

Repair Instructions Laundry - Repair Instruction;T22 - Table of content

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Concerning this document

1.1 Purpose and target group

These repair instructions include information on troubleshooting and repairs.

This information supports the following employees in customer service:

- Service technicians who repair domestic appliances
- Technical storemen in the spare-parts warehouse who determine the required spare parts
- Call centre employees who take orders

1.2 Other applicable documents

The following documents include additional relevant repair information:

- Documents "Design and function" and "Customer advice"
- Test programmes
- Circuit diagrams
- Exploded drawings
- Parts lists
- Repair videos

Safety

2.1 Qualification

In Germany repair work may be performed only by electrical engineers who have been trained by BSH or a centre authorised by BSH.

In all other countries repair work may be performed by comparably trained technicians only.

2.2 Information in warnings

2.2.1 Danger levels and warning symbols

Warnings are provided in this document with danger levels and warning symbols.

The danger levels consist of a symbol and a warning word. The warning word identifies the severity of the danger.



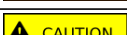





Danger level	Meaning
 DANGER	Failure to observe the warning will result in death or serious injuries.
 WARNING	Failure to observe the warning may result in death or serious injuries.
 CAUTION	Failure to observe the warning may result in minor injuries.
 NOTICE	Failure to observe the warning may result in damage.

Table 1: Danger levels

Warning symbols are symbolic illustrations which indicate the type of danger.

Symbol	Meaning
	General warning
	Danger of electric shock
	Risk of explosion
	Risk of cut injuries

Safety






Symbol	Meaning
	Risk of crush injuries
	Danger - hot surfaces
	Danger - strong magnetic
	Danger - non-ionising radiation


Table 2: Warning symbols

2.2.2 Structure


Warnings in this document have a uniform appearance and structure.

	<p>CAUTION</p> <p>Type and source of danger!</p> <p>Consequences of ignoring the warning.</p> <p>► Actions to protect from danger.</p>
--	--

The following example shows a warning which warns of an electric shock:

	<p>DANGER</p> <p>High voltage!</p> <p>Death by electric shock.</p> <p>► Disconnect appliance from grid.</p> <p>► Discharge high-voltage capacitor.</p>
--	--

2.3 Basic safety instructions

	These repair instructions form the basis for a systematic and safety-conscious procedure for the repair of domestic appliances.
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2.3.1 Measures to be taken for each repair

The following dangers are associated with the repair of domestic appliances:

- Danger of electric shock from exposed, live wires and components
- Risk of cut injuries from sharp edges
- Risk of destruction of electronic components by electrostatic discharge

Specific measures prevent injuries and damage. Service technicians are obliged to take these measures for each repair.

Preventive	measures
... against electric shock	<p>When carrying out repairs:</p> <ul style="list-style-type: none"> • Disconnect appliance from power supply. <p>When running tests with power supply on:</p> <ul style="list-style-type: none"> • Use a residual-current-operated circuit-breaker. • Select protective conductor connection less than standard value.
... to prevent cut injuries	<ul style="list-style-type: none"> • wear protective gloves.
... electronic components	<ul style="list-style-type: none"> • wear earthing wrist strap. • Discharge capacitors.

Table 3: Measures to be taken for each repair




Safety

2.3.2 Measures to be taken after each repair


State of the appliance	Measures
Appliance has been repaired and is functionally reliable.	<ul style="list-style-type: none"> • Run tests in accordance with VDE 0701 or comparable national regulations. • Conduct a performance test. • Document repair work, tests, measured values and functional reliability.
Appliance is still defective and not functionally reliable.	<ul style="list-style-type: none"> • Clearly identify appliance as "not functionally reliable". • Inform customer in writing about the lack of functional safety.

Table 4: Measures to be taken after each repair

2.4 Basic warning instructions

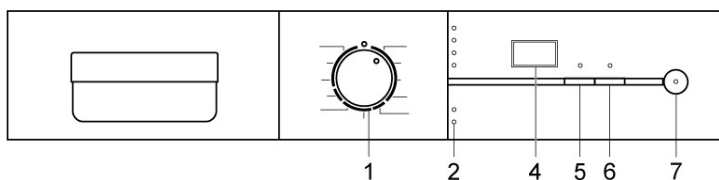
	<p>⚠ DANGER</p> <p>Exposed, live components!</p> <p>Death from electric shock.</p> <ul style="list-style-type: none"> ▶ Disconnect the appliance from the power supply. ▶ Do not touch housing, frame or components. ▶ If running tests while the power is on, always use a residual current circuit-breaker. ▶ Ensure that the resistance of the protective conductor does not exceed the standardised value.
	<p>⚠ DANGER</p> <p>Discharge current of charged capacitors!</p> <p>Death from electric shock. Risk of injury from startle response.</p> <ul style="list-style-type: none"> ▶ Disconnect the appliance from the power supply. ▶ Discharge capacitors.
	<p>⚠ DANGER</p> <p>Exposed, defective components live!</p> <p>Death from electric shock.</p> <ul style="list-style-type: none"> ▶ Disconnect the appliance from the power supply. ▶ Do not touch housing, frame or components. ▶ If running tests while the power is on, always use a residual current circuit-breaker. ▶ Ensure that the resistance of the protective conductor does not exceed the standardised value.

Safety

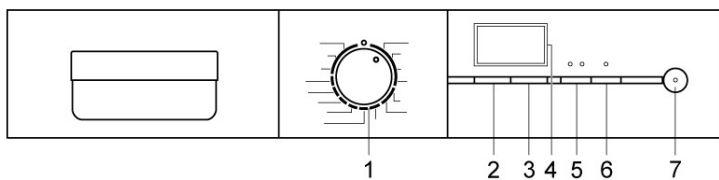
	<p>CAUTION</p> <p>Sharp edges!</p> <p>Cut injuries.</p> <ul style="list-style-type: none">▶ Wear protective gloves.▶ Wear personal protective equipment.
	<p>NOTICE</p> <p>Touching electrostatically sensitive components!</p> <p>Destruction of components.</p> <ul style="list-style-type: none">▶ Apply electrostatic protection system.▶ Observe measures to protect the electrostatically sensitive components.
	<p>NOTICE</p> <p>Unnecessary replacement of sensitive components!</p> <p>Destruction of components.</p> <ul style="list-style-type: none">▶ Systematically check components before replacing them.▶ Do not replace components without reason.▶ Observe technical documentation.

Design and function

3.1 Fascia



Graphic 1: Fascia



Graphic 2: Fascia

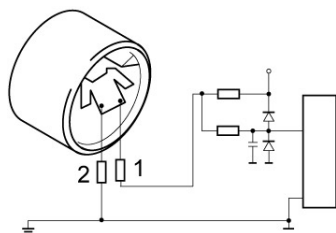
- | | | | |
|---|--------------------|---|----------------------------------|
| 1 | Programme selector | 5 | Low heat / super low heat button |
| 2 | Menu button | 6 | Easy-iron / Anti-crease button |
| 3 | Change button | 7 | Start / stop button |
| 4 | LCD display | | |

Design and function

3.2 Conductivity measurement



If the load is low, conductivity cannot be measured with precision.
See circuit diagrams: Washing not dry.



Graphic 3: Conductivity measurement in the appliance

1 Conductivity electrode

2 Counter-electrode

The conductivity measurement is a moisture-dependent control.

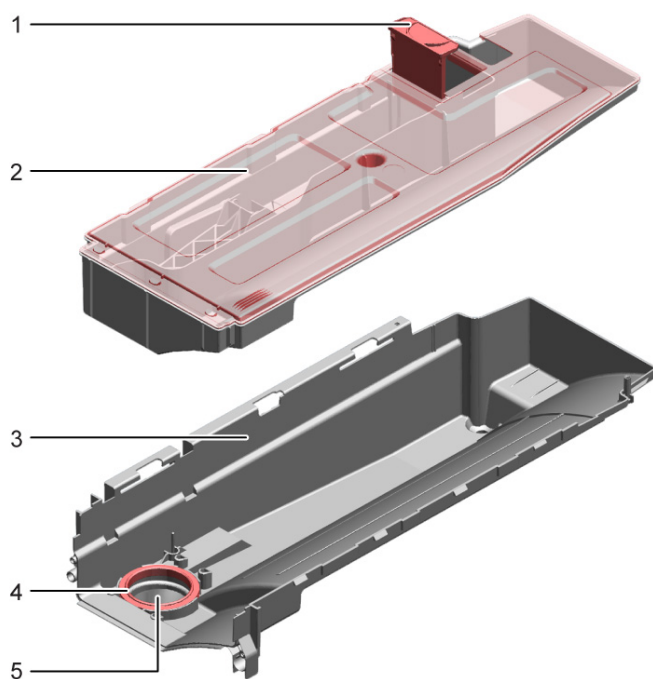
The conductivity measurement is based on the physical principle that textiles have a conductivity which varies depending on the moisture. Damp washing has a higher conductivity than dry washing. The conductivity is measured when the washing touches an electrode and a counter-electrode which form a measurement section.

The electrodes are in the end shield. During the drying process the items of washing continuously touch the electrodes. The preselected degree of drying is reached when the determined conductance of the washing agrees with a value specified by the programme selection.

Design and function

3.3 Condensate water container

3.3.1 Structure



Graphic 4: Components of the condensate water container

- | | |
|----------|-----------|
| 1 Filter | 3 Tray |
| 2 Drawer | 4 Opening |

The condensate water container consists of a cover with filter (1) and a chamber (2) for condensation, as well as a tray (3) with an opening (4) with a downpipe to the evaporator.

3.3.2 Function

The condensate water is pumped through the filter into the condensate water container via the condensate pump in the base pan. Fluff in the condensate water is caught in the filter. The filter is usually cleaned by emptying the condensate water container, but it can also be removed and cleaned manually. The cleaned condensate water is collected in one drawer (max. 2 l). The cleaned condensate water is conveyed through the opening in the tray to the evaporator via a downpipe and flushes the evaporator.

Design and function

3.4 Temperature control with fan (cooling air)

3.4.1 Structure

The appliance features two NTC sensors: The NTC sensor B31 in the refrigeration circuit on the compressor and an NTC sensor on the end shield (optional).

The electronic control is connected to the NTC sensors and controls the components, via electrical connections, which are required to control the temperature.

3.4.2 Function

The electrical control controls the fan (cooling air) depending on the selected programme and the transmitted NTC sensor values:

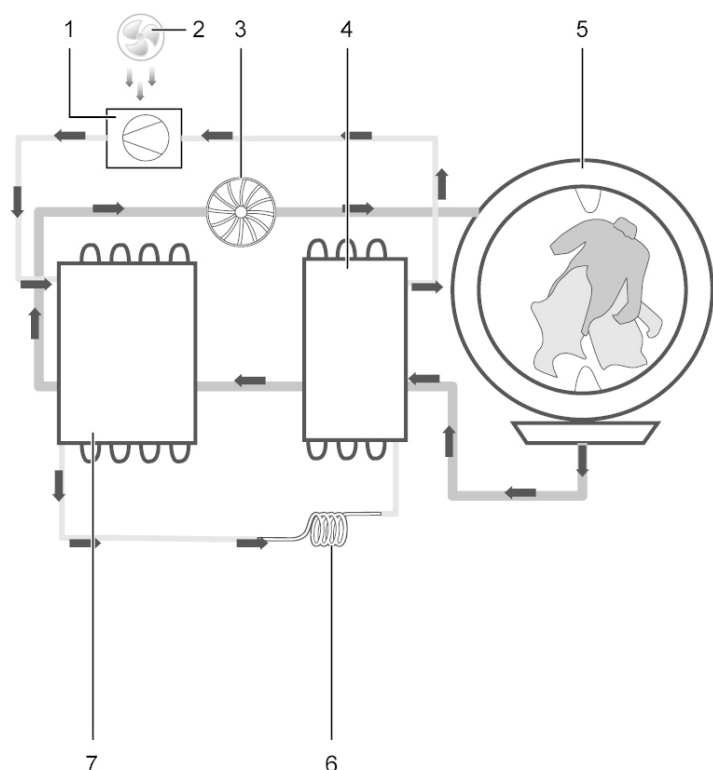
- From an ambient temperature above 30 °C.
- From a temperature on the NTC sensor B31 above 61 °C.

This prevents actuation of the overheating protection OLP (Over Load Protector) on the compressor.

Design and function

3.5 Heat pump circuit

3.5.1 Structure



Graphic 5: Components of the heat pump circuit

1	Compressor	5	Drum with washing
2	Fan (cooling air)	6	Capillary tube
3	Fan process air	7	Condenser
4	Evaporator		

3.5.2 Function

- The heat pump circuit contains the refrigerant
- The compressor compresses the gaseous refrigerant which is heated in the process.
- The condenser (7) releases heat into the process air which is then blown by the process air wheel into the drum.
- The heat dissipation causes the refrigerant to condense.
- The connecting capillaries cause the refrigerant to expand abruptly. As a result, the pressure and temperature are reduced, but the coolant remains liquid.
- The evaporator now absorbs heat from the moist process air and the coolant becomes gaseous. The cooling of the moist warm process air causes water to condense on the fins and then to flow into the base group.
- The compressor now draws the gaseous coolant in again and compresses it again.
- The fan cools the compressor to prevent the self-locking system (OLP) from activating.

Design and function

3.6 Automatic cleaning function

During a programme sequence the condenser is automatically cleaned up to four times.

As long as automatic cleaning is running, CLN is indicated on the display.



If the CLN display is lit, do not pull the condensate water container out.


Fault diagnosis

4.1 Malfunctions

Fault	Possible cause	Troubleshooting
Drying programme starts only briefly	Washing too dry (drum empty detection) Underload	▶ Also select timer programme
	Error in the conductivity system Humidity sensors have become coated	▶ For cleaning see operating instructions
	Door lock function (open briefly)	▶ Advise customer
Driving system <i>Drum does not turn</i>	Switching contact does not switch	▶ Replace door switch
	Cable break	▶ Replace cable
	Motor not rotating	▶ Run motor test programme. ▶ Check motor capacitor / Replace ▶ Replacing the motor
	Belt torn	▶ Replace belt.
	Rolling rollers damaged	▶ Replace rolling rollers of bearing shield.
Heating system <i>Appliance remains cold</i>	Heat pump driers do not become very warm	▶ Not a fault
	Heat pump defective	▶ Run heat pump test programme (See circuit diagrams)

Fault diagnosis

4.2 Result faults

Fault	Possible cause	Troubleshooting
Laundry not drying / residual moisture too high	Wrong drying programme	<ul style="list-style-type: none"> ▶ Customer information ▶ Select drying level by carefully adjusting appliance setting.
	Humidity sensors coated (fabric softener)	<ul style="list-style-type: none"> ▶ Clean: see instruction manual ▶ See trouble shooting plan / circuit documentation.
	Critical load (volume, mixture of small / large, items, type of laundry) (not a fault)	<ul style="list-style-type: none"> ▶ Customer information ▶ The time programme should be recommended for small loads. Make reference to Customer Information Bosch 725247 Siemens 725246 .
	Wrong drying programme	<ul style="list-style-type: none"> ▶ Customer information ▶ Residual moisture in different programmes varies See instruction manual / circuit documentation
Laundry bunched up (laundry roller)	Not loaded properly	<ul style="list-style-type: none"> ▶ Customer information ▶  Close zips, mix up small and large items, pay attention to size of load. See instruction manual.

Fault diagnosis

4.3 Leaks

Fault	Possible cause	Troubleshooting
Condensate water container / handle leaking	Condensate water container not emptied. Fluff filter in the condensate water container blocked. Appliance inclined slightly forwards. Overflow hose blocked.	<ul style="list-style-type: none">▶ Empty fluff filter after each drying cycle and check for dirt; clean if required.▶ Align appliance backwards slightly by approx. 5 mm.▶ Clean overflow hose and overflow area in the base group.

Fault diagnosis

4.4 Odours

Fault	Possible cause	Troubleshooting
Smell of oil	Not a fault. Drawing oil from production still on the drum.	▶ Customer information See "Advising customer" document, chapter "Smell of oil".
Chemical odour	Detergent, fabric softener, scented cloths.	▶ Change detergent, fabric softener or scented cloths. ▶ If possible do without fabric softener and scented cloths. ▶ Wipe drum with a damp cloth.
Scorching odour	Drum overloaded. Foreign objects in the appliance. Plugs / components scorched.	▶ Remove foreign objects. ▶ Replace plugs / components.

Test

5.1 Starting / ending demo programme

5.1.1 Starting the demo programme

1. Rotate programme selector switch to position 1.
2. Press and hold down *Low heat* button.
3. Rotate programme selector one position to the right.
4. Release *Low heat* button.
5. Rotate programme selector switch to position 5.
6. Press the *Start/Stop* button.

Result:

The demo programme runs without drum rotation and heat pump.

5.1.2 Ending the demo programme

- Switch off the appliance.

Result:

The demo programme ends.

Test

5.3 Checking interior light

Required tools:

✂ None

Prerequisite:

- Appliance is switched on.
- Programme has ended.

1. Open door.

Result:

Interior light is actuated for 15 minutes.

2. the interior light is not lit:

- ▶ Change bulb

Test

5.4 Read out fault memory



The information function

Customer can display information in advance about the error which has occurred.

1. Selection
2. Move programme selector to position *1*.
3. Press and hold down the *Low heat* button for 5 s.

Result:

The fault which last occurred is displayed for 5 s.

Repairs

6.1 Cleaning the heat pump

Required tools:

- ✂ Cleaning cloths 340417
- ✂ Domestic cleaning brush 342459
- ✂ Double fluff filter 650474 (option)
- ✂ Modification kit 743988 (option)

Prerequisite:

- The worktop has been removed
- Fascia has been removed
- Side panels have been removed



The most important removal steps for cleaning the heat pump are assigned to the appliances as a video

1. Remove drum and back part of housing.
2. Remove condensate pump.
3. Remove float from the base pan and remove fluff / deposits.
4. Remove fluff / deposits from area around condensate pump and float.
5. Detach front panel from the base group. Carefully detach seal from the base group between front panel and base group.
6. Remove diffuser and cover from the heat pump.
7. Lift heat pump out of the base group to be able to clean the front of the heat pump.
8. Remove partition from under the heat pump and clean.
9. Clean area around overflow hose.

► [Install modification kit as required. \(Page 22\)](#)

Result:

Base group and heat pump have been completely cleaned of fluff and deposits.

Repairs

6.2 Installing conversion kit 743988



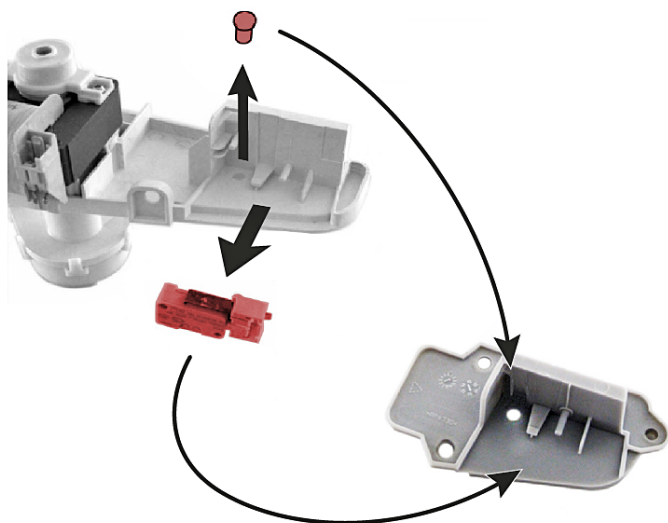
See video in the Quick Finder.

Prerequisite:

- Heat pump and bearing shield have been cleaned.
- Condensation tank with connection hose has been removed.
- Double fluff filter 650474 has been installed.

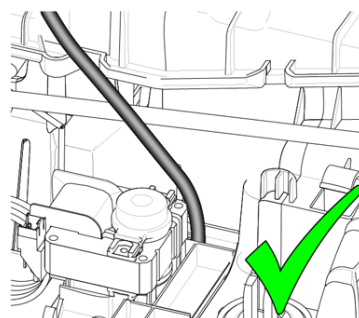
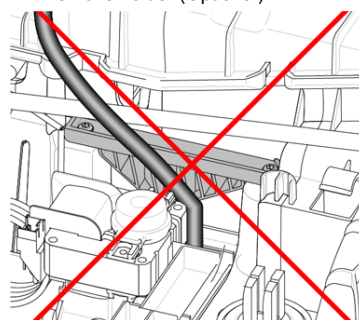
6.2.1 Preparing conversion kit

- ▶ Transfer microswitch and plunger from the old carrier.



6.2.2 Installing conversion kit

1. Remove holder (Optional)



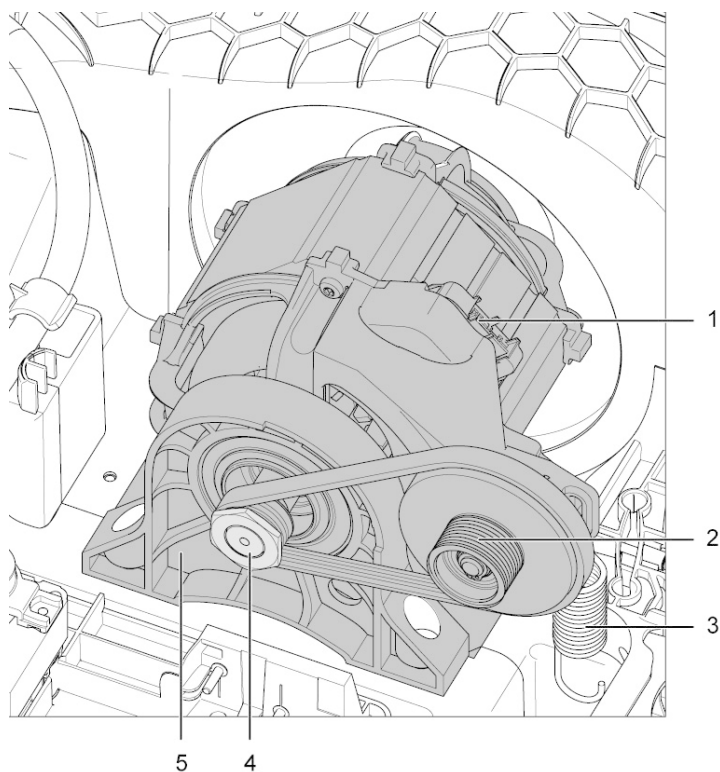
2. Install condensation pump and condensation sensor.
3. Install condensation tank housing.
4. Connect hose between condensation tank housing and condensation pump.
5. Insert double fluff filter.

Result:

Conversion kit has been installed.

Repairs

6.3 Replacing motor



Graphic 7: Motor

- | | | | |
|---|-----------------------|---|---------------|
| 1 | Electrical connection | 4 | Wheel |
| 2 | Motor shaft | 5 | Motor support |
| 3 | Tension spring | | |

Prerequisite:

- Worktop has been removed.
- Right side panel has been removed.
- Drive belt has been removed.

6.3.1 Removing motor

1. Remove electrical connections from the motor (1) and protect against damage.
2. Remove module housing cover (process air).
3. Remove process air duct.
4. Secure motor shaft (2) using a wrench.
5. Turn fan roller (process air) to the left and remove.
6. Detach tension spring (3).
7. Remove screws.
8. Take motor out of the appliance.

6.3.2 Installing motor



Ensure that the drive belt is fitted correctly! Always observe the gap between the pulleys.

- Install motor in reverse sequence.

Repairs

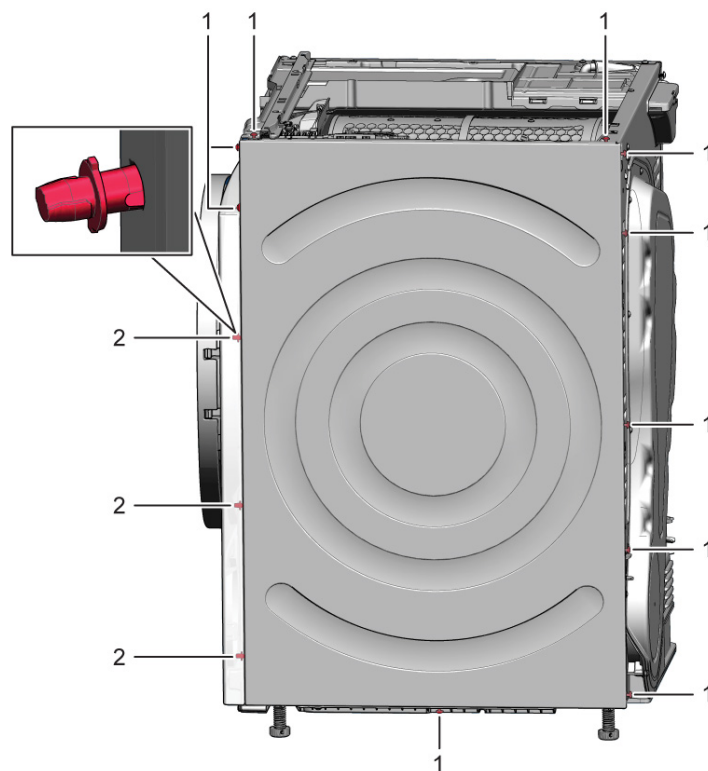
6.4 Replacing left / right side panel

Prerequisite:

- Worktop has been removed.
- Fascia has been removed.

6.4.1 Removing left / right side panel

- Remove screws 1
- Pull side panel backwards out of the catch elements 2



Graphic 8: Side panel

1 Retaining screws

2 Locking points

► Remove side panel.

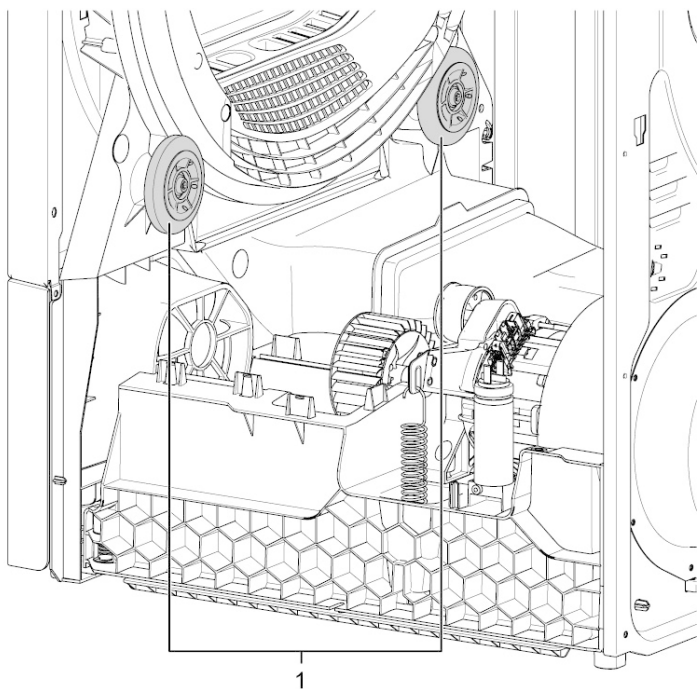
6.4.2 Installing left / right side panel

Repairs

- ▶ Install side panel in reverse sequence.

Repairs

6.5 Replacing rollers



Graphic 9: Rollers

1 Roller

Prerequisite:

- Worktop has been removed.
- Side panels have been removed.
- Drum has been removed.
- Rear panel has been removed.

6.5.1 Removing rollers

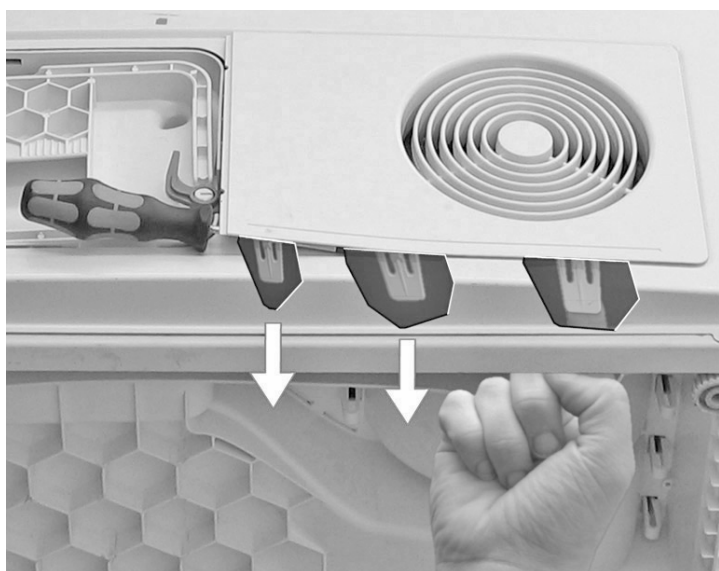
1. Remove screw.
2. Remove rollers (1) together with bearing from end shield.

6.5.2 Installing rollers

- ▶ Install rollers in reverse order.

Repairs

6.6 Removing / installing the cooling-air panel



Graphic 10: Cooling-air panel

Prerequisite:

- Left cover has been removed.

6.6.1 Removing the cooling-air panel

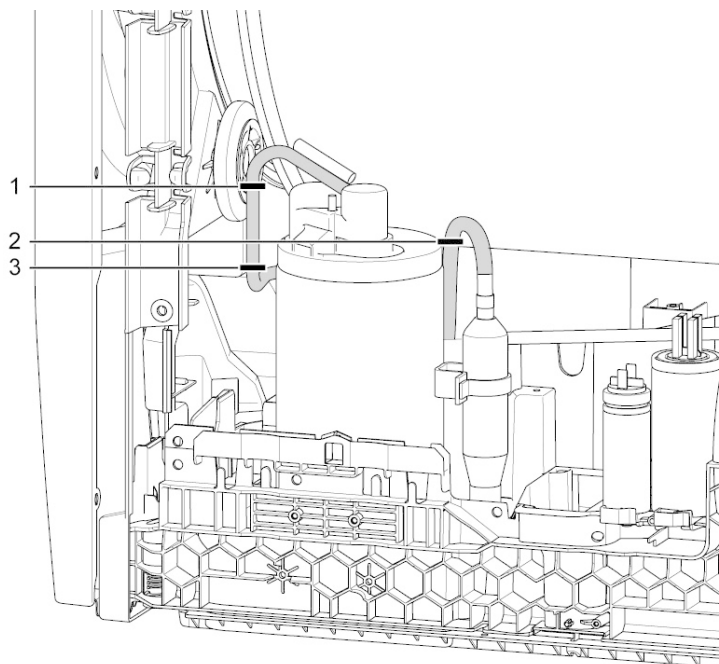
1. Tilt appliances to the rear.
2. Disengage catch elements from below.
3. Insert suitable object to prevent the catch elements from engaging again.
4. Remove cooling-air panel.

6.6.2 Installing the cooling-air panel

- ▶ Install cooling-air panel in reverse sequence.

Repairs

6.7 Opening / closing refrigeration circuit



Graphic 11: Compressor: Refrigeration circuit

- | | | | |
|---|--|---|---|
| 1 | Tapping area (pressure side) | 3 | Area to be cut through (on pressure side) |
| 2 | Area to be cut through (on suction side) | | |

Prerequisite:

- Worktop has been removed.
- Right side panel has been removed.
- Drive belt has been removed.
- Electrical connection of the compressor has been removed.

6.7.1 Opening the refrigeration circuit

1. Tap refrigeration circuit on the pressure side (1) using a piercing valve.
2. Extract and dispose of refrigerant as stipulated.
3. Disconnect compressor on the pressure side (3).
4. Disconnect compressor on the suction side (2).
5. Release hold points on the compressor and take compressor out of the appliance.

6.7.2 Closing refrigeration circuit

Required tools:

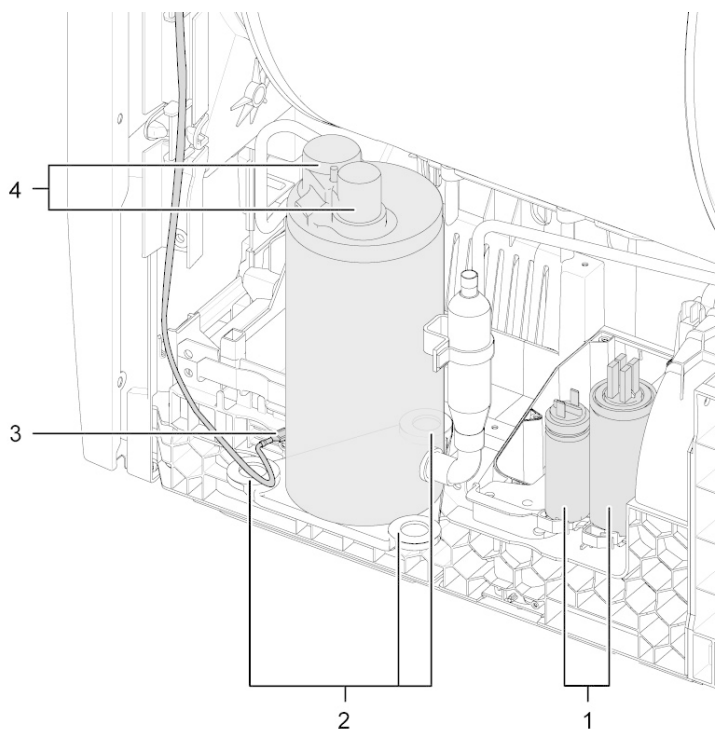
- ✂ Lokring

Prerequisite:

- Compressor has been inserted.
- Seal circuit with a Lokring.

Repairs

6.8 Replacing compressor



Graphic 12: Compressor

- | | | | |
|---|-------------------------------|---|-----------------------|
| 1 | Capacitors (motor/compressor) | 3 | Protective conductor |
| 2 | Nut | 4 | Electrical connection |

Prerequisite:

- Worktop has been removed.
- Right side panel has been removed.
- Drive belt has been removed.

6.8.1 Removing compressor

1. Remove (1) capacitors.
2. Remove electrical connection (4).
3. Remove protective conductor (3).
4. Remove nuts (2).
5. Open the refrigeration circuit.
6. Take compressor out of the appliance.

6.8.2 Installing compressor

- ▶ Install compressor in reverse sequence.

Repairs

6.9 Replacing fluff filter

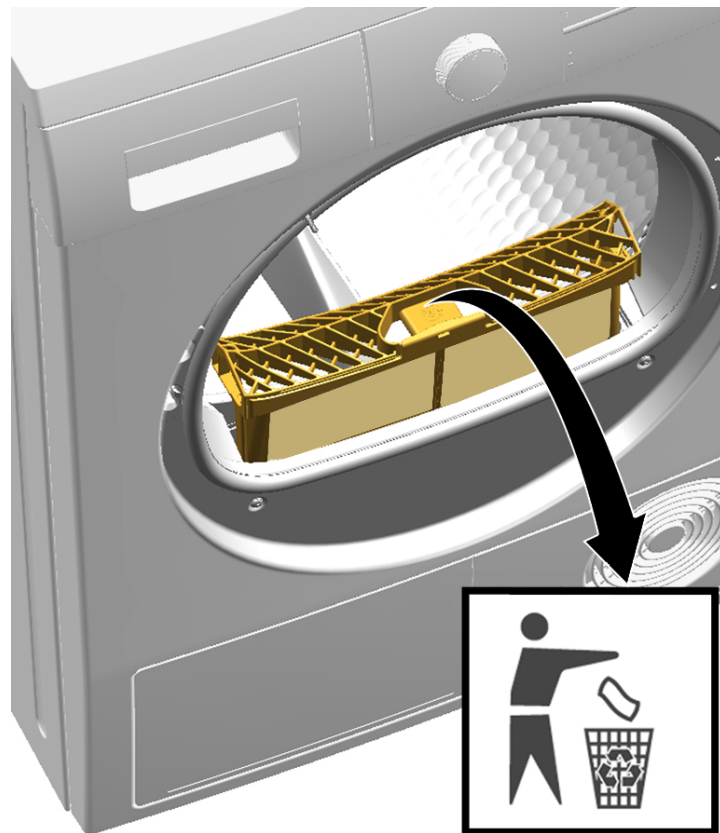
Prerequisite:

- Door is open.

6.9.1 Removing fluff filter



When removing the fluff filter, ensure that no deposits (hair / fluff) fall into the air duct.



Repairs

1. Take fluff filter out of the appliance.
2. Using a suitable tool, take seal out of the appliance.
3. Clean the process air duct with a damp cloth.

6.9.2 Installing fluff filter



Install seal without ripples.

1. Insert new seal straight into the end shield.

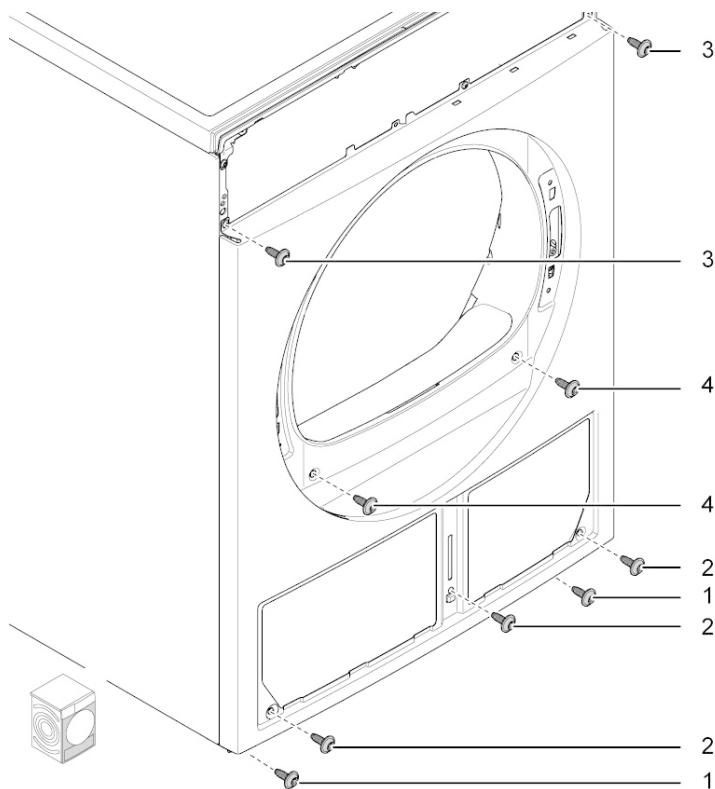


Process air duct must be cleaned before inserting the fluff filter.

2. Insert new fluff filter.

Repairs

6.10 Removing / installing front panel



Graphic 13: Front panel

1-4 Bolts

Prerequisite:

- Worktop has been removed.
- Fascia has been removed.
- Side panels have been removed.
- Door has been removed.
- Door seal has been removed.
- Covers on left and right have been removed.
- Door lock has been removed.

6.10.1 Removing the front panel

1. Remove screws (1-4).
2. Remove front panel.

6.10.2 Installing the front panel

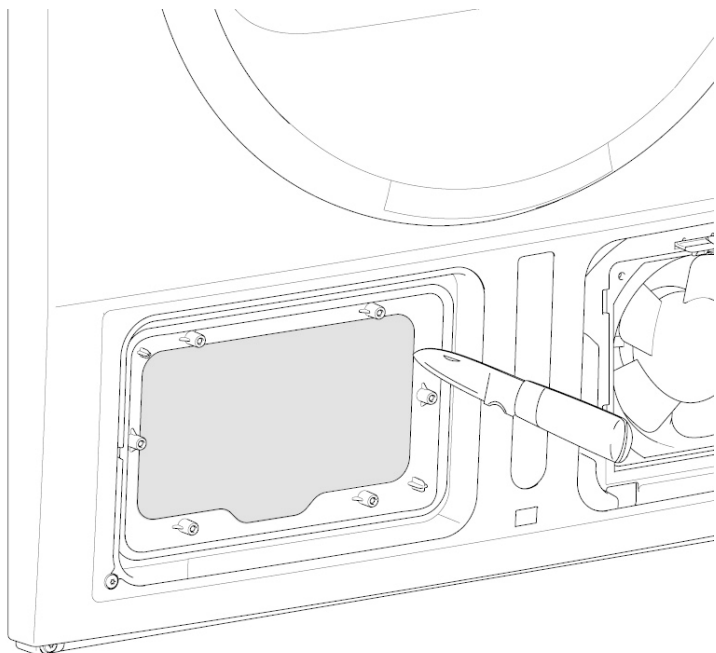
- ▶ Install front panel in reverse sequence.

Repairs

6.11 Cleaning the condenser

Prerequisite:

- Left and right side panels have been removed.



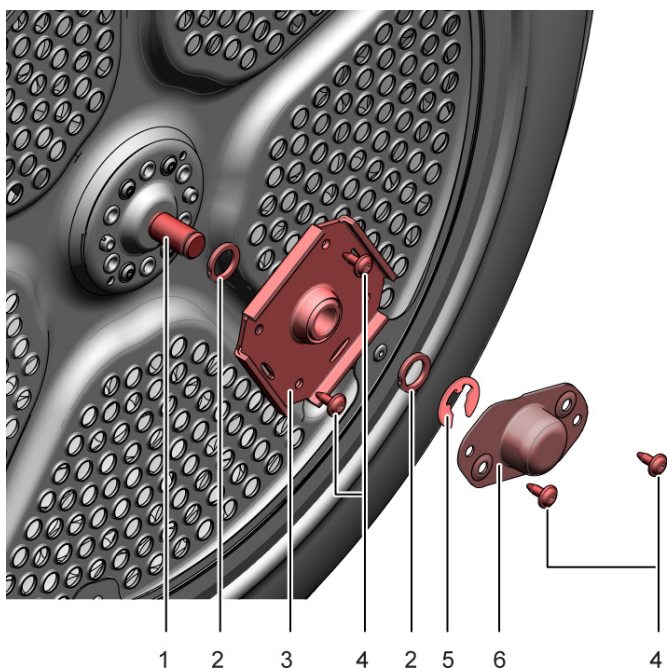
1. Using a knife, cut out base group along the specified contour.
2. Carefully remove fluff from the evaporator.
3. Install maintenance flap (646776).



Fins coated with paint.
Do not damage coating when cleaning.

Repairs

6.12 Removing / installing drum bearing



Graphic 14: Drum bearings

- | | | | |
|---|-------------------------|---|----------------|
| 1 | Drum shaft | 4 | Bolts |
| 2 | Inner and outer raceway | 5 | Retaining ring |
| 3 | Bearing block | 6 | Bearing cover |

Prerequisite:

- Worktop has been removed.
- Outer and inner process air cover has been removed.

6.12.1 Removing drum bearing

1. Remove screws (4) from the cover.
2. Remove bearing cover (6).
3. Remove retaining ring (5).
4. Remove outer raceway (2).
5. Remove screws (4) from the drum bearing (3).
6. Raise drum.
7. Take drum bearing out of the appliance.

6.12.2 Installing drum bearing

- ▶ Install drum bearing in reverse order.

Repairs

6.13 Transporting the appliance



Condensate water may run out of the overflow opening at the back left side or out of the pump chamber during transportation.

The appliance can be transported at temperatures ranging from -40 °C to +70 °C, provided there is no longer any water in the base group.



During the draining process, there is always a little water left in the appliance:

- Residual water after normal drying process: approx. 450 ml

1. If possible, transport appliance upright, e.g. using a sack truck.
2. After transporting the appliance, leave it to rest for at least 2 hours before switching it on.