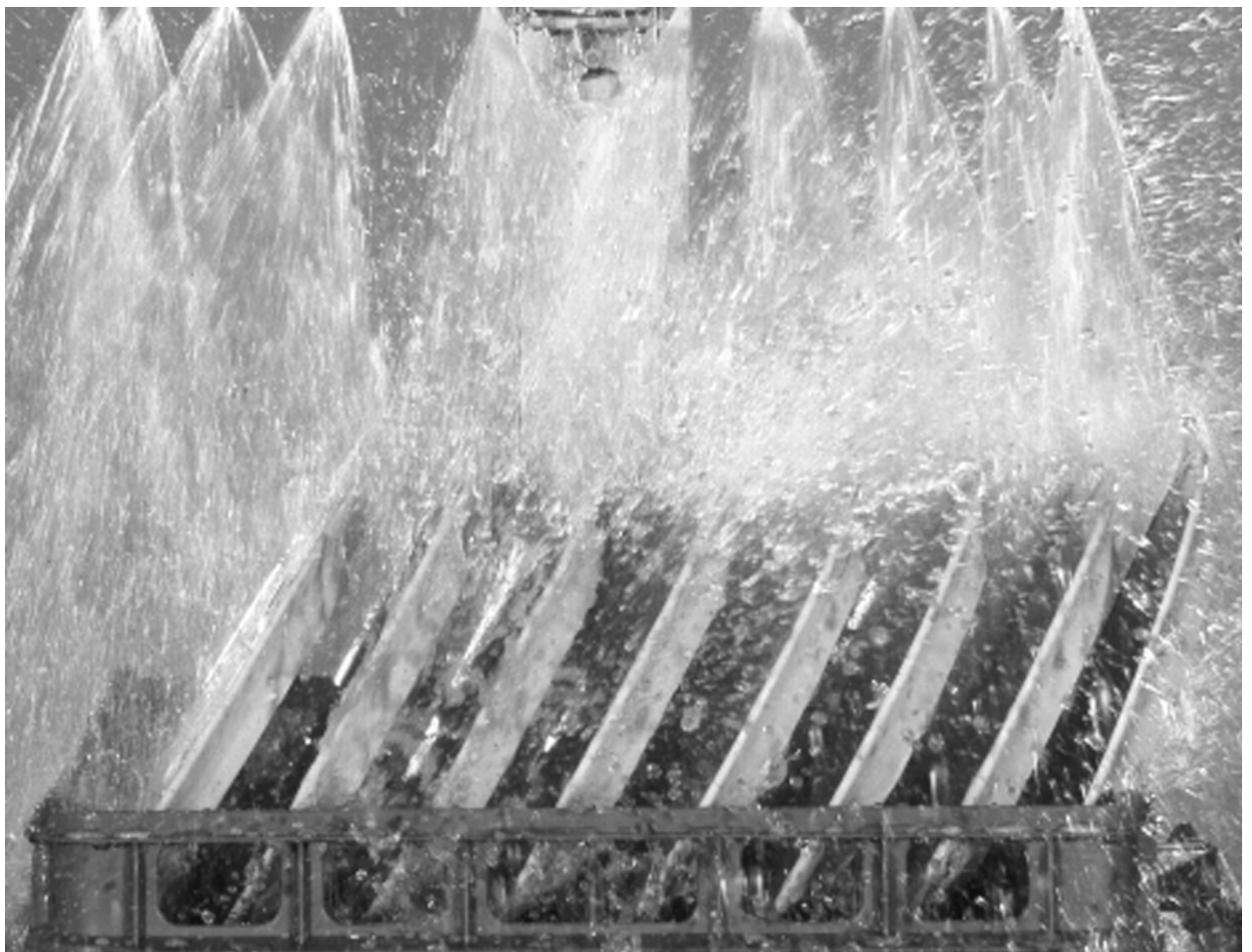


# **Operating instructions**



## **Glasswashing machine Model FV 28 GiO**

### **Installation and setting in operation instructions**



# 1

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# 2

## Declaration of conformity and other certificates

See separate EC-declaration of conformity.

# 3

## Transport, Delivery, Dimensions

### 3.1 Transport

---

- Observe transport notes on the packing.
- Transport to be executed with great care.
- Unpack the appliance.
- Check completeness of the delivery with the shipping documents.
- Examine the appliance for possible transit damage.
- Any damage must be reported immediately to the carrier, the insurance company and the manufacturer.



Damaged appliances must not be set into operation.

### 3.2 Dimensions, Technical data, Installation instructions

---

See attached technical sheet

# 4

## General safety information

The glasswashing machine has exclusively been designed for the washing of dishes, cutlery and glasses. It must not be used for any other purpose.



For a perfect and safe operation of the washing machine, the operating instructions must be thoroughly observed.

### 4.1 Explanation of the safety symbols

The following symbols are used in this booklet as important safety notes for the operator. The safety notes, especially the warnings, must absolutely be observed and followed.



**Warning:** indicates possible hazard for persons, especially through electrical equipment.



**Attention:** indicates the endangering of system parts or a possible functional damage.



**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 potable! Health hazard caused by ingestion cannot be excluded.



**Danger of burning:** indicates possible hazard due to hot surfaces or media.



**Danger of contusion:** indicates hazard caused by moving parts of the appliance.



**Note:** includes important additional information for the operator reg. the system or parts of the system and offers further tips.



**Symbol of instruction:** in front of directive text demanding an action.

### 4.2 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:

- ☐ Storage and installation area frost free
- ☐ Electrical connection acc. to technical sheet
- ☐ Fresh water connection acc. to technical sheet
- ☐ Waste water connection acc. to technical sheet

#### 4.2.1 Requirements for the installation area

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



The machine is only frost-resistant in the state it is delivered, resp. 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

### Installation, First setting in operation

#### 5.1 Installation of universal utensil washer

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

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.

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

- The complete unit must be levelled in both directions using a water level.
- Uneven floor can be compensated by adjusting the feet.
- Table connections to be tightened with detergent-resistant sealing compound (f. ex. silicone).

#### 5.2 Requirements for the electrical connection

The electrical connection of the machine must only be executed by a specialist acc. to DIN EN 50110-1.



Reg. connection, the customer must guarantee the following:

- The correct tension and current must be available
- Mains supply lines must be protected according to regulations and provided with a main switch.

- Appliances for fixed connection to be connected with equi-potential bonding.
- With an unearthed neutral (N), the main switch must have 4-poles for three-phase supply.
- 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.



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 washing machine.



- All conductor fixing screws must be re-tightened before setting the appliance into operation.

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

### 5.3 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 to be executed acc. to DIN 1988 part 1-8 resp. EN 1717, DVGW-work bulletin W 507, resp. acc. to the local regulations.



The flow pressure must be at least 1 bar before the connection kit. The maximum pressure is restricted to 3 bar by an integrated pressure reducer.

- If this flow pressure is not available, then increase the pressure by means of a booster pump or reduce it with a pressure reducing valve.
- Suitable protective measures must be taken to ensure that no iron particles can enter the appliance via the mains water supply. The same must be observed reg. the entry of other metal parts, as f. ex. copper chips. Corresponding indications can be taken from the installation drawing. Therefore suitable measures must be taken.



A fine filter is included in the connection set.

The filter is filled with a hardness stabiliser in order to protect the osmosis unit. The filter cartridge containing the hardness stabiliser must be renewed every six months.

The information on the water quality is contained in the Technical Data-sheet.

- For protecting the solenoid valve, a dirt trap must be fitted into the fresh water supply.

#### 5.4 Requirements for the waste water connection

- A siphon is installed in the waste-water pipe (connection instructions can be obtained from the installation drawing / dimensioned drawing).
- Depending on the machine application, a grease trap must be provided.

#### 5.5 Waste water discharge from reverse osmosis unit

- The waste water outlet from the reverse osmosis unit must not be closed. This will damage the unit in a very short time.

#### 5.6 Correct handling



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

Temperature of wash water = 58-60 °C.



The washed items as well as the components in contact with the wash water have the same temperature. Please observe appropriate protective measures.

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

##### 5.6.1 Emergency-off

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

#### 5.7 Authorised users / operators



For the handling of the washing machine, there are two groups of users:

1. Service engineers from the manufacturer or the agency, a specialist from the authorised dealer: qualified technician, knowing the appliance very well.
2. Operator - with basic knowledge (our customers are obliged to instruct the operators)

##### Customers responsibility reg. the groups of users

- ☐ The persons responsible for safety, must absolutely guarantee that only qualified persons execute connection, adjustment or maintenance works on the open washing machine.
- ☐ The permission for the execution of such works is given by the person responsible for the personnel safety and the installation, to persons qualified because of their training, education, experience or instructions; because of their knowledge reg. standards, regulations, accident-prevention regulations and the conditions of the installation.
- ☐ The persons responsible for the safety are obliged to instruct the operators reg. operation and the safety aspects of the washing machine.
- ☐ It must be ensured, that the supplied operating instructions are available for both user groups, for any work to be carried out. The service personnel is to observe these instructions, resp. the order-specific documentation in order to avoid any hazard and/or damages.



### 5.8 Chemicals for the operation of the appliance

---

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.

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.

### 5.9 Environmentally acceptable measures, measures for disposal

---

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.

The appliance can now be duly recycled (separate stainless steel, plastic materials, etc).



# 6



## Basic small machine information

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

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

## 6.1 General description of the washing machine

---

### 6.1.1 Execution

Square basket appliance with stationary basket

### 6.1.2 Wash principle

The appliance has one wash and one final rinse cycle.

A rotary pump transfers re-circulating water heated to about 60°C from the wash tank to the wash jets. Clean water rinsing follows the washing process when the latter is finished.

The items are rinsed via a separate nozzle system with hot fresh water (dish and cutlery washers 80 - 83° C, glasswashers 65° 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.

### 6.1.3 Detergent dosing

The detergent dosing unit 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 to 1 ml/l.

### 6.1.4 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.

The operating and adjustment instructions of the dosing units can be taken out of the „Service Instructions“.

## 6.2 Improper use



Washing machine and especially switch boxes and other electrical-technical components must not be sprayed with a water hose or a high-pressure hose.



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



The water in the wash-up area is non-potable! Do not use the water from the wash-up area for food preparation or drinking!



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

The door must be opened very carefully during the wash cycle to reduce the risk of wash water splashing out of the appliance.



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.

**i**

### **6.3 Emissions**

---

- ☐ Work place noise level  $L_{pA} \leq 70$  dB
- ☐ Water vapour

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

### **6.4 Data reg. the electrical and hydraulic equipment**

---

Technical data: installation drawing

**7**

## **Documentation**

Installation drawing / Technical sheet

Wiring diagram / Programming instructions

**i**

The service instructions are part of the operating instructions and should be kept in the appliance together with the wiring diagram.

**8**

## **Appendix**

### **8.1 Name and address of manufacturer**

---

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# Operating instructions



## Glasswashing machine Model FV 28 GiO

### Operating instructions



# 1

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# 2

## Operation



Without a thorough knowledge of the instructions „ Installation and setting in operation instructions “ the appliance must not be used. False operation could result in injuries or damages to the appliance.

### 2.1 Operating panel

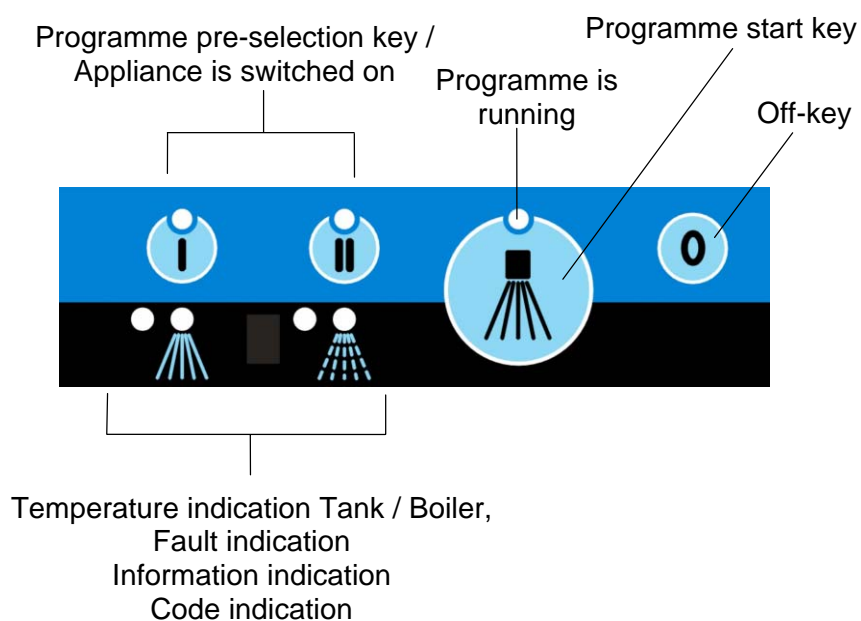


Illustration 1; Operating panel







| Key/Indication  | Meaning  |
|---|--|
|  | Normal cycle – Wash programme I                      |
|  | Intensive cycle – Wash programme II                  |
|  | Wash temperature                                     |
|  | Final rinse temperature                              |
|  | Programme start<br>Tank drain<br>Self-cleaning cycle |
|  | Switching off /<br>Cycle interruption                |

Table 1; Assigned to Programme key/Items to be washed

## 2.2 Preparation for washing and rinsing



The below described preparation works must be carried out before each setting in operation.

- Open the door
- Insert the sieves.
- Close the door.



Danger of contusion!  
Close the appliance with both hands!



- Switch on the appliance by pressing a programme pre-selection key.

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.

With cold water connection, the duration is 25 minutes.

## 2.3 Automatic dosing

The required detergent 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.



**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.



## 2.4 Operation during washing and rinsing cycle

When inserting the items to be washed into the baskets, the following must be observed:

- Hollow ware always to be loaded **up side down**. Otherwise the water will be trapped inside and they will not dry to a brilliant finish.
- Plates should always stand **at a slight angle** in the basket with their inside faces pointing upwards.
- When using cutlery quivers, ensure that cutlery is always inserted handle down.
- Load the quivers with a **mixture** of spoons, knives and forks, as identical items of cutlery can be too close together.
- Do **not overload** the quivers.
- 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.

### 2.4.1 Start the wash cycle

Programme start  
key



- Insert the items into the basket.
- Basket to be inserted into the appliance and correctly centred.
- Close the door.
- Press the programme start key.

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



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

### 2.4.2 Remove the washed items

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

### 3

#### Setting the appliance out of operation

Off-key



- Press the „0“-key (OFF-key). If no light is lit up, the appliance is out of operation.
- Remove the stand-pipe.

##### **Machines without built-in drain pump:**

- 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.

Programme start  
key



##### **Machines with built-in drain pump:**

- For draining the tank, press the programme start key.
- After the draining of the tank water, the tank interior is sprayed with hot fresh water. The door must remain closed. The waste water pump switches off automatically.

### 4

#### Maintenance and care

##### **4.1 Care, general**

The appliance has been designed to keep the need for cleaning, care and maintenance to a minimum.

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 the procedure, a maintenance contract can be concluded with the manufacturer or agency.

Works/repairs which were not correctly executed and the use of foreign parts through unauthorised persons, endanger the operators and the appliance and will invalidate the warranty.

##### **4.2 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.

Use only lather-free detergents suitable for industrial dishwashing machines.



### 4.3 Refilling of 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 filling level of the container and if necessary, replace it by a full one.

Use only lather-free rinse aids suitable for industrial dishwashing machines.



### 4.4 Cleaning

---

After the tank draining, the following must be done:

- Food residues sticking to the tank, tank heating element and sieves must be removed with a brush.
- Disassemble the wash arms and rinse them with flowing water.
- Wash nozzles to be cleaned daily.
- Cleanness of final rinse nozzles must be checked weekly and if necessary they must be rinsed with flowing water.

The inserts should be inserted with the journal facing the direction of flow.



### 4.5 Maintenance of stainless steel surfaces

---

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

For keeping the stainless steel surfaces constantly corrosion-free

- use only suitable products.

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



### 4.6 Filter cartridge with hardness stabiliser

---

The filter cartridge containing the hardness stabiliser must be renewed every six months, otherwise lime-scale will be deposited on the surface of the membrane and make it unusable.



### 4.7 Mothballing the osmosis unit

---

If the osmosis unit is to remain unused for a length period (> 60 days), the membrane can be damaged by the growth of bacteria.

The osmosis unit must therefore be mothballed in good time.





## 5

## Troubleshooting



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 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 described faults arise repeatedly, their cause must be clarified.

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

### 5.1 Indicating information and troubleshooting

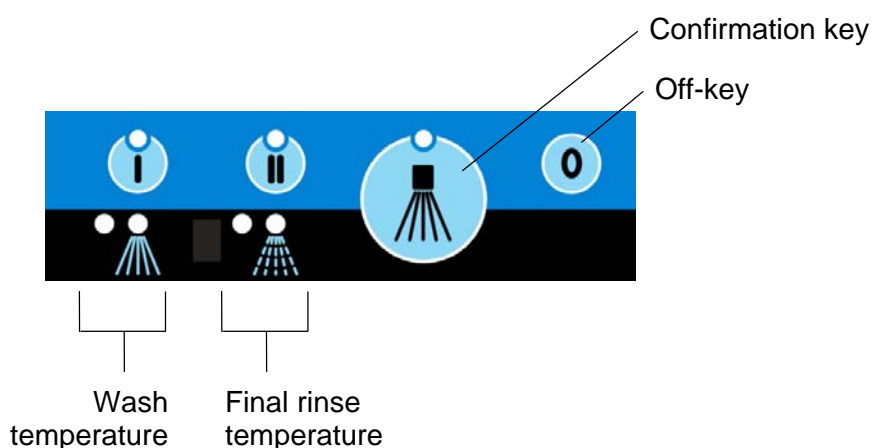


Illustration 2: Information display

#### 5.1.1 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.

#### 5.1.2 Error indication in the reverse osmosis unit:

The lights in the boiler temperature display (right) will flash if there is a malfunction in the reverse osmosis unit.

If the lights continue to flash after the machine has been disconnected from the power supply and then re-started, the cause can be a leak in the lower part of the plinth.

➤ Please notify the service engineer.

**5.2 COMMON FAULT messages with emergency service**

---

If these fault messages are displayed, only limited operation of the machine is possible.

The program times will certainly be extended when operating in emergency mode.

**5.2.1 The tank temperature display (on the left) remains dark**

The pre-set rinse 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.

**5.2.2 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.

**5.2.3 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.

**5.2.4 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.

# 6

**Appendix****6.1 Name and address of manufacturer**

---

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# Operating instructions



## Glasswashing machine Model FV 28 GiO

### **Service instructions**



## 1

**Contents**

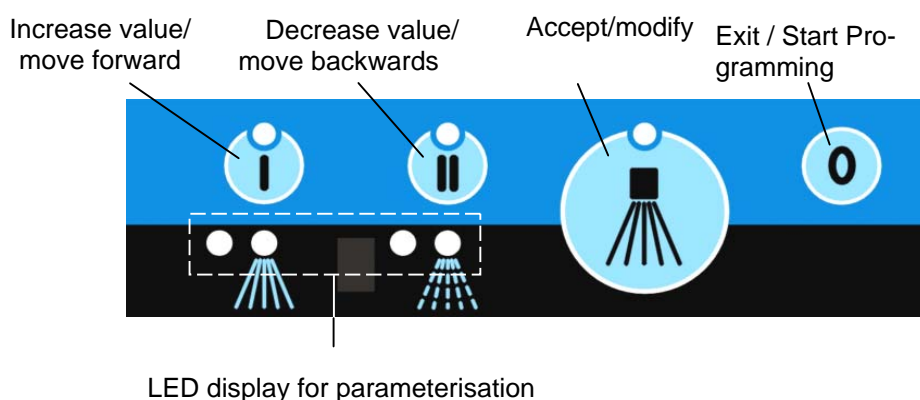
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## 2

**Admissible user of this documentation**

The works described in this booklet must be executed by specialists of the manufacturer, the responsible agency or an authorized dealer.

## 3

**Settings / modifications / on-site adaptation****3.1 Using the keyboard for programming**

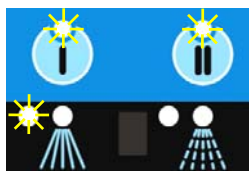
**For control programming, the power supply must be guaranteed, and the machine must be completely switched off (no LED must be lit).**

**3.2 Parameterise**

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 1 | Vent the detergent and rinse agent pipes |



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).

**Value table**

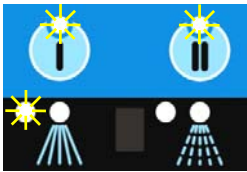
| LED's   | Step | Rinse agent concentration [ml/l] | Detergent concentration [ml/l] |
|---------|------|----------------------------------|--------------------------------|
| TT BT   |      |                                  |                                |
| 0 0 0 0 | 0    | OFF                              | OFF                            |
| 0 0 0 1 | 1    | 0,03                             | 0,36                           |
| 0 0 1 0 | 2    | 0,06                             | 0,71                           |
| 0 0 1 1 | 3    | 0,10                             | 1,07                           |
| 0 1 0 0 | 4    | 0,13                             | 1,43                           |
| 0 1 0 1 | 5    | 0,16                             | 1,79                           |
| 0 1 1 0 | 6    | 0,19                             | 2,14                           |
| 0 1 1 1 | 7    | 0,22                             | 2,50                           |
| 1 0 0 0 | 8    | 0,25                             | 2,86                           |
| 1 0 0 1 | 9    | 0,29                             | 3,21                           |
| 1 0 1 0 | 10   | 0,32                             | 3,57                           |
| 1 0 1 1 | 11   | 0,35                             | 3,93                           |
| 1 1 0 0 | 12   | 0,38                             | 4,29                           |
| 1 1 0 1 | 13   | 0,41                             | 4,64                           |
| 1 1 1 0 | 14   | 0,44                             | 5,00                           |
| 1 1 1 1 | 15   | MAX                              | MAX                            |

**Changing the parameters**

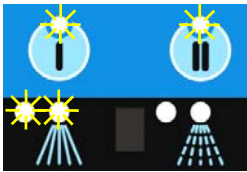
It is now possible to change the parameter which is currently showing by pressing the "Accept" button. The two LEDs of the Program Select button will now flash and the current value will be displayed by the LED combination of boiler and tank temperature.

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.

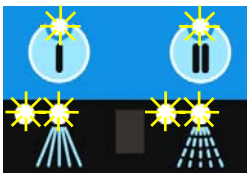
**3.2.1 Setting the rinse agent quantity**

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. It is possible to leave this level by pressing the "0" key.

**3.2.2 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.

It is possible to leave this level by pressing the "0" key.

**3.2.3 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.

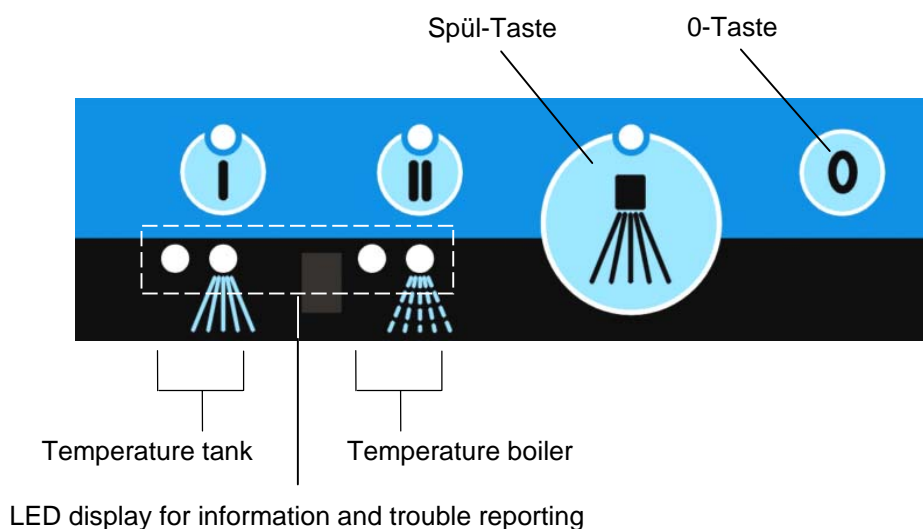
The dosing pumps will automatically stop at the end of the pre-defined running times.

The two LEDs of the Program Select buttons will now be permanently illuminated.

It is possible to leave this level prematurely by pressing the "0" key.

## 4

## Information reporting and troubleshooting



## 4.1 Information reporting

## 4.1.1 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 light 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.

## 4.2 Error messages

## 4.2.1 Malfunction in the reverse osmosis unit:



The lights in the boiler temperature display (right) will flash if there is a malfunction in the reverse osmosis unit.

If the light continue to flash after the machine has been disconnected from the power supply and then re-started, the cause can be a leak in the lower part of the plinth.

- Leaks in the sub-structure; the leak switch was activated.
- An osmosis unit component (motor, valve, regulator) is defective.
- The conductivity of the purified water is too high. The osmosis module is damaged / exhausted / contaminated and must be renewed.
- Please notify the service engineer.

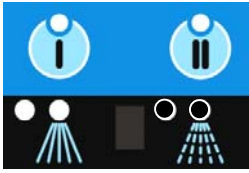
## 4.2.2 The tank temperature display (on the left) remains dark



The pre-set rinse 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.

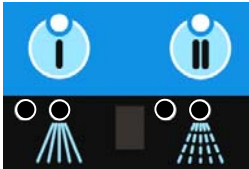
## Maintenance



### 4.2.3 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.

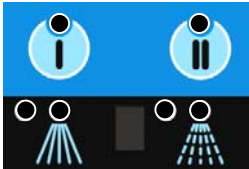
- Please notify the service engineer.



### 4.2.4 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.



### 4.2.5 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.

# 5

## Maintenance

### 5.1 Dosing units

The dosing units themselves are maintenance-free.

#### 5.1.1 Change of products

Change of product means, that a rinse aid resp. detergent product is replaced by another. If such differing products were mixed up, this could eventually result in a failure.

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

### 5.2 De-scaling

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

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

After having de-scaled the appliance:

- Remove the de-scaling agent completely out of the appliance. Therefore, 1 or 2 rinse cycles with fresh water are necessary.

Even small residues of de-scaling agent can be sufficient to destroy plastic parts and sealing materials!





# 6

## **Appendix**

### **6.1 Name and address of manufacturer**

---

MEIKO Maschinenbau GmbH & Co. KG

Englerstraße 3

D-77652 Offenburg

Phone no.: (+ 49) 781 / 203 - 0

Fax no.: (+ 49) 781 / 203 - 1121

[www.meiko.de](http://www.meiko.de)

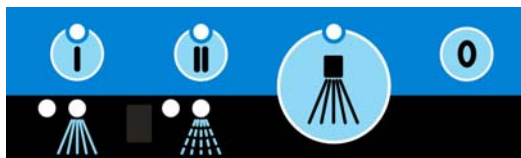
e-mail: [info@meiko.de](mailto:info@meiko.de)

## Service plan for stationary rack machines

[illegible]

## Service plan for stationary rack machines

[illegible]



Control panel

---

## 1. Preparing to wash and rinse

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- 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

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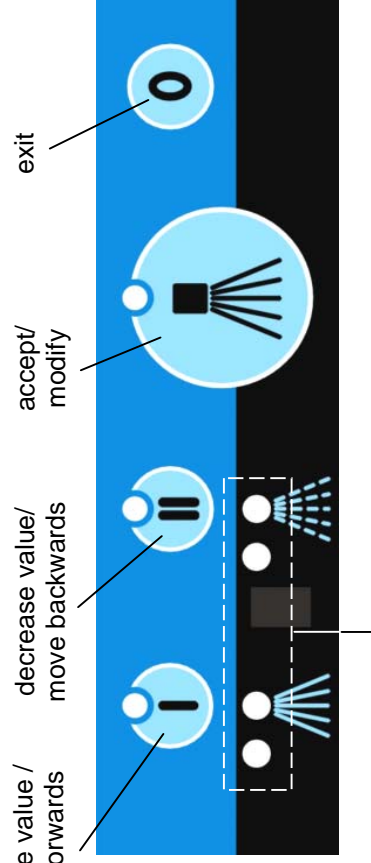
- Press the "0" button (Off button). The machine is switched off when all the lights are out.



- 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.

# Quick programming instructions FV 28 GiO

## Keyboard use during programming

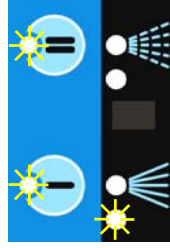


LED display for parameterisation

## 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 parameterisation 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 | 1 | - Vent the detergent and rinse agent pipes |

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.

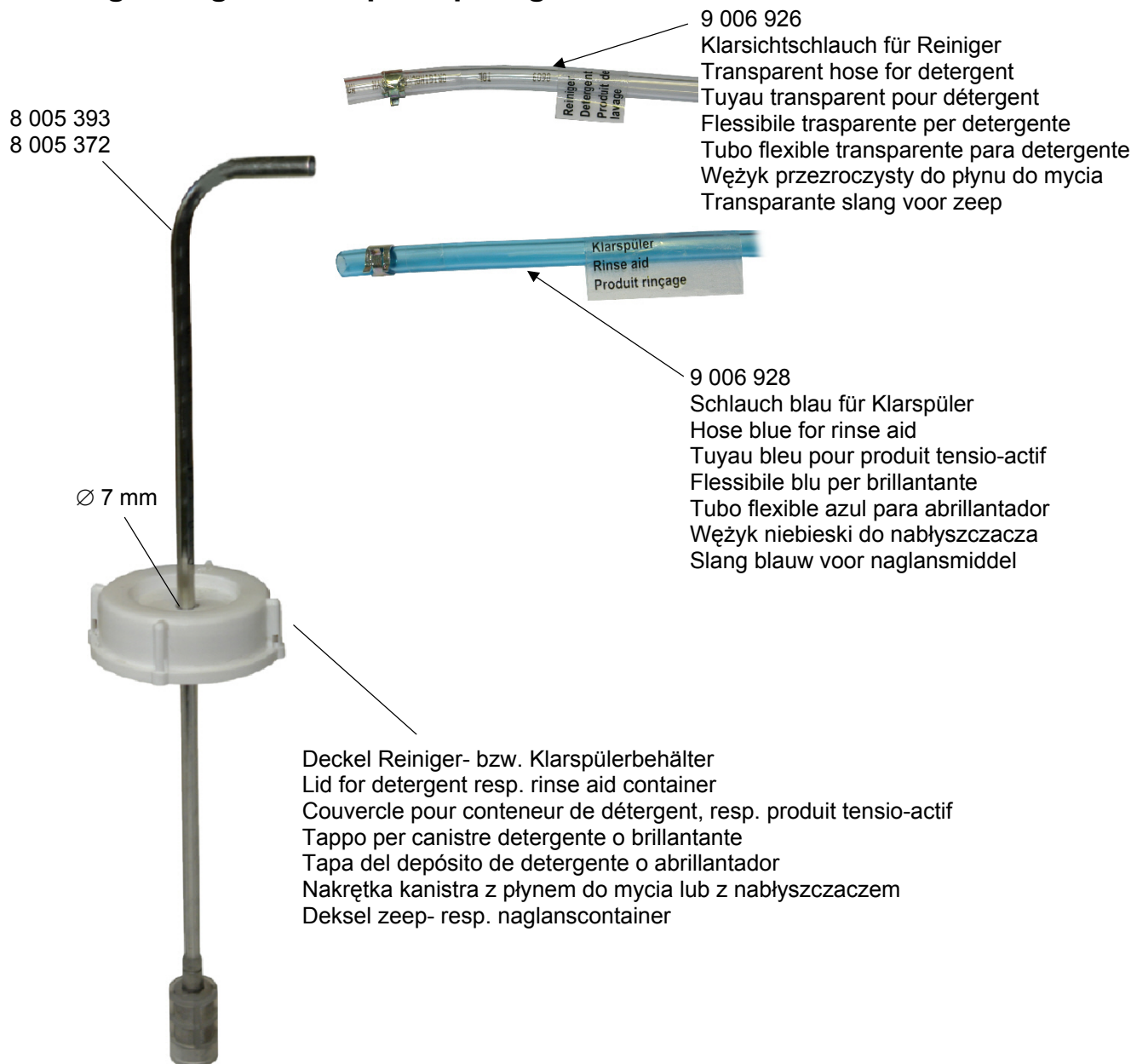
The 4 LEDs produce a value range of 16 steps as shown in the following table:

| LEDs    | Step | Rinse agent concentration [ml/l] | Detergent concentration [ml/l] |
|---------|------|----------------------------------|--------------------------------|
| 0 0 0 0 | 0    | AUS                              | AUS                            |
| 0 0 0 1 | 1    | 0,03                             | 0,36                           |
| 0 0 1 0 | 2    | 0,06                             | 0,71                           |
| 0 0 1 1 | 3    | 0,10                             | 1,07                           |
| 0 1 0 0 | 4    | 0,13                             | 1,43                           |
| 0 1 0 1 | 5    | 0,16                             | 1,79                           |
| 0 1 1 0 | 6    | 0,19                             | 2,14                           |
| 0 1 1 1 | 7    | 0,22                             | 2,50                           |
| 1 0 0 0 | 8    | 0,25                             | 2,86                           |
| 1 0 0 1 | 9    | 0,29                             | 3,21                           |
| 1 0 1 0 | 10   | 0,32                             | 3,57                           |
| 1 0 1 1 | 11   | 0,35                             | 3,93                           |
| 1 1 0 0 | 12   | 0,38                             | 4,29                           |
| 1 1 0 1 | 13   | 0,41                             | 4,64                           |
| 1 1 1 0 | 14   | 0,44                             | 5,00                           |
| 1 1 1 1 | 15   | MAX                              | MAX                            |

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).

**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!**

**¡ATENCIÓN!**

**¡Mantenga el tubo de aspiración alejado de las fuentes de calor!**

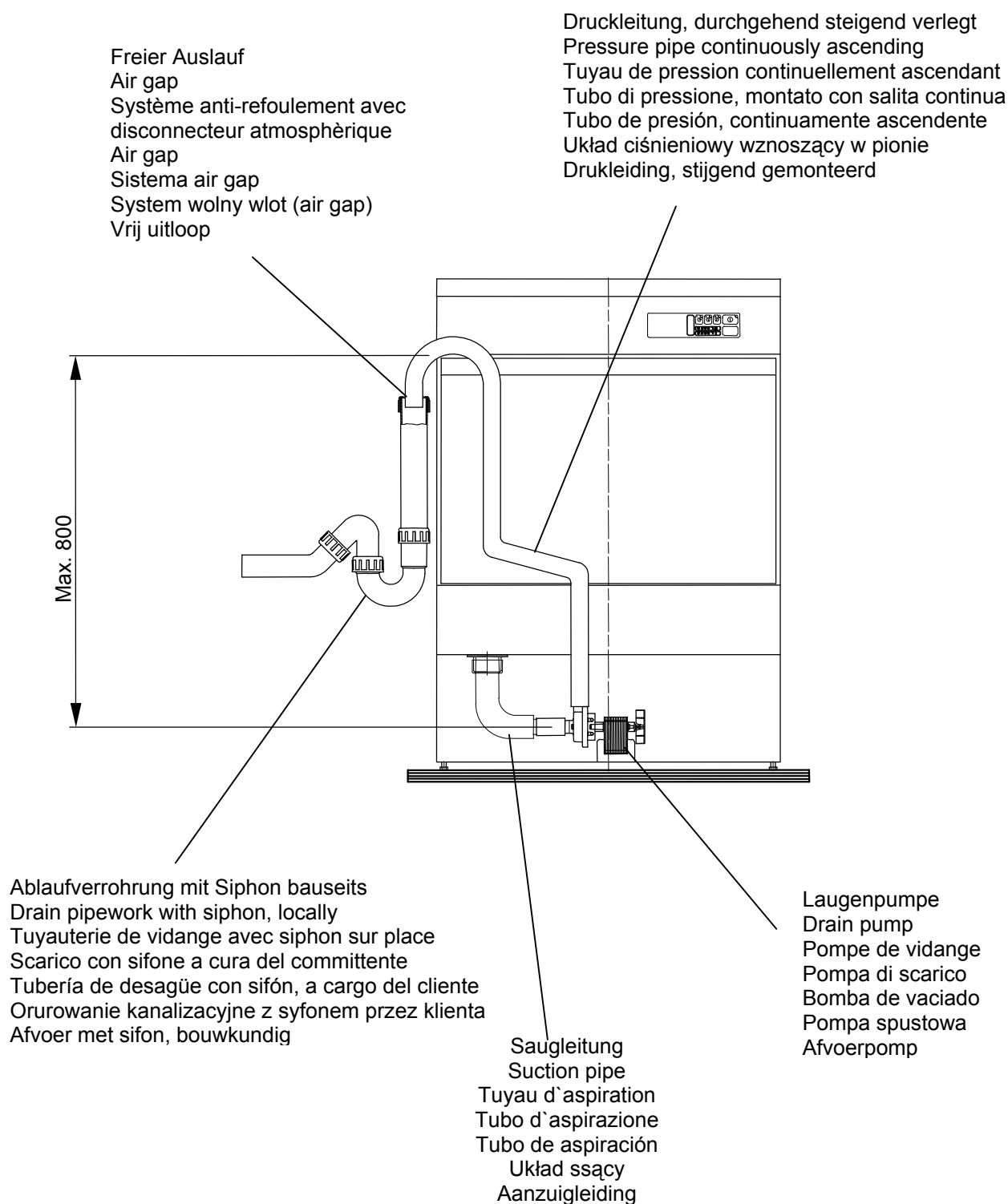
**UWAGA!**

**Układ ssący należy trzymać z dala od źródeł ciepła!**

**LET OP!**

**Aanzuigleiding van warmtebronnen verwijderd houden!**

**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**  
**Aansluitschema voor machine met afvoerpomp**



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 conformidad CE según los requerimientos CE en la construcción de maquinas CEN03A/01/98  
CE-Conformiteitsverklaring volgens de EG Machinerichtlijn  
CE – dichiarazione di conformità secondo le direttive stabilite riguardo alla costruzione di macchine

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

**MEIKO Maschinenbau GmbH & Co. KG**  
Englerstraße 3  
D-77652 Offenburg  
e-mail: info@meiko.de

| Spülmaschine Typ       | FV 28G    | FV 110G  | DV 40N   | DV 120.2    | EcoStar 430F   | OR 50H |
|------------------------|-----------|----------|----------|-------------|----------------|--------|
| dishwashing model      | FV 28GIO  | FV 130B  | DV 40T   | DV 120T     | EcoStar 530F   | GK 60  |
| lave-vaisselle modèle  | FV 20N    | FV 250B  | DV 80T   | DV 160      | EcoStar 530F-M |        |
| lavastoviglie modello  | FV 40T    | FV 130.2 | DV 80.2  | DV 200.2    |                |        |
| Vaatwasmachine type    | FV 40.2   | FV 250.2 |          | DV 200.2 PW | EcoStar 545D   |        |
| Modelo de lavavajillas | 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 conformità:

**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 réglementations 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 conformità 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, 08.06.2009**

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



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Komplementär GmbH: MEIKO Verwaltungs GmbH – HRB Offenburg 470 421  
Geschäftsführer: Dipl. Kfm. Burkhard Randel – Dr. Ing. Stefan Scheringer  
Ust-IdNr.: DE 142540206 – StNr. 14073/21602

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