NT 40/1 Tact
NT 40/1 Tact Te
Service Manual

1 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:	***Fall 110977***

The responsible product specialist will take care of your issue.
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2 Safety instructions

2.1 Hazard levels

⚠ Danger
Immediate danger that can cause severe injury or even death.
⚠ Warning
Possible hazardous situation that could lead to severe injury or even death.
Caution
Possible hazardous situation that could lead to mild injury to persons or damage to property.
Note
indicates useful tips and important information.

3 Technical Features

3.1 General

- Wet/dry vacuum cleaner to clean floors and walls for commercial use at construction sites, industrial sites and workshops.
- Container capacity: 40 Liter
- Push handle

3.2 Filter and vacuum system

- Closeable paper filter bag for dust-free disposal.
- Suction hose connection (DN 35) with bayonet system.
- Tact filter cleaning technology (Triggered Air Draft Cleaning Technology). Switchable fully automatic filter cleaning.
- Electronic fill level monitoring (in wet vacuum mode) switches the turbine off automatically when the max. liquid fill level is reached.

3.3 Electrical system

- Engine: 1380 Watts
- 7.5 m mains cable.
- Bypass suction turbine.

Te model only:
- Socket on microswitch on the socket flap and standby function for the connection of a electric tool.
- ON/OFF switch-off electronics: The suction turbine will switch on with an initial delay of 0.5 seconds when using an electric tool and will switch off after a trailing time of 12 to 15 seconds.
- ON/standard accessories - switch-off electronics with control lamp (LED) for standby operation.
- Stepless speed regulation.
- Anti-static system for the conductance of static charges.

4 Appliance view

4.1 Front view

1 Push handle
2 Cable / hose hooks (2x)
3 Storage area
4 Filter cover
5 Air outlet
6 Air input
7 Lock, suction head
8 Dirt receptacle
9 Impeller (2x)
10 Steering roller
11 Guiding roll with fixed position brake
12 Suction hose connection with bayonet system.
13 Suction head
14 ON/OFF switch, Tact filter cleaning system
15 Power switch
16 Supply air for Tact filter cleaning
17 Carrying handle
18 Control lamp, socket (Te model)
19 Speed regulator, stepless (Te model)
20 Socket (Te model)

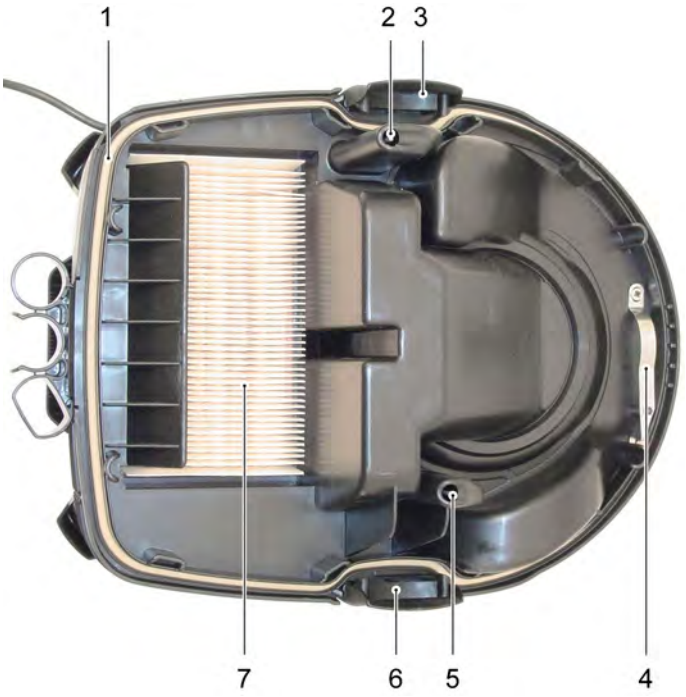
Speed regulator (Te model)
The suction performance for the use of different electric tools can be adjusted via the stepless speed regulator (60 -100 %).

Socket (Te model)
Electric tools with a power consumption of 100-2100 W can be connected to the socket. As soon as an electric tool is connected, the vacuum cleaner goes into standby mode and the control lamp lights up. The vacuum cleaner is turned on and off via the electric power tool.
When the electric tool is switched on, the startup of the vacuum cleaner is delayed by about 0.5 seconds. Once the electric tool has been switched off, the vacuum cleaner will run for approx. another 15 seconds. This ensures a complete emptying of the suction hose.

4.2 Rear view

1 Push handle
2 Suction pipe
3 Suction pipe, extension
4 Suction hose
5 Cable / hose hooks (2x)
6 Power cord
7 Nameplate
8 Star handle screw (2x), pushing handle attachment
9 Floor nozzle
10 Floor nozzle holder
11 Air outlet, working air
12 Accessory compartment
13 Crevice nozzle

4.3 Suction head (view from below)



1 Rubber foam string
2 Left electrode
3 Container lock latch, left
4 Grounding contact
5 Right electrode
6 Container lock latch, right
7 Flat fold filter

➔ Replace the moss rubber string, grounding contact if necessary.

4.3.1 Electrode overflow protection

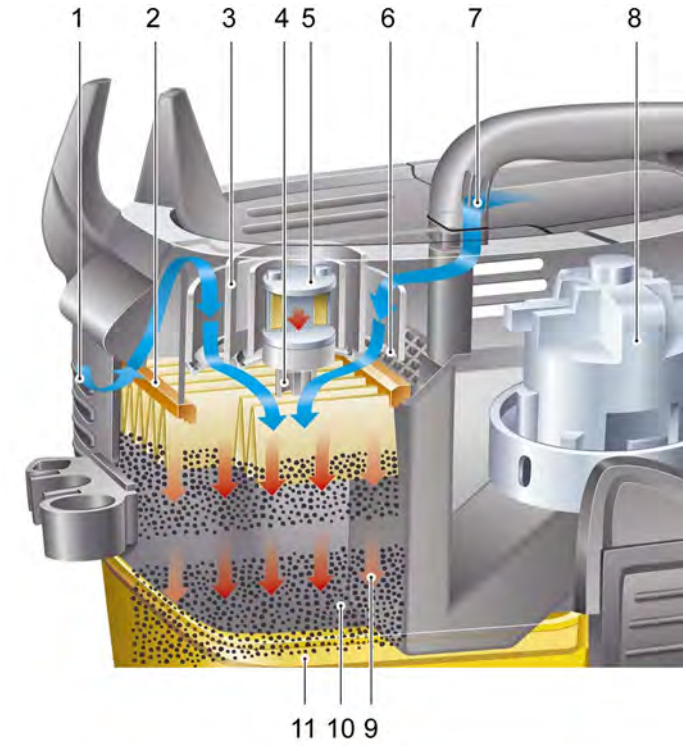
Note

The appliance will switch off immediately if the container is filled with enough fluid so that it touches both electrodes. This is not the case, if non-conductive fluids such as oils, greases and drilling emulsions are vacuumed up.
The filling level must be continuously monitored and the container must be emptied in time.
As an option, an upgrade kit "non-conductive media", part number 2.641-560.0, is offered. The switching off is done via a floater switch.

4.4 Anti-static (Te model)

During vacuuming, there can be electrostatic charges on the appliance in some circumstances. A ground contact (arrow) is installed on the suction air guidance to deviate these charges.
In order to prevent charging of the vacuuming accessories, an electrical conductive suction hose can be connected (option).

4.5 Filter dedusting



1 Air input
2 Flat fold filter
3 Magnet-holder
4 Spring
5 Electric solenoid
6 Valve disks
7 Air input on the handle
8 Suction turbine
9 Air stream

10 Fine dust
11 Dirt receptacle

When vacuuming larger volumes of fine dust, the flat fold filter plugs up fast. When the Tact filter cleaning system is turned on, the electro-magnet opens the diaphragm every 15 seconds, so that an air flow can clean off the flat fold filter via sudden pressure reversal.

It is recommended to switch off the Tact filter cleaning system while vacuuming coarse dirt and liquids.

Note

The Tact filter cleaning system can only be switched on/off when the vacuum is switched on.

4.6 Suction head, filter cover opened

1 Flat fold filter
2 Air input, left
3 Filter cover
4 Handle on the filter cover
5 Casing, Tact filter cleaning system
6 Air input, right

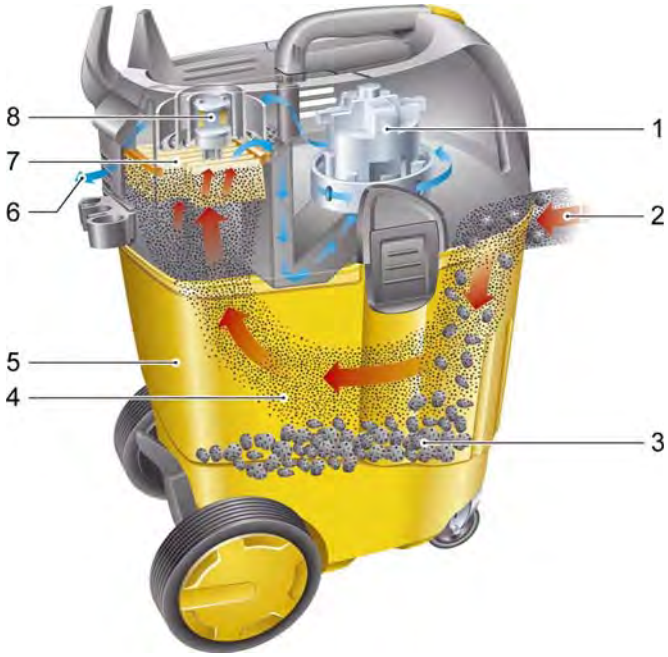
Note

For wet and dry vacuuming, the flat fold filter must always be installed.

After the wet vacuuming has ended, the flat fold filter must be dried.

To vacuum fine dust, you must use an additional paper filter bag or a membrane filter (special accessory). These must always be removed prior to wet vacuuming.

4.7 Suction system



1 Suction turbine
2 Air input
3 Coarse dirt
4 Fine dust
5 Dirt receptacle
6 Air outlet
7 Flat fold filter
8 Tact filter cleaning system

The air flows from the air input through the waste container and flat fold filter via the suction turbine to the exterior.

5 Basic settings and service procedures

⚠ Danger

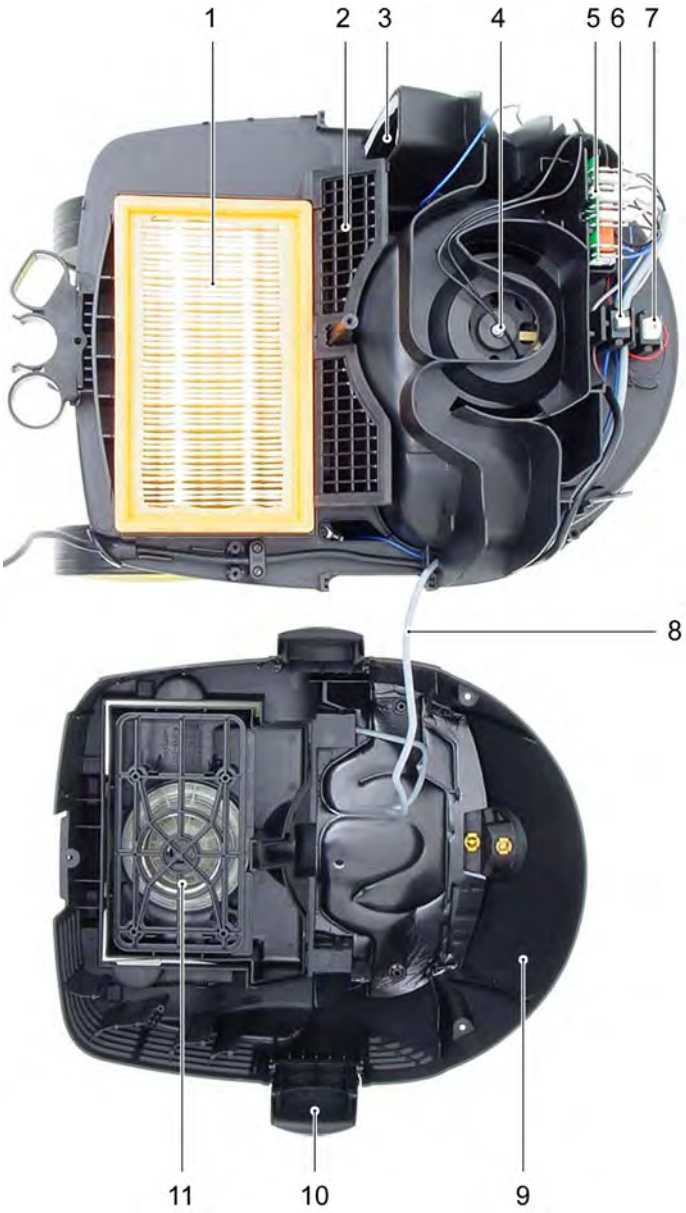
First pull out the plug from the mains before carrying out any tasks on the machine.

5.1 Disconnect the electro-magnet and the connecting cable for the electric solenoid.

1 hood
2 Fastening screws, hood
➔ Unscrew locking screws.

1 Tact casing top
2 Fastening screws, cover
➔ Unscrew locking screws.
➔ Remove the top part of the Tact casing.

1 Tact filter cleaning system
2 Connecting cable, electro-magnet
3 Fastening screws
➔ Disconnect connecting cable for electric solenoid.
➔ The electro-magnet can be removed from the Tact filter cleaning system toward the top and replaced.



1 Flat fold filter
2 Air input
3 Air outlet
4 Suction turbine
5 Control chip
6 Power switch
7 ON/OFF switch, Tact filter cleaning system
8 Connecting cable for electric solenoid
9 Casing top, suction head
10 Container lock latch (2x)
11 Tact filter cleaning system

➔ Disconnect the connecting cable for the electric solenoid from the circuit board.

➔ Pull out the connecting cable.

➔ Replace the connecting cable.

Note

In order to avoid excessive pull on the connecting cable, the installation of the connecting cable must take place with the filter lid open.

1 Connecting cable for electric solenoid

➔ Insert a new connecting cable and connect it to the circuit board and the electric solenoid. Route the cables as shown in drawing (dotted line box).

Note

During placement of the hood make sure that no cables are crushed.

➔ Install the hood in the reverse order.

5.2 Replace the Tact filter cleaning system

➔ Remove the top part of the Tact casing.

1 Tact filter cleaning system
2 Connecting cable, electro-magnet
3 Fastening screws

➔ Remove the fastening screws from the Tact filter cleaning system.

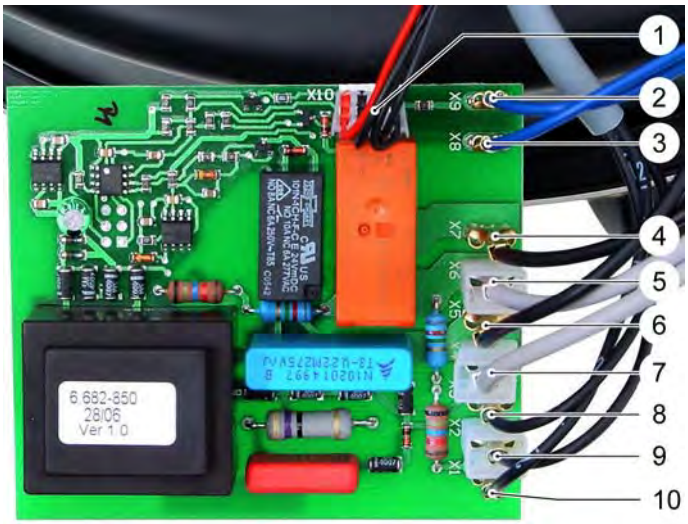
➔ Pull the electro-magnet out of the Tact filter cleaning system toward the top.

1 Connecting cable, electro-magnet
2 Electric solenoid
3 Fastening screws
4 Magnet-holder
5 Seal ring
6 Valve disks
7 Spring, large
8 Spring, small

5.3 Replace the circuit board

5.3.1 NT 40/1 Tact

➔ Remove the hood.



1	X10	Switch for filter shake off system
2	X9	Electrodes, overflow protection
3	X8	Electrodes, overflow protection
4	X7	Suction turbine
5	X6	Power switch
6	X5	Suction turbine
7	X4	Power switch
8	X3	Electric solenoid
9	X2	Electric solenoid
10	X1	Electric solenoid

➔ Pull the circuit board out toward the top.

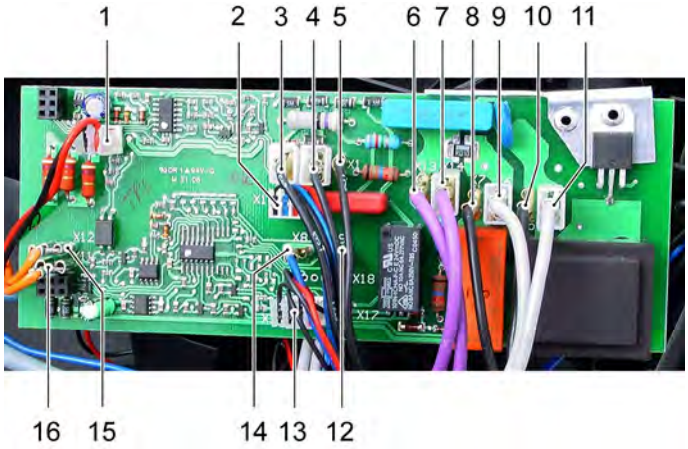
➔ Disconnect all connecting cables from the circuit board.

➔ Replace the circuit board.

➔ Connect the new circuit board as per the circuit diagram.

5.3.2 NT 40/1 Tact Te

➔ Remove the hood.



1	X15	Microswitch, socket
2	X10	Switch for filter shake off system
3	X3	Electric solenoid
4	X2	Electric solenoid
5	X1	Electric solenoid
6	X13	Socket
7	X14	Socket
8	X7	Suction turbine
9	X6	Power switch
10	X5	Suction turbine
11	X4	Power switch
12	X9	Electrodes, overflow protection
13	X8	Electrodes, overflow protection
14	X16	Speed regulation
15	X12	Indicator lamp, socket
16	X11	Indicator lamp, socket

➔ Pull the circuit board out toward the top.

➔ Disconnect all connecting cables from the circuit board.

➔ Replace the circuit board.

➔ Connect the new circuit board as per the circuit diagram.

5.4 Voltage measurements on the PCB

5.4.1 NT 40/1 Tact

The indication "position" refers to the position indications in the table "Replacing the PCB/NT 40/1 Tact".

Measurement on the contact	Position	**What is measured?**	**Nominal measuring value**
X4 + X6	7 + 5	Mains voltage from the appliance switch	230 Vac*
X5 + X7	6 + 4	Suction turbine	230 Vac +/- 10%*
X2 + X3	9 + 8	Electric solenoid	210 Vdc +/- 5%*
X10 PIN 1-2	1	Switch for filter shake off system	4,1 Vdc +/- 10%
X10 PIN 3-4	1	LED filter cleaning	4.5 Vdc +/- 10%
X8 + X9	3 + 2	Electrode overflow protection Switch-off at R ≤ 47kOhm	4.8 Vdc +/- 10%

5.4.2 NT 40/1 Tact Te

The indication "position" refers to the position indications in the table "Replacing the PCB/NT 40/1 Tact Te".

Measurement on the contact	Position	**What is measured?**	**Nominal measuring value**
X4 + X6	11 + 9	Mains voltage from the appliance switch	230 Vac*
X5 + X7	10 + 8	Suction turbine With electric consumers on terminals, e.g. suction turbine, bulb etc.	230 Vac +/- 10%*
		Without electric consumers on terminals	55 Vac +/- 10%*
X13 + X14	6 + 7	Socket	230 Vac +/- 10%*
X2 + X3	4 + 3	Electric solenoid	210 Vac +/- 5%*
X10 PIN 1-2	2	Switch for filter shake off system	5 Vdc +/- 10%
X10 PIN 3-4	2	LED filter cleaning	5 Vdc +/- 10%
X8 + X9	13 + 12	Electrode overflow protection Switch-off at R ≤ 47kOhm	4.8 Vdc +/- 10%
X11 + X12	16 + 15	Indicator lamp when microswitch on X15 is activated - socket flap open	5 Vdc +/- 10%
		Indicator lamp when microswitch on X15 is not activated - socket flap closed	0 Vdc
X15	1	Microswitch socket	5 Vdc +/- 10%*
X16 PIN 1-3	14	Speed regulation	5 Vdc +/- 10%*

⚠ ***Danger***

**Hazardous voltage or low voltage is on mains potential with galvanised separation. Work must only be performed by a certified electrician!*

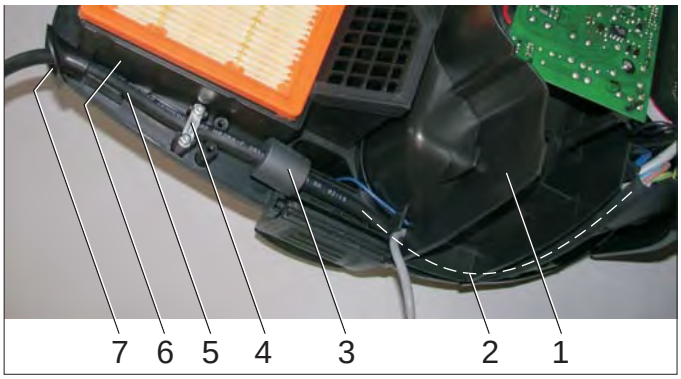
5.5 Replacing the mains cable

5.5.1 NT 40/1 Tact

➔ Remove the hood.

1 Mains cable
2 Connecting cable to Tact electro-magnet
3 ON/OFF switch, Tact filter cleaning system
4 Power switch
5 Control chip

➔ Disconnect the phase and the neutral connector on the device switch.

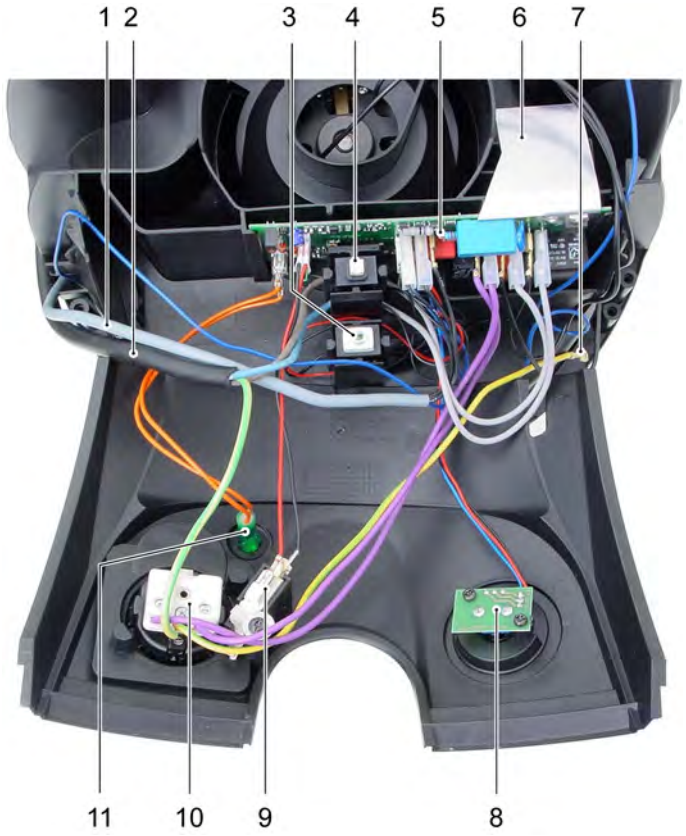


1 Turbine casing
2 Cable guide
3 Ferrit ring (anti-interference ring)
4 Mains cable traction relief
5 Mains cable
6 Filter casing
7 Mains cable grommet

➔ Remove the mains cable traction relief.
➔ Remove the mains cable from the cable guide.
➔ Remove the ferrit ring (anti-interference ring).
➔ Thread the mains cable through the grommet.
➔ Install the new mains cable in reverse sequence.

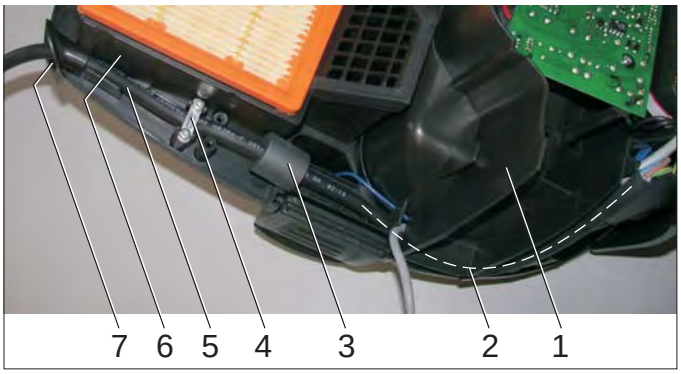
5.5.2 NT 40/1 Tact Te

➔ Remove the hood.
➔ Open the instrument panel.



1 Connecting cable to Tact electro-magnet
2 Mains cable
3 ON/OFF switch, Tact filter cleaning system
4 Power switch
5 Control chip
6 Cooling sheet
7 Grounding, waste container
8 Rotary regulator, speed regulator, stepless
9 Micro switch
10 Socket
11 Indicator lamp, socket

➔ Remove the ground cable (protective conductor) from the socket.
➔ Disconnect the phase and the neutral connector on the device switch.



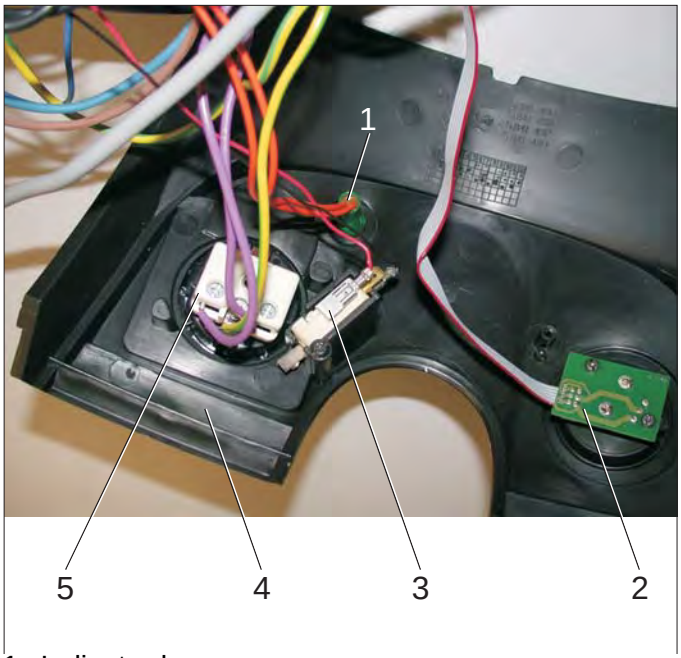
1 Turbine casing
2 Cable guide
3 Ferrit ring (anti-interference ring)

4 Mains cable traction relief
5 Power cord
6 Filter casing
7 Mains cable grommet
➔ Remove the mains cable traction relief.
➔ Remove the mains cable from the cable guide.
➔ Remove the ferrit ring (anti-interference ring).
➔ Thread the mains cable through the grommet.
➔ Install the new mains cable in reverse sequence.

5.6 Replace the main switch and the switch for the filter shake off system

➔ Remove the hood.
➔ Remove the main switch or the switch for the filter shake off system and disconnect it.
➔ Replace the main switch or the switch for the filter shake off system.
➔ Connect the new main switch or the new switch for the filter shake off system as per the circuit diagram.

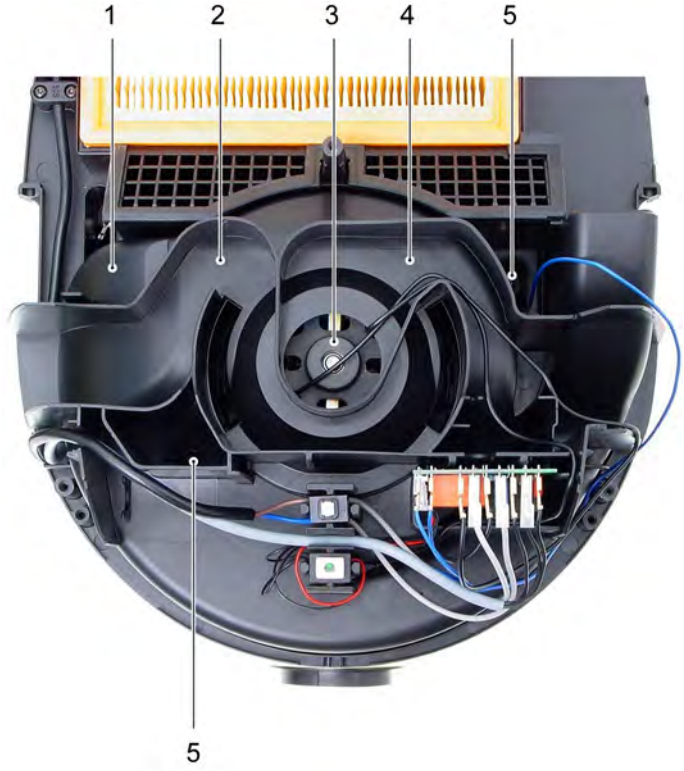
5.7 Replace the control lamp, the socket, the micro switch and the control dial.



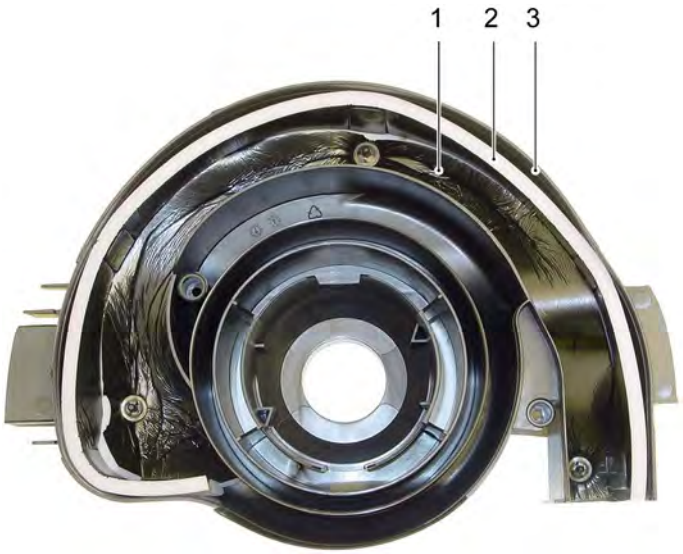
1 Indicator lamp
2 Rotary regulator, speed regulator, stepless
3 Micro switch
4 Instrument panel
5 Socket
➔ Replace the control lamp, the socket, the micro switch and the control dial if necessary

5.8 Replacing the suction turbine

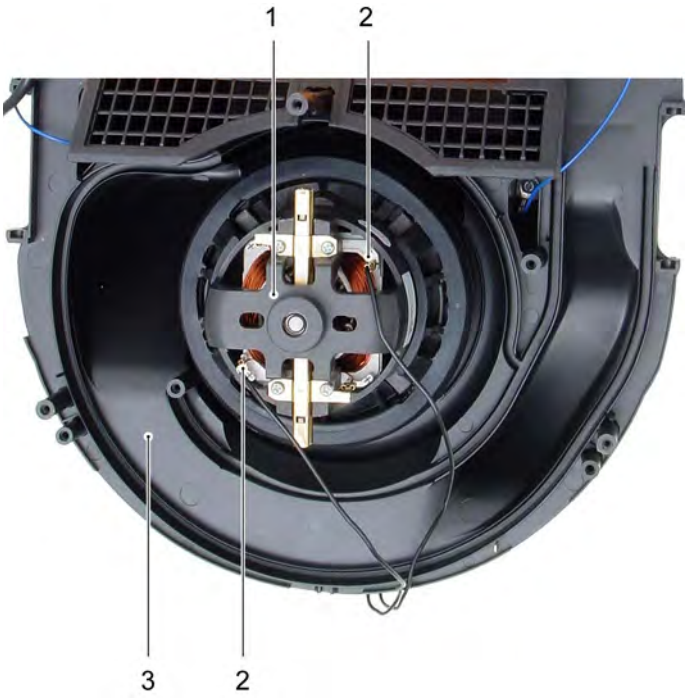
➔ Remove the hood.



1 Turbine casing
2 Air channel, engine cooling air - exhaust air
3 Suction turbine
4 Air channel, engine cooling air - suctioned air
5 Fastening screws for turbine housing
➔ Unscrew the fastening screws for the turbine casing.
➔ Remove the turbine casing.



1 Air channel
2 Sound proofing
3 Turbine casing



1 Suction turbine
2 Connecting cable, suction turbine
3 Air channel

➔ Pull the connection plug of the turbine from the PCB.

Note

Prior to removing the suction turbine, please observe the alignment of the suction turbine and the seating of the sealing rubber. This information is important for the installatin of the new suction turbine.

➔ Remove the suction turbine.

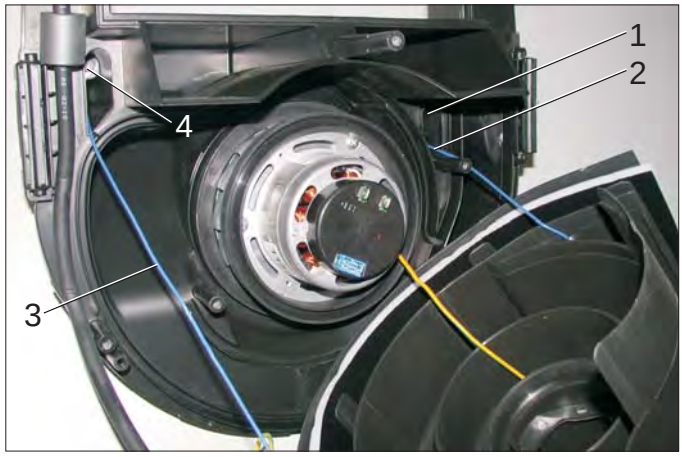
1 Carbon brushes
2 Cable connection, suction turbine

➔ Install the new suction turbine in reverse order.

5.9 Replace the electrodes of the overflow protection

➔ Remove the hood.

➔ Remove the turbine casing.



1 Left electrode
2 Electrode cable, left
3 Electrode cable, right
4 Right electrode

➔ Disconnect the connecting cables from the circuit board and the electrodes.

➔ Replace damaged connecting cables.

➔ Replace the electrodes.

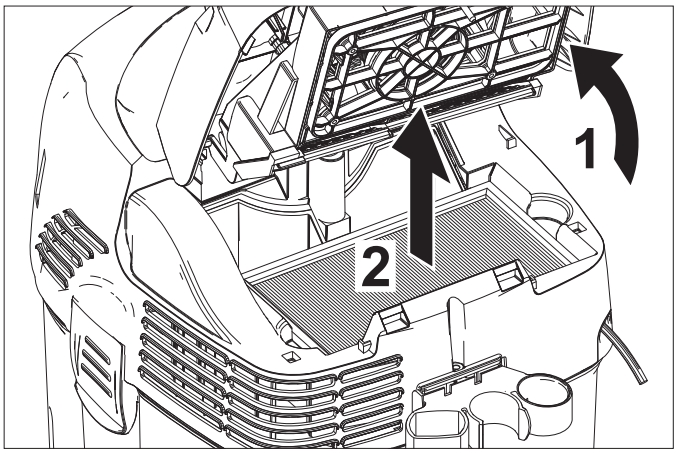
➔ Install new connecting cables in reverse sequence.

6 Maintenance and care

⚠ Danger

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

6.1 Exchanging the flat pleated filter



➔ Open filter door.
➔ Replace the flat pleated filter.
➔ Close the filter door, it must lock into place.

6.2 Clean the electrodes overflow fuse.

➔ Release and remove the suction head.
➔ Clean the electrodes.
➔ Insert and lock the suction head.

7 Troubleshooting

⚠ Danger

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

7.1 Suction turbine does not run

➔ Turn on the appliance.
➔ Container (in wet vacuuming mode) is full. Empty the container.
➔ Check cables, plugs and mains supply.
➔ Check/replace the appliance switch.
➔ Check/clean the electrode overflow fuse.
➔ Check / replace the socket.
➔ Check / replace microswitch on the socket.
➔ Check/replace the suction turbine.
➔ Check/replace the PCB.

7.2 The suction turbine will not switch off during wet vacuum cycles when the container is full.

➔ Check/clean the electrode overflow fuse.
➔ Check the fluid level with non-conductive fluid. Upgrade kit for "non-conductive media" (2.641-560.0).
➔ Check/replace the PCB.

7.3 Suction turbine turns off

➔ Empty the container.

7.4 Suction turbine does not start again after the container has been emptied

➔ Turn off the appliance and wait for 5 seconds, turn it on again after 5 seconds.
➔ Clean the electrodes as well as the space between the electrodes.

7.5 Suction capacity decreases

➔ Remove blockages in the suction nozzle, suction tube, suction hose, or flat pleated filter.
➔ Switch the Tact filter cleaning system on/off or replace it.
➔ Exchange the paper filter bag.
➔ Ensure the filter cover properly locks into place.
➔ Check suction system to see if there are any leaks/repair leaks.
➔ Clean or replace the membrane filter (special accessory).
➔ Replace the flat pleated filter.

7.6 Dust comes out while vacuuming

➔ Check for proper installation of the flat pleated filter.
➔ Replace the flat pleated filter.

7.7 Automatic shut-off (wet vacuum cleaning) does not react

➔ Clean the electrodes as well as the space between the electrodes.
➔ Continuously check the filling level in case of non-conductive liquid.

7.8 Automatic filter cleaning is not working

➔ Filter cover not properly closed / close properly. The filter cover must audibly lock into place.
➔ Check suction system to see if there are any leaks/repair leaks.
➔ Check/correct the correct positioning of the flat fold filter filter.
➔ Check for leaks between the suction head and the waste container/repair leaks.
➔ Suction hose is not connected.
➔ Speed regulator incorrectly adjusted while using a suction hose diameter of more than DN 35/setting of suction performance to max. (Te model only).

7.9 Automatic filter cleaning cannot be switched off

➔ Check/replace the Tact filter cleaning system ON/OFF switch.
➔ Check/replace the PCB.

7.10 Automatic filter cleaning cannot be switched on

➔ Check/replace the Tact filter cleaning system ON/OFF switch.
➔ Check/replace the PCB.

7.11 Electric tool is not working (Te model only)

➔ The electric tool does not have the recommended performance data (at least 100 W, max. 2,200 W). Test the electrical tool.
➔ Check the function of the electric tool / replace if necessary.
➔ Check / replace microswitch on the socket.
➔ Check/replace the PCB.

8 Technical specifications

Appliance type	Appliance no.:	Circuit diagram	Operating instructions	Spare parts list
NT 40/1 Tact *EU, 220-240 V, 1~ 50/60 Hz	1.184-823.0	0.089-841.0	5.963-384.0	5.971-073.0
NT 40/1 Tact Te *EU, 220-240 V, 1~ 50/60 Hz	1.184-824.0	0.089-841.0	5.963-384.0	5.971-075.0

The status of the attached circuit diagram represents the creation date of the service manual. This circuit diagram is not updated. When working on the device, please always use the current circuit diagram in Kärcher-Inside.

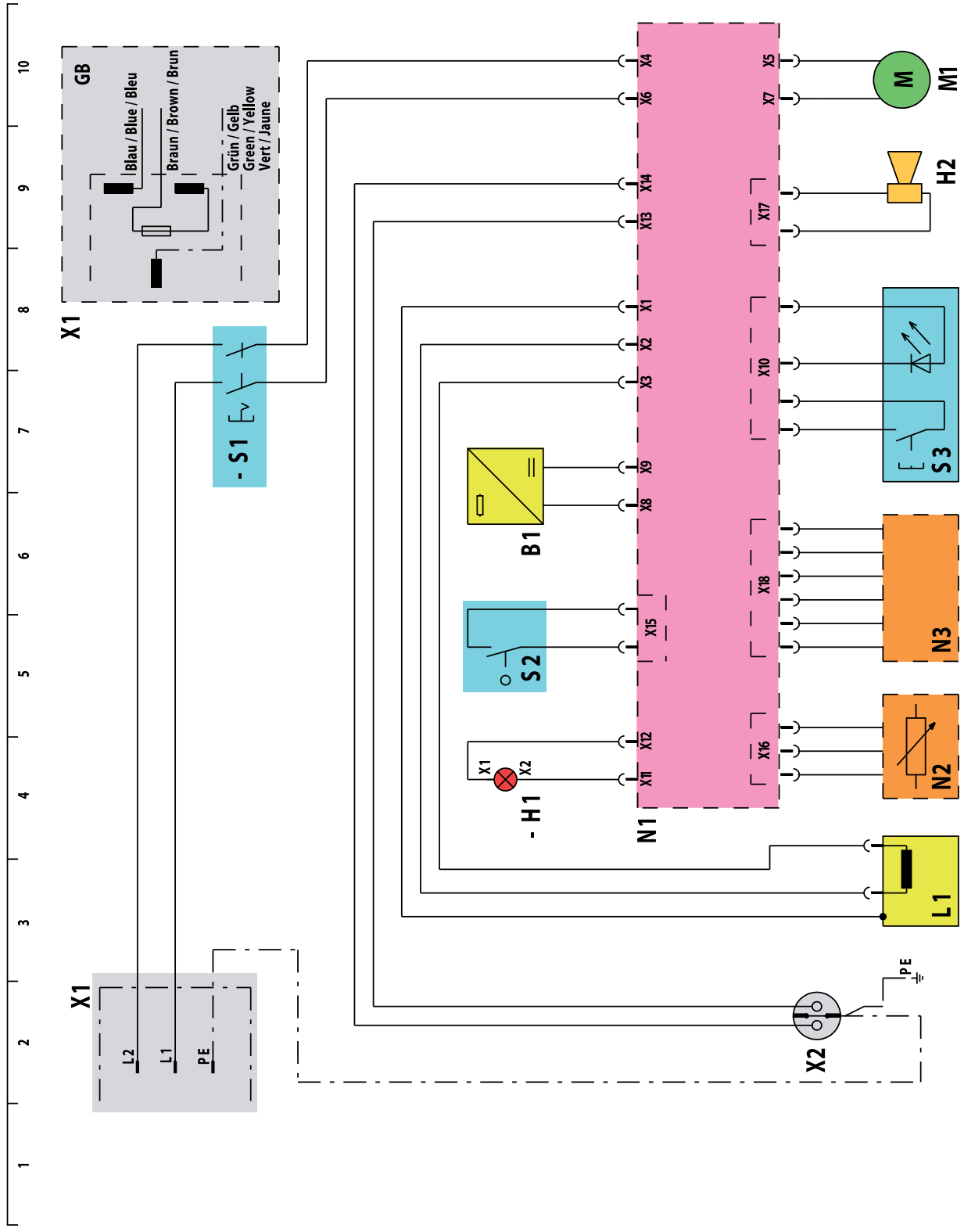
8.1 Special tools

There are no special tools necessary.

8.2 Tightening torques

No data.

9 Circuit diagram



B1 Electrodes, overflow protection

H1 Control lamp, socket (Te model)

H2 Horn (M and H models only)

L1 Electric solenoid

M1 Suction turbine

N1 Control chip

N2 Speed regulator, stepless (Te model)

N3 Selector switch suction hose (M and H models only)

S1 Power switch

S2 Microswitch, standby operation (Te model)

S3 ON/OFF switch, Tact filter cleaning system

X1 Mains plug

X2 Socket (Te model)