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**Spare Parts Manual**

**Leading UK Distributors  
of Catering Equipment Since 1977**

**Sales - Repairs - Spares**

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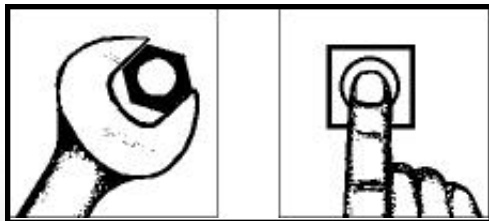
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**EF 40/CHF45**



*Installation & Operation*



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**NOTE: Model EF 40 - spec machines**

are fitted with Drain Pump and Detergent pump as standard

# GENERAL INFORMATION

**FAILURE TO RESPECT THE INDICATIONS BELOW MAY COMPROMISE THE SAFETY OF THE MACHINE AND CAUSE THE GUARANTEE TO LAPSE IMMEDIATELY.**

## 1. Layout of information



**The warnings contained in the machine's documentation include instructions that are important for the safety, operation and maintenance of the machine.** In order to obtain maximum safety, cleaning power and functioning at all times, it is advisable to keep all the documentation carefully near the machine, and to let technicians and those operating the unit read it.

### I. Manual

This manual is broken down into various parts and is designed to provide instructions for the machine's entire lifecycle, including:

- a) section for the user:
- operating and maintenance
- 

### II. Technical Documentation

In addition to this manual, the following documentation is also supplied with the machine:

- wiring diagram
- 

## 2. General

**The quality of this machine is ensured by the materials used, its being built in accordance with CE safety directives, and complete testing of each unit.**

- Observation of the suggestions made in this manual **is essential to the safety** of the user.
- The manufacturer, point of sale and authorised assistance centres can be contacted to provide clarity on any doubt you may have concerning operating and installing the machine.
- The manufacturer reserves the right to make any changes deemed necessary to improve the machine, without notice.

## GENERAL INFORMATION



### 3. Important warnings

This machine is designed for professional washing of batches of dishes. Despite every effort having been made by the manufacturer to make it simple to operate, install and maintain, it is still **intended for use by trained personnel** working in accordance with the manufacturer's instructions. Children should therefore be kept away from the machine.



**Failure to respect the manufacturer's instructions in the documentation supplied with the machine may compromise the safety of the machine and cause the guarantee to lapse immediately.**

**THE MANUFACTURER ACCEPTS NO RESPONSIBILITY FOR DAMAGE TO PEOPLE OR PROPERTY RESULTING FROM FAILURE TO OBSERVE THE INSTRUCTIONS GIVEN.**



**THE FOLLOWING IS EXPRESSLY FORBIDDEN:**

- Installation or deinstallation, maintenance, setting, repairs or any action requiring the removal of the protective panels **not carried out by trained, authorised personnel** in accordance with the manufacturer's instructions. Such personnel must, in any event, always disconnect the electricity and water supply to the machine before starting work and take all the necessary precautions when bypassing the safety devices fitted by the manufacturer.
- **Faulty or provisional installation** or any situation that does not include adequate safety of the electricity supply (e.g. fuses, main switch, **EARTHING**) and water supply (e.g. tap or waste syphon).
- **Modifications or additions to devices** that change the way the machine works.
- **Use of pirate parts**.
- Installation or storing under conditions that do not comply with the manufacturer's indications.
- Use of the machine to wash dishes that differ in type or size from those indicated.
- Use of dosage units with incorrect, impure or dry products.



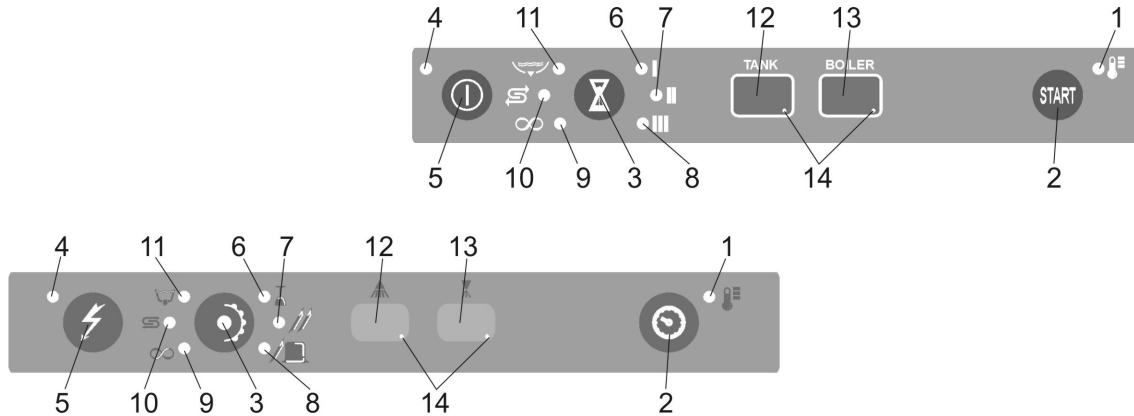
**Repairs must only be carried out by trained, authorised technicians.**



**We strongly advise against** the use of detergents and rinse aids (using the dispensers supplied or kits) that are of a concentration other than that recommended (see “Chemical products for washing and rinsing” section, in the OPERATING AND MAINTENANCE chapter).

# KNOWING YOUR MACHINE

## 1. Control Panel



- [1] = Machine ready LED
- [2] = Cycle start button
- [3] = Cycle selection button
- [4] = Machine ON LED
- [5] = Line button
- [6] = Cycle 1 LED
- [7] = Cycle 2 LED
- [8] = Cycle 3 LED
- [9] = Infinite cycle LED
- [10] = Regeneration LED
- [11] = Drain cycle LED
- [12] = Tank thermometer
- [13] = Boiler thermometer
- [14] = Indication (green dot) of “coils heating”

## 2. Installation data

Some of the data required for installing the machine correctly can be found on the data plate on the unit itself. A copy of the data plate is shown on the cover of this manual for quick reference.

**⚠️ Correct installation is essential for this machine to work properly. Installation must only be effected by trained, authorised technicians.**

## 3. Training the user


**⚠️ The personnel responsible for the installation must also provide adequate instruction for users on how the plant operates, and on the safety measures to be adopted.** They must also provide practical demonstrations on how to use the machine and check that all the documentation supplied with the machine is kept near the machine itself.

It should be remembered that, for maximum lifespan and performance, the machine must be used **in accordance with the operating instructions.** These must be kept carefully, and **particular care must be taken with maintenance** (routine, periodic and special) and the machine must be sanitised from time to time using non-corrosive, commercial products.

# INSTALLATION

**THE MANUFACTURER ACCEPTS NO LIABILITY FOR ANY DAMAGE TO OBJECTS OR PERSONAL INJURY ARISING FROM INSTALLATIONS WHICH FAIL TO COMPLY WITH THE INSTRUCTIONS PROVIDED.**

## 1. Glossary

 In this document, the terms **Main switch**, **water supply stop cock** and **Drain line** are defined as follows:

### MAIN SWITCH:

Must be of the type which **disconnects all conductors of the supply circuit including the neutral**, with a distance between the open contacts of at least 3 mm, incorporating a thermal magnetic circuit breaker or fuses, to be sized or calibrated in accordance with the power rating indicated on the appliance data plate.

The main switch must be located near to the installation and **must serve only one machine.**

### WATER SUPPLY STOP COCK:

This must be a slide, ball or gate stop valve **capable of rapid and complete shut-off of the water supply**, of sufficient dimensions to ensure the flow rate and pressure indicated on the machine data plate.

If the water supply pressure exceeds the prescribed maximum, a pressure regulator must be installed upstream of the machine. If the supply pressure is below the prescribed minimum, a pressure booster pump must be installed upstream of the machine.

If the temperature of the incoming water is below the recommended minimum, additional steps must be taken to obtain good washing results (see chapter “USE AND MAINTENANCE”)

The stop cock must be installed on the water supply pipe near to and **immediately upstream of the appliance.**

### DRAIN LINE

Must comprise an **open trap** of sufficient dimensions to discharge at least double the required supply flow.

It must be installed within reach of the discharge pipe supplied with the machine without this being subject to **tension, kinking or joints.**

## INSTALLATION

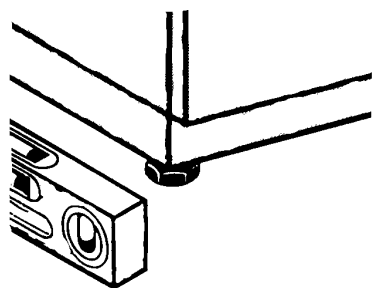
### 2. *Unpacking the appliance*

Before removing the packaging, check for any signs of damage, noting any defects found on the carrier's delivery note

After removing the packaging **inspect the appliance for signs of damage**; if damaged, notify your dealer by fax or registered post immediately and, if the damage is such as to compromise the safety of the machine, **do not** proceed with the installation until the appliance has been checked by a qualified technician.

**⚠ Packing materials (plastic bags, expanded polystyrene, nails, etc.) must not be left within reach of children and pets as they potentially very dangerous.**

### 3. *Positioning*



Ensure that there are no objects or materials near the installation site which could be damaged by water vapor or splashes of detergent solution which might be produced by the machine during operation.

The appliance must be leveled using the four adjustable feet so that it is **perfectly stable**; any other type of installation must be agreed and approved by the manufacturer.

### 4. *Connections*

#### I **Electrical supply**

A **Main Switch** must be provided for connection (see "Glossary").

**⚠ There must be an efficient EARTH CIRCUIT to which the machine is to be connected.**

**⚠ Do not use adapters, multiple sockets, cables of insufficient cross-sectional area or with extension connections which do not comply with specifications prescribed by EN 60335-1 and EN 60335-2-58.**



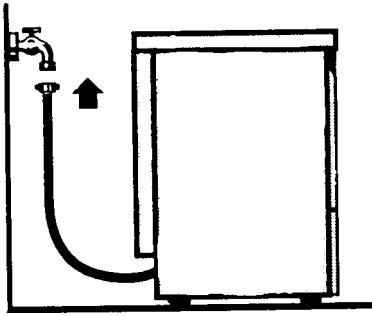
- **The electrical power supply** must be compatible with the indications on the data plate. For details on electrical operation consult the electrical circuit diagram.
- **The supply cable** must not be pulled or crushed during normal operation or routine maintenance.
- **The equipotential bonding terminal** fixed to the body of the machine must be connected in accordance with the requirements of standards EN 60335-1 and EN 60335-2-58 (using a cable with a cross-sectional area of between 2.5 and 6 mm<sup>2</sup>)



## INSTALLATION

### II Water supply

A water supply pipe with a **“Stop cock”** (see “Glossary”) must be provided for each machine.



The water supply line must conform to the specifications indicated in the section “Installation data”, even when other appliances are connected to the supply line.

If the water supply system **is new or has not been used for a prolonged period, run the water before connecting the appliance** so as to eliminate any impurities or air pockets which could soil or damage the machine.

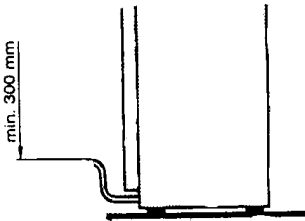
Connect the filling solenoid valve to the stop cock with a flexible pipe.

### III Drain line

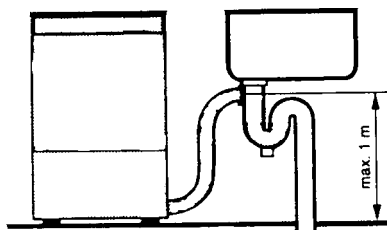
A suitable **“Drain line”** must be provided (see “Glossary”).

To ensure unrestricted discharge the pipe must reach the trap **without being put under tension, kinked, crushed, pressed or forced.**

#### Drain Pump is standard on model EF40



If the discharge pipe is connected to a trap in the floor, the highest point of the pipe must be at least 300 mm above floor level to prevent the machine from emptying.

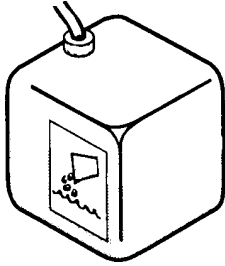


The highest point of the discharge pipe should be less than 1 meter above floor level.

## INSTALLATION

### 5. *Dispenser settings*

#### I **Rinse-aid dispenser**



Before starting the washing cycle, the dispenser and the delivery pipe must be full.

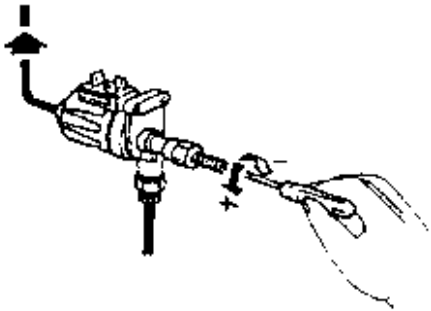
Check that there is sufficient rinse-aid in the container and top up if necessary.

The rinse-aid container must never be allowed to empty completely and must not be topped up with corrosive or impure products.



**The warranty does not extend to any damage arising from incorrect use of the dispenser.**

The dispenser is **not** factory-set; the dispenser must be calibrated by a qualified technician.



The dispenser is calibrated by adjusting a screw which is accessed by removing the front panel under the wash chamber door.


With the panel removed, without pulling the connection pipe, fill the delivery pipe with rinse-aid, and then fully close the adjuster screw, without forcing.

To determine the dosage for the preliminary setting, **refer to the information provided by the product manufacturer.**

Once you have determined the required dosage, open the adjuster screw until this quantity is obtained.

#### A) ***Hydraulic dispenser.***

One full turn of the adjuster screw is approximately equivalent to 0.4 grams of product per operating cycle. The hydraulic dispenser can thus deliver from 0.4 grams/cycle (1 turn of the screw) up to 3.2 grams/cycle (8 turns of the screw).

 *These values can only be guaranteed if the rinse-aid container is positioned approximately 40 cm below the level of the machine base. The quantity of rinse-aid dispensed will be increased if the container is raised and decreased if the container is lowered relative to this position. If the difference in height between the container and the base of the machine is greater than 80 cm, the dispenser will not function correctly.*

#### B) ***Electric dispenser (DB-2)***

One full turn of the adjuster screw is approximately equivalent to 0.06 grams of product per dispenser pulse, given that when fully open (16 turns of the screw), the dispenser delivers 1 gram/pulse. If the machine has 3 pulses per cycle, it can thus dispense from a maximum  $3 \times 1 = 3$  grams/cycle (16 turns of the screw) down to a minimum of  $0.06 \times 3 = 0,18$  grams/cycle (1 turn of the screw).

## INSTALLATION

After this preliminary calibration, any subsequent adjustment is to be made on the basis of the rinsing results obtained after at least 3 cycles.

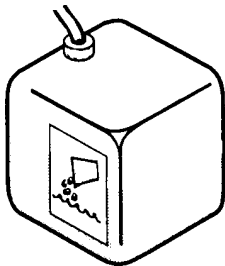
### **Turn the screw counter-clockwise to increase and clockwise to reduce the dosage.**

Bluish streaks on dishes and the formation of foam in the washing solution indicate too much rinse-aid.

Drops of water on items and slow drying indicate too little rinse-aid.

**!** In the event of imperfect washing, (at incorrect temperature or with too little detergent), an invisible, non-toxic patina of grease or starch may form on the tableware. This patina will prevent the rinse-aid from doing its job properly and in this case, increasing the dosage of the rinse-aid will not lead to any significant improvement. To remove this patina, the tableware is to be left to soak in a water and soap solution (10:1) for about 30 minutes and then washed again.

## II Detergent dispenser fitted as standard on model EF40



Never allow the detergent container to empty completely and never top up with corrosive or impure products.

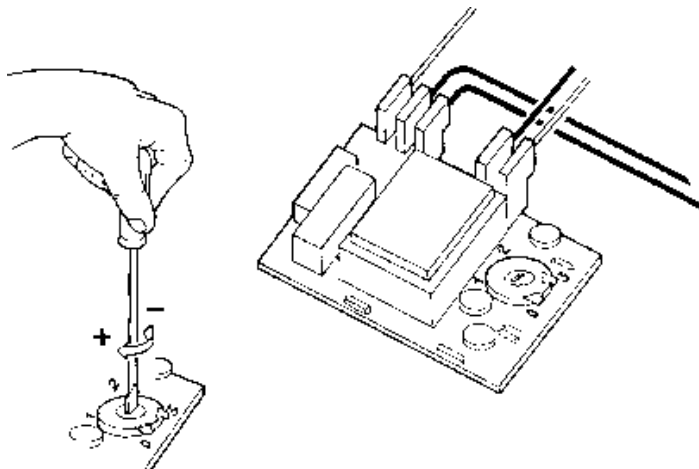
**!** The warranty does not extend to damage arising from incorrect use of the dispenser.

The detergent dispenser is factory-set; any subsequent adjustment to the dispenser setting should be carried out by a qualified technician.

**!** Refer to the dosage indicated by the detergent manufacturer, taking into account:

- characteristics of the water in your area;
- the type of items to be washed: glass, plastic, ceramic, decorated or plain porcelain, metal, cutlery or cooking utensils;
- type and quantity of food residue;
- intensity of use (number of wash cycles per hour).

### A) *Electronic dispenser EV-400*



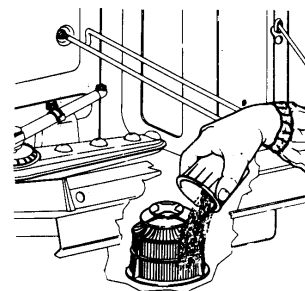
**Carefully clean the machine.**

## INSTALLATION

Adjust the detergent potentiometer on the electronic control card (consult layout diagram), turning it fully counter-clockwise to obtain zero detergent dosage.

Start a wash cycle, with no dishes in the machine, and allow the chamber to fill with water.

On completion of the filling cycle and before the wash cycle has started, open the door and pour the previously determined quantity of detergent into the chamber in the region of the wash pump suction filter.



About 10 seconds after the start of the wash cycle, start turning the potentiometer in a clockwise direction until you hear a buzzing which indicates that the dispenser is delivering detergent to the chamber. At this point the dispenser is calibrated to the previously determined dosage.

Any subsequent adjustment to the dosage should be made on the basis of the results obtained after a number of real wash cycles **(turn the potentiometer clockwise to increase the dosage and counter-clockwise to decrease it.)**

### 6. *Operator training*

**⚠** The installer is required to **provide the users with suitable instruction on the operation of the appliance and on the safety precautions**. He/she must also give practical demonstrations of the use of the appliance and ensure that he/she is in possession of all the documentation supplied with the appliance.


Note that to obtain the best performance and longest service life from the appliance, it must be used **in accordance with the operating instructions**, which must be kept in a safe place, **with particular attention to maintenance** (routine, periodic and major) and to periodic sanitation using non-corrosive commercial products.


# OPERATING AND MAINTENANCE

## 1. General Warnings

**THE MANUFACTURER ACCEPTS NO RESPONSIBILITY FOR DAMAGE TO PEOPLE OR PROPERTY RESULTING FROM FAILURE TO OBSERVE THE INSTRUCTIONS GIVEN.**

### I. Precautions


 Proper functioning and the machine's lifespan depend on outside factors such as: **preventive maintenance**, characteristics of the water and products used for washing, rinsing and sanitisation.


 **Maintenance must be carried out at the recommended intervals and as indicated here.**

The characteristics of the water supply (especially hardness and pressure) are important in deciding whether a rinsing pump, water softener, filters or purifiers are required to improve washing results, and to reduce consumption of detergents. Consult the technician responsible for installing the machine for clarification and suggestions in this regard.

### II. Safety

 **In case of breakdown, trained authorised technicians must be called in.**

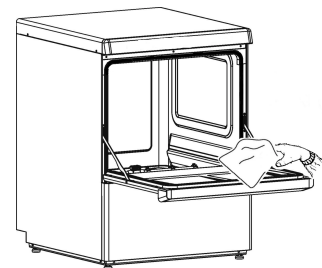
 Before carrying out any maintenance adjustments, repairs and cleaning, and in case of breakdown, always disconnect **the machine from the electricity** supply by switching off the external main switch or removing the plug. Also **shut off the water supply**, by closing the stopcock on the supply pipe.

 **Avoid** cleaning the machine with:

- pressurised water jets, that could reach the electrical system and damage it.
- steel wool, wire brushes or corrosive or abrasive products that may damage the surfaces and rubber parts.

Use suitable products to clean the interior properly.

The outside can be properly cleaned using a damp cloth and soap.




### III. Warnings for Use.

- **NEVER** open the machine's door quickly before the cycle has finished, to avoid the alkaline solution used for washing spraying out of the machine, and to allow time for rotating parts to come to a complete stop.
- **NEVER** use the machine or any of its parts as a step or support for people, objects or animals.
- **NEVER** overload. The machine's front loading door opening is sized to accommodate only the basket loaded with dishes.

We strongly advise against washing objects of a type, shape, size or material not guaranteed for washing in this machine, or anything that has become fragile due to cracks or use.

## IV. Hygiene

 **To ensure that the machine is hygienic, the maintenance operations indicated in the relevant** paragraph of this manual must be carried out regularly. In addition, the machine must be treated to sanitise it **from time to time** using adequate, non-corrosive, commercially available products.

 To ensure **that dishes are hygienic**, follow these general rules:

- **clear the dishes of** any dry residue or solids before washing.
- **replace the washing solution a number of times a day if necessary.**
- so as not to contaminate clean dishes, **do not use: brushes, tea cloths, or non-sterile cloths**, sponge mats, or any other materials that can hold bacteria. **Use disposable cloths or drainage racks.**
- **clean surfaces** on which the dishes are placed frequently, using suitable commercially available products.

## 2. Preparing the machine

### I. Chemical washing and rinsing products.


 **The choice and dosage of detergents are important both for good washing results and for the lifespan of the machine.**

Detergents are not supplied with this machine. Therefore we advise you to make contact with professional producers who are able to recommend the best solutions for all types of washing. Follow the dosages indicated by the detergent manufacturer. Any other dosage may produce unsatisfactory results.


This machine uses:


- *Washing* detergent
- *Rinse aid* for rinsing.

 There are powder, liquid and solid products on the market. Choose those intended for **industrial washing that are low foaming.**

 When the dosage unit provided is used:

- only use **detergents with a recommended dosage of less than 5g/litre**
- only use **rinse aids with a recommended dosage of less than 1.5g/litre**

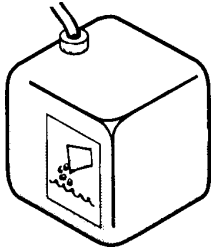
 The use of products having a different concentration will provide unsatisfactory results. Some detergents and rinse aids are subject to aging and temperature. Store them in strict compliance with the manufacturer's instructions. Do not use detergents that have not been stored correctly.

 *Detergents and rinse aids are chemical products that are potentially dangerous. **NEVER put your bare hands into the washing solution.*** Where this must be done, wear protective gloves. If the solution comes into contact with your eyes, rinse with abundant amounts of running water and contact a doctor, indicating the type of detergent used.

Remember that detergent and rinse aid are products that unfortunately produce pollution in rivers and seas. Therefore, it is important never to exceed the recommended dosage.

## II. Machine controls

 **Rinse** aid and detergent dosage units (optional)



Before starting the cycle, the dosage unit and supply pipes must be full.

**Check that the rinse aid and detergent levels are sufficient and top up as necessary.**

The level in the container must never drop until the container is empty and the container must never be topped up with corrosive or impure products.


 **The guarantee does not cover damage resulting from incorrect use of the dosage units.**

### 3. First cycle

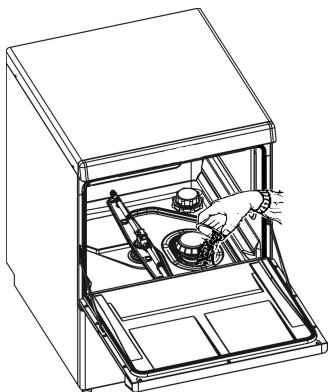
1. Open the outside water supply stopcock.
2. Switch the power on for the machine using the external main switch.
3. Check that it is not overfull.
4. Set the machine to “Washing” mode using the line button [5]. The machine on LED [4] comes on to indicate that the power supply to the machine is on. To start the quick heating cycle for the tank (Quick ready) press the start button [2] and select a washing cycle, when the recycling or drain pump is activated. Where this is not the case, quick heating starts automatically (the orange machine ready LED [1] flashes). During this cycle the rinsing cycle will automatically run 1 to 3 times to allow the machine to fill the tank with hot water. When the machine ready LED [1] remains green, the machine is ready to work.

The tank will start filling immediately if the Quick Ready function is not activated (Machine ready green LED flashing). When the machine ready LED [1] remains green, the machine is ready to work.

*Optional manual detergent loading:*

 See the **previous paragraph** for notes on the type of detergent.

**It is not advisable to use manual** dosing as this cannot guarantee the results that can be obtained with an automatic dosage unit (*see. detergent dosage kit*) and it may cause pollution of rivers and seas.



If you do not use an automatic dosage unit, the detergent must be placed in the area near the pump suction filter.

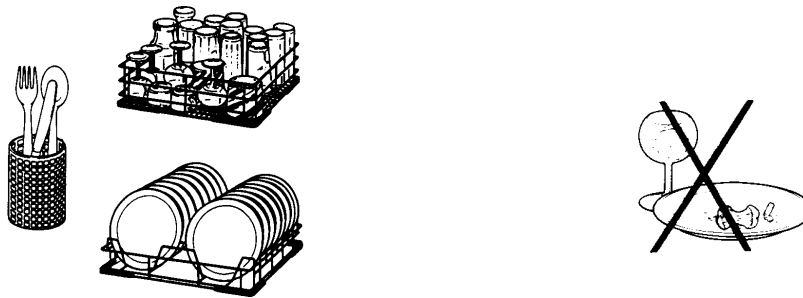
Always use the dosage recommended by the detergent manufacturer.



The tank holds about 12 litres of water.

Rinsing involves about 3 litres of water per cycle.

## 4. Washing cycle

1. Prepare the basket of dishes to be washed: use a basket that can handle the dishes (wine glasses, cups, glasses, normal plates, pizza plates, cutlery, etc.) and do not overload it.



2. Always clear the dishes beforehand. Do not load dishes that have dry or solid residue on them.
  3. To avoid breakages, only use dishes that are made for washing in dishwashing machines that are not cracked.
  4. Put the basket in the machine and close the door.
  5. Push the cycle selection button [3] until the LED indicating the washing time required is lit.
  6. Start the cycle using button [2]. The LED for the time selected ([6], [7], [8], [9]), starts to flash.
-  If the door is opened accidentally during the cycle, the machine stops automatically. To restart the cycle, simply close the door.
-  Despite the fact that the cycle stops immediately when the door is opened, it is not possible to guarantee that no alkaline washing solution will spray out.
7. On completion of the washing and rinsing cycles the LED [6], [7], [8] stays lit permanently. To stop an infinite cycle [9], push start (rinsing starts and the LED [9] goes out).
  8. On machines with a drain pump, the pump runs for about 20 seconds after rinsing. If the start cycle button [2] is pushed, the machine starts again automatically after having completed the current cycle.
  9. Immediately remove the basket from the machine to allow the dishes to dry correctly, which is not possible if they stay in the machine too long.
  10. When removing the basket, tilt it slightly to allow any water on the dishes to drip off.
  11. Leave the dishes in the basket for a few seconds to allow the last drops of rinsing water to evaporate.
  12. Remove the dishes from the basket, making sure that your hands and the surfaces the dishes will come into contact with are properly clean, so as not to contaminate the dishes just washed.



## 5. Successive Cycles

**Check the washing solution.** If this is too dirty, or the filters are clogged by residue from previous washes:

- Empty the tank as described in the “Emptying the Machine” paragraph.
- Clean the machine as indicated in the “Maintenance” paragraph.
- Replace the washing solution.

Follow the instructions given for the first cycle from point 6 “Prepare the basket of dishes to be washed” until the end.

## 6. Infinite cycle

To operate in the infinite cycle mode use the cycle selection button [3] to select the infinite cycle option (LED [9] lit), then press start [2].

The machine continues to wash until start [2] is pressed again, which will activate the rinse cycle. When rinsing has been completed the machine returns to standby mode.

## 7. Emptying the machine

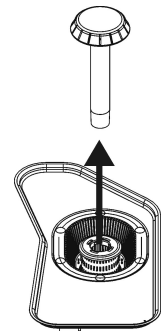
### I. Machines without drain pumps

Switch the machine off using the switch on the line [5].

Remove the plug for the overflow level and wait until the tank is completely empty before cleaning, following the steps described in paragraph 7 “Maintenance”.



The machine must be switched off whenever the overflow plug is removed.



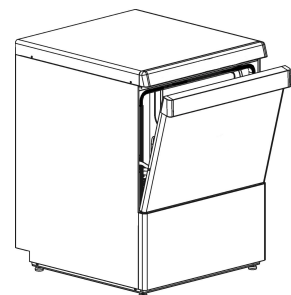
### II. Machines with a drain pump

To make the machine drain:

- I. Press the cycle selection button [3] until LED [11] switches on.
- II. Remove the overflow plug.
- III. Close the door.
- IV. Press the cycle start button [2]. The machine switches off when the drain cycle has been completed.

## 8. Before stopping for the day

- Clean the machine as described in the “Maintenance” paragraph.
- The door has a balanced intermediate position (door ajar). It is advisable to leave the door in this position on stopping work to avoid the development of foul odours inside the washing tank.

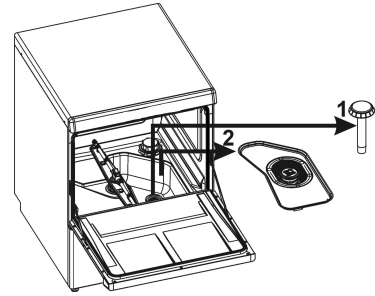


## 9. Maintenance

### I. Routine Maintenance

The following operations are to be carried out when residue is found on the tank filter.

- **Drain the** water altogether as described in paragraph 7 “Emptying the machine”.
- **⚠ Disconnect the power supply, using the external main switch.**
- **⚠ Close the external stopcock on the water supply.**
- Remove the baskets and overfull plug from the tank as well as the filters after having aligned the washing and rinsing arms.
- Clean the machine using a damp cloth with a little soap.
- **⚠ Do not use** steel wool, wire brushes or other abrasive products to clean the steel.

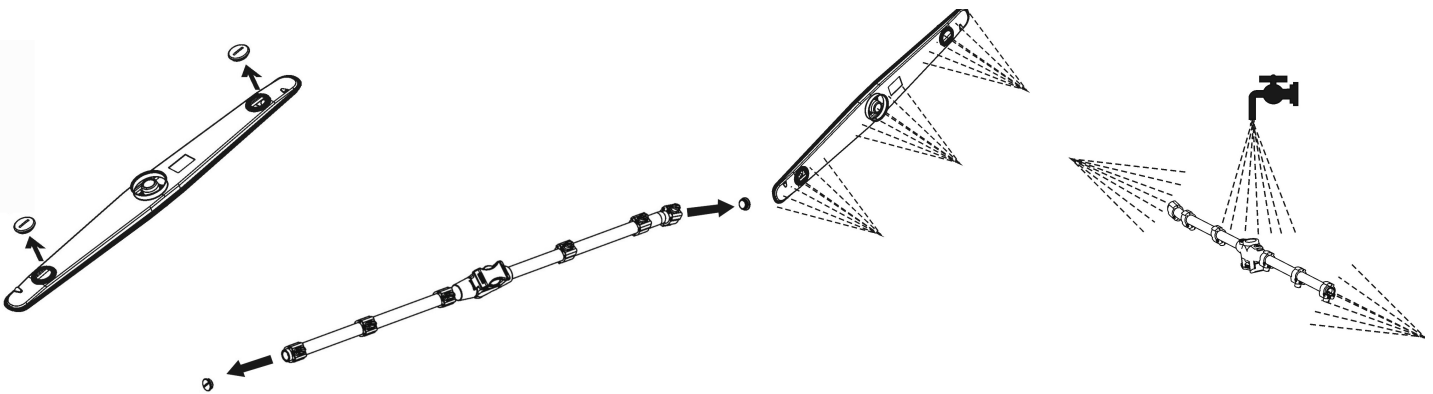


In case of the machine being unused, leave the door ajar to prevent the air becoming stale.

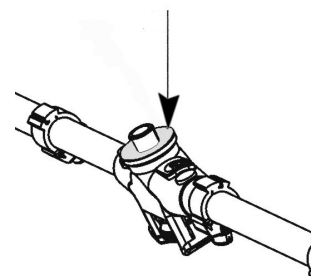
### II. Periodic maintenance

The following operations are to be carried out **every two or three days**, and after routine maintenance.

- Unscrew the ring nut and remove the rinsing and washing arms.
- Remove the caps and clean the arms and jets.




- Clean the tank and the machine carefully. Use disinfectant products that are not abrasive.
- Refit the jets and arms, taking care when inserting the arms in their respective seatings, and when positioning the plastic washer in the upper rinsing arm.
- Refit all the filters.




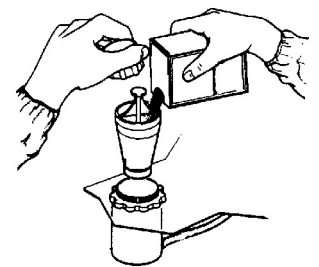
### III. Special Maintenance

**To ensure prolonged efficient operation, it is advisable to call in a trained technician once a year, to inspect and check the machine.**

 When the machine is unused **for long periods of time**, lubricate steel surfaces with vaseline and **call in trained technicians to** prepare the water circuits and dosage units correctly.



 When you suspect that **ice may have formed** in the machine, **DO NOT USE IT** until a trained technician has inspected the boiler and pipes.



## 11. Indication of problems with the water supply

The machine is fitted with a ("Safe Rinse") device that controls the flow of water into the machine. If any problem occurs with the water flowing into the machine, a signal will be displayed on the control panel, where the tank and boiler temperatures are normally displayed.

**The user is responsible for checking whether any problems have occurred, and is to act accordingly.**

The following indications may be displayed:

1) Line LED [4] flashes = **turbine disabled**

2) 

Pr	01
----	----

 = **insufficient quantity of water**

When the display shows the above indication, this means that there is insufficient water flowing into the machine to ensure adequate rinsing. ***The amount of water flowing is not considered sufficient to remove all detergent residue from the dishes, which may possibly pose a health risk for those using dishes washed in the machine.***

In such an event, **check the water supply** (for example check whether there are any other utilities on the same supply, they might reduce the amount of water available. If the piping is sufficiently sized, check that the pressure on the supply line is not lower than the minimum stated on the data plate. Also check that there is no pressure reducer upstream of the machine).

**Once the cause of the problem has been eliminated** (upon advice from a trained technician, who may suggest installing a pump to increase pressure) **ensure that the dishes are adequately rinsed.** **For best results run a complete second washing cycle.**


3) 

Pr	02
----	----

 = **excessive water supply**

When the display shows the above indication, this means that the pressure on the water supply is excessive.

If this signal occurs frequently, **check the water supply** (at the time of manufacturing the machine is set up to handle pressures within the range indicated on the data plate). Contact an expert technician who may recommend installing a pressure limiting device upstream of the machine.

 Excess pressure, and thus an excessive quantity of water, leads to greater consumption of detergent and rinse aid, (excessive amounts of these substances can pollute rivers and seas), as well as cause higher electricity consumption.

## 12. Thermostop

This machine is designed so that the ideal rinsing temperature is reached before the end of the current washing cycle. This is provided by the use of a thermostop function.

### 13. Energy saving

An *energy saving function* can be enabled on the machine, which *allows electricity to be saved* when the machine is on standby (the machine comes out of the factory with this function disabled. To activate it call in a trained technician or ask for this to be enabled when the machine is installed). The energy saving device allows the temperature of the water in the boiler to drop without the heating coil coming on, until a value is reached that depends entirely on the cycle selected. This means that during the next washing cycle, the boiler's heating coil is able to bring the rinse water up to optimum temperature before the washing cycle ends.

### 14. Alarms

When problems that cause the machine to malfunction occur, the machine cuts out and goes into safety mode. The breakdown is indicated on the display, where the tank and boiler water temperatures are normally shown.

**!** When the machine displays an alarm signal, a trained technician must be called. **The user is obliged to:**

- 1- **switch the machine off, disconnect it from the power supply and close the tap;**
- 2- **Contact service assistance, who will see to taking the necessary action. Under no circumstances should the user work on the machine.**

Maintenance, adjustments, repairs or any other action that requires the removal of the protection panels are especially forbidden. These tasks **may only be done by trained, authorised personnel** who are to follow the manufacturer's instructions.

Er	01	=	<b>Lack of water</b>
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This type of signal only appears when no water flows into the machine.

This means that the *water supply system upstream of the machine must be checked*, and whatever is stopping the water from flowing must be corrected (e.g. tap closed, no water in the pipes...).

N. B.: In each case the dishes must be rinsed by hand before they are used, or a complete washing cycle must be repeated once the problem has been resolved.

If this signal is shown, call in a trained technician.

Er	02	=	<b>Drain time out</b>
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This type of signal can only appear *if a drain pump has been fitted*. It indicates that the tank has not been altogether emptied.

1. Before running the drain cycle, *check whether the overflow cap has been removed*, then repeat the drain cycle.
2. In each case run a new drain cycle (in case the cause is the formation of air bubbles).

If this signal is shown, call in a trained technician.

Er	03	=	<b>Thermostop time out</b>
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This type of signal only occurs *if the thermostop has been enabled*.

If this signal occurs call in a trained technician.

## OPERATING AND MAINTENANCE

<b>Er</b>	<b>04</b>
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= **Load tank time out**

This type of signal appears some minutes after loading starts if the machine does not take on any water.

When this signal is displayed, *check that the overflow plug is inserted, check the water supply circuit upstream of the machine* (e.g. squashing of the pipe, broken valve, no water in the pipe...).

If this signal is shown, call in a trained technician.

<b>Er</b>	<b>05</b>
-----------	-----------

= **Tank probe open**

If this signal occurs call in a trained technician.

<b>Er</b>	<b>06</b>
-----------	-----------

= **Tank probe short circuit**

If this signal occurs call in a trained technician.

<b>Er</b>	<b>07</b>
-----------	-----------

= **Boiler probe open**

If this signal occurs call in a trained technician.

<b>Er</b>	<b>08</b>
-----------	-----------

= **Boiler probe short circuit**

If this signal occurs call in a trained technician.

<b>HI</b>	<b>**</b>
-----------	-----------

= **Boiler temperature excessive**

If this signal occurs call in a trained technician.

<b>**</b>	<b>HI</b>
-----------	-----------

= **Tank temperature excessive**

If this signal occurs call in a trained technician.

<b>SA</b>	<b>FE</b>
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= **Electro-mechanical safety**

This signal appears when the electronic card does not intervene when a state of “boiler temperature excessive”, or “tank temperature excessive”, or when the safety pressure gauge breaks down.

The tripping of this safety device automatically switches the machine to the drain cycle. In most cases involving the safety pressure gauge, draining the machine solves the problem without causing the signal to reappear. When this is not the case, the signal appears and the machine cuts out.

If this signal is shown, call in a trained technician.

## 15. Solution of the most common problems

### I. Dishes not clean

PROBLEM	REMEDY
Washing arms blocked	They must be easy to move by hand. Remove the washing arms and clean carefully. Check and clean the supply pipe to the machine's arms.
Washing arm nozzles clogged	Remove the washing arms and clean carefully, until all blockages have been removed. To clean the arms, unscrew the caps on the lower side of the arms themselves (see the "Maintenance" paragraph).
Rinsing arm nozzles clogged with calcium.	Remove the rinsing arms and remove the calcium in a separate receptacle. Check that the softener is working properly where this unit has been fitted.
Detergent concentration too high or insufficient	Check the dosage of detergent, as per the relevant chapter (see the INSTALLATION chapter in the technician's manual). This setting must be done by a trained technician.
Filter clogged	Remove the filter, clear and clean it.
Washing cycle too short	Select a cycle that continues longer, improve the preliminary clearing stage.
Washing solution too dirty	Drain the tank, clean the filters and tank, improve the preliminary clearing stage.

### II. Dishes not properly dry.

PROBLEM	REMEDY
Insufficient rinse aid	Increase the dosage (see technician's manual). This setting must be done by a trained technician.
Grease or starch not removed completely.	Detergent not concentrated enough. Increase the dosage (see technician's manual). This setting must be done by a trained technician.
Inadequate type of detergent	Choose a product better suited to the application. Only use low foaming dishwasher detergents.
Excess detergent	Reduce the dosage (see technician's manual). This setting must be done by a trained technician.
Basket not suitable for type of dishes	Choose a type of basket that will allow the water to run off the dishes.
Dishes left in the machine before being removed	Remove the dishes from the machine as soon as the drying cycle ends
Surfaces on glasses rough and porous or misty due to corrosion of the glass	Replace the glasses with new ones and use baskets that are suitable for avoiding that the glasses come into contact with each other during washing.
Streaks and marks on dishes	Rinse aid concentration too high. Reduce the dosage (see technician's manual). This setting must be done by a trained technician.
Water hardness or excessive undissolved minerals.	Check the quality of the water, ask for information and advice from your local distributor or a competent authority.

## OPERATING AND MAINTENANCE

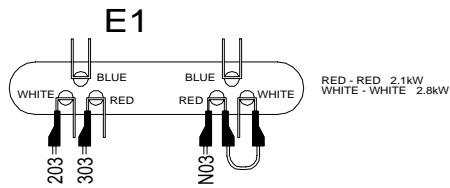
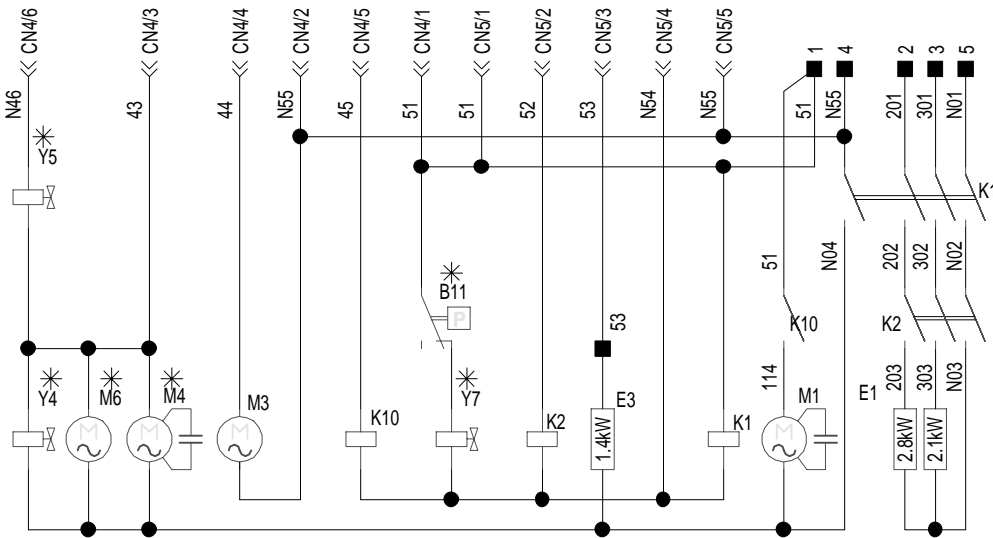
### III. Miscellaneous

PROBLEM	REMEDY
Breakage of dishes due to impact during the cycle	Choose and use suitable baskets and avoid overloading.
Machine stops during cycle	Machine connected along with other appliances. Connect the machine separately, to a switch or fuses that are adequate for the current shown on the data plate. Should this problem recur, call an electrician to check the plant.
Washing cycle doesn't start after a period of inactivity	Call a trained technician.
When the door is opened for loading the basket the cycle does not stop.	Call a trained technician to reinstate the safety device, check the magnetic contact and the related circuit.

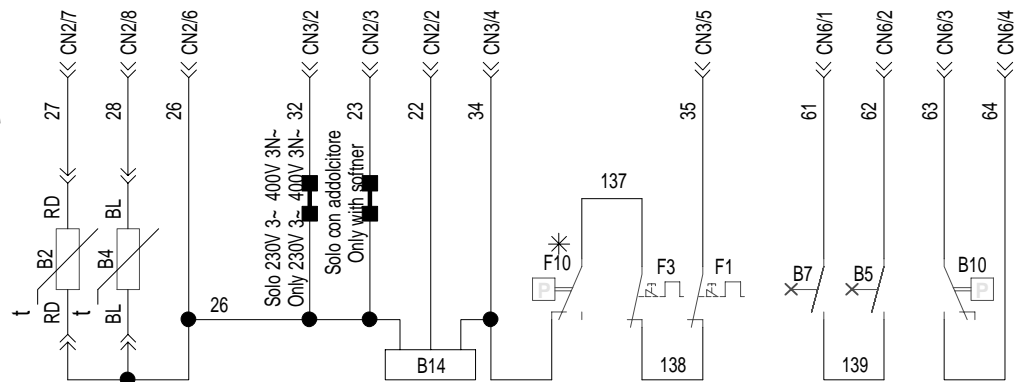


**INSTALLATION OF THE MACHINE, REPAIRS, INSTALLATION OF ADDITIONAL ACCESSORIES AND DEINSTALLATION OF THE MACHINE MUST ONLY BE DONE BY A TRAINED TECHNICIAN.**

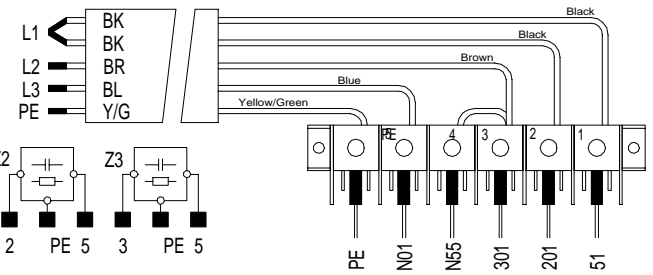




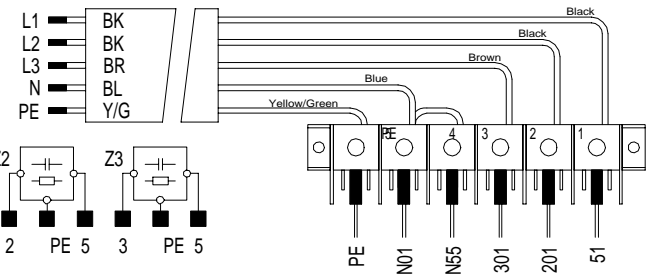
\* Optionals



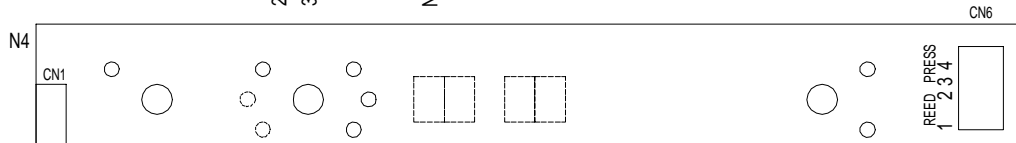
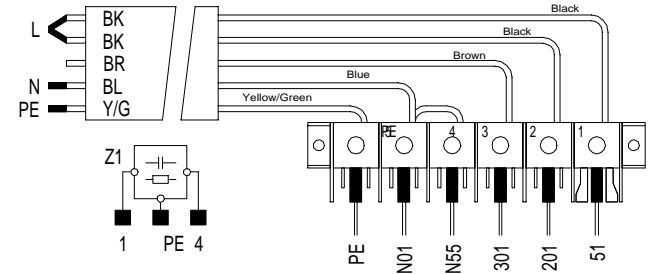
230V 3~  
Max 6.9kW / 20A  
Boiler 4.9kW / C



400V 3N~  
Max 6.9kW / 13A  
Boiler 4.9kW / C



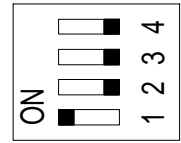
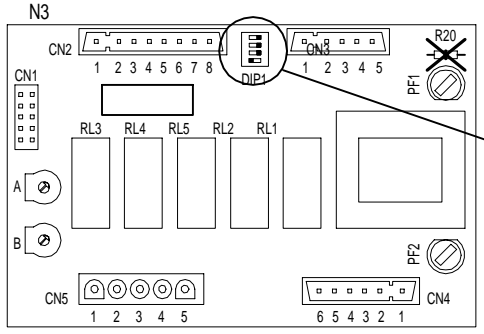
230V~  
Max 3.4kW / 16A  
Boiler 2.8kW / S



CON IL BOILER VUOTO IL DIP 4 DEVE ESSERE POSIZIONATO SU OFF. DOPO CHE IL BOILER E' STATO RIEMPIUTO VA POSIZIONATO SU ON

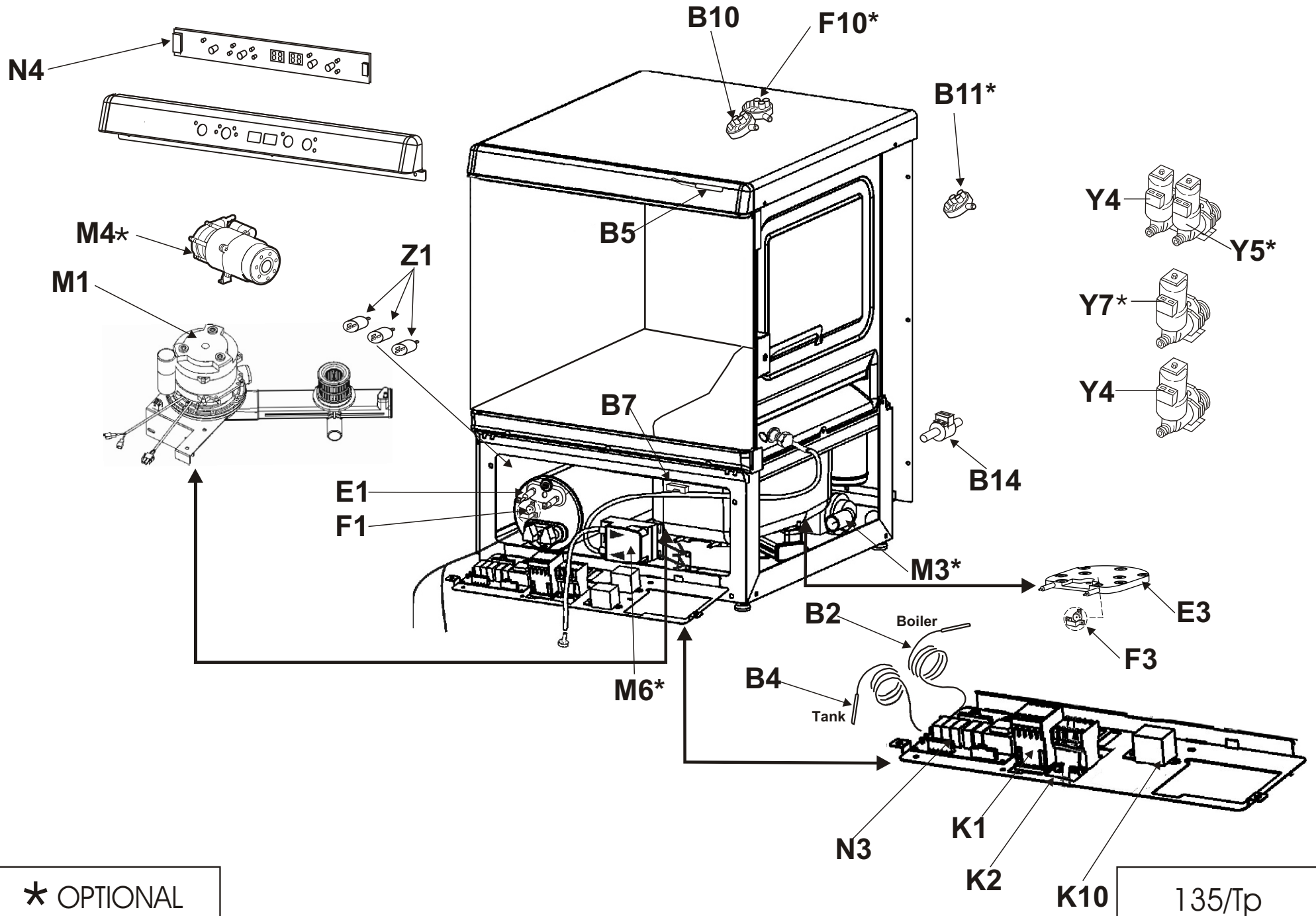
EVERY TIME THE BOILER IS EMPTY, IT MUST BE FILLED WITH DIP 4 OFF. WHEN BOILER FULL, DIP 4 SHOULD BE MOVED TO ON

- 4 ON = ENABLE FAST HEATING  
4 ON= RISCALDAMENTO RAPIDO ABILITATO
- 4 OFF = DISABLE FAST HEATING  
4 OFF = RISCALDAMENTO RAPIDO DISABILITATO
- 3 ON = Energy saving ON
- 3 OFF = Energy saving OFF
- 2 ON = ENABLE DRAIN PUMP  
2 ON = POMPA SCARICO ABILITATA
- 2 ON = DISABLE DRAIN PUMP  
2 ON = POMPA SCARICO DISABILITATA
- 1 ON = ENABLE THERMOSTOP  
1 ON = TERMOSTOP ABILITATO
- 1 OFF = DISABLE THERMOSTOP  
1 OFF = TERMOSTOP DISABILITATO



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	GB	D	F	I	E	P
B2	Boiler probe	Temperaturfühler Durchlauferhitzer	Sonde surchauffeur	Sonda boiler	Palpador de temperatura calderin	Sonda de temperatura caldera
B4	Tank probe	Tanktemperaturefühler	Sonde cuve	Sonda vasca	Palpador de temperatura en la cuba	Sonda de temperatura tanque
B5	Door switch	Reed- Türsicherheitkontaktschalter	Micro contact de porte	Micro porta	Interruptor de puerta	Micro-interruptor porta
B7	Filter switch	Filterkontaktschalter	Interrupteur de filtre	Microcontatto filtro	Interruptor del filtro	Micro-interruptor filtro
B10	Tank level control	Tankniveauschalter	Pressostat de cuve	Controllo livello vasca	Interruptor del nivel en la cuba	Interruptor de nivel tanque
B11	Air gap level control	"Air Gap" Niveauschalter	Pressostat niveau "Air Gap"	Controllo livello "Air Gap"	Comprobación de nivel "Air Gap"	Interruptor de nivel "Air Gap"
B14	Flow meter	Durchlauferhitzer	Fluxmètre	Flussometro		
E1	Boiler heating element	Heizkörper Durchlauferhitzer	Resistance du surchauffeur	Resistenza boiler	Resistencia del calderin	Resistências caldera
E3	Tank heating element	Tankheizung	Resistance de cuve	Resistenza vasca	Resistencia de la cuba	Resistència cuba
F1	Boiler safety thermostat	Durchlauferhitzer Temperaturbegrenzer	Thermostat securite surchauffeur	Termostato sicurezza boiler	Limitador de temperatura del calderin	Rgolador de temperatura caldera
F3	Tank safety thermostat	Tanktemperaturbegrenzer	Thermostat securite cuve	Termostato sicurezza vasca	Limitador de temperatura del deposito	Rgolador de temperatura tanque
F10	Tank level safety switch	Überlaufschutz Tankniveauschalter	Pressostat de contrôle niveau Cuve	Sicurezza livello vasca	Interruptor de nivel agua en la cuba	Segurança de nivel tanque
K1	Main relay	Relais EIN / AUS	Relais Marche / Arrêt	Relè di linea	Relé suministro de corriente	Relé de alimentação elétrica
K2	Boiler heating element relay	Durchlauferhitzer Heizkörper Relais	Relais resistance surchauffeur	Relè resistenza boiler	Relé resistencia Calderin	Relé de resistência de caldeira
K10	Wash pump relay	Relais Umwälzpumpe (evt. Schütz)	Relais de la pompe de lavage	Relè pompa lavaggio	Relé bomba lavado	Relé bomba lavagem
M1	Wash pump motor	Motor Umwälzpumpe	Moteur pompe lavage	Motore pompa lavaggio	Motor bomba lavado	Motor bomba de lavagem
M3	Drain pump motor	Motor Laugenpumpe	Moteur pompe vidange	Motore pompa scarico	Motor bomba de desagüe	Motor bomba de esgoto
M4	Rinse booster pump motor	Motor Drucksteigerungspumpe	Moteur pompe auxiliaire	Motore pompa ausiliaria	Motor bomba para aumentar la presión	Motor bomba de enxágue
M6	Detergent pump motor	Dosiergerät Reiniger	Moteur pompe produit lavage	Dosatore detergente	Dosificador por el detergente	Doseador de detergente
N3	Electronic control	Programmschaltwerk Elektronikmodul	Carte controle cycle	Scheda controllo ciclo	Electrónica de controló ciclo	Módulo electronico temporizador de ciclo
N4	Electronic switch board	Elektronikmodul	Carte controle pousoir	Scheda pulsantiera	Electrónica de controló	Módulo electronico
Y4	Fill / hot rinse solenoid valve	Elektromagnetventil Füllen / Klarspülung warm	Electrovanne remplissage	Elettrovalvola carico / risciacquo caldo	Válvula magnetica de entrada / enjuague caliente	Válvula magnetica de entrada / enxague quente
Y5	Regeneration solenoid valve	Elektromagnetventil Regenerieren	Electrovanne regeneration	Elettrovalvola rigenerazione	Válvula magnetica de regeneración	Válvula magnetica de regeneração
Y7	Break tank solenoid valve	Niveauelektromagnetventil für "Air Gap"	Electrovanne niveau "Air Gap"	Elettrovalvola livello "Air Gap"	Válvula magnetica de "Air Gap"	Válvula magnetica de "Air Gap"



**DISHWASHER TECHNICAL SPECIFICATIONS**

	<b>EF40</b>	<b>EH60</b>	<b>EH70</b>	<b>EUT30</b>	<b>EUT60</b>
Drain size	22MM	50MM	50MM	50MM	2"
Drain hose length	1,5M	1,80M	1,80M	1,80	No Hose
Water connection	3/4"	3/4"	3/4"	3/4"	3/4"
Water hose length	1,5M	2M	2M	2M	2M
Water pressure	1-4BAR	1-4BAR	1-4BAR	1-4BAR	1-4BAR
Water temp	15-55C	15-55C	15-55C	15-55C	15-55C
Total KW loading 3P	N/A	9.1KW	11.1KW	8.0KW	15.0KW
Total KW loading 1P	5,5KW/2,7KW	6.5KW	N/A	N/A	N/A
Mains cable length	3,0M	1,60M	1,60M	1,60M	1,60M
Mains cable size	3x4mm	5x2,5mm	5x4mm	5x2,5mm	5x4mm
Det pipe length	1,50M	1,50M	1,50M	N/A	N/A
R/aid pipe length	1,50M	1,50M	1,50M	N/A	N/A
Programme times. secs	60-120-180	60-110-150	50-85-110	120-240-360	120-240-360
Wat/consumption,cycle	3,3L	3L	2.7L	3.5L	8.0L
W/tank capacity	11L	20L	30L	40L	130L
R/tank capacity	6L	12L	12L	14L	14L
Drain pump	YES	NO	YES	NO	NO
W/pump rating	0,8KW	1.1KW	1.6KW	2.0KW	2X3KW
W/pump flow rate	260L/min	485L/min	534L/min	550L/min	950L/min
R/pump rating	0,45KW	0,15kw	0,15kw	0,15kw	0.45KW
R/pump flow rate	11L/min	36L/min	36L/min	36L/min	80L/min
Voltage 3P	N/A	400/50/3/N	400/50/3/N	400/50/3/N	400/50/3/N
Voltage 1P	230/50/1	230/50/1	N/A	N/A	N/A
Noise level(dB)	66db	66dB	67db	67db	69db
Rinse time	17 sec	15 sec	15 sec	17sec	17sec

As continued product improvement is a policy of HOBART, specifications are subject to change without notice.

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