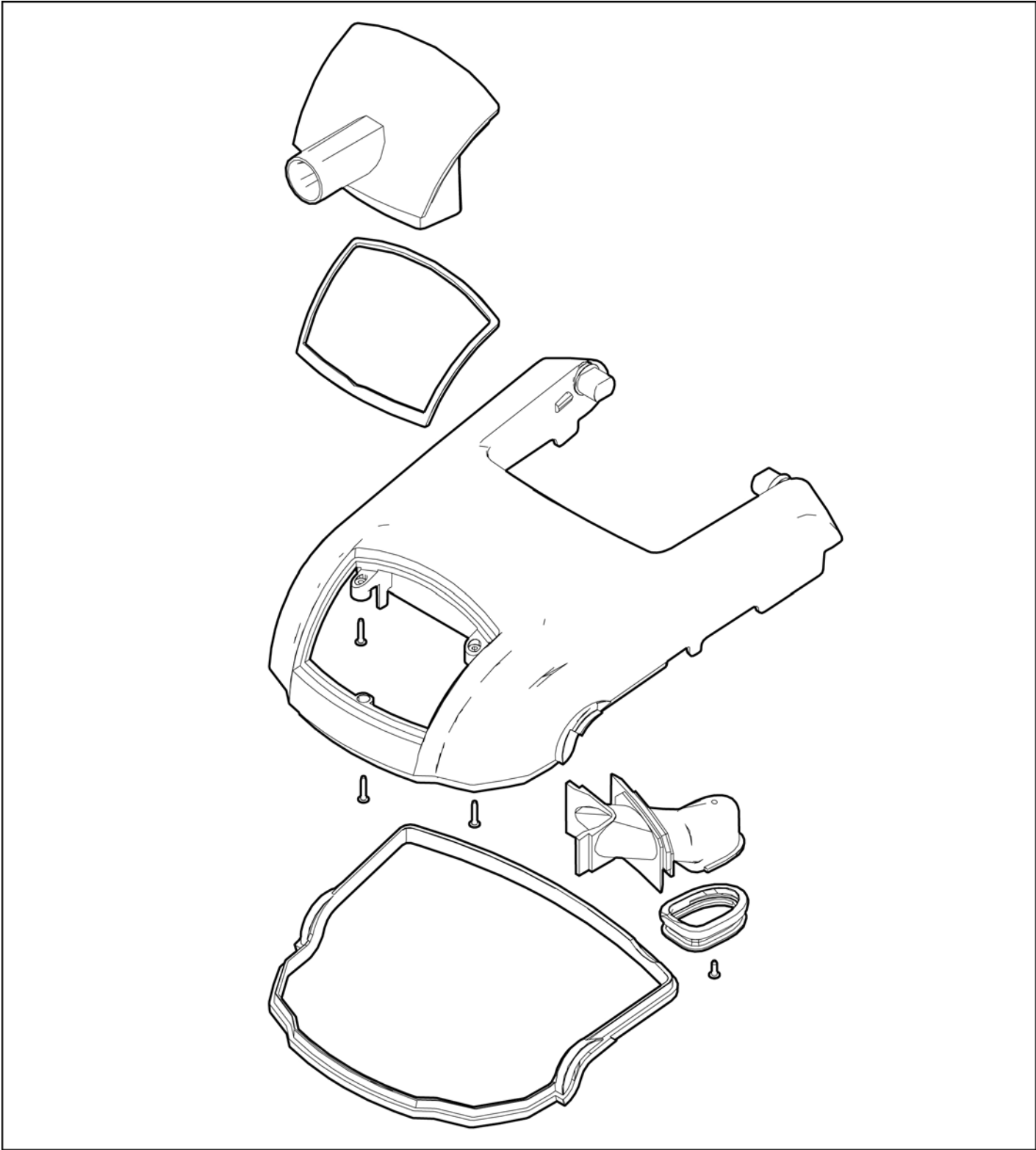


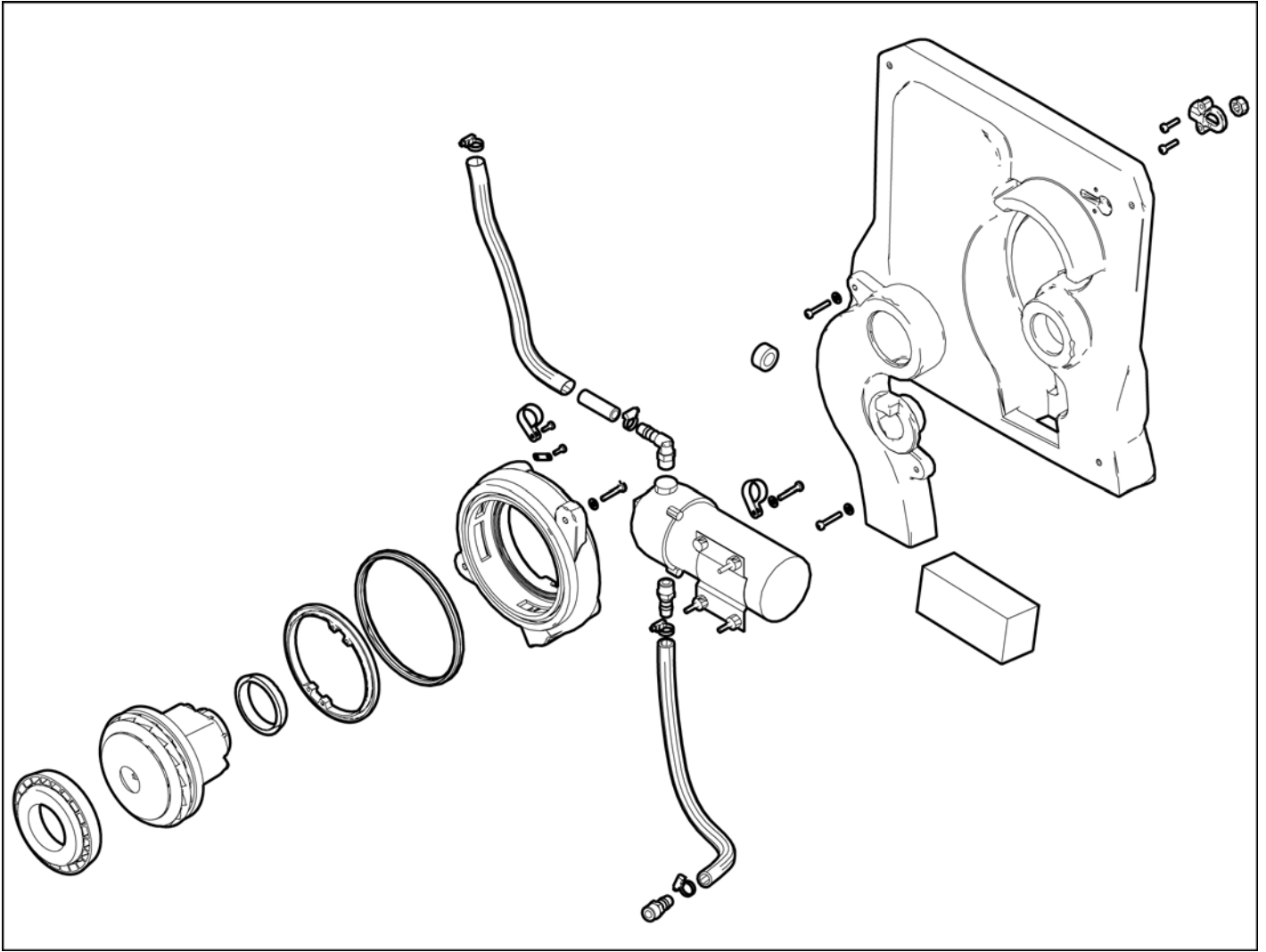
- 1 Float switch
- 2 Heating rods
- 3 Hose from the fresh water tank to the water pump

Overview of the components









AB service group bodywork / chassis

010 Safety information

General

Observe general safety information!

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

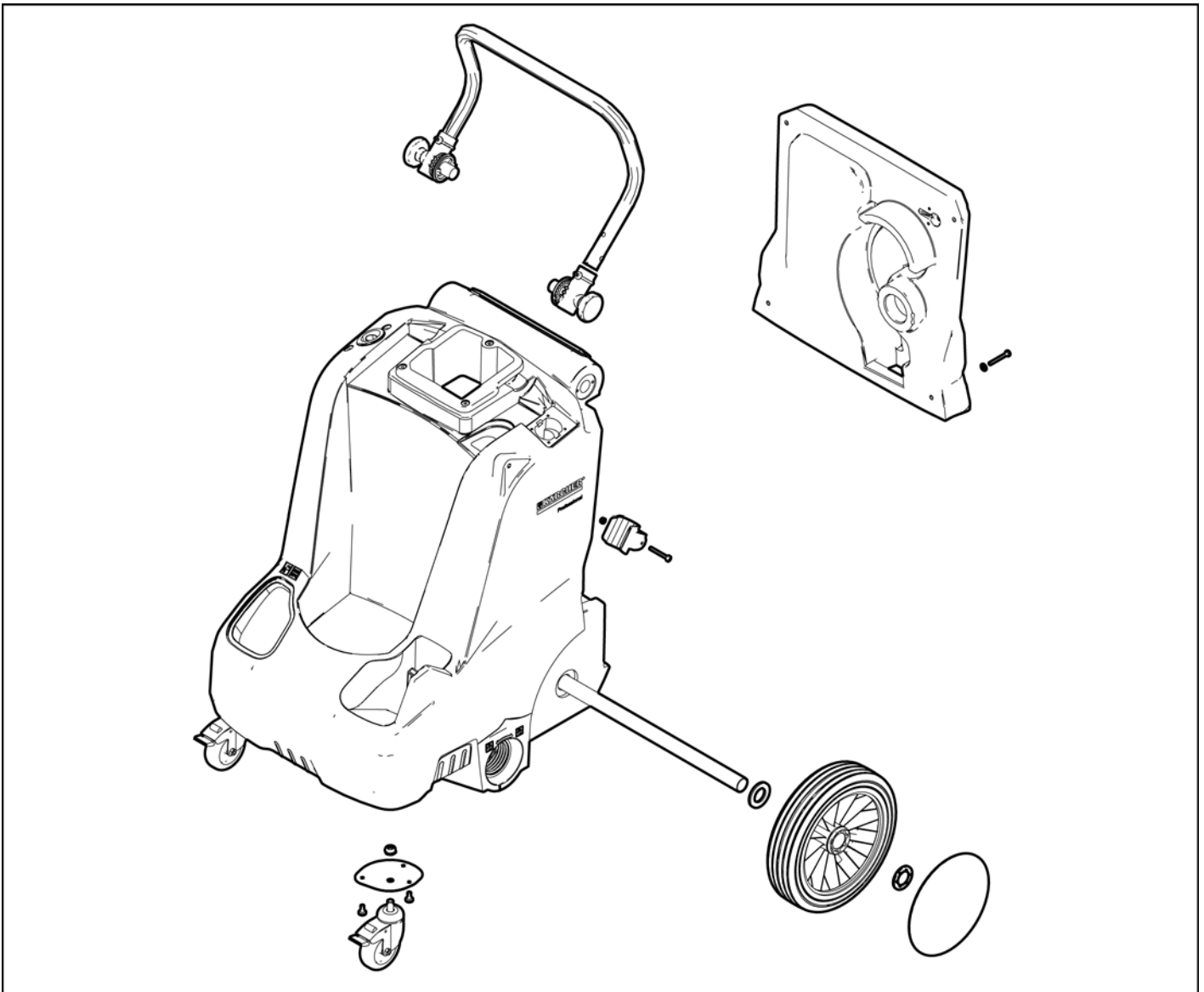
⚠ DANGER

First pull out the plug from the mains before carrying out any tasks on the machine.

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



030 Function

Casing

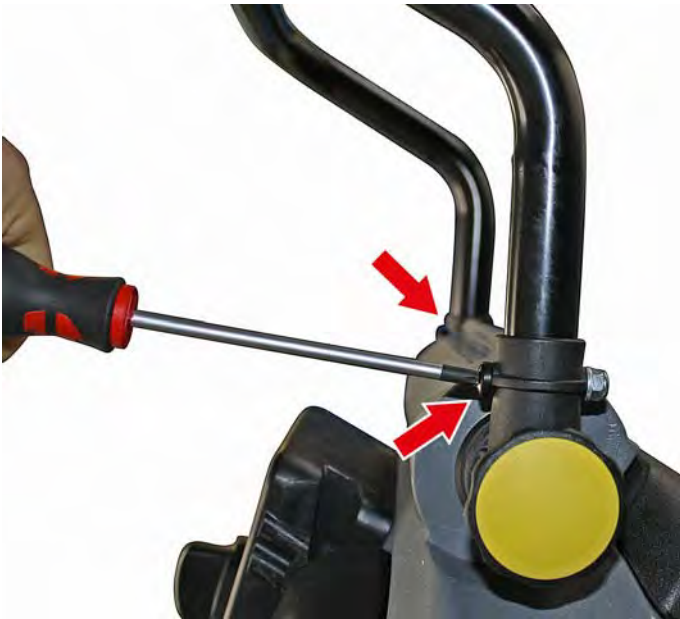
In the casing

- Rotating knob
- Fresh water tank
- Suction turbine
- Water pump
- Appliance electronics
- Chassis

are installed

040 Service activities

Uninstall / install push handle



- Unscrew the screws on both sides of the push handle.
- Pull the push handle out of the holders.

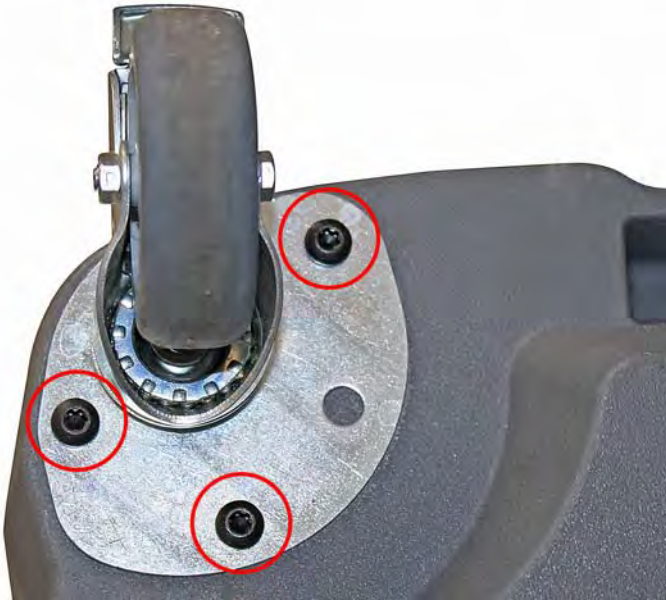
Uninstall / install holder for suction pipe



- Loosen screws.
- Hold up the nut.

Uninstall / install steering roller

- Unscrew the screws.
- Remove steering roller.



- Loosen the nut.



Uninstall / install running wheel



→ Remove the wheel cover.



→ Lever the clamping washer off the axle.
→ Use a new clamping washer upon installation.

Remove the service cover



→ Unscrew the screws.
→ Put the service cover aside.

050 Maintenance and inspection

- Check wheels for ease of movement.
- Check whether the axle is bent.

060 Error diagnosis

Findings	Possible cause	Correction
Damage, cracks	External mechanical impact	Replace casing, instruct operator
Casing distorted	Thermal impact	Replace casing

070 Peculiarities/ others

The service group does not contain any peculiarities.

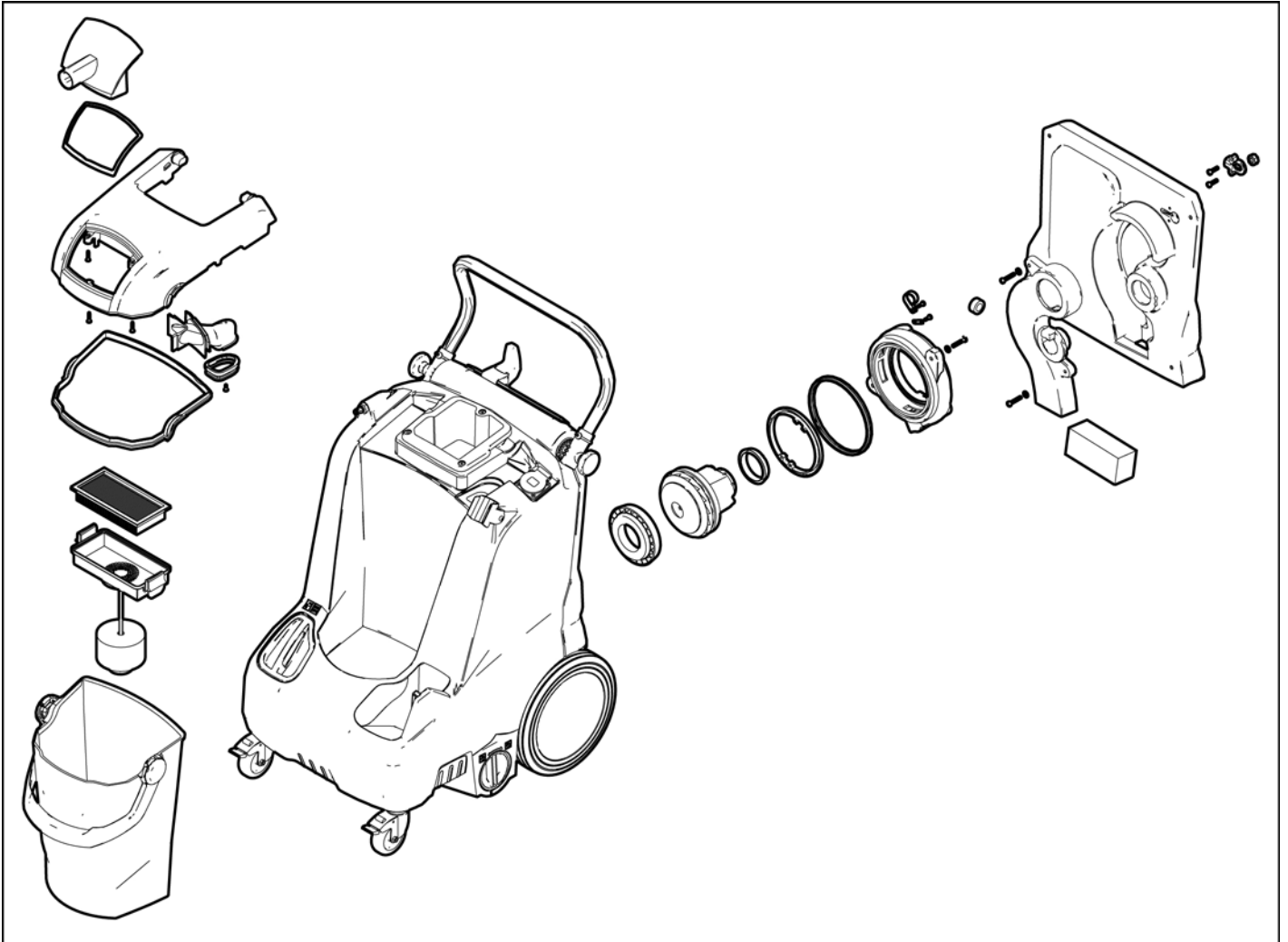
AC Service group suction system

010 Safety information

For this service group there is no special safety information.

Observe general safety information!

020 Overview



030 Function

Wastewater is sucked through the suction hose into the waste water tank via the floor nozzle.

The suction turbine generates the necessary vacuum in the wastewater tank.

In order to protect the suction turbine from damage caused by water ingress, the float closes the air duct when the wastewater tank is full.

040 Service activities

Uninstall / install waste water cover



- Pull suction hose off the waste water cover.
- ➔ Completely fold out the waste water cover.
- ➔ Pull out of the retainers towards the back.

Replacing the seal of the waste water cover



- Pull suction hose off the waste water cover.
- Open the cover.
- ➔ Pull the seal out of the groove.

Note

The new seal is inserted and pressed into the groove.

Uninstall / install suction nozzle

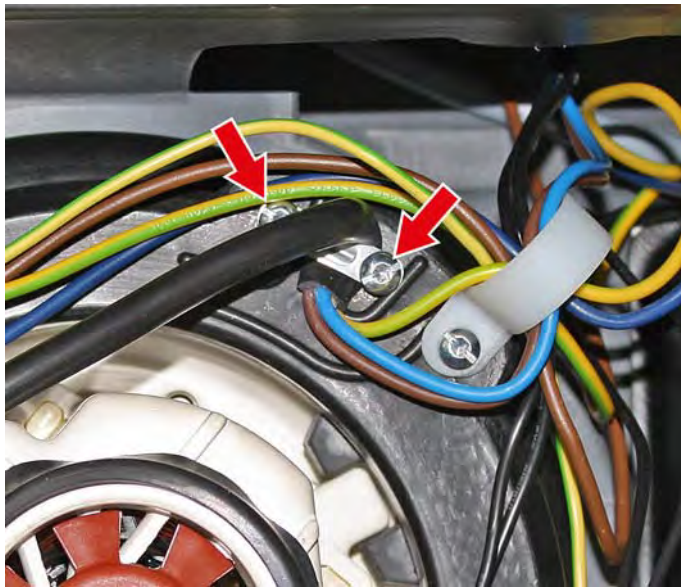


- Pull suction hose off the waste water cover.
- Open the cover.
- 1 Seal
- 2 Suction support
- 3 Screw
- ➔ Remove the seal from the suction nozzle.
- ➔ Loosen screws.

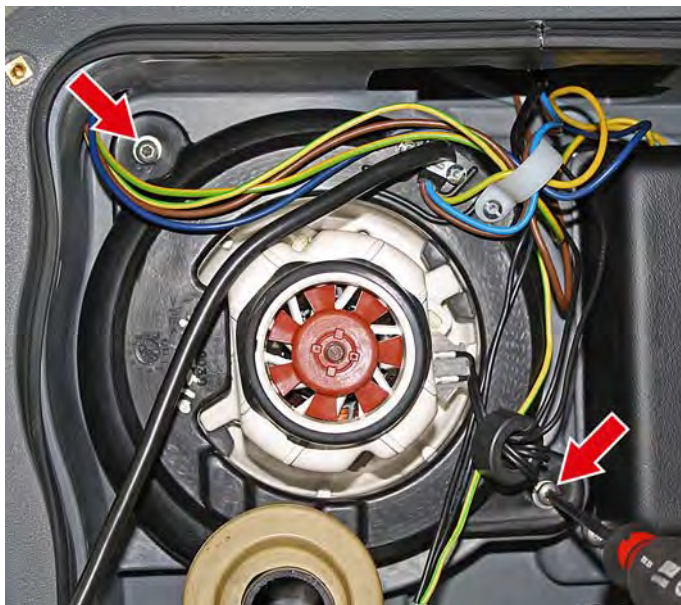
- Remove the suction nozzle from the retainer towards the top.



Uninstall/ install suction turbine



- Remove the cover of the service unit.
- Unscrew the screws on the strain relief.



- Unscrew the screws.
- Remove the suction turbine with the holder.



- Pull out the connecting plug.
- Remove the suction turbine from the holder.



- Mind the correct fitting position in the holder upon installation.

Note

The lugs on the suction turbine casing must be in the retainers in the holder.

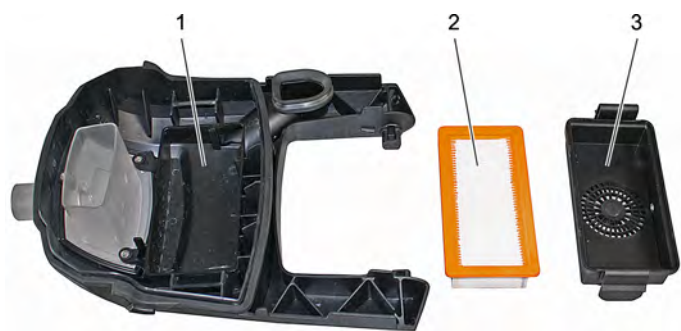
- Plug in connector plug.

Uninstall / install float



- Pull suction hose off the waste water cover.
- Open the cover.
- Unscrew the knurled-head screw.
- Pull off the float.

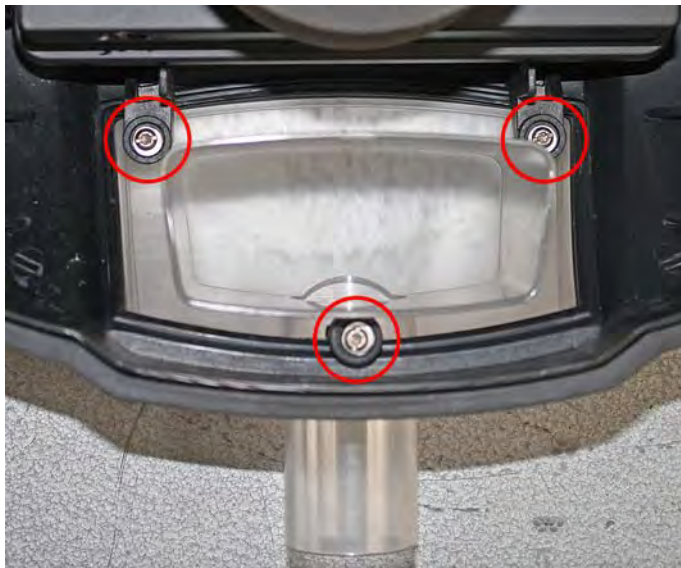
Uninstall / install flat fold filter



- Pull suction hose off the waste water cover.
- Open the cover.
- ➔ Push in the lugs on both sides of the filter casing.
- ➔ Remove the cover of the filter casing.

- 1 Filter casing
- 2 Flat fold filter
- 3 Cover filter casing
- ➔ Remove the flat fold filter from the filter casing.

Uninstall / install suction hose connecting piece



- Pull suction hose off the waste water cover.
- Open the cover.
- ➔ Unscrew the screws.
- ➔ Remove suction hose connecting piece.

050 Maintenance and inspection

- Check and clean seals, replace damaged seals.
- Check the suction hose for damages.
- Check suction hose for clogging.
- Check suction hose to see it is leak-proof.

060 Error diagnosis

Findings	Possible cause	Correction
Insufficient vacuum performance	Cover not closed.	Check the bonnet for proper seating.
	Seal cover damaged.	Clean the seal of the bonnet and the seating on the wastewater container.
	Lint trap soiled	Clean the fluff filter.
	Suction hose clogged.	Check suction hose for blockages; clean if required.
	Float blocked	Check the swimmer.
	Fitting position flat fold filter	Check for proper installation of the flat pleated filter.
	Flat fold filter clogged	Clean the flat pleated filter, replace if necessary.
	Flat folder filter wet	Allow the flat pleated filter to dry, or insert a new, dry flat pleated filter.
Swimmer is interrupting the suction air flow	Waste water container full	Empty the wastewater reservoir.
	Formation of foam in the waste water container	Prevent foam generation when adding detergent RM 761 to the wastewater container.
		Reduce the formation of foam by using the defoaming agent dosing unit (optional accessory).

070 Peculiarities/ others

The service group does not contain any peculiarities.

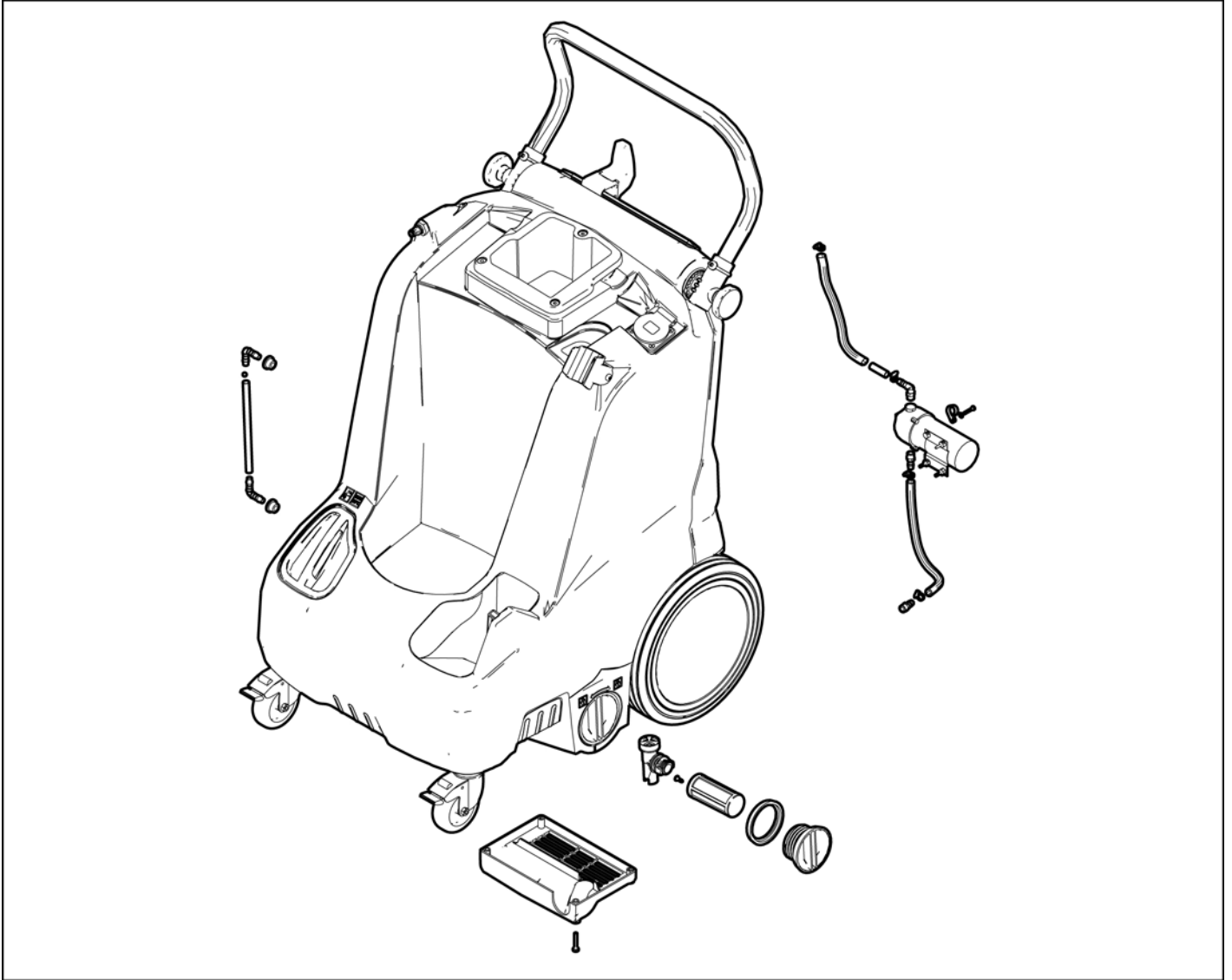
AD Service group water system

010 Safety information

For this service group there is no special safety information.

Observe general safety information!

020 Overview



030 Function

Detergent solution/ fresh water is delivered from the fresh water tank by the water pump.

Foreign objects and soiling in the cleaning detergent solution/ fresh water are retained by the water filter.

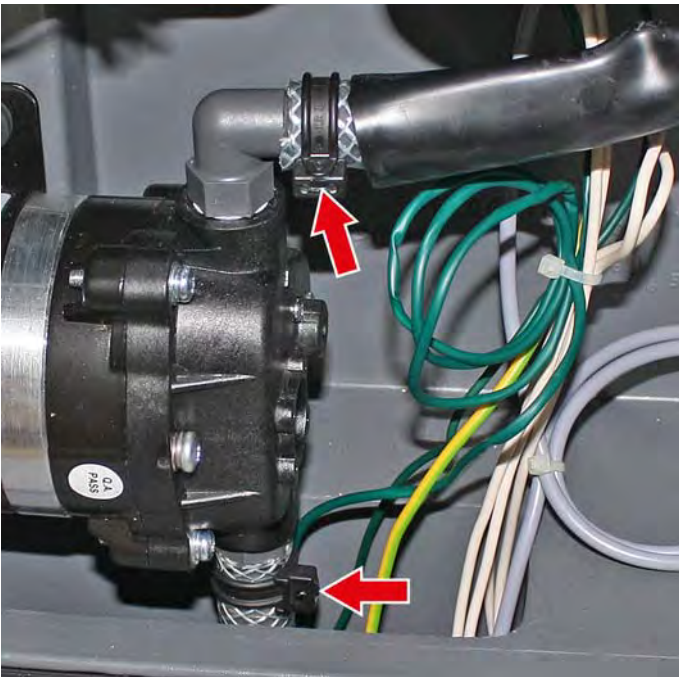
The detergent solution/ fresh water flows through the hose system to the floor nozzle.

040 Service activities

Uninstall / install water pump



- Remove the cover of the service unit.
- Unscrew the screws.

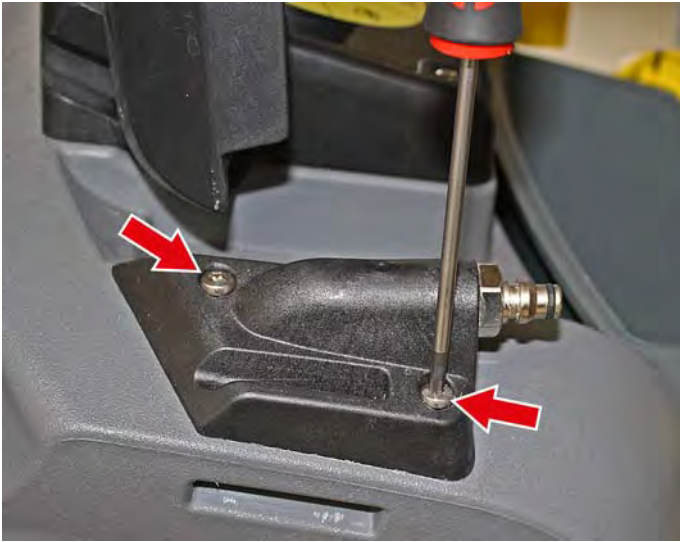


- Sever the cable tie.
- Remove the hoses from the pump.
- Disconnect the connectors.
- Use new cable ties upon installation.

Uninstall / install hose from pump to the spray hose connection



- Remove the cover of the service unit.
- Sever the cable tie.
- Remove the hose from the pump.



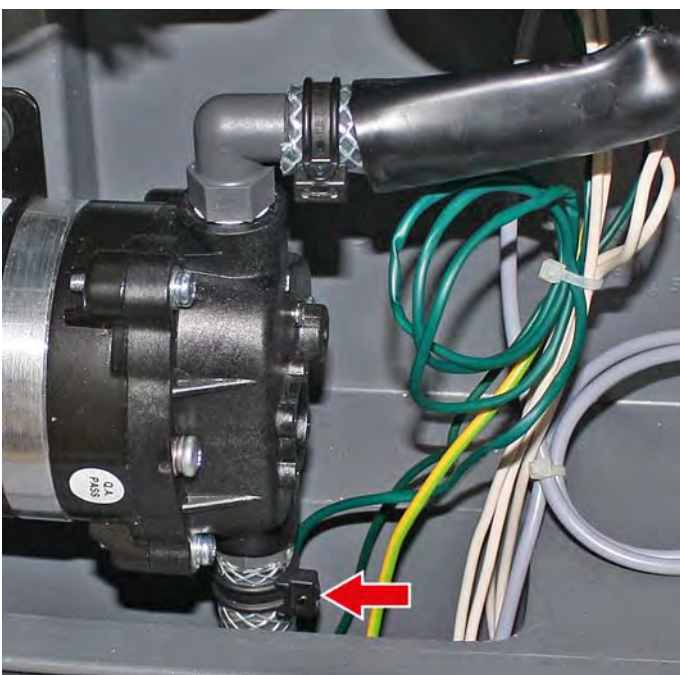
- ➔ Unscrew the screws.
- ➔ Sever the cable tie.
- ➔ Pull out the hose.
- ➔ Pull the hose out of the appliance towards the top.

Uninstall / install spray hose connection



- ➔ Unscrew the spray hose connection.

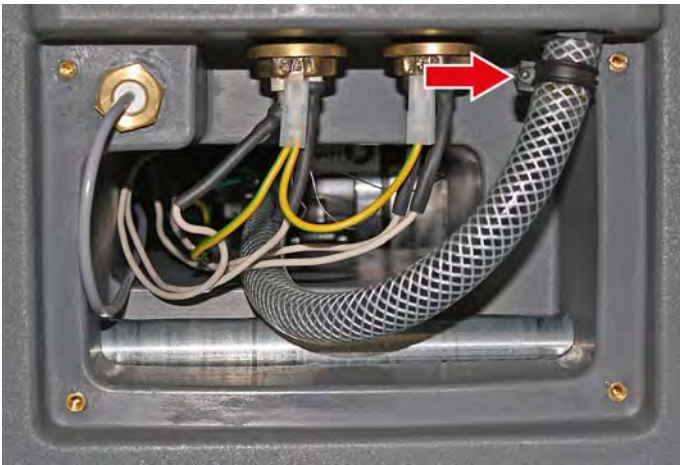
Uninstall / install hose from the fresh water tank to the water pump



- *Remove the cover of the service unit.*
- ➔ Sever the cable tie.
- ➔ Remove the hose from the pump.

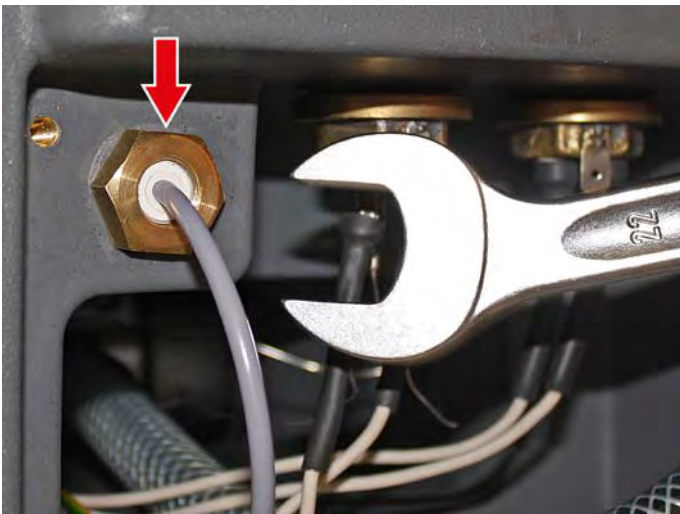


- ➔ Tilt the appliance back and rest it.
- ➔ Unscrew the screws.
- ➔ Remove the lid.



- ➔ Sever the cable tie.
- ➔ Remove the hose from the connection.
- ➔ Pull the hose out of the casing.

Uninstall / install float switch

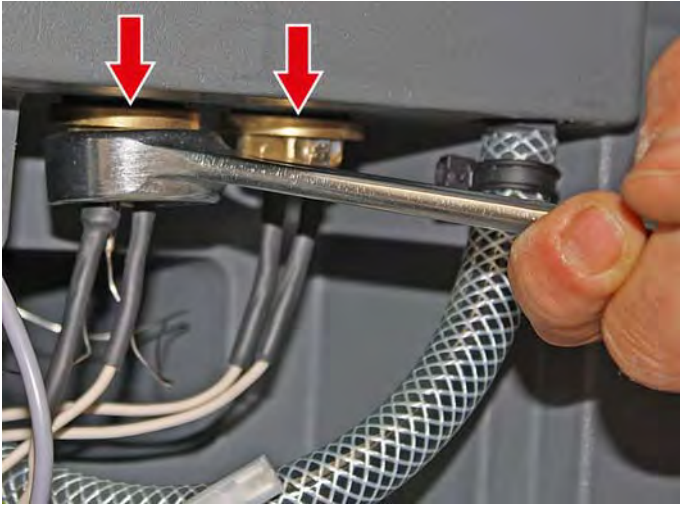


- *Tilt the appliance back and rest it.*
- *Remove the cover on the bottom.*
- ➔ Loosen the nut.
- ➔ Disconnect the connectors.

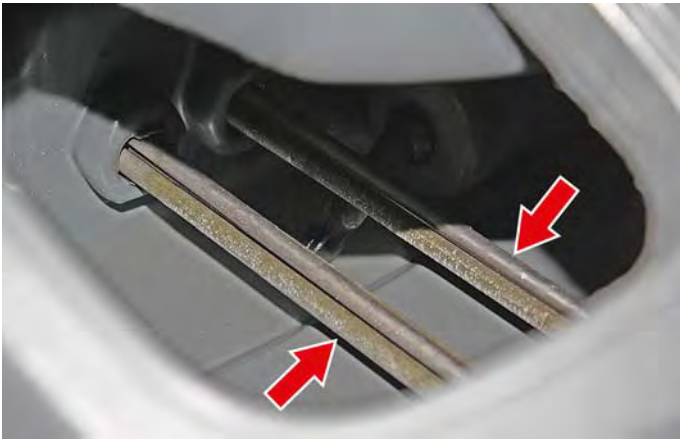


- ➔ Remove the float switch from the fresh water tank towards the top.

Uninstall / install heating rods



- Unscrew the screws.
- Remove the lid.
- Disconnect the cable of the heating rods on the appliance electronics.
- Tilt the appliance back and rest it.
- Loosen the mounting nuts.



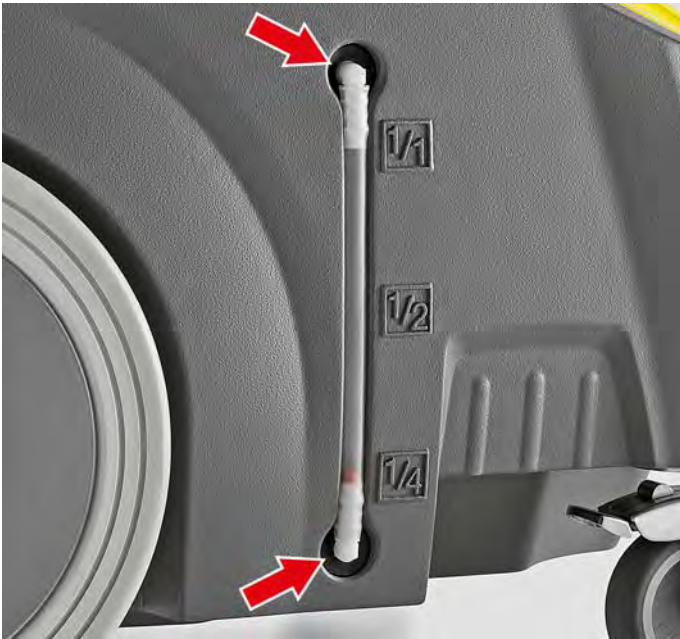
- Remove the heating rods from the fresh water tank.

Clean/ replace fresh water sieve



- Unscrew the fresh water sieve incl. the lid.
- Clean the fresh water sieve.

Uninstall / install water level indicator



- Empty the fresh water reservoir.

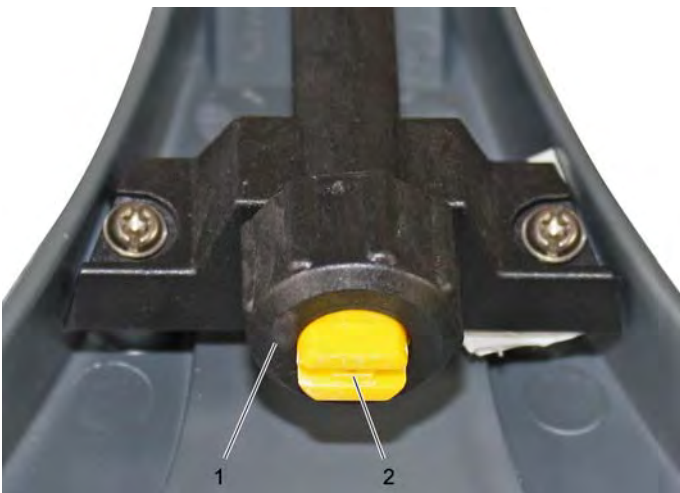
Note

The water level indicator is inserted in the casing with a rubber seal at the upper and lower end.

- ➔ Pull the water level indicator out of the casing.



Uninstall / install nozzle tip



- 1 Union joint
 - 2 Nozzle mouth piece
- ➔ Unscrew the covering nut.

050 Maintenance and inspection

- Clean the fresh water sieve.
- Clean nozzle mouthpiece.

060 Error diagnosis

Findings	Possible cause	Correction
Device is not sucking in detergent	Fresh water sieve soiled	Clean the fresh water sieve.
	Spray hose clogged	Check the spray hose.
Insufficient working pressure	Nozzle tip clogged	Clean or replace nozzle tip.
Spray stream one-sided		Clean nozzle mouthpiece.

070 Peculiarities/ others

The service group does not contain any peculiarities.

AH service group electrics

010 Safety information

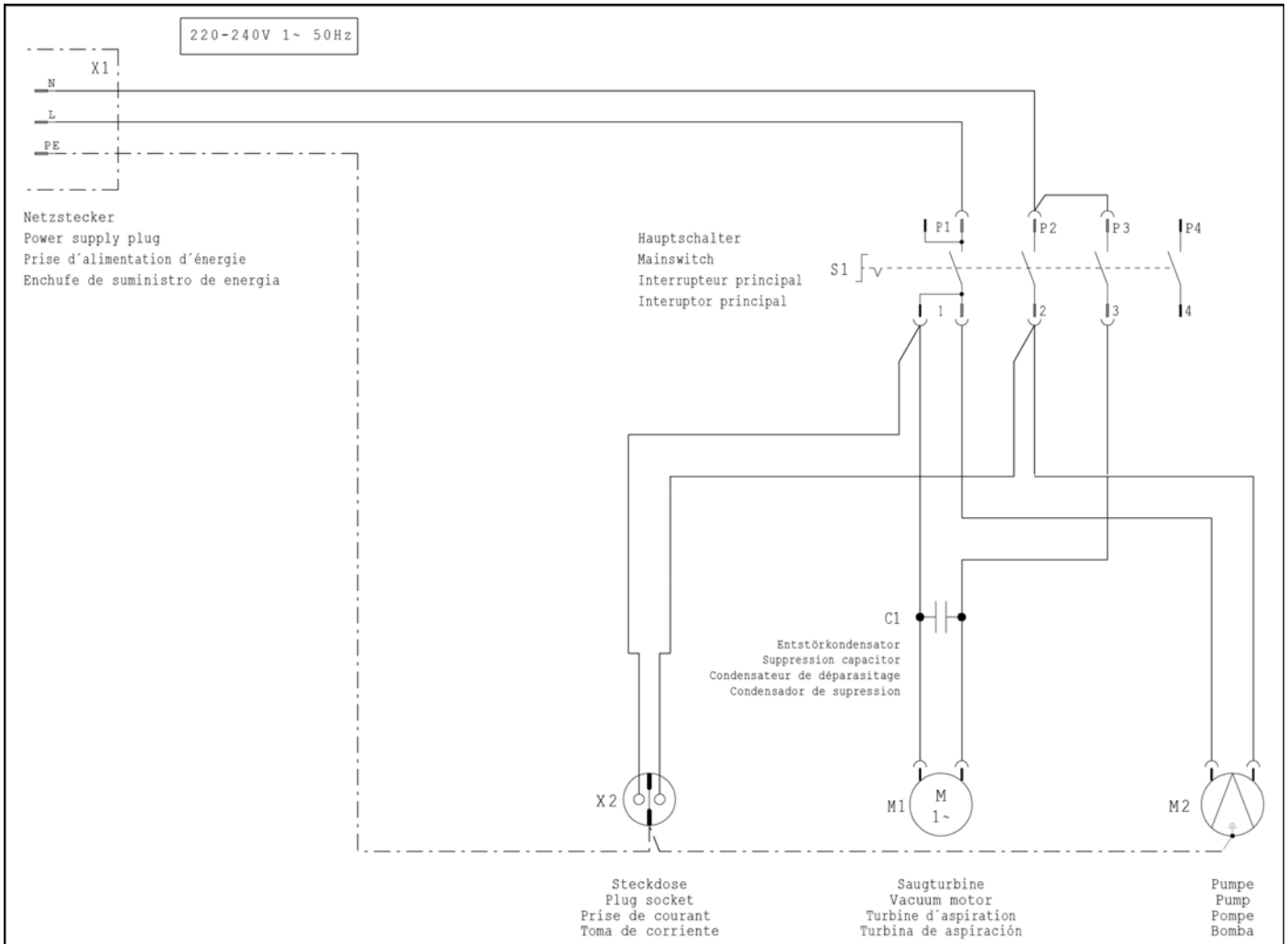
⚠ DANGER

First pull out the plug from the mains before carrying out any tasks on the machine.

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



The illustration serves as an overview over the electrical components of the Puzzi 30/4 C only! Always access the latest circuit diagram in DISIS for work on the appliance.

030 Function

The appliance electronics controls all appliance functions. The rotary switch is connected to the appliance electronics.

The rotary switch is the main switch at the same time.

040 Service activities

Uninstall / install socket



→ Unscrew the screws.



Note

Remember the order of the colours of the cables!

- Take out the socket.
- Loosen the screws of the cable fastening.
- Disconnect electrical connections.
- Reattach the seal upon installation.
- Tighten the screws equally until the socket sits close.

Uninstall / install rotary switch



→ Unscrew the screws.

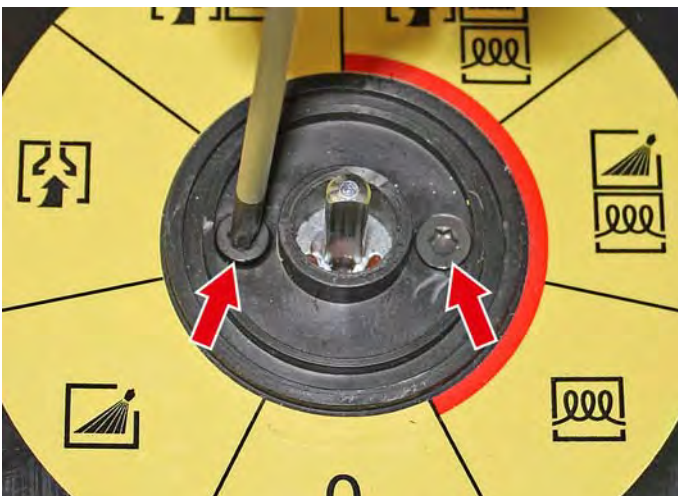
Note

The screws have different lengths!

The two lower screws are shorter than the upper screw.



→ Wedge the rotary knob free.



→ Unscrew the screws.

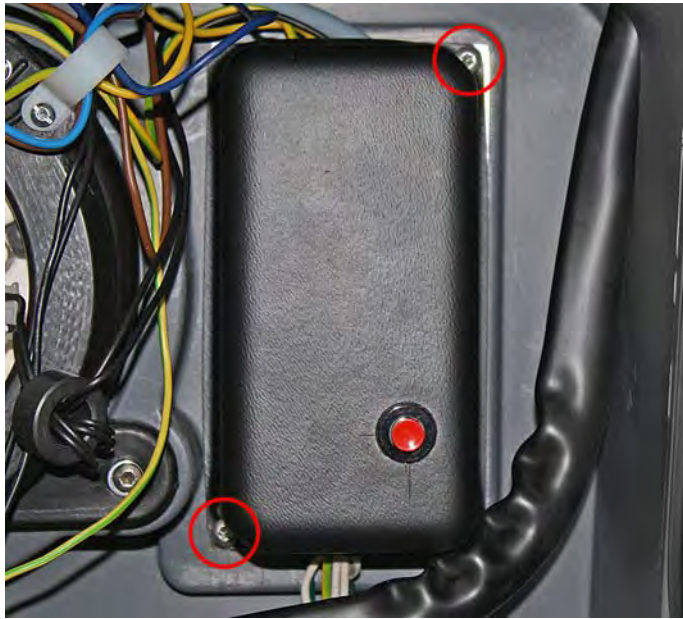


Note

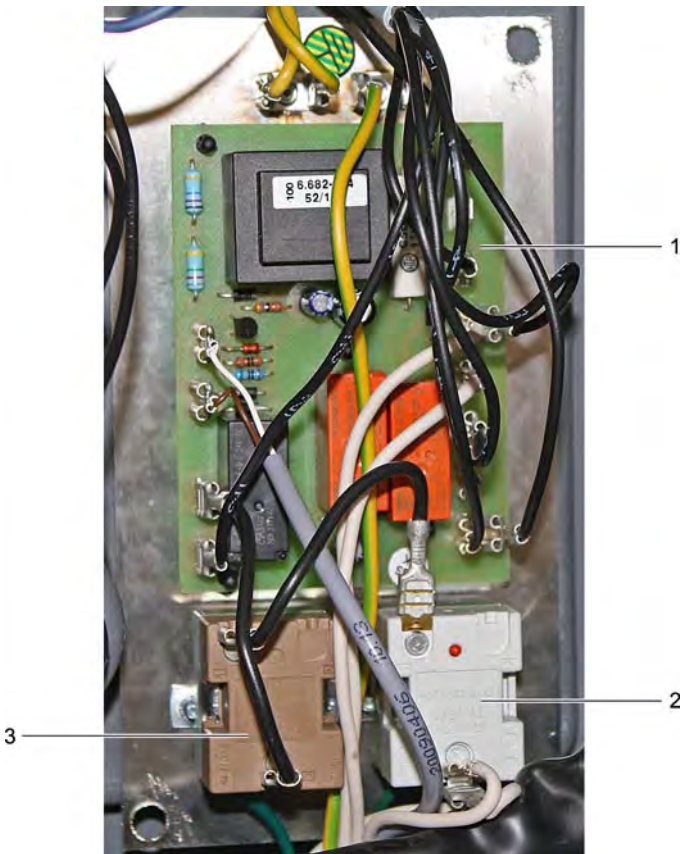
Remember the order of the colours of the cables!

→ Disconnect electrical connections.

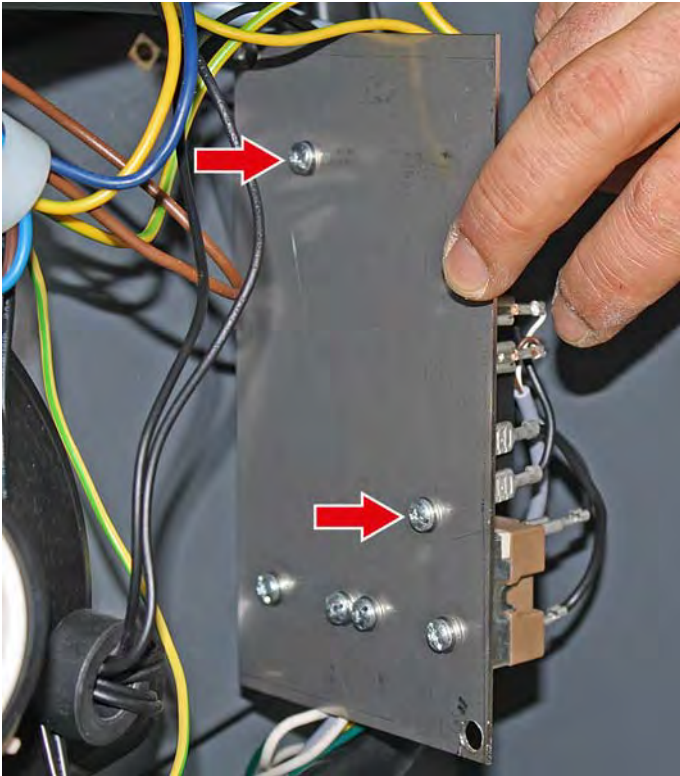
Uninstall/install appliance electronics



- Remove the service cover.
- Unscrew the screws.



- 1 Appliance electronics
- 2 Heat sensor with reset button
- 3 Sensor



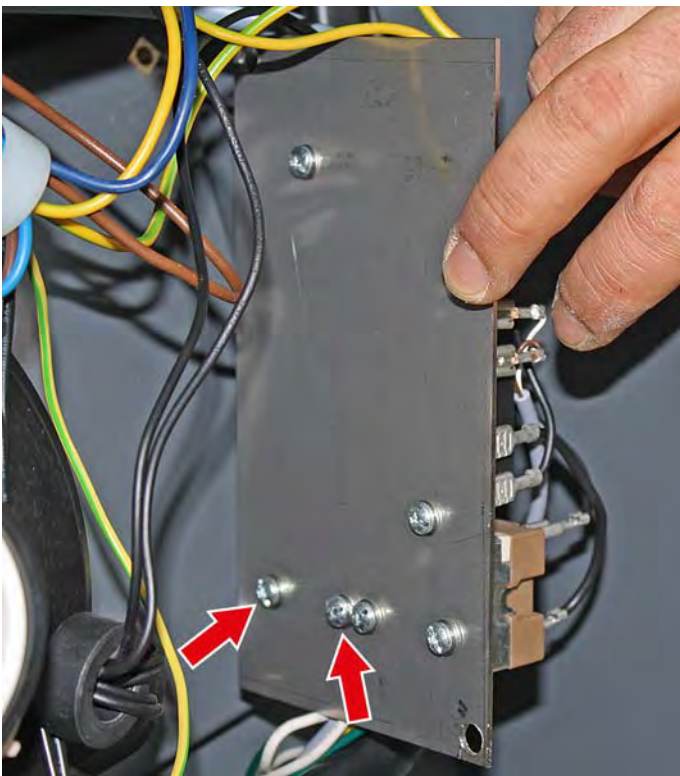
- ➔ Unscrew the screws.
- ➔ Carefully remove the appliance electronics from the appliance.

CAUTION

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

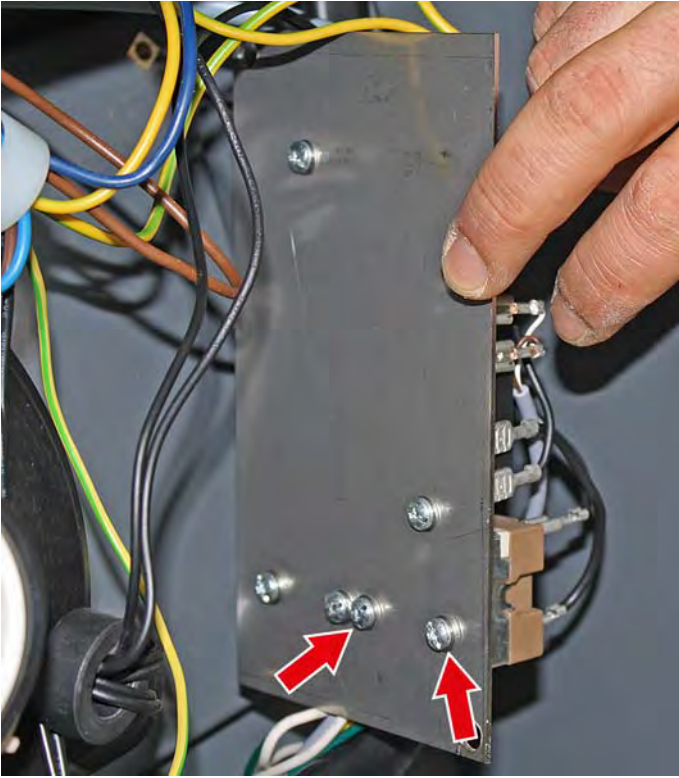
- ➔ Remove electrical connections from the board.

Uninstall / install heat sensor



- Remove the service cover.
- Remove the cover of the appliance electronics.
- ➔ Disconnect electrical connections.
- ➔ Unscrew the screws.
- ➔ Carefully remove the heat sensor from the base plate.

Uninstall / install sensor



- Remove the service cover.
- Remove the cover of the appliance electronics.
- Disconnect electrical connections.
- Unscrew the screws.
- Carefully remove the sensor from the base plate.

050 Maintenance and inspection

Service group does not contain any maintenance and inspection points.

060 Error diagnosis

Findings	Possible cause	Correction
Appliance is not working	Fuse responded.	Check the receptacle and the fuse of the power supply.
	Power cord or mains plug defective.	Check the power cable and the power plug of the device.
	The appliance is switched off.	Turn on the appliance.
	Appliance electronics defective	Check/ replace appliance electronics.

070 Peculiarities/ others

The service group does not contain any peculiarities.

Technical Documentation

Appliance type	Appliance no.	Circuit diagram	Operating instructions	Spare parts list
Puzzi 30/4 *EU	1.101-122.0	0.088-022.0	5.965-059.0	5.972-642.0

Technical specifications

		Puzzi 30/4
Mains voltage	V	220-240
Frequency	Hz	1~ 50
Type of protection	--	IPX4
Protective class	--	I
Power Input	W	1270
Power intake with socket	W	1520
Max. power intake	W	1670
Air volume (max.)	l/s	74
Negative pressure (max.)	kPa (mbar)	25,4 (254)
Spray pump performance	W	70
Spray pressure (max.)	MPa	0,6
Spray volume	l/min	3,0
Temperature of the cleaning solution (max.)	°C	50
Container capacity	l	30
Appliance socket performance (max)	W	250
Length x width x height	mm	580 x 460 x 930
Working width of the floor nozzle	mm	350
Typical operating weight	kg	26
Ambient temperature	°C	0...+40
Values determined to EN 60335-2-68		
Sound pressure level L_{pA}	dB(A)	66
Uncertainty K_{pA}	dB(A)	2
Hand-arm vibration value	m/s ²	<2,5
Uncertainty K	m/s ²	0,2

Special tools

There are no special tools necessary.

Circuit diagram

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