Operating instructions

Eco 2000

2026

IMO GmbH Gässlesweg 6 D-75334 Straubenhardt Tel.: +49 (0) 7082 49180 info@imo-ag.com www.imo-ag.com

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Dear Customer,

We appreciate your interest in our product and thank you for the trust you have placed in us.

Please observe the safety instructions listed below before commissioning your Öko 2000 circuit board washing machine.

1. Safety-related information

The Öko 2000 cleaning system may only be connected to a power supply that is protected by a maximum 16A fuse!
Please refer to the type plate for the mains voltage.

The system should be installed by personnel who are familiar with the installation of such or similar systems. Our technicians will be happy to assist you.

Please only use cleaning agents that you have purchased from us. Our cleaning agents are specially designed for the washing requirements of these printed circuit boards.
washing machine. If you still wish to use a different cleaning agent, please contact us for approval. Unauthorized cleaning agents can damage the machine, which will also void the warranty.

Please ensure that your items are suitable for this cleaning process. We accept no liability for damage to the printed circuit boards and components washed due to process, material, and temperature compatibility.

Glass tube micro fuses cannot be cleaned. Please only insert these components after cleaning.

Regularly check the edge of the lower metal sieve in the interior for rust spots. These can be caused by iron parts and lead to contact corrosion in the stainless steel sheet .

If you do not dry after the cleaning cycle, you must start a separate drying cycle every day after work to prevent corrosion damage (rust) to the drying turbine .

Only place loads on the open door with the support grate (and laundry) extended, max. 25 kg. Do not use as a work surface or seat, do not stand on it: risk of tipping!

To prevent water damage, the cleaning system can only be operated in conjunction with the supplied external solenoid valve.

We wish you every success in cleaning your products.

If you have any questions, please feel free to contact us at any time.

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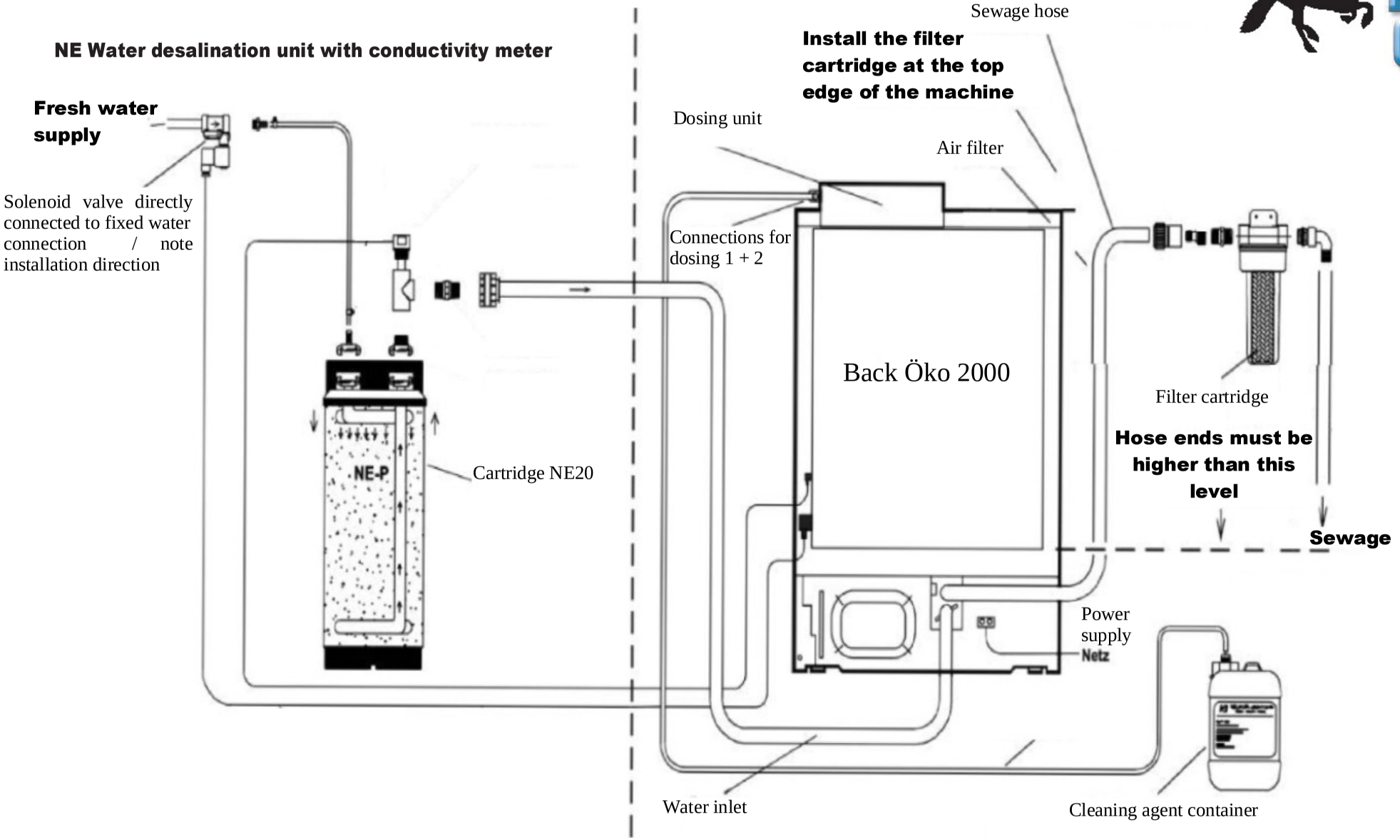
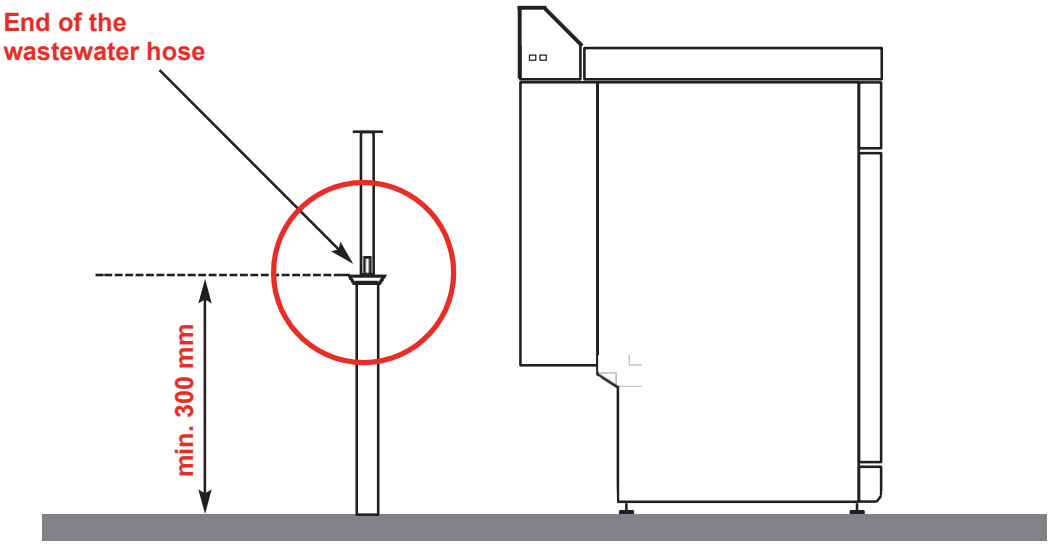
2. Connection diagram Öko 2000



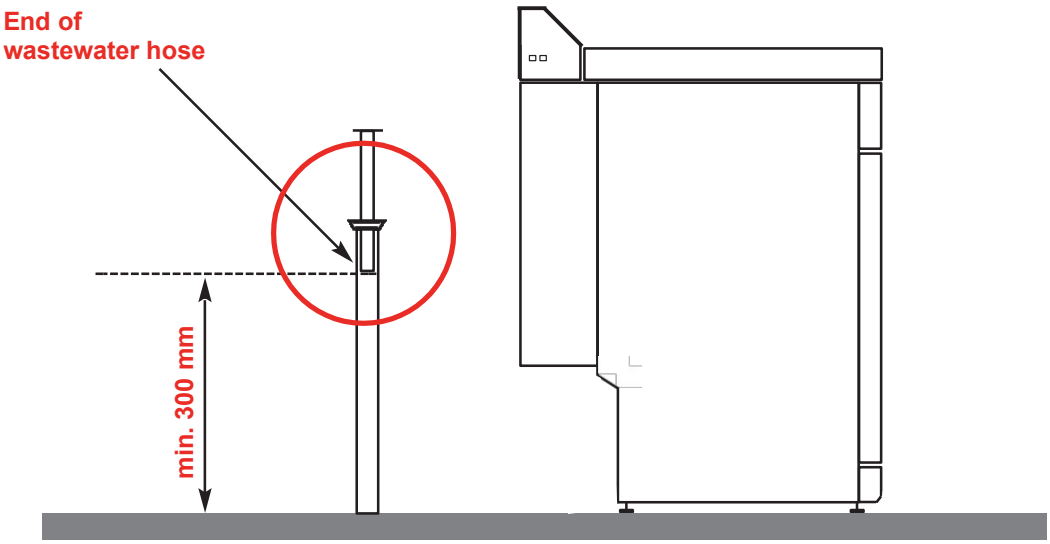
2.1 Connection diagram wastewater hose

To prevent uncontrolled drainage of water from the cleaning system,
the open, and therefore ventilated, end of the waste water hose must be installed at a height of at least 30 cm above the installation surface of the ÖKO2000 after the waste water filter .

If the hose ends lower down, the siphon effect can cause water to flow out of the system in an uncontrolled manner .



Alternatively



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3. Commissioning

3.1 Connecting the Öko 2000 PCB washing machine

Set up the Öko 2000 circuit board cleaning system horizontally and securely.

Fresh water:	Connect according to the connection diagram on page 5.
	The water pressure should be at least 2 bar and no more than 8 bar.
	Connection to a pressureless water heater is not permitted!
Waste water:	Connect according to the connection diagram on page 5.
	Local sewage regulations must be observed!
Electrical connection:	Only connect the cleaning system to 220 V - 230 V 50Hz alternating current via a properly installed grounded outlet.

3.2 Installation of the filter cartridge

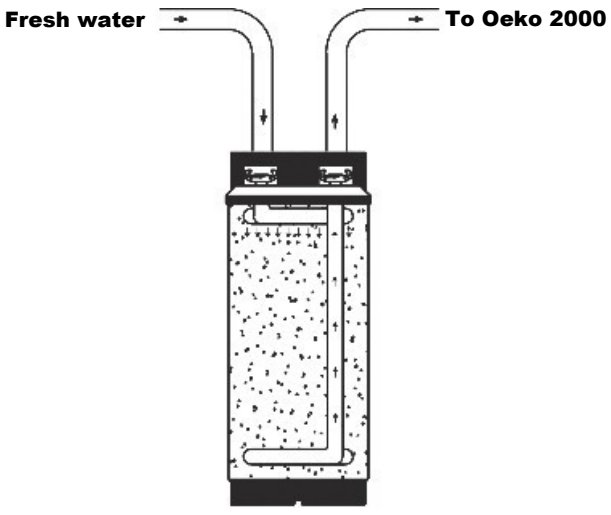
Mount the supplied filter cartridge **at the height of the top edge of the machine** on the wall. (See connection diagram, page 5).

3.3 Ventilation of the water desalination cartridge

Please note that when a new desalination cartridge is put into operation, it vents itself. This can lead to error messages, which should be ignored. The program will abort itself and must then be restarted. This process must be repeated until the cleaning program runs through. (Usually 5-10 times).

For faster venting, temporary operation in reverse flow direction is also possible. To do this, swap the "inlet" and "outlet" connections.
After filling the system several times, the connections must be reinstalled in their correct positions.

Residual venting can be carried out at the vent valve in the cover.



Normal operation

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3.4 Liquid cleaner

Dosage:

Liquid components are automatically dosed during cleaning via the built-in dosing pumps, as programmed. (Activator AT can also be added manually to the wash chamber before the cleaning process).

Powder:

Dispense powdered cleaning agents as shown before starting the cleaning process or when prompted by the system onto the inside of the open front flap.

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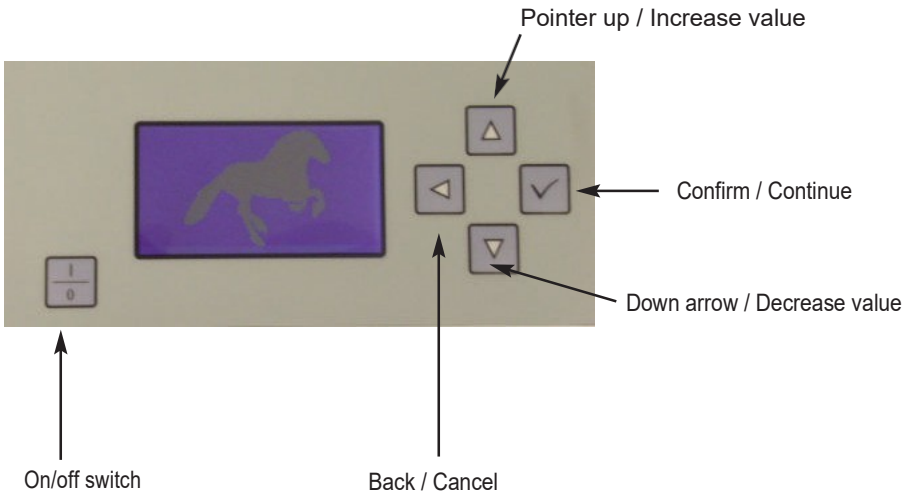
3.5 Front panel controls



The following wash programs are preset, but can also be changed:

Program 1:

For cleaning printed circuit boards in general, also suitable for removing "no clean" flux residues. Followed by drying.

Cleaner: Component A + and Mix 3

Program 2:

For cleaning printed circuit boards with exclusively rosin-based flux, followed by drying.

Cleaner: Mix 3, approx. 40 g

Program 3:

For cleaning lightly soiled items, e.g., degreasingn and dusting followed by drying.

Cleaner: Mix 3

Program 4:

Drying only

3.5.1 Remove the upper support rack

For large items, the upper support rack with spray arm can be easily removed. This gives you the full height of the interior for cleaning.

To remove, pull the upper support rack out as far as it will go, then lift it slightly and remove it at an angle. Insertion is done in the opposite manner.

The water supply to the upper spray arm is automatically shut off by a ball valve when it is removed. This means that the full spray power is available at the lower spray arm.

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3.6 Cleaning

1 Preparation

- Open the front flap
- Dose cleaning agent (see section 3.4)
- Place the washing frames equipped with printed circuit boards
  Place the washing frames in the washing room

2 Cleaning

- Close the front flap
- Switch on ÖKO 2000
- Select "Start program"
- Use the UP/DOWN buttons to select the desired program
- Confirm the selected program with the ENTER button
- The machine starts working and the program steps are shown on the display
- Completion notification after the end of the cleaning program

3 Remove laundry

- Switch off the machine
- Open the front flap
- Remove the washing frames equipped with printed circuit boards from the washing chamber.
  Caution: The items to be washed are hot!
- Close the front flap

Please note:
The device only operates when the front flap is completely closed. Opening the front flap immediately interrupts the program sequence. This is indicated by a corresponding message on the display. During the heating phases, the elapsed cleaning or rinsing time is displayed as '--'. Once the target temperature values have been reached , the programmed time runs down.
The elapsed time is displayed.

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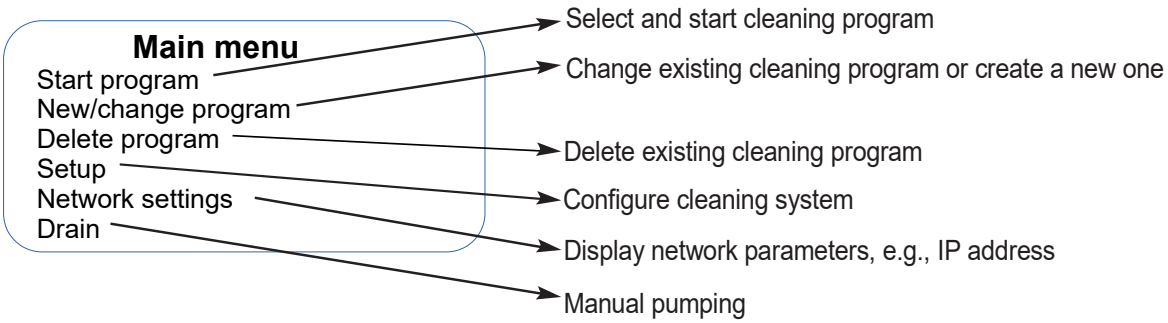
4. Operating overview

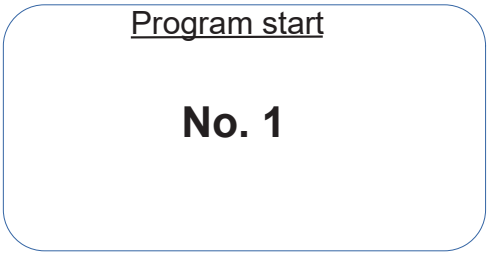
Function of the buttons

- I/0 On/Off
- ▲ Increase value / Move pointer up
- ▼ Decrease value/ Move pointer down
- ◀ Cancel / Return to previous menu item
- ✓ Confirm / Select menu item

4.1 Main menu



4.2 Start Program



Select existing cleaning program with ▲ and ▼

and start with ✓

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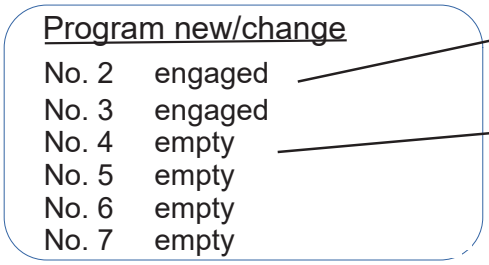
4.3 Program new / change



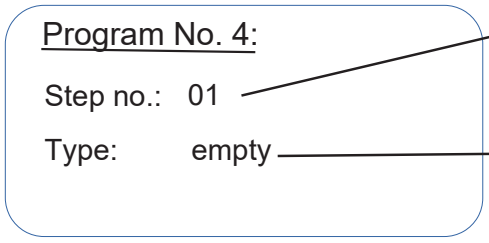
Existing cleaning program:
Change possible

Empty memory space:
New cleaning program can be added

Use ▲ /▼ to select the number of the program to be created / changed.

Use ☑ to enter edit mode

Note: Program numbers 1 to 20 are possible.

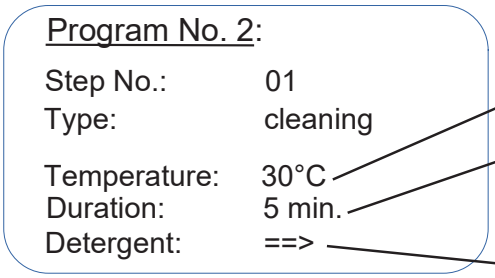


By selecting ☑ , ▲ and ▼ , you can scroll through the individual program steps.

Note: If the current step is empty, you cannot continue.

Type of programm step; can be changed by selection ☑ .

Note: Possible program step types are:
cleaning, rinsing, drying, empty (cleared)

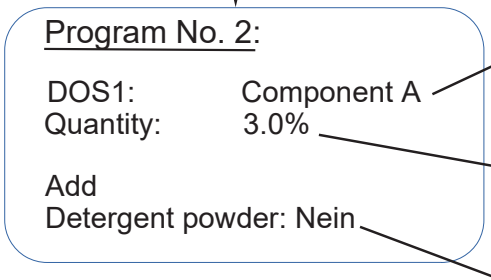


Type of program step 'cleaning':

Desired water temperature in the range of 20°C up to 70°C

Running time between 5 and 40 minutes after the water has been Heated to the desired temperature and the desired amount of detergent has been dispensed.

☑ Continue to the cleaner selection.



Selection of the dosing pump to be used in this program step (DOS1 or DOS2). The assigned cleaning agent is displayed in plain text (see also page 15).

Amount of detergent dispensed in relation to the amount of water (not with foaming or defoaming detergent; see page 20).

Addition of cleaning powder: Yes / No is switched ☑.
If "Yes" is set, the program stops and displays a reminder messege for manual dosing of cleaning powder.

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Program No. 2:

Step No.:	02
Type:	rinsing
Temperature:	30°C
Duration:	2 min.
EC-Limit:	40 µS

Program step type "rinse"

Desired water temperature in the range from 20 and 70°C

Running time between 2 and 20 minutes after the water has been heated to the desired target temperature.

Conductivity limit value in the range from 10 to 200 µS or "none" (conductivity measurement for this rinse cycle off).

Note: If an EC-limit value is specified, the same limit value is assigned to each subsequent rinse cycle. If there is a previous rinse cycle with an EC-limit value, this cannot be changed in the current rinse cycle.

Program No. 2:

Step No.:	03
Type:	drying
Temperature:	90°C
Drying grade:	5
Run after:	10 min.

Program step type "dry"

Desired air temperature at the fan outlet in the range from 50°C to 100°C.

Desired dryness level of the warm air in the range from level 1 to 8. At level 8, drying continues until the lowest residual moisture is reached.

Time in the range from 0 to 600 minutes, during which drying continues after the desired degree of dryness of the air has been reached in order to e.g., to completely dry out scoopable parts such as sockets.

Note: The drying step cannot be followed by another program step.

Rules of program-construction:

- No further program step can follow a drying step.
- There must be no empty (deleted) program steps between two program steps.
- A rinse step with an EC-limit value cannot be followed by a cleaning step. Conversely, an EC-limit value cannot be assigned to a rinse step before a cleaning step.
- If is assigned to a rinse step an EC-limit value, this limit value also applies to all subsequent rinse steps.
- If the EC-limit value of a rinsing step is maintained, every further rinsing step of the program is skipped, as sufficient cleaning has already been achieved.
- A maximum of 10 program steps are possible.

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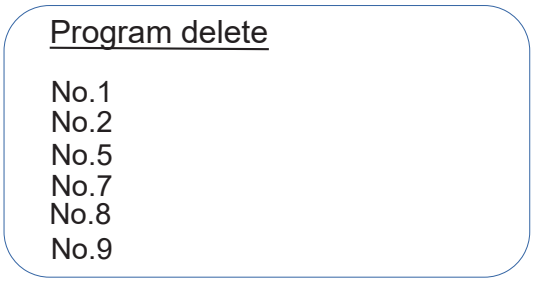
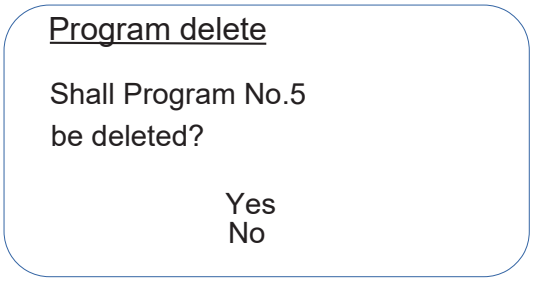
4.4 Program delete

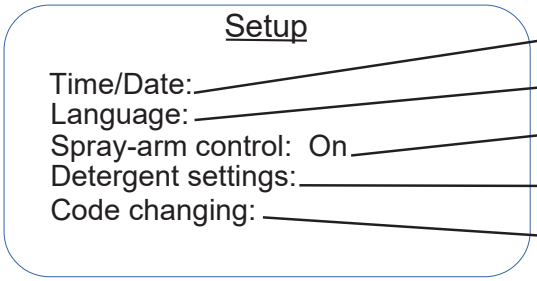


Use ▲ and ▼ to select a program from the list of available cleaning programs and confirm with ✓ to confirm.



Confirm the deletion process by selecting "Yes".

4.5 Setup



Setting the time and date for logs.

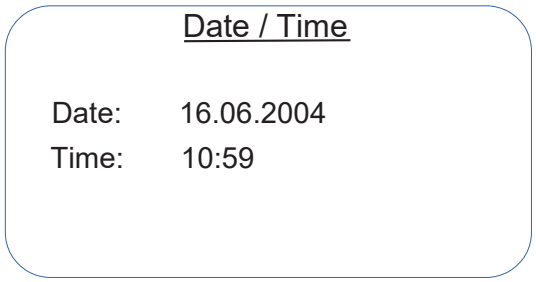
Changing the menu language

Spray arm monitoring on / off

Settings and maintenance fpr cleaning agents and dosing pumps

Code entry for access restriction

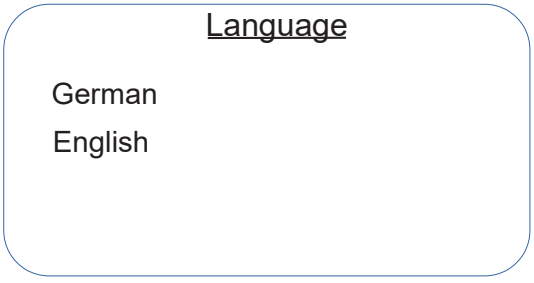
4.5.1 Date / Time setting



With ▲ /▼ and ✓ . Select date or time.

Use ▲ / ▼ to change the value (day/month/year or hour/minute and use ✓ to move to the next value.

4.5.2 Change menu language



Select the desired language with ▲ and ▼ and confirm with ✓ to confirm.

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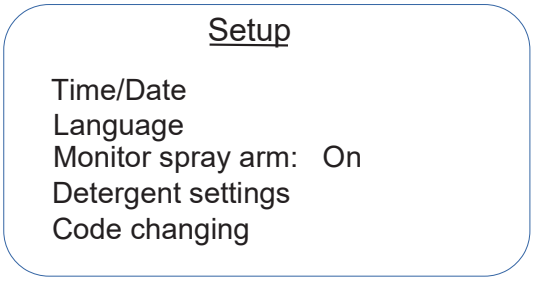
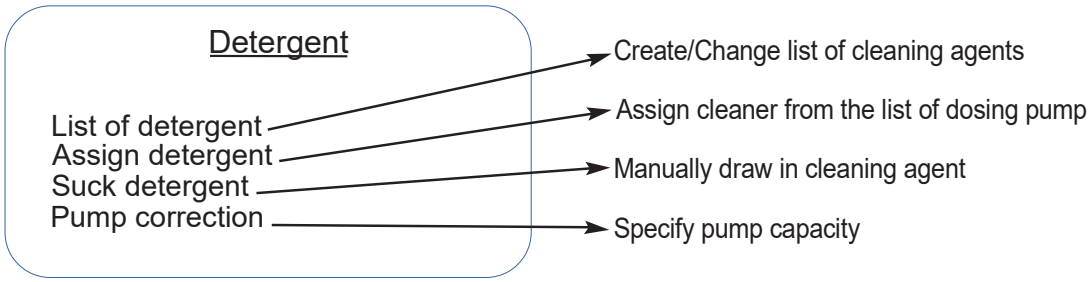
4.5.3 Spray arm monitoring on / off



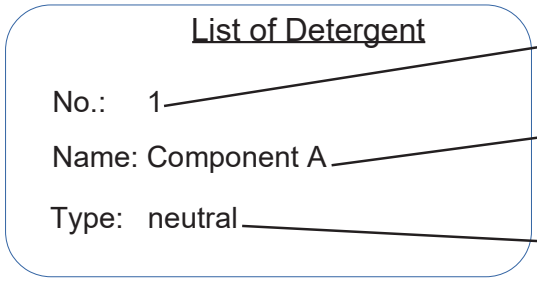
Select the “Spray arm monitoring“ entry with ▲ / ▼ and switch with ✓ to switch.

Note: Spray arm monitoring should generally remain switched on at all times, otherwise the foam control or blockage detection for the lower spray arm will not work. Cleaning programs that use foaming or defoaming detergents cannot be started if spray arm monitoring is switched off.

4.5.4 Cleaning agent



4.5.4.1 List of detergent setting / change



Scroll through the list using ▲ / ▼ and ✓ to select an entry.

Use ▲ / ▼ to change the text character and use ✓ to move to the next character.

The type of cleaner in terms of its foaming properties is set here. The possible settings are:

Foaming: The cleaner forms foam and is therefore gradually dispensed during a cleaning cycle until a light layer of foam has formed.

Defoaming: Some are used as foam inhibitors (e.g., when a foaming cleaning powder is used at the same time). During the cleaning process, this cleaner is dosed as needed.

Neutral: The cleaner has none of the above properties. It is therefore dosed in a fixed ratio to the amount of water filled. This ratio is specified when creating the cleaning program.

Empty: List entry does not contain any cleaner at all.

Note: If this cleaner is already used by cleaning programs, changes will also affect the programs concerned.

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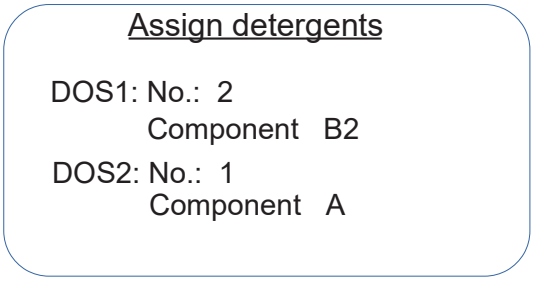
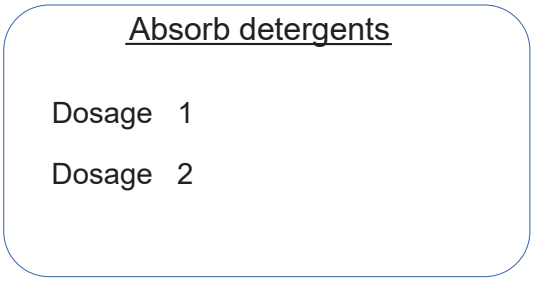
4.5.4.2 Assign cleaner to a dosing pump



Select the desired dosing pump with ▲ / ▼ . Then scroll through the list of available cleaners with ▲ / ▼ cleaners and select with ✓

Note: The same cleaner cannot be assigned to both dosing pumps.

4.5.4.3 Draw in cleaner



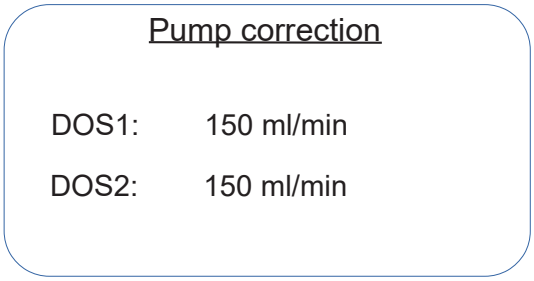
Use ▲ / ▼ to select the desired dosing pump and press ✓.

The corresponding dosing pump pumps for as long as the ✓ key is held down.

This function is required to flood the dosing hoses, e.g., after replacing a used cleaning agent container.

As long as there is air in the suction hose, it may be necessary to lift the cleaning agent container slightly during suction until the hose is completely filled with liquid. This is easy to see through the transparent hose.

4.5.4.4 Change pump factor



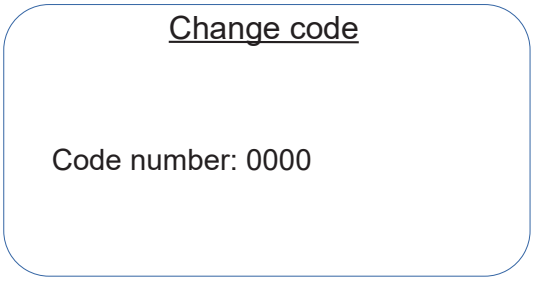
Enter the pump capacity for each dosing pump.

The quantity can be determined by pumping water for one minute using the suction function and measuring the quantity pumped.

The pump output should be checked approximately once a year and corrected if necessary.

Note: The output of the dosing pump is not changed; instead, the actual pump output is communicated to the system control. Worn dosing hoses can be replaced. See section 5.6.7.

4.5.5 Change code



The code number can be used to restrict access to the functions of the cleaning system. This function is deactivated with the code number “0000“.

The code number protects the following functions:

New/change program

Delete program

Change code

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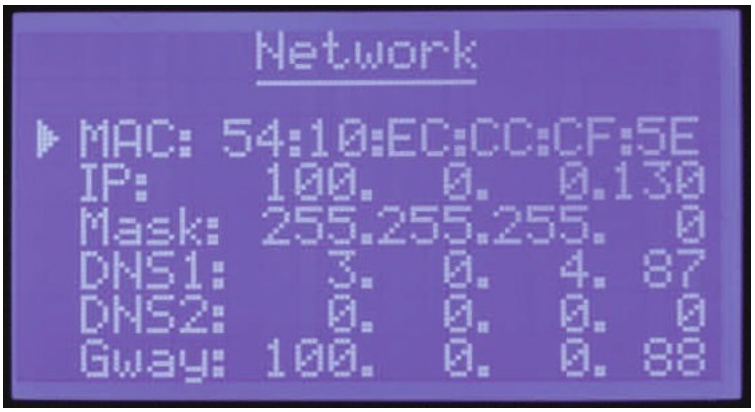
4.6 Network settings



After connecting the system to the company network, the ÖKO 2000 obtains an IP address via the DCHP system.

This address and other network parameters are displayed here. For more information on network connection, see section 6 (page 23).

5. Program sequence

5.1 Cleaning step

Program No. 2:

1: cleaning

Water: 0.7 litre
Temp.: 20°C / 50°C
Duration: --min / 20 min
DOS1: Component A 0.5%

Water is being filled:

The amount of water filled is displayed.

Program No. 2:

1: cleaning

Temp.: 20°C / 50°C
Duration: --min / 20 min
DOS1: Component A 0.5%

Water is heated and cleaning agent is dispensed:

The current water temperature and the target temperature are displayed.

Program No. 2:

1: cleaning

Temp.: 50°C / 50°C
Duration: 14 min. / 20 min.
DOS1: Component A 0.5%

Water is circulated and the cleaning time runs:

The time that has already elapsed and the target duration are displayed.

Program No. 2:

1: cleaning

Temp.: --°C / 50°C
Duration: --min / 20 min.
DOS1: Component A 0.5%

Cleaning step completed, the water is pumped out.

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5.2 Rinsing step

Program No. 2:

2: rinsing

Water: 0.7 litre
Temp.: 20°C / 40° C
Duration: ---min./ 10 min.
EC-Value: ---µS / 30 µS

Water is being filled:

The amount of water filled is displayed.

Program No. 2:

2: rinsing

Temp: 23°C / 40° C
Duration: --min./ 10 min.
EC-Value: --µS / 30 µS

Water is being heated:

The current water temperature and the target

temperature are displayed.

Program No. 2:

2: rinsing

Temp.: 40°C / 40°C
Duration: 8 min./ 10 min.
Ec-Value: --µS / 30µS

Water is being circulated; rinsing time is running:

The time that has already elapsed and the target

duration are displayed.

Program No. 2:

2: rinsing

Temp.: --°C / 40°C
Duration: --min./ 10 min.
EC-Value: 13µs / 30µS

Water conductivity is measured: If “none“ has been specified as the limit value, this part is omitted.

If the measured value is lower than the setpoint value, all subsequent flushing steps are omitted.

If the measured value is greater than the set target value, the next rinsing step is performed. If no further rinsing steps have been programmed, an error message is displayed. The cleaning program must be repeated, as the cleaning result is likely to be unsatisfactory.

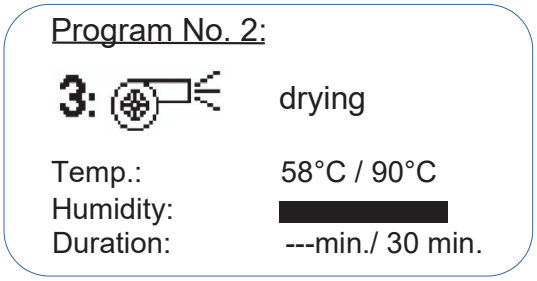
Program No. 2:

2: rinsing

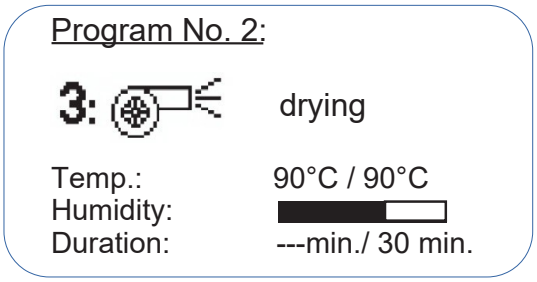
Temp.: --°C / 40°C
Duration: --min./ 10 min.
EC-Value: --µS / 30 µS

Rinsing step completed, the water is pumped out.

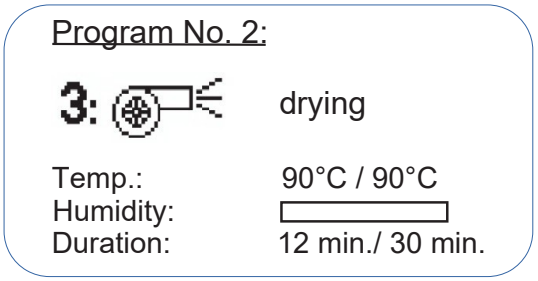
5.3 Drying step



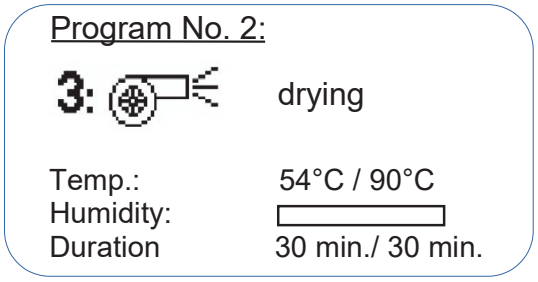
Air is heated:
The current air temperature and the target temperature are displayed.



Drying process in progress:
Once the target temperature has been reached, the residual moisture bar decreases as drying progresses.

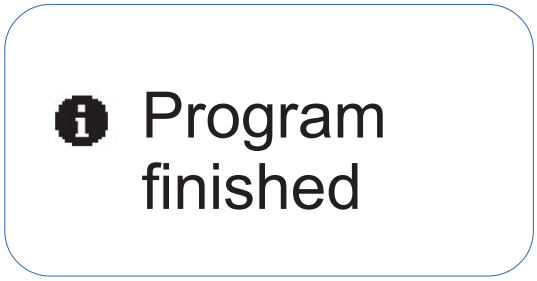


Desired degree of dryness reached, post-drying in progress:
If a post-drying time has been set (duration greater than zero), this time now elapses with reduced turbine power. The elapsed time and the set target duration are displayed.



Cooling phase:
The interior of the machine is cooled to 50°C. The turbine runs at reduced power.

5.4 End of program



End of program:
If enabled in the setup, the cleaning program log is printed.

Opening the door or pressing the button switches off the system.

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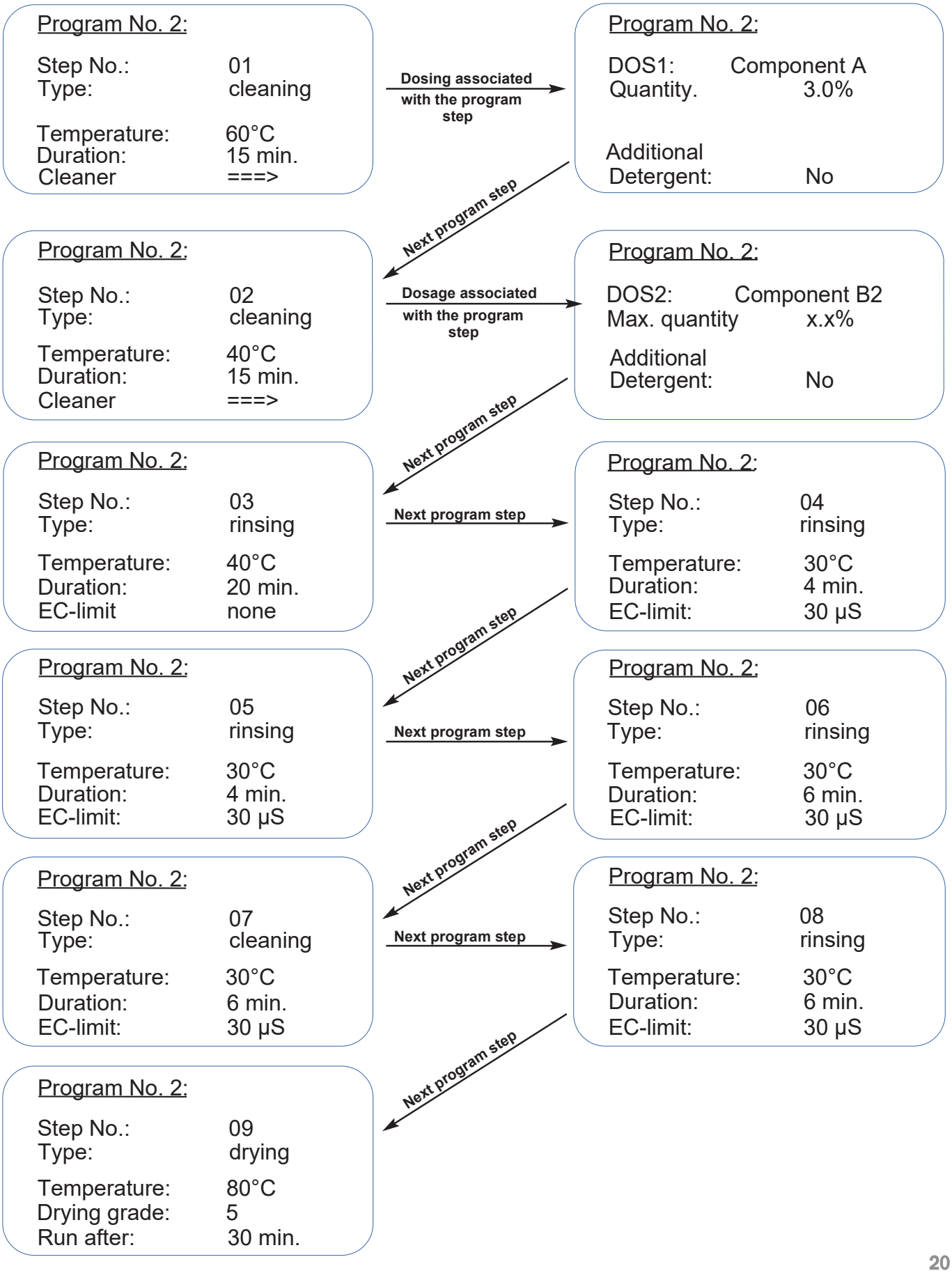
5.5 Program example



5.6 Notes and maintenance

5.6.1 Foam formation

ATTENTION: Heavy foaming results in insufficient cleaning!

If excessive foaming occurs during washing, please contact us.

Heavy foaming can be recognized by the following:

Visually, if a layer of foam is visible after opening the door or if foam is escaping from the machine.

Acousticaly, due to uneven running (repeated idling) of the circulation pump.

5.6.2 Replacing the filter cartridge

The washing liquor and rinse water are passed through the filter cartridge to filter out solid particles.

The filter cartridge must be replaced if the wastewater within the specified time is not completely pumped out, this is reported by the machine. To replace the filter cartridge, the union nut can be opened and the filter housing removed by pulling it downwards. Some water will run out, so it may be advisable to place a bucket underneath.
The pumping process can be observed through the transparent filter housing.

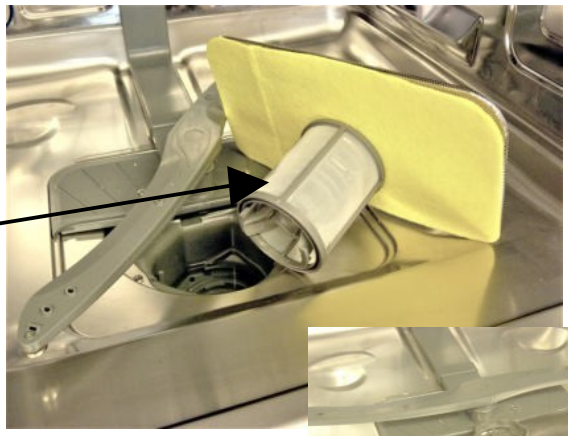
Filter cartridge (item no.: 7000C0020).

5.6.3 Replacing the air filter

The air required for drying is drawn in via an **air filter (item no.: 7200.0408).**
This filter must be checked for contamination at regular intervals and replaced if necessary.
The system reminds you to check the filter at regular intervals by displaying a message on the display.

5.6.4 Cleaning the dirt trap

Clean the dirt trap regularly, at least once a month, to remove dirt and, above all, accumulated metal chips.
The dirt trap can be removed together with the sieve insert by turning the upper plastic edge to the left.

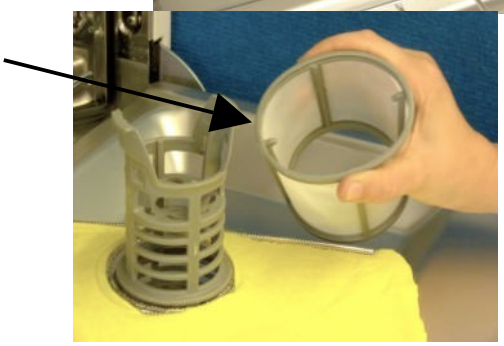


Dirt trap

5.6.5 Cleaning the screen insert

At regular intervals (approx. 4 times per year), remove the screen insert in the washroom (by turning the plastic insert) and clean the space underneath with an industrial vacuum cleaner to remove solder residue.

The filter mat can be removed after the dirt trap has been pulled off the screen insert. To remove the dirt trap, press it gently into an oval shape between its retaining hooks.
The filter mat can be washed out in a bucket of water. Replace the filter mat when worn.



Filter mat: Item no.: 7000C2016.

5.6.6 Replacing the spray arms

For optimal spraying of the items being washed, we recommend replacing both spray arms approximately every 200 wash cycles.

Lower spray arm: Item no.: 1800.88
Upper spray arm: Item no.: 1800.89

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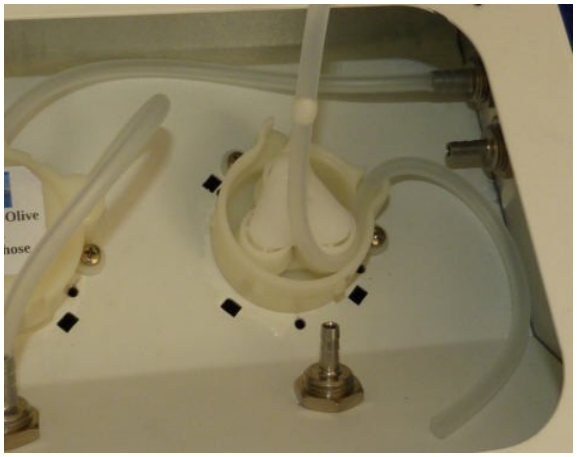
5.6.7 Replacing the dosing hoses

The dosing hose in the dosing pump head is subject to natural wear and tear. The dosing pump heads are located under the cover on the control panel. After removing the cover plate, access to the dosing panel.

Different dosing pumps may be installed. We recommend replacing the hose of one pump before removing the second pump.

5.6.8 Version with white dosing head



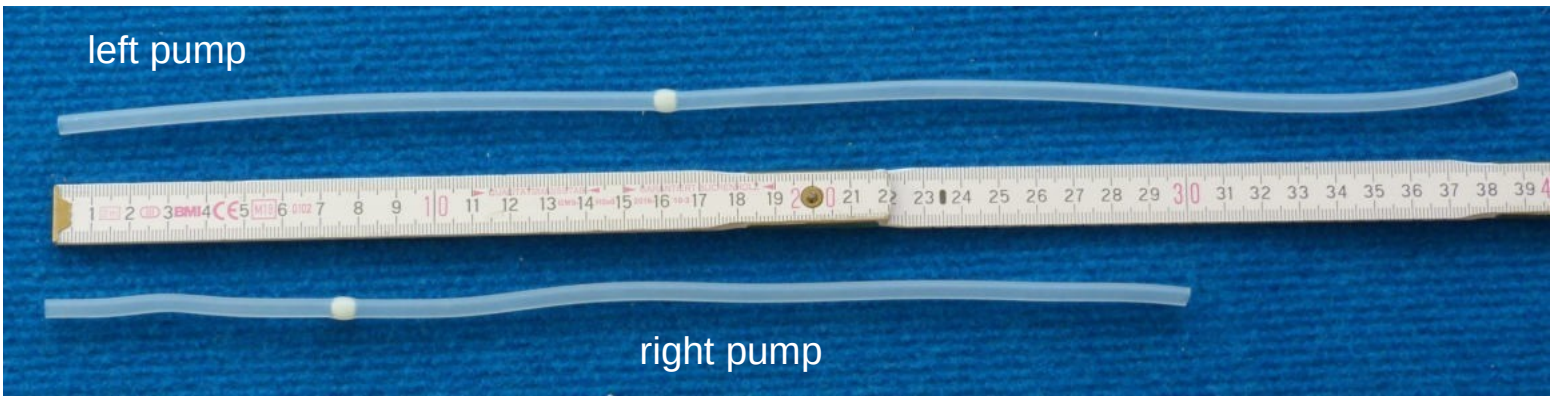
To replace thedosing hose, the dosing pump head must be opened.
To do this, unclip the 4 cover retaining tabs from their locks, starting with the tab between the hoses, then continue in sequence.
Use a small screwdriver if necessary.
The hose can be replaced either on the installed dosing pump or the pump can be removed for this purpose using 2 mounting screws.
The connection cables are long enough to remove the pumps slightly from the pump attachment.
Remove the old hose from the metal hose connector.
Remove the hose from the dosing head and remove the hose olive.

Push the hose olive out of the hose with your finger.
To make it easier to push out the hose olive, fill the hose with a little component A+ or methylated spirits.
The hose olive will later be inserted into the new hose; see illustration for position.

To grease in the metering pump head should remain there to lubricate the mechanism.

Cut the new hose to the required length and push the hose olive into the correct position, pouring a little methylated spirits into the hose.

The hole in the hose olive must be in the direction of flow in the hose, otherwise the flow will be blocked.



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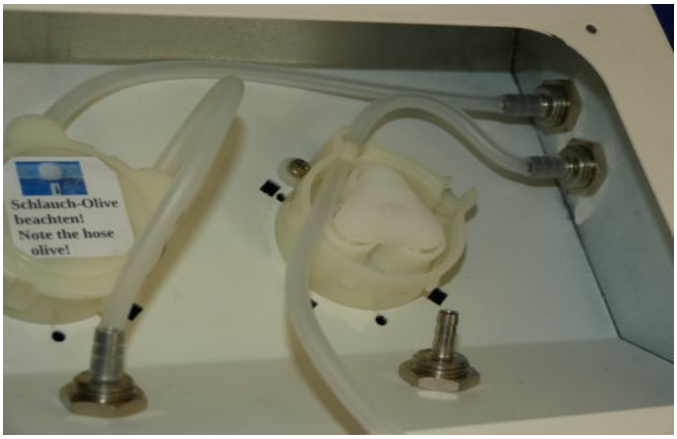
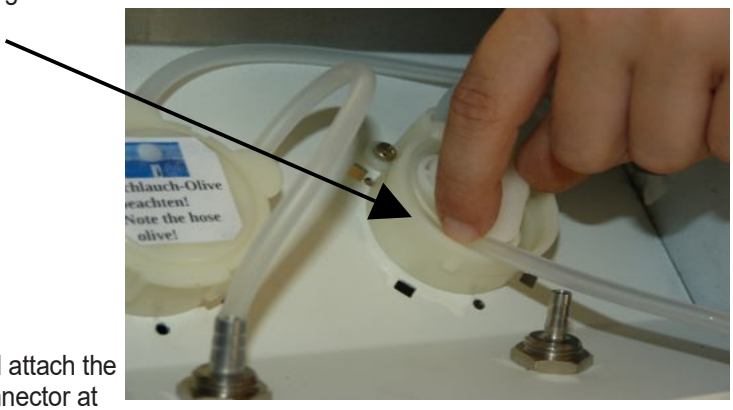
Attach the new hose with the hose olive inserted to the metal connector as shown and insert it into the dosing pump.



Continue inserting the hose into the pump ahead, turning the rollers counterclockwise and guiding the hose into the housing.



Clip on the pump cover and attach the hose to the lower metal connector at an even arc onto the metal connector.

If the pump was removed to replace the hose, reinstall it now.

5.6.9 Version with black dosing head and transparent cover

To replace the dosing hose, the dosing pump head must be opened. To do this, unscrew the 4 Phillips screws on the mounting eyelets on the transparent cover and remove the transparent cover.

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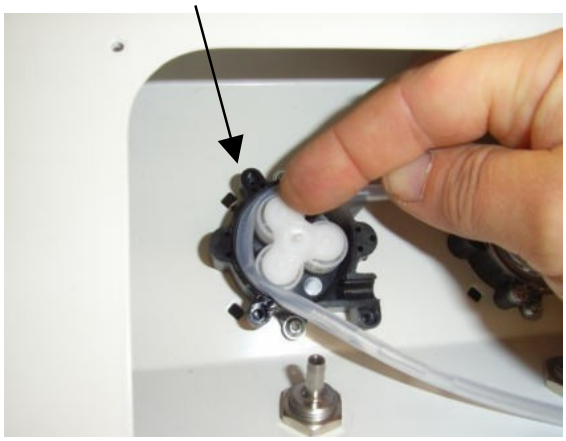
Remove the old hose from the metal hose connector and take it out of the dosing head.

Cut the new hose (item no.: 1804.0000.24 sold by the meter) to the required length.

Left pump: 34 cm
Right pump: 24 cm

Attach the new piece of hose to the metal connector on the right side wall and insert it into the pump head with sufficient slack in the length, turning the rollers counterclockwise and guide the hose into the housing.



Put the transparent cover on and carefully tighten the screws. Attach the end of the hose to the lower metal connector in a smooth arc.

6. Interfaces / Network connection

There is a USB and RJ45-Ethernet-LAN socket on the left side of the control panel.

The USB socket is intended for future firmware updates.

The LAN socket is used to connect the ÖKO 2000 to the company network.

You can then access various system data using a standard browser.

After connecting the system to the company network, the ÖKO 2000 obtain an IP address via the DHCP system.

This IP address can be displayed on the ÖKO 2000 display. To do this, please select “Network Settings“ in the main menu.

By entering this IP address in the address field of a browser on a computer connected to this network, you can access the programs you have created, system settings, and the logs for the last 20 cleaning cycles.

The logs are sorted by date and can also be conveniently output as PDF files.

Settings or changes to programs cannot be made via the network, but must be made on the system itself.

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7. Error messages

Message	Causes	Solution
A1 Internal inlet valve defective	- Machine-side inlet valve is leaking - Inlet hose has been extended	- Valve must be replaced - Use inlet hose in original length
A2 External inlet valve defective	- External inlet valve is leaking - Inlet hose has been extended - Air in the water desalination unit	- Valve must be replaced - Use inlet hose in original length - Vent the water desalination cartridge (see page 6)
A3 Inlet valve defective or inlet blocked	- Inlet valve on machine side or inlet side defective - Inlet valve on the inlet side not connected - Water supply shut off - Inlet hose kinked	- Valve must be replaced - Connect power cable for inlet valve - Open the water tap - Check inlet hose and remove kink
A4 Dosing defective	- Dosing pump control defective - Dosing opening blocked	- Contact customer service - Unscrew the dosing cap and clean under running water
S1 NTC water short circuit	- Water underneath the machine - NTC defective - Defect on ground circuit board - Defect on mainboard	- Find and eliminate the cause of moiture; allow the machine to dry - Contact customer service - Contact customer service - If the error occurs repeatedly, please contact us
S2 NTC water interruption	- NTC defective - Supply line to NTC defective - Defective circuit board base - Defect on mainboard	- If the error occurs repeatedly, please contact us
S3/S5 NTC air short circuit	- NTC on the exhaust/intake side of the drying system is defective - Drying circuit board defective	- If the error occurs repeatedly, please contact us

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Message	Causes	Solution
S4/S6 NTC air interruption	- NTC on the exhaust/intake side of the drying system is defective - Plug or supply cable to one of the NTCs is defective - Drying circuit board defective	- If the error occurs repeatedly, please contact us
S7 Water indicator defective	- Level sensor switches before water indicator - Level sensor defective - Water indicator defective - Fault on mainboard	- Check the supply lines from the water indicator and level sensor - If the error occurs repeatedly, please contact us
S9 Maximum water temperature exceeded	- Control for water heating defective - NTC water defective - Defect on mainboard	- If the error occurs repeatedly, please contact us
S10 Maximum air temperature exceeded	- Control for air heating defective - NTC on the outlet side of the drying system is defective - Plug or supply cable to one of the NTCs is defective - Drying circuit board defective	- If the error occurs repeatedly, please contact us
S12 Spray arm blocked	- Spray arm worn; particles in the spray arm hub - Spray arm has become entangled in hanging cables or similar - Water circulation is impended - Magnet on lower spray arm defective rusty/fallen off) - Water loss due to water hose ending too low (see also Troubleshooting S15)	- Check whether the spray arms can be turned easily - Check the filters for contamination and clean if necessary - Ensure correct detergent dosage - Replace ring magnet - Do not stack laundry too tightly - Use a different flux
S13 Too much foam in the machine	- Too much foaming cleaner added - See also error S12	- Use activator - See also error S12
S14 Cleaner DOSx is empty	- Detergent conatiner is empty - Dosing hose is kinked - Dosing hose is clogged - Air bubbles in the dosing hose	- Connect new detergent canister - Remove kink - Remove blockage or replace hose - Vent the dosing hose by sucking in a sufficient amount of detergent - Main menu →Setup← Cleaning agent →Suction cleaner)

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Message	Causes	Solution
S15 Water loss	- Wastewater hose on the machine side and hose end after the wastewater filter system installed too low or not ventilated - Scooping parts in the wash load - Dirt trap and/or filter insert dirty - Water indicator defective - Too much foam during filling	- The hose end must end above the machine installation surface to prevent suction. Ventilate the water system to prevent negative pressure - Load items so that water can drain off them easily - Clean the dirt trap and sieve insert - If the error occurs repeatedly, please contact us - Use less detergent or use AT activator
S16 Water leakage	- Water circuit leaking - Water leakage at the bottom of the machine - Excessive foaming	- Switch off the machine, disconnect it from the power supply. Tilt *slightly backward* so that the water that has leaked out can drain away. Check the machine for water leaks, eliminate any leaks, or prevent foam from forming. - Perform a reset and restart the program.
S17 Heater fuse for air has tripped	- The overtemperature fuse has tripped - Turbine defective - Air filter dirty	- Unplug the power cord! Remove rear shaft cover and switch temperature fuse back on at top of heating unit - Check whether the turbine starts up - Check the air filter and replace if necessary - The air intake and exhaust openings inside the machine must not be covered by laundry - If error occurs repeatedly, please contact us.
S18 Incorrect cleaning agent: does not foam	- Even after prolonged dosing, no foaming is noticeable	- Check whether the correct detergent is connected in accordance with the detergent definition or dosing pump assignment
S19 Incorrect cleaner: does not foam	- Even after prolonged dosing, foam formation does not decrease	- Check whether the correct detergent is connected in accordance with the detergent definition or dosing pump assignment.
S20 Ion exchanger exhausted	- Ion exchange cartridge used up	- Connect a new or regenerated ion exchanger cartridge
T1 Filling time exceeded	- Insufficient water pressure - Water inlet hose defective - Water shut-off valve may not be fully open	- Check water supply and water pressure - Restart program

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Message	Causes	Solution
T2 Water heating time exceeded	- Water heater defective - Water temperature sensor faulty	- Remove the laundry and restart the program without laundry - If the error occurs repeatedly, please contact us
T3 Air heating time exceeded	- Air heating defective - Air temperature sensor faulty	- Remove the laundry and restart the program without laundry - If the error occurs repeatedly, please contact us
T4 Drain time exceeded	- Waste water hose blocked - Filter cartridge worn out - Drain pump defective	- Switch off the machine - Check the drain hose and filter cartridge, replace if necessary - Restart the program - If the error occurs repeatedly, please contact us
T5 Maximum drying time exceeded	- Air outlet openings covered by laundry	- Position items correctly
Please close the door	-Front flap is not completely closed.	- Close front flap
Program requires spray arm monitoring	- A program with foaming or defoaming detergent has been selected even though spray arm monitoring has been switched off.	- Switch on spray arm monitoring or select another program

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8. Function of the connection plugs

External solenoid valve

This plug supplies the solenoid valve in the water inlet, upstream of the ion exchanger cartridge, with mains voltage as required. Max. load capacity up to 1A.

For safety reasons, the system cannot be operated without this valve.

External waste water pump

If necessary, an additional pump can be connected here to increase the delivery head of the waste water. Mains voltage is applied to the plug during pumping.

Max. load capacity up to 1A:

External fault signal

If a malfunction occurs in the system, mains voltage is applied to this connection. Max. load capacity up to 1A. The error message is shown on the display.

External conductivity measurement

The conductivity meter of the water desalination unit is connected here, if available.

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9. Technical information

The water is heated in a through-flow water heater; so there are no unsightly radiators in the interior. The water system and the floor pan make it virtually impossible for water to escape. This ensures a high level of protection against water damage. The consistent 6-sided insulation ensures particularly quiet operation.

Washing temperature		20°C – 70°C +/- 2°C
Washing time per wash cycle		5 – 40 min.
Rinse temperature		20°C – 70°C +/- 2°C
Rinse duration per rinse cycle		2 – 20 min.
Temperature of hot air drying (due to heat radiation and output, the interior temperature is approx. 80% of the preselected drying temperature)		50°C – 100°C +/- 5°C
Duration of warm air drying (it is also possible to select ONLY cleaning or ONLY drying programs can be created)		0 - 600 min.
Power connection		230V AC / 50Hz
Cable connection		2.4 kW
Operating noise (Cleaning) Operating noise (Drying)		Approx. 50 dB (A) Approx. 65 dB (A)
Water consumption per filling		Approx. 5 – 6 L deionized water
Ladder plate size (when using both spray levels and the washing frame simultaneously)	bottom max.: top max.:	405 mm x 260 mm 405 mm x 230 mm
Circuit board size (with upper spray level removed and washing frame used at bottom	max.:	405 mm x 555 mm
Interior dimensions	H x W x D	56 x 49 x 48 cm
External dimensions	H x W x D	97 x 60 x 77 cm
Weight		Approx. 80 kg

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