06/2017

Mod: DATIC20E/7(230/3)

Production code: T201BET23S

Diamond
catering equipment

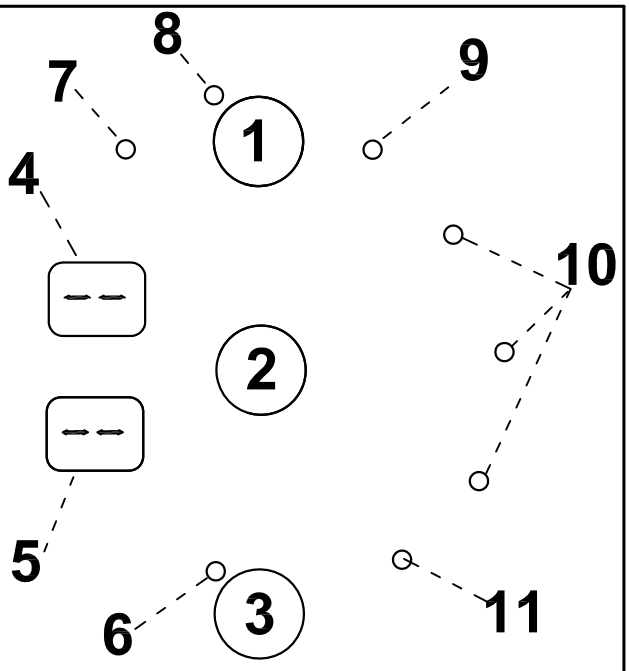


Fig.1

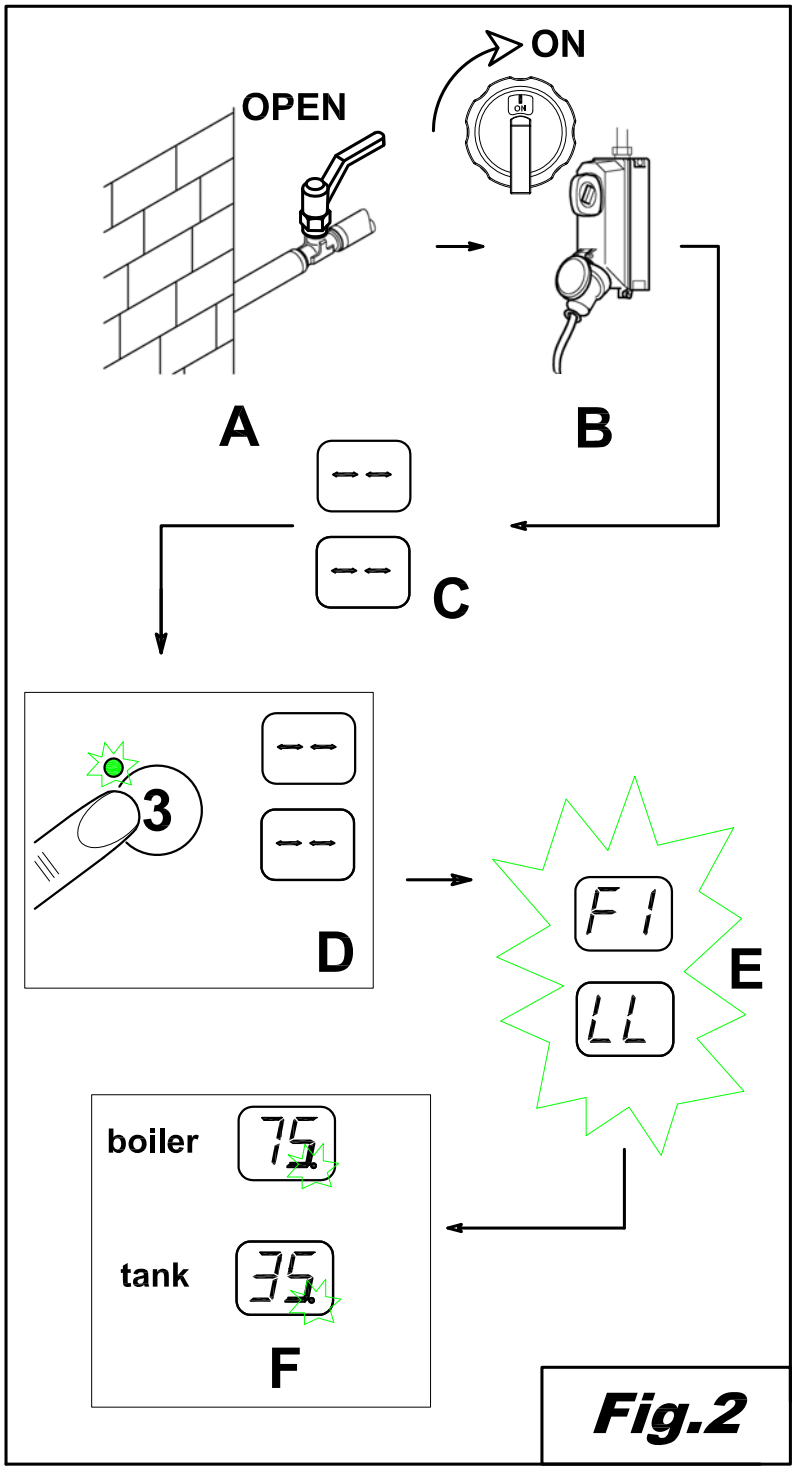


Fig.2

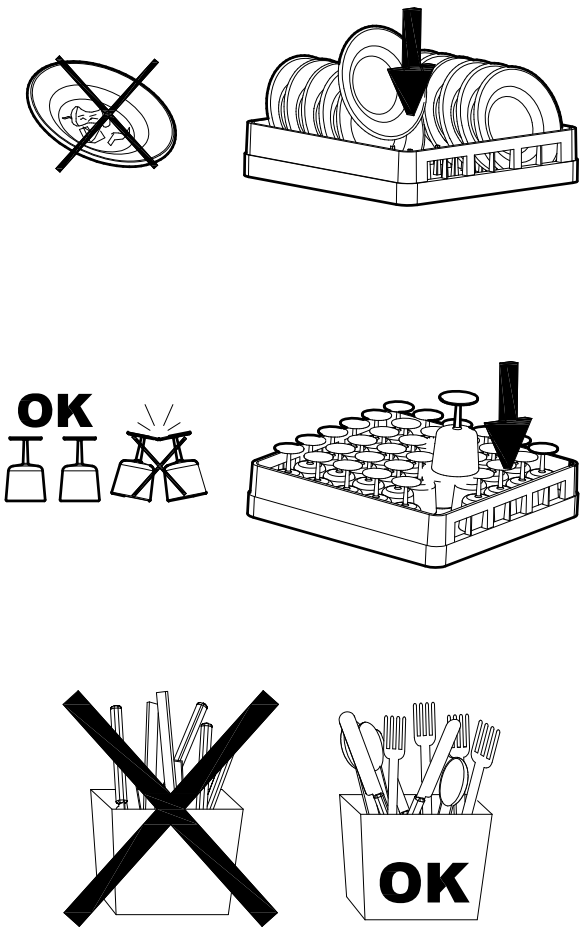


Fig.5

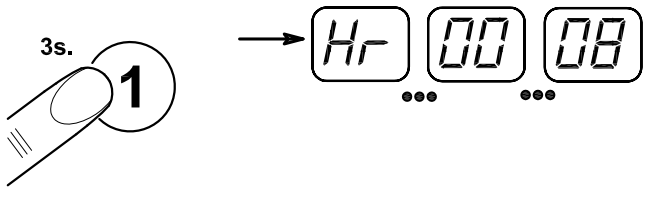


Fig.3

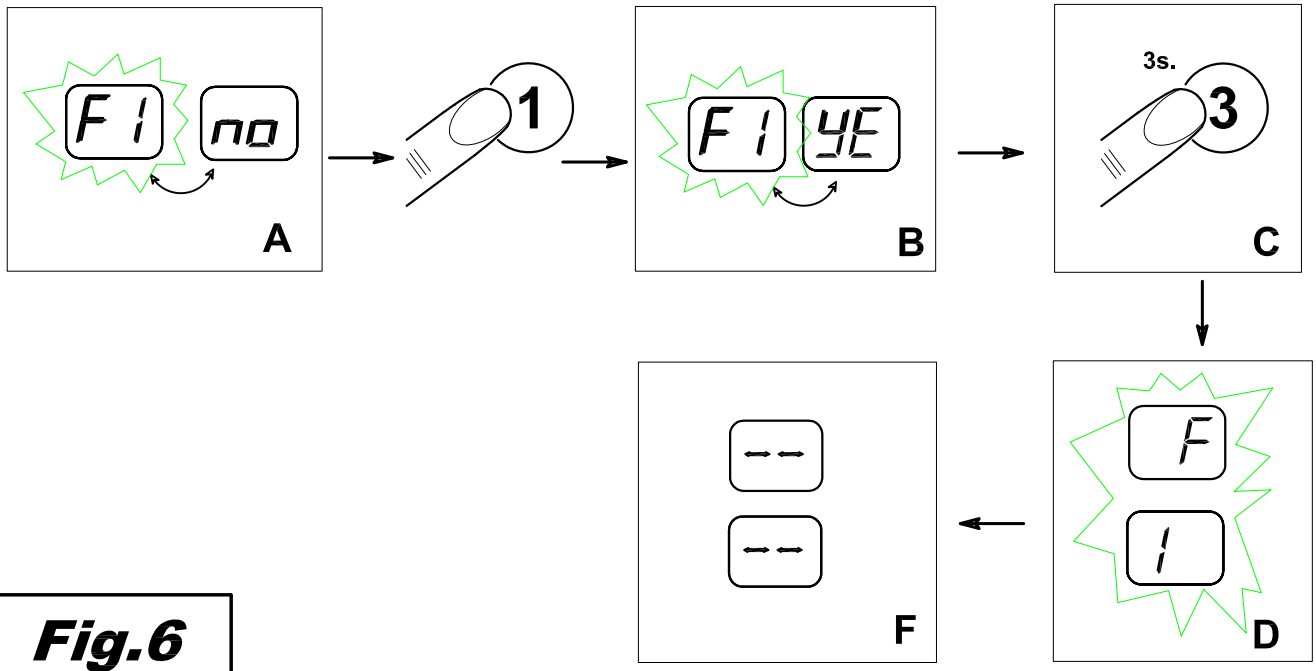

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Fig.6

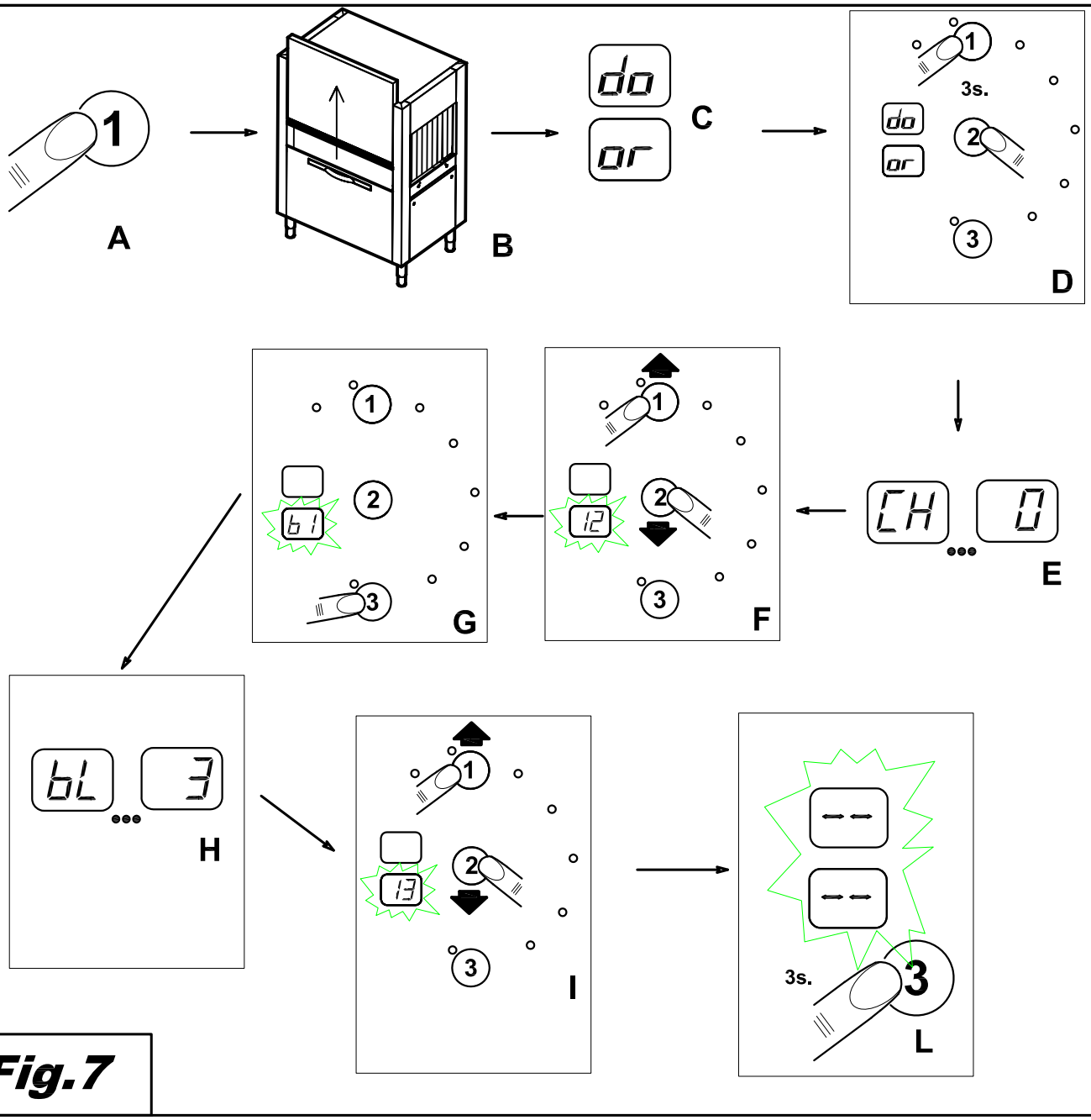
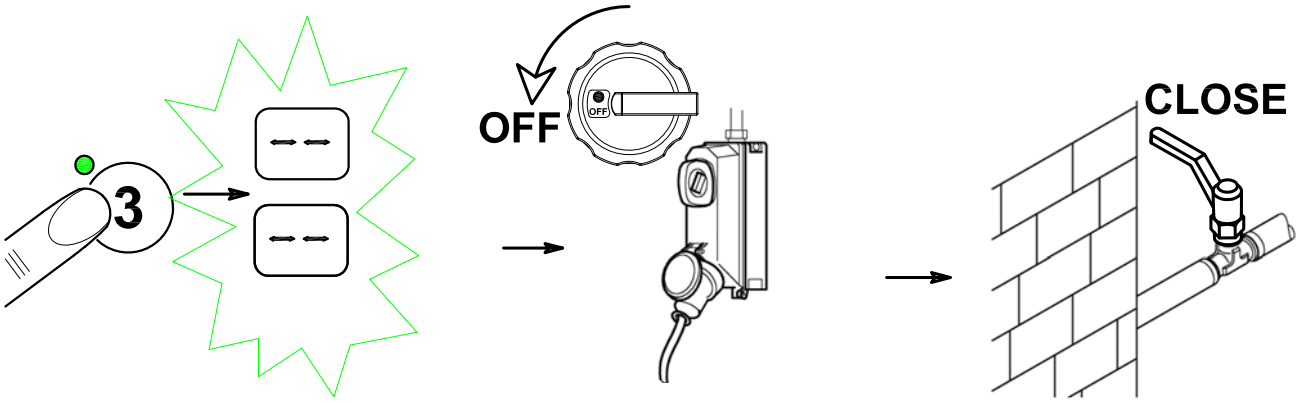
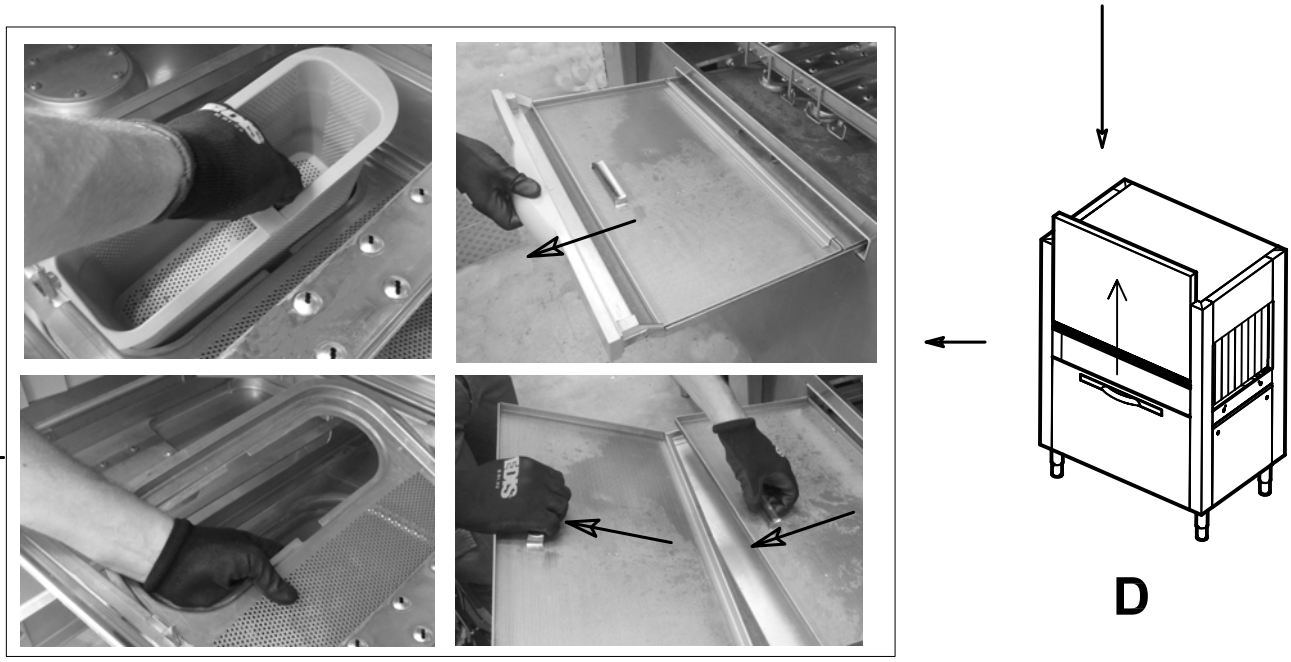

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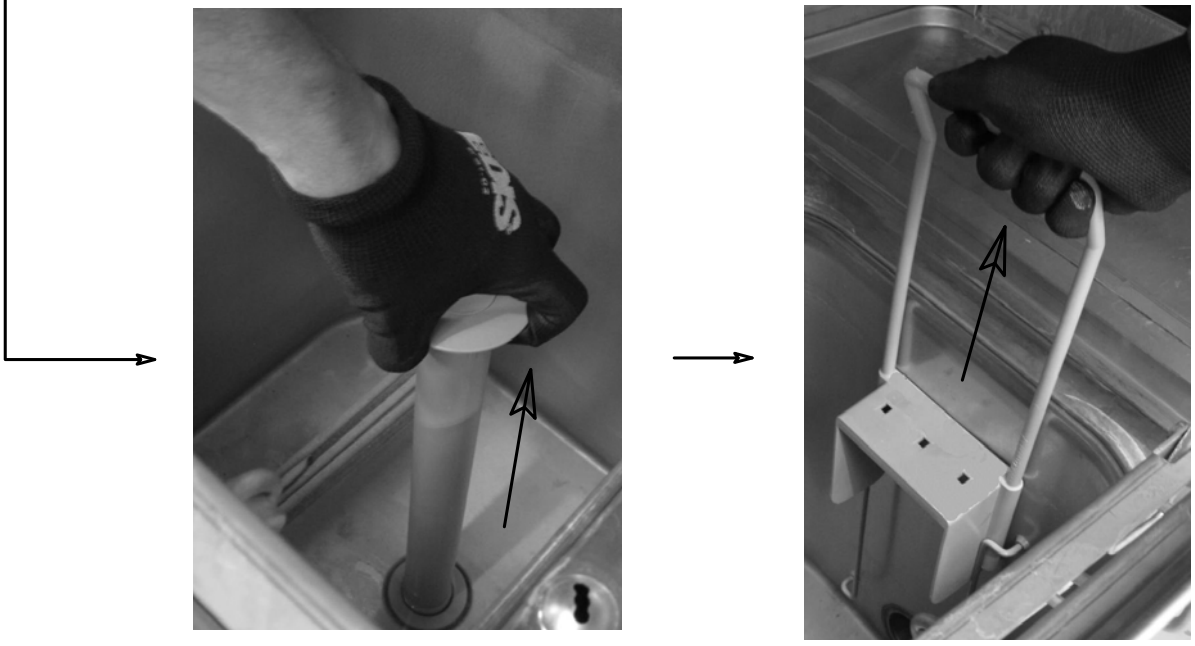
Fig.7



A B C



D E



F G

Fig.8

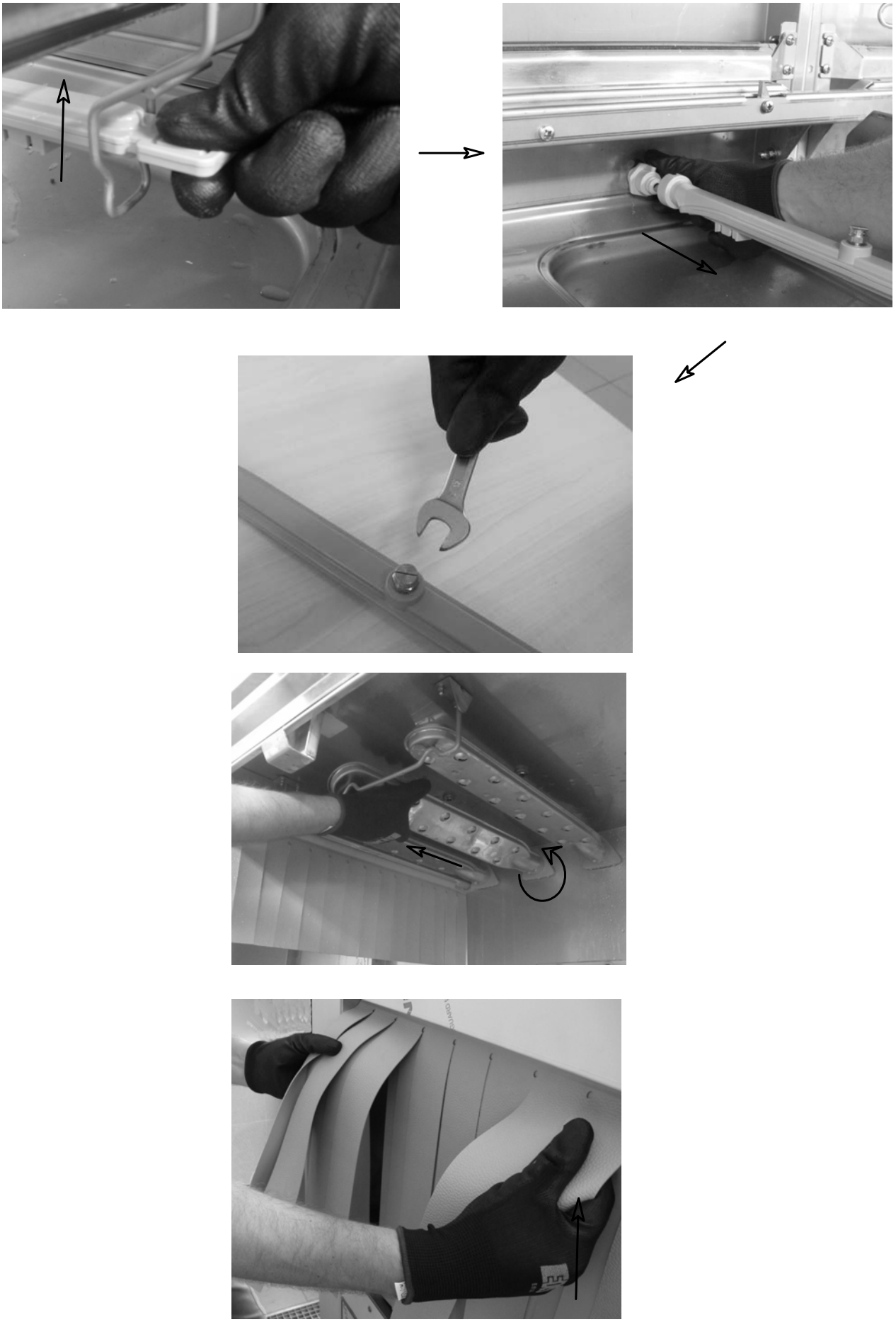


Fig.9

INDEX

CAP 1 FOREWORD 2

CAP 2 HANDLING AND TRANSPORTING THE MACHINE 2

2.1 TRANSPORTATION AND PACKAGING 2
2.2 HANDLING 2
2.3 STORAGE 3
2.4 DIMENSIONS 3

CAP 3 INSTALLATION 3

3.1 DANGER ZONES 3
3.2 ACOUSTIC PRESSURE LEVEL 4
3.3 UNPACKAGING AND POSITIONING 5
3.4 ENVIRONMENTAL CONDITIONS 5

CAP 4 INSTALLATION 5

4.1 ELECTRICAL CONNECTIONS 5
4.2 HYDRAULIC CONNECTION 6
4.3 CONNECTION TO THE WATER DISCHARGE GRID 7
4.4 CONNECTING THE LIMIT SWITCH 7
4.5 INSTALLATION OF DISPENSERS 8
4.6 COMMISSIONING 8
4.6.1 First boiler charging 8
4.7 CONTROLS 8
4.8 RECOMMENDATIONS ON THE SAFETY REGULATIONS TO BE ADOPTED 10

CAP 5 MACHINE DESCRIPTION 11

5.1 MACHINE DIAGRAM 11
5.2 DANGEROUS POINTS 12
5.3 SAFETY DEVICES 12
5.4 USE ACCORDING TO THE REGULATIONS 12

CAP 6 MACHINE USE 13

6.1 COMMAND DESCRIPTION 13
6.2 MACHINE START 13
6.3 HEATING 13
6.4 WASHING 13
6.5 WASHING PROGRAMME 13
6.6 STOP DEVICE 14
6.7 TEMPERATURE AND WORKING HOURS DISPLAY 14
6.8 LIMIT SWITCH DEVICE 14
6.9 REGULATIONS 14
6.9.1 temperatures 14
6.9.2 dispensers 15
6.10 USER MESSAGES 16
6.11 SELF-DIAGNOSIS 16
6.12 END OF WASHING OPERATIONS 17
6.13 POSITIONING THE DISHES 17

CAP 7 MAINTENANCE 18

7.1 GENERAL RULES 18
7.2 PERIODICAL MAINTENANCE 19

CAP 8 DISPOSAL 20

CAP 9 ENVIRONMENT 20

Cap 1 FOREWORD

The contents of this manual supply important safety information throughout the various phases of installation, use and maintenance.
Failure to follow the instructions contained in the attached documentation may compromise the safety of the appliance and immediately annul its warranty.

Warnings:

Carefully store all the documents near the appliance. Hand them to the technicians and workers in charge of use and make sure they are kept well preserved over time, at a safe location, ideally with copies for frequent consultation.

The operator must read, understand and learn the present manual before carrying out any operation on the device.

This piece of equipment is destined exclusively to the professional washing of tableware for large numbers of people. Therefore, its use and maintenance are only to be carried out by well-trained personnel, committed to following the manufacturer's instructions.

Warranty:

The manufacturer declines all responsibility and warranty for damages to things or persons derived from failure to follow the instructions provided herein or from improper use of the machine.

Failure to follow the indications contained in the attached documents may compromise the safety of the device and cause the warranty to be immediately annulled.

Installation and repairs carried out by unauthorised technicians, or the use of non-original spare parts, will cause the warranty to be immediately annulled.

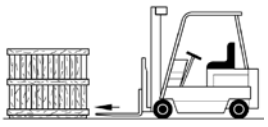
Cap 2 HANDLING AND TRANSPORTING THE MACHINE



2.1 Transportation and packaging

The machines can be transported in two manners:
- on lorries
- in containers

Both situations require the same kind of packaging.



2.2 Handling

- The machines must be handled with care, using a forklift truck or a hand pallet truck.
- The hoisting points are marked on the machine by adhesive labels.



- During transportation, it is forbidden to remain near the machine, as it may tilt and cause serious harm to persons nearby.
- Accidents may involve impact, entanglement, and trapping by the machine during handling and storage of the machine itself.

2.3 Storage

Storage methods for materials must include pallet, containers, conveyor belts, vehicles, lifting equipment and devices suitable for the prevention of damages caused by vibration, impact, abrasion, corrosion, temperature or any other condition that may occur. The parts stored must be periodically inspected for deterioration.

Storage:

Transportation and deposit: between -10° C and 55° C, with peaks of up to 70° C (max 24 hours)

2.4 Dimensions

The machines of the rack conveyor line are available in various models, whose layouts are attached to this document, including the dimensions of each machine.

Cap 3 INSTALLATION

3.1 Danger zones

Definition of danger zone and how (see figures on the next page) hazards may occur; general description of the protection measures adopted.



MOVING PARTS

Risk of entangling and dragging
- On the conveyor



HOT

High temperature hazard
- on the doors that give access to the washing/rinsing areas
- on the walls of the drying area
- on the boiler, during installation and maintenance operations



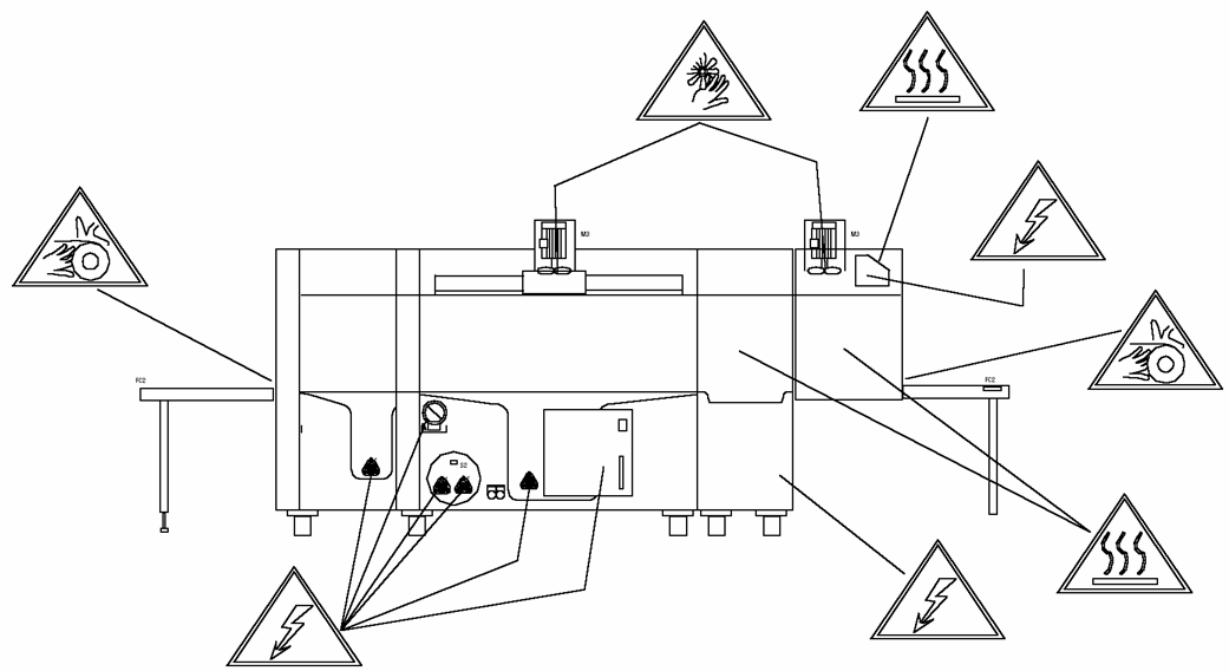
DANGEROUS POWER VOLTAGE

Dangerous voltage
- general switchboard
- electro-pump
- fan
- electric resistances

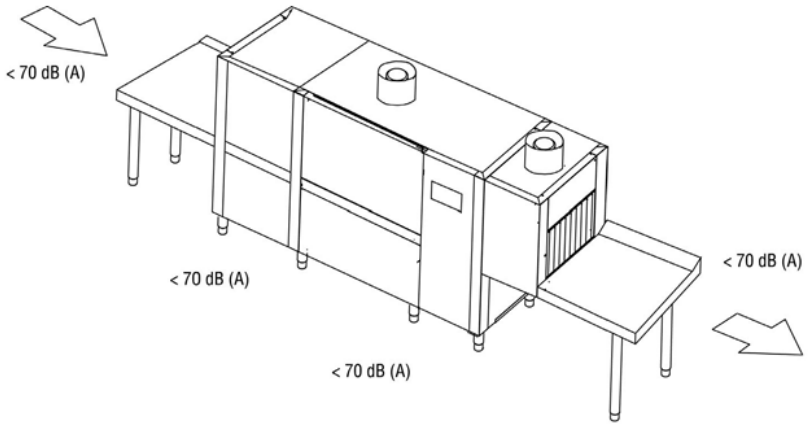


Shearing hazard
- on the fan of the suction unit

The machine is equipped with bulkheads that limit access to the inner part of the machine and to moving parts. The bulkheads are fixed by screws.



3.2 Acoustic pressure level

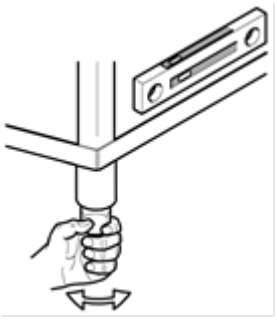


3.3 Unpackaging and positioning

When the machine is received, open the packaging and check the machine and its accessories for damage occurred during transportation. If any damages are detected, immediately report to the transportation company and do not proceed with installation: seek the assistance of qualified, authorised personnel.

The manufacturer cannot be held responsible for any damage occurred during transportation.

Packaging elements (plastic bags, Styrofoam, strips of wood, nails etc) must be kept away from the reach of children, as they are potentially hazardous.



Position the machine according to the indications supplied by the general installation layout, supplied separately, making sure its position is correct regarding maintenance needs.

Screw the feet to the supports and place the machine in its proper position. Adjust the height of the feet to level the machine. As these machines are long, use a spirit level.

Warning:
While positioning the machine, do not drag it on the floor, as this may damage its structure.

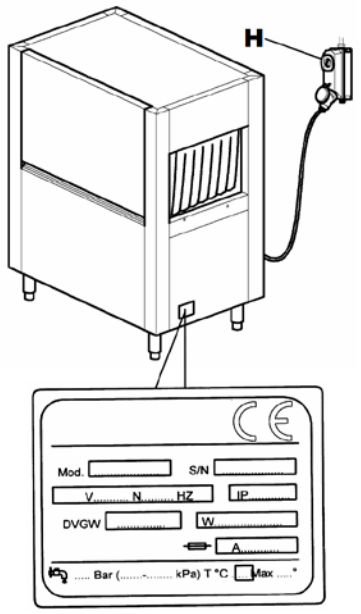
The floor must be dimensioned taking into consideration the overall weight of the machine. The floor must be levelled.

3.4 Environmental conditions

- Environmental temperature: 40° C max/4° C min (average: 30°C)
- Altitude: up to 2,000 metres
- Relative humidity: Max 30% at 40° C/max 90% at 20° C

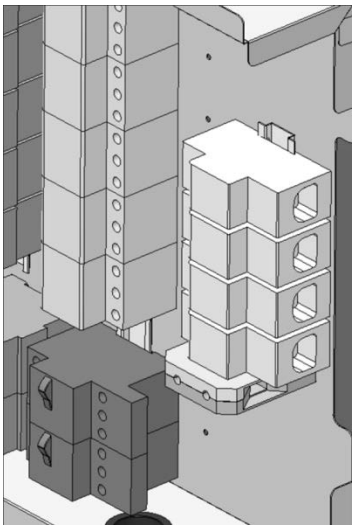
Cap 4 INSTALLATION

4.1 Electrical connections



- **Caution! Installation must only be carried out by specialised technicians!**

- Prior to connecting the equipment, make sure that both the voltage and frequency of the power grid correspond to those indicated in the information plate on the lateral panel of the machine.
- It is obligatory to connect the machine to the power grid by means of a dedicated omnipolar switch, in conformity with the safety regulations in force, of the automatic type, with fuses with at least 3 mm of opening between contacts. The above mentioned switch, not supplied with the machine, must be installed on the wall, in such a position that it can be easily reached, at a height between 0.6 and 1.7 m.
- Prior to connecting the machine to the power grid, make sure the power supply line is not live.



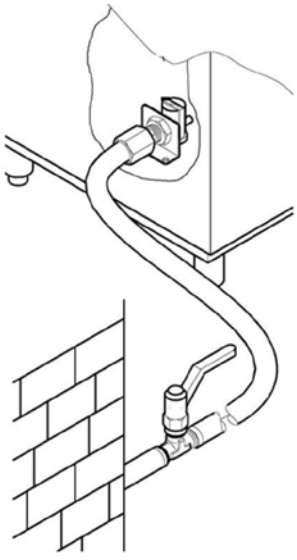
- Remove the anterior panel and the protection of the switchboard by loosening the screws.
- Introduce the power cable through the cable gland.
- Connect the cable to the terminals on the board, as indicated in the wiring diagram attached.
- If the Neutral and Earth cables are connected incorrectly, the machine may suffer irreversible damage, and the warranty may be annulled!
- Check that the cables on the contactors, thermal protections etc are well tightened, as the screws may have loosened during transportation.
- Place the anterior panel back in position and the control panel, using the screws included.

- The power supply cable, exclusively of the H07RN-F type, must never be tensioned or crushed during normal use or routine maintenance.
- In addition, the machine must be installed as part of an equipotential system, connected through a screw marked with the symbol ⏚
- The equipotential conductor must have a section of 10 mm^2.

⚠ It is forbidden to use multiple sockets, adaptors, cables of unsuitable type or section, or with extension junctions not in conformity with the current regulations regarding electric systems.

4.2 Hydraulic connection

Prepare the area according to the installation diagram attached.



Prior to connecting the machine, make sure that there is a gate valve installed between the water mains and the machine, to make it possible to interrupt water supply in case of need or when carrying out repairs.

In addition, make sure that the supply capacity is not inferior to 20 l/min.

Make sure that the incoming water temperature and pressure correspond to the values indicated in the technical characteristics tag.

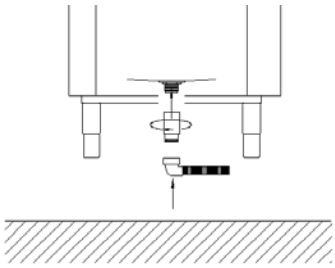
If the water is harder than the value indicated in the tag, it is advisable to install a water softener uphill to the power supply solenoid valve of the machine.

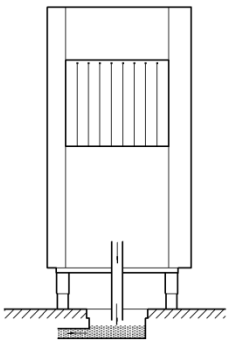
If the concentration of residual minerals in the conductibility water is very high, it is advisable to install a demineralisation system calibrated to obtain a residual water hardness compatible with the values in the table below.

WARNING! High concentrations of sodium chloride may cause rust.

	Characteristics		Min	Max
Hardness	French hardness	f	5	10
	German hardness	°dH	4	7.5
	English hardness	°e	5	9.5
Residual minerals	Parts per million	ppm	70	140
	Maximum	mg/l	300/400	

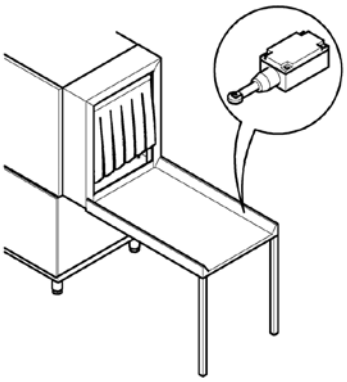
4.3 Connection to the water discharge grid





- Conveyor belt dish washing machines operate continuously. This means they require particularly efficient and well-working discharge systems.
- For information on the position of the discharge outlets, please refer to the installation diagram attached.
- Connect the discharge outlets of the machine to the mains, using tubes resistant to continuous temperatures of 70° C.
- Use the discharge tube and the connection supplied with the machine.
- The discharge system must include a siphon.

4.4 Connecting the limit switch



It is OBLIGATORY to install a limit switch in order to use the machine.

- The limit switch must be installed on the outgoing plane.
- The switch must be mechanically fixed to the machine in a manner suitable for its application.
- It is advisable to use a limit switch with lever activation with washer, to increase contact surface and reduce the effect of mechanical contrast.
- It is obligatory to verify its proper functioning with all the baskets in use in the area.
- It must have a protection of at least IP55.
- The switch must be in its positive mode (contact normally closed).
- Its minimum rated capacity must be 240 V 1.5 A.
- The advised mechanical duration is 10,000,000 cycles.

4.5 Installation of dispensers

The machine is equipped with specific outlets for the dispensers for rinse aid and dish washing liquid.
Connect the dispensers according to the wiring diagram, to ensure that the machine works properly.
Both the rinse aid and the washing liquid must be dosed by the automatic dispensers.
The amount of both products is established by the installation technician, according to water hardness.
The technician
is responsible for calibrating the dispensers.
For the initial filling of the dosing circuit and for its relative regulations, please refer to the "Regulations" paragraph.

- The level of liquids in the containers must never be allowed to drop to empty levels.
- The dispensers must never be filled with corrosive or soiled products.
- It is forbidden to use chlorine-based products, as they cause the formation of chlorine; in concentrations above 50 ppm, they may lead to corrosion.
- It is not advisable to dispense the products manually.
- For any other installation, please refer to the wiring and installation diagrams attached.
- The machine does not support multi-voltage dispensers and/or with more than 5 A of absorption per outlet.
  If you decide to use this kind of dispenser, it must be connected to an external 16 A relay.

4.6 COMMISSIONING

4.6.1 First boiler charging

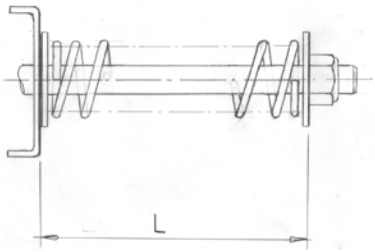
Reference: Figures 2 and 6

- Open the gate valve of the water supply system (Fig. 2/A)
- Supply the machine with power by switching on the main switch (Fig. 2/B)
- The display shows four horizontal bars (fig.2/C).
- Press the on button (3) to turn on the machine (fig.2/D).
- The display shows the alternating message "**FI**" "**no**" (fig.6/A).
- Press the on button (1) to select "**yE**" (fig.6 / A).
- Confirm by pressing and holding the button for a few seconds (3). (Fig.6 / C).
- When the dishwasher is turned on the boiler automatically starts heating and the display shows a flashing message "FI" (fig.6 / D) and the charging lamp (9) flashes.
- When the display shows the alternating messages "**LoAd**" "**End**", it means the loading phase is concluded, and the machine is ready to be switched on (Fig.6 / E-F).

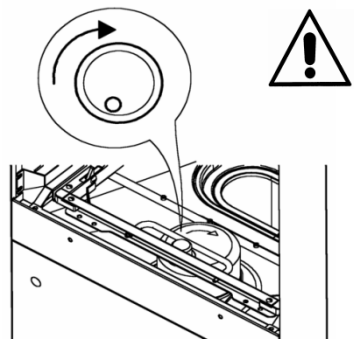
4.7 Controls

- Make sure that the level of water in the washing tank, once filled, is 1-2 cm below the overflow level.
- Make sure that the temperature of the washing and rinsing tank is in accordance with the settings.
- Check the dispensers for proper function.
- Make sure the rinsing economiser is working well: it must start dispensing hot water as soon as a basket arrives beneath the rinsing jets, and make the hot water flow stop when the basket moves away.
- Make sure the limit switch is working. The switch must block the functioning of the advancement motor and of the pump whenever a basket reaches the end of the plane. Once the basket is removed, the functioning must resume.
- Check the rotation direction of the pumps. If they are turning in the opposite direction, invert the

two phases of the power supply cable.



- Check the regulation of the mechanical safety system of the conveyor, which must be adjusted taking into account the overall length of the machine and of the output tables measured by themselves.
  A full load of baskets full of plates should not block the advancement of the conveyor.
  To make the regulation, turn the screw on the bracket that supports the conveying motion unit.
  The advised L length must range from 60 to 75 mm (see figure).
  Please contact your assistance centre for complex applications.



- Make sure that the rotation direction corresponds to the figure and to the central motion of the conveyor.

WARNING: The mechanical safety will not work efficiently if the rotation direction is incorrect.

- Check the manometer during rinsing. If necessary, adjust the pressure regulator and set the value as indicated in the table:

Version	Litres/hour Baskets/hour	bar	
No pre-wash	160	0.6	
With pre-wash	270	0.7	

Failure to carry out these checks will automatically annul the warranty.

END OF INSTALLATION

- The installation technician must inform the manufacturer in case of functioning and/or safety anomalies observed during the initial testing.
- The machine can only be used once installation is complete.
- The technician must issue a declaration of work carried out according to the rules of the trade and to the laws in force.

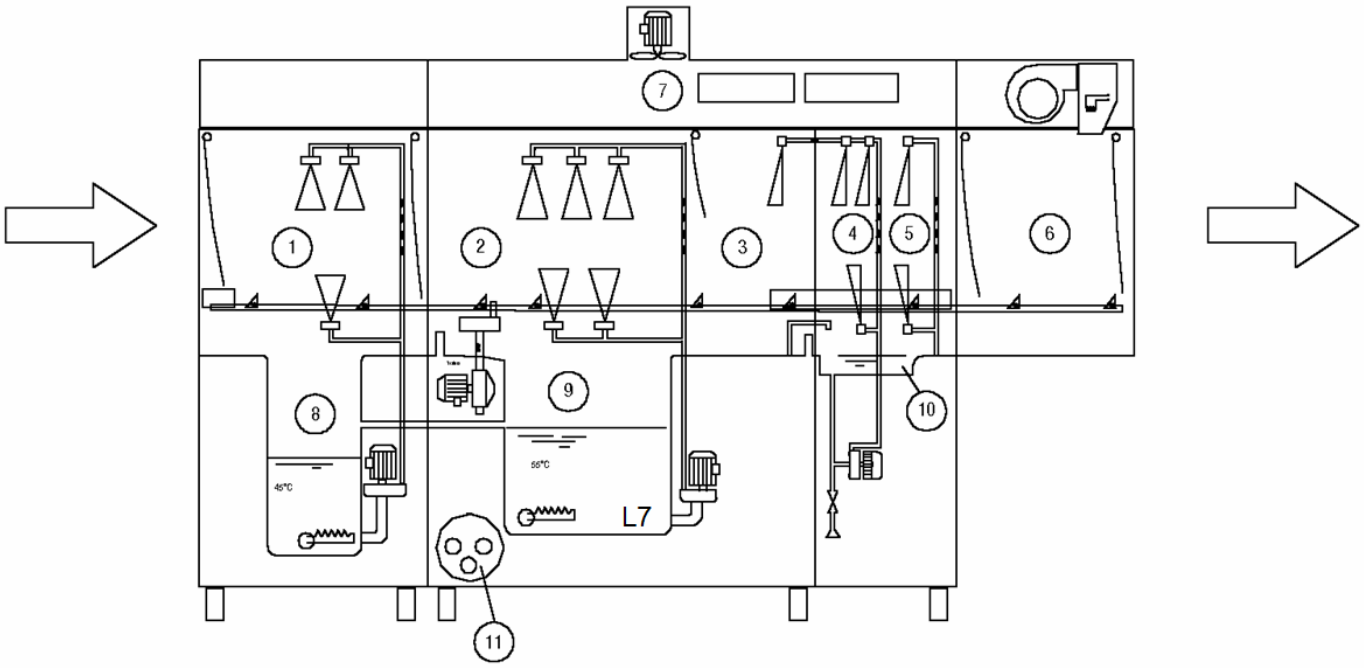
4.8 Recommendations on the safety regulations to be adopted

- This machine must only be destined to the use for which it has been expressly designed. Any other use must be considered improper and therefore dangerous.
- Do not leave the machine exposed to atmospheric agents (rain, sun etc).
- Do not allow the machine to be used by children or mentally disabled persons.
- The machine must only be used by trained personnel.
- Keep the machine in perfect functioning conditions and always use the several protections it is equipped with; ordinary maintenance must be performed by professionally qualified personnel. In particular, all safety devices must be periodically inspected by the maintenance technician.
- Prior to connecting the machine, make sure the information on the plates corresponds to the information regarding the power and water grids.
- Make sure the machine is perfectly earthed, as defined by the current laws in force. This fundamental safety requisite must absolutely be respected. In case of doubt, request an accurate inspection of the entire machine by professionally qualified personnel.
- Make sure that the power capacity of the system is suitable for the maximum power absorbed by the machine. In case of doubt, seek the assistance of a qualified person, who must make sure that the section of the system cables is suitable for the power absorbed by the device.
- The incoming power grid cables (not included) for the main switch must be suitably marked for danger.
- The power cable of this machine must be of the H07RN-F type.
- Prior to carrying out any maintenance operation, cut off power from the machine using the power switch.
- In case of malfunctioning, switch off the main power switch and do not attempt any direct repair intervention.
- The machine must only be repaired by the manufacturer or by an authorised assistance centre, using only original parts.
- Failure to follow these indications may compromise the safety of the machine.
- Do not use water to extinguish fires on the electric parts. Use a powder fire extinguisher.
- The machine must not be left under voltage when not in use.
- Do not modify the protections, and only remove them if the machine is not working and is cut off from the power supply.
- If you decide not to use a machine of this kind any longer, it is advisable to make it impossible to use by removing its power cable, after unplugging it from the mains.
- When cleaning the machine, strictly follow all the instructions supplied in the manufacturer's booklet.
- Do not obstruct the aspiration or dissipation grids.
- Do not operate the machine without its filters.
- After cutting off the machine from the power supply, only qualified personnel may access the control board.
- Do not submerge your unprotected hands in the water-detergent mixture. In case of accidental contact with the eyes, rinse with abundant clean water and seek medical advice.
- Do not open the doors too quickly. Wait at least 15 seconds after the engines have stopped.
- When opening the doors, make sure they are well hooked to their supports.
- Should the conveying system stop due to the safety device, remove the obstacle that cause the block before resuming operation.
- Make sure that the objects being washed are dishwasher-safe.
- Do not use dispensing devices or other devices not intended by the manufacturer, which may alter the safety or functionality characteristics of the machine.
- Use only anti-foam detergents specific for dishes, in the doses recommended by the manufacturer, according to the hardness of the water and the capacity of the tank.
- It is forbidden to use acid or corrosive products to clean the machine or to wash the dishes.
- NEVER use chips, steel wool or steel brushes to wash stainless steel items.
- In order to protect the environment, we advise against the use of corrosive or polluting products. Do not exceed the recommended dose.

- The personnel in charge of handling the dishes must absolutely follow the hygiene regulations in force after the washing.
- To pick up an object that fell inside the machine, stop the machine and switch it off.
- Do not get near the moving parts with dangling jewellery or loose sleeves, to avoid tangling.
- Do not use the machine as support surface for objects or tools.
- Always switch the machine off when not in use, using the wall-mounted omnipolar switch.
- Cut off water supply every time the machine is not in use.
- Immediately switch the machine off if any water leaks are detected.
- Keep in mind that the machine must never be used without its protection curtains (entrance, exit, and intermediary positions).
- It is forbidden to remove the basket from the machine before the basket is completely out of the machine.

Cap 5 MACHINE DESCRIPTION

5.1 Machine diagram



1 Pre-wash chamber
2 Washing chamber
3 Pre-rinse chamber
4 First rinse chamber
5 Final rinsing chamber
6 Drying chamber
7 Steam extraction and recovery zone
8 Pre-wash tank
9 Washing tank
10 Rinsing tank
11 Boiler

Conveying belt washing machines are manufactured with high-quality materials: AISI 304 stainless steel for the washing tanks and stainless steel for the remaining parts.

- In section 1 (pre-wash), the dishes are submitted to an initial removal of dirt.
- In section 2 (wash), the dishes are actually washed.
- Rinsing takes place in sections 3-5.
- The dishes are dried in section 6.
- In section 7, steam is extracted or heat is recovered.
- The baskets are automatically conveyed through the sections thanks to a lateral conveyor.



5.2 Dangerous points

A dangerous point or dangerous area of the machine is an area in which accidents may occur in case of failure to follow the instructions.

- If the conveyor stops during regular functioning, press the line button. Only restart the machine once the cause of the blockage has been identified and removed.
- It is forbidden and very dangerous to access the internal part of the machine from the entrance or exit of the conveyor when the machine is on and in motion.
- It is forbidden and very dangerous to make repairs to the conveying system and to the electric users when the machine is working.
- It is forbidden to use the machine without the surveillance of an operator.
- Do not submerge your hands in the water in the tanks.
- It is forbidden to access the switch to deactivate or activate the machine with wet hands.
- It is absolutely forbidden to access the internal part of the electric box.

5.3 Safety devices

- On the doors there are magnetic switches that interrupt pre-wash, wash, rinse and basket conveying, when opened.
- Protection against unexpected start-up. If the machine accidentally stops due to lack of electricity, it will not resume automatically when the power returns.
- Thermal protections for electro-pumps and motors, guaranteeing their integrity in case of short-circuit and overload.
- Magneto-thermal protections or fuses for each heating element, protecting elements from the dangers of short-circuits and overload.
- Boiler safety thermostat. In case of malfunctioning of a thermostat for temperature control, a second safety thermostat will intervene and interrupt the functioning of heating elements.
- Safety microswitch on the conveyor. If the conveying stops due to accidental causes, the microswitch installed near the support of the motor reducer will interrupt the conveying function.
- Safety door stop. When the doors are opened, the hooks prevent them from falling if a spring should break.
- Low-voltage commands.

5.4 Use according to the regulations

- Conveying machines are expressly designed to wash dishes, glasses, cups, flatware and similar items together with the basket in which they are placed. Any other use is considered to be not in accordance with the regulations.
- It is imperative to respect the manufacturer's safety, use and maintenance regulations.
- It is imperative to respect the suitable regulations to prevent accidents, and further acknowledged safety technique regulations.
- The machine must only be used by personnel suitably trained to avoid hazards.
- The machine must only be used with original manufacturer's accessories and spare parts.

Cap 6 MACHINE USE

6.1 Command description

With reference to Fig. 1

1	START/STOP BUTTON	**7**	REACHED WASH TEMPERATURE LIGHT
2	PROGRAM SELECTION BUTTON	**8**	WASH IN PROGRESS LIGHT
3	ON/OFF LINE BUTTON	**9**	WATER LOADING LIGHT
4	RINSE TEMPERATURE DISPLAY	**10**	SELECTED WASH PROGRAM LIGHT
5	WASH TEMPERATURE DISPLAY	**11**	LIMIT SWITCH ACTIVATED LIGHT
6	MACHINE ON LIGHT		

6.2 Machine start

Reference to Figure 2

- Open the gate valve of the water supply system (Fig. 2/A)
- Supply the machine with power by switching on the main switch (Fig. 2/B)
- The display will show 4 horizontal bars (Fig. 2/C)
- Press the line button (1) to switch the machine on. (Fig. 2/D)
- The display will flash the message "**FILL**" and the machine will start loading water (Fig. 2/E). During this phase, the water filling light flashes (9).
- On reaching the correct level, the lamp (9) will remain off while the two displays will show the temperature of the boiler and the washing tank (Figure 2 / G)

6.3 Heating

Reference to Figure 2

- Once the loading is finished, the machine will automatically start heating.
- During heating, a blinking dot for each of the two displays (4) and (5) indicates that both the water in the boiler and the tank are heating (Figure 2 / F)
- As soon as the set temperature of the wash tank is reached the light turns on (8).

6.4 Washing

Reference to figure 4

- To start washing, simply insert a basket at the the entrance of the machine until it is hooked by the basket conveying system.
- The Wash in progress indicator (8) lights up.
- During the wash cycle the two displays (4) and (5) display temperatures respectively of the boiler and the tank.

6.5 Washing programme

The machine is has several washing programs.
One of the selected program lights (10) is always lit next to the icon that represents the set program.
To select the desired program, press one or more times the program selection button (2).
One of the lights (10) will light next to the icon of the program set.
The most productive program "1" is indicated by top light lamp positioned higher.

Select a different program during washing only after pressing button (1).

6.6 Stop device

The machine is equipped with a ON/OFF line button (3) on the control board, and its use causes the immediate stop of all moving parts and of the washing programme.
It is possible to install additional optional stop devices near the entrance and the exit of the baskets.

6.7 Temperature and working hours display

The boiler and tank temperatures are always indicated on display (4) and (5).
To view the number of hours of operation, keep the button pressed for a few seconds (1)
Display (5) shows the hours the machine "**Hr**" mode (Figure 3) is working
The message is displayed twice

6.8 Limit switch device

The machine must work with a limit switch installed on the exit plane of the baskets (see installation chapter).
The limit switch on light (11), flashes when a basket exiting from the machine reaches the end of the plan and the washing stops as long as the basket will not be removed.
Simply remove the basket from the end of the plane to restart the machine completely.
If the basket is not removed within a few minutes, the machine will switch off, in a succession, the rinsing area, the washing area, the pre-wash area and, finally, the drying area, when installed.

6.9 Regulations

It is possible to regulate the temperature and the dispensing times.
With reference to Figure 7

- Switch the machine off by pressing the line button (3) (Fig. 7/A)
- Open the door of the machine (Fig. 7/B)
- The display will show the message "**door**" (Fig. 7/E)
- Keep buttons (1) and (2) simultaneously pressed for a few seconds. (Fig. 7/D)
- The display will alternate messages "**CH**" and "**0**".
- Scroll through the numbers using buttons (1) and (2) until you reach "**12**". (Fig. 7/F)
- Press line button (3) (Fig. 7/G).
- Select the parameter to be adjusted by pushing the on/off line button (3) for a few times (fig.7 / G)
- The display will show, in sequence, the parameter and the set value (Fig. 7/H).
- Use buttons (1) and (2) to set the desired value. (Fig. 7/I)
- Once all regulations are concluded, keep the line button (3) pressed for a few seconds.
- The new settings are now memorised and the display will show the message "**- - - -"** . (Fig. 7/L)

6.9.1 temperatures

It is possible to set the washing and rinsing temperatures of all washing programmes.

Parameter	Programme rinsing temperature	range of regulation (° C)
b1	"**1**" high capacity	**"oFF",1,2…90**
b2	"**2**"General purpose	
b3	"**3**" prolong contact	

Parameter	Programme washing temperature	range of regulation (° C)
t1	"**1**" high capacity	**"oFF",1,2…70**
t2	"**2**"General purpose	
t2	"**3**" prolong contact	

6.9.2 dispensers

It is possible to adjust the dosing time, in seconds, for the rinse aid and detergent dispensers.

Parameter	Dosing time	range of regulation (s)
dt	detergent	**oFF,1,2…25**
bL	rinse aid	**oFF,1,2…25**

It is possible to manually load the dosing circuit.
Proceed as follows:

- Select, from the menu, parameter "**bn**" if you wish to load the rinse aid circuit, or "**dn**" if you want to load the detergent circuit.
- The display will show, in succession, "**bn**", "**oF**" , if you selected the rinse aid circuit, or "**dn**", "**oF**" if you selected the detergent circuit.
- Keep button (3) pressed.
- The corresponding dispenser will start loading the circuit and the display will show "**on**" instead of "**oF**"
- To stop the dispenser, simply release button (3).

6.10 User messages

Display	Message description
door	open door
b	temperature of rinsing water
t	temperature of washing water
FI	first load activation
FI LL	Tank filling
no dt	No detergent
no bL	No rinse aid
Fu A	firmware revision
C5	software code
Hr	number of hours of work

6.11 Self-diagnosis

The machine is equipped with a self-diagnosis system that can detect and report different kinds of malfunctioning

Display	Error description and possible solutions	
Er 03	Thermostop time out	The temperature of the boiler has not reached the set value in the pre-established time. Please contact the assistance centre
Er 04	Tank loading time out	Failure to reach the proper level of water in the washing tank. Switch the machine off and on again after making sure that the overflow device has been correctly installed, and after opening the water supply. If the problem continues, contact the assistance centre.
Er 05	Tank probe "open"	The probe that measures the temperature of the tank is not working. The heating function is impaired. Contact the assistance centre.
Er 06	Tank probe "closed"	
Er 07	Boiler probe "open"	The probe that measures the temperature of the probe is not working. The heating function is impaired. Contact the assistance centre.
Er 08	Boiler probe "closed"	
Er SF	Electromechanical safety	The mechanical safety on the basket conveyor has intervened. Switch the machine off and make sure there are no objects preventing the motion of the conveyor inside the machine; remove the obstruction, if identified. If the problem continues, please contact the assistance centre.
Er 23	Draining time out	The tank has not been drained after the double rinse. Switch the machine off and clean the relative filter. If the problem continues, please contact the assistance centre.
Er 24	Break-tank loading time out	Failure to reach the correct level of water in the break tank Switch the machine off and then on again after opening the water supply and making sure that the capacity of the water mains is sufficient, in accordance with the data in the information plate. If the problem continues, contact the assistance centre.

Er 51	Temperatures electromechanical safety	The safety thermostats have intervened. Please contact the assistance centre.

Warning:
When the machine is switched off and then on, the alarm is initially reset, but will be displayed again if the cause of the problem is not solved.

6.12 End of washing operations

With reference to Figure 8

- Stop the machine using the line button (Fig. 8/A)
- Switch off the wall-mounted main switch (Fig. 8/B)
- Open the doors, making sure they are firmly hooked to their supports. (Fig. 8/C)
- Remove the horizontal filters, being particularly careful so as not to drop residues of food inside the washing tank. (Fig. 8/D)
- Lift the vertical filter and dispose of its contents. Use a hard brush to rinse the horizontal and the vertical filters. (Fig. 8/D)
- Slide out the overflow and allow the tank to drain. (Fig. 8/F)
- Accurately wash the bottom of the tank with a jet of water.
- Accurately wash the curtains.
- Remove any traces of dirt from the empty tank. At this point only, remove the safety filter of the pump and wash it under running water. (Fig. 8/G)
- The external parts of the machine must be cleaned when their surfaces are cool, using a sponge and non-foaming products that must be neither acid nor abrasive.
- Reinsert the overflow devices, the safety filters and the tray filters.

The machine is now ready to use.

WARNING: Do not wash the machine with water streams or high-pressure water directly applied to it, as any leaks into the electric components may compromise the regular function of the machine and of its safety systems, annulling the warranty.

It is advisable to leave the doors open, to avoid the formation of unpleasant smells.

6.13 Positioning the dishes

With reference to Figure 5

- Place the cups and glasses upside down in the baskets.
- Place the dishes in the dish basket with support shafts, with the inner surface turned upwards.
- The handles of all flatware and teaspoons must be pointing downwards, in the flatware basket.

Recommendations:
- Do not put silver and stainless steel flatware in the same flatware basket, as this would stain the silver and likely corrode the stainless steel.
- Use the specific baskets, created especially for different kinds of items to be washed (dishes, glasses, cups, flatware etc).
- To save both washing liquid and electricity, only wash full, but not overloaded, baskets.
- Avoid overlapping items.
- To reduce maintenance to a minimum, **we advise** pre-cleaning the items by removing food residues, bits of lemon, toothpicks, olive pits etc, which could otherwise clog the filter of the electro-pump, reducing the efficacy of the wash and reducing the quality of the final result.
- It is advisable to wash the dishes before the food residues on their surface dries out. In case of hardened dirt, the dishes should be left to soak before being placed in the machine.

Cap 7 MAINTENANCE

7.1 General rules

These machines were designed to reduce the need of maintenance to a minimum. The rules below must be followed in all cases, in order to guarantee a long useful life and operation without inconveniences.
In any case, a few general rules should be followed to keep the machines working properly:

- keep the machine clean and ordered
- avoid turning temporary or urgent repairs into permanent ones

Strictly following routine maintenance rules is extremely important. All machine parts must be regularly checked to prevent anomalies, thus reducing the necessary times for a maintenance intervention.

Prior to cleaning the machine, cut off its power supply.

7.2 Periodical maintenance

With reference to Figure 9

- Disassemble the upper and lower rinsing arms.
- Clean all nozzles, removing any obstruction found, and reassemble them.
- Disassemble the curtains and clean them with a nylon brush under running water.
- Disassemble the upper and lower washing arms and rinse them.
- Remove the washing pump filter and rinse it.
- Clean the washing tank thoroughly.
- Due to the calcium and magnesium salts present in the water, after a certain period of operation, which varies according to the hardness of the water used, a calcareous layer deposits in the inner surfaces of the boiler tank and of the pipes, compromising the proper functioning of the machine.
- It is therefore necessary to periodically remove incrustations, an operation that should be carried out by technically qualified personnel.
- If the machine is to be left unused for a long period of time, the steel surfaces must be greased with Vaseline oil.
- If there is danger of water freezing, have technically qualified personnel drain the boiler water and the washing pump water.
- If intense calcareous deposits form inside the machine in the presence of water, use an incrustation removing product.
- To remove the incrustations, carefully follow the instructions of the manufacturer of the product, or seek the assistance of qualified personnel. In any case, always rinse the machine thoroughly after removing incrustations.
- Make sure the safety devices are working efficiently.
- If the steam condensing battery is dirty, disassemble it and clean the spaces between the flaps using compressed air.

- **REMINDERS:**
  Every mechanical and electromechanical part of the machine is subject to physical wear. A qualified technician must carry out periodical inspections on:
  - Conveying system sledges
  - Washing/rinsing electro-pump seals
  - Door guides and springs
  - Remote control switch
  - Safety devices

  In addition, it is obligatory to test and inspect the devices that are not part of the machine, such as earthing differential, proper earthing, automatic switches and/or fuses in the power line, every electric conductor, the status of water pipes, discharge system, proper functioning of dispensers.

- **In case of malfunctioning, seek only technical assistance centres authorised by the manufacturer or by the manufacturer's dealer.**



Cap 8 DISPOSAL

Our machines do not contain any material that requires particular disposal procedures.
(Applicable in European Union countries and in countries with selective waste collection)
The marking on the product or on its documents means that the product must not be disposed of as domestic waste at the end of its working life. To avoid damages to the environment or to the health due to the incorrect disposal of waste, users should separate this product from other kinds of waste, and recycle it responsibly to promote the sustainable reuse of material resources.
Domestic users should contact their dealer, or the local office in charge of providing information regarding selective waste collection and recycling options for this kind of product.
Corporate users should contact their supplier and verify the terms and conditions of the purchase contract.
This product must not be disposed of with other commercial waste.

Cap 9 ENVIRONMENT

ENVIRONMENTALLY SAFE USE

- A conscious use of the dish washer may help reduce environmental impact, simply by following a few indications in every day use, such as:
- Only wash fully loaded baskets.
- Switch the dish washer off when not in use.
- Keep the machine closed when in stand-by mode.
- Use programmes suitable for the level of dirt.
- Supply the machine with hot water, if the water is heated with gas.
- Make sure that the drained water is conveyed to suitable sewage system.
- Do not exceed the recommended detergent doses.

The manufacturer is entitled to carry out electrical, technical and aesthetic modifications to the machine, and/or to replace parts without previous notice, whenever deemed necessary, in order to offer a reliable, long-lasting product with advanced technology.
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