

Operating Instructions



Operating Instructions

For Winterhalter PT Series rack pass-through dishwasher
(translation of the original German operating instructions)

Table of contents

| | | | | | |
|-----------|---|-----------|-----------|--|-----------|
| 1 | About this manual | 2 | 13 | PIN Menu | 23 |
| 2 | Proper use | 2 | 13.1 | General settings | 23 |
| 2.1 | Improper use | 2 | 13.2 | Programming automatic switch on / switch off | 25 |
| 3 | Safety notes | 2 | 13.3 | Operating data | 26 |
| 3.1 | General safety notes | 2 | 13.4 | Hygiene logbook | 27 |
| 3.2 | Electrical Safety | 3 | 13.5 | Descaling / basic cleaning | 28 |
| 3.3 | Maintenance and Repairs | 3 | 13.6 | Changing the amount of detergent / rinse aid | 30 |
| 4 | Before working with the machine | 3 | 13.7 | Resetting the water back-flow counter | 31 |
| 5 | Product description | 4 | 13.8 | Checking the connection (only for CONNECTED WASH) | 32 |
| 5.1 | Mode of operation | 4 | 14 | Customer-specific modifications | 33 |
| 5.2 | Special equipment | 4 | 15 | Installing the machine and tables | 33 |
| 5.3 | Overview | 5 | 15.1 | Installing the machine | 33 |
| 5.4 | Display (Touchscreen) and start button | 6 | 15.2 | Attaching the tables | 33 |
| 5.5 | Standard washing programmes | 7 | 15.3 | Converting the rack guide | 34 |
| 6 | Rinse aid and detergent | 8 | 16 | Water connection | 35 |
| 6.1 | Rinse aid | 8 | 16.1 | Requirements for the on-site inlet water connection | 35 |
| 6.2 | Detergent | 8 | 16.2 | Requirements for the on-site water stop cock | 35 |
| 6.3 | Suction tube with level control | 9 | 16.3 | Connecting the supply hose | 35 |
| 6.4 | Changing the detergent product | 9 | 16.4 | Connecting the drain hose | 35 |
| 6.5 | Priming the dosing devices | 10 | 17 | Electrical connection | 36 |
| 7 | Integral water softener (special equipment) | 10 | 17.1 | Connecting the mains cable | 36 |
| 7.1 | Lack of salt display | 10 | 17.2 | Establishing an earth connection | 36 |
| 7.2 | Filling regeneration salt | 10 | 17.3 | Connection diagram | 37 |
| 8 | Operation | 11 | 18 | External dosing devices | 38 |
| 8.1 | Before switching on the machine | 11 | 18.1 | Terminals | 38 |
| 8.2 | Switching on the machine and preparing it for operation | 11 | 18.2 | Electrical connection | 39 |
| 8.3 | Washing | 11 | 18.3 | Setting parameters | 40 |
| 8.4 | Switching off | 13 | 19 | Taking the machine out of service for a long period | 40 |
| 9 | Servicing and maintenance | 14 | 20 | Putting the machine back into service after a long period of disuse | 40 |
| 9.1 | Daily cleaning | 14 | 21 | Technical Information | 41 |
| 9.2 | Weekly cleaning | 15 | 22 | Emissions | 41 |
| 9.3 | Monthly cleaning | 16 | 23 | Disposal | 41 |
| 9.4 | Descaling | 16 | 24 | EC Declaration of Conformity | 42 |
| 9.5 | Maintenance by the Customer Service | 16 | | | |
| 10 | Malfunctions | 17 | | | |
| 10.1 | Accessing up the error code | 19 | | | |
| 10.2 | Poor cleaning result | 19 | | | |
| 10.3 | Increased generation of noise | 19 | | | |
| 11 | Info Level 1 | 20 | | | |
| 12 | Info Level 2 | 22 | | | |





1 About this manual

This manual contains information and instructions for the safe operation and maintenance of your dishwasher. Keep the operating instructions accessible. On our website www.winterhalter.biz/manuals you can find the operating instructions in electronic form, too.



Please note carefully the safety notes listed here.

The following symbols are used in these instructions:

| Symbol | Meaning |
|---|---|
|  Danger | Warning against potential serious or fatal injuries to persons if the described precautionary measures are not taken. |
|  Warning | Warning against potential minor injuries to persons or potential material damage if the described precautionary measures are not taken. |
|  Caution | Warning against defects in or destruction of the product if the described precautionary measures are not taken. |
|  | Read through the safety information and operating instructions in this manual carefully before you start working with the machine. |
| IMPORTANT | Important information is given here. |
| INFO | Useful information is given here. |
| ➤ | This symbol indicates instructions. |
| ⇒ | This symbol indicates results of your actions. |
| – | This symbol indicates itemizations. |
| ▶ | This symbol refers to a chapter with more detailed information. |

2 Proper use

- The PT Series dishwasher is a technical device for commercial use and is not intended for private use.
- Use the dishwasher only for the washing of dishes such as plates, cups, cutlery and trays or for washing glasses of a gastronomic and related type.

2.1 Improper use

- Children must not play with the device.
- Do not use the dishwasher to wash electrically heated devices or parts made of wood.
- Do not wash without a wash rack.
- Do not wash parts made of plastic if they are not heat and lye-resistant.
- Use a suitable detergent to wash parts made of aluminium such as jars, containers or plates in order to prevent black stains.
- Winterhalter Gastronom GmbH does not assume liability for any damage caused due to improper use of the device.

3 Safety notes

3.1 General safety notes

- Read through the safety notes and operating instructions in this manual carefully. Retain the operating instructions for future reference. Winterhalter Gastronom GmbH does not assume liability or warranty in case of non-adherence to these safety and operating instructions.

- Do not make changes, additions or reconstructions in the dishwasher without the approval of the manufacturer.
- Do not transport the warewasher with the ClimatePlus heat pump installed. The centre of gravity is situated on the right side and the warewasher could tip over.
- Use the dishwasher only after you have read and understood the operating manual. Allow the Winterhalter Customer Service to provide information about the operation and functioning of the dishwasher. Always operate the machine as described in these operating instructions.
- Train the operating personnel as regards handling the machine and inform them about the safety notes. Repeat the training sessions at regular intervals to prevent accidents.
- For your safety, test the local fault current circuit breaker (FI) regularly by pressing the test button.
- Close the on-site water stop cock after the work is complete.
- Switch off the local mains disconnecter after the work is complete.

3.2 Electrical Safety

- The electrical safety of this machine is guaranteed only if it is connected to a correctly installed protective circuit and a residual current circuit breaker. It is very important that this basic safety requirement is tested and in case of doubt the house installation is checked by a qualified electrician.
Winterhalter cannot be held responsible for damage caused by a missing or broken earthing system (e.g. electrical shock).

3.3 Maintenance and Repairs

- Maintenance work and repairs may only be performed by service technicians authorised by Winterhalter. Improper maintenance or repairs may cause significant danger for the user, for which Winterhalter is not liable.
- When performing maintenance and repair work, unplug machine from the power network. Electricity consumers (heating element, frequency inverter, ...) are under voltage until the on-site mains disconnect switch has been operated.
- Only original Winterhalter spare parts may be used for maintenance and repairs. If original spare parts are not used, the warranty is invalidated.
- A damaged or leaking machine can endanger your safety. In case of defects, switch off the machine immediately. Switch off the on-site mains disconnecter (main switch). Only then is the machine without power.
- Do not operate a damaged machine. In case of defects resulting from an unknown cause, switch off the machine, and do not switch it on until the defect has been rectified.
- Contact your installer or electrician if the on-site water or electricity supply is the cause of the malfunction.
- Notify an authorised service technician or your retailer if another fault has occurred.
- If the mains cable of this machine is damaged, it must be replaced by the Winterhalter or its Customer Service or another qualified person in order to prevent hazards. The mains cable must be H07 RN-F type or equivalent.

4 Before working with the machine

- Have the machine set up by an authorised service technician or your dealer (► ¶15).
- Have the machine connected as per the locally applicable standards and the regulations by authorised mechanics (water, waste water, electrical system) (► ¶16 and ¶17).
- After connecting the water and the power properly, contact the relevant Winterhalter dealer or your dealer for the commissioning of the machine and for providing training in its operation. Get yourself and your operating personnel trained in the operation of the machine.

5 Product description

5.1 Mode of operation

The boiler and the tank fill and are warmed up to the operating temperature after the machine is switched on. During the heating phase, the lighting of the start button (3) changes gradually from red to green. When the target temperatures are reached, the machine is ready for use. The start button lights up green.

The machine is fully automatic with programmes consisting of three steps: Wash, Drain and Rinse. Whilst a washing programme is running, the start button gradually moves from blue to green.

5.2 Special equipment

The following special equipment is available:

- **Cool (only for glass washers)**

Requirement: Connect the machine to the cold water.

In this process, the rinse is effected with cold fresh water.

⊕ The glasses are ready to use immediately after washing.

IMPORTANT The first rinses after activating this function will still be with hot or warm rinse water.

INFO This function can be deactivated at any time.

- **effect**

Requirement: Connection of the machine to water at a maximum 50 °C when the glasswasher is operated.

In this process, you wash with reduced tank and boiler temperatures.

⊕ Sustainable improvement of the kitchen climate and reduction of operating costs.

IMPORTANT Washing at these temperatures requires Winterhalter detergents and rinse aids which are appropriate for this process.

INFO This function can be deactivated at any time.

- **EnergyPlus**

Requirement: Connect the machine to the cold water.

In the construction above the machine there is a fan motor and a heat exchanger. The fan draws the moist, warm air (= vapours) out of the interior and transfers the generated energy to the cold inlet water via a heat exchanger. A waste water heat exchanger provides an additional energy gain.

⊕ Sustainable improvement of the kitchen climate and reduction of operating costs.

- **ClimatePlus (PT-M and PT-L only)**

Requirement: Connect the machine to the cold water.

In the construction above the machine there is a fan motor and a heat pump. The fan motor extracts the moist, warm air (= vapours) out of the interior and transfers the generated energy to the cold inlet water via a heat exchanger.

⊕ Air-conditioning effect on the kitchens and reduction of operating costs.

- **Automatic hood opening**

The hood opens automatically after each wash cycle.

- **Integral softener (► 7)**

- **PAY PER WASH**

Machines with this special equipment are rental machines. All wash cycles have to be purchased in the Winterhalter Internet portal.

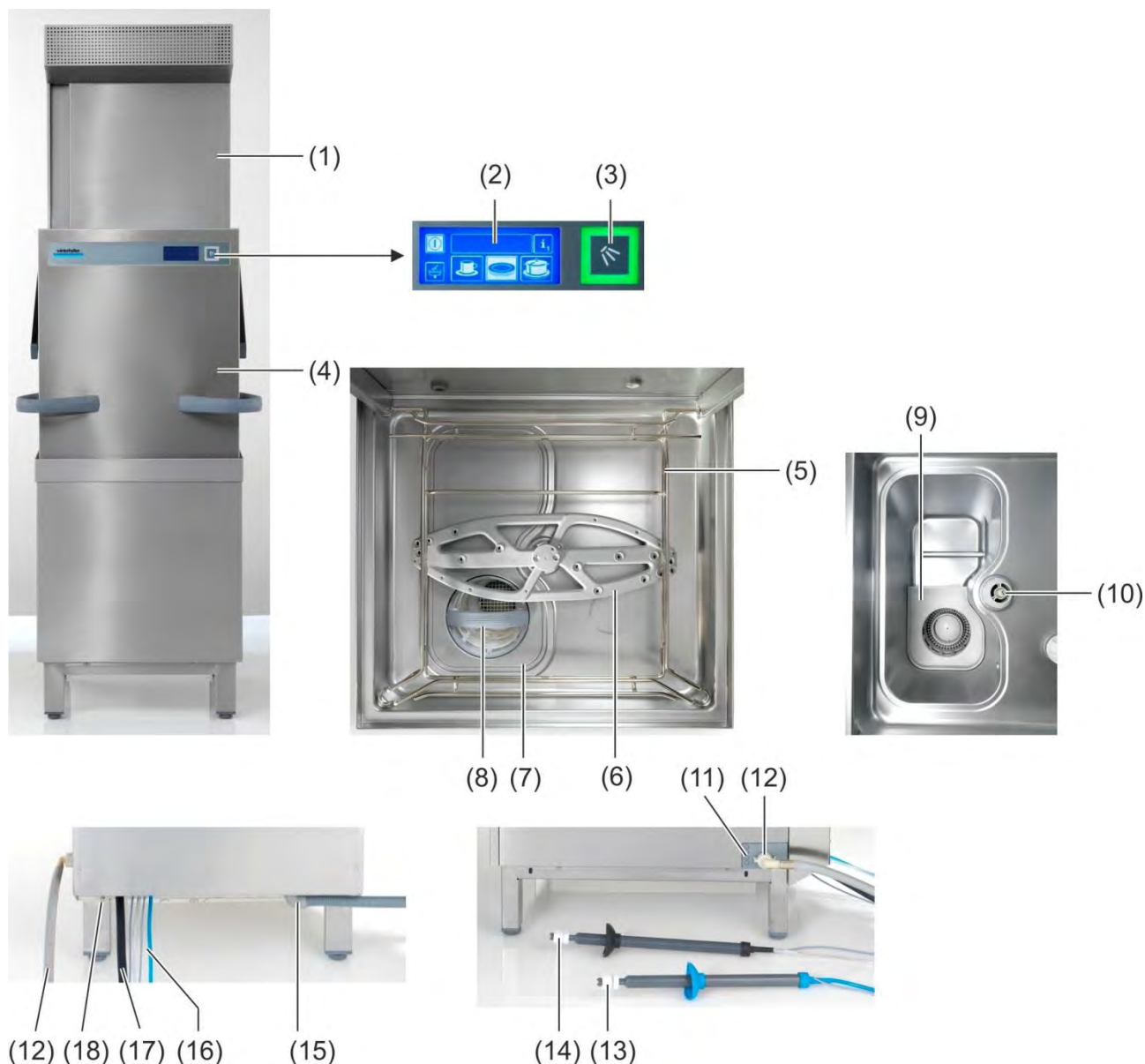
Identification feature: The text PAY PER WASH on the display.

The special functions of PAY PER WASH are described in a supplementary manual that can be downloaded from the Winterhalter website: www.winterhalter.biz/manuals.

- **CONNECTED WASH**

Machines with this special equipment can be connected with the Winterhalter Internet portal. After registration, you can read the various operating data and information about the machine there. The special functions are described in a supplementary manual that comes with the machines.

5.3 Overview



| Pos. | Description |
|------|--|
| (1) | Energy module (special equipment) or heat pump module (special equipment, no illustration) |
| (2) | Display (Touchscreen) |
| (3) | Start button |
| (4) | Machine hood (= hood) |
| (5) | Rack guide |
| (6) | Lower rotating wash field |
| (7) | Tank cover |
| (8) | Filter cylinder |
| (9) | Pump inlet filter |
| (10) | Wash field bearing |

| Pos. | Description |
|------|---|
| (11) | Bushings for cables and hoses |
| (12) | Water supply hose |
| (13) | Suction tube for rinse aid (blue cap and blue suction hose) |
| (14) | Suction tube for detergent (black cap and transparent suction hose) |
| (15) | Water drain hose |
| (16) | Hoses and cable for the suction tubes |
| (17) | Mains cable |
| (18) | Connection for local equipotential bonding system |

5.4 Display (Touchscreen) and start button



Activating the display

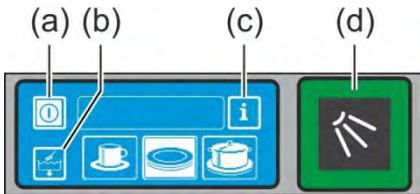
- Touch the display with your finger.
 - ⇒ The display turns on and then off again after a short time. This saves energy and prevents accidental switching on of the machine.

INFO Switching on the machine, see Section ► §.2.

On the screen touch-sensitive buttons (keys) are displayed. Operate the screen with your fingers only, not with sharp objects. Each touch of a button is confirmed by a beep. Events such as the end of the programme or malfunctions are indicated by a sequence of tones.

INFO An authorised service technician can deactivate the beep and the sequence of tones.

Operational state



- (a) On/Off key
- (b) Self-cleaning programme
- (c) Change to Info Level 1 → Info Level 2 → PIN Menu
- (d) Start button

Start button

The coloured lighting of the start button (d) has the following meanings:

| Colour | Meaning |
|---------------------|--|
| not lit | Machine is switched off |
| red | Machine is not yet ready for use |
| green | Machine is ready for use |
| blue | Machine is washing |
| red and green | Machine is filling and heating up |
| green and blue | Washing programme is running |
| blue and not lit | Self-cleaning programme is running |
| flashing green | Washing programme is ended; hood has not been opened yet |
| flashing green-blue | Only for the EnergyPlus und ClimatePlus models: Vapours being extracted. The washing programme has not completely finished. |

Menu levels

The machine electronic control unit is split into 3 levels:

- Level for the dishwashing staff (► §.5)
- Info level 1 with additional washing programmes and information (► ¶11)
- Info level 2 with access to the PIN Menu (► ¶12)

5.5 Standard washing programmes

The washing programme display depends on which application the machine has been programmed for. If necessary, the machine can also be reprogrammed later.

Programme 2 is already pre-selected when the machine is ready. Another washing programme is selected by tapping. The selected programme is represented by a button with a white background.

| Application of the machine | 1 | 2 | 3 | Programme 1 for | Programme 2 for | Programme 3 for |
|----------------------------|---|--|---|-----------------------|-----------------------|----------------------|
| Dishwasher |  |  |  | slightly dirty dishes | medium dirty dishes | heavily dirty dishes |
| Glasswasher |  |  |  | delicate glasses | less delicate glasses | robust glasses |
| Bistro dishwasher |  |  |  | glass | glasses and cups | plates |
| Bistro and cutlery washer |  |  |  | glass | cutlery | plates |
| Cutlery washer | |  | | | cutlery | |

INFO The indicator on your dishwasher may vary since the authorised service technician can display appropriate images for your machine from a collection of images. At your request, the service technician can also hide programmes.

6 Rinse aid and detergent



Danger

- When handling chemicals, observe the safety precautions and the dosage recommendations on the packaging.
- Wear protective clothing, protective gloves and protective goggles when handling chemicals.



Caution

- Use only products that are suitable for commercial dishwashers. Such products are appropriately marked. We recommend Winterhalter products. These are especially adapted to Winterhalter dishwashers.
- Do not put rinse aids in the storage container for detergents and vice versa.

6.1 Rinse aid

A rinse aid is necessary to ensure that water on the dishes drains off after washing and dries off after a short while. Rinse aid is automatically dosed from an external container. The rinse aid dosing device is an integral component of the machine. The dosing amount is set by the authorised service technician when commissioning the machine (► ¶13.6).

6.2 Detergent



Caution

- Do not use acidic detergents.
- Do not mix different detergent products in order to prevent crystallisation that could destroy the detergent dosing device (► ¶6.4)
- Do not use products that can create foam, e.g. hand soap, soft soap, hand wash liquid. Ensure that these do not enter the machine even during the pre-treatment of the dishes.

A detergent is necessary to ensure that the leftovers and dirt on the dishes is cleaned. Detergents can be dosed as follows:

- Manually as detergent powder.
- Automatically from an external container using a detergent dosing device.

INFO The detergent dosing device is not included in the scope of delivery of all machines. When using an external dosing device, a transfer strip is available for connecting the dosing device (► ¶18).

6.2.1 Manual dosing of detergent powder

Pre-dosing

- Switch on the machine and wait until the start button is lit green.
- Adhere to the dosing instructions on the packaging of the detergent. The machine's tank capacity is approx. 35 litres.
- Place approx. 100 g of detergent powder in the machine. This corresponds to a dosing of approx. 3 g/l.
- Then start the wash cycle immediately to mix the detergent powder with the water.

Post-dosing

At each wash cycle approx. 2.0-2.5 litres of fresh water enter the dishwasher, which must be mixed with detergent powder.

- Fill approx. 30 - 40 g detergent powder into the machine after 5 wash cycles.

6.2.2 Automatic dosing of liquid detergent

The dosing amount is set by the authorised service technician when commissioning the machine (► ¶13.6).

6.3 Suction tube with level control



Caution

- Only use the suction tube with sufficiently stable containers. Narrow and tall containers can tip if the suction tube is pulled.
- Do not place the suction tube for the rinse aid in the detergent container or vice versa.
- Do not pull unnecessarily on the suction hose or main power cable, as this may lead to a defect.

As an option, with your machine you may have one or more suction tubes. The suction tube is already connected to the machine.



Figure 1

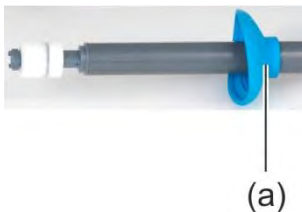


Figure 2

Figure 1:
Suction tube for detergent
Transparent suction hose
Black cap

Figure 2:
Suction tube for rinse aid
Blue suction hose
Blue cap

Servicing and maintenance



- Rinse the suction tube at every container change under running water. Remove crystallised detergent residue.
- Ensure that both vent holes (a) in the caps are open.
- Put the suction tube back into the container. Slide the cap downwards until the container opening is closed.

6.4 Changing the detergent product



Caution

- Mixing different detergents can lead to efflorescence that can lead to a failure of the detergent dosing device. This is applicable even if the new detergent is from the same manufacturer.
- The dosing tubes and the detergent dosing device must be thoroughly rinsed with water before the new detergent is used.

- A new detergent product usually requires a new setting of the detergent dosing device. Assign the required work to an authorised service technician to attain good cleaning results.

If this is not done, the warranty and product liability of Winterhalter Gastronom GmbH expires.

Integral water softener (special equipment)

Procedure:



Danger

- Observe the safety precautions when handling chemicals and the dosage recommendations on the packaging.
- Wear protective clothing, protective gloves and protective goggles when handling chemicals.
- Do not mix different detergents.

- Remove the suction tube from the container and place it in a water-filled container.
- Rinse the dosing tube and the detergent dosing device with water. To do this, use the "prime dosing device" function several times (► ¶11). The frequency depends on the length of the dosing tubes.
- Place the suction tube in the new detergent container.
- Use the "prime dosing device" function several times (► ¶11), to replace the water in the dosing tubes with detergent.

6.5 Priming the dosing devices

Dosing devices must be primed when air is reached in the dosing tubes because the containers were not exchanged or refilled in time (► ¶11).

7 Integral water softener (special equipment)

By softening the inlet water, limescale build-up in the machine and on the dishes is avoided. For the integral water softener to work correctly, the salt container must be filled with regeneration salt.

INFO At the commissioning of the machine the authorised service technician measures the water hardness and saves it in the machine's electronic control unit.

7.1 Lack of salt display



A pictogram appears on the screen when an empty salt container requires refilling. The display disappears after filling the salt container, as soon as approx. 3 wash cycles have been completed and part of the salt has been dissolved.

7.2 Filling regeneration salt



Caution

Possible risk of damage to the water softener

Chemicals such as detergent and rinse aid inevitably lead to damage to the water softener. Fill only with regeneration salt or pure evaporated salt.

Possible malfunction of the water softener

Do not fill with any other types of salt (e.g. table salt or de-icing salt). These can contain water-insoluble components. Fill only with fine-grained salt (max. 0.4 - 7 mm grain size).

INFO Because of their size, salt tablets are not suitable.

- Proceed in accordance with Figures A1 to A5.

IMPORTANT Figure A2 is only relevant for the first filling.



Caution

Risk of rust formation in the filling area

Immediately after filling, start a wash cycle to rinse off any salt residue.

8 Operation

8.1 Before switching on the machine



Caution

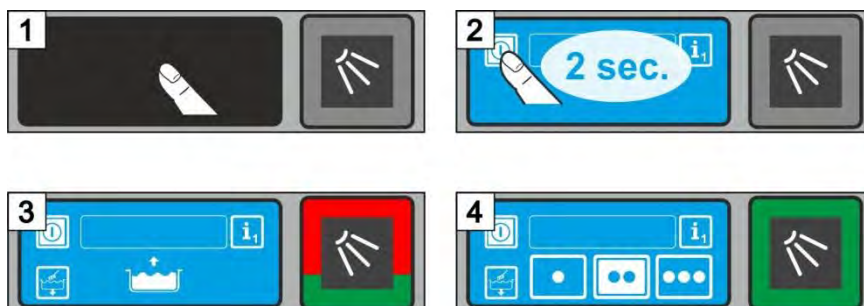
Possible risk of damage due to suction of items from within the machine e.g. pieces of cutlery

The pump inlet filter protects the circulating pump and the drain pump. Operate the machine only with the pump inlet filter fitted.



- Open the water stop cock.
- Switch on the local mains disconnecter.
- For your own safety, test the on-site residual-current circuit breaker (FI).
- Open the hood.
- Remove the filter cylinder (1).
- Check whether the pump inlet filter (2) is fitted. If it is not fitted there will be an error message when the machine is switched on.
- Insert the filter cylinder (1).
- Check whether the rotating wash fields (top and bottom) are fitted and properly engaged.
- Close the hood.
- Check whether sufficient detergent and rinse aid are present in the storage containers. Replace the storage containers in time so that the cleaning results are not affected.

8.2 Switching on the machine and preparing it for operation



8.3 Washing



Warning

Possible risk of scalding from hot wash water

- Keep children away from the dishwasher. The wash water is at a temperature of approx. 62 °C.
- Do not open the hood while the machine is washing. There is a risk of the hot wash water spilling out. Stop the washing programme before doing so (► 8.3.7).

Possible risk of injury

- Do not place any objects on the hood.
- Arrange sharp, pointed utensils so that they do not cause injury.



Caution

Possible failure of the washing programme due to heavy dirt ingress

Pre-rinse all dishes and pans with **cold** water. Remove food residues.

8.3.1 Arranging the dishes in the washing rack

Dishes and cutlery

- Place plates with their upper surface facing forwards.
- Place cups, bowls and pots rim down.
- Wash cutlery either standing in the cutlery holder or lying in a shallow basket. Make sure that they are not too close together. Soak cutlery, before you wash it.
- Position knives and other sharp objects in the cutlery holder with the handle up in order to prevent injuries.

Glasses

- Pour out drink residue (not in the machine).
- Remove scraps of paper.
- Rinse off ash with water.
- Place glasses rim down.
- Space the glasses, so they do not rub against each other. This will avoid scratches.
- For tall glasses choose a basket with appropriate divisions so that the glasses are held in a stable position.

8.3.2 Using automatic hood start

- Choose a washing programme (► §5.5).
INFO The washing programme remains selected until a different washing programme is chosen.
- Slide the washing rack into the machine.
- Check that the top and bottom rotating wash fields are free to turn.
- Close the hood.
⇒ The washing programme is started.

INFO The automatic hood start can be deactivated by an authorised service technician (P516). Every washing programme must then be started by pressing the start button.

8.3.3 Interrupting automatic hood start

- Do not close the hood completely, but only as far as the lower detent position.

8.3.4 Changing washing programme

- Choose a different washing programme by tapping the button (► §5.5).
⇒ The background of the button (4) becomes white.
- Close the hood.
⇒ The washing programme is started.

8.3.5 Intensive programme

If the stains are particularly dried in, the washing programme can be intensified

- Close the hood and press the start button twice in short succession ("double click").



⇒ In the info field, the "Brush" icon flashes.

INFO The intensive programme only affects the current washing programme and is then automatically deactivated again.

8.3.6 End of the programme

The start button **flashes green**, as soon as the washing programme has ended and the hood remains unopened.

Only for the EnergyPlus und ClimatePlus models:

At first, the start button **flashes blue-green**. At the same time, the warm-humid vapour is extracted from the washing compartment, and the heat energy stored in it is recovered for the next wash cycle. If possible, do not open the hood yet at this time.

The start button **flashes green** as soon as the warm air is extracted.

8.3.7 Prematurely terminating the washing programme

A washing programme can be terminated in the following ways:

- Press the start button
- Tap on the button of the selected washing programme

8.3.8 Periods of disuse

Do not switch the machine off during periods of disuse.

- Close the hood as far as the detent position to prevent it cooling down.

8.4 Switching off

Switch the machine off at the end of the working day using the self-cleaning programme (► 9.1.2), so that it is cleaned and emptied every day.

INFO If you use the On/Off switch, the tank stays filled but will no longer be kept at temperature. If the tank temperature has dropped too much before the machine is switched on again, the tank will be emptied automatically and filled again.

9 Servicing and maintenance



Warning

- Do not spray the machine and the surrounding area (panels, base) using a water hose, steam-jet air ejector or high-pressure cleaner.
- Ensure that the base of the machine is not flooded when cleaning the floor in order to prevent an uncontrolled inflow of water.



Warning

Wear protective clothing and protective gloves before touching parts in contact with detergent solution (filters, rotating wash fields, ...)

9.1 Daily cleaning

9.1.1 During operation

Remove the filter cylinder, clean if necessary and re-insert it.

9.1.2 Self-cleaning programme at the end of the working day

The machine is equipped with a self-cleaning programme that assists you when you are cleaning the inside of the machine. After the first programme step, the self-cleaning programme is interrupted so that you can remove the filter cylinder and the tank cover and clean them. If you do not follow this step, the self-cleaning programme will continue automatically after 30 seconds.

➤ Proceed in accordance with Figures B1 to B27.



Terminating the self-cleaning programme:

- Press this button.
 - ⇒ The background of the button becomes blue.
 - ⇒ The machine is filled again.



9.1.3 Cleaning the interior



Caution

Ensure that there are no rusty foreign objects in the machine which can cause even "rust-free stainless steel" material to start rusting. Rust particles can come from non-rust-free cleaners, damaged wire racks or non-rust-protected water lines.

The following materials must **not** be used for cleaning:

- High-pressure cleaner
- Detergents containing chlorine or acid
- Sponges and wire brushes containing metal
- Abrasives or abrasive cleaners

- Remove dirt with a brush or a cloth.

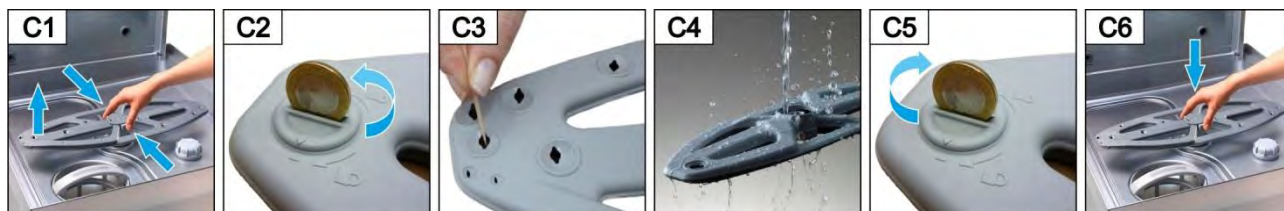
9.1.4 Cleaning the exterior of the machine

- Clean the display with a damp cloth.
- Clean the external surfaces using a stainless steel cleaner and stainless steel support.

9.2 Weekly cleaning

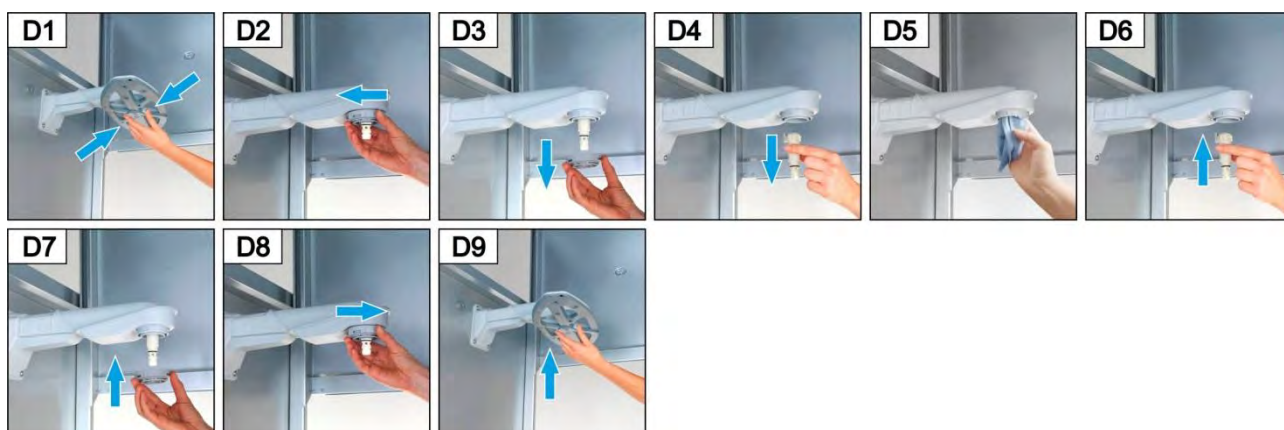
Cleaning the rotating wash fields (top and bottom)

- Proceed in accordance with Figures C1 to C6.



Cleaning the wash field bearings (top and bottom)

- Proceed in accordance with Figures D1 to D9.



9.3 Monthly cleaning

Only for the EnergyPlus und ClimatePlus models



Cleaning the energy module/heat pump:

- Slide the ventilation grill upwards and remove it.
- Clean the space behind the ventilation grill with a cleaning cloth.
- Wash the ventilation grill in the machine and then refit.



- Open the hood.
- Spray the suction channel with warm water. Use a water hose, not a high-pressure cleaner.
- Clean the suction channel with a cleaning cloth.

9.4 Descaling

If the machine is operated with water of high hardness without water treatment, descaling is necessary at regular intervals (► 13).

9.5 Maintenance by the Customer Service

We recommend that you have an authorised service technician carry out the maintenance of the machine at least once a year so that vulnerable parts can be checked and replaced accordingly. Original spare parts must be used for repairs and the replacement of worn parts.

Worn parts are, for example:

- Dosing tubes
- Bearings of the rotating wash fields
- Hood seal
- Water supply hose

Only for the EnergyPlus und ClimatePlus models:

The heat exchanger must be cleaned once a year irrespective of whether there is a maintenance contract or not. Depending on the degree of soiling, the performance of the heat exchanger will be reduced without maintenance.

- Contact an authorised service technician for the maintenance.



In the electronic control unit, the number of operation hours or washing programmes before servicing should be performed can be programmed and at what number of operation hours remaining the symbol for maintenance/service is displayed. If necessary, have this function activated by an authorised service technician.

10 Malfunctions

This chapter explains the remedies for malfunctions. The causes and remedies are specified in the tables. Contact an authorised service technician if you cannot rectify the error yourself.



Danger

Danger to life. Live components.

- Do not open any machine covers or machine parts if it requires tools. There is danger of shock.
- Only an authorised service technician should carry out work on the electrical system. The machine must first be disconnected from the mains.













Faults are displayed in the info field in the form of pictograms. In addition, every malfunction will be recorded in the hygiene journal (► ¶13) and can be retrieved in Info Level 2 (► ¶12). Information is recorded in both menus when the malfunction is remedied.

| Pictogram | Meaning | Possible Cause | Remedy |
|-----------|--|--|---|
| | Hood is open | Programme start with open hood | Close the hood |
| | Detergent is empty ¹ | | Change the detergent container |
| | Rinse aid is empty ¹ | | Change the rinse aid container |
| | Lack of water | Water stop cock closed | Open the water stop cock |
| | | Dirt filter in the dirt trap is blocked | Have the dirt trap cleaned by a service technician or have a new dirt trap installed |
| | | Solenoid valve defective or blocked | Contact an authorised service technician for the repair |
| | Integral water treatment is exhausted | Low salt | Fill the salt reservoir with regenerating salt (► ¶7.2) |
| | External partial or full demineralisation unit exhausted | | Exchange the partial demineralisation unit; exchange the resin of the full demineralisation unit. |
| | Service interval is running out | The number of operating hours / cleaning programmes set in the controls has been reached. INFO: This function is not activated in factory. | Contact an authorised service technician for the repair |
| | Check the calcification | The number of operating hours set in the control system has been reached. | Start the descaling programme (► ¶13.5) |

¹ is only displayed, when a suction tube with level control is used and connected to the machine.

Malfunctions

| Pictogram | Meaning | Possible Cause | Remedy |
|---|--|--|---|
|  | Lower rotating wash field is blocked | Rotating wash field is not correctly engaged | Correctly engage the rotating wash field |
| | | Rotating wash field obstructed by, e.g. a piece of cutlery | Remove the obstruction |
| | | Rotary wash arm blocked by pollution | Clean the wash field bearing (► 9.2) |
| | | Defective drive ² | Contact an authorised service technician for the repair |
|  | Upper rotating wash field is blocked | Rotating wash field obstructed by, e.g. high dishes | Remove the obstruction |
| | | Rotating wash field blocked by pollution | Clean the wash field bearing (► 9.2) |
| | | Defective drive ² | Contact an authorised service technician for the repair |
|  | Filter cylinder blocked | Heavily contaminated filter cylinder | Remove, clean and replace the filter cylinder |
|  | Energy optimization ³ | On-site energy optimisation equipment switches individual electrical consumers (heating elements). | Wait until the on-site energy optimisation equipment switches off |
|  | Pump inlet filter not fitted | Missing pump inlet filter ⇒ The machine switches off after 30 seconds and will not be filled. | Fit the pump inlet filter and, if necessary, switch the machine on again. INFO: When the prompt is downgraded three times, the machine can be switched on |
|  | Pump inlet filter not fitted despite three prompts | missing pump inlet filter IMPORTANT: The circulating pump and drain pump may get damaged by drawing in, for example, pieces of cutlery | Fit pump inlet filter |
|  | Automatic hood opening ² defective | Defective motor | Contact an authorised service technician for the repair |
|  | Tank will be filled | A washing programme is started while the machine is refilling | Wait till the machine has been filled |
|  | Error on external water treatment | Various | Contact an authorised service technician for the repair |
|  | Malfunction with error code | Various | Display the error code (► 10.1) and assign the repair to an authorised service technician |

² Special equipment

³ is displayed only when the machine is connected to an equipment with energy optimisation

10.1 Accessing up the error code

The following pictogram flashes in the info field:



- Access info level 2.
⇒ The list of events and malfunctions (1) is shown.



(1)

| Display | Explanation |
|-----------|--|
| Evt xx | Event (e.g. sequence of a washing programme) |
| ERR xx | Malfunction |
| ERR xx OK | Malfunction has been rectified |

- Contact an authorised service technician for the repair.

10.2 Poor cleaning result

| | Possible Cause | Remedy |
|--|--|---|
| The dishes do not get clean | No or low detergent dosing | Set the dosing amount as per the manufacturer's specifications (► ¶13.6) Check the dosing lines (for kinks, breakage, ...) Exchange the storage container, if empty |
| | Dishes incorrectly sorted | Do not stack dishes one over the other |
| | Nozzles of the rotating wash fields blocked | Remove the rotating wash fields and clean the nozzles (► ¶9.2) |
| | Temperatures too low | Check temperatures (► ¶11) |
| | | |
| There is formation of layers on the dishes | In case of limescale deposits: The water is too hard | Check the water preparation Clean thoroughly |
| | In case of starch residues: Temperature of the manual pre-cleaning (brush) is higher than 30 °C | Lower the temperature of the manual pre-cleaning Carry out the basic cleaning programme (► ¶13.5.2) |
| The dishes do not dry on their own | No or low rinse aid dosing | Set the dosing amount as per the manufacturer's specifications (► ¶13.6) Check the dosing lines (for kinks, breakage, ...) Exchange the storage container, if empty |
| | Rinse temperature too low | Contact an authorised service technician for the repair |

For machines without integral softener:

INFO The water quality affects the washing and drying performance. We therefore recommend from a total hardness of more than 3° dH (0.53 mmol/l) that the machine is supplied with softened water.

10.3 Increased generation of noise

For ClimatePlus machine models:

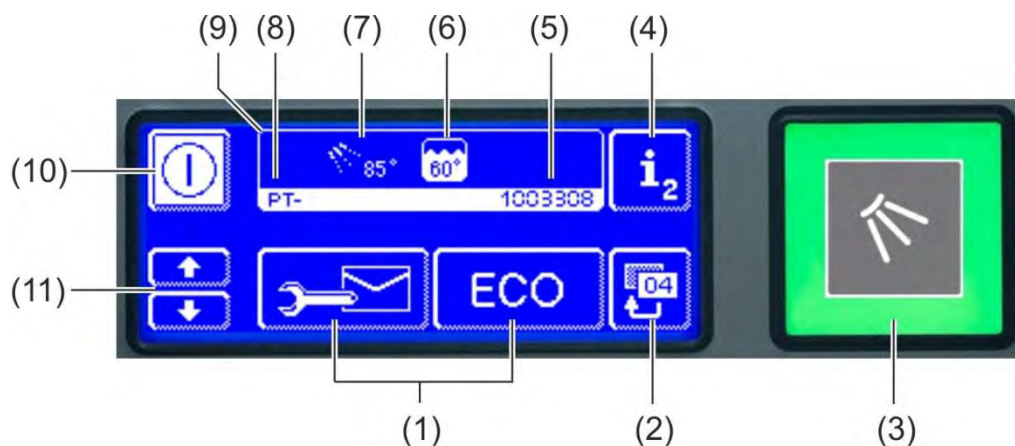
In rare cases a loud humming noise may develop due to sound reflection. In this case we recommend the installation of isolating buffers.

- Contact an authorised service technician for the installation.

11 Info Level 1

Accessing Info Level 1

➤ Press the following button:



| | |
|------|---|
| (1) | Buttons for retrieving information, the priming of the dosing devices and the selection of additional programmes |
| (2) | Back button |
| (3) | Start button |
| (4) | Switch to Info Level 2 (► i2) |
| (5) | Serial number |
| (6) | Current tank temperature |
| (7) | Current rinse temperature INFO The rinse temperature is lowered between rinse stages to save energy. The effective rinse temperature is only displayed at the start of the rinse. |
| (8) | Machine type (PT-M, PT-L or PT-XL) |
| (9) | Info field |
| (10) | On/Off switch (tank will then not be emptied) |
| (11) | Scroll buttons for area (1) |

Buttons of area (1)



Addresses

➤ Press the button.

⇒ The following 2 addresses appear:

- SERVICE: Address of the service technician
- CHEMICALS: Address of the chemicals supplier (rinse aid, detergent, ...)

INFO If no addresses appear, the authorised service technician can enter the matching addresses.



Prime the detergent dosing device and dosing tube

➤ Keep the button pressed.

⇒ The background of the button becomes white. The dosing device is activated (max. 30 seconds)



Prime the rinse aid dosing device and dosing tube

➤ Keep the button pressed.

⇒ The background of the button becomes white. The dosing device is activated (max. 30 seconds)



Integrated operating instructions

- Press the button.
 - ⇒ The integrated operating instructions appear.



Tips

- Press the button.
 - ⇒ Tips appear concerning themes such as hygiene, conservation of dishes and economy.

INFO Accessing the integrated operating instructions and tips is possible at any time, even while a washing programme is running.

Additional programmes

INFO The number of additional programmes depends on the programming of the machine.



Energy saving programme



Low-noise programme
for especially quiet washing



Short programme



Special programme

The special programme can be freely programmed by the service technician to your wishes (time, temperature, mechanics, chemistry).

Using the additional programmes


- Tap on the button of the selected additional programme.
 - ⇒ The background of the button becomes white.
 - ⇒ In the info field the display of the temperature is replaced by the display of the additional programme.
- Press the start button (3) to start the additional programme.
 - ⇒ The start button (3) lights up in blue.
 - ⇒ The start button (3) flashes green when the additional programme has ended.
 - ⇒ The additional programme remains stored until it is disabled or another additional programme is selected.

Additional programmes with the "Cool" and "effect" special equipment



INFO Button appears only on "Cool" type machines.


As long as the button is enabled (white background) rinsing will be with cold water. To disable the function, the button must be touched.

- ⇒ The background becomes dark and  flashes in the info field (9).



INFO Button appears only on "effect" type machines.

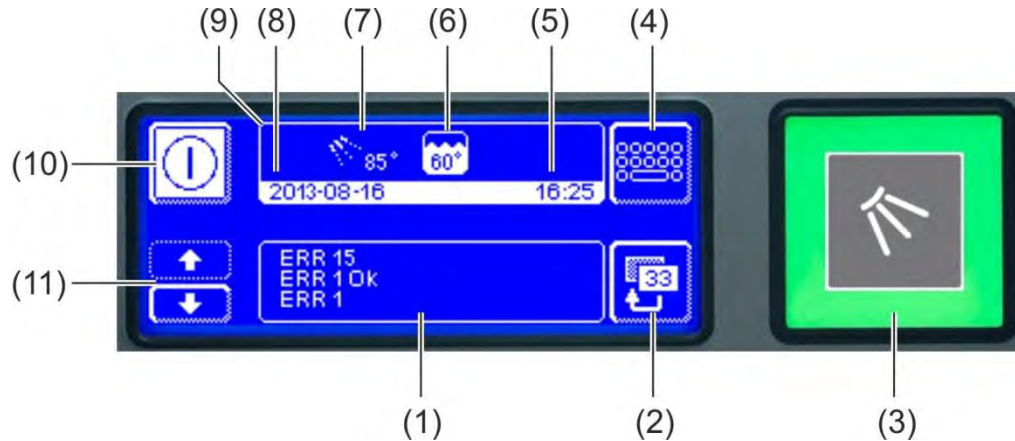
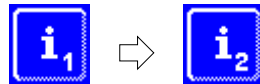
As long as the button is enabled (white background) rinsing will be at a lower temperature. To disable the function, the button must be touched.

- ⇒ The background becomes dark and  flashes in the info field (9).

12 Info Level 2

Accessing Info Level 2

➤ Tap the following buttons in turn:



| | |
|------|---|
| (1) | Area for displaying events and malfunctions |
| (2) | Back button |
| (3) | Start button |
| (4) | Switch to the PIN Menu (► 13) |
| (5) | Current time |
| (6) | Current tank temperature |
| (7) | Current rinse temperature INFO The rinse temperature is lowered between rinse stages to save energy. The effective rinse temperature is only displayed at the start of the rinse. |
| (8) | Current date |
| (9) | Info field |
| (10) | On/Off switch (tank will then not be emptied) |
| (11) | Scroll buttons for area (1) |

Events and malfunctions

In this field all events and malfunctions are displayed. Already resolved malfunctions appear here as well.

Example



| Display | Explanation |
|-----------|---|
| Evt xx | Event (e.g. end of a washing programme) |
| ERR xx | Malfunction |
| ERR xx OK | Malfunction resolved |

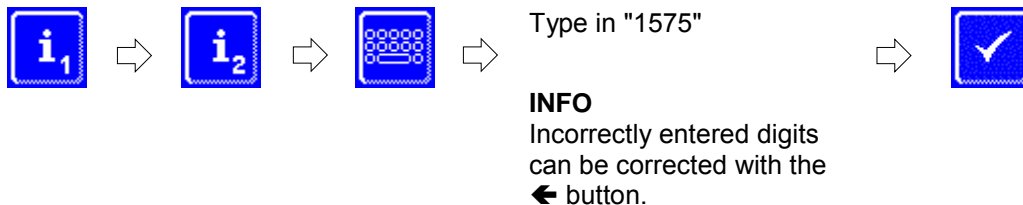
INFO Information with a date can be found in the Hygiene logbook (► 13.4).

13 PIN Menu

INFO If you switch to the PIN Menu, the machine switches off.

Accessing the PIN Menu

➤ Tap the following buttons in turn:



INFO An incorrectly entered PIN is displayed on the screen with the symbol. If you have entered your PIN incorrectly five times, the input is locked for 2 minutes.

Overview

| | |
|--|--|
| | General settings (time, date, language, contrast) (► ¶13.1) |
| | Programming automatic switch on/switch off (► ¶13.2) |
| | Displaying the operating data (► ¶13.3) |
| | Accessing the hygiene logbook (► ¶13.4) |
| | Starting the descaling or cleaning programme (► ¶13.5) |
| | Changing the amount of detergent/rinse aid (► ¶13.6) |
| | Setting the parameters for external dosing devices (► ¶18.3) |
| | Resetting the water back-flow counter (► ¶13.7) |
| | only for CONNECTED WASH (► ¶13.8) Checking the connection |

Leaving the PIN Menu

➤ Press the button.



13.1 General settings

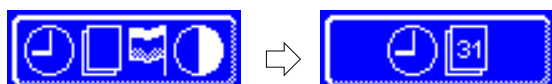
13.1.1 Date, time, temperature unit

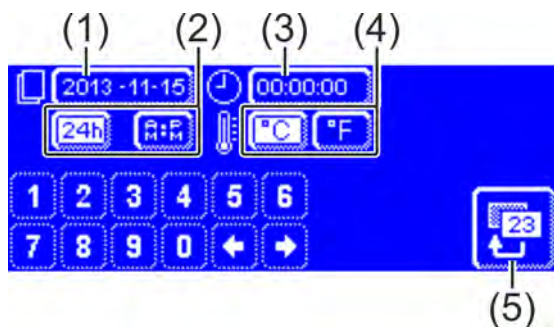
Here you can enter the current date and the current time, change the format of the time, and change the temperature unit.

INFO The time must be changed for the summer/winter time changeover.

Retrieving the settings

➤ Tap the following buttons in turn:





| | |
|---|--|
| 1 | Current date (Format: YYYY-MM-DD (year-month-day)) INFO You can only enter only a plausible date. |
| 2 | Time format – AM/PM = 12-hour mode – 24 h = 24-hour mode |
| 3 | Current time |
| 4 | Temperature unit – °C = degrees Celsius – °F = degrees Fahrenheit |
| 5 | Back button |

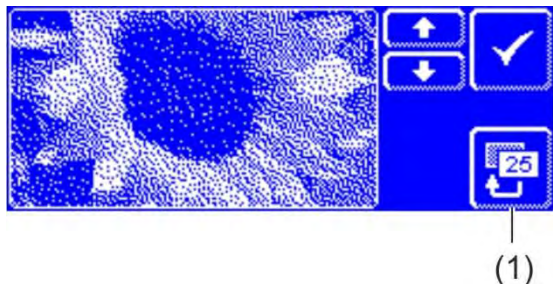
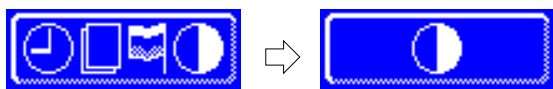
- Press the back button (3) to exit from the menu.

13.1.2 Setting the contrast

Here you can change the contrast to match the display of the screen to the lighting conditions in your kitchen.

Retrieving the settings

- Tap the following buttons in turn:



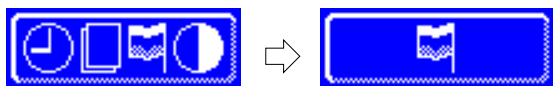
- Change the setting with the ↑ and ↓ buttons until all of the data on the display is readable.
- Confirm with the ✓ button.
- Press the back button (1) to exit from the menu.

13.1.3 Setting the language

Here you can set the language in which to display texts on the screen.

Retrieving the settings

- Tap the following buttons in turn:



- Select the required language.
- Press the back button (1) to exit from the menu.

13.2 Programming automatic switch on / switch off

Here you can:

- programme, when the machine is to fill and heat up automatically.
- programme, when the machine is to switch off automatically.

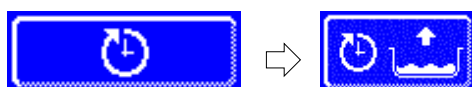
The automatic switching on/off can be set either per day or for a special date. If the inputs overlap, a specific date always takes precedence over the weekly programme.

IMPORTANT The following requirements must be met at the time of the automatic switch on:

- The hood is closed.
- The on-site mains disconnector is switched on.
- The water stop cock is open.

Programming automatic switch on

➤ Tap the following buttons in turn:

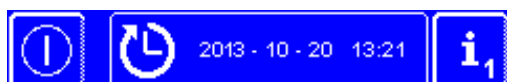


Setting the weekday

| | | | |
|---|-----------------------------------|-------------------------------------|-----------------------------------|
| 1 ➤ Activate functions. | 2 ➤ Select weekday. | 3 ➤ Activate weekday. | 4 ➤ Enter the time. |
| 5 ➤ Repeat as necessary for the other weekdays. | 6 ➤ Save. | | |

Setting a special date

| | | |
|---------------------------------------|--|-------------------------|
| 1 ➤ Activate functions. | 2 ➤ Enter the date and time. | 3 ➤ Save. |
|---------------------------------------|--|-------------------------|

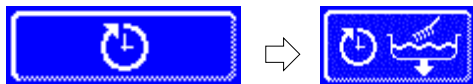


INFO

The date and time of the next automatic activation are displayed when the machine is switched on. However, the machine can be used before this point of time.

Programming automatic switch off

➤ Tap the following buttons in turn:



The setting of days of the week or special dates is much the same as for automatic switch on. Proceed as described in this section.

Sequence of the automatic switch off:

- ⇒ Sound 3 short beeps
- ⇒ 10 second pause
- ⇒ Sound 3 short beeps
- ⇒ 10 second pause
- ⇒ Sound 3 short beeps
- ⇒ The machine is emptied and switched off using the self-cleaning programme.

INFO If the hood is open at the time of the automatic switch off, the machine is pumped empty and switched off, but **not** cleaned internally.

13.3 Operating data

Here you can read out all operating data.

Retrieving the operating data

➤ Press the button.



The following operating data is shown on the display.

| | |
|---|---------------------------|
| Commissioning | Date |
| Next service in ⁴ | x hours or washing cycles |
| Total operation hours | x hours |
| Total washing cycles | x |
| Total water consumption | x litres |
| Full washing cycles EnergyPlus ⁵ | x |
| Total energy savings ⁵ | x kWh |
| Switching cycles heat pump ⁶ | x |
| Op. hours heat pump ⁶ | x hours |
| Absorbed energy ⁶ | x kWh |
| Delivered energy ⁶ | x kWh |
| Op. hours/day | x hours |
| Washing cycles/day | x |
| Water consumption/day | x litres |
| Remaining capacity water treatment | x litres |
| Operating hours Master old ⁷ | x hours |

INFO The display depends on the facilities of the machine.

➤ Press the back button to exit from the menu.

⁴ An authorised service technician can activate this function.

⁵ only for EnergyPlus models

⁶ only for ClimatePlus models

⁷ when a new display is installed

13.4 Hygiene logbook

In the hygiene logbook you can:

- retrieve all operating conditions, actions, and failures for one day in chronological order.
- retrieve all HACCP and hygiene relevant data.

The list starts with the current date and the first event on this day. Then the following events on that day, and then the events of days before. The most important operating data are summarized at the end of each day.

INFO When the memory capacity is reached, the oldest data is deleted as soon as new data is added.

Accessing the hygiene logbook

- Press the button.



- ⇒ The hygiene logbook display then appears:
 - The list starts with the current date and the first event on this day.
 - This is followed by the events from the days before.
- Press the back button to exit from the menu.

13.5 Descaling / basic cleaning

13.5.1 Descaling programme

If the machine is operated with hard water without water treatment, the boiler, the machine interior, all water lines and other components may scale.

Grease residues and dirt that remain in the machine can contribute towards an unhygienic interior and can lead to failure of heating elements. Regular removal of these layers is absolutely essential.

Using the descaling programme you can descale the interior of the dishwasher. The water lines and the boiler can only be descaled by an authorised service technician.

For descaling, you need an acid-based descaler suitable for commercial dishwashers. We recommend the Winterhalter Descaler A 70 LS.



Danger

- When handling chemicals, observe the safety precautions and the dosage recommendations on the packaging.
- Wear protective clothing, protective gloves and protective goggles when handling chemicals.

Ideally, start the descaling programme when the machine is empty and switched off. If the machine is already prepared for use, it will automatically empty first.

Only with an external detergent dosing device:



Warning

Development of chlorine gas

If you mix active chlorinated detergent and descaler, chlorine gas is produced. Stop the detergent dosing (e.g. remove the suction tube or switch off the dosing device).

INFO A detergent dosing device built into the machine will be disabled automatically in the descaling programme.

Starting the descaling programme

➤ Tap the following buttons in turn:



⇒ The button flashes while the programme is running.

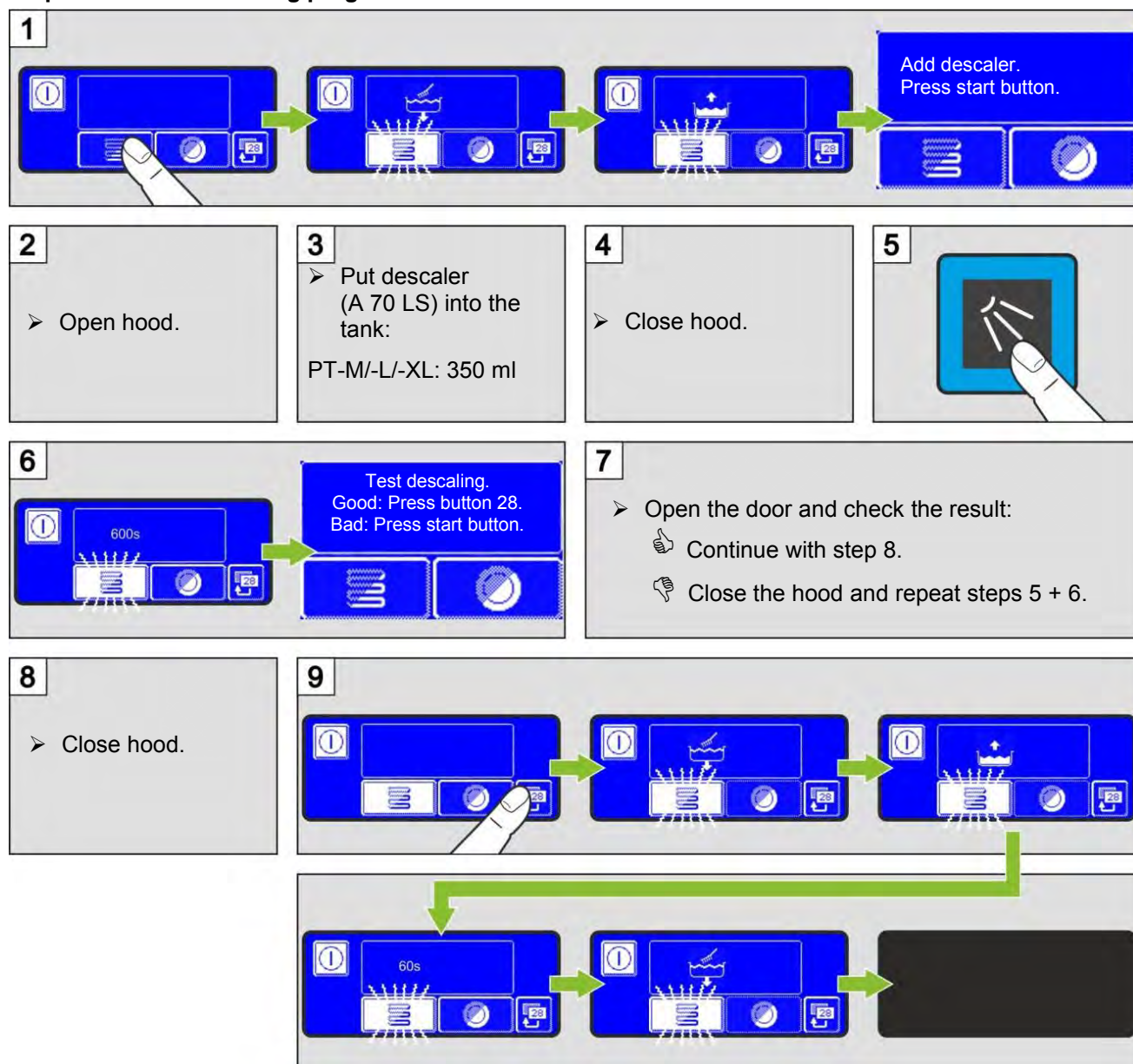


Warning

Descaler causes corrosion

The descaling solution must not remain in the machine. If you switch off the machine when the descaling programme is in progress or if you terminate the programme, the machine must be emptied, refilled and again emptied. Use the self-cleaning programme for this.

Sequence of the descaling programme

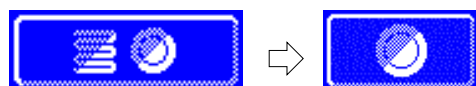


13.5.2 Basic cleaning programme

New dishes and new glasses generally have a protective coating, which can be removed by using the basic cleaning programme. The programme can also be used if coatings such as starch have built up on the dishes.

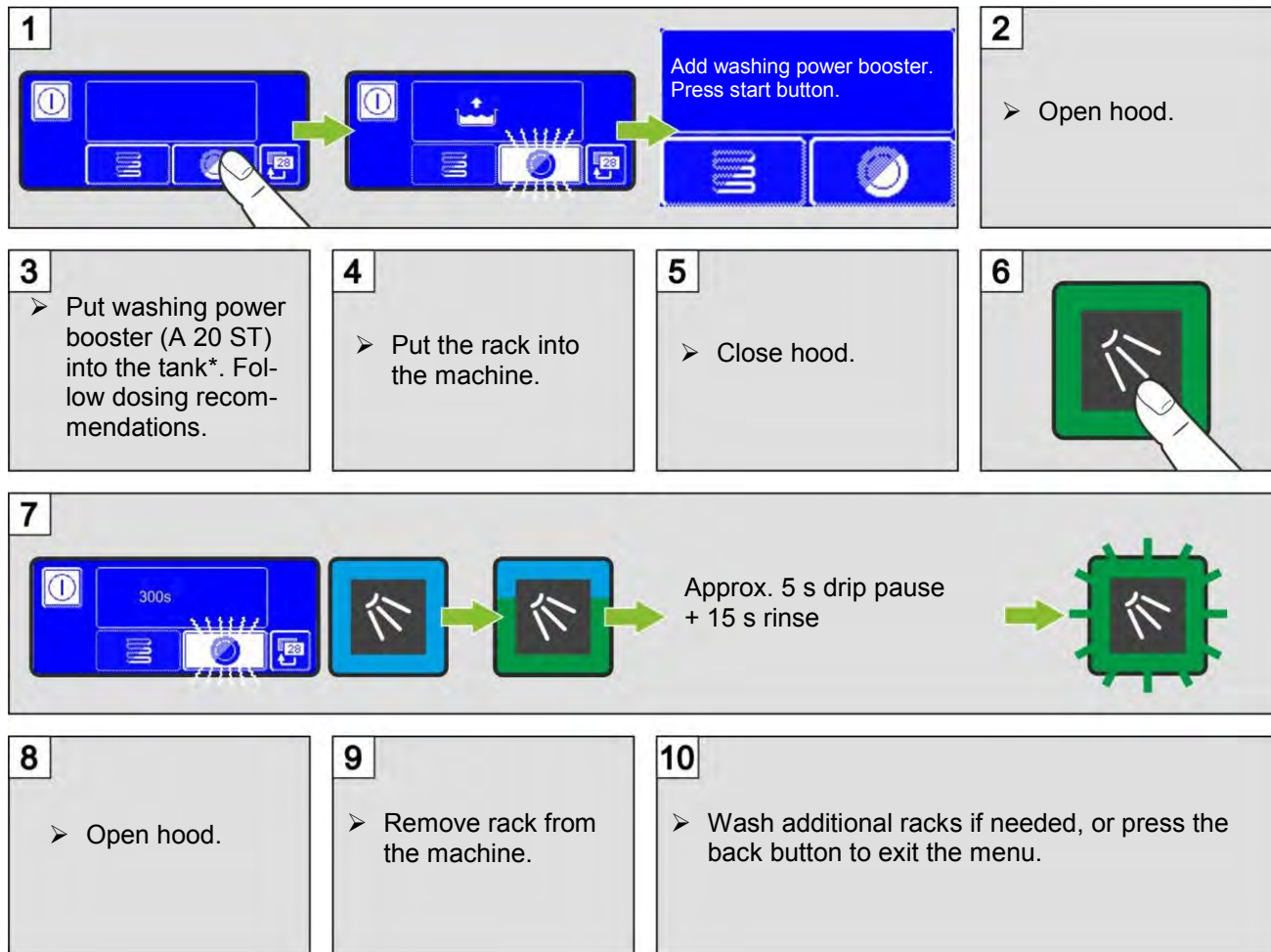
Starting the basic cleaning programme

➤ Tap the following buttons in turn:



⇒ The button flashes while the programme is running.

Sequence of the basic cleaning programme



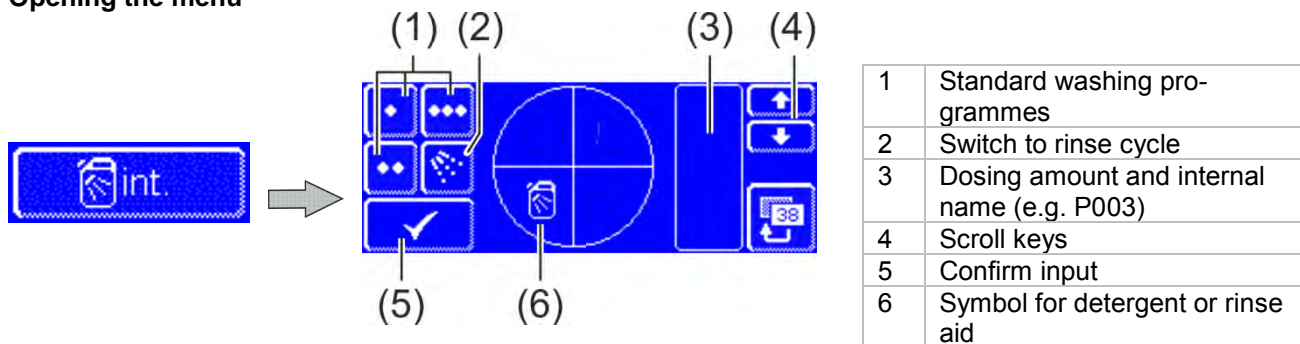
* Tank capacity: 35 l

13.6 Changing the amount of detergent / rinse aid

When a new detergent or a new rinse aid is used, it may be necessary to change the dosing amount. Please observe the dosing recommendations on the packing.

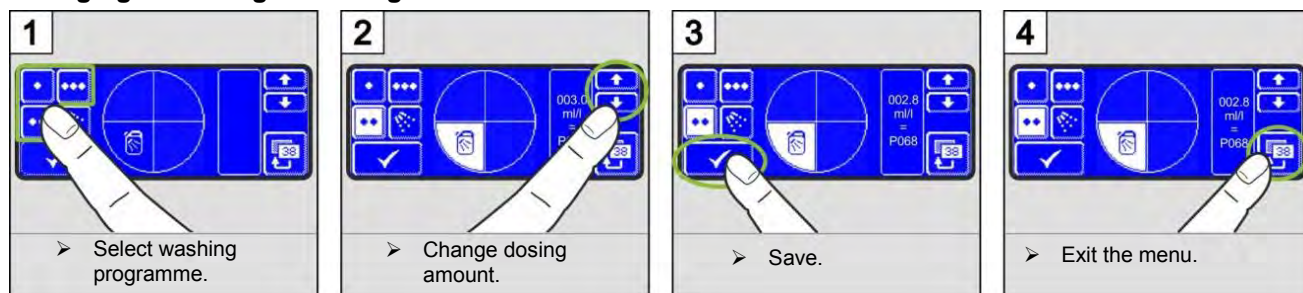
IMPORTANT In the next menu, only the dosing amount of the installed dosing devices is changed. Observe the respective device documents for external dosing devices.

Opening the menu

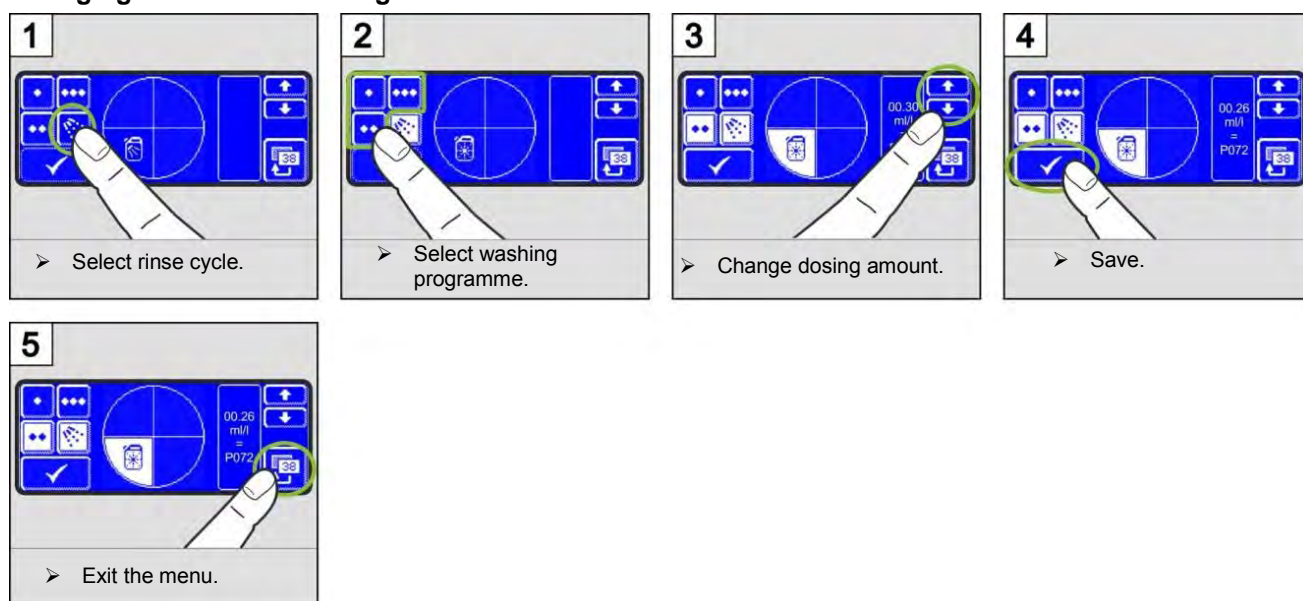


INFO The dosing amounts for each individual washing programme can be set differently.

Changing the detergent dosing amount



Changing the rinse aid dosing amount



13.7 Resetting the water back-flow counter

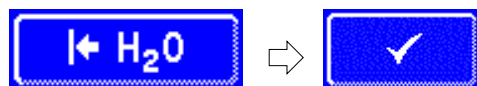


The water back-flow counter must be reset if this symbol flashes on the screen of machines with an external partial or full demineralisation unit.

- Contact an authorised service technician to exchange the external partial or full demineralisation unit.

Resetting the water back-flow counter

- Tap the following buttons in turn:



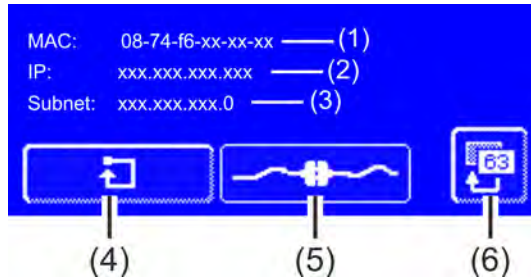
- Press the back button to exit from the menu.



13.8 Checking the connection (only for CONNECTED WASH)

If you have a CONNECTED WASH machine, you can use this menu to check the connection status of your machine or retrieve the connection details (e.g. the IP address of the warewasher).

Opening the menu

➤ Tap the button.



| Item | Description |
|------|--|
| 1 | MAC address of the warewasher |
| 2 | IP address of the warewasher |
| 3 | Subnet mask |
| 4 | Button for gateway reset |
| 5 | Connection status:  = connection to network established  = connection to network not established |
| 6 | Back button |

Gateway reset

The following factory settings are restored by pressing the button (4):

- Winterhalter server: europe-hub1.winterhalter.biz
- IP settings: DHCP
- Login for the web configuration screen: Username “admin” and password “admin”

If a connection cannot be established, please refer to the information in our FAQ: <http://www.connected-wash.biz/faq>. Here you can also find an analysis tool that helps you with troubleshooting.



14 Customer-specific modifications

The controls of the machine can be adapted to individual needs within certain limits.

Examples

- The pressure can be reduced if mainly light dishes are washed.
- The sound signal at the touch of a button can be disabled.

➤ Contact an authorised service technician for the modification.

15 Installing the machine and tables

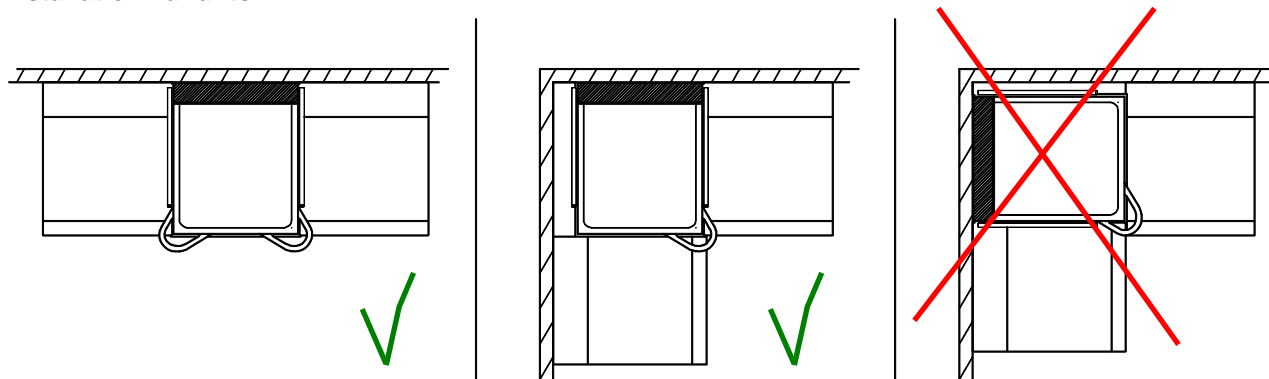
The installation site must be frost-resistant so that the water supply systems do not freeze. If the installation site is not frost-free: ► 19.

15.1 Installing the machine

INFO No gap is required between the wall and rear of machine. The wall gap for the ClimatePlus model may only be a maximum of 100 mm.

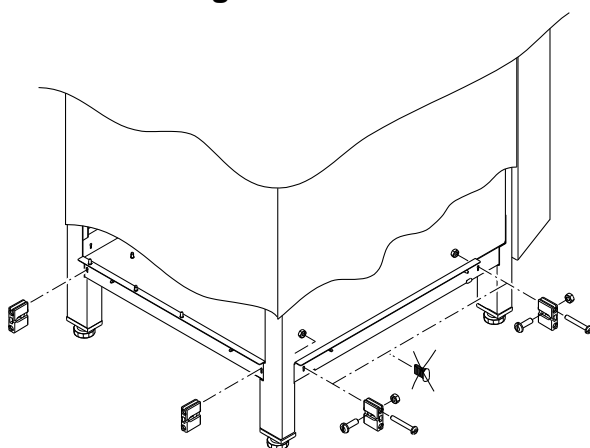
- Install the machine horizontally with the help of spirit level.
- Adjust the base unevenness with the help of the height-adjustable machine feet.

Installation variants



INFO If the machine is installed in a corner, the left hood handle must be removed. For plugging the holes a kit with part no. 30002147 is available.

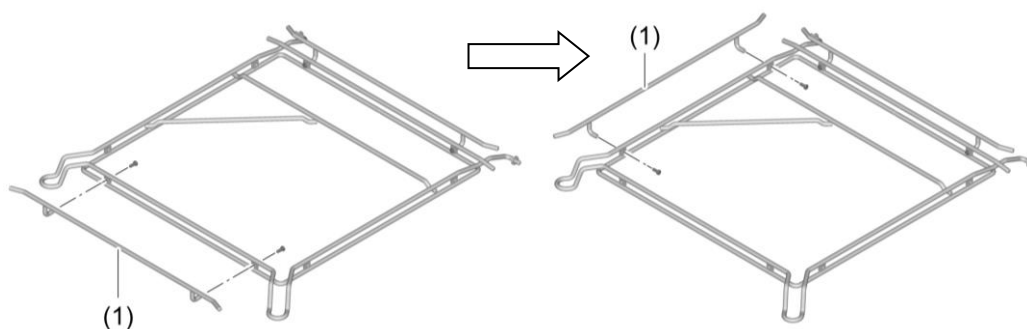
15.2 Attaching the tables



- Assemble tables.
- When Winterhalter tables are used, attach aluminium strut supports to the machine. The aluminium strut supports are in the machine.
- Secure the tables to the machine.
- Connect the earthing cable from the table to the machine.

15.3 Converting the rack guide

If the machine is installed in a corner, the rack guide must be converted.



➤ Unscrew the front guide bar (1) and attach to the left side of the rack guide.

With separately available guide bars, the rack guide can be converted to the following rack sizes and wall distances:

| Rack size | Distance between the wall and rear of the rack guide |
|--------------|--|
| 420 x 500 mm | 235 mm |
| 500 x 500 mm | 170 mm |
| 530 x 530 mm | 155 mm |
| 500 x 500 mm | 140 – 150 mm |
| 500 x 600 mm | 175 mm |
| 600 x 400 mm | 170 mm |
| 600 x 400 mm | 235 mm |

16 Water connection

The water-related safety should be as per DIN EN 61770. The machine can be connected to an inlet water supply without an intermediate connection to other safety equipment.



Warning

The machine and any other relevant additional devices must be connected by an authorised specialist company in relation to local standards and regulations.

16.1 Requirements for the on-site inlet water connection

| Water quality | The fresh water must in microbiological aspects have the quality of drinking water. | | | | | | | | | | | | | | | | | | |
|-------------------------|---|--|---|--------------------------------------|-----------------------------------|------|----------|--|---|---|------------|--|---|---|-------------|--|---|---|--|
| Water inlet temperature | max. 60°C max. 20 °C for Cool, EnergyPlus and ClimatePlus machine models max. 50 °C for effect glasswasher models | | | | | | | | | | | | | | | | | | |
| Water hardness | We recommend a maximum hardness of 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l), to prevent scaling in the machine. | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th></th><th>Machines without integrated softener</th><th>Machines with integrated softener</th><th>Note</th></tr> </thead> <tbody> <tr> <td>Standard</td><td>≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l)</td><td>≤ 30 °dH (37.6 °e / 53.4 °TH / 5.35 mmol/l)</td><td>—</td></tr> <tr> <td>EnergyPlus</td><td>≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l)</td><td>≤ 20 °dH (25.1 °e / 35.6 °TH / 3.58 mmol/l)</td><td>With a conductivity < 200 µS/cm (128 ppm TDS), a stainless-steel exhaust air heat exchanger is necessary.</td></tr> <tr> <td>ClimatePlus</td><td>≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l)</td><td>—</td><td>The conductivity must be ≥ 200 µS/cm (128 ppm TDS).</td></tr> </tbody> </table> | | Machines without integrated softener | Machines with integrated softener | Note | Standard | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | ≤ 30 °dH (37.6 °e / 53.4 °TH / 5.35 mmol/l) | — | EnergyPlus | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | ≤ 20 °dH (25.1 °e / 35.6 °TH / 3.58 mmol/l) | With a conductivity < 200 µS/cm (128 ppm TDS), a stainless-steel exhaust air heat exchanger is necessary. | ClimatePlus | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | — | The conductivity must be ≥ 200 µS/cm (128 ppm TDS). | |
| | Machines without integrated softener | Machines with integrated softener | Note | | | | | | | | | | | | | | | | |
| Standard | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | ≤ 30 °dH (37.6 °e / 53.4 °TH / 5.35 mmol/l) | — | | | | | | | | | | | | | | | | |
| EnergyPlus | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | ≤ 20 °dH (25.1 °e / 35.6 °TH / 3.58 mmol/l) | With a conductivity < 200 µS/cm (128 ppm TDS), a stainless-steel exhaust air heat exchanger is necessary. | | | | | | | | | | | | | | | | |
| ClimatePlus | ≤ 3 °dH (3.8 °e / 5.34 °TH / 0.54 mmol/l) | — | The conductivity must be ≥ 200 µS/cm (128 ppm TDS). | | | | | | | | | | | | | | | | |
| Minimum flow pressure | 100 kPa (1.0 bar) 150 kPa; (1.5 bar) for the EnergyPlus and ClimatePlus machine models | | | | | | | | | | | | | | | | | | |
| Maximum input pressure | 600 kPa (6.0 bar) | | | | | | | | | | | | | | | | | | |
| Flow rate | at least 4 l/min | | | | | | | | | | | | | | | | | | |

16.2 Requirements for the on-site water stop cock

- easily accessible
- not behind the machine
- 3/4" connector

16.3 Connecting the supply hose



Caution

The supply hose may not be shortened or damaged.
Old existing hoses may not be re-used.
Do not bend the supply hose while laying it.

The supply hose and dirt trap are located in the machine.
INFO The dirt trap prevents particles from the water supply line entering the machine thus preventing extraneous rust on the cutlery and in the machine.



Right view

- Connect the supply hose (TWw) to the machine.
- Connect the dirt trap to the on-site water stop cock.
- Connect the supply hose to the dirt trap.
- Open the water stop cock and test whether the connections are tight.

16.4 Connecting the drain hose



Caution

The drain hose may not be shortened or damaged.
Do not bend the drain hose when laying it.

The drain hose is located in the machine.
INFO The machine is equipped with a drain pump. The on-site water drain must have a trap. The maximum height of the on-site water drain is 650 mm.



Back view

- Connect the drain hose (A) to the machine.
- Connect the drain hose to the on-site water drain.

18.2 Electrical connection



Caution

When connecting an external dosing device to the control board, there must be no short circuit. The control board can be destroyed by a short circuit. Only connect external dosing devices with their own fuse protection.

IMPORTANT maximum current drain at the transfer strip: 0.5 A.

➤ Connect the external dosing device to the 5-pin plug.

Terminals (arranged from top to bottom)

| | Terminal | Voltage is on | Condition | Restriction | Setting |
|---|--------------------|---|--------------|------------------|----------------------|
|  | L1 | continuous voltage | | | |
| | N | | | | |
| | Rinse (O18) | parallel to rinse pump (O12) parallel to solenoid valve (O7) – while the machine is filling – during rinsing | a) a) | c), d), e) c) | P709 = 0 P709 = 1 |
| | Wash (O20) | while the circulating pump is running | a) | c), d), e) | |
| | Fill / Water (O17) | while the machine is filling parallel to solenoid valve (O7) – while the machine is filling – during rinsing | a), b) a) | c) | P704 = 0 P704 = 1 |

- a) hood / door closed
- b) minimum water level in the tank
- c) not in the self-cleaning programme
- d) not while the machine is filling
- e) not in descaling or basic cleaning programme

The parameters P704 and P709 control when a voltage is present at the “Fill” and “Rinse” terminals.

Connecting an external detergent dosing device

Example 1:
Hose pump with time-delay relay and fixed output

- Connect to “Wash” terminal.
- Set time-delay relay on the dosing device.

Example 2:
Hose pump with adjustable output

- Connect to “Fill” terminal.
- Set P704=1.
- Set output on the dosing device.

Example 3:
Hose pump with fixed output (e. g. ESP 166, ESP 166C, SP 166Z)

- Connect to “Fill” terminal.
- Set P704=2.
- Set both potentiometers to maximum.
- Set dosing amount on the machine.
- If the capacity is not equal to 166 ml/min, set P706 (see service instructions).

Connecting an external rinse aid dosing device

Example 1:
Hose pump with adjustable output

- Connect to “Rinse” terminal.
- Set P709 = 0.
- Set output on the dosing device.

Example 2:
Hose pump with fixed output (16 ml/min) (e.g. SP 16K)

- Connect to “Rinse” terminal.
- Set P709=2.
- Set potentiometer to maximum.
- Set dosing amount on the machine.