Operator's Manual

RR225, RR285, RR315, RR375, RR405 OPTIMA
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 Australian installation shall be in accordance with The Plumbing Code of Australia (PCA).

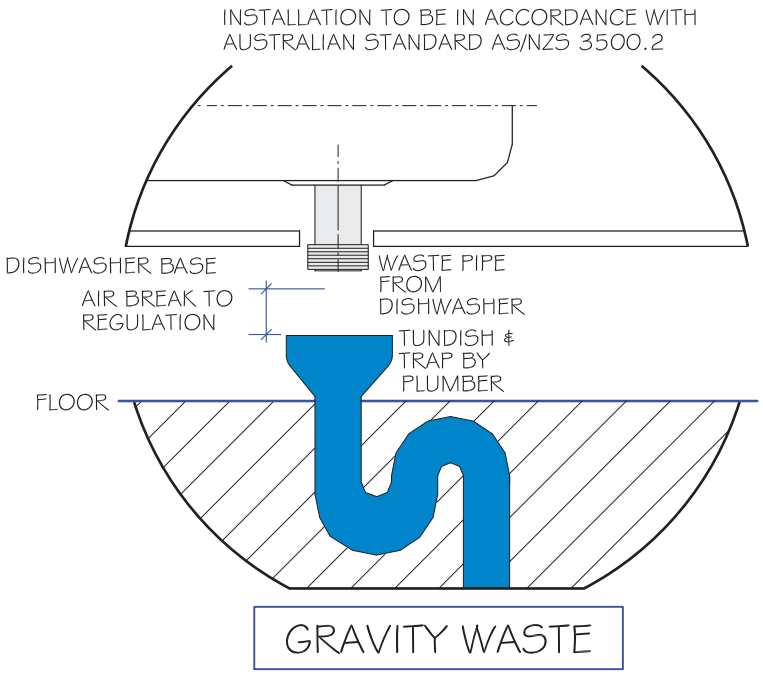
This appliance should be connected to a hot water supply (Max 65°C) for in accordance with Australian Standard AS/NZS 3500.1. for optimum performance.

The water supply pressure should be a minimum 200 kPa at all times and flow rate should be at least 15 litres per minute. A static pressure higher than 600 kPa (73.5 psi) requires a pressure reducing valve upstream of the supply line. If water pressure is below 200 kPa, the use of a rinse booster pump is recommended.

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

The grey water drain hose must have a fixed watertight seal above the tundish 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 IS BELOW



VENTILATION

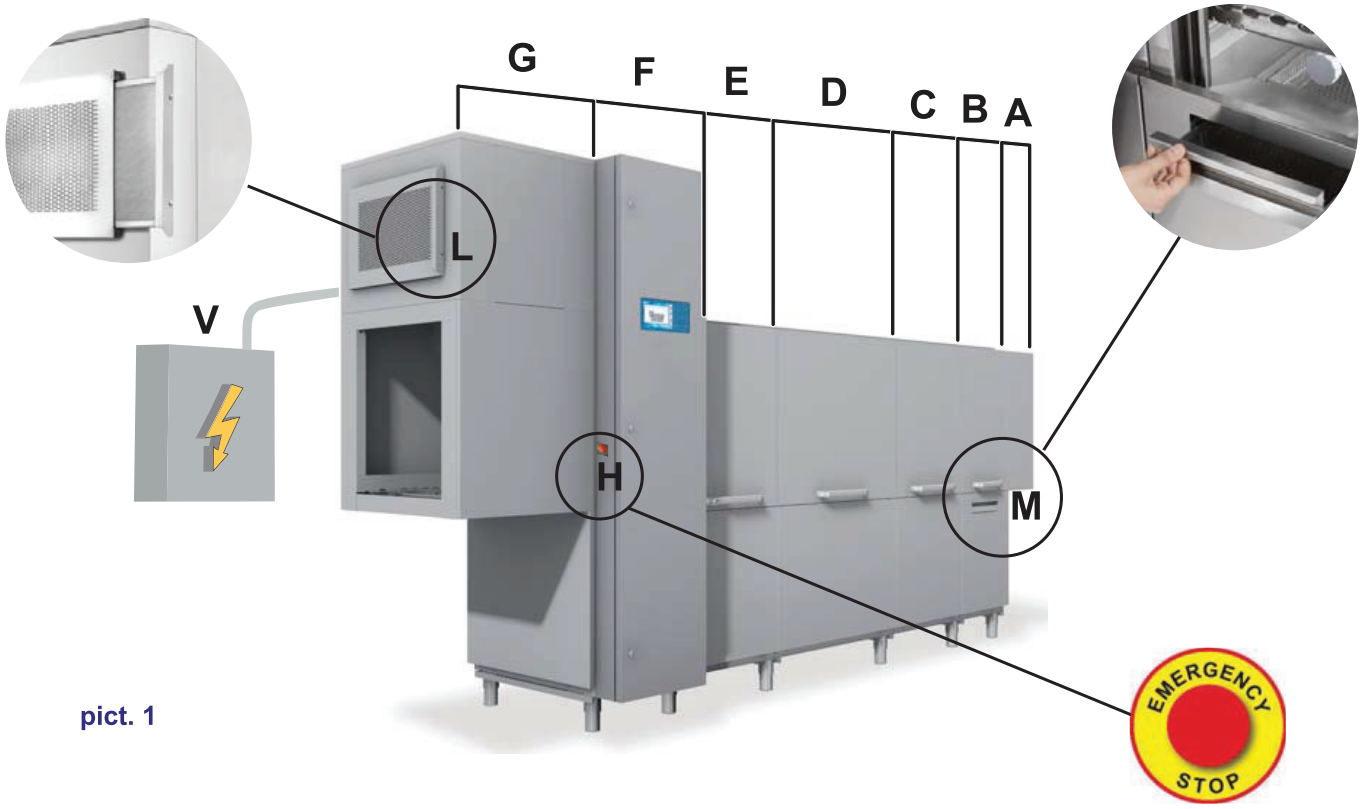
Use extractor fans to guarantee a minimum ventilation of 500 m³/h. Increase the ventilation rate to 1500 m³/h if the machine is equipped with drying system. It is suggested to position the extractor fans close to the machine entry and exit and in correspondence to the heat recovery fans.

MACHINE DESCRIPTION

Description of the machine, its accessories and its guards

Machine description

Refer to annexes for the technical data of the machines.



pict. 1

Example:

MACHINE IN RIGHT EXECUTION

A - SPLASH GUARD
B - PRE-WASH WITH DRAWER STRAINER
C - PRE-WASH
D - FIRST WASH
E - DOUBLE PRE-RINSE + RINSE MODULE
F - CONTROL PANEL
G - HEAT RECOVERY + DRYER
H - EMERGENCY BUTTON
L - RECOVERY FILTER
M - DRAWER STRAINER
V - WALL-MOUNTED CIRCUIT BOARD

Module	Dimension		
	Width	Height	Depth
A - SPLASH GUARD	300 mm	1550 mm	900 mm
B - PRE-WASH WITH DRAWER STRAINER	450 mm		
C - PRE-WASH	600 or 900 mm		
D - WASH	900 mm		
E - DOUBLE PRE-RINSE + RINSE MODULE	600 mm		
F - CONTROL PANEL	450 mm	1750 or 2100 mm	
G - HEAT RECOVERY + DRYER	600 mm	2100 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 and water heating interruption 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: two pre-rinse are performed that remove 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 two 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).

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 or clearing the exit 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.

Heat recovery + Dryer G:
It is a low consumption and high efficiency dryer thanks to the dedicated Heat Recovery. It conveys hot and dry air that creates the ideal conditions for the rinse aid action. Clean the filter **L** periodically to ensure the dryer efficiency.
Depending on his/her needs the operator can turn on or off the dryer module heating part using the dedicated key, during the work.
The optional includes the Heat Recovery: 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.
When the work is over and the tanks drained, it is possible to start the exchanger cleaning procedure by pressing the dedicated key.
If there is the Automatic drain optional the machine autonomously arranges for the exchanger cleaning at every tanks draining.

WARNING: Heat Recovery system - 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.

Automatic drain:
If there is the optional each tank is provided with dedicated motorized valve. The end work draining occurs when the machine is in stand-by by pressing the dedicated key and without having to open the doors and getting in touch with the washing solution.
If there is the optional it is possible to program the filling and heating of the machine. The programming can be done within 24 hours.

WARNINGS: the machine with activated programming must be considered as an operating machine, and must be monitored.

With this configuration it is possible to periodically drain only the pre-wash tanks and then to ensure the pre-wash tanks regeneration (where most of the residuals accumulate) and to keep an efficient and low consumption washing.
After the pre-set operation period, the machine proposes to the operator the pre-wash tanks draining. If the operator confirms the draining the machine temporarily interrupts the washing and starts the operation.

Self-cleaning:
The system allows to carry 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.

Options combination:

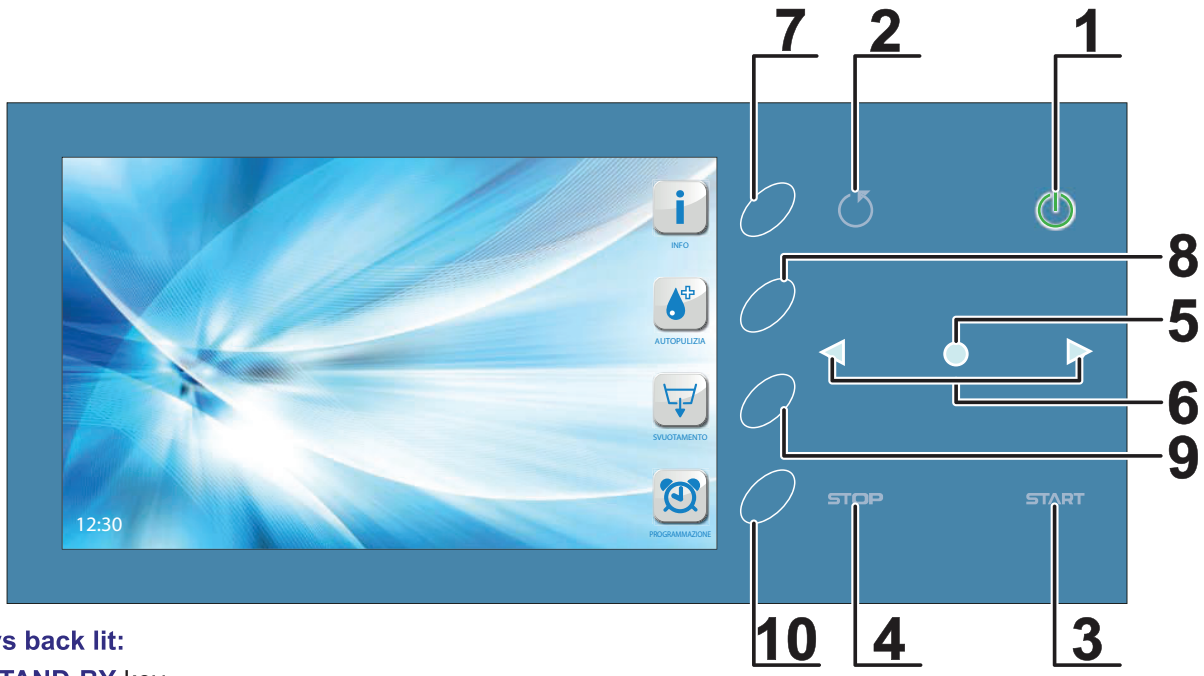
Automatic drain + Pre-wash with drawer strainer:
The information for the Automatic drain on the model with pre-wash is valid for this combination, too.

Automatic drain + Self-cleaning:
When the Self-cleaning key is pressed, the machine manages the draining and then the Self-cleaning.
The start of the draining does not involve the start of the Self-cleaning.

Automatic drain + Heat Recovery and Dryer:
When the draining starts the heat recovery cleaning is carried out automatically.

Automatic drain+ Heat Recovery and Dryer + Self-cleaning:
The Self-cleaning start involves the start of the draining and of the heat recovery cleaning.
The start of the draining involves the heat recovery cleaning.
The start of the draining does not involve the self-cleaning start.

CONTROL PANEL AND RELATED SYMBOLS



Fixed keys back lit:

1= ON / STAND-BY key.
Green: STAND- BY
White: Machine ready or in operation.
Red: Alarm signal

2= RETURN key.
- By pressing the key you accept the automatic notices (alerts).
- It allows to exit the menu, level by level, without saving possible modified settings.

START **3= START** key. When the machine is ready it allows to launch it. By pressing start the conveyor is launched.

STOP **4= STOP** key. When the machine is launched it allows to take it back to the ready stage. By pressing STOP the conveyor is stopped.

5= key. It allows to:
- Enter the menu when the machine is in **stand-by**.
- Confirm the access to a menu item or a value modification when inside the menu.
- Increase the view on the machine and display the single module conditions when the machine is ready or in operation.

Fixed keys not back lit:

6= and keys. They allow to:
- Scroll the items when inside the menu.
- Modify (increase, decrease, scroll) the settable parameters.
- Move the view on the machine modules when the machine is ready or in operation.

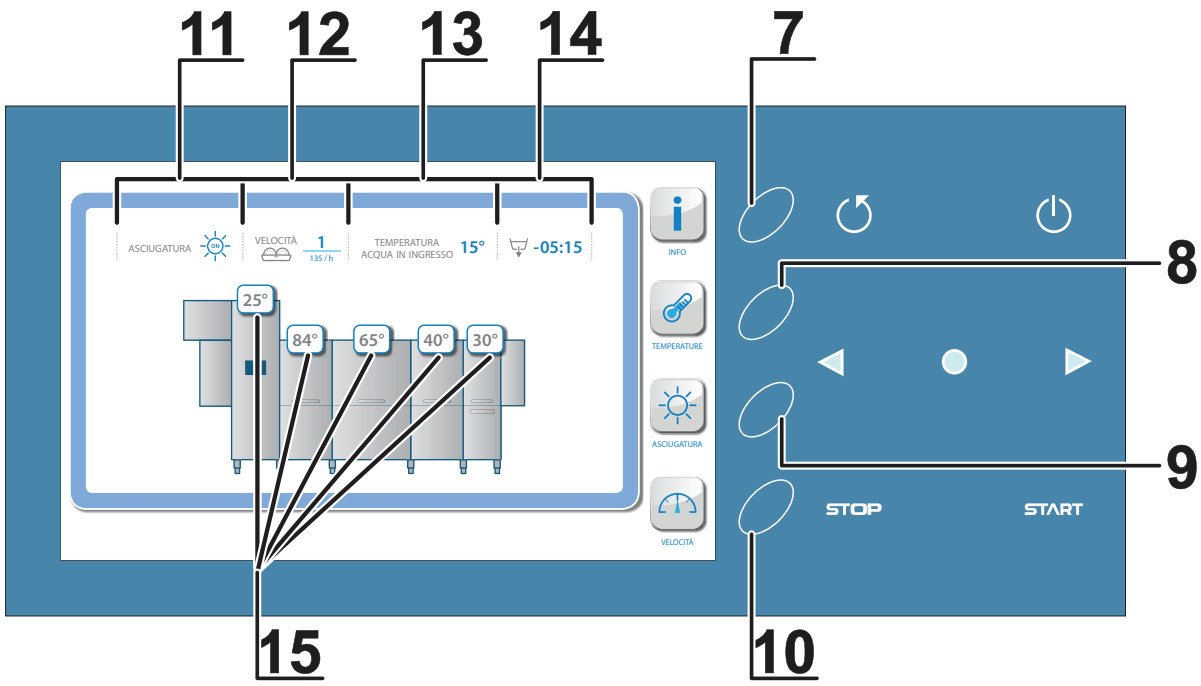
Variable function keys not back lit – MACHINE IN STAND-BY:

7= INFO key.
In case of alarm it allows to have more details. In other conditions it provides additional information about the current state of the machine.
To exit from **INFO** press the **RETURN** key.

8= SELF-CLEANING/HR WASHING key.
Only with the **SELF-CLEANING** optional or the **DRYER + HEAT RECOVERY** optional.
If it is pressed it starts the relative function. See paragraph **Available options** for more information.

9= DRAINING key.
Only with the **AUTOMATIC DRAIN** optional.
By pressing it the tank draining starts. See paragraph **Available options** for more information.

10= PROGRAMMING key
Only with the **AUTOMATIC DRAIN** optional if the quick-select **PROGRAMMING** key has been enabled from the user menu.



Variable function keys – MACHINE READY/ IN OPERATION - not back lit:

7= **INFO** key.
In case of alert or alarms it allows to have more details. In other conditions it provides additional information about the current state of the machine.

To exit from **INFO** press the **RETURN** key.

8= **TEMPERATURE** key.
It is present only if the quick-select key has been enabled from the user menu.
It allows to adjust the working temperature of the single modules.

9= **DRYER ON/OFF** key.
Enabled with the **DRYER + HEAT RECOVERY** optional.
It allows to turn on or turn off the heating for the **DRYER**. See paragraph **Available options** for more information.

10= **SPEED** key.
It allows to adjust the conveyor speed.

Notice area:

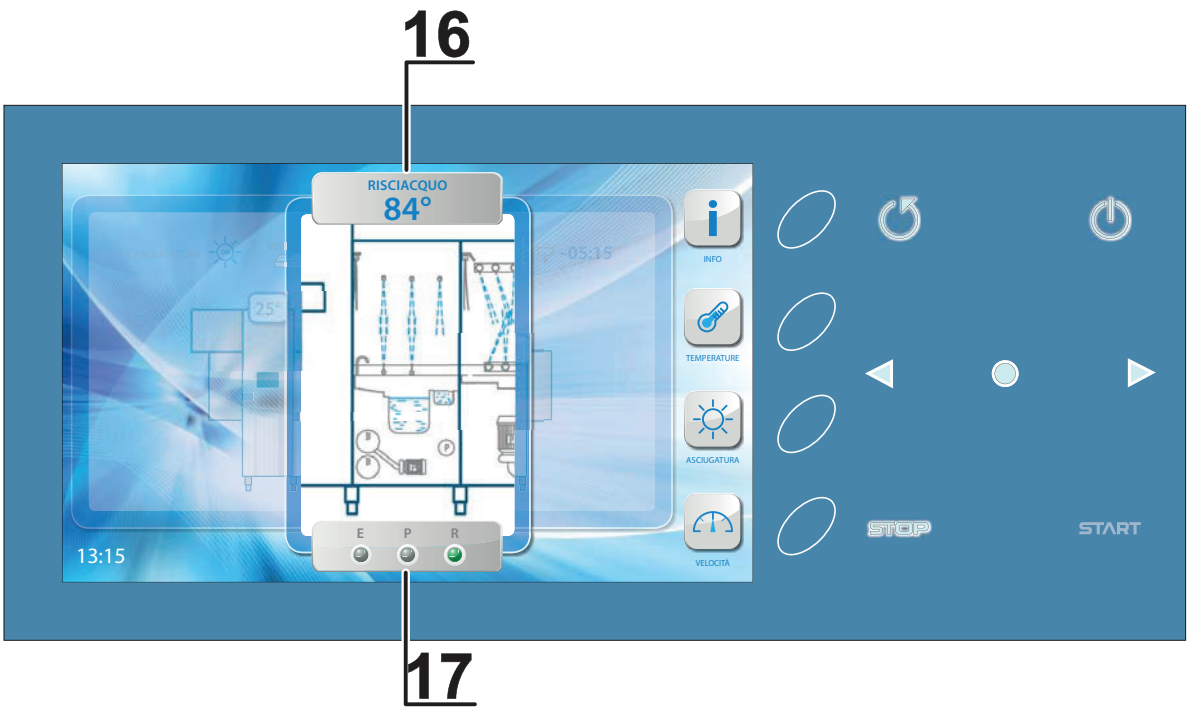
11= Enabled with the **DRYER + HEAT RECOVERY** optional.
State the conditions of the **DRYER** heaters.

12= State the racks/h productivity with the current speed set for the conveyor.

13= Enabled with the probe optional activated.
State the water temperature coming from the water network and entering the machine.

14= Enabled with the **AUTOMATIC DRAIN** optional and if the pre-wash draining function is set.
State the residual time needed before the machine proposes the draining of only the pre-wash tanks.

15= Measured temperatures for single modules.



Machine layout:

To access press the ◎ key (when the machine is ready or in operation). To move from a module to another one press keys **6** ◀ and/or **6** ▶.

16= Measured temperature of the displayed module.

17= Information about some module components:

E: green states that there is a basket in the module;
grey states that there is no basket in the module.

P: green states that the module pump is on and not in alarm;
red states a malfunctioning of the module pump.

R: green states that the module heating element is on and not in alarm;
red states a malfunctioning of the module heating element.

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 heating operations to be completed.
  Once the filling is finished, the complete heating of the machine starts.
  To ensure a proper washing, the start is not possible until the set temperatures are reached.
  The working temperatures can be seen on the display.
  The several phases are represented on the display with specific icons.
- When the heating is finished, use the control panel to start the machine.

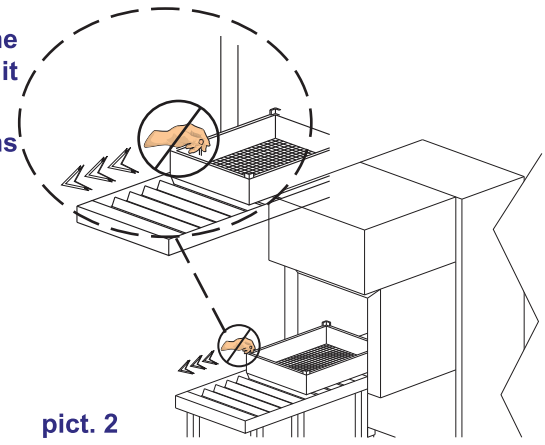
Washing

- To set the desired working speed press the speed key  on the display and set a suitable speed for the type of work to be carried out.
  There are ten possible settings:
  Speed 1 (MIN): intensive wash.
  Speed from 2 to 6 (NORMAL): dedicated to the washing of the average dirt.
  Speed from 7 to 10 (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.
- Press **START 3** button to start the conveyor movement.
- Carry out the cleaning off.
  Place the baskets on the conveyor (see paragraph **Dishes and cutlery loading** - pic. 3 - 4).
  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 (**H** - if there is).
  ►Thermostatically controlled temperature wash **L**.
  ►Double 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). It is always combined with the heat recovery **F** optional.
  ►Baskets exit zone equipped with roller conveyor and limit switch.
- Push the **STOP 4** button to stop the operation.

WARNING: In case a dangerous situation occurs, push the emergency button **H**. The conveyor 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. 2).

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



pict. 2

End washing operations

- Press **STOP 4** key.
- Press key **1** .
- Drain the tanks.
  If there is not the **AUTOMATIC DRAIN** optional, open the doors and remove filters and overflows.
  If there is the **AUTOMATIC DRAIN** optional, press **DRAINING 9** key. The machine will start automatically the draining of the tanks.
- Once the draining is ended, turn off the wall-mounted main switch **V**.
- Shut the water supply valve(s).
- 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:

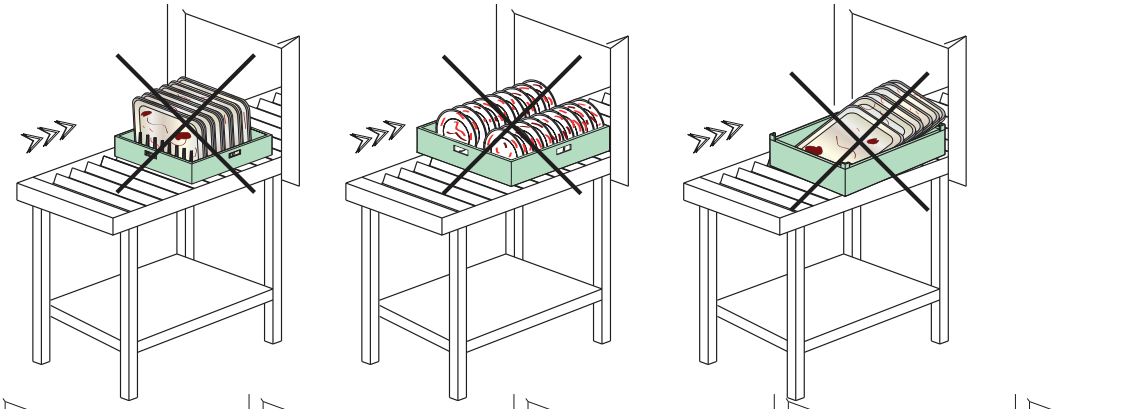
- Wooden crockery and cutlery or with wooden parts; wood wraps and loses its characteristics if it is exposed to high temperatures. In addition the glues used are not suitable for dishwashers; a consequence may be the handles detachment.
- Hand-made objects, valued vases or decorated glasses.
- Plastic 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.

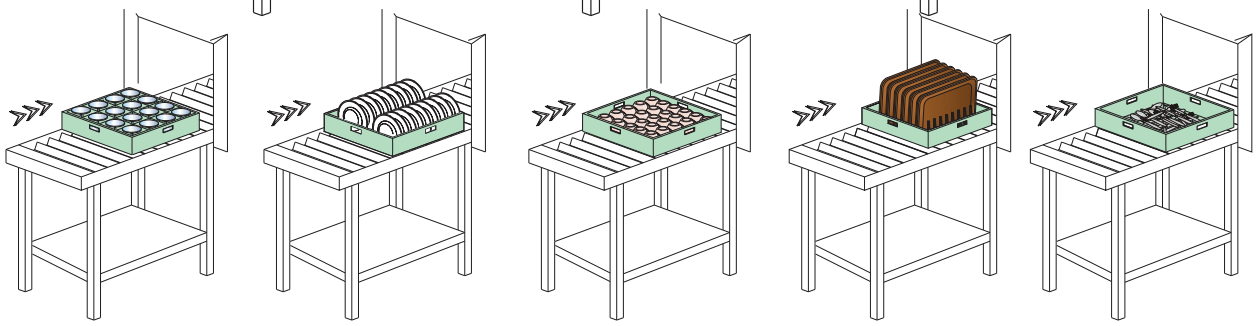
If after the washing the dishes are not clean or they have washing residuals (glasses, cups, bowls, etc., with liquid on the inside) it is mandatory to repeat the procedure.

NO ➔



pict. 3

YES ➔



pict. 4

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.

MAINTENANCE

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

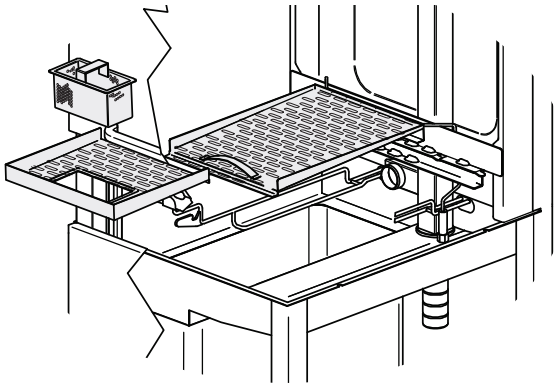
It is also suggested to contact cleaning product dealers for detailed information about methods and products for a periodical sanitizing of the machine.

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

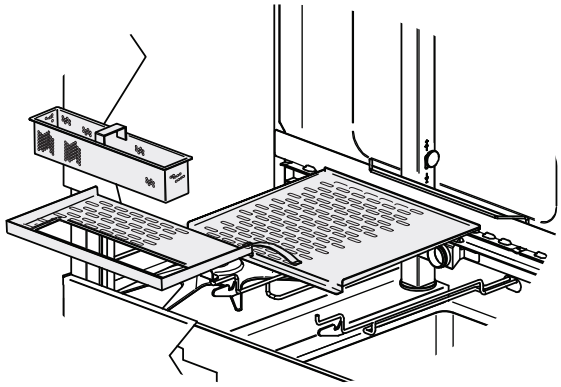
Routine maintenance

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 + Dryer clean the extractable filter (see photo 2).
  If there is, turn on the Heat Recovery battery Self-Cleaning. Press key **8**. During the process the washing residuals removed fall in the rinse section.
- With empty tank, extract the filters of the tanks and the pumps (see pict. 5 - 6). 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. 5



pict. 6

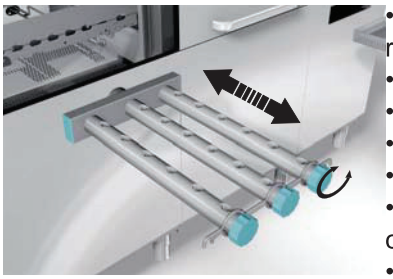


photo 1

• Extract the wash/rinse arms and carefully clean the nozzles and the dome filters of the rinse nozzles underneath running water.
•Reassemble all the parts and replace the arms in their seats (see photo 1).
• 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 3).
• It is suggested to leave the doors of the machine open at the end of the day.

Note: It is recommended to replace the water in the tank, by new filling, when the water is very dirty or at least twice a day.

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

Do not use pressure cleaning systems.

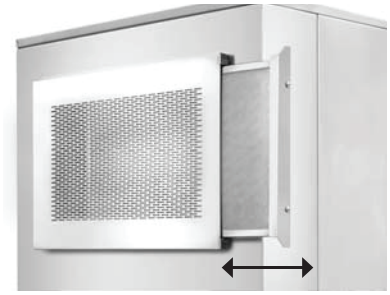


photo 8

photo 9

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.
- If there is, to clean the heat recovery coil.

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

DETERGENTS

Using detergent

The detergent must be of good quality, NON-CORROSIVE and 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.

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

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/UE and 2012/19/UE 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 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/UE.
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.

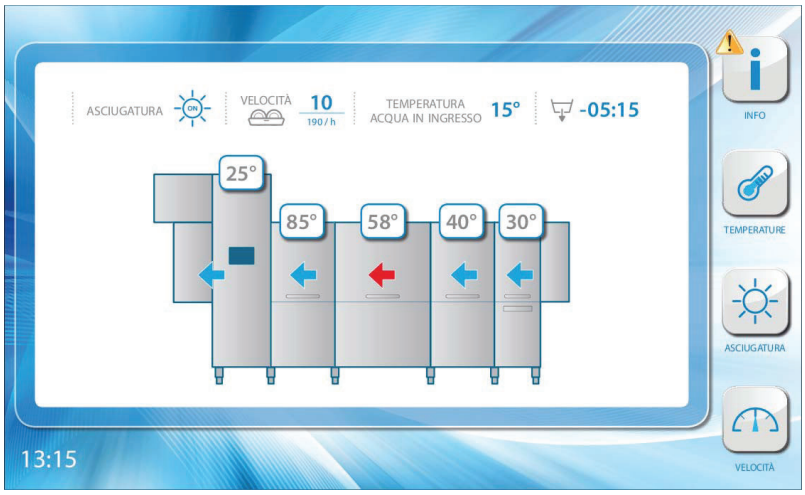
SIGNALS AND ALARMS

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 **INFO** key.

Press the **RETURN** key to go back to the main screen.



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.

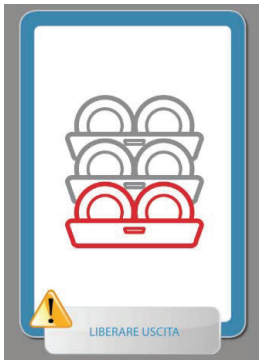
When **REMOVE THE RACKS FROM OUTLET** appears on the display it means that it is necessary to remove the baskets from the exiting shelf to continue the operation.

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**).

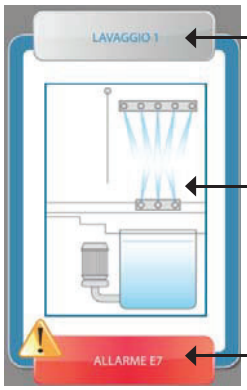
When **PROCEEDING WILL CANCEL THE CURRENT TIMER SETTING** appears on the display it means that the programmed filling and heating of the machine was set and you are trying to run an operation that deletes this setting.

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:



Module or component involved

Picture of the involved module or where the component is inserted

Alarm code

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

Alarm code

Information for the operator and actions to implement

If the alarm does not block the machine it is possible to continue the operation by pressing **RETURN** .
The machine will continue to signal the alarm until the resolution of the problem by:
- A symbol on the **INFO** key icon.

In this case by pressing the **INFO** key the current alarm is displayed.
- A red arrow pointing the module involved or the control panel on the machine layout.

If the alarm block the machine the operator will be able to carry out only two actions:
- Press the **INFO** key to have more information
- Press the **1** key to position the machine in stand-by.

Alarms description

Alphanumeric abbreviation	Alarm description
ALARM **B2**	BOILER 1 PROBE FAILURE (RINSE)
ALARM **B3**	BOILER 1 HEATING FAILURE (RINSE)
ALARM **B5**	BOILER 1 OVERTEMPERATURE (RINSE)
ALARM **B10**	BOILER 1 LOW TEMPERATURE (RINSE)
ALARM **C1**	PRE-RINSE FILLING FAILURE
ALARM **C6**	PRE-RINSE DRAINING FAILURE
ALARM **C7**	PRE-RINSE PUMP THERMAL PROTECTION
ALARM **E1**	WASH FILLING FAILURE
ALARM **E2**	WASH 1 PROBE FAILURE
ALARM **E3**	WASH 1 HEATING FAILURE
ALARM **E4**	WASH 1 LOW TEMPERATURE
ALARM **E5**	WASH 1 OVERTEMPERATURE
ALARM **E6**	WASH 1 DRAINING FAILURE
ALARM **E7**	WASH 1 PUMP THERMAL PROTECTION
ALARM **F2**	WASH 2 PROBE FAILURE
ALARM **F3**	WASH 2 HEATING FAILURE
ALARM **F4**	WASH 2 LOW TEMPERATURE
ALARM **F5**	WASH 2 OVERTEMPERATURE
ALARM **F7**	WASH 2 PUMP THERMAL PROTECTION
ALARM **G2**	WASH 3 PROBE FAILURE
ALARM **G3**	WASH 3 HEATING FAILURE
ALARM **G4**	WASH 3 LOW TEMPERATURE
ALARM **G5**	WASH 3 OVERTEMPERATURE
ALARM **G7**	WASH 3 PUMP THERMAL PROTECTION
ALARM **M1**	PRE-WASH FILLING FAILURE
ALARM **M2**	PRE-WASH PROBE FAILURE
ALARM **M3**	PRE-WASH COOLING FAILURE
ALARM **M5**	PRE-WASH OVERTEMPERATURE
ALARM **M6**	PRE-WASH DRAINING FAILURE
ALARM **M7**	PRE-WASH PUMP THERMAL PROTECTION
ALARM **N2**	PRE-WASH PROBE FAILURE
ALARM **N7**	PRE-WASH PUMP THERMAL PROTECTION
ALARM **U3**	MOTOR THERMAL PROTECTION (EXTRACTOR)
ALARM **U4**	MOTOR THERMAL PROTECTION (BLOWER)
ALARM **U7**	SELF-CLEANING PUMP THERMAL PROTECTION
ALARM **U10**	MOTORS THERMAL PROTECTION (OPTIONAL MOTORS)
ALARM **W1**	INVERTER THERMAL PROTECTION (CONVEYOR)
ALARM **W2**	INVERTER THERMAL PROTECTION (RINSE)
ALARM **X2**	INLET WATER PROBE FAILURE
ALARM **Z8**	GENERAL ALARM (EMERGENCY BUTTON PRESSED)
ALARM **Z14**	BREAK TANK FILLING FAILURE (RINSE)
ALARM **Z15**	BREAK TANK DRAINING FAILURE (RINSE)
ALARM **Z16**	WATER SUPPLY FAILURE (SELF-CLEANING)
ALARM **Z17**	WATER SUPPLY FAILURE (RINSE)

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 HEATING FAILURE

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM B5 OVERTEMPERATURE
It is recommended to turn OFF the machine and contact the Rhima Service Department.

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

ALARM C1 FILLING FAILURE
Please check that water inlet connection is working.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM C6 DRAINING FAILURE
Please check that the drain of the tank is not clogged.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM C7 PUMP THERMAL PROTECTION
Rinse results may be affected.
Please contact the Rhima Service Department.

**ALARM E1 FILLING FAILURE **
Please check that water inlet connection is working

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM E2 PROBE FAILURE
Washing results may be affected.
Please contact the Rhima Service Department.

ALARM E3 HEATING FAILURE

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM E4 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 persist, please contact the Rhima Service Department.

ALARM E5 OVERTERMPERATURE
It is recommended to turn OFF the machine and contact the Rhima Service Department.

ALARM E6 DRAINING FAILURE
Please check that the drain of the tanks is not clogged.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

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

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

ALARM F3 HEATING FAILURE

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM F4 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 persist, please contact the Rhima Service Department.

ALARM F5 OVERTEMPERATURE

It is recommended to turn OFF the machine and contact the Rhima Service Department.

ALARM F7 PUMP THERMAL PROTECTION

Washing results may be affected.
Please contact the Rhima Service Department.

ALARM G2 PROBE FAILURE

Washing results may be affected.
Please contact the Rhima Service Department.

ALARM G3 HEATING FAILURE

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM G4 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 persist, please contact the Rhima Service Department.

ALARM G5 OVERTEMPERATURE

It is recommended to turn OFF the machine and contact the Rhima Service Department.

ALARM G7 PUMP THERMAL PROTECTION

Washing results may be affected.
Please contact the Rhima Service Department.

ALARM M1 FILLING FAILURE

Please check that water inlet connection is working.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM M2 PROBE FAILURE

Washing results may be affected.
Please contact the Rhima Service Department.

ALARM M3 COOLING FAILURE

Please check that the cold water inlet connection is working.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM M5 OVERTEMPERATURE

Washing results may be affected.
Please check that the cold water inlet connection is working.
Should the alarm persist, please contact the Rhima Service Department.

ALARM M6 DRAINING FAILURE

Please check that the drain of the tanks is not clogged.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

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

ALARM N2 PROBE FAILURE
Please contact the Rhima Service Department.

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

ALARM U3 MOTOR THERMAL PROTECTION
It is recommended to suspend washing.
Please contact the Rhima Service Department.

ALARM U4 MOTOR THERMAL PROTECTION
Please contact the Rhima Service Department.

ALARM U7 MOTOR THERMAL PROTECTION
Please contact the Rhima Service Department.

ALARM U10 MOTOR THERMAL PROTECTION
Please contact the Rhima Service Department.

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

INVERTER W2 INVERTER THERMAL PROTECTION
Please contact the Rhima Service Department.

ALARM X2 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 means to turn the appliance ON/OFF.

ALARM Z14 FILLING FAILURE
Check if the water supply is working.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM Z15 DRAINING FAILURE
Please make sure that rinse nozzles are not clogged.

Please turn OFF the appliance, by pressing the **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM Z16 WATER SUPPLY FAILURE
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 **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, please contact the Rhima Service Department.

ALARM Z17 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 **1** key, and turn it ON again, after a few seconds.
Should the alarm persist, 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 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 + Dryer

Type of problem	Possible causes	Cure
Rinse water temperature <70°C	Dirty steam battery	Carry out **HR WASHING**. Contact the Rhima Service Department if the problem persists
Objects are not properly dried	Insufficient rinse aid dosage	Contact the Rhima Service Department to increase the dosage
	The basket is not suitable for the objects	Use a basket suitable for the objects
	Dirty steam battery	Carry out **HR WASHING**. Contact the Rhima Service Department if the problem persists
	Cold air comes out	Contact the Rhima Service Department to check the thermostats settings
	The fan direction is inverted due to incorrect connection of the power supply cable	Contact the Rhima Service Department

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 1.0

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

For all other washing