



# CADET

Technical User Manual

CDT-1



# Under Counter dishwasher

CADET CDT-1



EN-US      User Manual



## Foreword



The installation, use, and maintenance manual (hereinafter Manual) provide the user with information necessary for correct and safe use of the machine (or “appliance”).

The following must not be considered a long and exacting list of warnings, but rather a set of instructions suitable for improving machine performance in every respect and, above all, preventing injury to persons and animals and damage to property due to improper operating procedures.

All persons involved in machine transport, installation, commissioning, use and maintenance, repair and disassembly must consult and carefully read this manual before carrying out the various operations, in order to avoid wrong and improper actions that could compromise the machine's integrity or endanger people. Make sure to periodically inform the user regarding the safety regulations. It is also important to instruct and update personnel authorized to operate on the machine, regarding its use and maintenance.

The manual must be available to operators and carefully kept in the place where the machine is used, so that it is always at hand for consultation in case of doubts or whenever required.

If, after reading this manual, there are still doubts regarding machine use, do not hesitate to contact the Manufacturer or the authorized Service Center to receive prompt and precise assistance for better operation and maximum efficiency of the machine. During all stages of machine use, always respect the current regulations on safety, work hygiene and environmental protection. It is the user's responsibility to make sure the machine is started and operated only in optimum conditions of safety for people, animals and property.



### **IMPORTANT**

- The manufacturer declines any liability for operations carried out on the appliance without respecting the instructions given in this manual.
- The manufacturer reserves the right to modify the appliances presented in this publication without notice.
- No part of this manual may be reproduced.
- This manual is available in digital format by:
  - contacting the dealer or reference customer care;
  - downloading the latest and up to date manual on the web site;
- The manual must always be kept in an easily accessed place near the machine. Machine operators and maintenance personnel must be able to easily find and consult it at any time.

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## A SAFETY INSTRUCTION

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### A.1 General information



#### **IMPORTANT**

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. Refer to “A.2 *Personal protection equipment*” for suitable personal protection equipment.
- Do not touch the heating element during or immediately after use.
- The installation of this unit must be installed in accordance with local codes, or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, “NFPA 70”, Canadian Electrical Code (“CEC”), Part I, “CSA C22.1”, and Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, “NFPA 96”.
- **BEFORE SERVICING, DISCONNECT THE ELECTRICAL SERVICE AND PLACE A RED TAG AT THE DISCONNECT SWITCH TO INDICATE WORK IS BEING DONE ON THAT CIRCUIT.**



#### **NOTE!**

- Contact your authorized service company to perform maintenance and repairs.
- Using any parts other than genuine factory manufactured parts relieves the manufacturer of all warranty and liability.
- 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.
- 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 all National Codes governing plumbing, sanitation, safety and good trade practices.

<b>SAVE THESE INSTRUCTIONS</b>
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## A.2 Personal protection equipment

Summary table of the Personal Protection Equipment (PPE) to be used during the various stages of the machine's service life.

Stage	Protective garments 	Safety footwear 	Gloves 	Glasses 	Safety helmet 
Transport	—	●	○	—	○
Handling	●	●	○	—	—
Unpacking	○	●	○	—	—
Installation	○	●	● <sup>1</sup>	—	—
Normal use	●	●	● <sup>2</sup>	○	—
Adjustments	○	●	—	—	—
Routine cleaning	○	●	● <sup>1-3</sup>	○	—
Extraordinary cleaning	○	●	● <sup>1-3</sup>	○	—
Maintenance	○	●	○	—	—
Dismantling	○	●	○	○	—
Scrapping	○	●	○	○	—
<b>Key:</b>					
●	<b>PPE REQUIRED</b>				
○	<b>PPE AVAILABLE OR TO BE USED IF NECESSARY</b>				
—	<b>PPE NOT REQUIRED</b>				

1. During these operations, gloves must be cut-resistant. Failure to use the personal protection equipment by operators, specialized personnel or users can involve exposure to harm to health (depending on the model).

2. During these operations, gloves must be heatproof and suitable for contact with water and the substances used (refer to the safety data sheet of the substances used for the information regarding the required PPE). Failure to use the personal protection equipment by operators, specialized personnel or users can involve exposure to chemical risk and cause possible harm to health (depending on the model).

3. During these operations, gloves must be suitable for contact with chemical substances used (refer to the safety data sheet of the substances used for information regarding the required PPE). Failure to use the personal protection equipment by operators, specialized personnel or users can involve exposure to chemical risk and cause possible harm to health (depending on the model).

## B GENERAL SAFETY RULES

### B.1 Introduction

The machines are provided with electric and/or mechanical safety devices for protecting workers and the machine itself.

Therefore the user must not remove or tamper with such devices. The Manufacturer declines any liability for damage due to tampering or their non-use.

### B.2 Mechanical safety characteristics, hazards

The machine does not have sharp edges or protruding parts. The guards for the moving and live parts are fixed to the cabinet with screws, to prevent accidental access.

### B.3 Protection devices installed on the appliance

#### B.3.1 Guards

The guards on the appliance are:




- fixed guards (e.g. casings, covers, side panels, etc.), fixed to the appliance and/or frame with screws or quick-release connectors that can only be removed or opened with tools;
- interlocked movable guards (door) for access inside the appliance;
- appliance electrical equipment access doors, made from hinged panels openable with tools. The door must not be opened when the appliance is connected to the power supply.




#### B.3.2 Safety devices

The appliance has:

- interlocks on the front panels giving access to inside the appliance;

### B.4 Safety signs to be placed on the appliance or near its area

Prohibition	Meaning
	do not oil, lubricate, repair and adjust moving parts
	do not remove the safety devices
	do not use water to extinguish fires (placed on electrical parts)

Danger	Meaning
	danger of crushing hands
	caution, hot surface
	danger of electrocution (shown on electrical parts with indication of voltage)

### B.5 Instructions for use and maintenance

Risks mainly of a mechanical, thermal, and electrical nature exist in the machine. Where possible the risks have been neutralized:

- directly, by means of adequate design solutions.
- indirectly by using guards, protection, and safety devices.

Any anomalous situations are signaled on the control panel display.

During maintenance, several risks remain, as these could not be eliminated, and must be neutralized by adopting specific measures and precautions.

Do not carry out any checking, cleaning, repair, or maintenance operations on moving parts. Workers must be informed of this prohibition by means of clearly visible signs.

To guarantee machine efficiency and correct operation, periodical maintenance must be carried out according to the instructions given in this manual.

Make sure to periodically check correct operation of all the safety devices and the insulation of electrical cables, which must be replaced if damaged.

### B.6 Reasonably foreseeable improper use

Improper use is any use different from that specified in this manual. During appliance operation, other types of work or activities deemed improper and that in general can involve risks for the safety of operators and damage to the appliance are not allowed. Reasonably foreseeable improper use includes:

- lack of appliance maintenance, cleaning and periodical checks.
- structural changes or modifications to the operating logic.
- tampering with the guards or safety devices.
- failure to use personal protection equipment by operators, specialized personnel and maintenance personnel.
- failure to use suitable accessories (e.g. use of unsuitable equipment or ladders).
- keeping combustible or flammable materials, or in any case materials not compatible with or pertinent to the work, near the appliance.
- improper appliance installation.
- placing in the appliance any objects or things not compatible with its use, or that can damage the machine, cause injury or pollute the environment.
- climbing on the appliance.
- non-compliance with the requirements for correct appliance use.
- other actions that give rise to risks not eliminable by the Manufacturer.



## WARNING

The previously described actions are prohibited!

### B.7 End of use

When the appliance is no longer to be used, make it unusable by removing the mains power supply wiring.

### B.8 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. In order to reduce the risks, provide for sufficient spaces while installing the unit. To preserve these conditions, the 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 indicated below: such situations are deemed improper 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
Catching, dragging or crushing	<p>Catching or dragging of the operator or other persons in the drive, during the machine work phase, due to improper actions, such as:</p> <ul style="list-style-type: none"> <li>• placing an arm inside the machine to remove a stuck rack without stopping the machine by operating an emergency switch.</li> <li>• accessing the rack handling system without stopping the machine by operating an emergency switch.</li> </ul> <p>Use of improper clothing with loose parts (e.g., necklaces, scarves, shawls, ties, etc.) or long hair not gathered, which could get caught up in moving parts.</p>

Residual risk	Description of hazardous situation
Burns/abrasions (e.g., heating elements, cold pan, cooling circuit plates and pipes)	The operator deliberately or unintentionally touches some components inside the machine without using protective gloves.
Stab wounds	The operator deliberately or unintentionally touches some components with sharp edges during the machine cleaning without using protective gloves.
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.
Shearing of upper limbs	The operator violently closes the front panels.
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).
Crushing or injury	The specialized personnel may not correctly secure the control panel when accessing the technical compartment. The panel could close suddenly.
Crushing or shearing	Possible risk of injury to upper limbs during the hood closing operation.
Tipping of loads	When handling the machine or the packing containing it, using unsuitable lifting systems or accessories or with the unbalanced load.
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.



### IMPORTANT

In case of a significant anomaly (e.g., short circuits, wires coming out of the terminal block, motor breakdowns, worn electrical cable sheathing, etc.) the operator must immediately deactivate the machine.

## C GENERAL INFORMATION

### C.1 Introduction

This manual contains information relevant to various appliances. The product images in this guide are only an example.

The drawings and diagrams given in the manual are not in scale. They supplement the written information with an outline, but are not intended to be a detailed representation of the appliance supplied.

The numerical values given on the appliance installation diagrams refer to measurements in millimeters and/or inches.

### C.2 Definitions

Listed below are the definitions of the main terms used in the manual. It is advisable to read them carefully before use.


Operator	machine installation, adjustment, use, maintenance, cleaning, repair and transport personnel.
Manufacturer	INSINGER machine company or any other service center authorized by INSINGER machine company.
Operator for normal machine use	an operator who has been informed and trained regarding the tasks and hazards involved in normal machine use.



Customer Care service or specialized technician	an operator instructed/trained by the Manufacturer and who, based on his professional and specific training, experience and knowledge of the accident-prevention regulations, is able to appraise the operations to be carried out on the machine and recognize and prevent any risks. His professionalism covers the mechanical, electrotechnical and electronics fields.
Danger	source of possible injury or harm to health.
Hazardous situation	any situation where an operator is exposed to one or more hazards.
Risk	a combination of probabilities and risks of injury or harm to health in a hazardous situation.
Protection devices	safety measures consisting of the use of specific technical means (guards and safety devices) for protecting operators against risks.
Guard	an element of a machine used in a specific way to provide protection by means of a physical barrier.
Safety device	a device (other than a guard) that eliminates or reduces the risk; it can be used alone or in combination with a guard.
Customer	the person who purchased the machine and/or who manages and uses it (e. g. company, entrepreneur, firm).
Emergency stop device	a group of components intended for the emergency stop function; the device is activated with a single action and prevents or reduces damage to persons/ machines/ property/animals.
Electrocution	an accidental discharge of electric current on a human body.

### C.3 Machine and Manufacturer's identification data

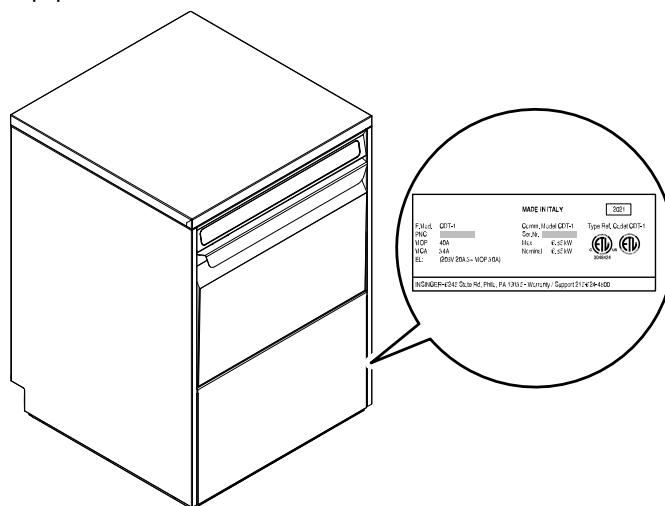
A reproduction of the marking or data plate on the machine is given below:

		<b>MADE IN ITALY</b>		2021	
F.Mod.	CDT-1	Comm. Model	CDT-1	Type Ref.	Cadet CDT-1
PNC	██████████	Ser.Nr.	██████████		
MOP	40A	Max	6.85 kW		
MCA	34A	Nominal	6.85 kW		
EL:	(208V 20A 3- MOP 30A)				
INSINGER- 6245 State Rd, Phila, PA 19135 - Warranty / Support 215-624-4800					

The data plate gives the product identification and technical data; listed below is the meaning of the various information given on it.

F.Mod.	factory description of product
Comm.Model	commercial description
PNC	production number code
Ser.No.	serial number
208V 1ph	power supply voltage
208V 3ph	electric convertibility (depending on the model)
60 Hz	power supply frequency
6.85 kW	max. power
6.85 kW	nominal power
IPX4	dust and water protection rating
INSINGER machine company - 6245 State Rd, Phila, PA 19135	manufacturer

The data plate is located on the right-side panel of the equipment.



### WARNING

Do not remove, tamper with or make the machine marking illegible.



### IMPORTANT

When scrapping the machine, the marking must be destroyed.



### NOTE!

Refer to the data given on the machine marking for relations with the Manufacturer (e.g., when ordering spare parts, etc.).

### C.4 Responsibility

The Manufacturer declines any liability for damage and malfunctioning caused by:

- non-compliance with the instructions contained in this manual;
- repairs not carried out in a workmanlike fashion, and replacements with parts different from those specified in the spare parts catalogue (the fitting and use of non-original spare parts and accessories can negatively affect appliance operation and invalidates the original manufacturer warranty);
- operations carried out by non-specialised personnel;
- unauthorized modifications or operations;
- missing, lack or inadequate maintenance;
- improper appliance use;
- unforeseeable extraordinary events;
- use of the appliance by uninformed and / or untrained personnel;
- non-application of the current provisions in the country of use, concerning safety, hygiene and health in the workplace.

The Manufacturer declines any liability for damage caused by arbitrary modifications and conversions carried out by the user or the Customer.

The employer, workplace manager or service technician are responsible for identifying and choosing adequate and suitable personal protection equipment to be worn by operators, in compliance with regulations in force in the country of use.

The Manufacturer declines any liability for inaccuracies contained in the manual, if due to printing or translation errors.

Any supplements to the installation, use and maintenance manual the Customer receives from the Manufacturer will form

an integral part of the manual and therefore must be kept together with it.

### C.5 Copyright

This manual is intended solely for consultation by the operator and can only be given to third parties with the permission of INSINGER machine company.

### C.6 Keeping the manual

The manual must be carefully kept for the entire life of the appliance, until scrapping. The manual must stay with the appliance in case of transfer, sale, hire, granting of use or leasing.

## C.7 Recipients of the manual

This manual is intended for:

- the carrier and handling personnel;
- installation and commissioning personnel;
- specialized personnel - Customer Care service (see service manual).

## D NORMAL USE

### D.1 Correct use

Our machines are designed and optimized in order to obtain high performance and efficiency.

This equipment must only be used for its expressly designed purpose, i.e. washing dishes with water and specific detergents. Any other use is to be deemed improper.

### D.2 Characteristics of personnel enabled to operate on the appliance

The Customer must make sure the personnel for normal appliance use are adequately trained and skilled in their duties.

The operator must:

- read and understand the manual;
- receive adequate training and instruction for their duties in order to operate safely;
- receive specific training for correct appliance use.



### IMPORTANT

The Customer must make sure his personnel have understood the instructions received and in particular those regarding work hygiene and safety in use of the appliance.

### D.3 Basic requirements for appliance use

- Knowledge of the technology and specific experience in operating the appliance.
- Adequate general basic education and technical knowledge for reading and understanding the contents of the manual, including correct interpretation of the drawings, signs and pictograms.
- Sufficient technical knowledge for safely performing his duties as specified in the manual.
- Knowledge of the regulations on work hygiene and safety.

## E TECHNICAL DATA

### E.1 Main technical characteristics

Model	CADET CDT-1	
Supply voltage: field upgrade to	208V 1ph, 33amp 208V 3ph, 20amp	
Frequency	Hz	60
Max. power	kW	6.85
Booster heating elements	kW	6.0
Tank heating elements	kW	2.2
Water supply pressure	min max	7.25 psi [50 kPa] 101 psi [700 kPa]
Water supply temperature	°F [°C]	50 – 122 [10 – 50]
Water supply hardness for models without incorporated continuous water softener	ppm [°f]	140 [14 max]
Electric conductivity of water for models without incorporated continuous water softener	µS/in	< 1016
Concentration of chlorides in water	ppm	< 20
Rinse cycle water consumption	gal [L]	0.80 [3]
Booster capacity	gal [L]	3 [12]
Tank capacity	gal [L]	6.1 [23]
Standard cycle time with water supply at 122°F [50°C]	sec.	120 - 240 - 130
Legal noise level Leq <sup>1</sup>	dB(A)	LpA: 63dB - KpA: 1.5dB

<b>Model</b>		<b>CADET CDT-1</b>
Protection rating		IPX4
Minimum Supply - Circuit Ampacity	amp	34
Net weigh	lb [kg]	152 [68]
Shipping weight	lb [kg]	179 [81]
Shipping width	inch [mm]	29 1/8 [740]
Shipping height	inch [mm]	39 3/4 [1010]
Shipping depth	inch [mm]	26 3/8 [670]

1. The noise emission values have been obtained according to EN ISO 11204.

## F PRODUCT DESCRIPTION

### F.1 General description

The appliance is suitable for washing glasses, cups, cutlery.

Under no circumstances it can be used for other applications or ways not provided for in this manual.

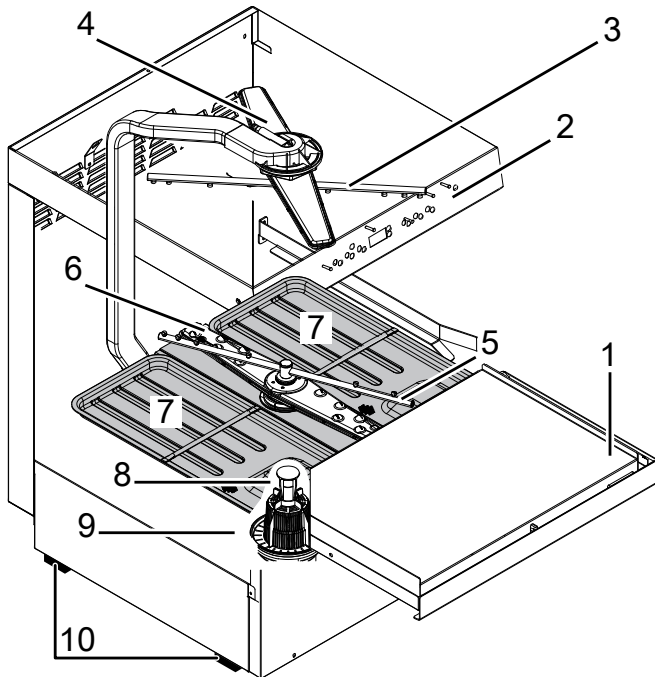
This equipment has been created in order to ensure a better work environment and cost efficiency.

These appliances are used in restaurants, cafeterias, cooking centers and large institutions. The special dish racks, that can be equipped with various inserts, offer practical and easy use for obtaining excellent washing results.

The electronic system enables complete supervision of the washing process. The control panel also has a display that shows the operating parameters and signals any faults.

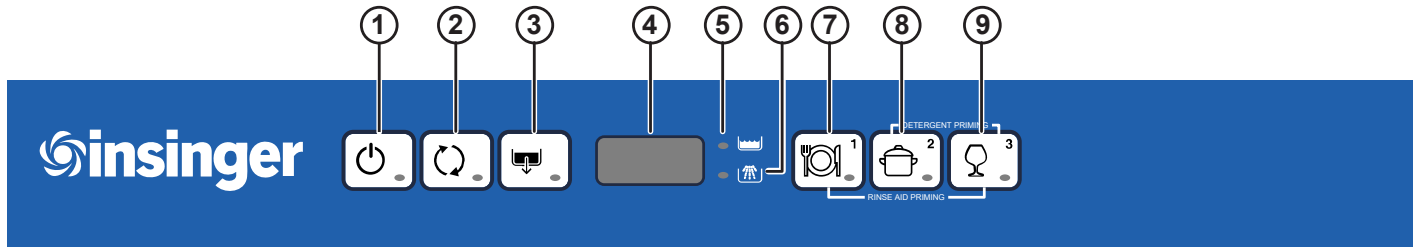
1	Door
2	Control panel
3	Upper rinse arm
4	Upper washer arm
5	Lower washer arm
6	Lower rinse arm
7	Flat filters
8	Overflow
9	Wash tank filter
10	Adjustable feet

### F.2 Machine overview



## G CONTROL PANEL DESCRIPTION

### G.1 Control panel description



1	On/Off
2	De-lime cycle
3	Drain/self-cleaning cycle
4	Display
5	Tank temperature indicator light
6	Booster temperature indicator light
7	Wash cycle 1
8	Wash cycle 2
9	Wash cycle 3



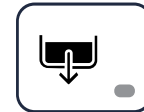
#### NOTE!

The temperature shown on the display is that of the booster if the indicator light "6" is on or, of the tank if the light "5" is on.

The tank temperature is displayed during the wash cycle and the booster temperature during the rinse cycle.

#### Drain / self-cleaning cycle

This button starts a drain/self-cleaning cycle. When the cycle is selected, the button indicator is lit up.



#### Wash cycle 1

This button starts **Wash cycle 1**. When the cycle is selected, the button indicator is lit up. This cycle is recommended for lightly soiled dishes or glasses.



#### Wash cycle 2

This button starts **Wash cycle 2**. When the cycle is selected, the button indicator is lit up. This cycle is recommended for normally dirty dishes.



#### Wash cycle 3

This button starts **Wash cycle 3**. When the cycle is selected, the button indicator is lit up. This is a specific cycle for glasses.



### G.2 Basic Controls

Described below are all the single buttons and functions available in the various control panel models listed above. Some functions are common to all models of the range, whereas others are available only on some versions.

#### On/Off

This button indicates equipment status: on or off. When the equipment is on, the button indicator is lit up.



#### De-lime cycle

This button starts the de-lime cycle. To be used if there are signs of lime deposits (a white, chalky substance) on the inside walls and on the wash arms.



## H OPERATION

### H.1 Starting



#### NOTE!

Carry out a couple of cycles without dishes to flush out any industrial grease which has remained in the tank and piping.

- 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 button.



- The indicator light of On/Off button 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:



**NOTE!**

This dishwasher does the first tank filling through several consecutive hot rinse cycles, while the display shows the message "FILL". This system saves up to 30% of the time than traditional models.

- If the door is opened during this stage the message "CLOSE" will appear on the display:



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



- To display the booster temperature during heating of the tank, open the door and press the **Wash cycle 1** button.



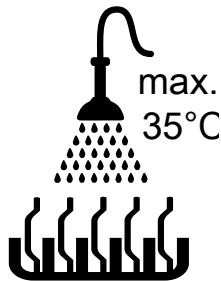
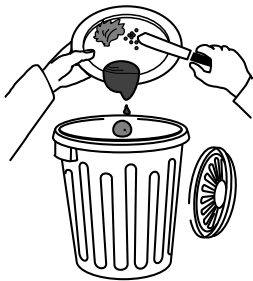
## H.2 Loading dishes on racks

The appliance is suitable for washing dishes, glasses, cups, cutlery, containers and receptacles in plastic and/or steel used for preparing, cooking and serving; as well as a wide variety of ceramic and/or metal cooking utensils. However it is advisable not to wash decorated dishes or place silverware in contact with other metals.



**IMPORTANT**

The appliance does not remove burnt food deposits from dishes. Dishes with burnt-on food deposits should be cleaned mechanically/chemically before putting them in the dishwasher. Before inserting the racks in the machine, clear the dishes of any food residuals and rinse them with cold or warm water, at a max. temperature of 35°C [95°F], using a manual prewash spray.



**CAUTION**

Failure to remove the residuals of detergent possibly used for manual prewash can cause malfunctioning of the dishwasher and compromise washing results.

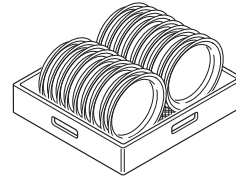


**IMPORTANT**

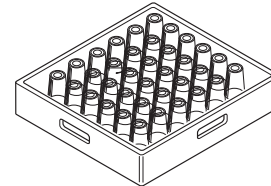
This machine must only be used for washing dishes, containers, etc. (see above) do not use it to wash animals or food (e.g., fruit, vegetables, meat or fish).

## H.3 Type of racks and loading

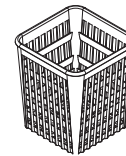
- YELLOW** rack: for 18 plates with maximum diameter of 240 mm.



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



- YELLOW** container for cutlery: insert items, with the handles pointing downwards, in each container.



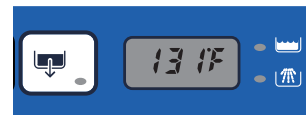
## H.4 Operation



**IMPORTANT**

- To guarantee sanitization of the dishes, wash at least 3 empty racks at lowest speed. This allows all the machine to reach the working temperature. Repeat the procedure if the machine is stopped or the door is opened for a long time.
- During normal daily operations, make sure to change the water in the tank at least twice a day.

The filling and heating stage has finished when the display shows the tank temperature. The appliance is now 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:
  - For lightly soiled dishes, press button **Wash cycle 1**.



- For very dirty dishes, press button **Wash cycle 2** (recommended).



- Specific cycle for glasses, press button **Wash cycle 3**.



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

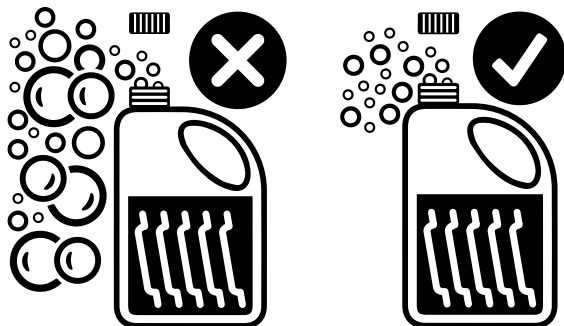


- Open the door and remove the rack containing the clean dishes.



#### CAUTION




The use of "foaming/nonspecific" detergents or in any case detergents used in different ways from that prescribed by the manufacturer, can cause damage to the dishwasher, and compromise the washing results.



## H.5 Wash cycle

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).

#### Table of times

 1	 2	 3
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.

## I DAILY CLEANING



### WARNING

Refer to "SAFETY INSTRUCTION".



### WARNING

When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging. Refer to the chapter *A.2 Personal protection equipment* for handling chemical products.

### I.1 Appliance cleaning

Cleaning must be carried out after every day of use. Use hot water, a neutral detergent/cleaner if necessary, and a soft brush or sponge. If another type of detergent is used, carefully follow the producer's instructions and observe the safety rules given in the information sheets provided with the product or substance.

In order to reduce the environmental impact of pollutants it is advisable to clean the appliance (externally and, where necessary, internally) with products that are more than 90% biodegradable.



#### CAUTION

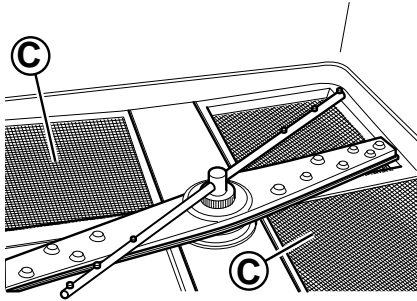
Do not use steel wool or similar material to clean stainless-steel surfaces. Do not use detergents containing chlorine.



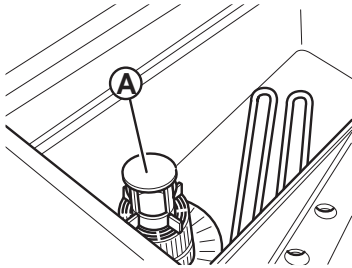
## I.2 End of service

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 flat filters "C".



- Remove the overflow "A".



- Close the door. Select the drain cycle by pressing button Drain/Self-cleaning cycle.



- The message "CLE" will be displayed throughout the drain cycle:



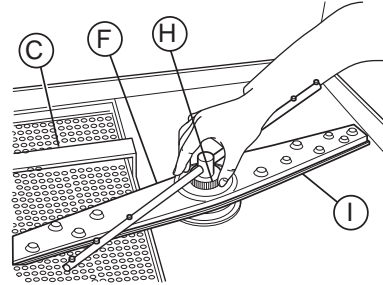
- After a few minutes, 3 beeps indicate the end of the cleaning cycle and the message "END" blinks on the display:



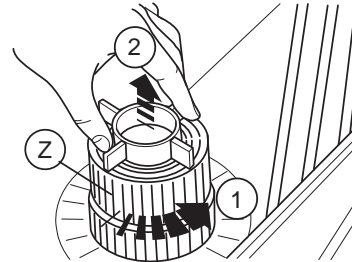
- Switch off the dishwasher by pressing ON/OFF button.



- Switch unit off at the main circuit breaker.
- Close the water shutoff valve.
- Remove the top and bottom wash and rinse arms "F" and "I", unscrewing the ring nut "H".



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



- Upon completion of cleaning operations, replace the parts removed previously:
  - tank filter "Z" and the overflow "A";
  - the flat filters "C";
  - top and bottom wash and rinse arms "F" and "I", screwing the ring nut "H".

## J MAINTENANCE

### J.1 Maintenance intervals

The inspection and maintenance intervals depend on the actual machine operating conditions and ambient conditions (presence of dust, damp, etc.), therefore precise time intervals cannot be given. In any case, careful and periodical machine maintenance is advisable in order to minimize service interruptions.

#### J.1.1 Preventive Maintenance

Preventive Maintenance reduces downtime and maximizes machines efficiency.

Customer Care Service can provide advice on the best maintenance plan to be purchased based on the intensity of use and the age of the equipment.

It is advisable to stipulate a preventive and scheduled maintenance contract with the Customer Care Service.

### J.2 Maintenance frequency

To ensure constant appliance efficiency, it is advisable to carry out the checks with the frequency given in the following table:



Maintenance, inspections, checks and cleaning	Frequency	Responsibility
Ordinary cleaning • general cleaning of appliance and surrounding area	Daily	Operator
Ordinary cleaning • Every month descale the wash and rinse jets with vinegar.	Monthly	Operator
Ordinary cleaning • Every month descale the wash and rinse jets with scale remover.	Monthly	Service
Mechanical protection devices • check their condition and for any deformation, loosening or removed parts	Monthly	Service
Control • check the mechanical part, for cracks or deformation, tightening of screws: check the readability and condition of words, stickers and symbols and restore if necessary	Yearly	Service
Appliance structure • Descal the boiler, inside surfaces of the tank and the appliance piping.	Yearly	Service
Appliance structure • The internal hose of the rinse-aid and detergent peristaltic dispenser should undergo periodic maintenance.	Yearly	Service
Appliance structure • If present, clean the finned coil of the energy saving device.	Yearly	Service
Appliance structure • tightening of main bolts (screws, fixing systems, etc.) of appliance	Yearly	Service
Safety signs • check the readability and condition of safety signs	Yearly	Service
Electrical control panel • check the electrical components installed inside the electrical control panel. Check the wiring between the electrical panel and appliance parts.	Yearly	Service
Electrical connection cable and plug • check the connection cable (replace if necessary) and plug	Yearly	Service
General appliance overhaul • check all components, electrical equipment, corrosion, pipes...	Every 10 years <sup>1</sup>	Service

1. the appliance is designed and built for a duration of about 10 years. After this period of time (from commissioning) the appliance must undergo a general inspection and overhaul. Some examples of checks to be carried out are given below.

### J.3 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.

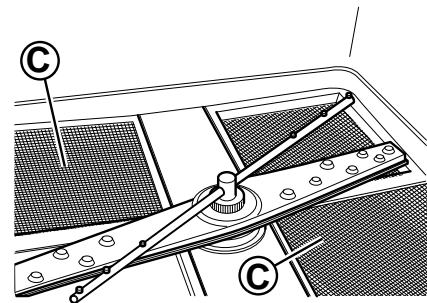


#### CAUTION

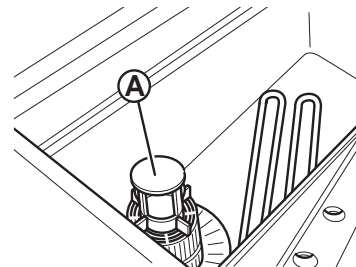
De-liming agents for commercial dishwashers cause corrosion. Product must be kept free of limescale for proper operation. Please contact your chemical supplier. Only use approved non-chlorinated, non-foaming commercial dishwasher chemicals. Always wear proper safety protection. follow all instructions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

#### Step 1 - Discharge tank dirty water

- Open the door and take out the rack containing the clean dishes.
- Remove the flat filters "C".



- Remove the overflow "A".



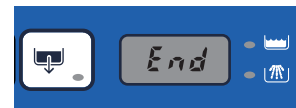
- Close the door. Select the drain cycle by pressing button Drain/Self-cleaning cycle.



- The message "CLE" will be displayed throughout the drain cycle:



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



- Switch off the dishwasher by pressing ON/OFF button.





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

- Switch on the dishwasher by pressing ON/OFF button.



- The indicator light of On/Off button 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:



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



## Step 3 - Pour the deliming agent

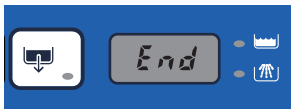
- Open the door, pour the required amount of deliming agent regarding agent concentration suggested by agent for 6 gallons [23 liters] of water.

## Step 4 - Start the De-Lime cycle

- Close the door and start the De-Lime cycle by pressing the "De-Lime" button.



- 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.

## Step 5 - Empty and clean the tank.

- Repeat step 1.



### CAUTION

Do not allow the deliming agent remaining in the machine longer than recommended by the deliming agent supplier.



### IMPORTANT

To delime the booster, call your authorized service company.

## J.4 Precautions in case of long idle periods

If the machine is not going to be used for some time, take the following precautions:

- close the water supply tap(s).
- completely drain the tank(s).
- remove and carefully clean the filters.
- completely drain the boiler.
- remove the plug from the power socket.
- completely drain the incorporated dispenser hoses. Remove them from the containers.
- carefully clean the internal parts of the machine.
- clean the cabinet, going over all the stainless steel surfaces vigorously with a rag moistened with paraffin oil to create a protective film.
- leave the door ajar so that air can circulate inside, preventing the formation of unpleasant odors.
- periodically air the premises.



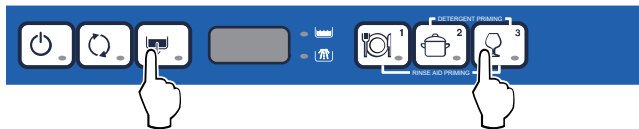
### NOTE!

After carrying out maintenance make sure the machine is able to work safely and, in particular, that the protection and safety devices are efficient.

## J.5 Booster drainage

If the appliance is not to be used for a long time, empty out the booster to prevent any malfunction and/or mildew and unpleasant odors.

- Press simultaneously the buttons as shown in the figure.




- A buzzer indicates completion of drainage.

## J.6 Machine disposal

At the end of the product's life cycle, make sure the equipment is not dispersed in the environment. The equipment must be disposed of in compliance with current regulations in the country of use.

All metal parts are in stainless steel (AISI 304) and removable. Plastic parts are marked with the letters of the material.



The symbol  on the product indicates that this product should not be treated as domestic waste, but must be correctly disposed of in order to prevent possible negative consequences for the environment and the human health.


Regarding the recycling of this product, please contact the sales agent or dealer of your product, your Customer Care service or the appropriate waste disposal service.

Risk of fire or explosion. Flammable refrigerant used

## K TROUBLESHOOTING

### K.1 General troubleshooting

Anomaly	Type of anomaly	Possible causes	Actions
The dishwasher does not start	Blocking	The dishwasher is not connected to the main power supply.	Check if the appliance main circuit breaker is in ON position.
The dishwasher does not wash well.	Loss of performance.	No scrape action before putting dishes in the racks	Scrape dishes before putting them in the racks.
		The wash arms are clogged by solid food remains. Residual food has not been removed from dishes.	Check if the wash jets are clogged by solid food remains.
		The wash arms are not properly installed.	Check the integrity of the wash arms. Remove and fit again the wash arms.
		The dishes are not correctly placed in the racks.	Check if the dishes are correctly placed in the racks.
		The dosing of detergent is not correct.	Call detergent and rinse aid service center.
		The detergent tank is empty.	Check that there is detergent in the container and if necessary top it up.
		Detergent pump does not work.	Call detergent and rinse aid service center.
		The wash tank suction filter is dirty.	Clean wash tank suction filter thoroughly.
Glasses and dishes are not dried properly.	Loss of performance.	The container of rinse aid is empty.	Check that there is rinse-aid in the container and if necessary top it up.
		Rinse aid pump does not work.	Call detergent and rinse aid service center.
		The rinse water temperature is too low.	Check if the rinse water temperature is between 176°F [80°C] and 194°F [90°C]. Call detergent and rinse aid service center to set the temperature in accordance to the rinse aid specifications.
		Foamy detergent present in the wash tank.	Check if the dishes were not immersed in foamy detergent (e.g., hand wash detergent) before being put in the dishwasher. Only use "non-foaming" products for professional dishwashers.
Condensation on glasses.	Loss performance.	The container of rinse aid is empty.	Check that there is rinse-aid in the container and if necessary top up.
		Rinse aid pump does not work.	Call detergent and rinse aid service center.
Stains on the glasses.	Loss of performance.	Foamy detergent present in the wash tank.	Only use "non-foaming" products for professional dishwashers.
		The dosing of rinse aid is not correct.	Call detergent and rinse aid service center.
		the hardness of the water is too high or too low.	Adjust the amount of detergent and rinse aid. Call detergent and rinse aid service center.

Anomaly	Type of anomaly	Possible causes	Actions
Excessive foam in the tank.	Loss performance.	Residuals of food or detergent, used for manual prewash, remains in the dishes.	Remove residuals of food or detergent from the dishes.
		Wash water temperature is too low.	Check if the water temperature of the wash module is between 131°F [50°C] and 154°F [68°C]. Call detergent and rinse aid service center to set the temperature in according to the detergent specifications.
		Foamy detergent present in the wash tank.	Empty and refill the tank with water until the foam has been removed.
Smears or spots on the glasses.		Too much rinse-aid.	Reduce the amount of rinse-aid. Call detergent and rinse aid service center.
Low pressure from wash arms.	Loss of performance	The wash arms are clogged. The tank filter is clogged. The wash pump filter is clogged. The water drainage hose is clogged. The wash pump does not work properly.	Clean the rinse arms. Run the De-Lime cycle. Clean the tank filter. Clean the wash pump filter. Call service center. Call service center.
Low pressure from rinse arms.	Loss of performance	The rinse arms are clogged. The water pressure after pressure reducer is too low.	Clean the rinse arms. Run the De-Lime cycle. Call service center.
The wash pump does not work.	Blocking	The wash pump is clogged.	Call service center.
The drain pump does not work.	Loss of performance	The drain pump is clogged.	Call service center.
The dishwasher is switched off, but the appliance continues to fill water.	Loss of performance	Inlet valve is damaged.	Close the water supply tap or taps and call service center.
The display shows to close the door.  Once closed the door, the display shows the same anomaly.	Blocking	The magnetic switch door does not work.	Call service center.

If the fault persists after carrying out the above checks, contact the Customer Care Service, remembering to specify:

- A. the type of fault.
- B. the appliance PNC (product number code).
- C. the Ser. No. (appliance serial number).



#### IMPORTANT

The appliance PNC and serial number are essential for identifying the type of appliance and date of manufacture.



#### NOTE!

For detailed information about the troubleshooting see the complete user manual in the web site.

## K.2 Alarms

Anomaly	Type of anomaly	Possible causes	Actions
<b>A1</b>	NO WATER	The valve is close. The water inlet filter is clogged. Too low pressure in hydraulic circuit. Overflow not inserted (only for appliances without drain pump).	Open the valve. Clean the water inlet filter. Check the minimum mains pressure. Insert properly the overflow.
<b>B1</b>	INEFFICIENT DRAINAGE	Overflow not removed. The waste outlet pipe and/or the overflow aperture obstructed.	Remove the overflow. Remove any obstruction from the waste outlet pipe and/or the overflow aperture.
<b>B2</b>	TANK WATER LEVEL TOO HIGH	The waste outlet pipe and/or the overflow aperture obstructed.	Remove any obstruction from the waste outlet pipe and/or the overflow aperture.

<b>Anomaly</b>	<b>Type of anomaly</b>	<b>Possible causes</b>	<b>Actions</b>
<b>C1 – C8</b>			CALL THE SERVICE CENTER
<b>E1 – E8</b>		The appliance continues to operate, but appropriate checks by a technician are recommended.	CALL THE SERVICE CENTER





Insinger Machine Co.  
6245 State Rd. Philadelphia, PA 19135  
800.344.4802 | [sales@insingermachine.com](mailto:sales@insingermachine.com)