# *Operator's Manual*

## *RR360 PRO*
## Rack Conveyor Washers



**Australia** Tel: 1300 347 944 | **New Zealand** Tel: 0800 902 054 | **Singapore** Tel: +65 9107 8943

# INSTRUCTION MANUAL FOR DISHWASHERS



**It is important to keep this instruction manual near the appliance for future consultation.**
**If the appliance is sold or transferred to another user, make sure this manual remains with the appliance so that the new owner is informed about the warnings and operation of the appliance. These instructions are given for safety reasons and they must be read carefully before installing or using the appliance.**

## GENERAL INSTRUCTIONS

- The appliance must be connected to water and electrical supplies by qualified tradespersons only and according to local regulations.
- The appliance must be used by adults only. Do not let children play with, or operate this machine.
- Only persons trained to use this dishwasher are permitted to operate it.
- This appliance has been designed to wash food preparation and eating utensils. It has NOT been designed to wash objects soiled with petrol, paint, remnants of steel or iron, corrosive chemical products such as acids, alkalis, or solvents or any item that cannot be immersed in water.
- Do not open the appliance door(s) while the appliance is operating. The appliance has a safety device which stops operation if a door is accidentally opened.
- After using the appliance, isolate the electric and water supply.
- Do not attempt to repair the appliance. Repairs made by unqualified persons may cause further damage and will void warranty.
- Repairs and servicing of this appliance must be carried out by Rhima personnel only.

## IMPORTANT CUSTOMER INFORMATION

- To request a service, detergents or rinse additive contact your local Rhima Service centre below:

Australia: **1300 347 944**
New Zealand: **0800 902 054**
Singapore: **+65 9107 8943**

## ELECTRICAL INSTALLATION

This appliance must be connected to an earthed 3-phase electrical switched outlet of an appropriate rating.

## PLUMBING INSTALLATION

The installation shall be in accordance with T*he Plumbing Code of Australia (PCA)*.

This appliance should be connected to a hot water supply *(Max 65°C)* in accordance with *Australian Standard AS/NZS 3500.1.* for optimum performance.

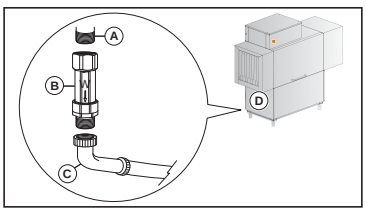
The incoming water supply must be maintained at a minimum dynamic pressure of 200 kPa *(29.0 psi)* and flow rate should be at least 15 litres per minute. Where the supply pressure is below 150 kPa, an installation of a rinse booster pump is recommended to ensure optimum rinse performance. If static pressure is higher than 600 kPa *(87.0 psi)* then a pressure reducing valve will be required upstream of the supply line *(not supplied)*.

Water hardness should not exceed 90 ppm; where this limit is exceeded, a suitably sized water softening system must be installed to prevent scale formation and maintain equipment efficiency. In locations where the incoming water quality contains elevated levels of sediment, chlorine & chlorides, organic contaminants, or other impurities, an installation of a pre-treatment carbon filtration system is recommended to improve water quality and protect the equipment from premature wear or operational issues.
*(Any machine failures or damage caused to machine components due to poor water supply will not be covered under warranty)*

**IMPORTANT: *Backflow prevention***

To comply with the *ABCB (Australian Building Codes Board) WMTS-101 WaterMark Technical Specification*, a suitable *WaterMark-Certified* external backflow prevention device, such as this dual check valve example explained below, MUST be installed:

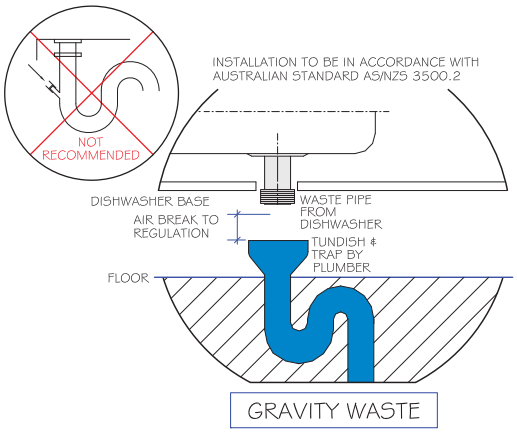
- The installation can be vertical or horizontal.
- Make sure all lines are cleaned of any debris before commissioning.
- Connect to the incoming water supply valve **A** to the dual check valve **B** and then to the inlet hose **C** which connects to the washer **D**.
- Ensure that the dual check valve is installed in the correct flow direction. Refer to flow direction arrow on valve nameplate or body.




**This appliance is designed to drain into a tundish or trap.**
Waste connection to a spigot is not recommended and will cause draining issues.
The drainpipe should withstand 70°C (158°F) in continuous duty conditions.

The drain hose/pipe must have a fixed watertight seal above the tundish or trap in accordance with the Australian Standard AS/NZS 3500.2.

**A DIAGRAM SHOWING THE CORRECT METHOD OF WASTE INSTALLATION IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS/NZS 3500.2**




## VENTILATION

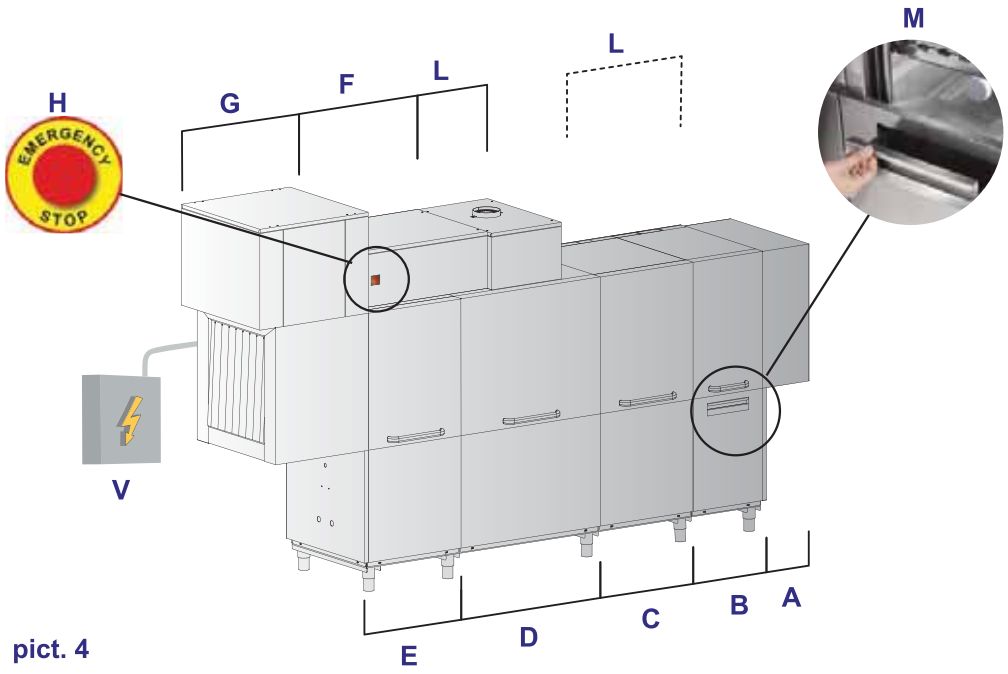
Use extractor fans to guarantee a minimum ventilation of 500 m³/h. Increase the ventilation rate to 1500 m³/h if the machine is equipped with drying system. It is suggested to position the extractor fans close to the machine entry and exit and in correspondence to the heat recovery fans.

## MACHINE DESCRIPTION

### Description of the machine, its accessories and its guards

### Machine description

Refer to annexes for the technical data of the machines.




pict. 4

**Example:**
**MACHINE IN RIGHT EXECUTION**

**A** - SPLASH GUARD
**B** - PRE-WASH WITH DRAWER STRAINER
**C** - PRE-WASH
**D** - FIRST WASH
**E** - PRE-RINSE AND RINSE MODULE
**F** - CONTROL PANEL
**G** - DRYER
**H** - EMERGENCY BUTTON
**L** - HEAT RECOVERY/STEAM CONDENSER/HEAT RECOVERY WITH HEAT PUMP
**M** - DRAWER STRAINER
**V** - WALL-MOUNTED CIRCUIT BOARD

| Module | Dimension | | |
|---|---|---|---|
| | Width | Height | Depth |
| **A** - SPLASH GUARD | 300 mm | 1520 mm | 900 mm |
| **B** - PRE-WASH WITH DRAWER STRAINER | 450 mm | | |
| **C** - PRE-WASH | 600 or 900 mm | | |
| **D** - WASH | 900 mm | | |
| **E** - PRE-RINSE AND RINSE MODULE | 600 mm | | |
| **F** - CONTROL PANEL | 850 mm | 1830 mm | |
| **G** - DRYER | 600 mm (700 mm) | 2070 mm | |
| **L** - HEAT RECOVERY/STEAM CONDENSER | 450 mm o 1300 mm | 1860 mm | |
| **L** - HEAT RECOVERY WITH HEAT PUMP | 1000 mm | 2070 mm | |

This machine is built with high quality materials in particular AISI 304 stainless steel (AISI 316 for boilers and tanks) and in high thickness to ensure a longer lifetime.

The machine is built in different sections:

**Pre-wash module (the presence depends on the model chosen):** a preliminary rough washing is carried out with low temperature thermostatically controlled to melt the alimentary residuals and avoid the proteins denaturation.
On machines with pre-wash, the initial tanks filling occurs in several phases:
- Phase 1: wash tanks only filling
- Phase 2: filling interruption. Water heating using the heating elements until a proper pre-wash temperature is reached (factory-set)
- Phase 3: resume and filling conclusion
- Phase 4: resume and heating conclusion.

**Wash module(s):** a proper washing of the crockery is performed with temperature thermostatically controlled.

**Rinse module:** a pre-rinse is performed that removes most of the detergent, then a final rinse is performed with high temperature thermostatically controlled.

**Autotimer:** the Autotimer function (activated by default) allows stopping the machine if it is in start-mode but not operating at the moment.
It can happen in three cases:

1. The machine is working in vain (it is in operation but it is not used).
2. The machine is in operation but a baskets accumulation exiting the machine causes the limit switch SQ1 to trip (F1).
3. The machine is in operation with the drawer **M** open.

In these cases, the timer set by default at 300 seconds trips. When the time is over the energetic saving mode turns on.

By inserting a basket, clearing the exit or closing the drawer the machine restarts automatically to operate.

## Available options

### Pre-wash with drawer strainer B:

Low temperature pre-wash module equipped with drawer strainer **M**.
The filter collects the food residuals and it can easily be removed and cleaned during the operation thanks to the drawer, without opening the doors, removing the baskets and getting in touch with the washing solution.
If the drawer is extracted during the washing, the machine stops the conveyor, the rinse and the module pump to allow the filter cleaning.
The wash pumps keep working.
The machine restart the operation as the drawer is repositioned.
Make sure that during the operation the filter is clean and correctly positioned.

### Dryer G:

It conveys hot and dry air that creates the ideal conditions for the rinse aid action.
Depending on his/her needs the operator can turn on or off the dryer module heating part using the display, during the work.

### Heat recovery L:

The goal is the recovery of the steam heat exiting the machine that otherwise would be dispersed, and use it to pre-heat the water entering the boiler.
The machine must have a cold water supply for the rinse.

### Heat recovery with heat pump L:

The goal is the recovery of the steam heat exiting the machine that otherwise would be dispersed, and use it to pre-heat the water entering the boiler.
It exploits a heat pump to further increase the water temperature entering the boiler.
The machine must have a cold water supply for the rinse.
**WARNING:** If this optional is present the **Autotimer** must be set to a minimum value of 300 seconds



**WARNING: Heat Recovery system and Steam Condenser - installation (optional)**

**It is strictly forbidden to connect the machine's vent directly with the outdoor!**

**Cold weather conditions might seriously damage the Thermal Recovery system or the Steam Condenser.**

### Pressure Increase Pump:

It allows a proper machine operation when the feeding water pressure of the machine is lower than 200 kPa.

### Self-cleaning:

The system allows carrying out an automatic internal machine cleaning and rinsing cycle, when it has finished operating. Specific sanitizing product can be used.
The self-cleaning can be carried out only if:

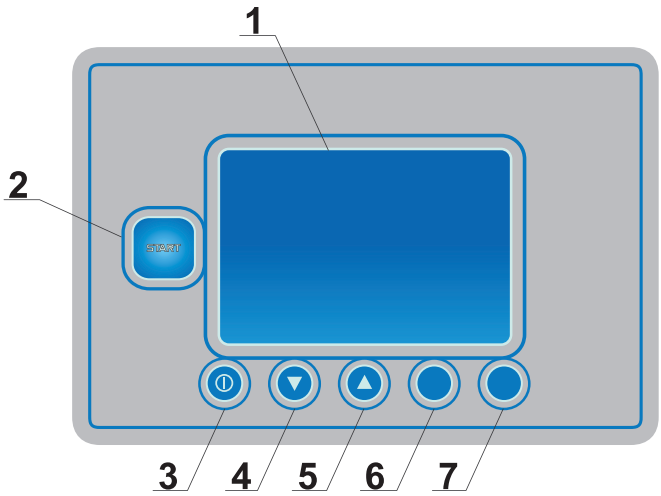
- The machine is in stand-by
- The doors are closed
- The tanks are empty.

The display shows the Self-cleaning screen.
During the cycle all the other functions are disabled. If there is no electrical supply the cycle will be restarted automatically to ensure a proper execution of the cycle.

### Inlet water temperature probe:

The option allows to show the inlet water temperature on display.

## CONTROL PANEL AND RELATED SYMBOLS




**1:** Display LCD backlit.
Not backlit: machine in stand-by
White: programming mode
Blue: machine ON and in operation
Red: machine ON and in filling or heating mode, or alarm signal (blocking or not blocking)
Green: machine ready (tanks filled, temperatures reached).

**2:** **START / STOP** key - backlit.
Not backlit: machine in stand-by mode.
White: programming mode
Blue: machine ON and in operation
Fixed red: machine ON and in filling or heating mode
Flashing red: blocking alarm
Green: machine ready (tanks filled, temperatures reached).

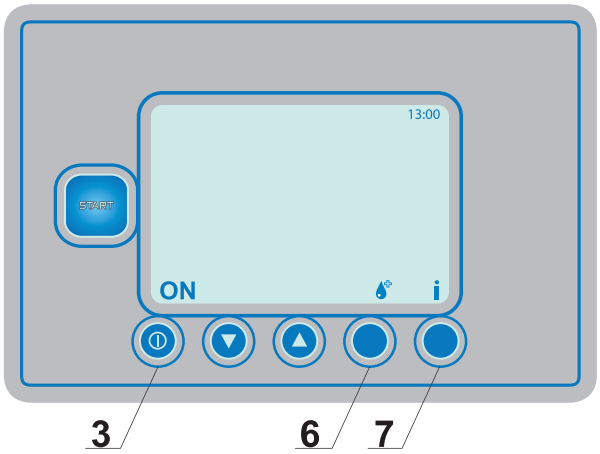
**3:** Tasto **ON / OFF**.

**4 and 5:** Scrolling keys (**▼ / ▲, - / +**).

**6:** Function key (**MENU, SELF-CLEANING, ESC**).

**7:** **INFO** key.

### MACHINE IN STAND-BY MODE

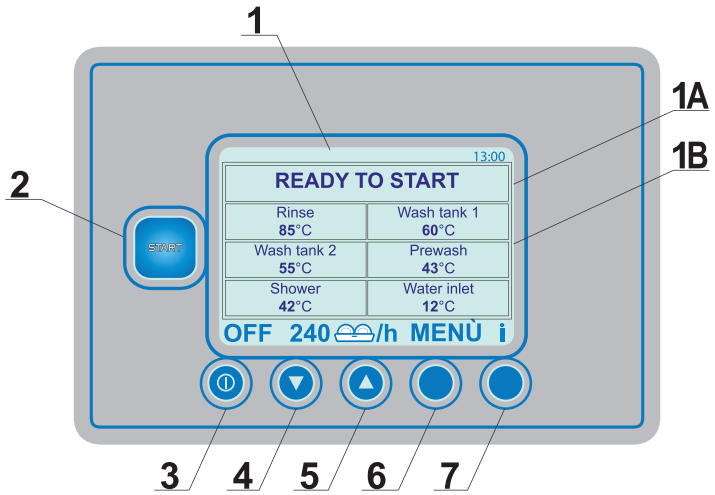



**3:** **ON / OFF** key with **ON** function.
To turn the machine ON.

**6:** **SELF-CLEANING** key.
Enabled with **SELF-CLEANING** optional. If pressed the function is activated. See paragraph **Available options** for more information.

**7:** **INFO** key.
Provides additional information about the current status of the machine.

## MACHINE READY OR IN OPERATION




**1:** Notice area.

**1A:** Status of the machine

**1B:** Measured temperatures for single modules and for inlet water (enabled with PROBE optional)

**2: START / STOP** key - backlit.
When the machine is ready, it allows the start. The conveyor is activated by pressing this key.
When the machine is running, allows stopping and putting in ready mode. The conveyor is stopped by pressing this key.

**3: ON / OFF** key with **OFF** function.
Allows putting the machine in **STAND-BY** mode.

**4 and 5:** Scrolling keys (**▼ / ▲, + / -**).
When in the menu either scrolls the items or modifies all adjustable parameter (increase and/or decrease).
When the machine is ready or running: to adjust the conveyor speed.

**6: MENÙ** function key.
It is present only if the following functions are activated:
- Temperature quick adjustment.
  It allows the working temperature adjustment of the single modules.
- Enable or disable the drying heating elements (if present the **DRYER** optional).
  It allows to enable or to disable the DRYER heatings. See paragraph **Available options** for more information.

**7: INFO** key.
It provides additional information about the current status of the machine.
In case of alarm it allows to have more details.

## FUNCTIONING OF THE MACHINE

### Machine start-up

- Check that the overflow pipes are correctly inserted.
- Turn on the wall-mounted main switch **V.**
- Open the water supply valves.
- Turn on the machine using the control panel.
- Wait for the filling and pre-heating operations to be completed. During the pre-heating the machine suspends the tanks filling. In this phase the display always shows the message **FILLING**.
  Once filling of all the tanks is finished, the complete heating of the machine starts. In this phase the display shows the message **HEATING** and, by pressing **START / STOP 2**, it shows the reached temperatures.
  To ensure a proper washing, the start is not possible until the set temperatures are reached.
  The several phases are represented on the display with specific icons.
- When the heating is finished, it is possible to proceed with the washing.

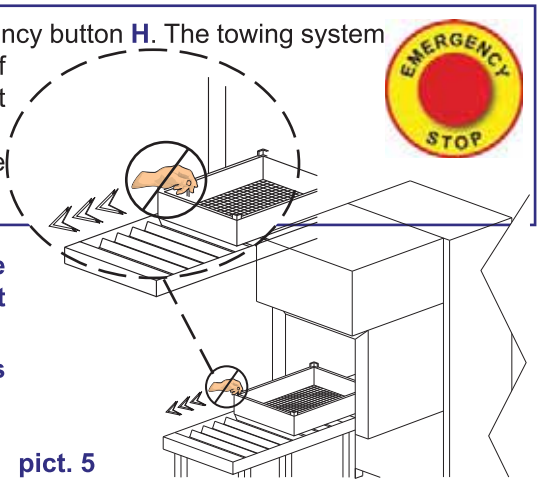
**The working temperatures can be seen on the display.**

### Washing

- To set the desired working speed, use keys **4** ▼ (decrease) and **5** ▲ (increase) to set a suitable speed for the type of work to be carried out.
  There are five possible settings:
  Speed 1 (MIN): intensive wash.
  Speed 2 and 3 (NORMAL): dedicated to the washing of the average dirt.
  Speed 4 and 5 (MAX): dedicated to trays and dusting.
- If the machine is not equipped with an automatic chemicals dispenser, manually introduce the detergent in the wash tank. Carefully follow the instructions of the product manufacturer considering the water hardness (see chap.**DETERGENTS**).
- Press **START / STOP 2** button to start the conveyor movement.
- Carry out the cleaning off.
  Place the baskets on the conveyor (see paragraph **Dishes and cutlery loading** - pic. 6 - 7).
  Push the basket inside the splash guard **A** until the hooking with the towing system.
  The washing sequence is the following:
  ►Automatic shower (**B** - if there is the optional module) equipped with filter that can be periodically cleaned by extracting the drawer **M**.
  ►Low temperature pre-wash (**C** - if there is).
  ►Thermostatically controlled temperature wash **D**.
  ►Pre-rinse **E.**
  ►Final rinse **E** carried out with clean water coming from the hydric network and thermostatically controlled and eventually rinse aid.
  ►Drying (**G** - if there is the optional module).
  ►Baskets exit zone equipped with roller conveyor and limit switch.
- Push the **START / STOP 2** button to stop the operation.

**N.B.:** It is recommended to change the tank's water by new filling, when very dirty or, at least, twice a day.

**WARNING:** In case a dangerous situation occurs, push the emergency button **H**. The towing system and the absorptions turn off. Before restarting the appliance, check if the emergency is over. The emergency button rearmament does not start the machine but it position the appliance in stand-by.
The emergency button does not have to be used as usual machine switch off system.




**It is forbidden to remove the basket from the machine before it has come out of the tunnel and to insert hands or arms inside the machine when it is in movement (see pict. 5).**

**Note: Always turn the machine off before inserting your hands or arms inside the tunnel.**

**pict. 5**

## End washing operations

- Press **START / STOP 2** key.
- Press key **OFF 3**.
- Drain the tanks.
  Open the doors and remove filters and overflows.
- Turn off the wall-mounted main switch **V**.
- Close the water valves.
- Start the cleaning of the machine (see chap. **MAINTENANCE**).

## Dishes and cutlery loading

Before loading the dishes it is necessary to carry out a proper cleaning off of the food residuals.

It is not necessary to rinse the dishes with water before the loading.



**WARNING: Do not wash items contaminated by petrol, paint, pieces of steel or iron, ash, sand, wax, lubricating grease. These substances damage the machine. Do not wash fragile items or made of material that do not stand the washing process.**

Follow these tips:

- Crockery and cutlery must not lie inside one another, covering each other.
- Place the dishes so that all the surfaces can be reached by the water; otherwise the dishes cannot be washed properly.
- Make sure that the dishes are placed in a stable position and that the empty containers (cups, glasses, bowls, etc.) do not turn upside down.
- Place all the empty containers like cups, glasses, etc., **upside down.**
- Place in tilted position the dishes with deep hollows, so that the water can drain.
- Make sure that the smaller dishes do not fall from the baskets.
- Check that the dishes are not too tall or protruding.
- Do not wash trays horizontally.

Some food, like carrots, tomatoes, ketchup, may contain natural colorant substances that may alter the dishes and plastic parts if they are in large quantity.

The eventual color alteration does not mean that the plastic is not thermo-resistant.

### Dishes to not wash in a dishwasher

Dishes not suitable to be washed in a dishwasher:

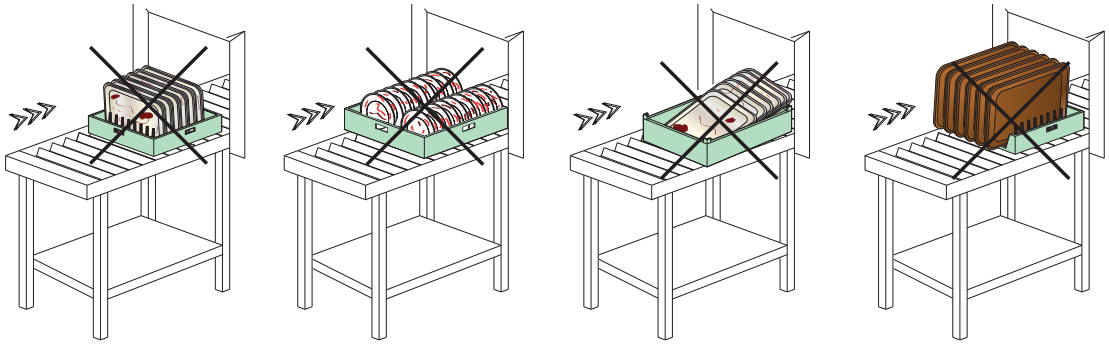
- Wooden crockery and cutlery or with wooden parts; wood wraps and loses its characteristics if it is exposed to high temperatures. In addition the glues used are not suitable for dishwashers; a consequence may be the handles detachment.
- Hand-made objects, valued vases or decorated glasses.
- Plastic dishes not thermo-resistant.
- Copper, brass, pewter or aluminum objects can discolor or become opaque.
- The decorations on glass can lose sparkle after a certain number of washes.
- Fragile glass or crystal objects can become opaque if washed many times.

It is suggested to purchase only crockery and cutlery suitable for washing in dishwashers.

Glasses can become opaque after many washes.

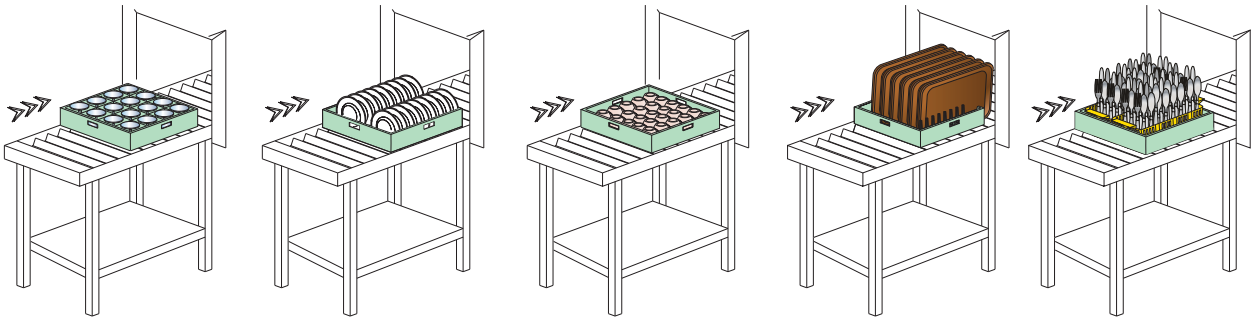
**If after the washing the dishes are not clean or they have washing residuals (glasses, cups, bowls, etc., with liquid on the inside) it is mandatory to repeat the procedure.**

**NO →**



**pict. 6**

**YES →**



**pict. 7**

**WARNINGS:**

- Do not slam the doors when opening and closing.
- Do not put material or objects on the machine.
- The water used for the washing and the rinsing is not potable because of the presence of chemical additives. In case of contact with skin or eyes wash them immediately with plenty of water and check the safety instructions of the detergent manufacturer. If necessary, contact a doctor.
- Some important rules must be followed for the use of this appliance:
  1) Never touch the appliance with wet hands or feet
  2) Never use the appliance when barefooted
  3) Do not install the appliance in places exposed to water splashes.
- **This machine must be disconnected from the main electrical supply after use at the end of the day and for any service/maintenance operation. Switch off the main switch located on the wall, which shall be installed by a professional installer. Shut the water supply valve(s).**
- In case an obstacle stops the towing, first switch off the wall-mounted main switch and then remove the cause of the block.

**WARNING: INTERNAL CLEANING OF THE MACHINE SHALL BE CARRIED OUT AT LEAST 10 MINUTES AFTER IT HAS BEEN TURNED OFF.**

**WARNING: DO NOT INSERT HANDS AND/OR TOUCH THE PARTS LOCATED AT THE BOTTOM OF THE WASH TANK AND/OR AT THE END OF THE WASH CYCLE.**

**WARNING: DO NOT TOUCH THE CONVEYOR WHILE IT IS WORKING.**

## DETERGENTS

### Using detergent

The detergent must be of good quality, of NON-FOAMING type, specific for the mechanical washing of dishes.
The use of liquid detergents is recommended.
The dosing has to be done following the recommendations of the detergent manufacturer and in accordance with the water and dishes characteristics.
The detergent has to be inserted only in the wash tank 1. For manual dosing remember that the wash tank contains about 85 litres of water.

**Note:** It is forbidden to use detergents with chlorine-based reagents.

### Using rinse aid

It is possible to use the rinse aid to get quicker drying and polishing.

The dosing has to be done following the recommendations of the rinse aid manufacturer and in accordance with the water characteristics.
**Note:** too much chemicals produces foam that reduces the effectiveness and lifetime of the washing pump.
Too much chemicals might leave residuals on the dishes.

### Using sanitizing

It is forbidden to use sanitizing products with chlorine-based reagents.
Detergents and sanitizing products used to clean the machine must be properly prewashed.
It is forbidden to use generic detergents to clean the machine.

## AIRBORNE NOISE EMISSIONS

The machine has an average sound pressure between 70dB(A) and 80dB(A) depending on its configuration.

| | |
|---|---|
| Machine with one tank without dryer optional | 70dB(A)±2.5 dB(A) |
| Machine with two tanks without dryer optional | 71dB(A)±2.5 dB(A) |
| Machine with three tanks without dryer optional | 72dB(A)±2.5 dB(A) |
| Machine with four tanks without dryer optional | 73dB(A)±2.5 dB(A) |
| Machine with dryer optional | 74dB(A)±2.5 dB(A) |

## OBSERVANCE OF THE RULES OF HYGIENE AND H.A.C.C.P.

In order to meet the correct H.A.C.C.P. procedures remember to prepare a sheet with tables where the shift operator enters the date and time the washing starts, the time the washing ends, the tanks and boilers temperatures and any other note/ alarms that have tripped and what he/she has done to ensure sanitary safety.

This is the reason why the machine is equipped with:

- Temperature gauges that indicate the boiler and tank temperature.
- Malfunctioning gauges.
- Possibility to consult the washing parameters.

## MAINTENANCE

**WARNING: The machine is not protected against pressure water jets, therefore avoid the use of this type of cleaning system on the cabinet.**

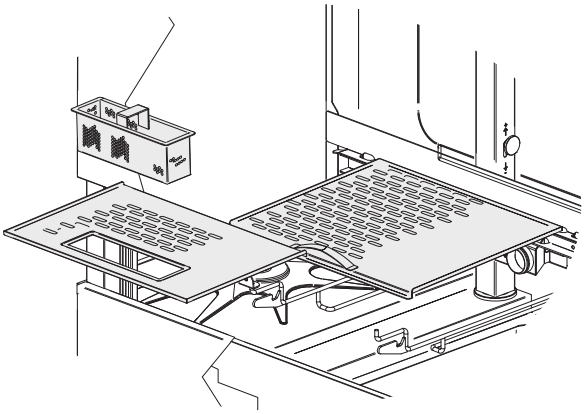
**It is also suggested to contact cleaning product dealers for detailed information about methods and products for a periodical sanitizing of the machine.**

**Do not use bleach or chlorine-based detergents to clean the machine.**

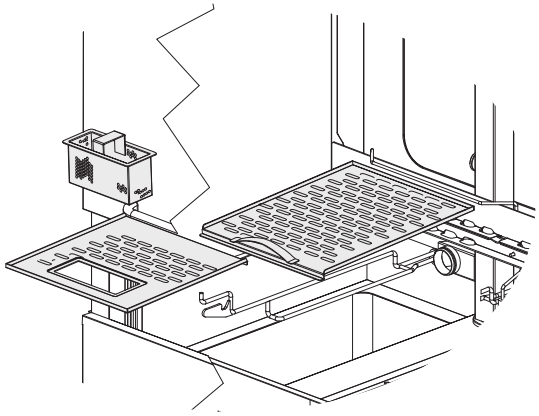
### Routine maintenance

The perfect operation of the machine **depends on a careful cleaning that is necessary at least once a day** with the following procedure:

- Turn off the machine as explained in the paragraph **End washing operations**.
- If the machine is equipped with Heat Recovery with heat pump, clean the extractable filter (see pict. 10).
- With empty tank, extract the filters of the tanks and the pumps (see pict. 8 - 9). Be careful that the washing residuals in the filters do not fall in the tanks. Clean the filters with a rigid brush underneath a powerful water jet.



pict. 8



pict. 9

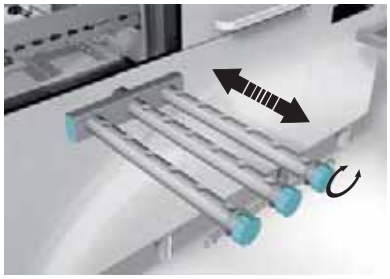
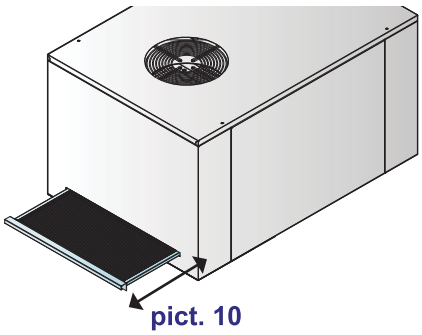


photo 1

• Extract the wash (see photo 1) and the rinse arms and carefully clean the nozzles and the dome filters of the rinse nozzles underneath running water.
• Carefully clean the tanks avoiding the use of chlorine-based detergents.
• Clean the shutters (long on the outside, short on the inside).
• Clean the entry and exit shelves.
• If the machine is equipped with pre-wash with drawer strainer, extract the drawer and clean it (see photo 2).
• Reassemble all the parts and replace the arms in their seats.
• It is suggested to leave the doors of the machine open at the end of the day.

Do not use a metal scouring pad and/or corrosive products to clean the dishwasher.

Do not use pressure cleaning systems.



pict. 10



photo 2

## Extraordinary Maintenance – by qualified Service Personnel only

Once or twice per year, the machine should be checked by qualified Service Personnel:

- To remove scaling from the heating elements
- To check the status and the tightness of all gaskets
- To check the perfect state and/or wear of the components
- To check the efficiency of the dispensers
- To tighten firmly all electrical connections at least once per year
- To clean the intake filter of the solenoid valve
- To check the state of the safety devices of the doors/boilers, limit switches
- To check the calibration of the clutch.

**Pay attention to do not wet the motor or any electric part. Perform maintenance with the wall-mounted main switch turned OFF.**

## Extraordinary Maintenance - Heat Recovery with heat pump option

Every two months the Heat Recovery should be checked by qualified Service Personnel to:

- Clean the finned exchangers inside the Heat Recovery.
- Check the heat pump's flow is properly charged.

## Extraordinary Maintenance - Heat Recovery or Steam Condenser option

Every three months the Heat Recovery/Steam Condenser should be checked by qualified Service Personnel to:

- Clean the finned exchanger inside the Heat Recovery/Steam Condenser.

## Extraordinary Maintenance - Pressure Increase Pump option

After long periods of inactivity of the dishwasher, check that the supplementary pressure increase pump freely rotate.



## ENVIRONMENTAL ASPECTS

### Packing

The packing consists of the following:

- a wooden crate;
- extensible belt in nylon (LDPE);
- polystyrene foam (PS).

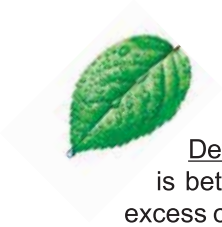
Please dispose of the materials listed above, according to the current regulations.

### Disposal



pict. 11

The symbol WEEE used on this product indicates that it cannot be treated as domestic waste. Proper disposal of this product contributes to protecting the environment. For more information on product recycling, contact the local authorities, domestic waste authorities or the shop where the product was purchased.
For product or part disposal, follow the Council directives 2011/65/EU and 2012/19/EU as amended and/or application legislative decrees.
The present product or parts can not be disposed of as urban waste but shall be collected in separate containers (see the waste bin on wheels symbol - pict. 11 - with an "X" on the product).
At the time of product disposal, the user shall refer to the waste electrical and electronic equipment (WEEE) specification.
The manufacturer guarantees the absence of dangerous substances in the EEA used in conformity to the directive 2011/65/EU.
If the user does not comply with the regulations he/she shall be subject to the penalties foreseen by each member state.
Disconnect electricity and water before disposal.
Cut the electrical cable to ensure that further use is impossible.
All metal parts are recyclable as they are made of stainless steel.
Recyclable plastic parts are marked with the plastic material symbol.



## ECOLOGICAL ASPECTS

### Recommendations for optimum use of energy, water and additives

If possible, use the machine at full load: This will avoid wasting detergent, rinse aid, water and energy.

Detergents and rinse aids: Use detergents and rinse aids having the highest biodegradability so that the environment is better respected. Have the correct dosage according to the water hardness checked at least once a year. An excess of product pollutes rivers and seas, whereas an insufficient amount compromises dish washing and/or hygiene.

Tank and boiler temperatures: The temperatures of the tank and boiler are set by the manufacturer so as to get the best washing results with the majority of detergents on the market. These can be reset by the installer according to the detergent used.

Cleaning off: Carefully clean off the kitchenware using water at ambient temperature with moderation so as to make removal of animal fats easier. To remove encrusted matter, soaking in hot water is recommended.

Notes: Wash the objects as soon as possible in order to prevent the deposits from drying and jeopardizing the effectiveness of the washing. To get an efficient wash, it is advisable to regularly clean and maintain the dishwasher.
(see chap. **MAINTENANCE**).

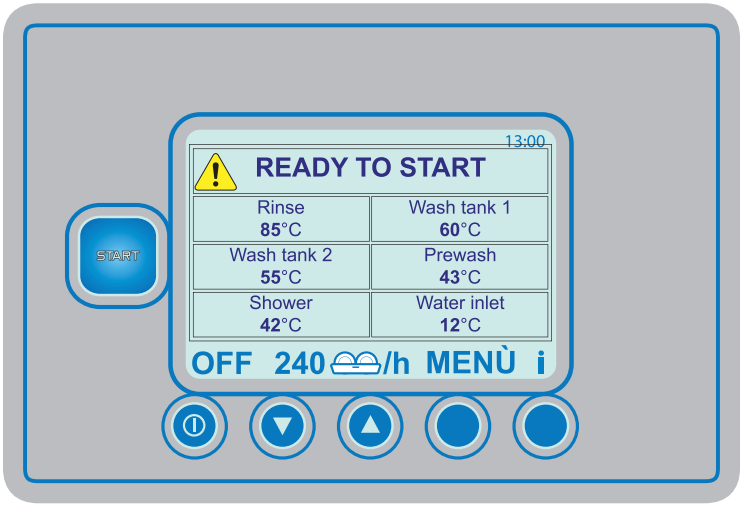
**Non-compliance with the above points and all the information described in this manual could determine a waste of energy, water and detergent, with consequent increase in operating costs and/or decrease in performance.**

## SIGNALS AND ALARMS

During the operation, the machine signals other situations in addition to alarms that need the operator attention.

In any case the relative information automatically appears on the display and remains visible until the operator execute the necessary actions.
To display the alarm/signal screen during the machine operation, press the **7 INFO** key.
Press the **6 ESC** key to go back to the main screen.

Alarm screen example (machine ready to start with a running alarm):




### Signals

The signal messages are displayed and signalized with a beep.

When **DETERGENT LOW LEVEL** appears on the display it means that the detergent is over.

When **RINSE AID LOW LEVEL** appears on the display it means that the rinse aid is over.

When **SANITIZER LOW LEVEL** appears on the display it means that the sanitizing product is over (only on machines equipped with the **SELF-CLEANING** optional).

When **DOOR OPEN** appears on the display it means that you are trying an operation that cannot be done with the door opened or that you opened the door and interrupted a cycle in progress.

When **DRAWER OPEN** appears on the display it means that you are trying an operation that cannot be done with the drawer opened or that you opened the drawer and interrupted a cycle in progress.

When **PLEASE DRAIN THE TANKS** appears on the display it means that you are trying an operation that cannot be done with the tanks full.

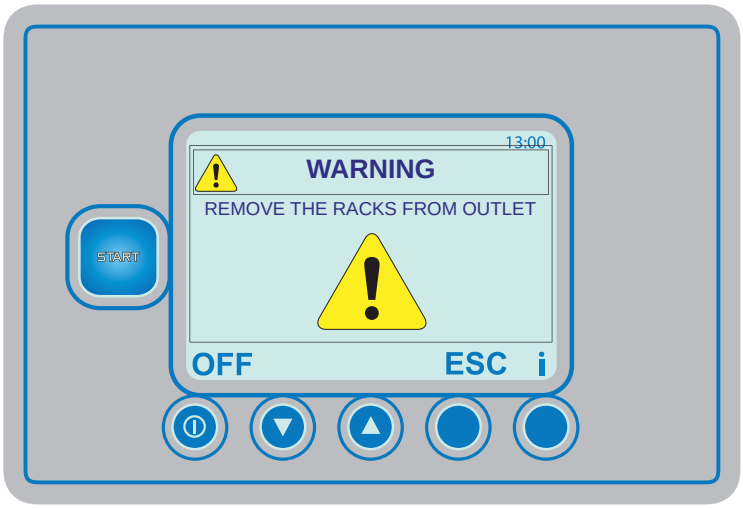
When **REMOVE THE RACKS FROM OUTLET** appears on the display it means that it is necessary to remove the baskets from the exiting shelf to continue the operation.

When **PERIODIC MAINTENANCE SUGGESTED** appears on the display it means that it is suggested to contact a technician for the periodical check of the machine.

When **ENERGY SAVING MODE** appears on the display it means that the machine is in energetic saving mode.
(see par. **Available options**).

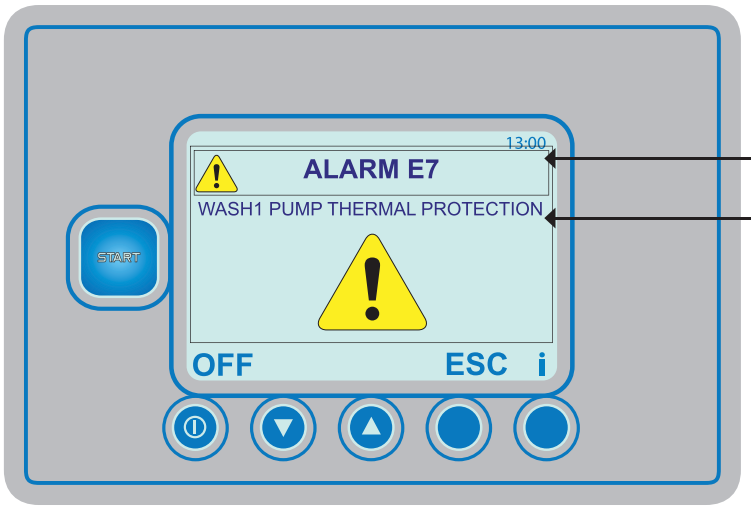
When **HEAT PUMP MAINTENANCE** appears on the display it means that you must call a technician for the Heat Recovery with heat pump maintenance (see paragraph **Extraordinary Maintenance - Heat Recovery with heat pump option** - only if the machine is equipped with the optional).

Signal screen example:

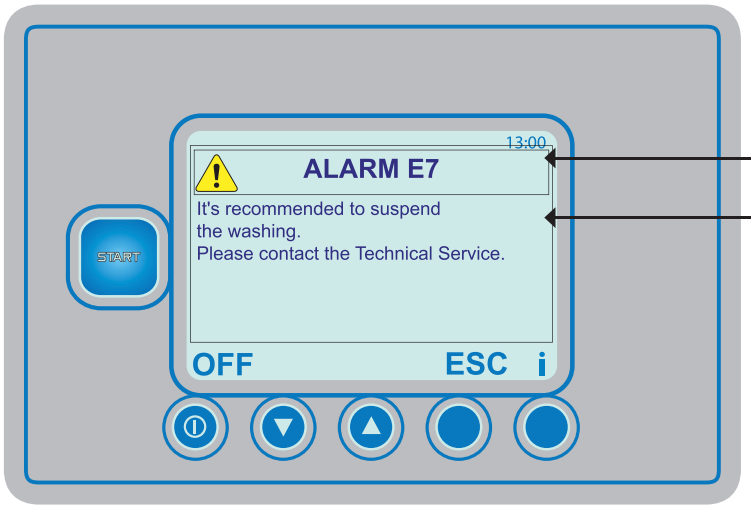


## Alarms

The alarms are displayed on a dedicated screen that overlap the current display at the time the alarm occurs.
Each alarm screen gives precise information about the meaning of the alarm and which are the operation the operator can run.
Alarm screen example:




It is possible to have more information about the current alarm by pressing the **7 INFO** key.




If the alarm does not block the machine it is possible to continue the operation by pressing **6 ESC** key.
The machine will continue to signal the alarm until the resolution of the problem by:

- The symbol ⚠ is shown in the state of the machine.
- The **7 INFO** key flashing.

In this case by pressing the **7 INFO** key the current alarm is displayed.

If the alarm block the machine the operator will be able to carry out only two actions:

- Press the **7 INFO** key to have more information
- Press the **3 ON/OFF** key to position the machine in stand-by.



## Alarms description

| Alphanumeric abbreviation | Alarm description |
|---|---|
| ALARM **B2** | BOILER 1 PROBE FAILURE |
| ALARM **B3** | BOILER 1 HEATING FAILURE |
| ALARM **B5** | BOILER 1 OVERTEMPERATURE |
| ALARM **B10** | RINSE LOW TEMPERATURE |
| ALARM **C1** | PRE-RINSE FILLING FAILURE |
| ALARM **C7** | PRE-RINSE PUMP THERMAL PROT. |
| ALARM **E1** | WASH TANKS FILLING FAILURE |
| ALARM **E2** | WASH1 PROBE FAILURE |
| ALARM **E3** | WASH1 HEATING FAILURE |
| ALARM **E4** | WASH1 LOW TEMPERATURE |
| ALARM **E5** | WASH1 OVERTEMPERATURE |
| ALARM **E7** | WASH1 PUMP THERMAL PROTECTION |
| ALARM **F2** | WASH2 PROBE FAILURE |
| ALARM **F3** | WASH2 HEATING FAILURE |
| ALARM **F4** | WASH2 LOW TEMPERATURE |
| ALARM **F5** | WASH2 OVERTEMPERATURE |
| ALARM **F7** | WASH2 PUMP THERMAL PROTECTION |
| ALARM **M1** | PREWASH FILLING FAILURE |
| ALARM **M2** | PREWASH PROBE FAILURE |
| ALARM **M3** | PREWASH COOLING FAILURE |
| ALARM **M5** | PREWASH OVERTEMPERATURE |
| ALARM **M7** | PREWASH PUMP THERMAL PROT. |
| ALARM **N2** | SHOWER PROBE FAILURE |
| ALARM **N7** | SHOWER PUMP THERMAL PROT. |
| ALARM **U1** | RINSE PUMP THERMAL PROTECTION |
| ALARM **U3** | EXTRACTOR MOTOR THERMAL PROT. |
| ALARM **U4** | BLOWER MOTOR THERMAL PROT. |
| ALARM **U7** | SELF-CLEAN. PUMP THERMAL PROT. |
| ALARM **U9** | HEAT PUMP THERMAL PROT. |
| ALARM **U10** | OPTIONAL MOTORS THERMAL PROT. |
| ALARM **W1** | INVERTER THERMAL PROTECTION |
| ALARM **X2** | INLET WATER PROBE FAILURE |
| ALARM **Z8** | GENERAL ALARM |
| ALARM **Z14** | BREAK TANK FILLING FAILURE |
| ALARM **Z15** | BREAK TANK DRAINING FAILURE |
| ALARM **Z16** | SELF-CLEAN. WATER SUPPLY FAIL. |
| ALARM **Z17** | RINSE WATER SUPPLY FAILURE |

**ALARM B2 BOILER 1 PROBE FAILURE**
Rated temperature cannot be reached.
It's recommended to suspend the washing.
Please contact the Rhima Service Department.

**ALARM B3 BOILER 1 HEATING FAILURE**
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM B5 BOILER 1 OVERTEMPERATURE**
It is recommended to turn **OFF** the appliance and contact the Rhima Service Department.

**ALARM B10 RINSE LOW TEMPERATURE**
Please make sure that rinse arms and nozzles are in the right position.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM C1 PRE-RINSE FILLING FAILURE**
Please check that water inlet connection is working.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM C7 PRE-RINSE PUMP THERMAL PROT.**
Rinse results may be affected.
Please contact the Rhima Service Department.

**ALARM E1 WASH TANKS FILLING FAILURE**
Please check that water inlet connection is working.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM E2 WASH1 PROBE FAILURE**
Rated temperature cannot be reached.
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM E3 WASH1 HEATING FAILURE**
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM E4 WASH1 LOW TEMPERATURE**
The washing results may be affected.
Please check if the curtains are properly placed and that dishes are well-positioned in the racks.
It is recommended to suspend washing until the right temperature is reached.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM E5 WASH1 OVERTEMPERATURE**
It is recommended to turn **OFF** the appliance and contact the Rhima Service Department.

**ALARM E7 WASH1 PUMP THERMAL PROTECTION**
It's recommended to suspend the washing.
Please contact the Rhima Service Department.

**ALARM F2 WASH2 PROBE FAILURE**
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM F3 WASH2 HEATING FAILURE**
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM F4 WASH2 LOW TEMPERATURE**
The washing results may be affected.
Please check if the curtains are properly placed and that dishes are well-positioned in the racks.
It is recommended to suspend washing until the right temperature is reached.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM F5 WASH2 OVERTEMPERATURE**
It is recommended to turn **OFF** the appliance and contact the Rhima Service Department.

**ALARM F7 WASH2 PUMP THERMAL PROTECTION**
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM M1 PREWASH FILLING FAILURE**
Please check that water inlet connection is working.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM M2 PREWASH PROBE FAILURE**
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM M3 PREWASH COOLING FAILURE**
Please check that the cold water inlet connection is working.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM M5 PREWASH OVERTEMPERATURE**
Washing results may be affected.
Please check that the cold water inlet connection is working.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM M7 PREWASH PUMP THERMAL PROT.**
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM N2 SHOWER PROBE FAILURE**
Please contact the Rhima Service Department.

**ALARM N7 SHOWER PUMP THERMAL PROT.**
Washing results may be affected.
Please contact the Rhima Service Department.

**ALARM U1 RINSE PUMP THERMAL PROTECTION**
Please contact the Rhima Service Department.

**ALARM U3 EXTRACTOR MOTOR THERMAL PROT.**
It's recommended to suspend the washing.
Please contact the Rhima Service Department.

**ALARM U4 BLOWER MOTOR THERMAL PROT.**
Please contact the Rhima Service Department.

**ALARM U7 SELF-CLEAN. PUMP THERMAL PROT.**
Please contact the Rhima Service Department.

**ALARM U9 HEAT PUMP THERMAL PROT.**
Please contact the Rhima Service Department.

**ALARM U10 OPTIONAL MOTORS THERMAL PROT.**
Please contact the Rhima Service Department.

**ALARM W1 INVERTER THERMAL PROTECTION**
Please contact the Rhima Service Department.

**ALARM X2 INLET WATER PROBE FAILURE**
Please contact the Rhima Service Department.

**ALARM Z8 GENERAL ALARM**
Emergency button pressed.
Make sure that the emergency is solved.
To resume working, release the emergency button.
**WARNING:** the emergency button should not be used as ordinary mean to turn the appliance **ON/OFF**.

**ALARM Z14 BREAK TANK FILLING FAILURE**
Check if the water supply is working.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM Z15 BREAK TANK DRAINING FAILURE**
Please make sure that rinse nozzles are not clogged.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM Z16 SELF-CLEAN. WATER SUPPLY FAIL.**
Please check if the water supply is working and make sure that self-cleaning arms are in the proper position.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.

**ALARM Z17 RINSE WATER SUPPLY FAILURE**
Please check if the water supply is working and make sure that rinse arms and nozzles are in the proper position.
Please turn **OFF** the appliance, by pressing the **ON/OFF 3** button, and turn it **ON** again, after a few seconds.
Should the alarm persists, please contact the Rhima Service Department.



## MACHINE PROBLEMS, CAUSES AND CURES

| Type of problem | Possible causes | Cure |
|---|---|---|
| The machine does not start | Main switch turned off | Turn on the main switch |
| | Card transformer fuse blown | Contact Rhima Service Department to replace the fuse |
| The machine does not load water | Water supply valve closed | Open the water supply valve |
| | Shortage of supply water pressure | Turn off and turn back on when the pressure increases or install a booster pump |
| | Solenoid valve filter clogged with sand | Contact the Rhima Service Department to clean the filter |
| Inadequate washing results | The washing nozzles are clogged | Clean the nozzles and correctly reposition the arms in the proper seats |
| | Detergent concentration too low | Change the dosage of detergent |
| | Filters too dirty | Remove and clean the filters with a brush under a jet of water, then replace them in their seats |
| | Presence of foam | Always use a non-foaming detergent. Check the detergent and rinse aid dosages and reduce them if necessary. |
| | Check the tank temperature | Adjust the temperature set for the washing. Contact the Rhima Service Department to check the correct operation of the heating element |
| | Washing duration not sufficient for the type of dirty | Select the lowest speed or repeat the washing cycle |
| | Washing water too dirty | Drain the water of the tanks, clean the filters. Reload the tank and replace the filters properly |
| | The machine doesn't rinse | Contact the Rhima Service Department |
| The objects are not dried properly | Insufficient rinse aid dosage | Check the dosage of rinse aid and increase it if necessary |
| | Baskets unsuitable for the objects | Use a basket suitable for the objects |
| | Rinse water temperature too low | Check the temperature of the water entering the system |
| Streaks or smears on the objects | Rinse aid concentration too high | Always use a non-foaming detergent. Check the detergent and rinse aid dosages and reduce them if necessary. |
| | Water too hard | Check the water quality. The water hardness must not be higher than 8°f |
| During the operation the machine suddenly stops | The machine is connected to an overloaded system | Contact the Rhima Service Department to connect the machine separately |
| | A machine safety device tripped | Contact the Rhima Service Department to check the security devices |
| During the washing phase the machine stops and replenishes the water | The water of the previous day has not been changed | Empty the tank and carry out a new filling |
| | Faulty pressure switch | Contact the Rhima Service Department |
| | Overflow/drain pipe positioned incorrectly | Remove and correctly reposition the overflow/drain pipe |
| | A tank emptied due to excess of foam or lack of curtains/splash guards | Reduce the concentration of rinse aid/detergent or correctly reposition the curtains or the other guards that may have been removed |
| | Wash arms incorrectly positioned | Check and correctly reposition the wash arms |

| Type of problem | Possible causes | Cure |
|---|---|---|
| The machine does not wash and the pump is noisy on machines with three-phase pump | The pump direction is inverted due to incorrect connection of the power supply cable | Contact the Rhima Service Department |
| | The level of water inside the tank is too low | Remove and correctly replace the overflow/drain pipe |
| | | Correctly reposition the curtains or the other guards that may have been removed |
| | | Check and correctly reposition the wash arms |
| | | If the level of water continues to fall, contact the Rhima Service Department |
| | The suction of the pump is clogged | Check if the suction filters of the pump (placed in the tanks) are clogged. If the problem persists contact the Rhima Service Department. |

## OPTIONALS PROBLEMS, CAUSES AND CURES

### Heat recovery with heat pump

| Type of problem | Possible causes | Cure |
|---|---|---|
| Compressor attach/detach | Safety pressure switches intervention | Contact the Rhima Service Department |
| | Water temperature supply too high | Verify the water temperature supply |
| | Water capacity not sufficient | Verify the static pressure |
| | Dirty steam coil | Clean the filter. Should the alarm persists, please contact the Rhima Service Department to clean the Heat Recovery |
| Low boiler temperature | Dirty steam coil | Clean the filter. Should the alarm persists, please contact the Rhima Service Department to clean the Heat Recovery |
| | Heat pump has lost gas | Contact the Rhima Service Department |
| | The Heat Recovery has been switched **OFF** and then switched **ON** | Wait a couple of minutes to restart the compressor and that the boiler temperature is restored |
| | Safety pressure switches intervention | Contact the Rhima Service Department |
| The objects are not dried properly | Insufficient rinse aid dosage | Verify the rinse aid dosage and increase it, if needed |
| | The basket is not suitable to the objects | Use basket suitable for the objects |
| | Dirty steam coil | Clean the filter. Should the alarm persists, please contact the Rhima Service Department to clean the Heat Recovery unit. |
| | Heat pump has lost gas | Contact the Rhima Service Department |
| Dirty coil alarm | Dirty steam coil | Contact the Rhima Service Department (it is possible to keep dishwashing, for a limited time, while the filter is under cleaning) |

## Heat Recovery

| Type of problem | Possible causes | Cure |
|---|---|---|
| Low boiler temperature | Dirty steam coil | Should the alarm persists, please contact the Rhima Service Department to clean the Heat Recovery |
| | The ventilation motor is damaged | Contact the Rhima Service Department |
| The objects are not dried properly | Insufficient rinse aid dosage | Verify the rinse aid dosage and increase it, if needed |
| | The basket is not suitable to the objects | Use basket suitable for the objects |
| | Dirty steam coil | Should the alarm persists, please contact the Rhima Service Department to clean the Heat Recovery |

## Dryer

| Type of problem | Possible causes | Cure |
|---|---|---|
| The objects are not dried properly | Cold air is emitted | Contact the Rhima Service Department |
| | The fan direction is inverted due to incorrect power cable connection | Contact the Rhima Service Department |

## Pressure increase pump

| Type of problem | Possible causes | Cure |
|---|---|---|
| Inadequate washing results | The machine doesn't rinse | Contact the Rhima Service Department |

## Break Tank

| Type of problem | Possible causes | Cure |
|---|---|---|
| Inadequate washing results | The machine doesn't rinse | Contact the Rhima Service Department |
| | Water capacity not sufficient | Verify the static pressure |

**N.B.: For any other problems, contact the Rhima Service Department. The Manufacturer reserves the right to modify the technical characteristics without prior notice**

**Australia** Tel: 1300 347 944
**New Zealand** Tel: 0800 902 054
**Singapore** Tel: +65 9107 8943

Version 1.1

# DETERGENTS

To request detergents or rinse additive contact your local Rhima Service centre below:

Australia: **1300 347 944**
New Zealand: **0800 902 054**
Singapore: **+65 9107 8943**




**Superwash**

10L Drum







