

**Washing machines,
Toploader**

**Range 40 cm
Timer Appliances**

© AEG Hausgeräte GmbH
Muggenhofer Straße 135
D-90429 Nürnberg
Germany

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599 51 32 96
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EN

Fax +49 (0)911 323 1420

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A) SAFETY PRECAUTIONS

Before intervention on any internal components, always remove the power plug from the socket.

When possible, the ohmic resistance of the components should be measured rather than making direct measurements of voltage and current.

Some parts of the mechanical structure of the appliance could be dangerous; it is necessary to take care in order to avoid injuries.

B) PURPOSE OF THIS MANUAL

This manual is to provide technicians, who have already a basic knowledge of repairing washing machines, with general information concerning this new range of products.

For more detailed information refer to:

- electrical diagram
- programming
- timer diagram
- spart parts list

C) PRESENTATION OF APPLIANCES

This new range of washing machines consists of:

- A CARBORANâ base including the filter body on which different components are fixed (drain pump, circulation pump, inlet valve, module and suspension).
- A tub of CARBORANâ and a drum of stainless steel with a capacity of 42 liters.

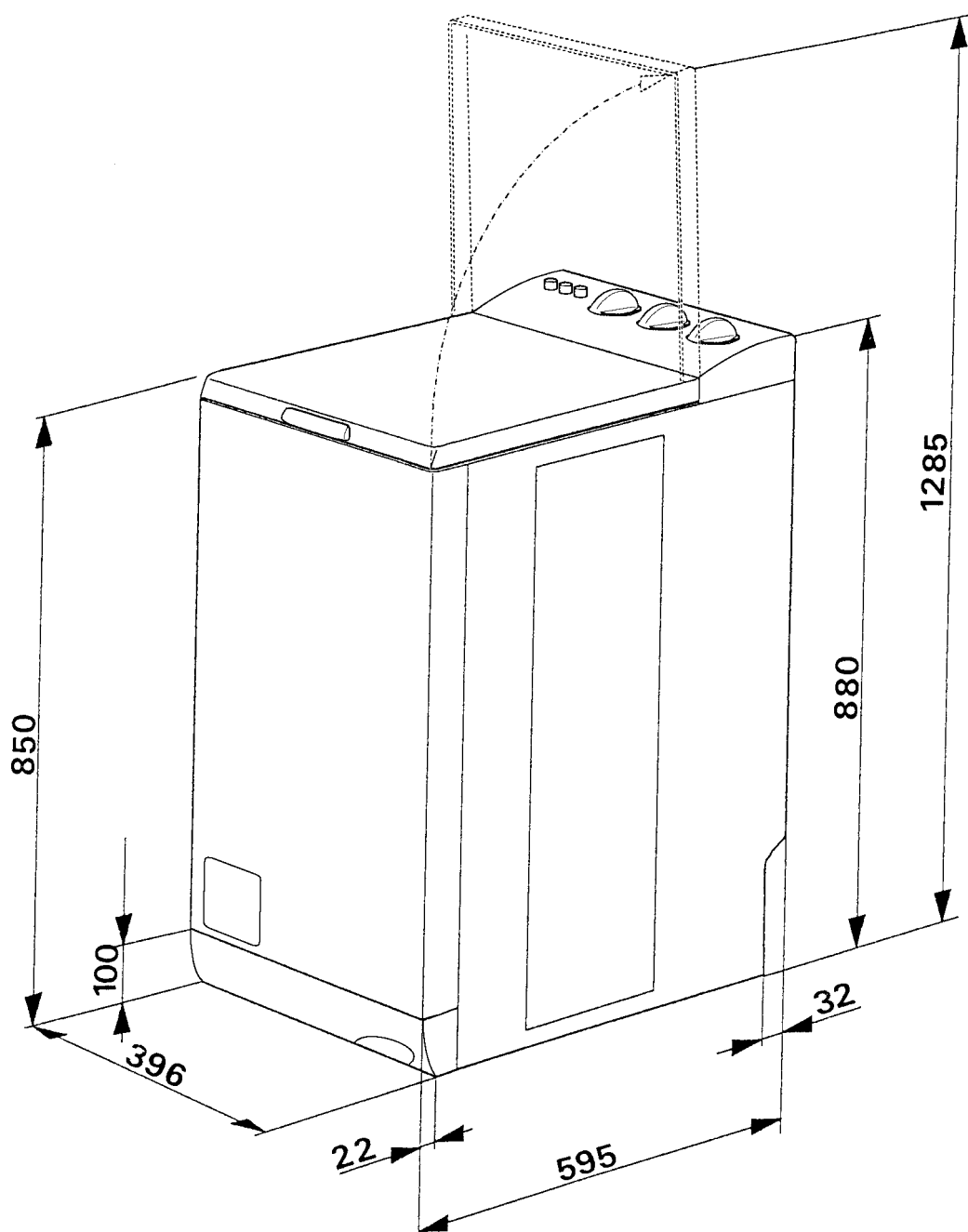
On the tub there are compensating weights, one left and one right, and electrical components such as heating element, thermostat, motor and cables.

- A cabinet including four side panels:
 - right, left and front panels electrogalvanized and thermolacquered;
 - rear panel electrogalvanized

On this construction the tub is hanging up by four springs.

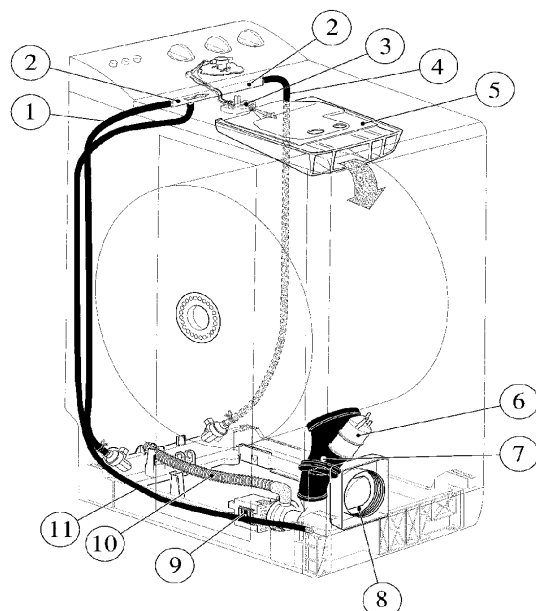
- A top of "polypropylene", a housing lid on which the water inlet tray is fixed, a functional support including the control panel with the electrical components and the water distributor.

D) DIMENSIONS



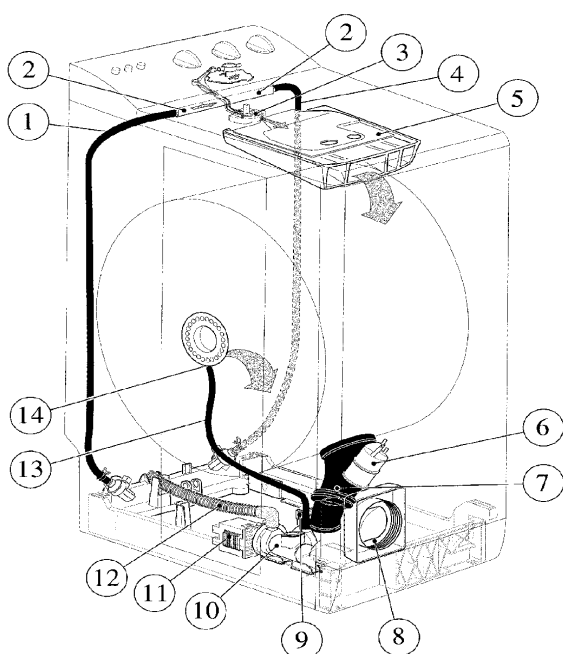
E) HYDRAULIC CIRCUIT

1) “STANDARD” washing system



- 1 - cold water
- 2 - air-break
- 3 - distributor
- 4 - hot water (GB)
- 5 - product box
- 6 - compression chamber
- 7 - durit-hose
- 8 - filter body
- 9 - drain pump
- 10 - drain hose
- 11 - ventilation of fluff filter housing

2) “DIRECT SPRAY” washing system



- 1 - cold water
- 2 - air-break
- 3 - distributor
- 4 - hot water (GB)
- 5 - product box
- 6 - compression chamber
- 7 - durit-hose
- 8 - filter body
- 9 - circulation pump
- 10 - linkage piece
- 11 - drain pump
- 12 - drain hose
- 13 - direct Spray hose
- 14 - direct Spray cupel

a) Advantages of the “Direct Spray” function

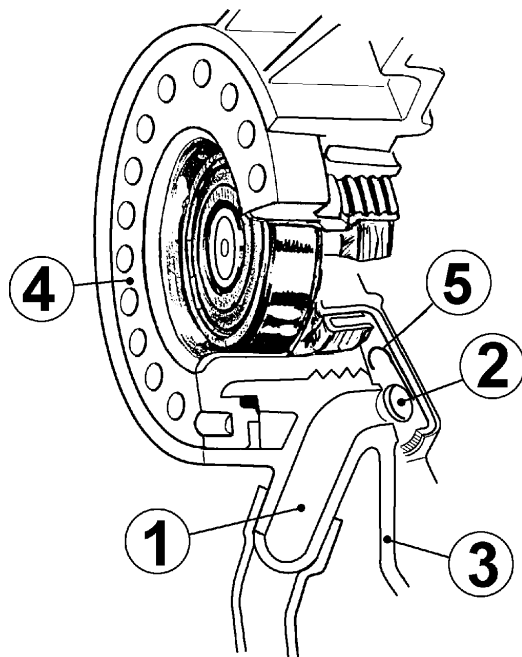
The “direct spray” function with a spraying system in the middle of the drum offers a high performance of washing and rinsing to the user with a low consumption of water and energy.

“Direct Spray” principle:

- During the filling the circulation pump function permits to moisten quickly the washing and thus to optimize the amount of water following the quantity and kind of washing.
- During the washing cycle the circulation of washing water permits a continuous spraying. This operation combined with the mechanical effect of the drum rotation permits to obtain a very high performance of wash.
- The circulation with foam control will also be used during the rinsing cycles to optimize the water consumption.

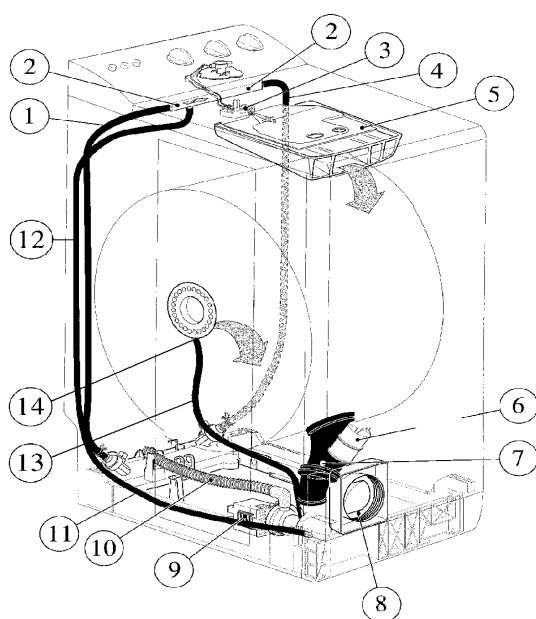
b) Principle

The circulation pump brings the wash water from the drum to the left bearing, then this water is injected through the holes in the drum (2).



- | | | |
|---|---|---------------------------------------|
| 1 | - | “direct spray” inlet connecting piece |
| 2 | - | injection hole in the drum |
| 3 | - | tub |
| 4 | - | bearing |
| 5 | - | deflecteur |

3) "ECO"-washing system



- | | | |
|----|---|--|
| 1 | - | Cold water |
| 2 | - | Air-break |
| 3 | - | Distributor |
| 4 | - | Hot water (GB) |
| 5 | - | Product box |
| 6 | - | Compression chamber |
| 7 | - | Durit-hose with ECO-ball |
| 8 | - | Filter body |
| 9 | - | Drain pump |
| 9 | - | Hose for ECO-ball |
| 10 | - | Drain hose |
| 11 | - | Ventilation of fluff filter housing |
| 12 | - | Hose for ECO-ball |
| 13 | - | Hose for water excess pressure |
| 14 | - | Control opening of water excess pressure |

a) Advantages of the "ECO" function

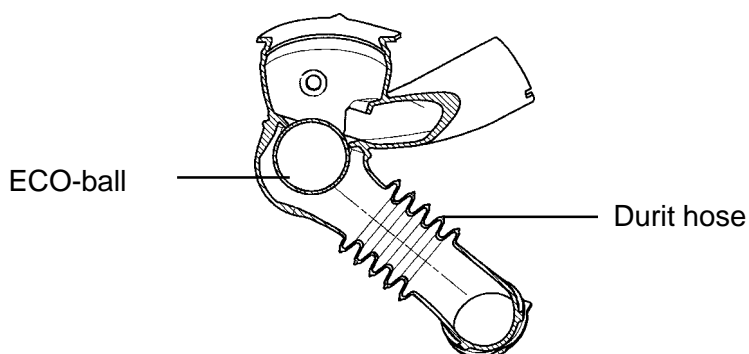
Due to the „ECO“ washing systems, with the ECO-ball in the durit-hose, the user achieves a high washing and rinsing result with a low consumption of detergent.

The detergent does not fall down as far as to the drain area during the filling cycle, but remains on the ECO-ball usable for the washing cycle.

b) Principle

During the filling cycle, a part of the water is conducted through the hose (9) into the fluff filter housing.

The water level in the fluff filter housing increases until the ECO-ball floats up in the durit hose and locks the way to the tub (see figure).

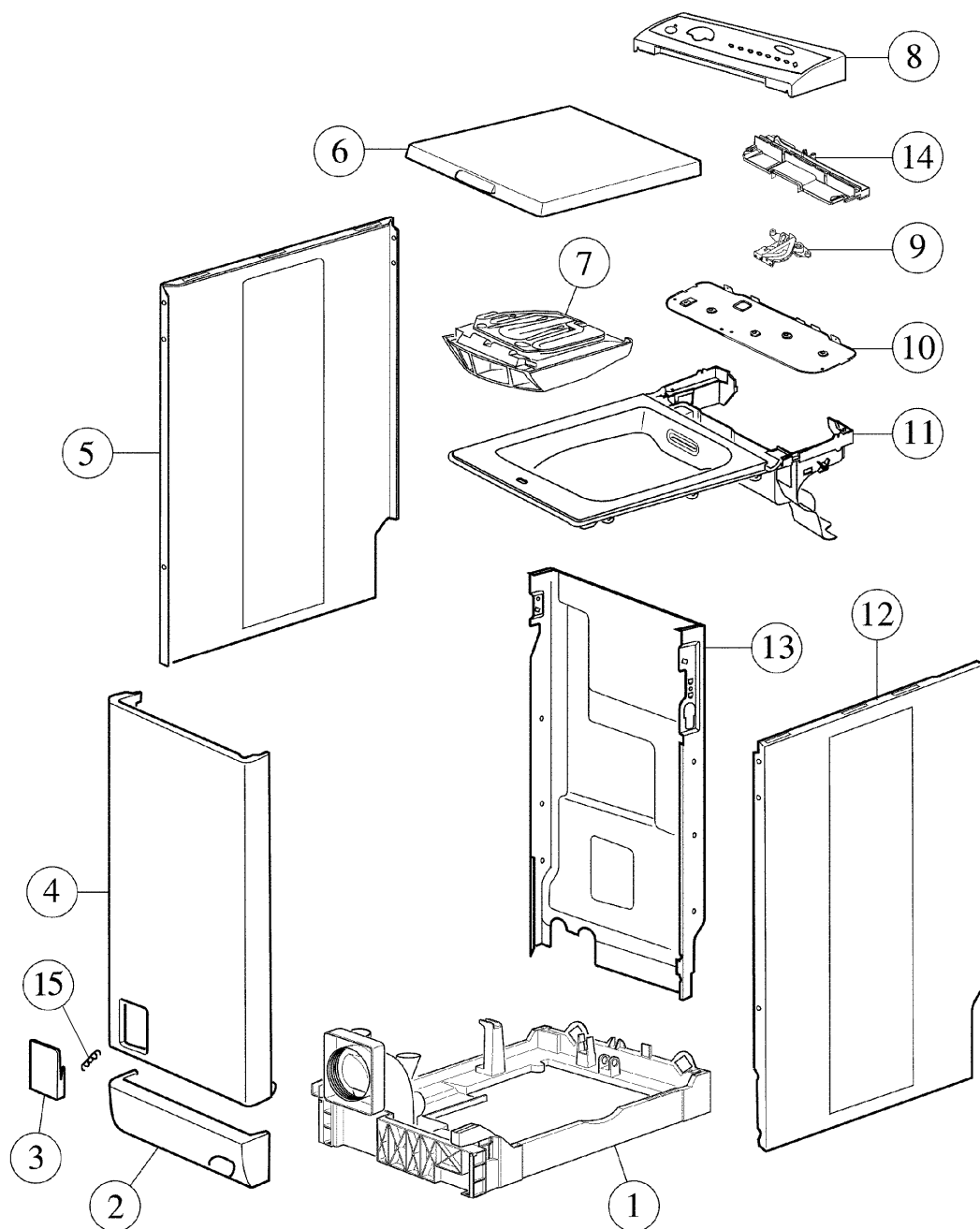


The further existing water pressure is passed on through the hose (12) into the tub.

When selecting the drain pump, the ECO-ball is drawn downwards because of the underpressure, the water in the tub can be drained.

F) STRUCTURE

1) Cabinet

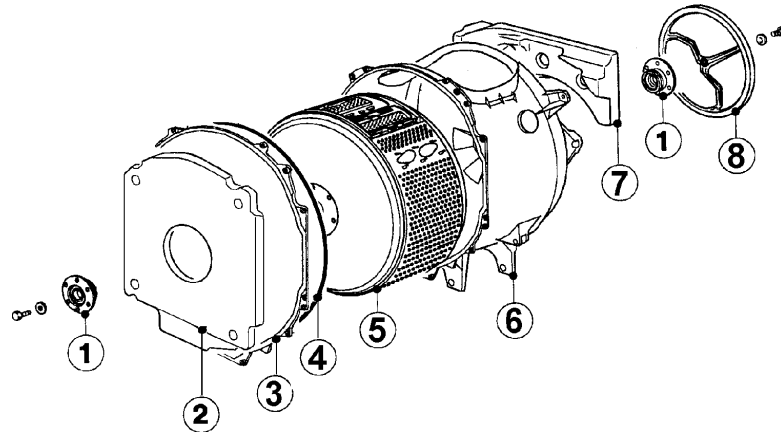


- 1 - base
- 2 - base panel
- 3 - flap for fluff filter
- 4 - front panel
- 5 - left panel
- 6 - cover
- 7 - product box

- 8 - control panel
- 9 - water distributor
- 10 - functional support
- 11 - upper part
- 12 - right panel
- 13 - rear panel
- 14 - cover water distributor
- 15 - spring

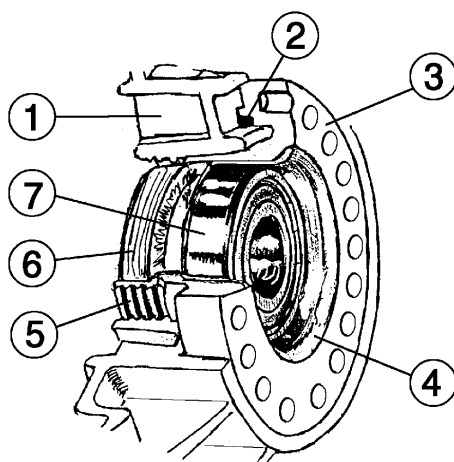
2) Internal

a) CARBORAN®-tub



- | | | | | | |
|---|---|----------------|---|---|--------------|
| 1 | - | bearing | 5 | - | drum |
| 2 | - | left weight | 6 | - | tub |
| 3 | - | tub side panel | 7 | - | right weight |
| 4 | - | tub gasket | 8 | - | pulley |

CARBORAN®-tub bearing



- | | | |
|---|---|----------------------------|
| 1 | - | tub |
| 2 | - | static gasket |
| 3 | - | bearing body |
| 4 | - | metallic insert of bearing |
| 5 | - | threading of bearing body |
| 6 | - | dynamic gasket |
| 7 | - | bearing |

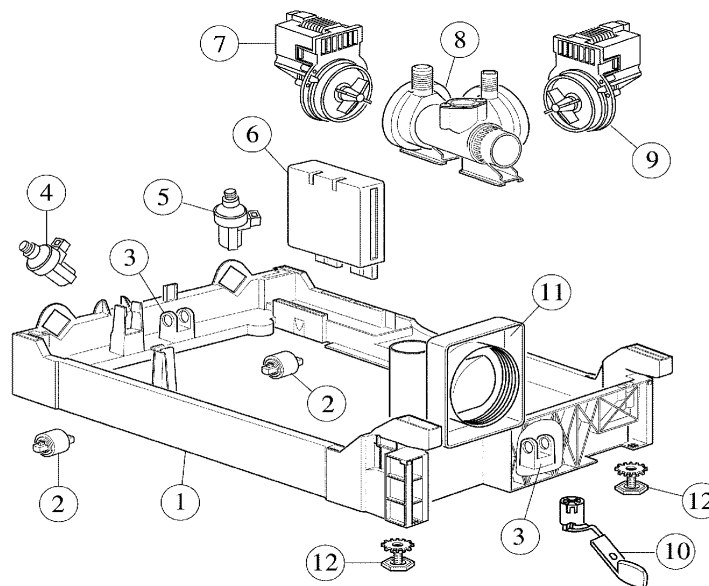
Both bearings are screwed on the tub (1).

The bearing (7) is pressed into a metallic insert.

The bearing is sealed as follows:

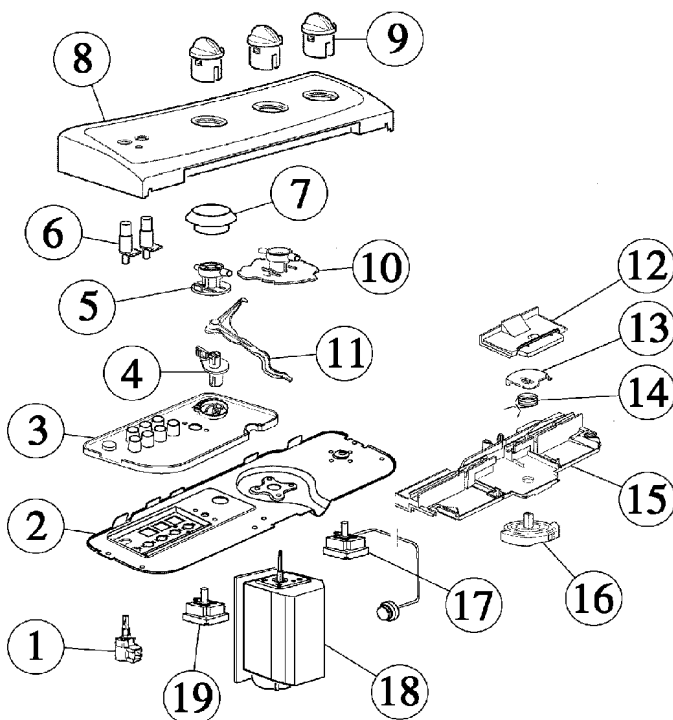
- The gaskets (6) to the shaft are set into the bearing body. The bearing seat permits to obtain a perfect concentricity between the bearing (7) and the gasket (6), which guarantees a perfect sealing.
- The bearing seat on the tub is sealed by a gasket (2).

b) Base



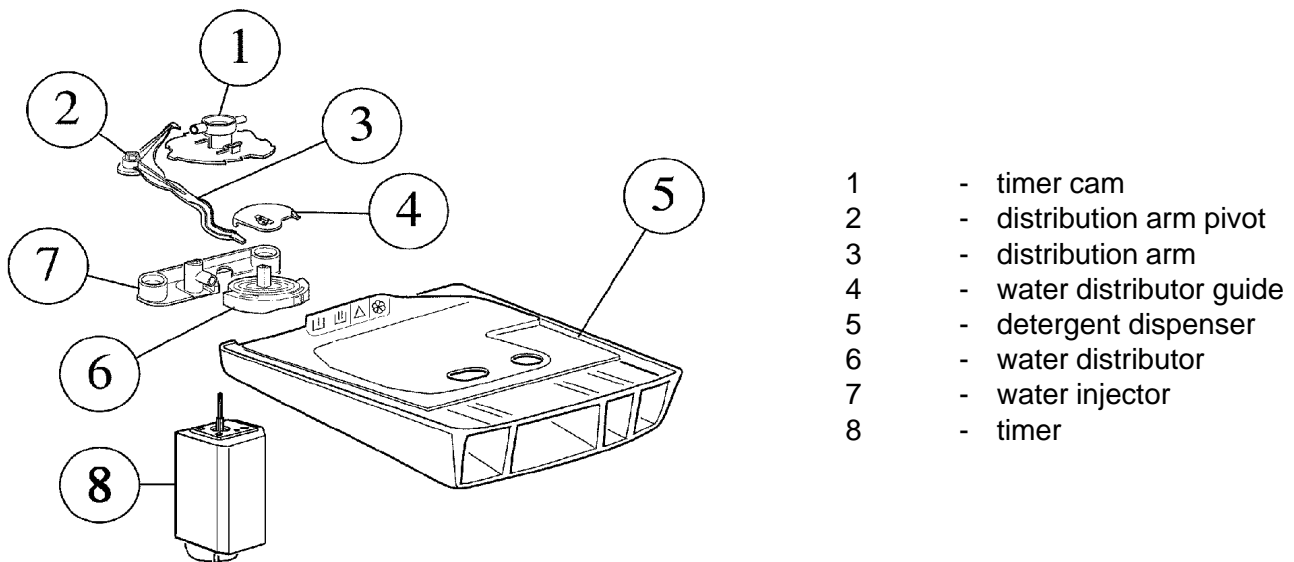
- | | | | | | |
|---|---|---------------------------------|----|---|---|
| 1 | - | base | 7 | - | drain pump |
| 2 | - | rear roller | 8 | - | connection drain/circulation pump (following model) |
| 3 | - | fixation for shock absorber | 9 | - | circulation pump (following model) |
| 4 | - | cold water inlet valve (Europa) | 10 | - | front roller kit |
| 5 | - | hot water inlet valve (GB) | 11 | - | filter body included in the base |
| 6 | - | electronic | 12 | - | adjustable feet |

c) Control panel



- | | | |
|----|---|-------------------------------|
| 1 | - | on-off switch |
| 2 | - | functional support |
| 3 | - | secondary support |
| 4 | - | distribution arm pivot |
| 5 | - | knob body |
| 6 | - | key |
| 7 | - | disk |
| 8 | - | panel support |
| 9 | - | knob |
| 10 | - | distribution cam |
| 11 | - | distribution arm |
| 12 | - | distribution cover |
| 13 | - | water distribution cam |
| 14 | - | distribution draw back spring |
| 15 | - | water distributor support |
| 16 | - | water distributor |
| 17 | - | potentiometer or thermostat |
| 18 | - | timer or distributor |
| 19 | - | potentionmeter |

d) Distribution system



The distribution cam (1) is fixed to the timer (8). The cam profile has four positions which corresponds to the relevant water compartment for :

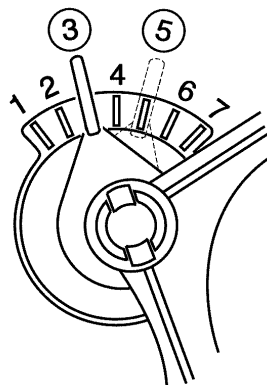
Prewash / Bleach / Main Wash / Conditioner

The distribution arm (3) engages with cam profile (1) which, engages with the water distributor cam (4), and rotates the water distributor (6). Water passes through the injector (7) and is directed into the required detergent dispenser compartment.

e) Water distributor adjustment

The distribution linkage can be adjusted as follows:

- Set the timer on a „Prewash“ filling step.
- Set the eccentric distributor pivot on the third notch (see figure). Check that the water is entering the correct compartment of the dispenser.
- Note : on electronic appliances, the distributor will be powered to position 5 (see figure)



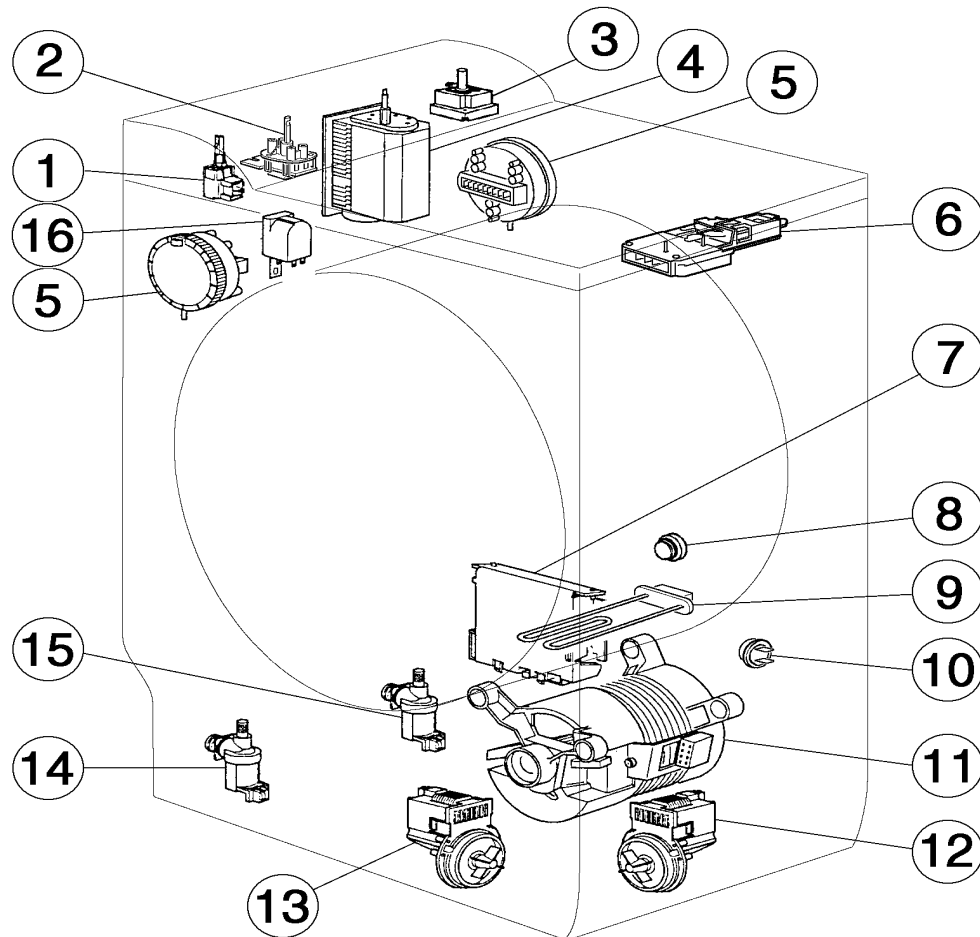
- If necessary adjust the eccentric pivot

f.) Water injectors

The majority of appliances have a „Cold water“ injector only, models for the UK market are equipped with „Hot and Cold „ injectors.

These injectors are pushed into the top frame, sealing is with an "O" ring .

g.) Layout of electrical components

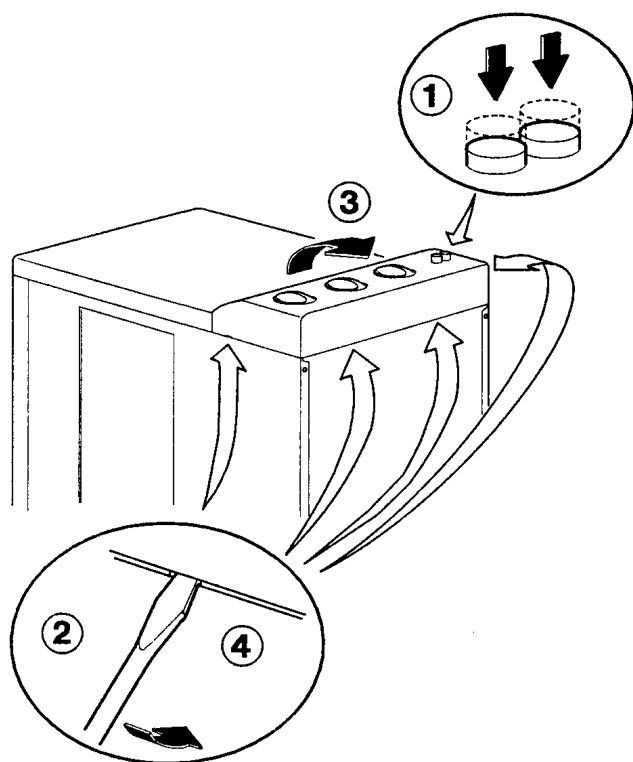


- 1 - switch
- 2 - potentiometer or adjustable thermostat if appliances equipped with „Start delay“
- 3 - potentiometer or adjustable thermostat or „Start delay“ clock
- 4 - timer or distributor
- 5 - pressure switch (1 or 2 depending on model)
- 6 - door lock
- 7 - module
- 8 - fixed or adjustable thermostat (NTC)
- 9 - heating element
- 10 - thermistor (tub / filter housing)
- 11 - motor
- 12 - circulation pump
- 13 - drain pump
- 14 - cold water inlet valve
- 15 - hot water inlet valve (GB)
- 16 - supressor

G / ACCESSIBILITY

1) Control panel

a) Dismantling



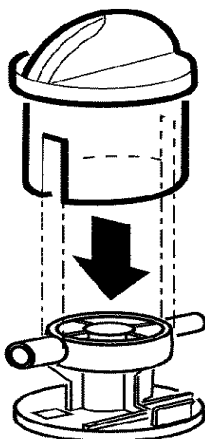
- 1 - Depress the push button.
- 2 - Unclip the 2 side lugs.
- 3 - Lift the control panel at the front.
- 4 - Release from the 2 rear lugs.
- 5 - Remove the panel.

Removal of the control panel will give access to the following:

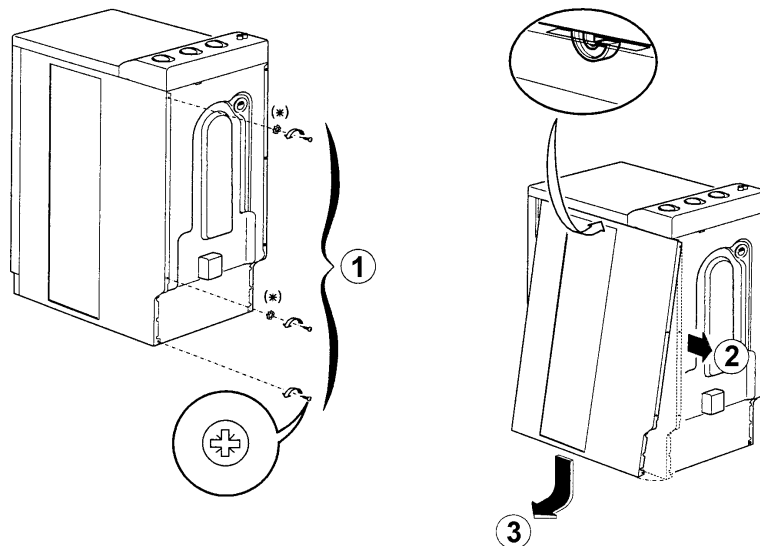
- Control knobs
- Indicator discs (depending on model)
- Support cross member
- Dispenser linkage

b) Reassembly

- Remove the knobs.
- Re-locate control panel.
- Locate and clip in the knob.n.



2) Side panel



- 1 - Unscrew the 4 rear fixation screws.

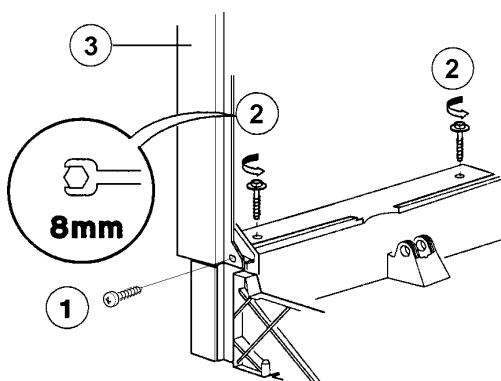
Warning: Do not forget the two washers when assembling. They confirm the earth connection of the side panels.

- 2 - Pull the side panel to the back in order to disassemble the upper anchoring and the three points of front anchoring.
- 3 - Then remove the side panel.

3) Front panel

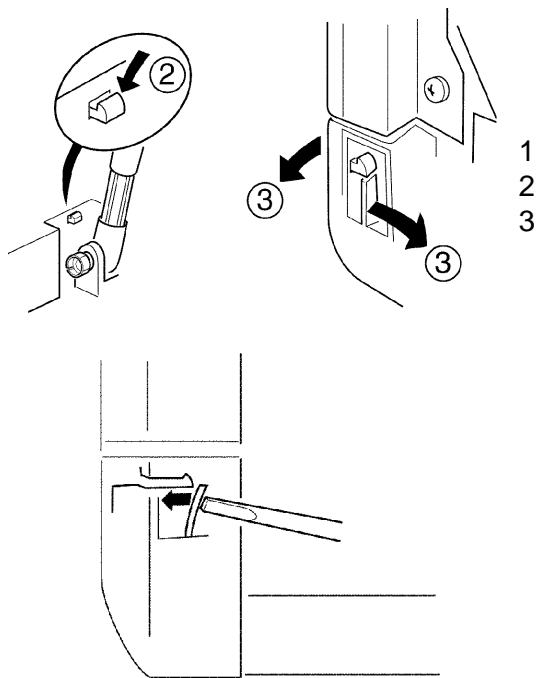
Warning: For easier handling it is necessary to put a block under the motor.

Remove the right and left side panel.



- 1 - Unscrew the two lower side fixation screws.
- 2 - Unscrew the two lower fixation screws.
- 3 - Unscrew the two upper side fixation screws.
- 4 - Remove the front panel.

4) Base panel

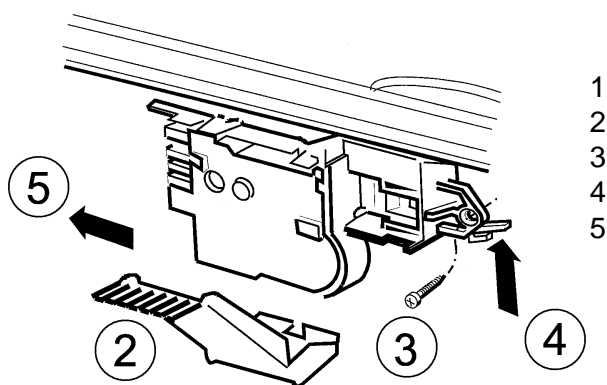


- Remove the side panels.
- Press down the middle clip.
- Pull the side of the base panel to the outside and, using a screwdriver, press the locking part to the back. Press down the clip tilting the base panel to the front at the same time.

Warning: During the assembling of the base panel take care that the side clips are in place.

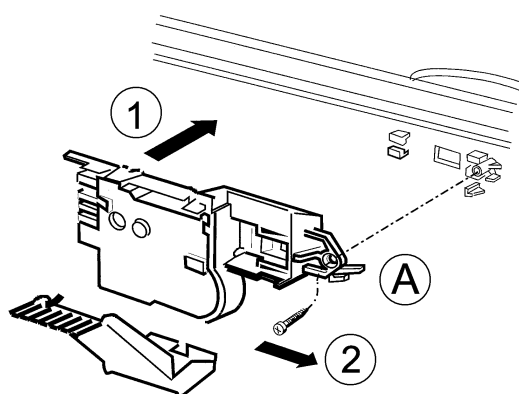
5) Door lock

a) *Disassembling*



- Remove the side panels.
- Remove the cover cap.
- Remove the screw.
- Unlock the safety clip and unlock it to the left by pushing the door lock.

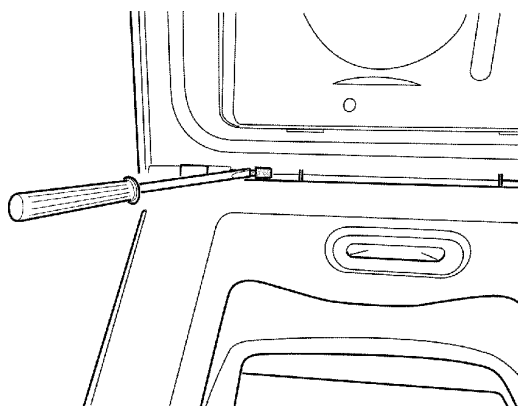
b) Assembling



- 1 - Put the door lock in front of the slides.
- 2 - Lock it by pushing to the right.
- 3 - Turn in the screw.
- 4 - Put the cover cap on.

Warning: Take care that the clip (A) is correctly locked and that the splash protection is in place.

6) **Cover**



- 1 - Open the cover.
- 2 - Move out both fixing pins using a screwdriver.
- 3 - Remove the cover.

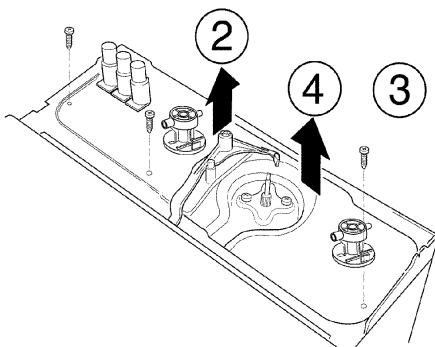
Warning: Put the water inlet tray or a cloth on the drum that the fixing pins cannot fall into the appliance when removing.

7) Functional support

The removal of the functional support permits the access to:

- Connections of components;
- on/off key;
- water distributor;
- key;
- signal lamp;
- timer;
- pressure switch;
- supressor

a) Disassembling



- 1 - Remove the control panel.
- 2 - Unscrew the 3 fixation screws from the functional support.
- 3 - Remove the functional support.

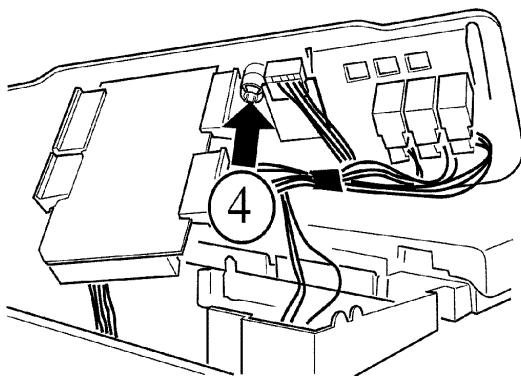
b) Assembling

Put on the functional support and fix it with 3 screws.

Warning: Take care to the wiring when assembling.

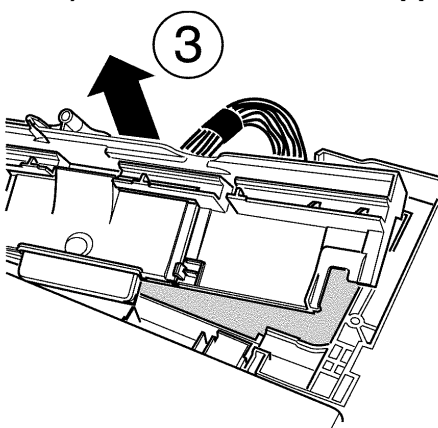
8) Water distributor cover and water distributor

Removal of the additional support panel allows access to the push buttons.



- 1 - Remove the additional support panel.
- 2 - Remove the push buttons - connecting piece between potentiometer and knob (depending on model).
- 3 - Remove the potentiometer (depending on model).
- 4 - Take off the clip to enable the removal of the distribution lever pivot.
- 5 - Remove clip from metal parts of support cross member.

9) Water distributor support

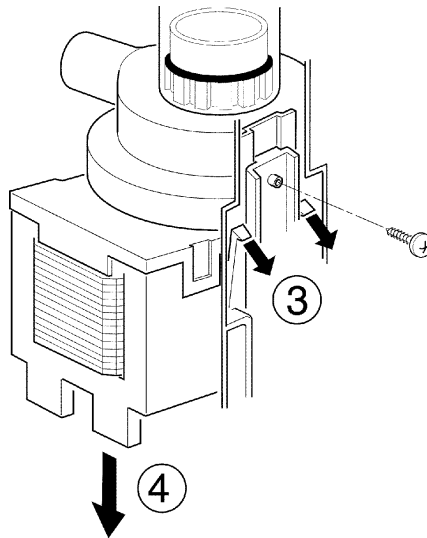


- 1 - Remove the support cross member.
- 2 - Remove the distributor cover.
- 3 - Extract the distribution guide.

10) Drain pump

- 1 - Remove the left side panel.
- 2 - Tilt the appliance to the back.
- 3 - Unlock the clips for pump and connection part (following appliance).
- 4 - Pull out the pump from the rear.

If (when you disassemble the drain pump or the connection part of drain pump/circulation pump), one of its fixation clips has been broken, use the screws with reference no. **6020190-01/0**.



11) Circulation pump

Proceed as described above.

Warning: Take care after reassembling to the correct position of the “direct spray” hose.

12) Motor

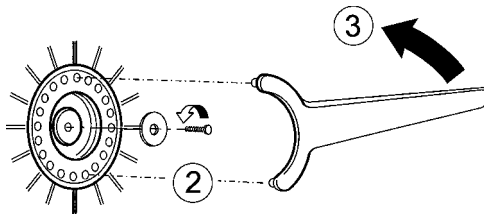
a) Disassembling

- 1 - Remove the left and right side panel.
- 2 - Remove the drive belt.
- 3 - Pull off the earth connection and the motor plug.
- 4 - Remove the 3 fixation screws.
- 5 - Take out the motor.

13) Bearings

a) Disassembling/Assembling

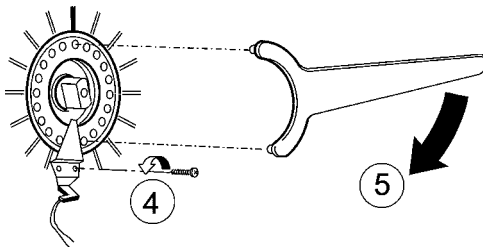
Left bearing



- 1 - Remove the left side panel.
- 2 - Remove the drum screw.
- 3 - Loosen the bearing (open sense) with a spanner as shown in the figure, ET-no. 899 2980018-48/5

During assembling take care to the correct position of the round gasket. Clean the drum shaft, grease the shaft-sealing ring, screw the bearing to the tub (closed sense). Screw in the drum screw with pulley.

Right bearing



- 1 - Remove the right side panel.
- 2 - Remove the drum screw with pulley.
- 3 - Remove the pulley.
- 4 - Remove the earth connection of the drum.
- 5 - Loosen the bearing (open sense) with a spanner
ET-no. 8992980018-48/5.

During assembling take care to the correct position of the round gasket. Clean the drum shaft, grease the shaft-sealing ring, screw the bearing to the tub (closed sense). Slip on and screw the pulley.

Note: These bearings are auto-fastening, therefore do not fasten them too strong.

14) Left and right weight

a) Disassembling / Assembling

The whole tub can be equipped with 3 kinds of weights:

- weight of concrete
- weight with a "polypropylene" housing
- weight of iron

Right weight

- 1 - Remove the right side panel.
- 2 - Remove the foam damper.
- 3 - Untighten and remove the 4 screws for the fixation of the weight, which have a different length depending on the kind of weight.

Left weight

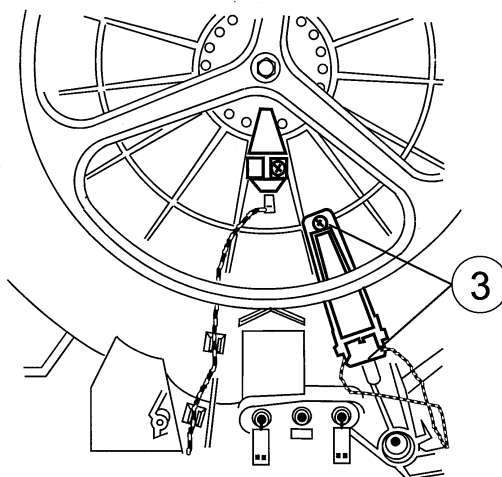
- 1 - Remove the left side panel.
- 2 - Remove the foam damper.
- 3 - Remove the direct spray hose.
- 4 - Untighten the 4 screws for the fixation of the fixing device and remove this device.

The weights are assembled in reverse order.

15) Drum self positioning DSP

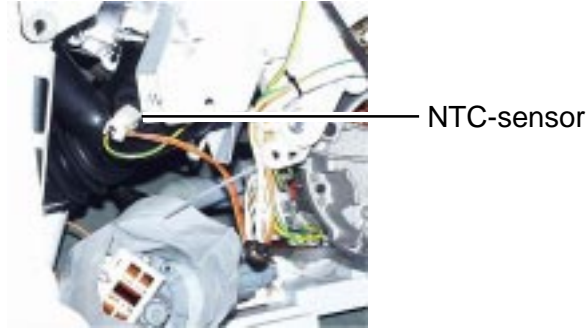
a) Disassembling

- 1 - Remove the right side panel.
- 2 - Remove the drive belt and the pulley.
- 3 - Unscrew the 2 screws from the DSP.



16) NTC-sensor

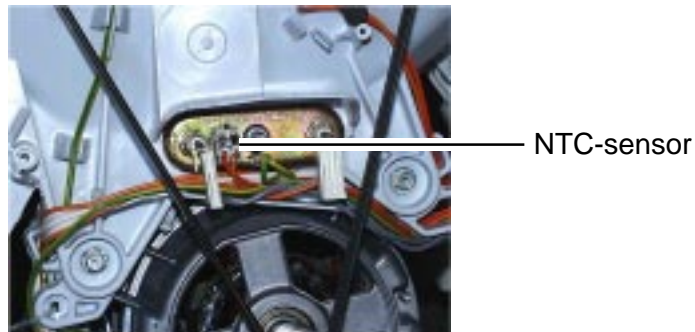
a) Version 1 NTC-sensor in the durit-hose



Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Remove the NTC-sensor from the durit hose
- 3 - Insert the new NTC-sensor with silicone in the durit hose

b) Version 2 NTC-sensor in the heating element

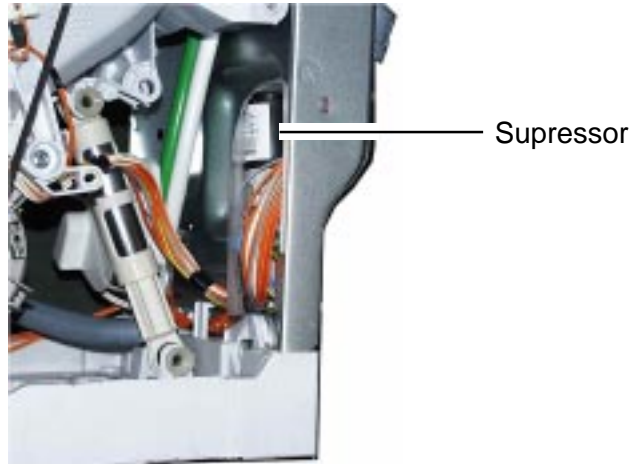


Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Heatingelement loosen.
- 3 - Remove the NTC-sensor careful
- 4 - Press in the NTC sensor and retighten the heating element.

17) Supressor

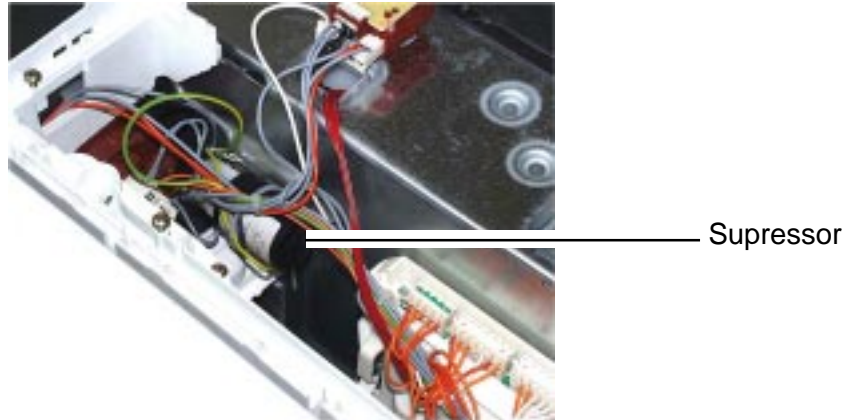
a) Version 1 Rear panel, bottom right



Disassembling / Assembling

- 1 - Remove the right side panel.
- 2 - Disassemble the supressor
- 3 - When assembling the new supressor, reinstall the foil properly.

b) Version 2 Rear panel, top left



Disassembling / Assembling

- 1 - Remove the control panel.
- 2 - Unscrew the 3 fixation screws from the functional support.
- 3 - Remove the functional support.
- 4 - Disassemble the supressor