



# **TECHNICAL MANUAL**

Installation, Operation and Maintenance Instructions

## **CADET**

### **Undercounter Dishwasher**

Insinger Machine Company  
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Philadelphia, PA 19135-2996

**800-344-4802**  
Fax: 215-624-6966  
[www.insingermachine.com](http://www.insingermachine.com)



Project \_\_\_\_\_  
 Item \_\_\_\_\_  
 Quantity \_\_\_\_\_  
 CSI - 11400 \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Date \_\_\_\_\_



## CADET Undercounter Dishwasher

- Three dedicated wash cycles (Dishware, Cookware, Glassware)
- Meets and exceeds EnergyStar 3.0 rating
- Extremely quiet with sound suppression lined panels. Rated at <65dB
- Built-in atmospheric booster with dedicated rinse pump provide consistent, constant 180°F hot water to properly sanitize ware—no external booster required
- 110°F recommended inlet water temperature; 70°F minimum required water temperature
- Perfect for Daycares, Nursing Homes, and Small Cafes

### STANDARD FEATURES

- Capacity is 30 (20" x 20) racks per hour or 750 dishes per hour
- Only 0.8 gal (3L) of water per rack
- Full stainless steel construction inside and out for durability
- Tank has rounded corners for easy cleaning
- Electronic PCB control with temperature display, LED indicator lamps, and self-diagnostics for serviceability
- Single phase (1PH) electrical connection, field-convertible to three phase (3PH) with included copper jumper connectors
- Waterproof membrane control switches
- No need for PRV (Pressure Regulating Valve).
- Built-in detergent and rinse aid dispensers with EZ Prime system
- Automatic pumped drain with removable overflow tube
- Single step drain and clean system
- Dedicated timed de-lime cycle to eliminate limescale build-up
- Revolving interchangeable stainless steel upper and lower wash/rinse arms provide superior results
- Door opening is 13 3/16" for maximum clearance
- Easy to service—all components accessible from the front of machine
- Sound suppression lined panels
- Comes standard with: 1 Plate rack, 1 Cup rack, 1 Glass Rack, 2 Cutlery Cups

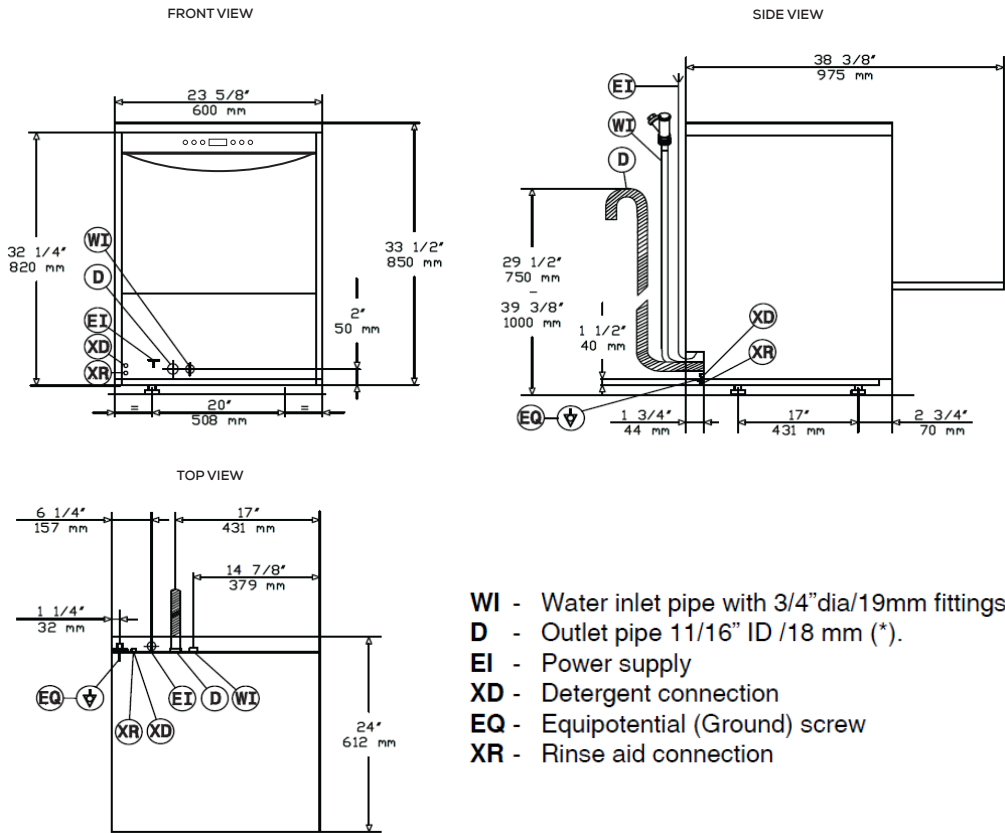
### OPTIONS

- Additional plastic 20" x 20" rack
- Drain quench system
- 6" stand
- 17" stand
- Drip 'n Dry drying rack

### SPECIFIER STATEMENT

Specified unit will be an Insinger Cadet automatic undercounter dishwasher. Features include waterproof membrane control switches, built in detergent and rinse air dispensers with EZ Prime system, electronic PC control with temperature display and LED indicators, revolving interchangeable wash/ rinse arms, sound suppression lined panels, and 304 stainless steel construction.





Capacity Per Hour	30 racks 750 dishes 68 meals
Tank Capacity	6.08 gallons
Booster Capacity	3 gallon built-in booster
Motor Size	1hp (wash)
Electric Usage	2.2 kW wash tank 6.0 kW built-in booster (40°-70° rise) 6.85 kW maximum operating
Water Inlet Temperature	110°F recommended inlet water temperature; 70 °F minimum required water temperature
Final Rinse Consumption at 20 psi min.	25.5 gallons/hour 0.80 gallons/rack
Exhaust Hood Requirement	None
Time Cycle	120 sec. (Standard) 240 sec. (Extended) 130 sec. (Gentle)
Shipping Weight	165 lbs.
Current Draw Amps	Electric with Built-in Booster
208/1 PH/60 HZ	33 Amps
208/3 PH/60 HZ	20 Amps
Recommended Plug and Receptacle	1-Phase: L15-50P (Plug) L15-50R (Receptable) 3-Phase: L15-30P (Plug) L15-30R (Receptable)

## SPECIFICATIONS

**CONSTRUCTION-** Door, front, side, and top panels are of stainless steel AISI304 ("T304") construction of various material thicknesses including sound-suppression lined panels. Upper and lower wash/rinse arms are T304 stainless steel and are interchangeable and revolving. Tank is stainless steel with stamped rounded corners for easy cleaning.

**CONTROLS-** Electronic PCB waterproof membrane controls with temperature display, LED indicator lamps, and self-diagnostics for serviceability. Three (3) dedicated cycle buttons (regular, extended, gentle) also function to prime detergent and rinse aid.

**WASH/RINSE SYSTEM-** Three (3) dedicated wash cycles- Regular (dishware), Extended (cookware), Gentle (glassware). 110°F recommended inlet water temperature; 70°F minimum required water temperature. Built-in atmospheric booster with dedicated rinse pump for 180° final rinse.

**DRAIN SYSTEM-** Drain pump moves water up to 29 1/2" above floor level. Connection to be open drain with atmospheric air gap. Dishwasher drain system cannot be tied into garbage disposal.

**INTERNAL HEIGHT-** 13 3/16"

Contact Insinger Sales at 800-344-4802 for an installation drawing specific to your application.  
 This drawing is available on the Insinger website at [www.insingermachine.com](http://www.insingermachine.com)

Note: Due to product improvement we reserve the right to change information and specifications without notice.

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# A

## SAFETY INSTRUCTIONS

To reduce the risk of fire, electrical shock, or injury when using your dishwasher, please follow these basic precautions including the following:

- Read all instructions before using your dishwasher.
- This Manual does not cover every possible condition and situation that may occur. Use common sense and caution when installing, operating and maintaining this appliance.
- Do not sit, stand or lean on the door or racks of a dishwasher.
- Store dishwasher detergent and rinse agents in clearly marked packages with MSDS (Material Safety Data Sheets) sheets in a safe place.
- **FOR YOUR SAFETY DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUID IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**
- Your dishwasher uses hot water to clean and sanitize a variety of wares. Machine surfaces and wares become hot during and immediately following normal operations. Operators should use caution when loading and unloading wares from the machine.
- Do not touch the heating element during or immediately after use.
- The installation of this unit must conform to local codes or, in the absence of local codes, to all National Codes governing plumbing, sanitation, safety and good trade practices.
- **BEFORE SERVICING, DISCONNECT THE ELECTRICAL SERVICE AND PLACE A RED TAG AT THE DISCONNECT SWITCH TO INDICATE WORK IS BEING DONE ON THAT CIRCUIT.**
- **NOTICE:** CONTACT YOUR AUTHORIZED SERVICE COMPANY TO PERFORM MAINTENANCE AND REPAIRS.
- **NOTICE:** Using any parts other than genuine factory manufactured parts relieves the manufacturer of all warranty and liability.
- **NOTICE:** Manufacturer reserves the right to change specifications at any time without notice.
- **WARNING:** The equipment warranty is not valid unless the appliance is installed, started and demonstrated under the supervision of a factory trained installer.
- **WARNING:** The unit must be installed by Personnel who are qualified to work with electricity and plumbing. Improper installation can cause injury to personnel and/or damage to the equipment. The unit must be installed in accordance with applicable codes.

**SAVE THESE INSTRUCTIONS**

## B

# GENERAL RECOMMENDATIONS

### CAUTION

**CAREFULLY READ THE INSTALLATION OPERATING AND MAINTENANCE INSTRUCTIONS BEFORE INSTALLING THIS APPLIANCE. INCORRECT INSTALLATION, ADAPTATIONS OR ALTERNATIONS COULD CAUSE DAMAGE TO PROPERTY OR PERSONAL INJURY. FAILURE TO COMPLY WITH THESE INSTRUCTIONS, ABUSE RESULTING IN DAMAGE AND IMPROPER INSTALLATION WILL VOID WARRANTY AND RESPONSIBILITIES OF THE MANUFACTURER.**

1. Carefully read this instructions booklet, as it contains important advice for safe installation, operation and maintenance. Keep this booklet handy in a safe place for future reference.
2. **The installation instructions contained herein are for the use of qualified installation and service personnel only. Installation or service by other than qualified personnel may result in damage to the appliance and/or injury to the operator. FAILURE TO COMPLY WITH INSTALLATION INSTRUCTION OR IMPROPER INSTALLATION WILL VOID WARRANTY AND RESPONSIBILITIES OF THE MANUFACTURE.**
3. The equipment warranty is not valid unless the unit is installed, started and demonstrated under the supervision of a factory trained installer.
4. Switch off the appliance in the event of failure or malfunctioning at the main circuit breaker.

Only have the appliance repaired by an Authorized Service Center and be sure to ask for OEM original spare parts.

### B1 NOTICE FOR SHIPPING DAMAGE

- The container should be examined for damage before and during unloading.
- The freight carrier has assumed responsibility for its safe transit and delivery.
- If damaged equipment is received, either apparent or concealed, a claim must be made with the delivering carrier. Apparent damage or loss must be noted on the freight bill at the time of delivery.
- The freight bill must then be signed by the carrier representative (Driver). If the bill is not signed, the carrier may refuse the claim. The supply can supply the necessary forms.
- A request for inspection must be made to the carrier within 15 days if there is concealed damage or loss that is not apparent until after the equipment is uncraated. The carrier should arrange an inspection.
- Be certain to hold all contents plus all packing material. Under no circumstances should a damaged appliance be returned to the manufacturer without prior notice and written authorization.

### B2 HANDLING

Use suitable means to move the appliance: a lift truck or fork pallet trucks (the forks should reach more than halfway beneath the appliance).

### B3 UNPACKING

Wear protective gloves to unpack.

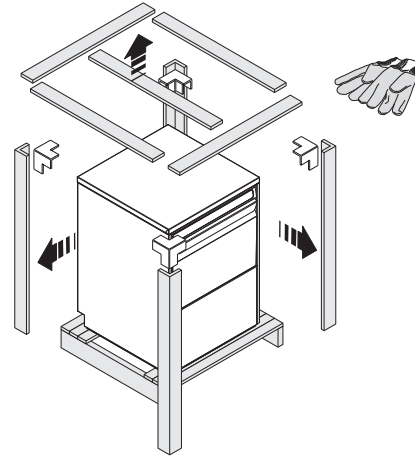


Figure 1

Lift the appliance using a lift truck,

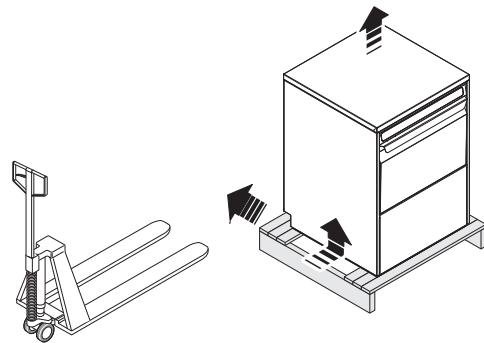


Figure 2

remove the base and position the appliance where it is to be installed.

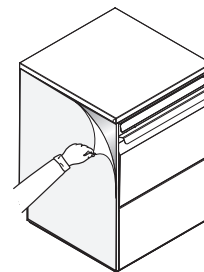





Figure 3

Remove the protective film and ensure that the packaging material is disposed of correctly in compliance with the regulations in force in the country where the product is to be used.

## B4 DISPOSAL OF PACKING MATERIAL

All the packaging materials are environmentally safe and friendly. They may be kept without fear or danger. They may be recycled or burned in a special waste incineration plant. Recyclable plastic components are marked as follows:

	<b>polyethylene</b>	<b>external wrapping film, instruction bag.</b>
	<b>polypropylene</b>	<b>top packaging panels, straps.</b>
	<b>polystyrene foam</b>	<b>protective surround elements.</b>

Wood and cardboard components may be disposed of according to local regulations in force. Appliances that have reached the end of their service life should be suitably disposed of. The appliance should be dismantled according to regulations in force. All metal parts are in stainless steel (AISI 304) and are removable. Plastic parts are marked with the symbol of the material.

## B5 TECHNICAL DATA

MODEL	CADET CDT-1
Supply voltage:	208V, 1ph, 60Hz 33amp
field upgrade to	208V, 3ph 60Hz 20amp
Total Watts	6.85 kW
Booster heating elements	6.0 kW
Tank heating elements	2.2 kW
Water supply pressure	7.25 - 101psi [50 - 700kPa]
Water supply temperature	50°-122°F [10°-50°C]
Water supply hardness for models without incorporated continuous water softner	140 ppm [14°fH max]
Electric conductivity of water for models without incorporated continuous water softener	< 1016 µS/in / < 400 µS/cm
Concentration of chlorides in water	< 20 ppm
Rinse cycle water consumption	0.80 gallons [3 liters]
Booster capacity	3 gallons [12 liters]
Tank capacity	6 gallons [23 liters]
Standard cycle time with water supply at 122°F [50°C]	120 - 240 - 130 seconds
Legal noise level Leq	<65dB
Protection rating	IPX4
Minimum Supply - Circuit Ampacity	34amp
Net weight	150lb [68kg]
Shipping weight	181lb [82kg]
Shipping width	27 15/16" [710 mm]
Shipping height	41 3/4" [1060 mm]
Shipping depth	30 11/16" [780 mm]

**Table 1**

Standard cycle time may vary should the inlet water temperature be different from that indicated above.

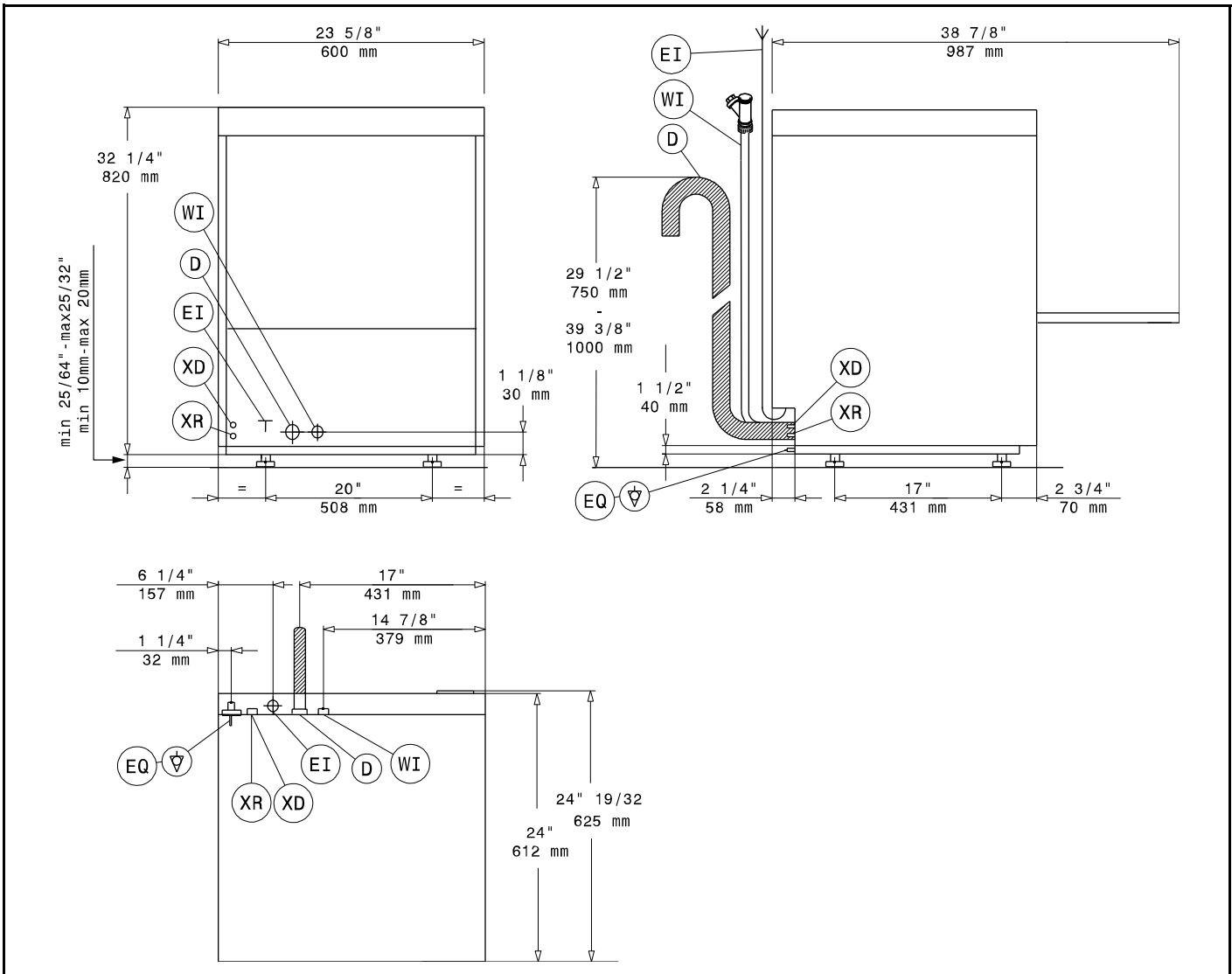


Figure 4

**Legend Figure 4**

- WI** - Water inlet pipe with 3/4" dia/19mm fittings
- D** - Outlet pipe 11/16" ID /18 mm (\*).
- EI** - Power supply
- XD** - Detergent connection
- EQ** - Equipotential (Ground) screw
- XR** - Rinse aid connection
- (\*) - Only for model with drain pump

# C

# INSTALLATION AND START-UP INSTRUCTIONS

A fused disconnect switch or a main circuit breaker (customer furnished) **MUST** be installed in the electric supply line for the appliance. It is recommended that this switch/circuit breaker have lockout/tagout capability. Before making any electrical connections to this appliance, check that the power supply is adequate for the voltage, amperage, and phase requirements on the rating plate.

The chosen device must be lockable in the open position in case of maintenance.

## C1 RATING PLATE

The rating plate contains identification and technical data and is located on the right-hand side panel of the appliance (Figure 5).

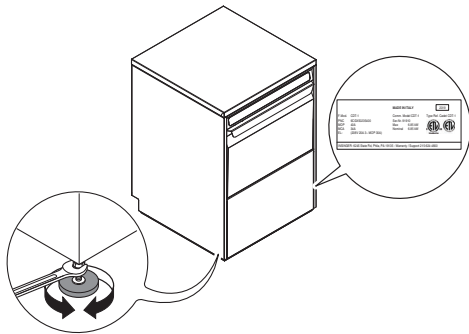


Figure 5

## C2 WATER CONNECTION

- Position the dishwasher and level the appliance by adjusting the appropriate bullet feet (Figure 5).
- Connect the appliance water supply pipe “A” (Figure 4) (keeping with local plumbing codes) to the incoming water supply. Install a shutoff valve, Y-Strainer, and a pressure gauge between the appliance and the incoming water supply of the unit (Figure 6).

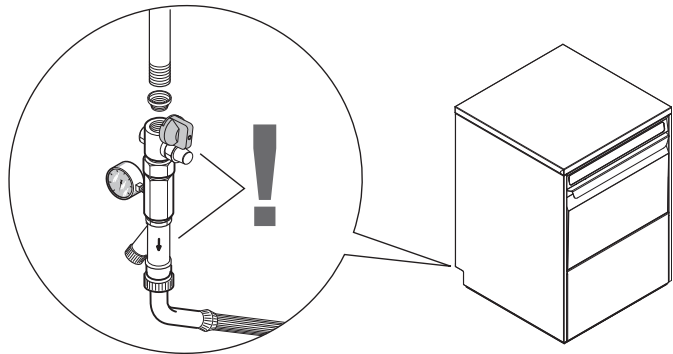


Figure 6

- Check that the **dynamic** water supply **pressure** measures **between 7.25 - 101 psi [50 - 700kPa]** while dishwasher tank or booster is filling with water.

If the pressure is too high, install a suitable pressure regulator on the incoming water supply to the unit.

Position the outlet pipe at a height anywhere between 29 1/2” to 39 3/8” [750 to 1000mm] from the floor.

Check that about 0.8 gallon [3 litres] of water flow out of the outlet pipe during the rinse cycle.

**Make sure drain hose does not kink, pinch or twist, resulting in a water flow restriction.**

## C3 ELECTRICAL CONNECTION

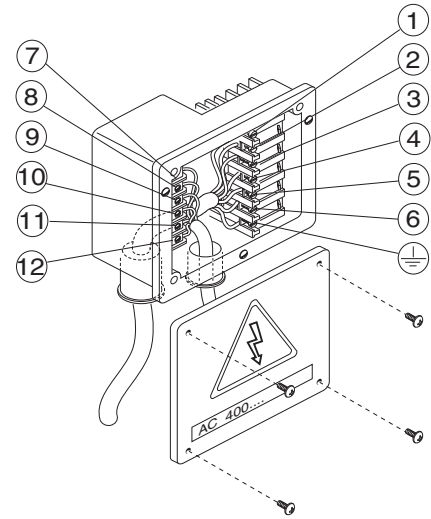


Figure 7



### CAUTION

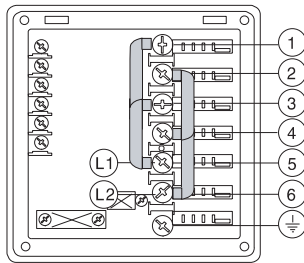
**THE ELECTRICAL CONNECTIONS MUST MEET ALL NATIONAL AND ELECTRICAL CODE REQUIREMENTS.**

The installation of this unit must conform to local codes or, in the absence of local codes, to all National Codes governing plumbing, sanitation, safety and good trade practices.

- Check the over rating plate before making any electric supply connections. Electric supply connections must agree with data on the unit rating plate.
- The earth wire at the terminal end must be 3/4”/20mm (max.) longer than the phase wires.
- The appliance requires a ground connection to the unit ground screw located at the rear of the unit marked “Q” (Figure 4) in the manual and marked with the symbol “⚡” on the unit. The ground wire must have a cross section of AWG 8/8.35 mm<sup>2</sup>. Do not use the wiring conduit or other piping for ground connections. If necessary, have the electrician supply the ground wire.

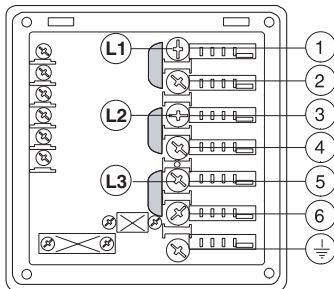
**WARNING**

Before servicing unit switch off power at the main circuit breaker and place a red tag on the breaker to indicate work is being done on that circuit.

**C3.1 Power supply 208 V 1ph****Figure 8**

Open the power supply terminal box and insert the jumpers provided as follows: two jumpers between terminals 1, 3, 5 and another two between terminals 2, 4 and 6.

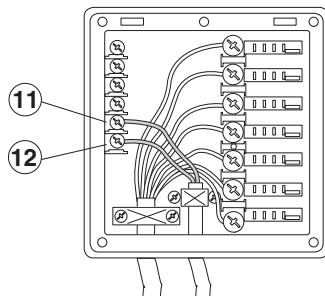
Using a suitable power supply cable connect L1 and L2 to terminals 5 and 6 respectively and the ground wire to the terminal  $\perp$ .

**C3.2 Power supply 208 V 3ph****Figure 9**

Open the power supply terminal box and insert the jumpers provided as follows: one jumper between terminals 1 and 2, one between terminals 3 and 4 and another between terminals 5 and 6. Using a suitable power supply cable, connect the three phases to terminals 1, 3, 5, and the earth wire to the terminal  $\perp$ .

**C3.3 Connections provided for energy control**

This appliance is designed for an external energy consumption control.

**Figure 10**

Connect the energy peak controller across terminals 11 and 12.

**CAUTION**

A normally open (n.o.) contact of the controller must be connected across terminals 11 and 12. When this contact closes the booster heating elements are disconnected. Using the dishwasher in these conditions may increase the cycle time.

**C3.4 Safety devices**

- An automatic resettable thermally protected device incorporated in the windings of the electric pump cuts off the electricity supply in the case of malfunctioning.
- In the event of water mains failure, a back-flow device prevents water in the booster from returning into the mains.
- An overflow pipe, connected to the drainage outlet, maintains the water in the tank at a constant level.
- On models with a drain pump, a supplementary level control device activates if the main level control device is faulty.

**Failure to comply with safety rules and regulations relieves the manufacturer of all liability.**

**C4 WARNING MESSAGES DISPLAYED ON THE CONTROL PANEL****A1 NO WATER**

- Check that the shutoff valve is open.
- Check that the water inlet filter is clean.
- Check the minimum main pressure is not less than 7.25 psi [50kPa].
- Check that the overflow pipe is inserted (for appliances without drain pump only).

**B1 INSUFFICIENT DRAINAGE**

- Check if the overflow has been removed.
- Check for obstruction on the waste outlet pipe and the overflow aperture.

**B2 TANK WATER LEVEL TOO HIGH**

- Check for obstruction on the waste outlet pipe and the overflow aperture.

**C1..C8 CALL THE AUTHORIZED SERVICE CENTER****E1..E8 CALL THE AUTHORIZED SERVICE CENTER**

- The appliance continues to operate, but appropriate checks by an authorized technician are recommended.

## C5 DETERGENT/RINSE-AID DISPENSERS AND SETTINGS

If the appliance is connected to a water softener or osmotic device, contact the detergent supplier for the specific product.

Peristaltic dispensers (rinse-aid and detergent) require periodic maintenance. The internal hose of the rinse-aid dispenser should undergo periodic maintenance (at least once or twice a year).

### 1. Dishwasher with incorporated detergent dispenser pump [R] (Figure 11).

When the appliance is filled with water for the first time in the day, pump “R” dispenses a detergent quantity in the tank. At each cycle, pump “R” dispenses a detergent quantity in the tank to keep proper detergent concentration. Insert the hose provided in the kit into the detergent container.

### 2. Dishwashers with incorporated peristaltic rinse-aid dispenser pump (Figure 11).

When the appliance is filled with water for the first time in the day, pump “S” dispenses a rinse-aid quantity in the booster. At each rinse cycle, pump “S” dispenses a rinse-aid quantity in the booster to keep proper rinse-aid concentration. Insert the hose provided in the kit into the rinse-aid container.

### Connections for automatic detergent dispenser (Figure 11)

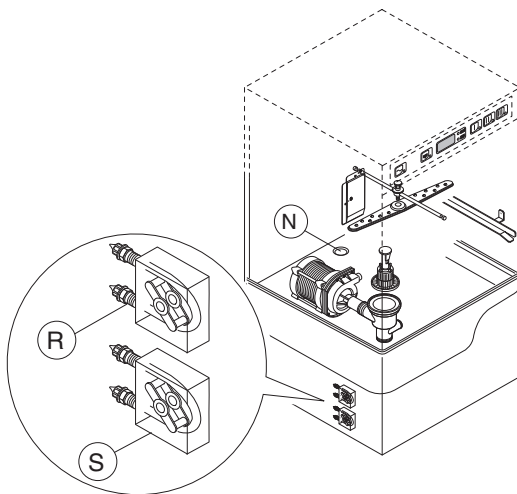


Figure 11

There is a ready-made impression “N” (inside dishwasher chamber floor) to be perforated (5/16”dia/8mm) for positioning the detergent concentration measuring sensor.

The sensor should be installed without compromising the watertightness of the appliance.

### Electrical connections for automatic detergent and rinse-aid dispensers.

Terminals are available on the power supply terminal box for the electrical connection of external dispensers working at 208V. Max. power 30 VA.

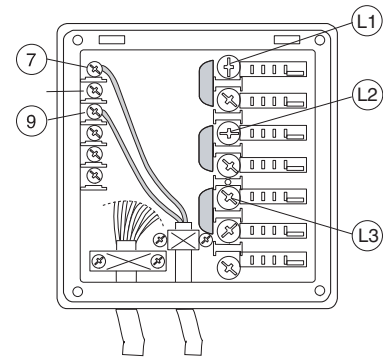


Figure 12

Connect the **detergent dispenser** between terminals 7 and 9. These connection points are live for a set time during filling of the tank and at the start of the wash cycle (see paragraph “Setting the dispensers”).

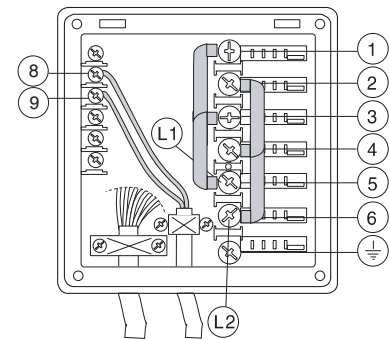


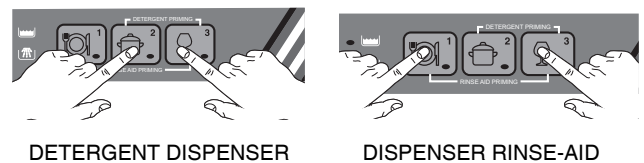
Figure 13

Connect the **rinse-aid dispenser** between terminals 8 and 9. These connection points are live during filling of the tank and at the end of the rinse cycle for a set time (see “setting the dispensers” paragraph).

### C5.1 Manual Activation

Whenever the detergent containers are replaced, it may be necessary to activate the dispensers manually in order to fill the hoses and eliminate any air.

Simultaneously press the buttons, as shown in the figures below. If necessary, repeat this operation several times.




## C6 SETTING THE DISPENSER

All operations should be carried out with the appliance switched on, the door open and no cycle selected.

## LEGEND

 Increase

 Decrease

 Confirm or select next parameter

### C6.1 Sequential start

Press the indicated buttons simultaneously for 5 seconds:



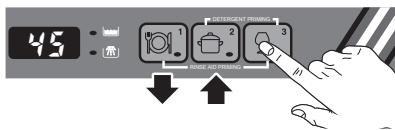
Display of programming mode:



Initial amount of detergent:



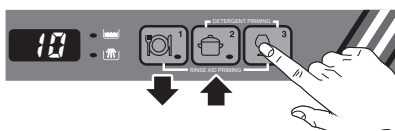
Setting the activation time:



Initial amount of rinse-aid:



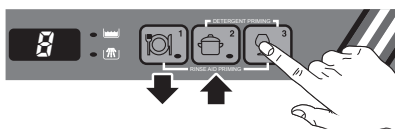
Setting the activation time:



Amount of detergent during the cycle:



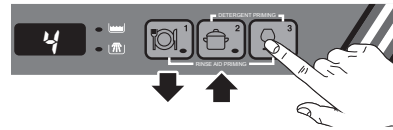
Setting the activation time:



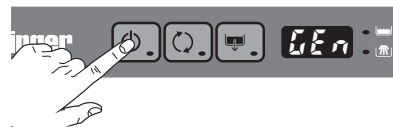
Amount of rinse-aid during the cycle:



Setting the activation time:



Exit from programming mode:



### Notes for external dispensers:

- if  $delt = 101$  the detergent dispenser only operates during **wash pump** operation; terminals **7 and 9** of the main terminal box are powered at the same time.
- if  $delt = 102$  the detergent dispenser only operates during **filling electrovalve** operation for restoring the booster level; terminals **7 and 9** of the main terminal box are powered at the same time.
- if  $rA = 61$  the rinse-aid dispenser only operates during **filling electrovalve** operation for restoring the booster level; terminals **8 and 9** of the main terminal box are powered at the same time.
- if  $rA = 62$  the rinse-aid dispenser only operates during **wash pump** operation; terminals **8 and 9** of the main terminal box are powered at the same time.

For connections, see the wiring diagram.

### Example:

Supposing that an external detergent dispenser has been connected with a tank concentration measuring sensor, a standard setting could be as follows:

$dln = 0$  the dispenser is not activated during filling of the tank

$delt = 101$  the dispenser is activated during wash pump operation and, thanks to the concentration measured by the conduction sensor, the correct amount of detergent is dispensed.

**Suggestion:** to check the effectiveness of the rinse-aid, look at freshly washed glasses against the light. Drops of water remaining on the glass indicate an insufficient amount, while streaks on glass indicate an excess amount.

## C6.2 Changing the detergent/rinse-aid type

If changing to a **different detergent/rinse-aid type** (even one by the same manufacturer), you must rinse the suction and pressure hoses with fresh water before connecting the new detergent/rinse-aid container.

Otherwise, the mixing of different types of detergent/rinse-aid will cause crystallisation, which may result in a breakdown of the dosing pump. Failure to observe this condition will invalidate the warranty and product liability.

# D

## USER INSTRUCTIONS

Our appliances have been studied and optimized to give the highest performance. This appliance must be used exclusively for the purpose for which it has been designed, i.e. for washing dishes with water and specific detergents. Any other use will be considered “improper use” and will void the warranty and manufacturer liability.

This appliance will not carry out the rinse cycle should there be no supply water; it stops all functions and an error message “A1” will be displayed (also see “Warning Messages Displayed On The Control Panel”).

### TIPS

- Carry out a couple of cycles without dishes to flush out any industrial grease which have remained in the tank and piping.
- Avoid washing decorated dishes.
- Do not allow silverware to come into contact with other metals.
- Do not allow food to dry on the dishes.
- Remove large food scraps from the dishes to prevent clogging the filters.
- Pre-wash the dishes by spraying them with cold or lukewarm water, do not use any detergent.
- Use automatic dispensers for the detergent.
- If there is no automatic dispenser, pour a non-foaming detergent into the tank when the water has reached the washing temperature.

### CONTROL PANEL

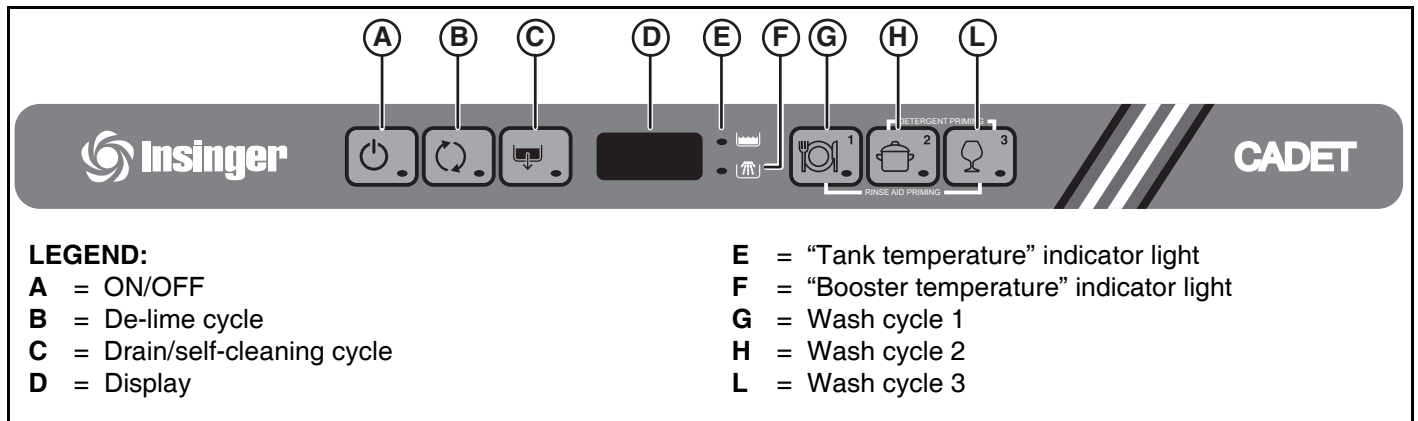


Figure 14

The temperature shown on the display is that of the booster if the indicator light “F” is on or of the tank if the light “E” is on. The tank temperature is displayed during the wash cycle and the booster temperature during the rinse cycle.

### D1 STARTING

- Open the water supply shutoff valve.
- Switch unit on at the main circuit breaker.
- Open the door and check that all the components are in their correct position.
- Close the door and press ON/OFF “A” button.



The indicator light of the ON/OFF button “A” (Figure 14) comes on, indicating that the dishwasher is powered and that water is being introduced and heated.

The word "FILL" is shown on the display during the entire filling and heating stage



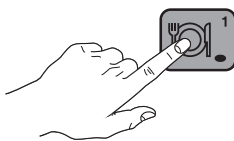
**Notice**, this dishwasher does the first tank filling through several consecutive hot rinse cycles, while the display shows the message FILL (scrolling across display). This system save up to 30% in time over traditional models. If the door is opened during this stage the message "CLOSE" will scroll on the display:



The filling and heating stage has finished when the display shows the tank temperature:



To display the boiler temperature during heating of the tank, open the door and press "G" button (Figure 14).






## D2 WASH CYCLES

The wash cycle includes one wash with hot water and detergent (150°F [66°C] min) and one rinse with hot water and rinse-aid (180°F [82°C] min).

### D2.1 Table of times

Standard cycle time with supply water at 122°F [50°C].

		
120 sec.	240 sec.	130 sec.

A device lengthens the cycle time if the water in the booster has not reached the minimum temperature for correct rinsing.

The cycle times and the temperature may be personalized (e.g. increase of the rinse time and temperature). The cycle times should only be set by an Authorized Service technician.

## D3 OPERATION

The filling and heating stage has finished when the display shows the tank temperature:



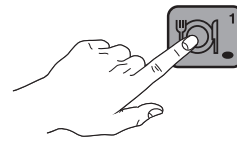
The appliance is then ready for use:

- Open the door.
- Insert the rack containing the dirty dishes.

Close the door and select the suitable wash cycle; the corresponding indicator light comes on and the wash cycle starts:

### - Cycle I

For lightly soiled dishes or glasses: press "G" button (Figure 14) (see table of times).



### - Cycle II (recommended)

For normally dirty dishes: press "H" button (Figure 14) (see table of times).



### - Cycle III Specific cycle for glasses



To stop the wash cycle, just press the selected cycle button or open the door.

- To continue the wash cycle, just press the selected cycle button or close the door. The cycle starts again from where it stopped.
- At the end of the wash, the dishwasher emits a series of beeps and "END" blinks on the display:



open the door and remove the rack containing the clean dishes.

## WARNING

**The appliance will not remove burnt food deposits from dishes. Dishes with burnt-on food deposits should be cleaned manually using detergent (for example, prewash under running water) before putting them in the dishwasher**

**Change the water in the tank at least twice a day.**

### D3.1 Type of racks and loading

- YELLOW rack: for 18 plates with maximum diameter of 240 mm.

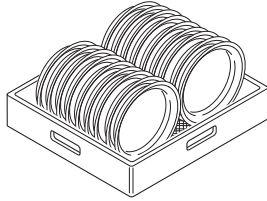


Figure 15

- BLUE rack for glasses: the glasses should be placed upside down.

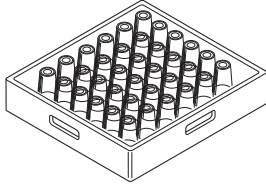


Figure 16

### D4 END OF WORK AND DAILY CLEANING

The appliance is designed to carry out an automatic cleaning cycle to help flush out any residues and to guarantee greater health and hygiene:

- Open the door and take out the rack containing the clean dishes.
- Remove the tank filters and the overflow "W".

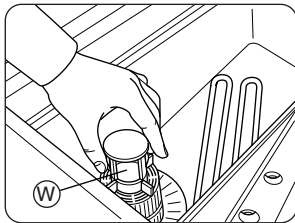
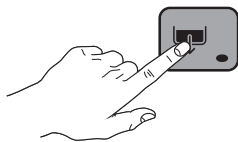


Figure 17

- Close the door.
- Select the drain cycle by pressing "B" button (Figure 14).



The message "CLE" ("CLEAN") will be displayed throughout the drain cycle:



- After a few minutes, 3 beeps indicate the end of the cleaning cycle and "END" blinks on the display:



- Switch off the dishwasher by pressing "A" button (Figure 14).



- Switch unit off at the main circuit breaker.
- Close the water shutoff valve.
- Replace the filters and the overflow.
- Remove the top and bottom jets "F" and "I", unscrewing the ring nut "H".

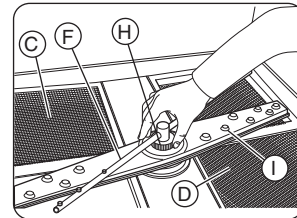


Figure 18

- Carefully clean the washing and rinse jets and clean everything with hot water and neutral detergent/deterasive, if necessary using a soft brush or sponge. Do not use sharp implements to clean the nozzle holes, which could otherwise be damaged.
- Remove filters "C" and "D" and clean them under a water spray.
- Remove the filter "Z" and clean away any stuck on food in order to avoid blocking the draining system.

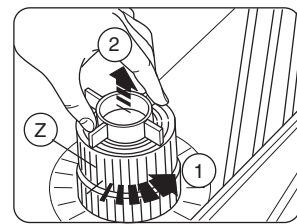


Figure 19

Upon completion of cleaning operations, replace the parts removed previously.

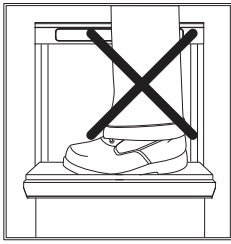
#### D4.1 Cleaning the exterior surfaces

Before carrying out any cleaning operations, turn off the power at the main circuit breaker.

Clean the stainless steel surfaces using warm soapy water; never use detergents containing abrasive substances nor steel scrapers, common wire wool, brushes or scrapers; rinse thoroughly using a wet cloth and carefully wipe dry. Clean the control panel using a soft damp cloth and a neutral detergent if necessary.

Do not wash the appliance using direct or high-pressure water jets. To reduce the emission of pollutants into the environment, clean the appliance (externally and where necessary internally) with products having a biodegradability of over 90%.

**CAUTION:** Never stand or sit on the door, do not place heavy boxes or crates on the door.



## D5 MAINTENANCE

### D5.1 DE-LIMING

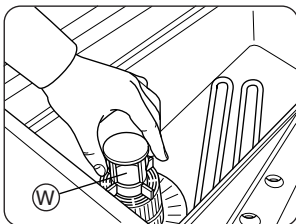
Machines that are operated in hard water areas and are not connected to an external water treatment system must be de-limed from time to time. Deliming should be done when you can see clear signs of lime deposits (a white, chalky substance) on the inside walls and on the wash arms. There are de-liming agents specially designed for commercial dishwashers available for this purpose, please consult your detergent supplier.

#### CAUTION

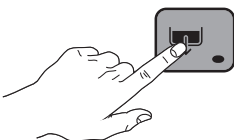
**De-liming agents for commercial dishwashers cause corrosion. Product must be kept free of limescale for proper operation. Please contact your chemical supplier. Only use approved non-chlorinated, non-foaming commercial dishwasher chemicals. Always wear proper safety protection. follow all instructions on chemical supplier's packaging.**

- **Step 1 - Discharge tank dirty water**

Open the door and remove any baskets that are in chamber. Remove tank filters and overflow "W".



Close the door and select the drain cycle by pressing the "C" button (Figure 14).



The message "CLE" ("CLEAN") will be displayed throughout the drain cycle.

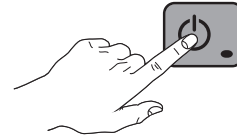


After a few minutes, 3 beeps indicate the end of the cleaning cycle and "END" blinks on the display:



At the end of drain cycle, open the door, replace the overflow "W" and close the door.

Switch off the dishwasher by pressing "A" button (Figure 14)



- **Step 2 - Filling tank and heating water without detergent**

Press on/off "A" button (Figure 14).



The indicator light of the on/off button "A" comes on, indicating the dishwasher is powered and the water is being introduced and heated. The word "FILL" scrolls across display during the entire filling and heating stage.



The filling and heating stage has finished when the display shows the tank temperature:



- **Step 3 - Pour the deliming agent**

Open the door, pour the required amount of deliming agent regarding agent concentration suggested by agent for 6 gallons/23 liters of water.

- **Step 4 - Start the De-Lime cycle**

Close the door and start the cycle by pressing "B" button (Figure 14).



The wash cycle duration is 10 minutes. At the end of the cycle the dishwasher emits a series of beeps and “END” blinks on the display.



**If the limescale:**

- is completely absent then go to step 5.
- is still present then repeat step 3 and 4.

**CAUTION**

**Do not allow the deliming agent to remain in the machine longer than recommended by the deliming agent supplier.**

**Step 5 - Empty and clean the tank.**

Repeat step 1.

**Note!**

- To delime the booster, call your authorized service company.

**D5.2 Prolonged period of inactivity**

If the dishwasher is not to be used for a long time, proceed as follows:

- Close the water supply shutoff valve.
- Completely drain the tank.
- Remove and carefully clean the filters.
- Completely drain the incorporated dispenser hoses, removing them from the containers. Repeat the procedure described in the paragraph “Manual activation” at least 3 times.
- Completely drain the booster by simultaneously pressing the buttons as shown in the figure.



A buzzer indicates completion of drainage.

- Spread a thin film of petroleum jelly over all the stainless steel surfaces.

**D5.3 Preventive maintenance**

The preventive maintenance message “CALL” may be activated.

Upon reaching the set number of cycles (e.g. 20000), appears on the display.

This message advises calling a qualified authorized service technician for a general check-up on of the state of the appliance.

**NOTICE: CONTACT YOUR AUTHORIZED SERVICE COMPANY TO PERFORM MAINTENACE AND REPAIRS**

**NOTICE:** Using any parts other than genuine factory manufactured parts relieves the manufacturer of all warranty and liability.

**NOTICE:** Manufacturer reserves the right to change specifications at any time without notice.

**WARNING**

**The equipment warranty is not valid unless the appliance is installed, started and demonstrated under the supervision of factory trained installer.**

**WARNING**

**The unit must be installed by Personnel who are qualified to work with electricity and plumbing. Improper installation can cause injury to personnel and/or damage to the equipment. The unit must be installed in accordance with applicable codes.**

**D6 RESIDUAL RISKS**

The machine has several risks that were not completely eliminated from a design standpoint or with the installation of adequate protection devices.

Nevertheless, through this manual the Manufacturer has taken steps to inform operators of such risks, carefully indicating the personal protection equipment to be used by them.

Sufficient spaces are provided for during the machine installation phases in order to limit these risks.

To preserve these conditions, the corridors and areas around the machine must always be:

- kept free of obstacles (e.g. ladders, tools, containers, boxes, etc.);
- clean and dry;
- well lit.

For the Customer’s complete information, the residual risks remaining on the machine are given below; such actions are to be considered incorrect and therefore strictly forbidden.

RESIDUAL RISK	DESCRIPTION OF HAZARDOUS SITUATION
Slipping or falling	The operator can slip due to water or dirt on the floor.
Burns	The operator deliberately or unintentionally touches some components inside the machine or dishes at the outfeed without using gloves or without allowing them to cool. Possible contact with water above 60°C / 140°F.
Electrocution	Contact with live parts during maintenance operations carried out with the electrical panel powered.

Falling from above	The operator intervenes on the machine using unsuitable systems to access the upper part (e.g. rung ladders, or climbs on it).
Tipping of loads	During maintenance on the machine or the packing containing the machine with the use of unsuitable accessories or lifting systems or with load unbalanced.
Chemical	Contact with chemical substances (e.g. detergent, rinse aid, scale remover, etc.) without taking adequate safety precautions. Therefore always refer to the safety cards and labels on the products used.

## E

## TROUBLESHOOTING

<b>DISHWASHER DOES NOT WASH WELL</b>	<ol style="list-style-type: none"> <li>1. Check if the suction filter is dirty, if so clean it thoroughly.</li> <li>2. Check if the wash jets are clogged by solid food particles.</li> <li>3. Check that the initial amount of detergent or subsequent additions are correct.</li> <li>4. The selected wash cycle is too short. Repeat the cycle.</li> <li>5. Check that the tank temperature is between 131°F [50°C] and 154°F [68°C].</li> <li>6. Check that the dishes are stacked correctly in the racks.</li> </ol>
<b>GLASSES AND DISHES ARE NOT DRIED PROPERLY</b>	<ol style="list-style-type: none"> <li>1. To be performed by authorized service technicians: check the instructions for the amount of rinse-aid.</li> <li>2. Check that there is rinse-aid in the container and if necessary top off level.</li> <li>3. Check the set amount of rinse-aid (see “setting the dispensers” paragraph).</li> <li>4. Check that the water temperature is between 176°F [80°C] and 194°F [90°C].</li> </ol>
<b>CONDENSATION ON GLASSES</b>	<ol style="list-style-type: none"> <li>1. Check that there is rinse-aid in the container and if necessary top off level.</li> <li>2. Check the set amount of rinse-aid (see “setting the dispensers” paragraph).</li> <li>3. Remove the rack of glasses immediately the cycle has ended.</li> </ol>
<b>STAINS ON THE GLASSES</b>	<ol style="list-style-type: none"> <li>1. Only use “non-foaming” products for professional dishwashers.</li> </ol>
<b>EXCESSIVE FOAM IN THE TANK</b>	<ol style="list-style-type: none"> <li>1. Check that the wash water temperature is not less than 122°F [50°C].</li> <li>2. To be performed by authorized service technicians: check if the amount of product dispensed by the detergent dispenser is excessive.</li> <li>3. Ensure that the tank has not been cleaned with unsuitable cleaners. Drain the tank and rinse thoroughly before new wash cycles.</li> <li>4. If a foaming detergent has been used, drain and refill the tank with water until the foam disappears.</li> </ol>
<b>SMEARS OR SPOTS ON THE GLASSES</b>	<ol style="list-style-type: none"> <li>1. Reduce the amount of rinse-aid (see “setting the dispensers” paragraph).</li> </ol>
<b>THE WASH OR RINSE ARMS TURN SLOWLY</b>	<ol style="list-style-type: none"> <li>1. Remove and thoroughly clean the arms.</li> <li>2. Clean the wash pump suction filter.</li> <li>3. Run the De-Lime cycle.</li> </ol>



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