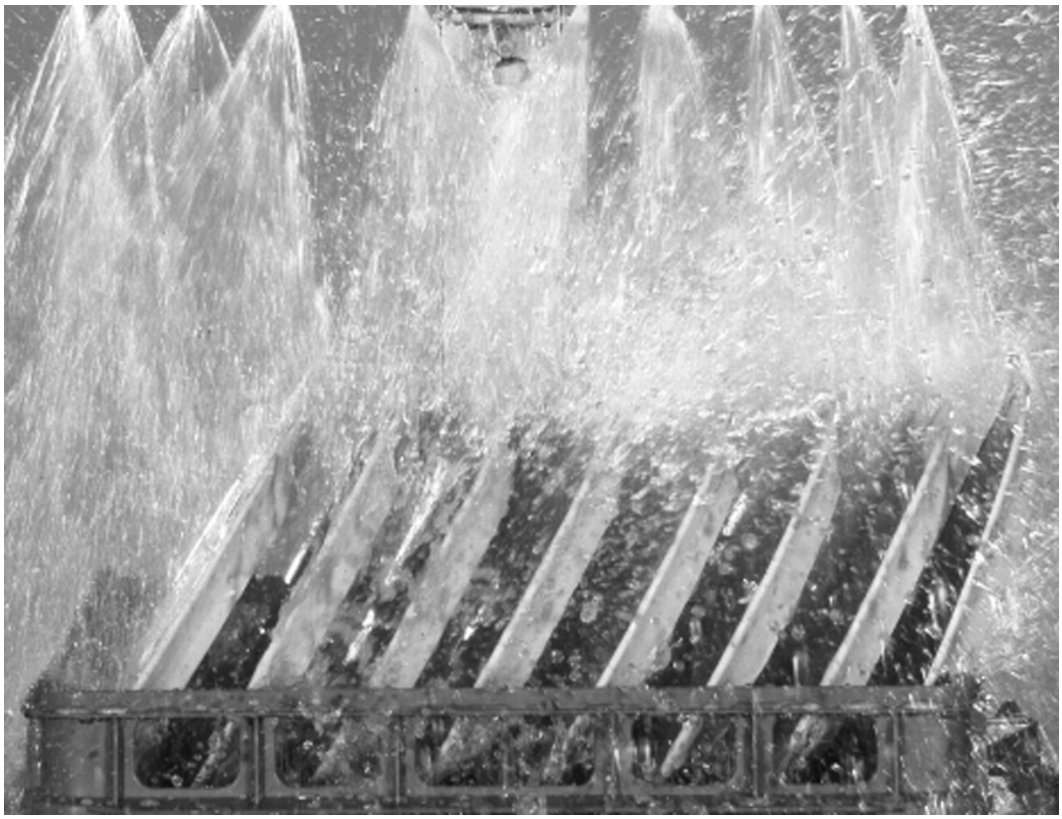
Operating instructions

Dish- and Glasswashing machine

EcoStar 530 F-M



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1 Introduction and general information

Dear Customer,
We are delighted about the confidence you have shown in our products.
It is very important to us that you should obtain significant use from MEIKO products and that they should make your work easier.

If you follow the instructions in this document carefully, your dishwashing machine will always give you total satisfaction and will have a long service life.

The dish- and glasswashing machine machine has been assembled by us at the factory and has undergone a thorough inspection. This provides us with the certainty and you with the guarantee that you will receive a fully developed product.

We would therefore ask you to read these operating instructions carefully before using the installation.

These operating instructions inform users of this installation about
- the installation
- its operating methods
- Its use
- the safety instructions and
- the maintenance

This information will help you to get to know the installation fully and to use it properly. It will also enable you to avoid repairs and the related loss of operational time.
In the event of any damage caused by non-observance of these operating instructions, any guarantee claims are invalid. This information will help you to use the installation properly.

MEIKO is constantly working on the further development of all its models.

We would therefore ask you to understand that because of this, we must reserve the right to make modifications at any time to any items covered by the contract in terms of their shape, fittings and technical characteristics.

No claims may therefore be based on the details, the images or the descriptions contained in these operating instructions.

Should you require any further information, or in case any particular problems not dealt with in great detail in the operating instructions should arise, you may contact the relevant MEIKO branch to obtain the information you require.

We should also like to inform you that the contents of these instructions do not form part of or amend any earlier or existing agreement, statement, or legal position.

All MEIKO's obligations arise from the relevant purchase contract which also contains the entire and only valid guarantee provisions.

These contractual guarantee rules shall be neither extended nor restricted as a result of any explanations given in the instructions.

You receive all this technical documentation free of charge.
Further copies are available against the payment of a fee.

MEIKO very much hopes that you will enjoy our product and use it successfully.

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1.1 Storage

Always store the operating instructions close to the installation!
The operating instructions must always be kept within easy reach!

1.2 Name and address of manufacturer

Please address any queries, technical problems etc. directly to:

MEIKO Maschinenbau GmbH & Co. KG
PO Box 2040
D - 77652 OFFENBURG
Phone + 49 / 781 / 203-0
Fax: +49 / 781 / 203 - 1121 (Export)
http://www.meiko.de

or:

Name and address of the MEIKO branch, manufacturer's agent or dealer.

(Insert company stamp or address)

1.3 Description of the type of equipment

Please provide the following information on any query and/or when ordering spare parts:

Machine type:

Order number:

Position:

Serial number:

Year machine constructed:

This information can be found on the plate.

2 Explanation of the safety symbols used

The following safety symbols will appear throughout these operating instructions. The purpose of these symbols is to draw the reader's attention to the text of the adjacent safety information.

 IMPORTANT!	This symbol warns that there is danger to human life and health.
 DANGER!	This symbol warns that there is danger to the installation, to material or to the environment.
	This symbol denotes information that helps you to understand the installation's operation.
	Warning of dangerous electrical current!
	Warning of possible hand injuries!
	**No splashing water:** prohibits the use of a high pressure hose.
	**Danger of explosion:** indicates a potential explosion hazard.
	**Non-potable water:** The water is not for drinking. Health can be endangered by drinking.
	**Danger of burning:** indicates possible hazard due to hot surfaces or media.

3 Use of the appliance for the purpose intended


DANGER!

This Dish- and Glasswashing machine is intended for washing dishes, cutlery and glasses.

The Dish- and Glasswashing machine must be used only in accordance with regulations. Other uses are prohibited. The items to be washed must be suitable for washing in dish-washing machines.

The EcoStar 530 F-M Dish- and Glasswashing machine is a technically-based piece of equipment (and is not a consumer product within the meaning of the provisions of the Equipment and Product Safety Act). It is intended solely for use in commercial (i.e. non-domestic) situations.

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4 General safety information

4.1 Operator's duty of care


IMPORTANT!

The dishwashing machine has been constructed based on a risk analysis and after careful selection of the applicable harmonized standards, as well as additional technical specifications. It therefore corresponds to the latest technology and is guaranteed to provide maximum safety.
This level of safety can only be achieved in practice, however, if all the necessary measures are taken. The operator of the installation has an obligation of care to ensure that these measures are scheduled, and also to check that they are correctly executed.

Measures to ensure the safe machine operation:


IMPORTANT!

The operator must ensure in particular that ...

... the washing machine is only used in accordance with the regulations.
Should it be used in any other way, damage or danger may occur, for which we accept no liability (see the chapter on "Use for the Purpose Intended“).

... in order to preserve the operational and safety guarantees, whenever required, only original parts supplied by the manufacturer are used.
the user will lose the right to any possible claims if the appliance is modified using any parts other than original parts.


IMPORTANT!

... only appropriately qualified and authorized personnel use, maintain, and repair the installation.


IMPORTANT!

... the relevant personnel is regularly trained in all questions relating to safety at work and environmental protection and, in particular, that they are familiar with the operating instructions as well as with the safety information provided in them.


IMPORTANT!

... the installation is only operated in perfect, operationally efficient condition and, in particular, that the safety systems and switch elements are regularly checked for their operational efficiency.


IMPORTANT!

... the required personal protective equipment is made available to maintenance and repair personnel, and is worn by them.


IMPORTANT!

..... a functional test on all safety systems of the machine / installation is carried out during every regular maintenance.


IMPORTANT!

... the operating instructions are always kept in legible, complete condition at the place where the installation is installed, and are always at hand.


IMPORTANT!

.... any necessary initial tests to parts supplied by sub-suppliers must be carried out. More detailed information, if required, can be found in the relevant Instructions for Use.


IMPORTANT!

Once the washing machine has been installed, put into service and handed over to the customer/operator, no modifications (electrical or location modifications, for example) may be made. Modifications to the washing machine, and in particular technical modifications carried out without the manufacturer’s written authorization, or any modifications carried out by unauthorized persons, will lead to the complete loss of any guarantee claims and will invalidate any liability for the product.


IMPORTANT!

... equipment for optimising energy consumption must not be used to reduce essential operating temperatures, as set out in DIN 10511 and 10512. If you, the client, install equipment for optimising energy consumption, any possible reduction in the quality of the wash and hygiene is your responsibility.

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4.2 Basic safety measures


IMPORTANT!

Danger can arise from the improper use of the machine or if it is used for purposes for which it was not intended.

Parts carrying electric current as well as moving or rotating parts can cause

- Dangers to the user's life and limb and
- Material damage

.


IMPORTANT!

The machine may only be operated by adequately qualified staff who have been trained by the operating company and who have been trained about the Hazard and Safety Instructions.
Qualified staff, as defined by the Operating Instructions, are persons:

- who are over 14 years of age,
- who, because of their training, experience, instruction and knowledge of the relevant standards, regulations, accident prevention instructions and operating conditions, have been authorised by the person responsible for the safety of the machine to carry out the necessary activities, and who therefore are aware of the possible dangers and how to avoid them,
- who have been trained in first aid and in the on-site rescue arrangements,
- who have read and who observe the safety instructions,
- who have read and who observe the Operating Instructions (or the part applicable to the work to be carried out).

The machine operates with hot water. (Temperature of wash water = 58-60 °C.) Avoid all contact with the rinse water. There exists therefore the danger of scalding. Please observe appropriate protective measures. Please observe appropriate protective measures.
Observe all the instructions posted on the machine.

Warning !
When electrical equipment is in operation, it is inevitable that certain parts carry a dangerous current.
ALL current to the whole machine MUST be switched off before the machine's cladding or electrical equipment is opened.
PLACE THE (ON SITE) MAIN SWITCH IN THE "OFF" POSITION and install suitable security measures to prevent the switch from being switched on.
Only specialist personnel may carry out repairs and rectification work on the electrical part of the machine. The Health and Safety Regulations must be observed.

The machine may not be sprayed with a water hose or high-pressure cleaner.


IMPORTANT!

The machine must only be operated under the supervision of instructed staff.

The water in the wash-up area is non-potable and can´t be used for food preparation!


IMPORTANT!

If you are unsure about the operation of the machine, the machine must not be used.

Do not place any solvents or other easily flammable substances in the wash-up area, as this increases explosion hazard

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IMPORTANT!

Steel scrub pads are not to be used for the pre-scouring nor for cleaning the items to be washed.

Do not wash any metal items in the machine which are not made of stainless steel.

The in-coming of metal parts (especially iron, tinplate, copper) must absolutely be avoided.

The appliance must not be used to transfer waste water from other sources into the drain (Warning: risk of corrosion and blockage).

Only use suitable products for cleaning the stainless steel surfaces, which do not attack the material, form any deposits, nor cause any discolorations.

IMPORTANT!

Door and flaps MUST be closed.

Do not place anything on the open door of the appliance, resp. no heavy loads, as the machine could tip over!

Open the door very carefully during the programme cycle, as otherwise wash water could splash out.

The tank heating element may still be hot after the tank has been emptied. There is therefore the danger of burns when the machine is cleaned manually.

IMPORTANT!

Only detergents and rinse-aids suitable for the use in industrial dishwashers may be used.

Corresponding information is submitted by the manufacturers of such products.

Detergents and rinse agents can be injurious to health.

The manufacturers hazard instructions on the original packaging and in the safety data sheets must be observed.

IMPORTANT!

The main switch must be turned off when operation has finished.
The accompanying Operating Instructions must be observed for accessory devices, e.g. water treatment installations.

IMPORTANT!

WE ACCEPT NO LIABILITY FOR DAMAGE OR INJURY ARISING FROM FAILURE TO OBSERVE AND ABIDE BY THESE SAFETY INSTRUCTIONS!!!

4.2.1 Working on electrical equipment

IMPORTANT!

Any repair work and repairs to the power supply on the installation's electrical equipment may only be carried out by a qualified electrician!

Check the electrical equipment regularly! Tighten any loose connections! Replace any damaged leads/cables immediately!

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5 Delivery, shipping, installation and assembly

5.1 Delivery

Check that the delivery is complete immediately after receiving it by comparing it to MEIKO's contract confirmation and/or the delivery note.

If necessary, complain about any missing parts immediately to the shipping company and notify MEIKO.

Examine the appliance for possible transit damage.

Should you suspect any damage has occurred during shipping, you should inform:

- the shipping company,
- and MEIKO

in writing, and also send a photo of the damaged parts to MEIKO.in writing, and also send a photo of the damaged parts to MEIKO.

IMPORTANT!

Damaged appliances must not be commissioned.

5.2 Transport, installation and assembly

In order to avoid damage or life-threatening injuries during shipping of the installation, the following points must be observed:

IMPORTANT!

- The shipping operations may only be carried out by qualified persons who observe the safety instructions.
- Observe transport instructions on the packing.
- The appliance must be moved with great care.
- Unpack the machine.

In order to ensure safe shipping, the installation parts are placed on a special four-sided wooden frame.

Incoming goods should only arrive on these wooden frames. The packing is specifically designed to allow the appliances to be moved safely and securely using a pallet truck.

The enclosed technical sheet indicates the connection and consumption ratings of the appliance.

IMPORTANT!

Small quantities of steam may escape from the door of the appliance. Furniture and equipment situated near the door must be protected.

An engineer from your local MEIKO Service Centre can install the appliance at the correct point and connect the tables - upon request. An engineer from your local MEIKO Service Centre can install the appliance at the correct point and connect the tables - upon request.

The following must be observed during the installation of the dishwashing machine:

- The complete unit must be levelled in both directions using a water level.
- Compensate for an uneven floor by adjusting the feet.
- Table joints must be sealed with detergent-resistant sealing compound (e.g. silicone).

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5.3 Operating conditions

It is taken for granted that the planning of the system, as well as installation, setting in operation and maintenance works are executed by sufficiently instructed staff and that these works are checked by responsible specialists. The indications on the name plate of the machine must correspond to the technical sheet and the local connection conditions.

Conditions to be provided by the customer:

- Frost free storage and installation area
- Electrical connection in accordance with the technical sheet
- Fresh water connection in accordance with the technical sheet
- Waste water connection in accordance with the technical sheet
- Anti-slip floor coverings should be provided around the washing appliance.

5.3.1 Requirements for the installation area

- Ensure that the storage and installation area is permanently frost free.

The machine is only frost-resistant in the state it is delivered or when provided with special features (option: frost drainage). If the appliance is installed in an area where the surrounding temperatures are below freezing point, the water freezing inside can damage the internal water components such as pump, solenoid valve, boiler, etc.

5.4 Requirements for the electrical connection

Work on the electrical part of the machine may only be undertaken by specialist personnel.

The customer must guarantee the following points relating to the connection:

- The correct voltage and type of current must be available
- Mains supply lines must be protected according to regulations and provided with a main switch.
- Appliances must have a fixed connection and equi-potential bonding.
- If an unearthed neutral (N) is used with threephase current, the main switch must have 4-poles (with alternating current 2-poles).
- For connection to three-phase current a 5-pole terminal strip (L1, L2, L3, N, PE) must be used.
- Electricity supply without neutral conductor (N): when connecting to three-phase current, use a 4-pole clamping strip (L1, L2, L3, PE).
- Conductor colors: live conductor L1 = black/1, L2 = brown/2, L3 = black/3, neutral conductor N = blue/4, protective earthing conductor PE = green-yellow.

IMPORTANT!

Protective measures as well as the connection of the equi-potential bonding must be carried out according to DIN VDE 0100-540 and conform to the local power utilities regulations.

Do not protect by fuses any additional consumers together with the dishwashing machine.

- All conductor fixing screws must be re-tightened before commissioning the appliance.

The wiring diagram is behind the front panel, resp. front cladding of the appliance.
The enclosed wiring diagram must remain in the appliance.

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5.5 Requirements for the fresh water connection

Each appliance carries the DVGW test symbol and does not require an extra safety valve in the water feed.

- Fresh water connection must be made according to EN 1717 or according to local regulations.

IMPORTANT!

The minimum flow pressure of the clean water supply upstream of the solenoid valve must be 2,5 bar, if air-gap is incorporated 0,6 bar and if water-softening equipment (EW 10) is incorporated into the machine: 3 bar.
The maximum pressure must not exceed 5 bar.

- If the flow pressure is below the minimum, increase the flow pressure with a booster pump; if the maximum pressure is exceeded, limit it with a pressure reducer.
- Suitable protective measures must be taken to ensure that no iron particles can enter the appliance via the mains water supply. Similarly, precautions must be taken to prevent the entry of other metal particles, for example copper turnings. Corresponding instructions are contained in the installation drawing. Therefore suitable measures must be taken.
- A dirt trap must be fitted into the fresh water supply to protect the solenoid valve.

5.6 Requirements for the waste water connection

- Build an odour trap into the waste water connection if this is not already built-in (further information about this is in the Installation drawing / Technical Sheet).
- The drain hose must be connected to the waste water pipe in the building.
- A grease trap may be needed, depending on the machine application.

5.7 Emergency-off

- Set the local main switch to „OFF“ or switch off the local main fuse.

5.8 Chemicals for the operation of the appliance

IMPORTANT!

Only alkali detergents and acid rinse agents suitable for use in commercial dishwashers may be used. Corresponding information is submitted by the manufacturers of such products.

MEIKO recommends brand cleaning products from leading manufacturers. - cleaning and hygiene products are an excellent choice.

If unsuitable products are used, the life expectancy of the dosing units can be reduced considerably. Observe the dosing instructions of the manufacturer.

Detergents and rinse-aids can present a health hazard if they are not correctly used. Please observe the manufacturers' instructions on the original packing and on the safety data sheets.

If a de-scaling agent is used, please strictly observe the manufacturer's instructions reg. handling and safety. After having used such an agent, the product must be completely removed from the machine, as even small residues are sufficient to destroy plastic parts and packing materials.

Chemical product settings

The correct settings for the quantity of detergent and rinse agent depend on the product used.
The relevant chemical supplier can install the correct setting.

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5.9 Instructions for the disposal of the packaging material

- The four-sided wooden frame consists of untreated, raw wood. Special country-specific import regulations may also stipulate the use of wood which has been treated against pests.
- The plastic sheeting (PE sheeting) may be recycled.
- The cardboard packaging material used to protect the edges can also be recycled.
- The steel tensioning strap made of strip steel may be recycled with the steel scrap.
- The plastic tensioning strap of plastic (PP) can be recycled.

6 Settings for initial commissioning by the service engineer

6.1 Commissioning

In order to avoid damage to the installation and the injury and death of persons when commissioning the installation, the following points must be observed without fail:
Any necessary initial tests to parts supplied by sub-suppliers must be carried out. More detailed information, if required, can be found in the relevant Instructions for Use.


IMPORTANT!

- The installation may only be commissioned by suitably qualified persons observing the safety instructions.
- Before initial startup, check that any tools and parts not belonging to the installation have been removed.
- Check whether any escaping liquid is removed.
- Activate all the safety systems and door switches before commissioning.
- Check that all screw connections are tight.
- Please also read the chapter on “General safety instructions ".
- Commissioning and instructions will be provided by technicians specially trained by Meiko. The operator may only use the installation after training has been provided.

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7 Washing with dish-washer

The appliance must not be used without a thorough knowledge of the ”Operating Instructions“. Incorrect operation could result in injuries to personnel or damage to the appliance.

7.1 Operating panel

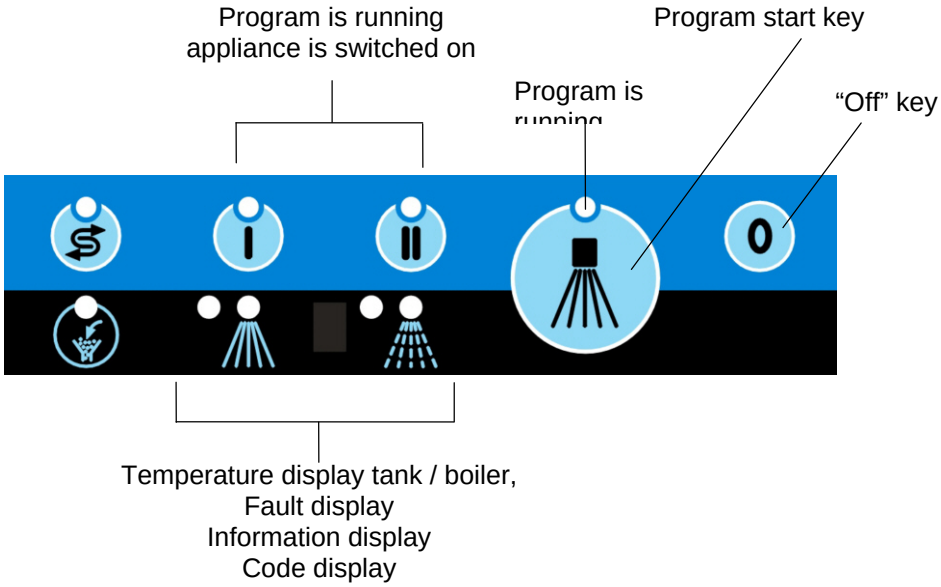

Illustration 1; Operating panel

Key / display	Meaning
	Normal program – Wash program I
	Intensive program – Wash program II
	Wash temperature
	Final rinse temperature
	Program start Tank drain Self-cleaning cycle
	Switch off appliance/ Cycle interruption

Table 1; Program key function / items to be washed

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7.2 Preparation for washing and rinsing

The preparatory work described below must be carried out before each operation.

- Open the door.
- Place the screen and stand pipe in position.
- Close the door.

ATTENTION! Danger of crushing!

Close the door with both hands.

- Switch on the appliance by pressing one of the program pre-selection keys.

During the filling and heating phase, the light above the pre-selection key will flash. When the light remains constantly lit, the machine is ready for operation.

The time until the operation readiness is reached depends on the temperature of the supplied water and the installed boiler, resp. tank heating capacity.

In the case of cold water supply, the time taken is: about 35 minutes.

7.3 Manual dosing of detergent

If there is no detergent dosing pump, the detergent must be added manually to the washing water. To obtain a concentration of 2 g/l, an initial amount of 40 g and a later addition of 30 g after each of 5 cycles should be added.
If the detergent is in powder form, the powder should be scattered evenly on the water in the tank and dissolved after the tank has been filled. This will prevent discolouration of stainless steel parts.

7.4 Automatic dosing

The required detergent (detergent dosing pump: option) and rinse aid is transported out of the containers into the tank, resp. boiler, via electronically controlled dosing units. The dosing is effected automatically acc. to the requirements arising during the wash process.

IMPORTANT!

If unsuitable products are used, the life of the dosing equipment will be significantly shortened.

We therefore recommend that detergents should have a pH value greater than 7 and that rinse agents should have a pH value between 7 and 2.

7.5 Operation during washing and rinsing cycle

The following fundamental principles must be observed when placing the items to be washed in the baskets:

- All hollow containers must always to be loaded upside down. Otherwise the water will be trapped inside and they will not dry to a brilliant finish.
- Plates, trays and big plates should always stand at a slight angle in the basket with their inside faces pointing upwards.
- When using cutlery baskets, ensure that cutlery is always inserted handle down.
- Load the cutlery baskets with a mixture of spoons, knives and forks, as identical items of cutlery can be too close together.
- Do not overload the baskets.
- Do not stack the dishes in the wash basket, as the wash water could not strike the items directly and the wash times would have to be unnecessarily prolonged. Short wash times with baskets which are not overloaded are much more economical.

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7.5.1 Start the wash cycle

Program start key

- Pre-wash the dishware (major food residues, serviettes, tooth picks, etc.) and place in the basket.
- Place the basket in the appliance, ensuring that it is correctly centred.
- Close the door.
- Press the program start key.

The appliance washes and rinses automatically and switches off the wash program after completion. The program cycle is indicated by a light on the program start key.

The wash time can differ from the set program time if the boiler heating capacity is not sufficient for heating up the fresh water to the pre-set boiler temperature during the program time. In this case, the automatic wash time extension is activated.

7.5.2 Remove the washed items

- When the light goes out, open the door and remove the basket.

8 Shutting down the dishwasher

"Off" key

- Press the "0"key (OFF key). The machine is switched off when all the lights are out.
- Remove the stand-pipe.

Machines without built-in drain pump:

Program start key

- After the water has been drained from the tank, the tank is sprayed with clean hot water by pressing the Program Start button. The door must remain closed.

Machines with built-in drain pump:

- Press the program start key to drain the tank.
- The tank interior is sprayed with clean hot water after the tank water has been drained. The door must remain closed. The waste water pump switches off automatically.

9 Care and maintenance

9.1 Care, general

The appliance has been designed to minimise the need for cleaning, care and maintenance.

However, for a reliable, safe and permanent function of the appliance and in the interest of hygiene and cleanliness a correct care and maintenance is necessary.

To facilitate this procedure, a maintenance contract can be concluded with the manufacturer or the manufacturer's agent.

IMPORTANT!

Works/repairs which were not correctly executed and the use of unauthorised parts by unqualified personnel endanger both operators and the appliance, and will invalidate the warranty.

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9.2 Refilling of detergent

There are two different types of detergent containers:

Incorporated container

The storage container is translucent white in colour and is located in the lower part of the stationary dishwashing machine. The lid can be opened after the container has been removed from its position.

- Re-fill the container marked ”detergent“ if necessary.

External container

The container is located next to the appliance.

- Check the filling level of the container and if necessary, replace it by a full one.

IMPORTANT!

Only non-foaming alkali detergents (pH > 7) suitable for commercial dishwashers may be used.

Detergent dosing units must be checked to see if they are functioning properly if there is reason to believe that they are malfunctioning. Carry out a visual inspection!

9.3 Refilling with rinse aid

There are two different types of rinse aid containers:

Incorporated container

The storage container is translucent blue in colour and is located in the lower part of the stationary dishwashing machine. The lid can be opened after the container has been removed from its position.

- Re-fill the container marked ”rinse-aid“ if necessary.

External container

The container is located next to the appliance.

- Check the level and, if necessary, replace the container by a full one.

IMPORTANT!

Only non-foaming acid rinse aid (pH < 7) suitable for commercial dishwashers may be used.

Detergent dosing units must be checked to see if they are functioning properly if there is reason to believe that they are malfunctioning. Carry out a visual inspection!

9.4 Cleaning

After the tank has been drained, proceed as follows:

- Do not use a foaming detergent for dish-washing by hand for pre-cleaning close to the dish-washer. Foam can cause malfunctions in the dish-washer and a poor wash.
- Food residues sticking to the tank, tank heating element and sieves must be removed with a brush.
- Dismantle the wash arms and rinse them under running water.
- Wash nozzles must be cleaned daily.
- The cleanliness of final rinse nozzles must be checked weekly and if necessary clean under running water.

The inserts for the final rinse nozzles must be inserted with the prongs facing the water flow.

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9.4.1 Safety instructions for cleaning


IMPORTANT!

The tank heating element may still be hot after the tank has been emptied. There is therefore the danger of burns when the machine is cleaned manually.


IMPORTANT!

The machine, switch cabinet and other electrical components must NOT be sprayed with a hose or a high pressure cleaner.

9.5 Maintenance of stainless steel surfaces

The appliance is made of high-quality stainless steel. Nevertheless, under certain conditions corrosion may appear.

To maintain stainless steel surfaces permanently free from corrosion use

- only cleaning products which are properly.


IMPORTANT!

Use only products which do not attack the material, build up a film or cause discoloration.

9.6 De-scaling

If the appliance was operated with hard water, the boiler and wash tank could have lime scale deposits. De-scaling of the tank interior, boiler housing, tank heating, boiler heating and wash and final rinse system then becomes necessary


IMPORTANT!

For de-scaling the appliance use only products suitable for industrial dishwashers. Please observe the instructions of the manufacturers of such products.

After de-scaling the appliance:

- Remove the de-scaling agent completely from the appliance. 1 or 2 rinse cycles with fresh water are necessary to achieve this.

Even small residues of de-scaling agents can be sufficient to destroy plastic parts and sealing materials! If the appliance is heavily scaled, you should ask a service engineer from the agency responsible to de-scale the boiler.

10 Machine with built-in water softening device EW10

10.1 General

If the red lamp lights up, the capacity of the water softener has been almost exhausted. About a further 10 program cycles are possible before the water softener is completely exhausted. It is therefore possible to delay the necessary regeneration until a time when the machine is not in use.


IMPORTANT!

It is important to note that if the machine continues to be used when the water softener is exhausted, capacity can be reduced and the machine may even become unusable.

10.2 Adjustment of water hardness

The water softening device is pre-set to 30°Gh in the factory. When the service engineer installs or commissions the appliance he should adjust this value depending on the actual water hardness. Should there be any further changes in the water hardness, this parameter must be adjusted accordingly as set out in the Short Programming Instructions.

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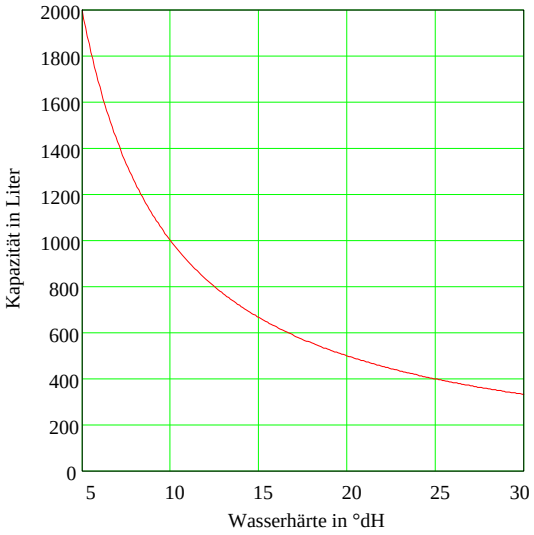
10.3 Capacity of the built-in water softening device



10.4 Regeneration

Press the OFF-key.

Remove the stand-pipe, empty the tank.

Fill the salt solution container with 0.8 kg regenerating salt. A funnel can be used for this if necessary.

By regenerating salt we mean here sodium chloride with a grain size of 0.3 to 1 mm.

IMPORTANT!

The seal and the thread of the salt solution container must be cleaned before closing the container. Carefully lock the salt solution container cover. The penetration of wash water can reduce the capacity of the built-in water softening device.

- Press the regeneration button.
- The regeneration process starts automatically and lasts for about 25 minutes.

The machine cannot be used during this time. The door must remain closed.

The regeneration process is indicated by a yellow light. The machine can be filled again when the light has gone out.

- Even if the red light has not come on to indicate that the water softener is exhausted, the regeneration process can be started by pressing the regeneration button for at least 3 seconds.

IMPORTANT!

We recommend that you fill the machine immediately after the regeneration process in order to dissolve and remove from the wash tank any salt particles that have been spilled.
If the salt remains in the wash tank for a lengt hyperiod, this can result in corrosion and even pitting corrosion in the bottom of the tank.

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11 Basic information on the appliance

Each dishwashing machine is manufactured acc. to the latest state of the art technology. Operation is safe.

IMPORTANT!

Dangers could arise from this model, if it is not correctly operated by unsuitable operating staff or if it is not used acc. to it's purpose.

Liability

We accept no responsibility for damage of the appliance and other objects caused by operating faults, resp. non-observance of the operating instructions. Any modifications to the appliance - especially technical modifications inside - undertaken by unauthorised persons without the written permission of the manufacturer will invalidate the warranty.

11.1 General description of the washing machine

11.1.1 Execution

Square basket appliance with stationary basket

11.1.2 Wash principle

The appliance has one wash and one final rinse cycle.

The temperature regulator keeps the wash temperature. A centrifugal pump circulates the water out of the wash tank into the wash nozzles. The water jets reach the items to be washed out of differing directions. Therefore an even washing result can be guaranteed.

The washing cycle is followed by the fresh water final rinse. The items are rinsed via a separate nozzle system with hot fresh water 80 - 83° C. Thus heating up the items for the following drying process. At the same time the final rinse water serves for the regeneration of the wash water, the level of soil of the wash water thus being reduced.

11.1.3 Detergent dosage

The detergent dosing unit (option) is designed for the automatic adding of liquid, alkaline detergent into the wash water.

The detergent is transported out of the container into the wash tank by means of a hose line. The dosing unit is self-priming. The dosing is effected during each filling cycle and at the beginning of each programme cycle using timer control.

Normally, a dosing of approx. 2 ml of detergent per liter of tank water is the correct concentration. This can be increased/reduced acc. to the water quality, items to be washed and degree of soiling to 5 ml/l or to1 ml/l.

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11.1.4 Rinse aid dosing

The rinse aid dosing unit is designed to automatically add liquid final rinse aid into the fresh water.

The rinse aid is transported out of the container into the fresh water supply line by means of a hose line. The dosing unit is self-priming. The dosing takes place during each filling cycle.

The correct dosing results in a smooth, even water film.

In case of overdosing, there are bubble and stripe formations - reduce dosing.

In case of under-dosing, water drops remain on the washed items - increase dosing.

11.2 Noise level

Work place noise level $L_{pA} \leq 70$ dB

11.3 Data reg. the electrical and hydraulic equipment

See attached technical sheet

11.4 Dimensions, technical data, installation instructions

See attached technical sheet

12 Tips for self-help in the case of faults

Fault:	Remedy
Machine does not fill.	• No water available • Dirt trap blocked • Level switch defective • Solenoid valve defective • Door safeguard defective
Rinse water does not spray!	• No water available • Dirt trap blocked • Solenoid valve defective • Booster pump has failed (with air gap) • Fresh water rinse system furred
Stripes and smears on the dishes!	• Rinse water mineral content too high (see operating instructions) • If this is observed only at particular times, check water softener for regeneration. This must not carried out during the dishwashing operation. • Water pre-treatment defective or not carried out • Different water type depending on the waterworks • Unsuitable rinse aid products or wrong dosage quantity

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Formation of a significant amount of foam in the wash tank!	• Detergent for dish-washing by hand enters the wash tank because of pre-cleaning the dishes • Daily cleaning is carried out with foaming cleansing agents which afterwards enter the machine. • Improve pre-wash, as too much food residue is entering the tank. Alternatively, empty wash tanks between uses. • Rinse water quantity too low • Detergent or rinse aid product not suitable • Temperatures too low < 40°C

13 Staff training

Only trained and instructed personnel are allowed to work on the dishwashing machine. Staff responsibilities for the installation's operation, maintenance and repair must be clearly defined.
Any personnel undergoing training are only allowed to work on the dishwashing machine installation under the supervision of an experienced person.

persons / Activity	Trained operating personnel	Trained in-house technician	Trained in-house technician or installation engineer
Installation and assembly			◆
Commissioning			◆
Operation, use	◆	◆	◆
Cleaning	◆	◆	◆
Checking safety devices	◆	◆	◆
Fault finding		◆	◆
Troubleshooting, mechanical		◆	◆
Troubleshooting, electrical			◆
Maintenance			◆
Repairs		◆	◆

Training should be recorded in writing.

14 Authorized user of this documentation

The works described in this booklet (chapter 14 - 18) may only be carried out by specialists of the manufacturer, the responsible agency or an authorized dealer.

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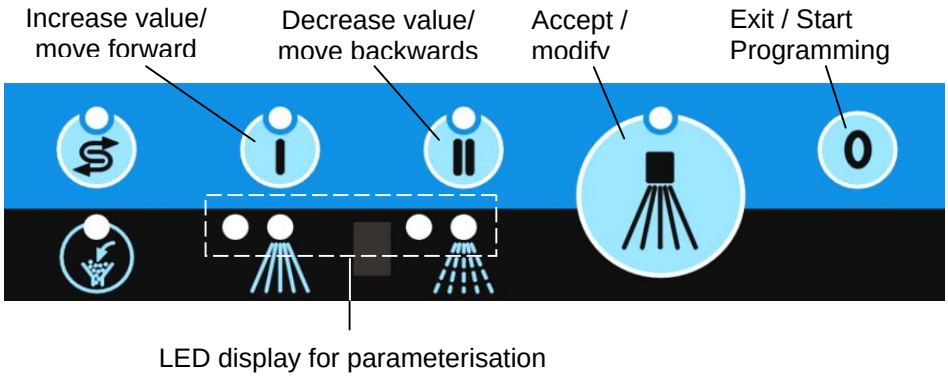
15 Settings / modifications / on-site adaptation

15.1 Using the keyboard for programming



For control programming, the power supply must be available but the machine must be completely switched off (no LED must be illuminated).

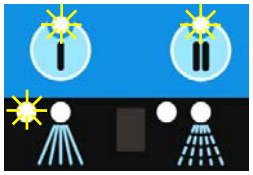
15.2 Parameterisation

Parameters can be set and activities started without code interrogation by using the membrane key-pad.
The list of activities and parameters you can access is attached, along with information on the corresponding display in order to identify the items in the list (1 = LED on / 0 = LED off):

LED's	Meaning
1 0 0 0	Rinse agent concentration
1 1 0 0	Detergent concentration
1 1 1 0	Water hardness degree
1 1 1 1	Vent the detergent and rinse agent pipes
0 1 1 1	Vent the rinse agent pipes
0 0 1 1	Vent the detergent agent pipes
0 0 0 1	First-time-filling of boiler
0 0 0 0	Reset the cartridge capacity (only for partial desalination)

Proceed as follows to edit the parameters:

The machine must be switched off before you edit any parameters.



Access parameterisation by pressing the “0” button (for about 3 seconds) until both LEDs of the program selection buttons light up. The left-hand LED in the row of tank and boiler temperature LEDs lights up to denote the first editable parameter.

You can switch to the next or the previous parameter by pressing buttons I or II respectively. The current position in the parameter list is shown by the illuminated LEDs of the boiler and tank temperature display (see the table above).

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Value table

LED's TT BT	Step	Rinse agent concentration [ml/l]	Detergent concentration [ml/l]	Water hardness degree [°dH]
0 0 0 0	0	OFF	OFF	0
0 0 0 1	1	0.03	0.36	8
0 0 1 0	2	0.06	0.71	10
0 0 1 1	3	0.10	1.07	12
0 1 0 0	4	0.13	1.43	14
0 1 0 1	5	0.16	1.79	16
0 1 1 0	6	0.19	2.14	18
0 1 1 1	7	0.22	2.50	20
1 0 0 0	8	0.25	2.86	22
1 0 0 1	9	0.29	3.21	24
1 0 1 0	10	0.32	3.57	26
1 0 1 1	11	0.35	3.93	28
1 1 0 0	12	0.38	4.29	30
1 1 0 1	13	0.41	4.64	32
1 1 1 0	14	0.44	5.00	34
1 1 1 1	15	MAX.	MAX.	36

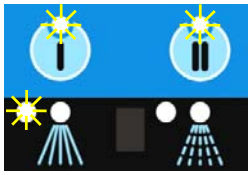
Changing the parameters

It is now possible to change the parameter which is currently showing by pressing the “Accept” button. The two LEDs of the Program Select button will now flash and the current value will be displayed by the LED combination of boiler and tank temperature.

The 4 LEDs produce a value range of 16 steps as shown in the above mentioned table.

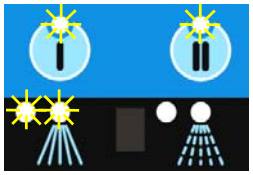
The set value is increased by 1 step by pressing button I and reduced by one step by pressing button II. When you reach the required value, confirm it by pressing the “Accept” button. Press the “0” button to leave this setting level without storing the value.

15.2.1 Setting the rinse agent quantity



Press the "Accept" key to confirm that this parameter is to be changed; the two LEDs of the Program Select buttons will now flash and the current value will be displayed by the LED combination of boiler and tank temperature. The rinse agent quantity can be set from 0.03 up to 0.44 ml/l. Increase the value using the "I" key or reduce it using the "II" key and confirm with the "Accept" key. The two LEDs of the Program Select buttons will now be permanently illuminated.
You can leave this level by pressing the “0” key.

15.2.2 Setting the detergent quantity



Press the "Accept" key to confirm that this parameter is to be changed; the two LEDs of the Program Select buttons will now flash and the current value will be displayed by the LED combination of boiler and tank temperature. The detergent quantity can be set from 0.36 up to 5.0 ml/l. Increase the value using the "I" key or reduce it using the "II" key and confirm with the "Accept" key.
The two LEDs of the Program Select buttons will now be permanently illuminated.
You can leave this level by pressing the “0” key.

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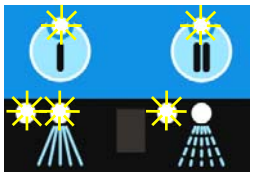
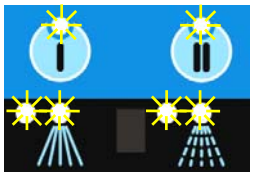
15.2.3 Adjustment of water hardness



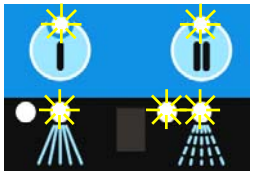
Press the "Accept" key to confirm that this parameter is to be changed; the two LEDs of the Program Select buttons will now flash and the current value will be displayed by the LED combination of boiler and tank temperature. The water hardness can be set from 8 up to 36 °dH. Increase the value using the "I" key or reduce it using the "II" key and confirm with the "Accept" key.
The two LEDs of the Program Select buttons will now be permanently illuminated.
You can leave this level by pressing the “0” key.

15.2.4 Bleeding program for detergent and rinse agent pipes



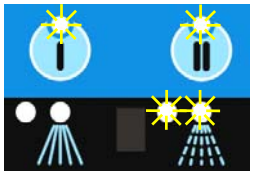
The bleeding program is started by pressing the "Accept" key. The LEDs on the tank and boiler temperature display will flash alternately to indicate that this process is in progress. The tank temperature display refers to the detergent dosing pump and the boiler temperature display refers to the rinse agent dosing pump. The dosing pumps will automatically stop at the end of the pre-defined running times. The two LEDs of the Program Select buttons will now be permanently illuminated. The bleeding programme must be carried out twice for appliances with suction from a canister. You can leave this level prematurely by pressing the “0” key.

15.2.5 Bleeding program only for rinse agent pipe



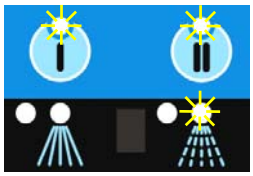
The bleeding program is started by pressing the "Accept" key. The LEDs on the boiler temperature display will flash alternately to indicate that this process is in progress. The rinse agent dosing pump will automatically stop at the end of the pre-defined running times. The two LEDs of the Program Select buttons will now be permanently illuminated. The bleeding programme must be carried out twice for appliances with suction from a canister. You can leave this level prematurely by pressing the “0” key.

15.2.6 Bleeding program only for detergent pipe



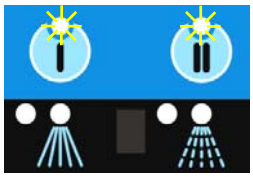
The bleeding program is started by pressing the "Accept" key. The LEDs on the tank temperature display will flash alternately to indicate that this process is in progress. The rinse detergent pump will automatically stop at the end of the pre-defined running times. The two LEDs of the Program Select buttons will now be permanently illuminated. The bleeding programme must be carried out twice for appliances with suction from a canister. You can leave this level prematurely by pressing the “0” key.

15.2.7 First-time-filling of boiler



Press the “Accept” key to set a special signal for the next filling and heating cycle. When this signal is set, the next time the appliance is switched on, the boiler and tank will be completely filled as a special, non-recurring procedure before the heating elements are switched on. The tank will also be heated before the boiler in this case. The purpose of this is to protect the boiler heating element after draining as a precaution against frost or to repair the boiler. You can leave this level prematurely by pressing the “0” key.

15.2.8 Reset partial demineralisation cartridge capacity



The process of resetting the counter and the cartridge capacity, which refer to partial demineralisation, is started by pressing the ”Accept“ key. The two LEDs on the Program Select buttons will then flash and a further LED in the tank and boiler temperature row will light up for 1 second. After all LEDs have lit up for 1 second, the counters have been reset. The two LEDs of the Program Select buttons will now be permanently illuminated.
You can leave this level by pressing the “0” key.

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16 Trouble-shooting

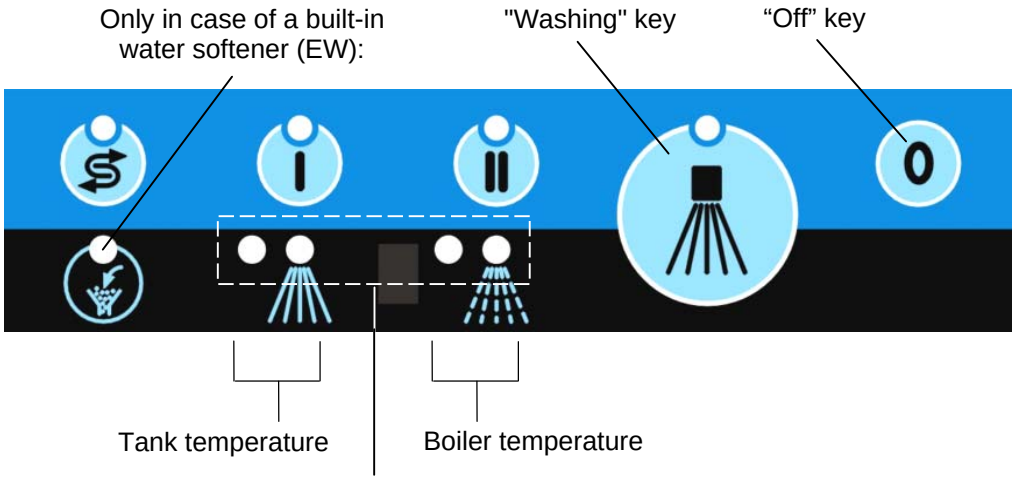
Despite being expertly designed, the machine may develop minor faults which are usually easy to eliminate. This section explains a number of possible problems and how you can deal with them yourself.

Before carrying out work on the open appliance, it MUST be disconnected from the power supply. The local main switch must be switched ”OFF“, or the local main fuse must be removed.

Should any of the operational faults described arise repeatedly, their cause must be established in each case.

Faults not described here can in general only be eliminated by a technician or electrician. Please contact the agency responsible or the authorised dealer.

16.1 Information reporting and troubleshooting



LED display for information and trouble reporting

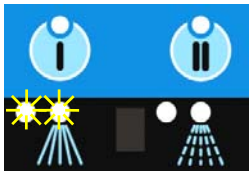
16.1.1 Information reporting

16.1.1.1 Incorporated softener exhausted

If the red lamp lights up, the capacity of the water softener has been almost exhausted. About a further 10 program cycles are possible before the water softener is completely exhausted.

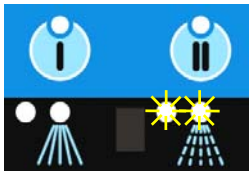
Carry out the regeneration procedure as described in the Operating Instructions.

16.1.1.2 Empty indication detergent/rinse agent (option):



If suction lances with conductivity sensors have been installed in the storage containers for detergent and / or rinse agent, the lights of the tank temperature display (left) will flash if one of the containers is empty. The empty indication will be automatically cancelled when liquid is recognised in the relevant storage container.

16.1.1.3 Empty indication partial demineralisation cartridge (option):



The lights in the boiler temperature display (right) will flash if the cartridge is empty. This indication will not be automatically cancelled when the cartridge is changed. This must be done manually as described in the Short Programming Manual.

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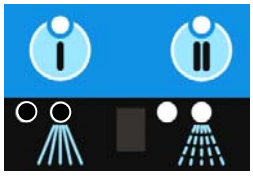
16.2 Error messages

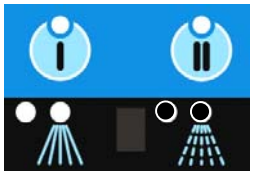
16.2.1 The tank temperature display (on the left) remains dark



The pre-set wash water temperature is not reached in the time allowed. The cause can be a defective tank heating element or tank temperature sensor.

➢ Please notify the service engineer.

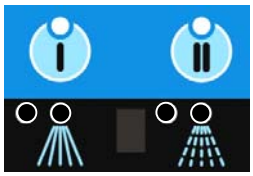
16.2.2 The boiler temperature display (on the right) remains dark



The pre-set rinse water temperature is not reached in the time allowed. The cause can be a defective boiler heating element or boiler temperature sensor.

➢ Please notify the service engineer.

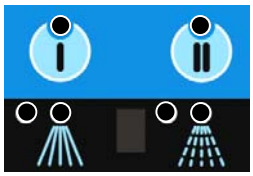
16.2.3 Both temperature displays remain dark



This can indicate that the water supply from the building has been cut off or that the screen in the inlet valve is dirty. It is impossible to fill the wash tank.

➢ Notify the service engineer if the malfunction cannot be remedied by opening the water supply line or by cleaning the screen.

16.2.4 All displays remain dark



There is no power.

➢ Switch the main switch in the building or the main safety devices on.

If this does not rectify the fault, operation in emergency mode will no longer be possible.

➢ Please notify the service engineer in all cases.

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17 Maintenance

Maintenance work may only be carried out when the dishwashing machine is shut down. In addition, the dishwashing machine main power switch must be in the OFF position and locked in this position.

Existing safety systems may not be removed!


IMPORTANT!

A functional test on all safety systems of the machine / installation is carried out during every regular maintenance

We recommend that you take out a maintenance contract with our manufacturer's agent in order to ensure a long service life.

17.1 Basic safety measures during normal operation

Observe the maintenance periods prescribed in the operating instructions!
Observe the maintenance instructions given in these operating instructions for individual components!


IMPORTANT!

Before carrying out any maintenance or repair work, prohibit access to the operating area to any unauthorized persons! Provide or display a sign drawing attention to the maintenance or repair work!

Before carrying out any maintenance and repair work, switch off the electrical power at the main electrical power switch and secure the switch with a padlock! The key for this lock must be kept in the hands of the person carrying out the maintenance and repair work! Failure to observe these precautions can result in severe physical injury or damage to property.


IMPORTANT!

Before carrying out any maintenance and repair work, ensure that all the parts of the machine that may be touched have cooled down to room temperature!

Carefully dispose of any cleaning products that could harm the environment!

17.1.1 Before starting operations following maintenance or repair work


IMPORTANT!

Before starting operations following maintenance or repair work, all initial tests must be carried out as described in "Machine Settings for Initial Commissioning by the Service Engineer".

17.1.2 Observe the environmental protection regulations


IMPORTANT!

Legal obligations relating to the avoidance of waste materials and to their recycling/removal in accordance with applicable regulations must be observed!

In particular, during installation, repair and maintenance work, materials that could pollute water such as: Grease and oils, Cleaning fluids containing solvents, must not pollute the ground or run into the sewerage system! These materials must be stored, shipped, collected and disposed of in suitable containers!

17.2 Dosing units

The dosing units themselves are maintenance free in principle but the working life of the wearing parts (peristaltic tube) is largely dependent on the chemical used.

17.2.1 Change of products

Change of product means that one rinse aid or detergent product is replaced by another. The use of differing products alongside each other can result in break-downs.

- Hose lines and dosing units must always be rinsed out with warm water.

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17.3 Maintenance plan

Maintenance procedures	FV 28G / FV28GIO EcoStar 430 F EcoStar 530 F-M	FV 40.2 / FV 60.2 / FV 70.2 D	GK 60	OR 50 H	EcoStar 545D / DV 80.2 / DV 120.2 / DV 125.2 / DV 200.2 / DV 200.2 PW	DV 270 B	FV 130.2 – FV 250.2 / DV 270.2	Component OK	Component faulty	Component replaced
1. Pumps										
Check pumps for watertightness, pump rotor noise, rotation direction and function										
Check pump suction										
Check pump sieves correctly fitting and operating correctly										
Check sliding ring washer/contra-rotation ring										
2. Wash systems										
Check water level in tank										
Check that wash water pipe is watertight										
Check washing system is complete and produces correct spray pattern										
Check wash arm hubs										
3. Fresh water rinse										
Check flow pressure/water pressure										
Check rinsing system is complete and produces correct spray pattern										
Check that system is watertight										
4. Housing and mounting parts										
Check housing, tank, sheet metal cover, hood, doors and covering of machine base for damage and correct operation										
Check tank cover sieves										
Check boiler, hoses, clamps, plastic parts and seals										
Check operation of raising and lowering equipment										
5. Fresh water installation										
Check level regulation										
Check valves, clean dirt trap										
Check that all connections (incl. hand spray) are watertight										
Check settings of built-in water softener (if fitted)										
Check operation of complete or partial water softener (if fitted)										
Check water hardness										
6. Waste water equipment										
Check if watertight										
Check pressure hose position and operation of drain pump										
7. Electrical installation										
Check of all fuses										
Tighten all electrical connections										
Check tank and boiler heating										
Check thermostat and stop switch										
8. Detergent dosing										
Check dosage, adjust if necessary										
9. Rinse aid dosing										
Check dosage, adjust if necessary										

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Maintenance procedures	FV 28G / FV28GIO EcoStar 430 F EcoStar 530 F-M	FV 40.2 / FV 60.2 / FV 70.2 D	GK 60	OR 50 H	EcoStar 545D / DV 80.2 / DV 120.2 / DV 125.2 / DV 200.2 / DV 200.2 PW	DV 270 B	FV 130.2 – FV 250.2 / DV 270.2	Component OK	Component faulty	Component replaced
10. Operation check of the complete machine										
Check machine for correct interaction of all functions										
11. Test run										
Check results of test wash and rinse										
Brief instruction for new personnel										

18 Environmentally acceptable measures, Disposal of the installation

Each discarded appliance is to be made immediately unserviceable - to avoid later accidents.

- Therefore, set the local main switch to „OFF“ or switch off the local main fuse.

When you eventually dispose of the installation (dismantlement/scrapping), the parts and their corresponding materials should preferably be re-used.

Here is a list of the materials that most frequently occur when dismantling:

- Chrome-nickel-steel
- Aluminium
- Copper
- Brass
- Electrical and electronic parts
- PP and other synthetic materials

19 Documentation

Installation drawing / technical sheet

Technical Data

Wiring diagram / Programming instructions

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Gruppe
Group
Groupe

Das Programm auf einen Blick	Our product range	Notre gamme de production
1 **Spülautomaten mit stationärem Waschverfahren** Geschirr- und Gläserspülautomaten; Topf- und Behälterspülautomaten; Salat- und Gemüsewaschautomaten	**Automatic dishwashing machines** with fixed washing system	**Lave-vaisselle à procéder de lavage stationnaire** Automates de lavage
2 **Spülautomaten mit Durchlaufsystem** Geschirrspülautomaten mit Bandtransport-, Korbtransport- oder Umlaufsystem	**Belt conveyor and rack transport machines** for continuous throughput operations	**Lave-vaisselle automatiques à passage continu** Lave-vaisselle automatiques à conveyeur et à transport de paniers
3 **Spezialspülanlagen** Vollautomatische Spülanlagen für Geschirr, Tabletts und Besteck; Flight-Catering-Anlagen; Industriespülautomaten; Trolley-, Behälter- und Transportwagenspülanlagen	**Special purpose warewashing solutions** such as semi and fully automatic systems, designed for the catering industry in general	**Lave-vaisselle spéciaux** Installations de lavage entièrement automatiques et semi-automatiques, lave-vaisselle industriels
4 **Förderanlagen** Tablett- und Geschirrtransportbänder, Geschirrsortier- und Stapeleinrichtungen	**Conveying systems** for vertical and horizontal transport of trays and dishes	**Installations de transport** pour le transport vertical et horizontal de plateaux
5 **Speisereste-Behandlungsanlagen** Maschinen und Anlagen zur Aufbereitung von Speiseresten für eine umweltgerechte Entsorgung	**Food waste treatment systems** Water conditioning appliances	**Installations de traitement de déchets alimentaires** ainsi que des installations de traitement d'eau
6 **Großkücheneinrichtungen** Geräte und Mobiliar für Relais- und Stationsküchen; Transportwagen; Tablett- und Tellerstapler; Tische, Schränke und Regale aus Edelstahl; diverse Organisationsmittel	**Central wash-up equipment** Tables, cabinets, tray and plate stackers	**Installations pour grandes cuisines** Tables, empileurs de plateaux et d'assiettes
7 **Sanitäreinrichtungen für Krankenhäuser und Heime** Reinigungs- und Desinfektionsautomaten für Steckbecken und andere Pflegegeschirre; Pflegekombinationen; Komplettausstattung für Unreine Arbeitsräume	**Sanitary appliances for healthcare establishments** Automatic cleaning and disinfection appliances for bedpans and other care utensils	**Installations sanitaires pour hôpitaux et maisons de soins** Automates de nettoyage et de désinfection, combinés de soins

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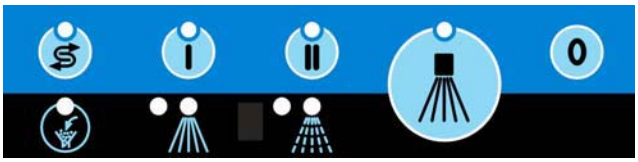


Control panel

1. Preparing to wash and rinse

- Open the door.
- Insert suction sieve and tank covering sieve.
- Close the door.
- Turn on the machine by pressing one of the pre-selector buttons.
- Check level and if necessary refill detergent and rinse aid reservoirs.
- The machine is ready for operation when flash light of pre-selector button stops.

2. Washing and rinsing

- Place the material to be washed in the basket.
- Insert the basket in the machine.
- Close the door.
- Program I for normal soiled dishes.
- Program II for heavily soiled dishes.
- Press the program start button.
- The machine automatically washes, rinses and switches itself off when the wash program is finished. Open the door after the lamp goes out and remove the basket.

3. Shutting the machine down

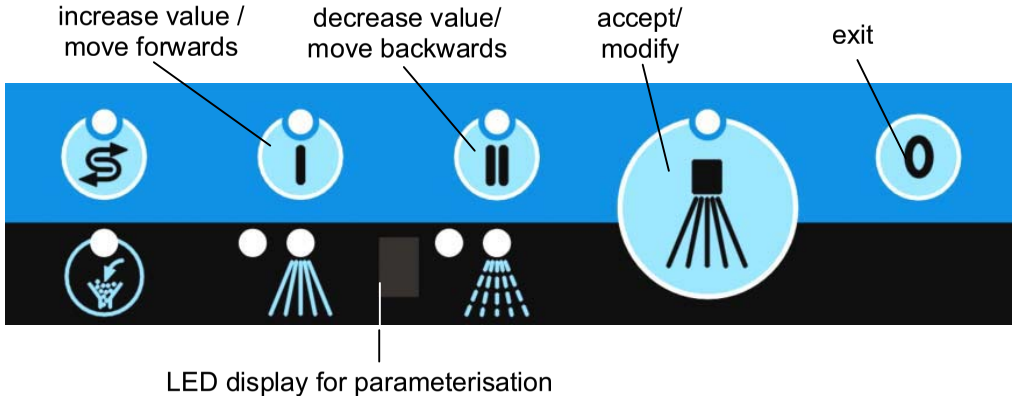
- Press the “0“ button (Off button). The machine is switched off when all the lights are out.
- Open the door and remove the stand-pipe.
- If the appliance has a built-in waste water pump, the program start button must be pressed to empty the tank.
- After the tank water has been pumped out, the interior is rinsed with fresh hot water. The door must be kept closed. The waste water pump disconnects itself automatically.
- Clean tank, strainers and wash arms.

4. Regeneration (optional)

- A red lamp indicates that the capacity of the water softener is nearly exhausted.
- Carry out the regeneration process according to the operating instructions.

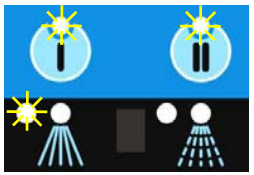
Quick programming instructions EcoStar 530 F-M / EcoStar 545 D-M

Keyboard use during programming



General:
In order to programme the drive, the power supply must be ensured, and the machine must be completely switched off (no LED must be lit).

Parameterisation:



To do this the "0" button is pressed until both LEDs of the Program Select buttons light up (about 3 seconds).
The left-hand LED in the row of tank and boiler temperature LEDs lights up to denote the first parameter that can be changed. It is possible to quit paramerisation at any time by pressing the “0“ button again.

The following parameters can be selected using the membrane keypad.

1	0	0	0	- Set the rinse agent concentration
1	1	0	0	- Set the detergent concentration
1	1	1	0	- Set the water hardness degree
1	1	1	1	- Vent the detergent and rinse agent pipes
0	1	1	1	- Vent only the rinse agent pipe
0	0	1	1	- Vent only the detergent pipe
0	0	0	1	- One-time filling of the booster heater without immediate heating
0	0	0	0	- Reset the water meter after partial demineralisation

You can switch to the next or the previous parameter by pressing the buttons I or II respectively. The current position in the parameter list is shown by the illuminated LEDs (see the table above).

Changing the parameters:

It is now possible to change the parameter which is currently showing by pressing the Program Start button. The two LEDs of the Program Select button will now flash and the current value will be displayed by the LED combination of boiler and tank temperature.
The 4 LEDs produce a value range of 16 steps as shown in the following table:

LEDs	Step	Rinse agent concentration [ml/l]	Detergent concentration [ml/l]	Water hardness degree [°dH]
0 0 0 0	0	AUS	AUS	0
0 0 0 1	1	0,03	0,36	8
0 0 1 0	2	0,06	0,71	10
0 0 1 1	3	0,10	1,07	12
0 1 0 0	4	0,13	1,43	14
0 1 0 1	5	0,16	1,79	16
0 1 1 0	6	0,19	2,14	18
0 1 1 1	7	0,22	2,50	20
1 0 0 0	8	0,25	2,86	22
1 0 0 1	9	0,29	3,21	24
1 0 1 0	10	0,32	3,57	26
1 0 1 1	11	0,35	3,93	28
1 1 0 0	12	0,38	4,29	30
1 1 0 1	13	0,41	4,64	32
1 1 1 0	14	0,44	5,00	34
1 1 1 1	15	MAX	MAX	36

The set value is increased by 1 step by pressing button I and reduced by one step by pressing button II. When you reach the required value, confirm it by pressing the Program Start button. Press the “0” button to leave this setting level without storing the value.

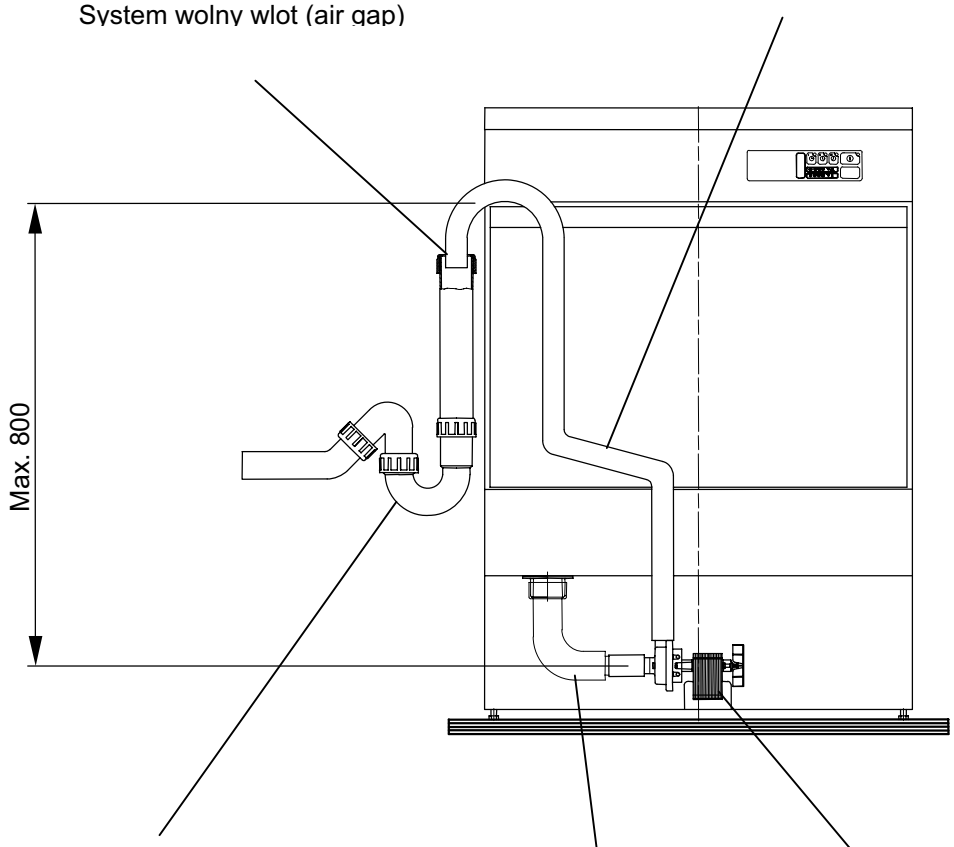
In addition to adjusting the values in the above table, the detergent and rinse agent pipes can be vented in the parameterisation mode (both dosing units are activated for a pre-set time); the meter for water flow can also be re-set on installation of a partial demineralisation cartridge if parameter 109 has been activated.

Anschlussvorschrift für Laugenpumpe
Connection prescription for drain pump
Prescription de connexion pour pompe de vidange
Prescrizioni di collegamento per la pompa scarico
Prescripciones para la conexión de la bomba de vaciado
Reguła instalacji pompy spustowej

MEIKO
8.97/LP 6-sprachig

Freier Auslauf
Air gap
Système anti-refoulement avec disconnecteur atmosphèrique
Air gap
Sistema air gap
System wolny wlot (air gap)

Druckleitung, durchgehend steigend verlegt
Pressure pipe continuously ascending
Tuyau de pression continuellement ascendant
Tubo di pressione, montato con salita continua
Tubo de presión, continuamente ascendente
Układ ciśnieniowy wznoszący w pionie

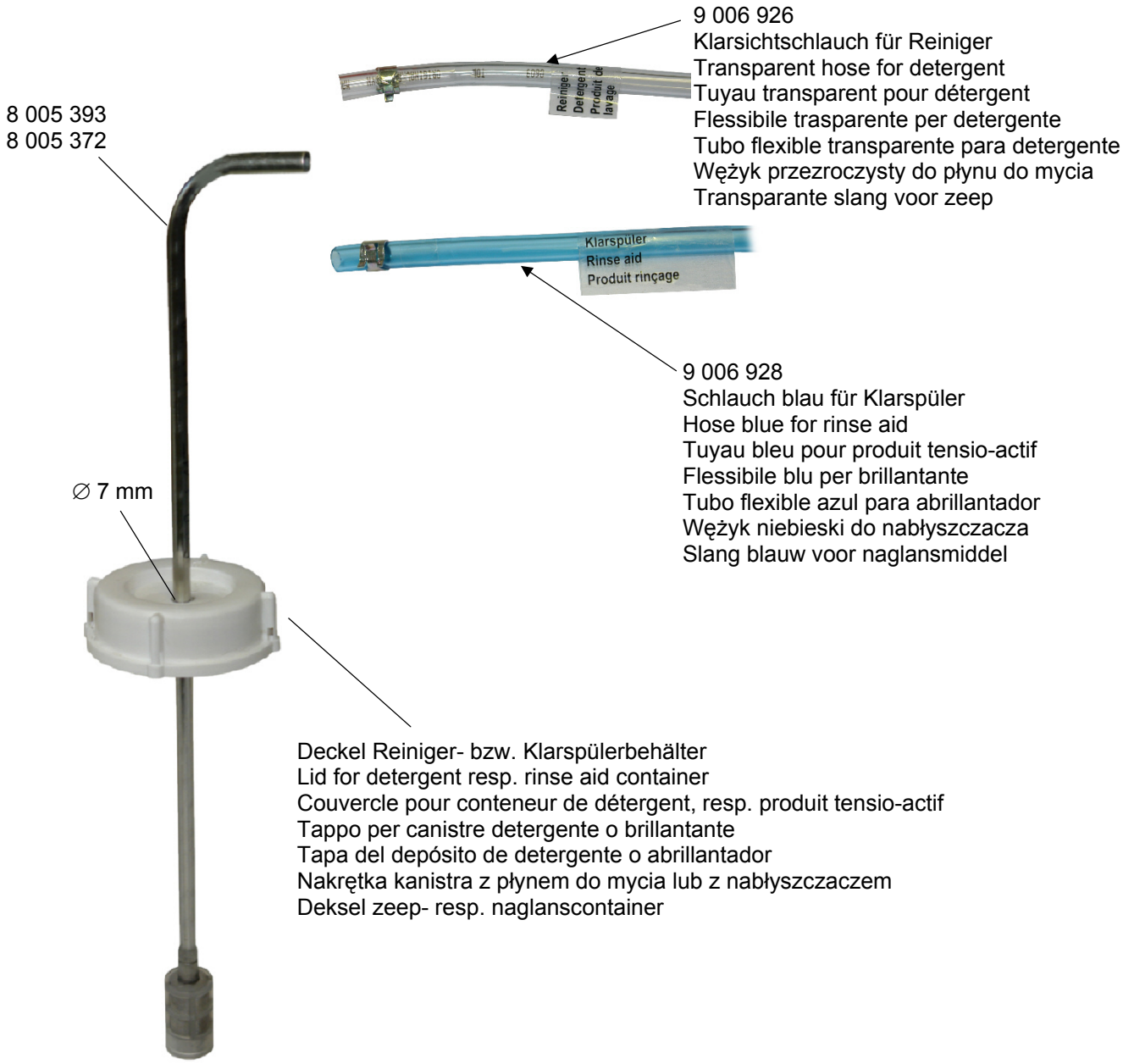


Ablaufverrohrung mit Siphon bauseits
Drain pipework with siphon, locally
Tuyauterie de vidange avec siphon sur place
Scarico con sifone a cura del committente
Tubería de desagüe con sifón, a cargo del cliente
Orurowanie kanalizacyjne z syfonem przez klienta

Laugenpumpe
Drain pump
Pompe de vidange
Pompa di scarico
Bomba de vaciado
Pompa spustowa

Saugleitung
Suction pipe
Tuyau d`aspiration
Tubo d`aspirazione
Tubo de aspiración
Układ ssący

Saugleitung für Reiniger bzw. Klarspüler
Suction line for detergent resp. rinse aid
Conduite d'aspiration pour détergent, resp. produit tensio-actif
Tubo d´aspirazione per detergente e brillantante
Tubo de aspiración para detergente y abrillantador
Układ ssący płynu do mycia lub nabłyszczacza
Aanzuigleiding voor zeep- resp. naglansmiddel



ACHTUNG!	**Saugleitung von Wärmequellen fernhalten!**
ATTENTION!	**Keep away suction line from heating sources!**
ATTENTION!	**Ecartez la conduite d'aspiration de toute source de chaleur!**
ATTENZIONE!	**Tenere il tubo d´aspirazione lontano da fonti di calore!**
¡ATENCION!	**¡Mantenga el tubo de aspiración alejado de las fuentes de calor!**
UWAGA!	**Układ ssący należy trzymać z dala od źródeł ciepła!**
LET OP!	**Aanzuigleiding van warmtebronnen verwijderd houden!**

Geschirrspülautomaten
Gläserspülautomaten
Topfwaschautomaten
Universalwaschautomaten
Salat- u. Gemüsewaschautomaten
Vollautomatische Spülanlagen

Sonderwaschanlagen
Förderanlagen
Speisereste-Anlagen
Kücheneinrichtungen
Pflegeeinrichtungen
Reinigungs- und Desinfektionsautomaten

CE - Konformitätserklärung

gemäß EN 45014 und
EG-Maschinenrichtlinie 98/37/EG
Stand: 25.09.2007

CE declaration of conformity as defined by EC machinery-directive
Déclaration de conformité CE conformément à la directive CE relative aux machines
Declaración de cónformidad CE según los requerimientos CE en la construcción de maquinas CEN03A/01/98
CE-Conformiteitsverklaring volgens de EG Machinerichtlijn
CE – dichiarazione di conformitá secondo le direttive stabilite riguardo alla costruzione di macchine

Firma/Company/Société/Empresa/Firma/Casa costruttrice:
Adresse/Adress/Adresse/Dirección/Adres/Indirizzo:

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e-mail: info@meiko.de

Spülmaschine Typ dishwashing model lave-vaiselle modèle lavastoviglie modello Vaatwasmachine type Modelo de lavavajillas						
	FV 28G	**FV 110G**	**DV 40N**	**DV 120.2**	**EcoStar 430F**	**OR 50H**
	FV 28GIO	**FV 130B**	**DV 40T**	**DV 120T**	**EcoStar 530F**	**GK 60**
	FV 20N	**FV 250B**	**DV 80T**	**DV 160**	**EcoStar 530F-M**	
	FV 40T	**FV 130.2**	**DV 80.2**	**DV 200.2**		
	FV 40.2	**FV 250.2**		**DV 200.2 PW**	**EcoStar 545D**	
	FV 40.2 G		**DV 125.2**	**DV 240B**	**EcoStar 545D-M**	
	FV 60.2			**DV 270B**		
	FV 70.2					
	FV 70T			**DV 270.2**		

Konformitätserklärung

Declaration of conformity/Déclaration de conformité/Declaración de conformidad/Conformiteitsverklaring/Dichiarazione di conformitá:

Hiermit bescheinigen wir in alleiniger Verantwortung die Konformität des Erzeugnisses mit den grundlegenden Anforderungen der folgenden EG-Richtlinien, harmonisierten Normen, nationalen Normen.

We herewith confirm the sole responsibility for the conformity of the product with the basic requirements of the following EC-regulations, harmonized standards, national standards.

Par la présente nous déclarons, que nous avons responsabilité pour la conformité du produit aux demandes fondamentales des régulations CE, normes harmonisées et normes nationales suivantes.

Por la presente atestamos en exclusiva responsabilidad la conformidad de nuestros productos con los requerimientos básicos de los siguientes requerimientos CE, normas armonizadas y nacionales.

Hiermee bevestigen wij onze verantwoordelijkheid van de conformiteit van het product met betrekking tot de fundamentele en gestelde eisen volgens EG-Richtlijnen, geharmoniseerde Normen en Nationale Normen.

Con la presente dichiarazione confermiamo la nostra responsabilità riguardo alla conformitá sul prodotto con i regolamenti basilari delle seguenti normative CE, normative armonizzate e normative nazionali.

EG-Richtlinie/EC-regulation/Régulation CE/Requerimiento CE/EG-Richtlijn/Regolamento CE:
98/37 EWG

Offenburg, 16.02.2009
Offenburg, the/Offenburg, le/Offenburg, el/Offenburg,/Offenburg, il

Unterschrift/Signature/Signature/Firma/Handtekening/firma:
Konstruktion/Construction/Construction/Construcción/Constructie/resp. progettazione:

MEIKO Maschinenbau GmbH & Co. KG

ppa . Dr. Thomas Peukert

Dr. Thomas Peukert
Leiter Entwicklung und Konstruktion

Excelence in quality management Certified to DIN ISO 9001