

Hood Dishwasher

**EHT8/HHT8/KHT8/NHT8/XHT8/VHT7/
ZHT8/AHT8I/EHT8I/HHT8I/XHT8I/VHT7I/
ZHT8I/ZHT8TI/EHT8TI**



EN Installation and operating manual *



NSF/ANSI 3 compliant

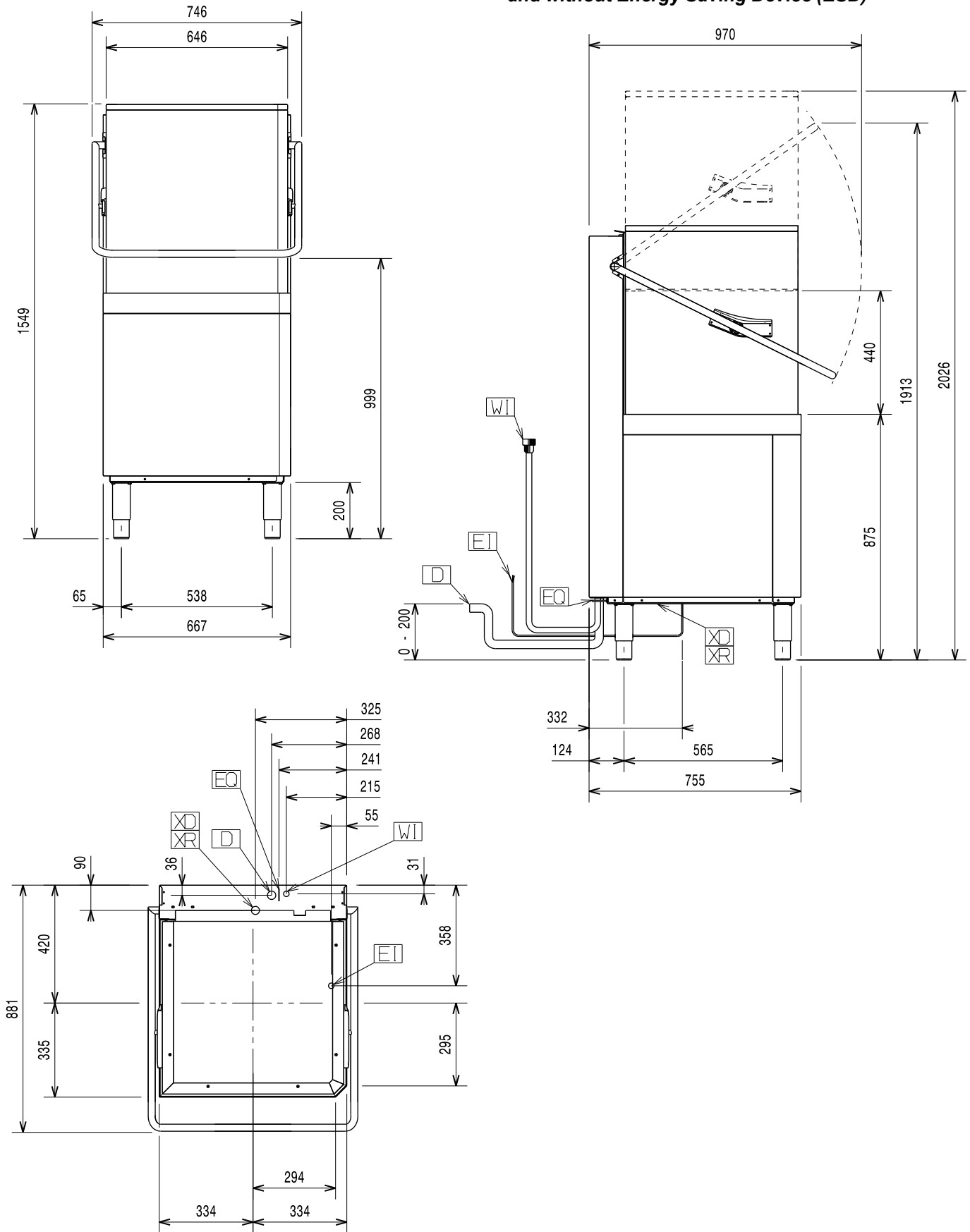


*Original instructions

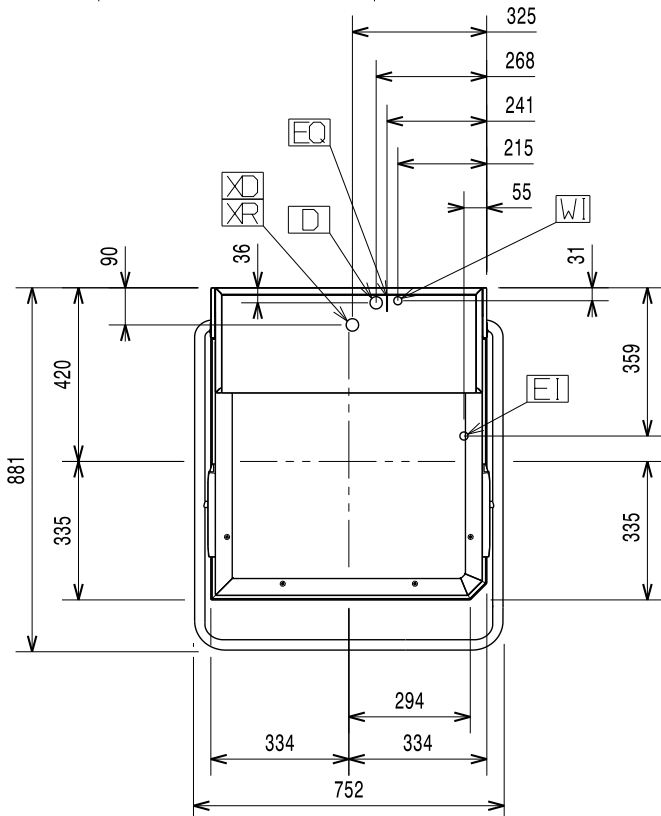
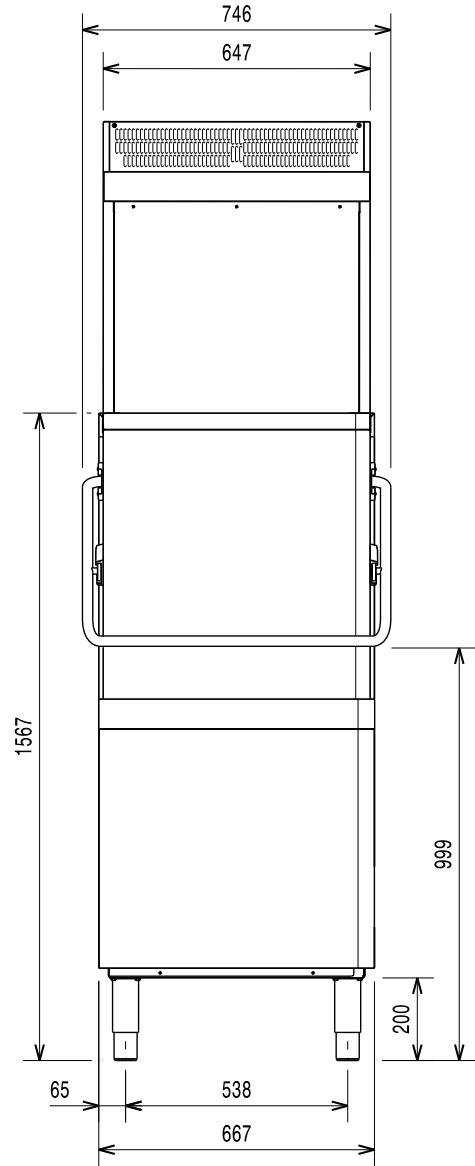
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Installation diagram

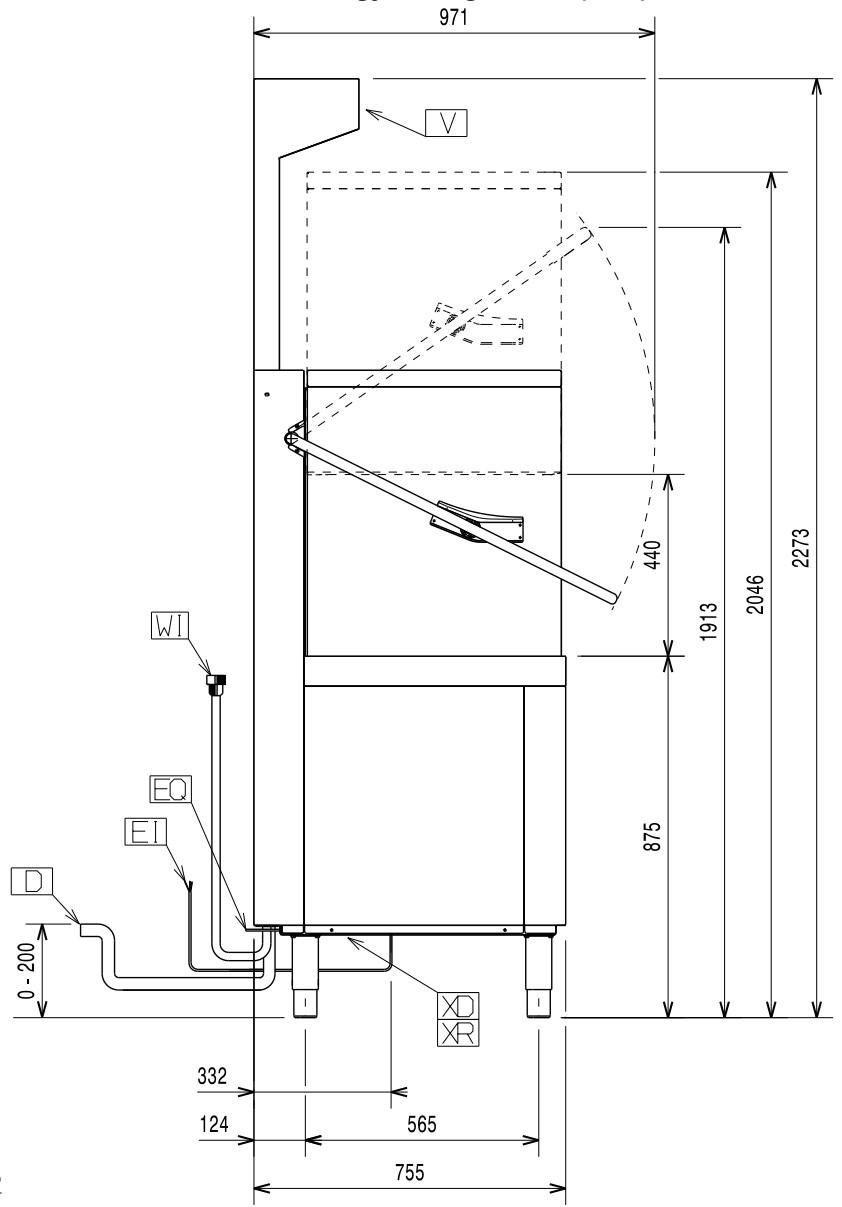
Manual hood type (single skin) without drain pump and without Energy Saving Device (ESD)



Installation diagram

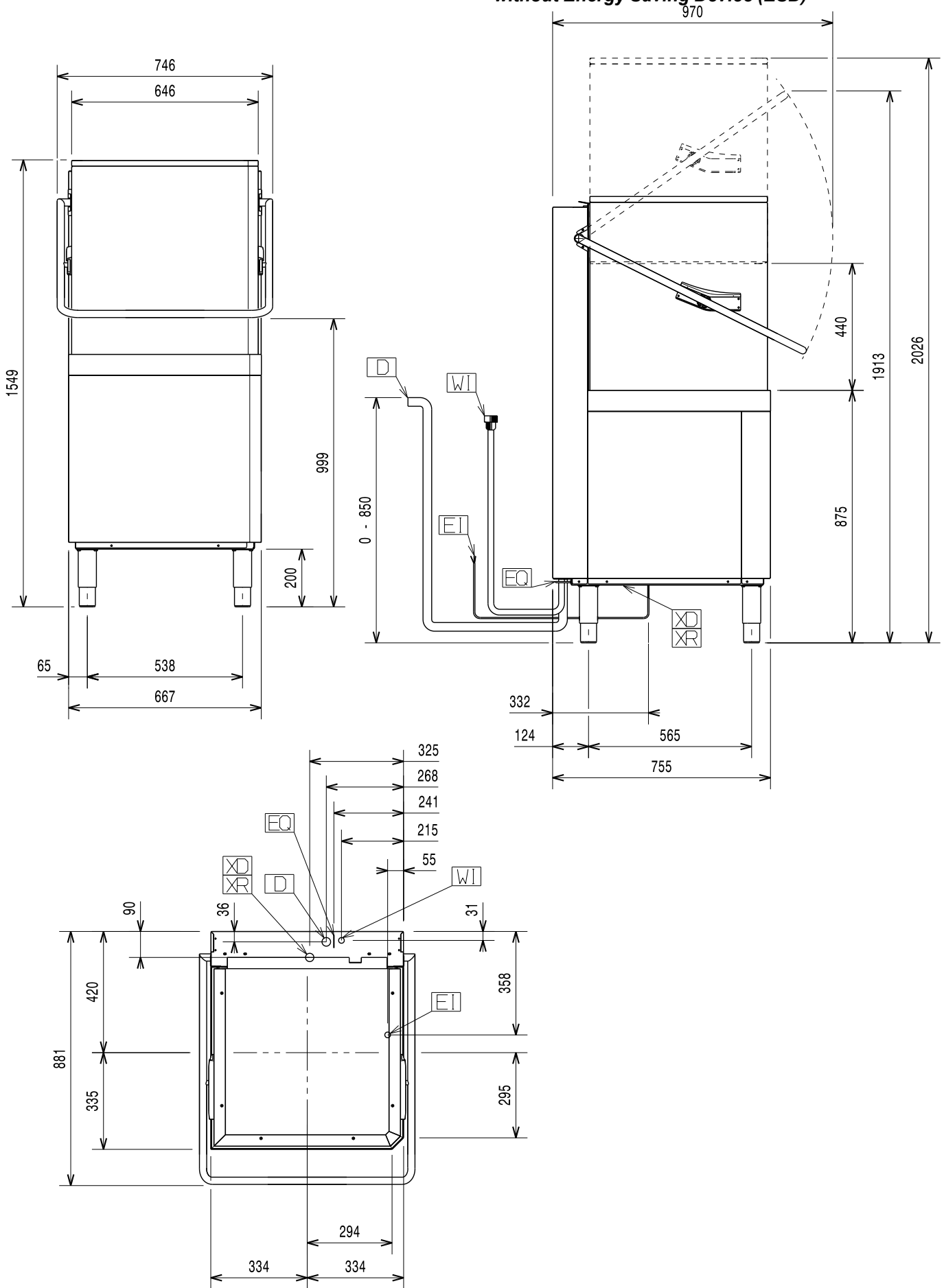


Manual hood type (single skin) without drain pump and with Energy Saving Device (ESD)

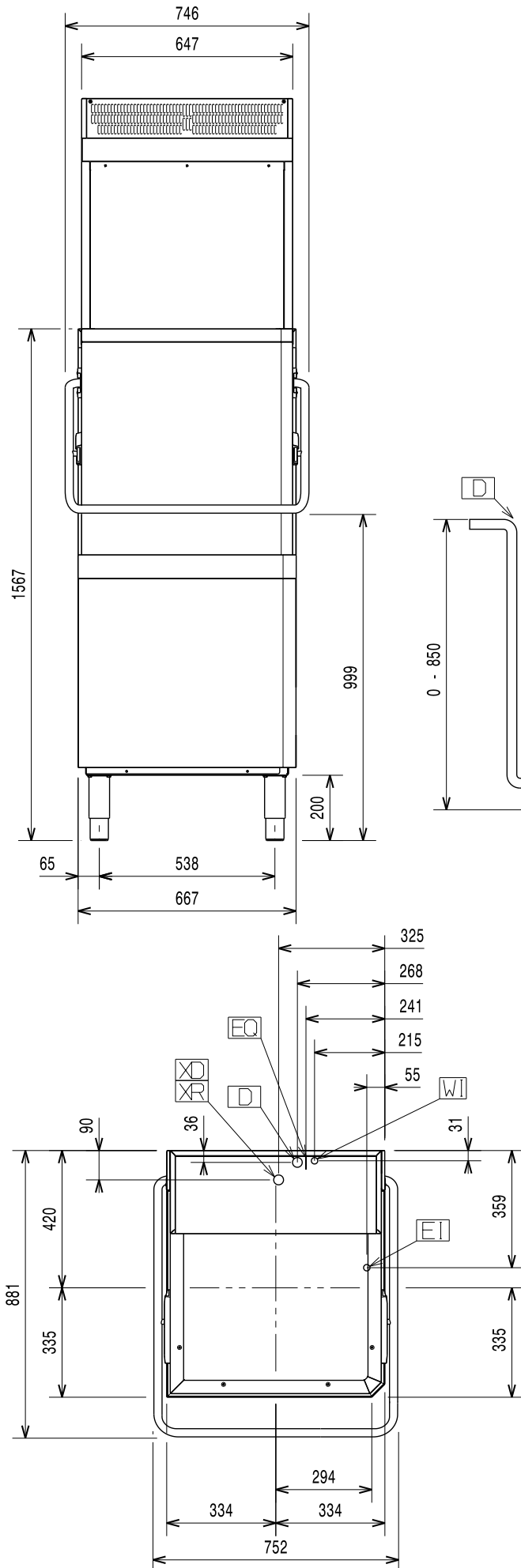


Installation diagram

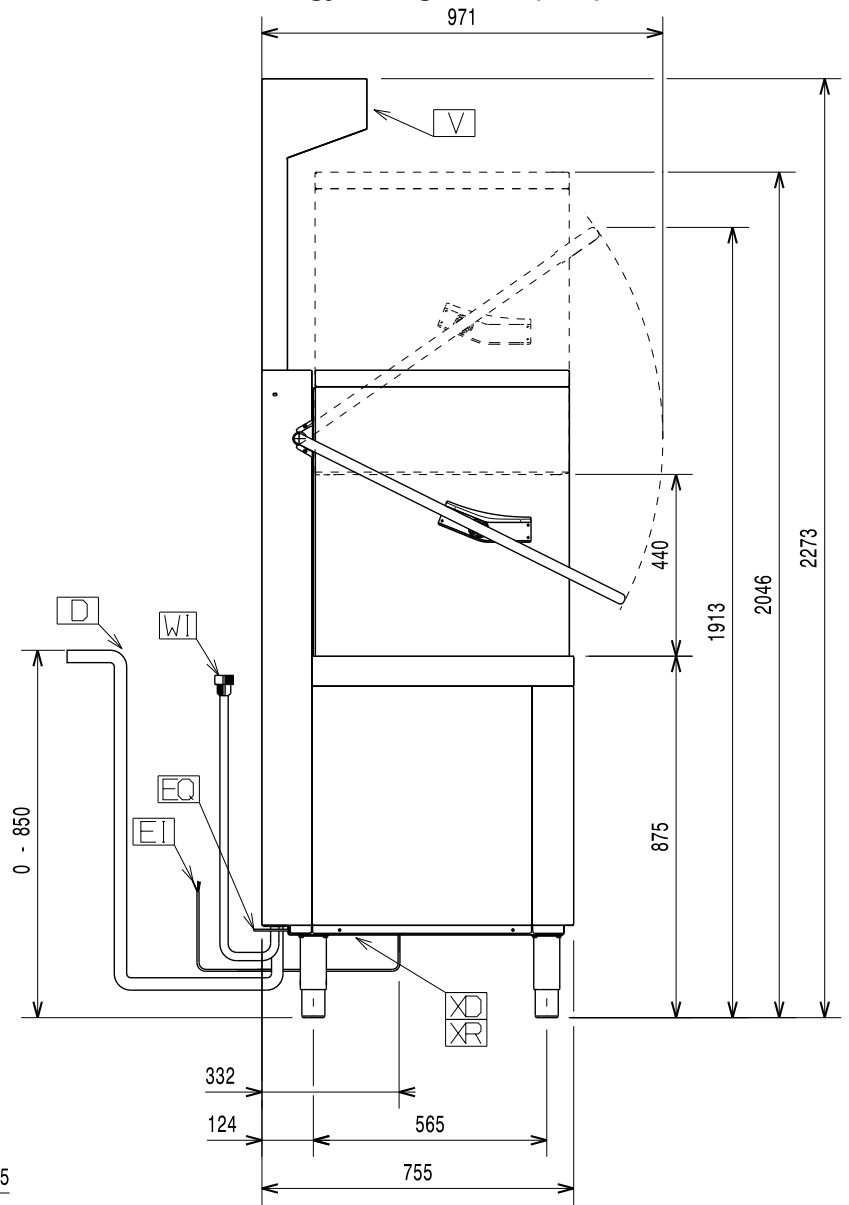
Manual hood type (single skin) with drain pump and without Energy Saving Device (ESD)



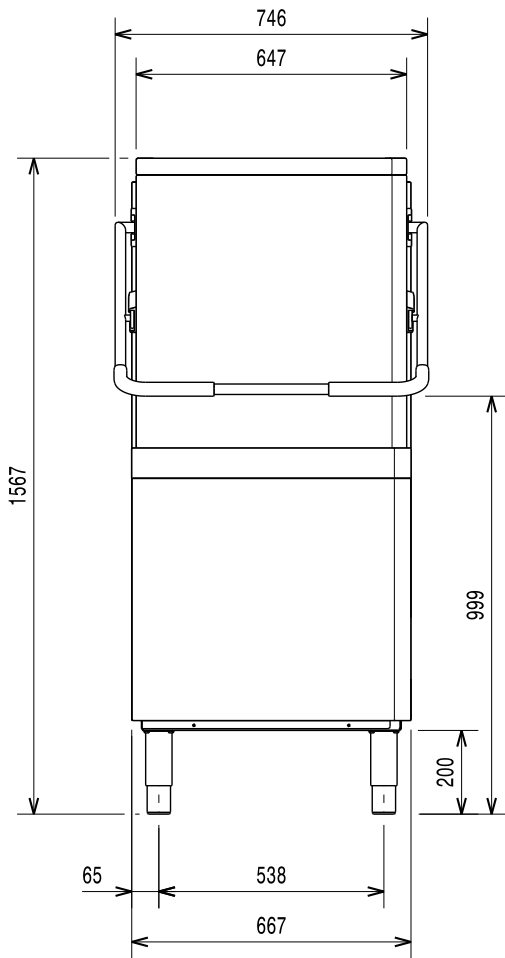
Installation diagram



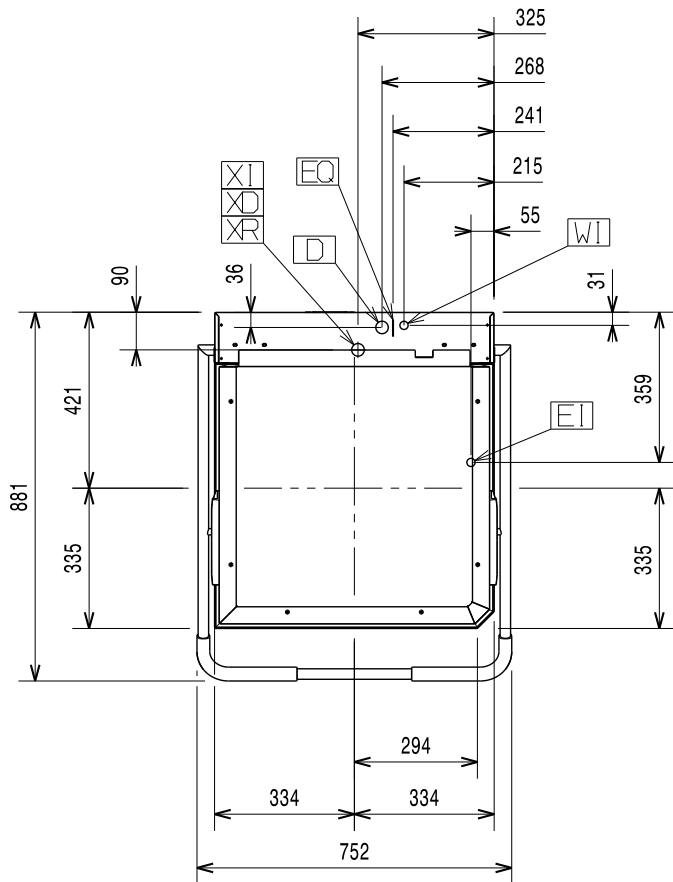
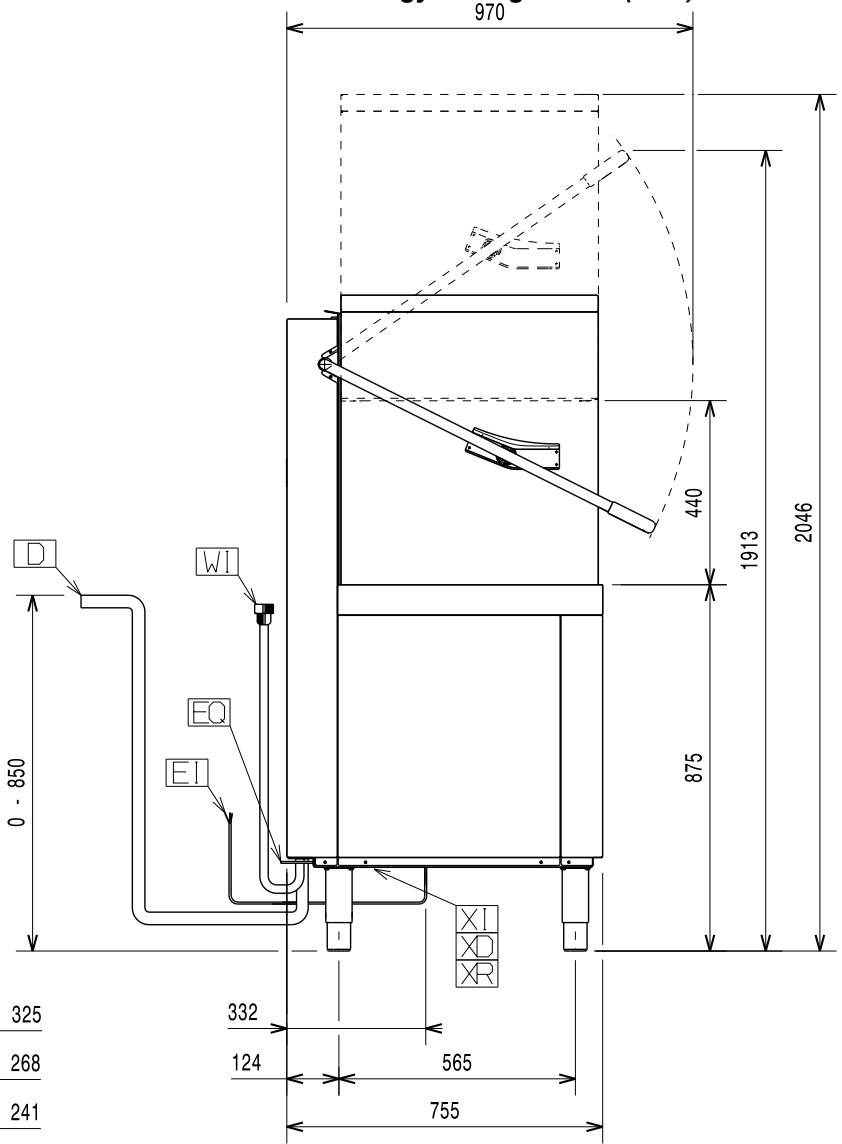
Manual hood type (single skin) with drain pump and with Energy Saving Device (ESD)



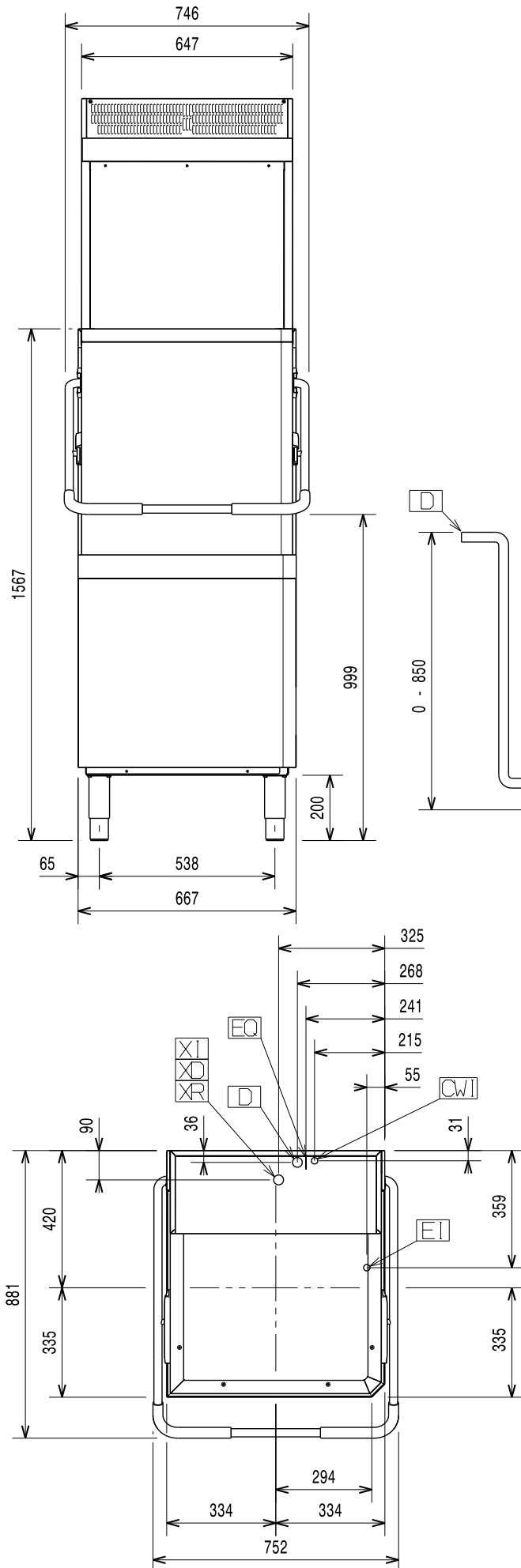
Installation diagram



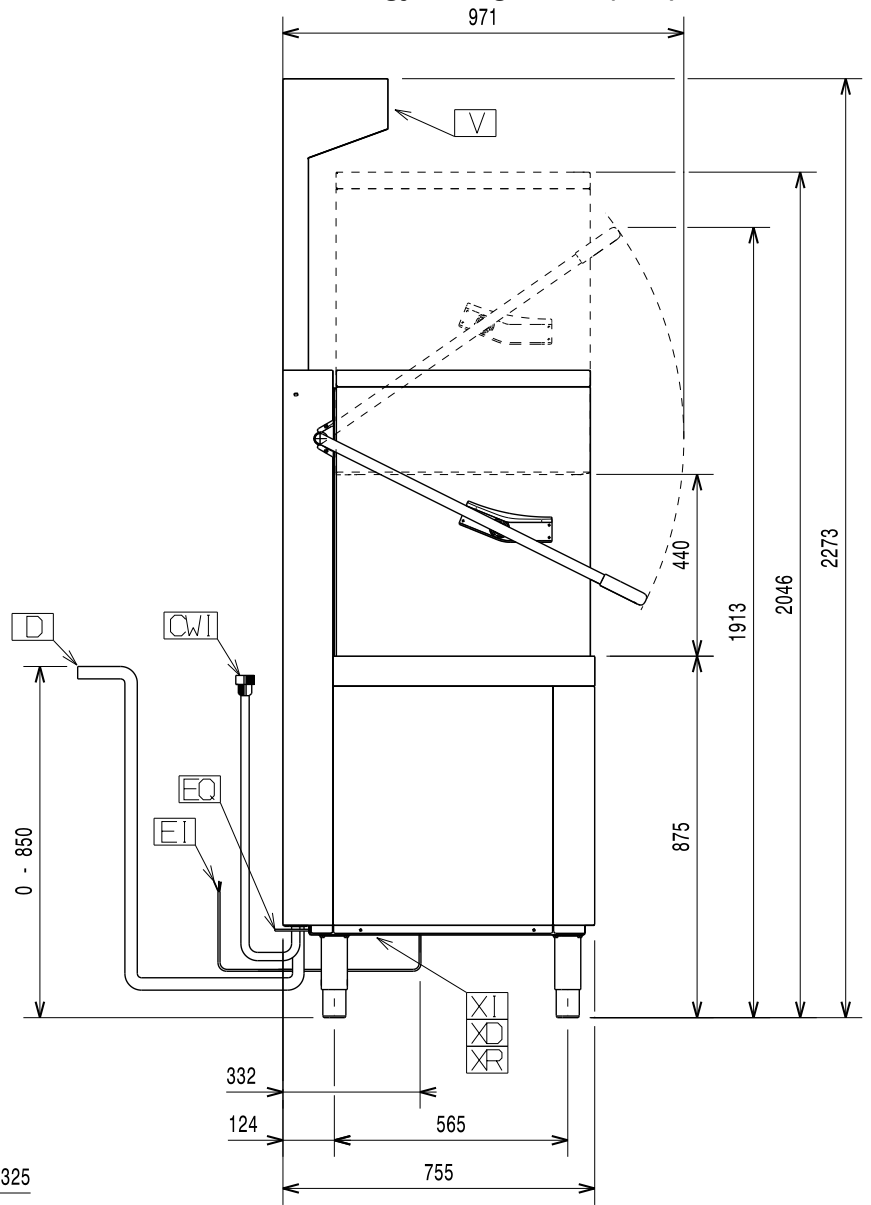
Manual hood type (double skin) with drain pump and without Energy Saving Device (ESD)



Installation diagram

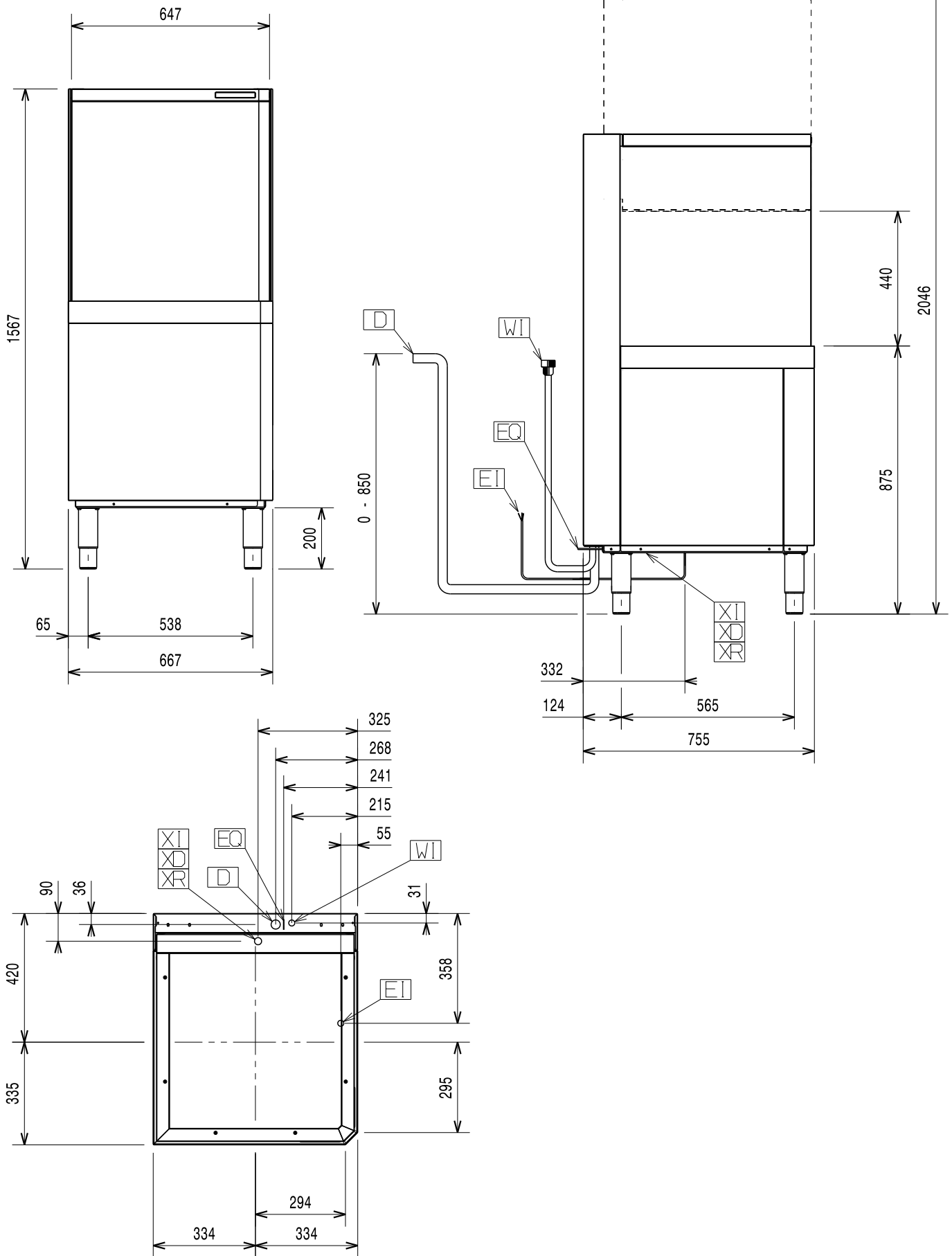


Manual hood type (double skin) with drain pump and with Energy Saving Device (ESD)



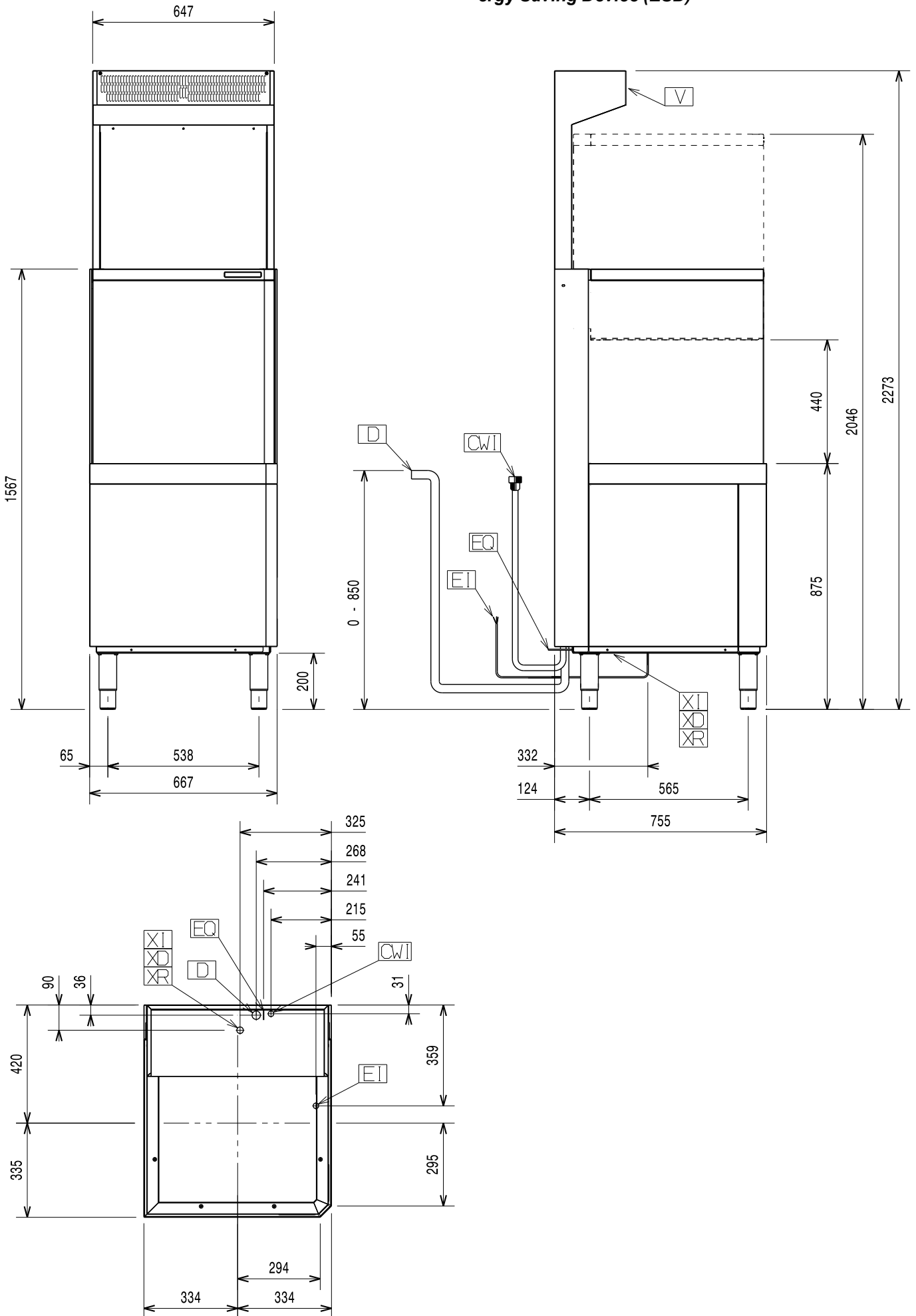
Installation diagram

Automatic hood type with drain pump and without Energy Saving Device (ESD)



Installation diagram

Automatic hood type with drain pump and with Energy Saving Device (ESD)



CWI = Cold water Inlet pipe $\varnothing=3/4"$ G
WI = Water Inlet pipe $\varnothing=3/4"$ G
D = Drain pipe internal $\varnothing=40$ mm(\wedge) - 20 mm($*$)
(\wedge) Only for model with free-fall drainage
(*) Only for model with drain pump

EI = Electrical Inlet
EQ = Equipotential screw
XD = Inlet pipe for detergents
XR = Inlet pipe for rinse-aid
XI = Inlet pipe for delime

Foreword



The installation, use and maintenance manual (hereinafter Manual) provides 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 authorised 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 authorised Service Centre 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 INSTRUCTIONS

A.1 General safety

- The appliance must not be used by people (including children) with limited physical, sensory or mental abilities or without experience and knowledge of it, unless instructed in its use and supervised by those responsible for their safety.



CAUTION

Do not wash the appliance with direct or high pressure jets of water.



WARNING

If the power cable is damaged it must be replaced by the Customer Care Service or in any case by specialised personnel, in order prevent any risk.

B GENERAL INFORMATION

B.1 Introduction

Given below is some information regarding the machine's intended use, its testing, and a description of the symbols used (that identify the type of warning), the definitions of terms used in the manual and useful information for the appliance user.

B.2 General safety instructions

To ensure safe use of the machine and a proper understanding of the manual it is necessary to be familiar with the terms and typographical conventions used in the documentation. The following symbols are used in the manual to indicate and identify the various types of hazards:



WARNING

Danger for the health and safety of operators.



WARNING

Danger of electrocution - dangerous voltage.

Words further explaining the type of hazard are placed next to the symbols in the text. Warnings serve to ensure the safety of personnel.

B.3 Additional indications

In this manual the risks arising from incorrect use will be marked with:



CAUTION

Risk of damage to the machine or the product.

The parts of the text preceded by the following symbol:



NOTE!

Clarifications and explanations

Provide recommendations to keep in mind during the entire life-cycle of the product.

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 machine supplied.

The numerical values given on the machine installation diagrams refer to measurements in mm.

B.4 Definitions

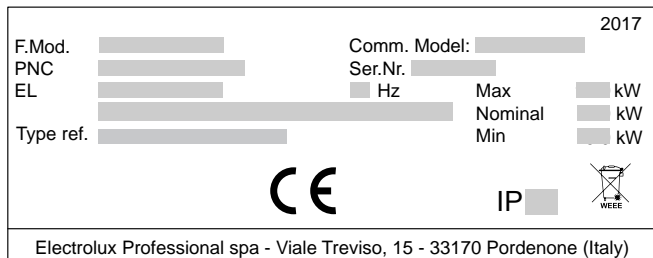
Listed below are the definitions of the main terms used in the manual. It is advisable to read them carefully before use.

Operator	machine installation, adjustment, use, maintenance, cleaning, repair and transport personnel.
Manufacturer	Electrolux Professional SpA or any other service centre authorised by Electrolux Professional SpA.
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 specialised personnel	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 recognise 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).
Electrocution	an accidental discharge of electric current on a human body.

B.5 Machine and Manufacturer's identification data

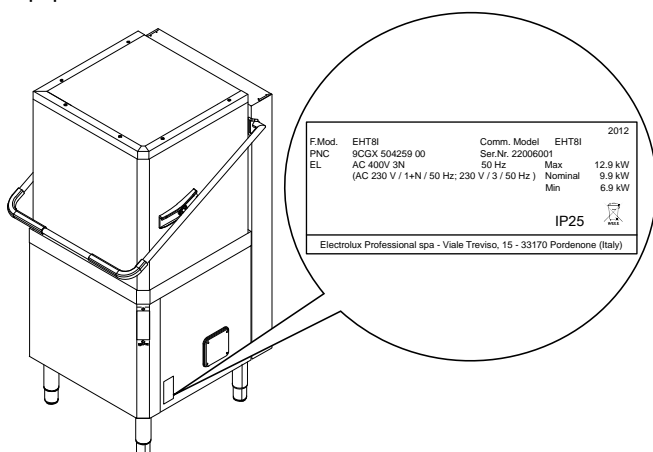
An example of the marking or dataplate on the machine is given below:



The dataplate 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
400 V 3N~	power supply voltage
230 V 1N~ – 230 V 3~	electric convertibility
50/60	power supply frequency
12.9 kW	max. power
9.9 kW	nominal power
6.9 kW	min. power
IP25	dust and water protection rating
Type ref.	list of acronyms used to identify the type of machine, uniquely
CE	CE marking
Electrolux Professional SpA Viale Treviso 15 33170 Pordenone Italy	manufacturer

The dataplate 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.



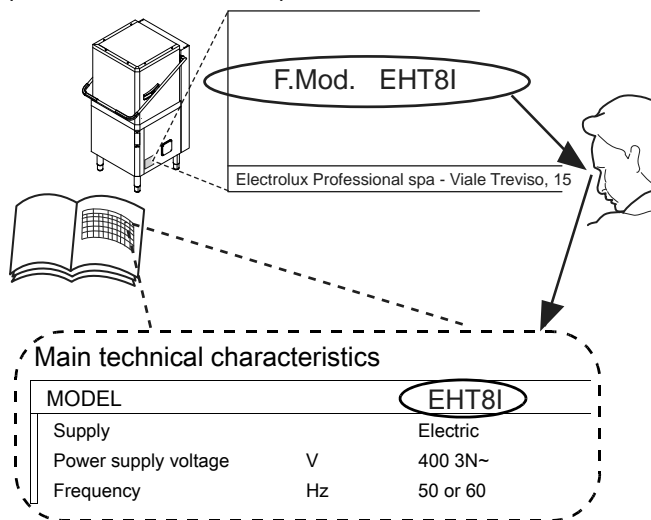
NOTE!

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

B.6 Appliance identification

B.6.1 How to identify the technical data

To identify the technical data, read the factory description of the product (F. Mod.) on the dataplate, identify the main machine data and consult "Main technical characteristics, performance and consumption".



B.6.2 How to interpret the factory description

The factory description on the dataplate has the following meaning (some examples are given below):

Single-Skin version						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
N	HT	8	WS	G		
E	HT	8	M			
Z	HT	8	L	G	UK	
V	HT	7	G			

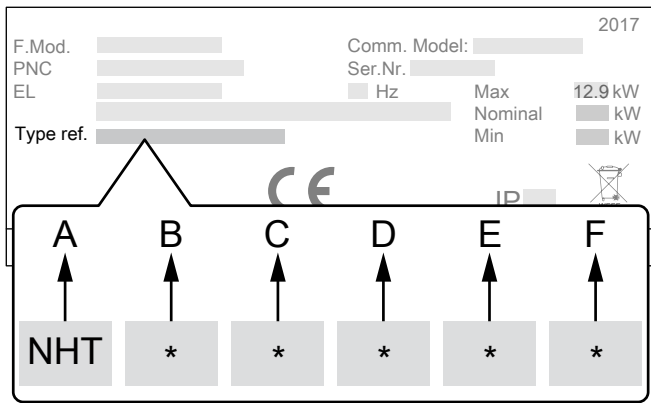
Double-Skin version						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Z	HT	8	I	E	L	G
E	HT	8	T	I	E	L
V	HT	7	I	G		

Variable description

(1) Brand	E = Electrolux, Z = Zanussi, N = To brand, K = Kipro, A = Alpeninox, H = Hakpro, KXT = Klumaier X Tanner, V = Veetsan
(2) Machine type	HT = Hood Type
(3) Racks/hour	8 = 80 racks/hour 7 = 72 racks/hour
(4...7) Appliance equipment	T = automatic, I = double skin hood, E = Energy Saving Device, L = delime cycle, G = detergent pump + rinse aid pump + drain pump, DD = detergent pump, WS = water softener, M = marine, USPH = marine-USPH, 6 = 60 Hz, UK = UK market, S = solid detergent.

B.6.3 How to interpret the type reference

The type reference description on the dataplate has the following meaning.



Legend




A	Type of appliance • Hood type dishwasher
B	Type of rinsing • 0 = without rinse pump • 1 = with rinse pump
C	Water treatment • 0 = without water softener • 1 = with water softener
D	Type of hood • 0 = manual hood • 1 = automatic hood
E	Energy Saving Device [ESD] • 0 = without ESD • 1 = with ESD
F	Heating element in the boiler • 0 = single heating element • 1 = double heating element

B.7 Copyright

This manual is intended solely for consultation by the operator and can only be given to third parties with the permission of Electrolux Professional SpA.

B.11 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	○	●	● ¹	—	—
Normal use	●	●	● ²	○	—
Adjustments	○	●	—	—	—
Routine cleaning	○	●	● ¹⁻³	○	—
Extraordinary cleaning	○	●	● ¹⁻³	○	—
Maintenance	○	●	○	—	—

B.8 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 machine operation and invalidates the warranty);
- operations by non-specialised personnel;
- unauthorised modifications or operations;
- inadequate maintenance;
- improper machine use;
- unforeseeable extraordinary events;
- use of the machine by uninformed and 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. Electrolux Professional SpA 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.

B.9 Keeping the manual

The manual must be carefully kept for the entire life of the machine, until scrapping.






The manual must stay with the machine in case of transfer, sale, hire, granting of use or leasing.

B.10 Recipients of the manual

This manual is intended for:

- the carrier and handling personnel;
- installation and commissioning personnel;
- the employer of machine users and the workplace manager;
- operators for normal machine use;
- specialised personnel - Customer Care service (see service manual).

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

Stage	Protective garments 	Safety footwear 	Gloves 	Glasses 	Safety helmet 
Dismantling	○	●	○	○	—
Scrapping	○	●	○	○	—
Key:					
●	PPE REQUIRED				
○	PPE AVAILABLE OR TO BE USED IF NECESSARY				
—	PPE NOT REQUIRED				

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 damage 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, specialised personnel or users can involve exposure to chemical risk and cause possible damage 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 damage to health (depending on the model).

C TECHNICAL DATA

C.1 Main technical characteristics

Model		NHT8/EHT8/ KHT8/HHT8/ XHT8/ZHT8/ VHT7/	ZHT8/AHT8/ EHT8/NHT8/ HHT8/XHT8/ VHT7/	EHT8M/ EHT8IUSPH5	EHT8M6/ EHT8IUSPH6	EHT8TIL/ ZHT8TIL
Supply voltage: convertible to single-phase version		400V 3N~ 230V 3~ 230V 1N~	400V 3N~ ¹ 230V 3~ ¹ 230V 1N~ ¹	400V 3~ — —	440V 3~ — —	400V 3N~ 230V 3~ 230V 1N~
Frequency	Hz	50	50 or 60	50	60	50
Max. power		12.9 ²	12.9 ²	12.9 ²	12.9 ²	12.9 ²
Power absorbed as factory setting	kW	9.9	9.9	9.9	9.9	9.9
Power absorbed with water supply at 65°C [149°F]		6.9 ³	6.9 ³	—	—	6.9 ³
Boiler heating elements	kW	9.0	9.0	9.0	9.0	9.0
Tank heating elements	kW	3.0	3.0	3.0	3.0	3.0
Water supply pressure	kPa [bar]	50 - 700 [0.5 - 7]	50 - 700 [0.5 - 7]	50 - 700 [0.5 - 7]	50 - 700 [0.5 - 7]	50 - 700 [0.5 - 7]
Water supply temperature: — for models without ESD — for models with ESD	°C [°F]	10-65 [50-149] —	10-65 [50-149] 10-20 [50-68]	10-65 [50-149] —	10-65 [50-149] —	10-65 [50-149] 10-20 [50-68]
Water supply hardness for models without incorporated continuous water softener	°f/°d/ °e	14/8/10 max	14/8/10 max	14/8/10 max	14/8/10 max	14/8/10 max
Water supply hardness for models with incorporated water softener	°f/°d/ °e	53.4/30/ 35.7 max	53.4/30/ 35.7 max	53.4/30/ 35.7 max	53.4/30/ 35.7 max	53.4/30/ 35.7 max
Electric conductivity of water for models without incorporated continuous water softener	µS/ cm	<400	<400	<400	<400	<400
Concentration of chlorides in water	ppm	<20	<20	<20	<20	<20
Rinse cycle water consumption	l	2.0 ⁴	2.0 ⁴	2.0	2.0	2.0
Boiler capacity	l	12	12	12	12	12
Tank capacity	l	24	24	24	24	24

Model		NHT8/EHT8/ KHT8/HHT8/ XHT8/ZHT8/ VHT7/	ZHT8/AHT8/ EHT8/NHT8/ HHT8/XHT8/ VHT7/	EHT8M/ EHT8IUSPH5	EHT8M6/ EHT8IUSPH6	EHT8TIL/ ZHT8TIL
Cycle duration in "High Productivity" mode ⁵	sec.	45-84-150 50-84-150 (VHT7G)	45-84-150 ⁶ 50-84-150 (VHT7IG)	45-84-150	45-84-150	45-84-150 ⁶
Cycle duration in "NSF/ANSI3" compliant mode ⁵	sec.	57-84-150	57-84-150 ⁶	57-84-150	57-84-150	57-84-150 ⁶
Legal noise level Leq ⁷	dB[A]	LpA:68dB KpA:1.5dB	LpA:68dB KpA:1.5dB	LpA:68dB KpA:1.5dB	LpA:68dB KpA:1.5dB	LpA:68dB KpA:1.5dB
Protection rating		IP25	IP25	IP25	IP25	IP25
Net weight for models without [with] ESD	kg	106 [-]	117 [150]	117 [-]	117 [-]	119 [152]
Power supply cable		H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Supply cord diameter (min. - max. value)	mm	18 - 25	18 - 25	18 - 25	18 - 25	18 - 25
Latent heat without [with] ESD	kWh	0.5 [-]	0.5 [0.35]	0.5 [-]	0.5 [-]	0.5 [0.35]
Sensible heat without [with] ESD	kWh	2 [-]	2 [1.49]	2 [-]	2 [-]	2 [1.49]

1. For the model EHT8IELG6: 380-400V 3N~ convertible 220-230V 3~ or 220-230V 1N~.
2. If activated by software, coincidence of tank and boiler heating elements.
3. Activatable via software only by a specialized technician.
4. For models VHT7G and VHT7IG 2.3 liters.
5. With water supply temperature at 65°C [149°F].
6. In models with Energy Saving Device (ESD) cycle duration is extended by 11 seconds.
7. The noise emission values have been obtained according to EN ISO 11204.

	380 – 415V 3N		400 – 440V 3		220 – 240V 3		220 – 240V 1N	
	C	S	C	S	C	S	C	S
6.9 kW	5x2.5 mm ²	16A 3P + N	5x2.5 mm ²	16A 3P	4x4 mm ²	20A 3P	3x6 mm ²	40A 1P + N
9.9 kW	5x2.5 mm ²	20A 3P + N	4x2.5 mm ²	20A 3P	4x6 mm ²	32A 3P	3x10 mm ²	60A 1P + N
12.9 kW	5x4 mm ²	32A 3P + N	4x4 mm ²	25A 3P	4x10 mm ²	50A 3P	3x10 mm ²	70A 1P + N

C = Power supply cable
S = On/Off switch



NOTE!

Standard cycle time may vary should the inlet water temperature and/or the boiler heating elements be different from that indicated above.

C.2 Characteristics of power supply

The AC power supply to the machine must meet the following conditions:

- max. voltage variation $\pm 6\%$
- max. frequency variation $\pm 1\%$ continuous $\pm 2\%$ for a short period.

Harmonic distortion, unbalanced three-phase supply voltage, voltage pulses, interruption, dips and the other electric characteristics must respect the provisions of point 4.3.2 of Standard EN 60204-1 (IEC 60204-1).



WARNING

The machine's power supply must be protected against overcurrents (short circuits and overloads) by fuses or suitable thermal magnetic circuit breakers. A suitable high-sensitivity manual-reset differential omnipolar thermal-magnetic switch with contact gap enabling complete disconnection in category III overvoltage conditions and complying with the current regulations, must be installed between the power cable and the electric line.



WARNING

For protection against indirect contacts (depending on the type of supply provided for and connection of earths to the equipotential protection circuit) refer to point 6.3.3 of EN 60204-1 (IEC 60204-1) with the use of protection devices that ensure automatic cut-off of the supply in case of isolation fault in the TN or TT systems or, for IT systems, the use of isolation controllers or differential current protection devices to activate automatic power disconnection (an isolation controller must be provided for indicating a possible first earth fault of a live part, unless a protection device is supplied for switching off the power in case of a such a fault. This device must activate an acoustic and/or visual signal which must continue for the entire duration of the fault). For example: in a TT system, a differential switch with cut-in current (e.g. 30 mA) coordinated with the earthing system of the building where the machine is located must be installed ahead of the supply.

D TRANSPORT, HANDLING AND STORAGE

D.1 Introduction

Transport (i. e. transfer of the machine from one place to another) and handling (i. e. transfer inside workplaces) must occur with the use of special and adequate means.



WARNING

Due to their size, the machines cannot be stacked on top of each other during transport, handling and storage; this eliminates any risks of loads tipping over due to stacking.



NOTE!

Specialised personnel must:

- have specific technical training and experience in the use of lifting systems;
- have knowledge of the safety regulations and applicable laws in the relevant sector;
- have knowledge of the general safety rules;
- ensure the use of personal protection equipment suitable for the type of operation carried out;
- be able to recognise and avoid any possible hazard.

D.2 Transport: instructions for the carrier



WARNING

Do not stand under suspended loads during loading/ unloading operations. Unauthorised personnel must not enter the work area.

The weight of the appliance alone is not sufficient to keep it steady.



NOTE!

The transported load can shift:

- when braking;
- when accelerating;
- in corners;
- on rough roads.

D.3 Procedures for handling operations

For correct and safe lifting operations:

- use the type of equipment most suitable for characteristics and capacity (e.g. electric pallet truck or lift truck);
- cover sharp edges;

Before lifting:

- send all operators to a safe position and prevent persons from entering the handling area;
- make sure the load is stable;
- make sure no material can fall during lifting. Manoeuvre vertically in order to avoid impacts;
- handle the machine, keeping it at minimum height from the ground.



WARNING

For machine lifting and anchoring, do not use movable or weak parts such as: casings, electrical raceways, pneumatic parts, etc.

D.4 Shifting

The operator must:

- have a general view of the path to be followed;
- stop the manoeuvre in case of hazardous situations.



WARNING

Do not push or pull the appliance to move it, as it may tip over.

D.5 Placing the load

Before placing the load, make sure the way is free and that the floor is flat and can take the load. Remove the appliance from the wooden pallet, move it to one side, then slide it onto the floor.

D.6 Storage

The machine and/or its parts must be stored and protected from damp, in a non-aggressive place, free of vibrations and with room temperatures between -10°C and 50°C. The place where the machine is stored must have a flat support surface to avoid deforming the machine or damage to the support feet.



WARNING

Appliance positioning, installation and disassembly must be carried out by specialised personnel.



CAUTION

Do not make modifications to the parts supplied with the appliance. Any missing or faulty parts must be replaced with original parts.

E INSTALLATION AND ASSEMBLY

E.1 Introduction

To ensure correct operation of the appliance and maintain safe conditions during use, carefully follow the instructions given below in this section.



WARNING

The above operations must be carried out by the specialised personnel in conformity with the current safety regulations, regarding the equipment used and the operating procedures. Before moving the appliance make sure the capacity of the lifting equipment used is suitable for its weight.

E.2 Customer responsibilities

The Customer must provide for the following:

- installation of an adequate electrical power supply ahead of the appliance, according to the equipment's technical specifications (C.1 *Main technical characteristics* and C.2 *Characteristics of power supply*);
- the equipotential connection ∇ of the workplace electrical system to the metal structure of the machine by means of a copper cable of adequate section (see position "EQ" in *Installation diagram*);
- adducting for the electrical connection between the workplace electric panel and the equipment;
- the water supply and drain connections and other connections as indicated in C.1 *Main technical characteristics* and in the paragraph E.8 *Plumbing connections*;

E.3 Characteristics of the installation place

The machine is designed for installation in professional and not domestic-type kitchens. Water collection traps/ metal grates must be arranged in the floor at the machine discharges (see the *Installation diagram*), possibly replaceable with a single water trap sized for a flow rate of at least 3 l/s.



CAUTION

Do not install the appliance over 2000 meters above sea level.

E.4 Appliance space limits

- A suitable space must be left around the appliance (for operations, maintenance, etc.).
- The passages enabling personnel to operate on the appliance must be at least 50 cm wide, except at the rear of the appliance.

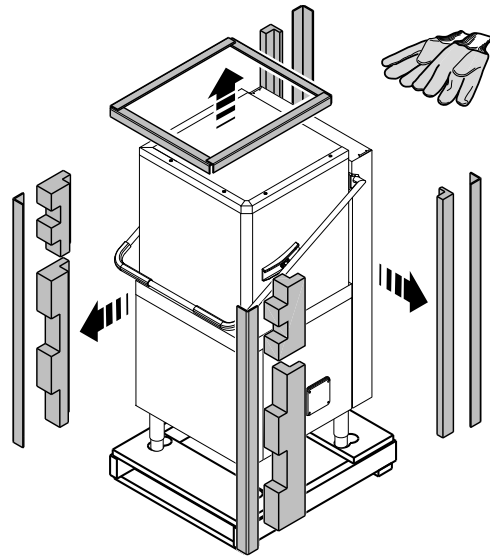
- This space must be increased in case of use and/or transfer of other equipment and/or means or if exit routes are necessary inside the workplace.
- To be used to keep the correct distances indicated in the installation diagram.

E.5 Positioning

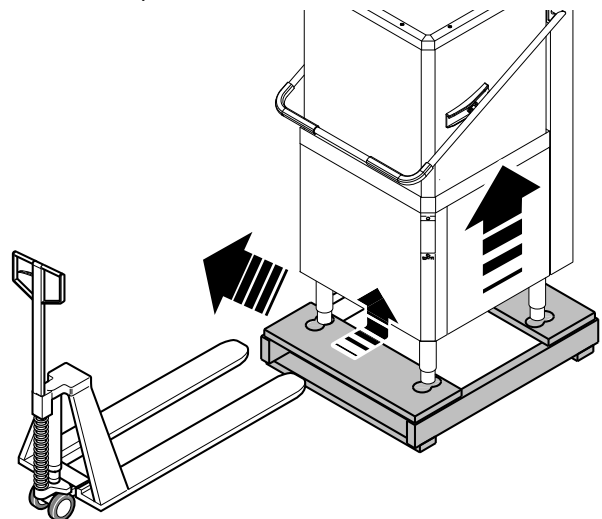
The machine must be taken to the place of installation and the packing base removed only when being installed.

Arranging the machine

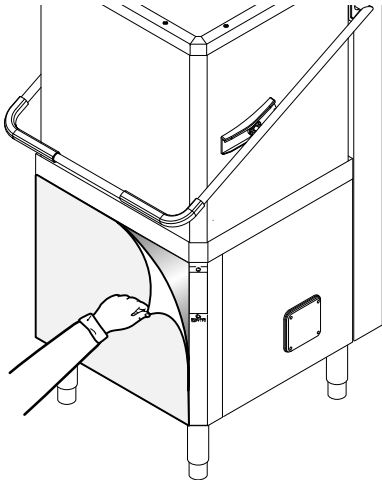
- Wear protective gloves and unpack the machine.



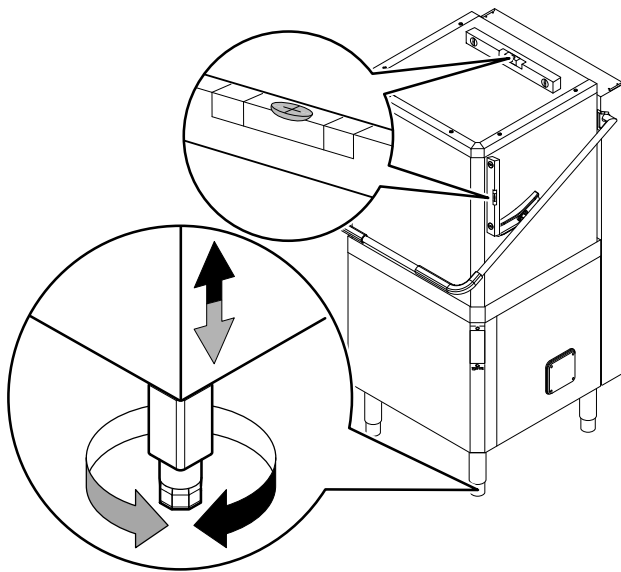
- Lift the equipment with a lift truck, remove the base and position it the place of use.



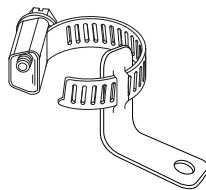
- Carefully remove the protective film from the outer panels without tearing it, to avoid leaving traces of glue.



- Adjust the equipment by turning the special adjustable feet and making sure it is perfectly level, both length wise and crosswise.



- The appliance must be fixed to the floor using the two clamps supplied.



- Accessing the appliance bottom panel.
- Fit the clamps on feet as shown in supplied technical sheet.
- Screw the appliance steadily to the floor using hole clamps.

E.6 Extraction hood

For models **without** Energy Saving Device (ESD), make sure to install an extractor hood to remove the steam produced by the machine.

For models **with** Energy Saving Device (ESD), it is **not** necessary to install an extractor hood unless the current regulations in the country of use require it.

The hood air flow must be calculated taking into account the type of installation and the work environment where it is installed.

In any case, an air flow rate of between 1000 m³/h and 1500 m³/h is recommended.

E.7 Disposal of packing

The packing must be disposed of in compliance with the current regulations in the country where the appliance is used. All the packing materials are environmentally friendly.

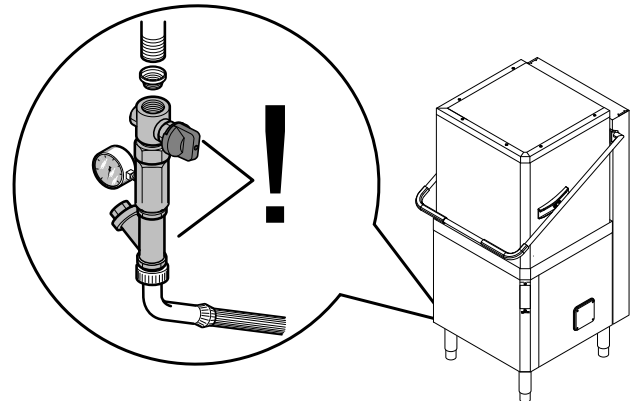
They can be safely kept, recycled or burned in an appropriate waste incineration plant. Recyclable plastic parts are marked as follows:

 PE	Polyethylene <ul style="list-style-type: none"> • Outer wrapping • Instructions bag
 PP	Polypropylene <ul style="list-style-type: none"> • Straps
 PS	Polystyrene foam <ul style="list-style-type: none"> • Corner protectors

The parts in wood and cardboard can be disposed of, respecting the current regulations in the country where the machine is used.

E.8 Plumbing connections

- Connect the appliance water supply pipe “WI” (see the *Installation diagram*) to the mains, fitting a cut-off tap, the filter provided and a pressure gauge between the appliance and the mains (see figure below).



- Check that the dynamic water supply pressure, measured between the appliance and the main, is between between 50 and 700 kPa [0.5 - 7 bar] (test while dishwasher tank or boiler is filling with water).



NOTE!

If the pressure is too high, fit a suitable pressure reducer on the inlet pipe.

- On the model with free-fall drainage: connect the waste outlet pipe (detail “D” in the *Installation diagram*) to the main drain pipe, fitting a trap, or place the outlet pipe over an “S” trap set into the floor.
- On the model with drain pump: position the outlet pipe at a height anywhere between 750 and 1000 mm from the floor. Check that about 3 litres of water flow out of the outlet pipe during the rinse cycle.



CAUTION

Always use a new set of joints if you remove and reinstall the water inlet pipe to the appliance.

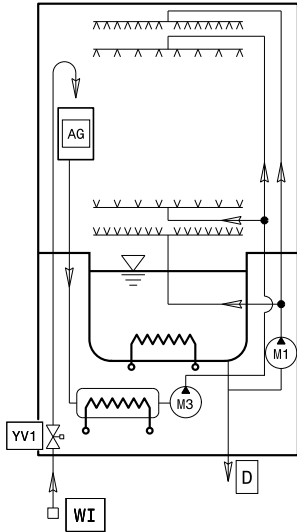


IMPORTANT

Watermark labelled appliances must be installed in accordance with AS/NZS 3500.1 and drainage to be in accordance with 3500.2. On models with ESD, an approved dual check valve must be installed upstream.

E.9 Plumbing circuits

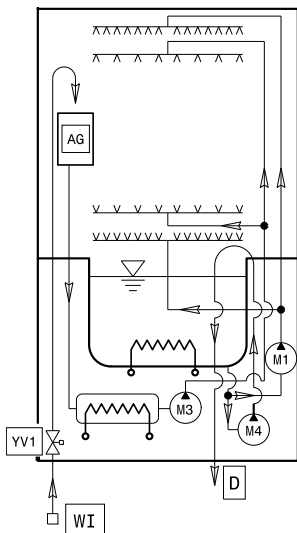
Hood dishwasher without drain pump



LEGEND

- WI = Water inlet
- D = Drain
- M1 = Wash pump
- M3 = Rinse pump
- AG = Air Gap
- YV1 = Filling solenoid valve

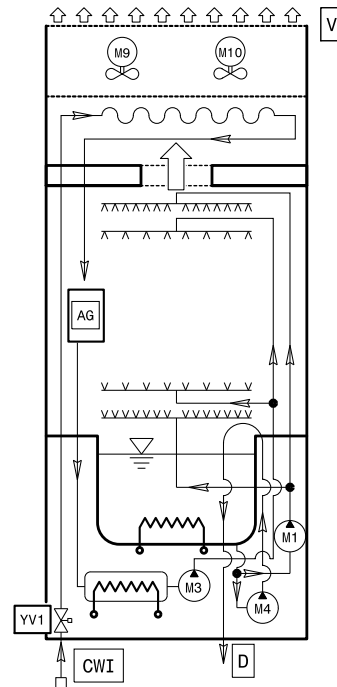
Hood dishwasher with drain pump



LEGEND

- WI = Water inlet
- D = Drain
- M1 = Wash pump
- M3 = Rinse pump
- M4 = Drain pump
- AG = Air Gap
- YV1 = Filling solenoid valve

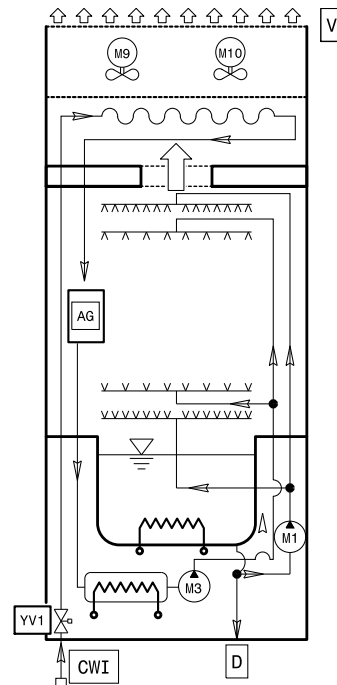
Hood dishwasher with drain pump and Energy Saving Device (ESD)



LEGEND

- CWI = Cold Water inlet (~15°C)
- D = Drain
- M1 = Wash pump
- M3 = Rinse pump
- M4 = Drain pump
- M9 = ESD fan motor
- M10 = ESD fan motor
- AG = Air Gap
- YV1 = Filling solenoid valve
- V = Ventilation

Hood dishwasher without drain pump and with Energy Saving Device (ESD)



LEGEND

- CWI = Cold Water inlet (~15°C)
- D = Drain
- M1 = Wash pump
- M3 = Rinse pump
- M9 = ESD fan motor
- M10 = ESD fan motor
- AG = Air Gap
- YV1 = Filling solenoid valve
- V = Ventilation

E.10 Electrical connections



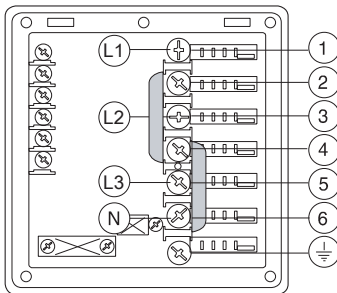
WARNING

Work on the electrical systems must only be carried out by a specialised personnel.

- Connection to the power supply must be carried out in compliance with the regulations and provisions in force in the country of use.
- Make sure the machine power supply voltage specified on the rating plate matches the mains voltage.
- Make sure the system power supply is arranged and able to take the actual current load and that it is executed in a workmanlike manner according to the regulations in force in the country of use.
- The earth wire from the terminal board side must be longer (max 20 mm) than the phase wires.
- Connect the power cable earth wire to an efficient earth. The equipment must also be included in an equipotential system, whose connection is made by means of screw EQ (see par. *Installation diagram*) indicated by the symbol ∇ . The equipotential wire must have a section of at least 10 mm².

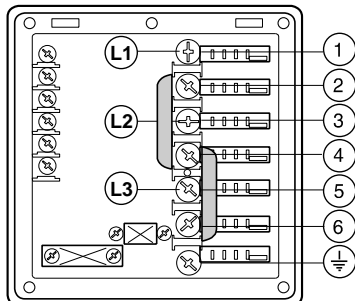
Power supply 380-415V 3N

Open the power supply terminal board and insert the jumpers provided as follows: one jumper between terminals 2 and 4 and another between terminals 4 and 6. Using a suitable power supply cable (see C.1 *Main technical characteristics* table), connect the three phases to terminals 1, 3 and 5, the neutral to terminal 6 and the earth wire to the terminal \perp .



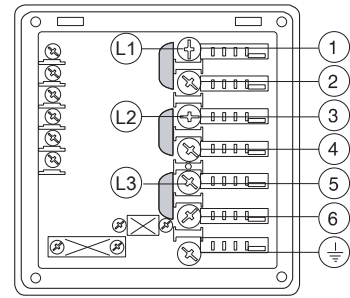
Power supply 400 - 440V 3

Open the power supply terminal board and insert the jumpers provided as follows: one jumper between terminals 2 and 4 and another between terminals 4 and 6. Using a suitable power supply cable (see C.1 *Main technical characteristics* table), connect the three phases to terminals 1, 3 and 5, the neutral to terminal 6 and the earth wire to the terminal \perp .



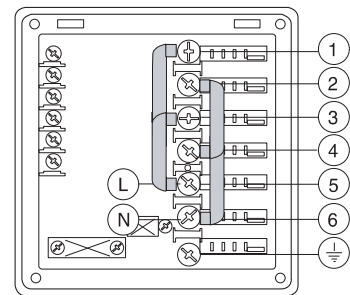
Power supply 220 - 230V 3

Open the power supply terminal board 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 (see C.1 *Main technical characteristics* table) connect the three phases to terminals 1, 3 and 5 and the earth wire to the terminal \perp .



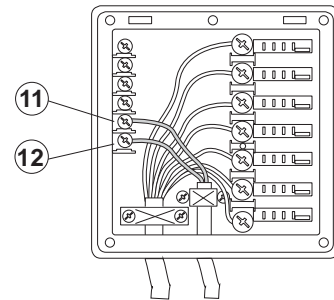
Power supply 220 - 230V 1N

Open the power supply terminal board 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 (see C.1 *Main technical characteristics* table), connect the phase and neutral to terminals 5 and 6 respectively and the earth wire to the terminal \perp .



E.10.1 Connections provided for energy control

This appliance is designed for an external energy consumption control.



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 boiler heating elements are disconnected. Using the dishwasher in these conditions may increase the cycle time.

E.11 Safety devices

- An automatic-reset overload protector incorporated in the electric pump windings cuts off the power to the pump in case of faulty operation.
- A device prevents the booster water from returning back into the system in the event of a water supply system fault.
- An overflow pipe connected to the discharge ensures a constant water level in the tank.

- If the water level in the tank is too high, the drain pump (if present) automatically activates to empty out the excess water.



IMPORTANT

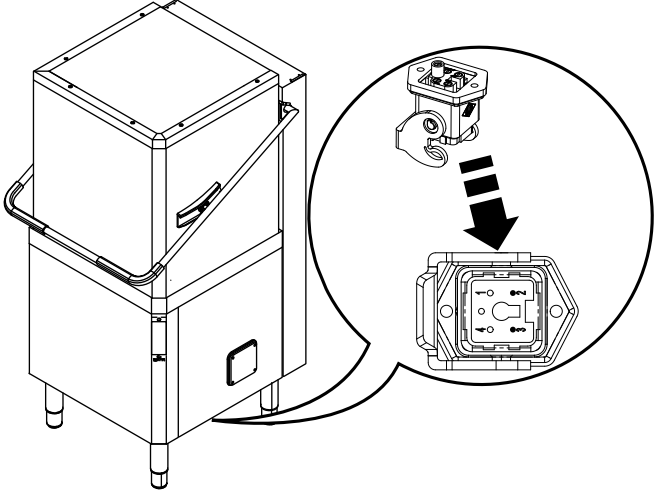
The Manufacturer declines any liability if the accident-prevention regulations are not respected.

E.12 “HACCP” arrangement

In some models the machine is not arranged for the “HACCP” connection. The “HACCP” kit can be ordered as an accessory.

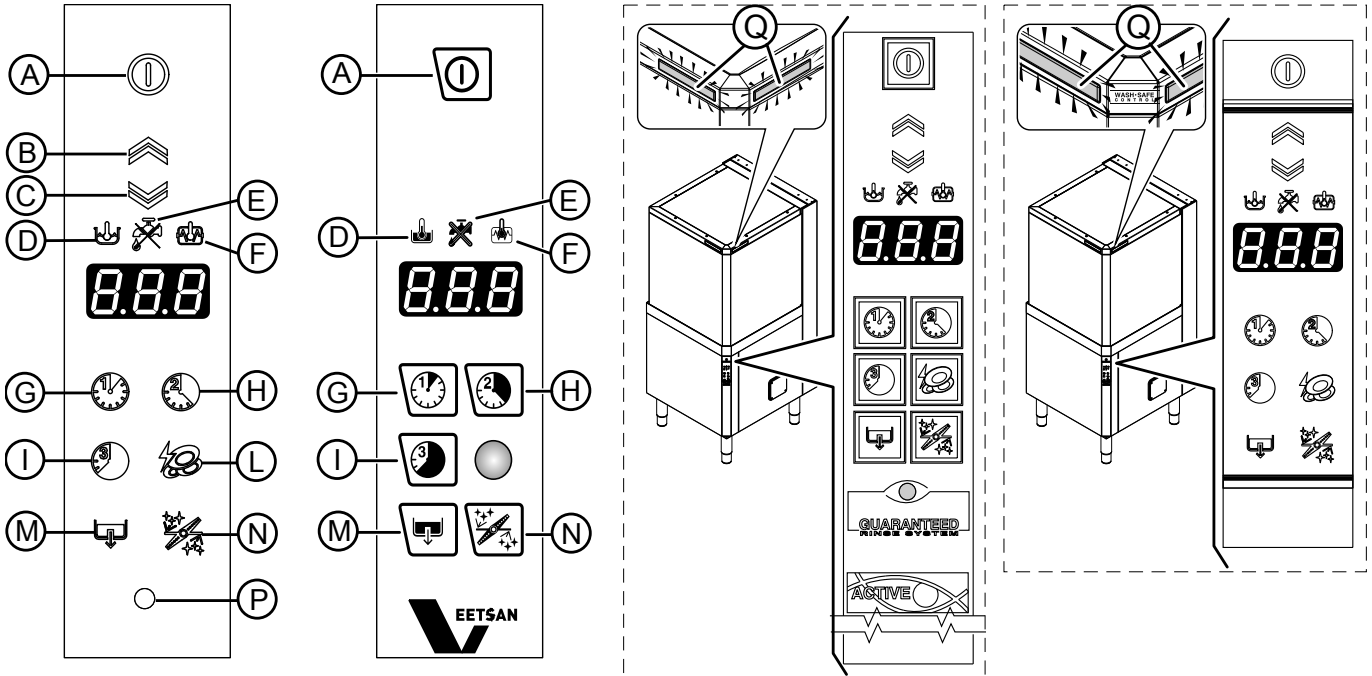
When the machine is arranged for the “HACCP” connection it is still necessary to order the network connection cable.

Connect the “HACCP” network to terminals 2 and 3 of connector X4.



F CONTROL PANEL

F.1 Control panel description



Legend

A = On / Off	F = “Boiler temperature” indicator light	M = Drain / self-cleaning cycle
B = Open hood	G = Wash cycle 1	N = “Delime” cycle
C = Close hood	H = Wash cycle 2	P = ACTIVE / WASH SAFE CONTROL
D = “Tank temperature” indicator light	I = Wash cycle 3	Q = LED bar
E = “Water tap” indicator light	L = High Productivity or NSF/ANSI 3 compliant	



IMPORTANT

The GUARANTEED RINSE SYSTEM (GRS) is incorporated in the ACTIVE/ WASH SAFE CONTROL models (see led "P"). The GRS is an automatic rinse time/temperature control system.

Operation is as follows:

- during the wash cycle the indicator light is OFF;
- during the rinse cycle the indicator light comes on and is GREEN;
- at the end of the rinse cycle the indicator light remains GREEN if the rinse temperature and time have been carried out as per the programme, otherwise the indicator light becomes RED;
- upon opening the hood, the indicator light GOES OUT.

If the indicator light becomes RED, for example should the boiler waiting time be disabled, wait for a couple of minutes and then repeat the wash cycle.

The temperature shown on the display is that of the tank if the light "D" is on, or of the boiler if the indicator light "F" is on. The tank temperature is displayed during the wash cycle and the boiler temperature during the rinse cycle. In automatic versions the machine has a LED bar "Q" which monitors equipment status. When the LED bar is green the machine is ready for washing and when it is blue it indicates wash cycle progress status. After rinsing, the LED bar remains green if the temperature and rinse time were as programmed, otherwise the LED bar turns RED.

F.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.



Hood opening/closing (for automatic versions only)

These buttons open/close the hood, only in automatic versions.



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 washing not very dirty dishes.



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 washing normally dirty dishes.



Wash cycle 3

This button starts **Wash cycle 3**. When the cycle is selected, the button indicator is lit up. This cycle is recommended for washing very dirty dishes.



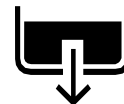
High Productivity or NSF/ANSI 3 compliant mode

This button is used to go from "High Productivity" wash mode to "NSF/ANSI3" compliant mode and vice versa.



Drain / self-cleaning cycle

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



Delime cycle

This button is used to run a machine water circuit "delime" cycle with vinegar. When a cycle is selected, the corresponding button is lit up.



G COMMISSIONING

G.1 Preliminary checks, adjustments and operational tests



WARNING

These operations must only be carried out by specialized technicians provided with adequate personal protection equipment (e. g. safety footwear, gloves, glasses, etc.), tools and suitable ancillary equipment with the appliance switched off and cold.

Electrical and plumbing checks

Before starting the machine:

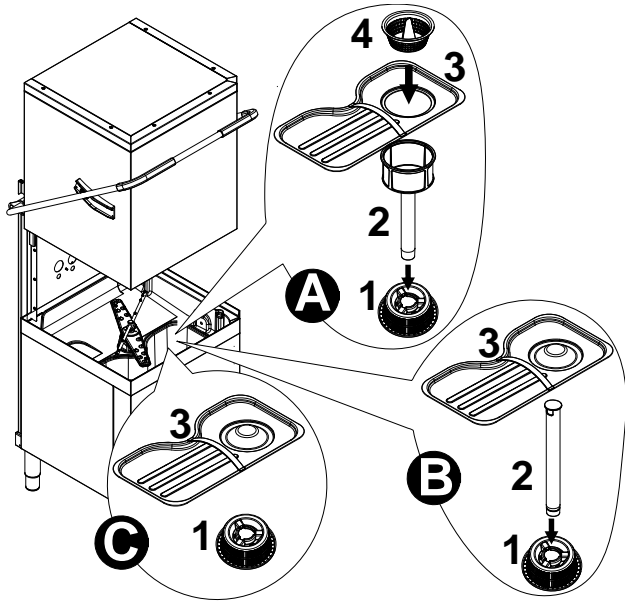
- check correct connection of the electrical wires that feed the machine;
- make sure the power supply voltage and frequency match the data given in the technical data table (C.1 *Main technical characteristics*);
- check correct connection of the water supply and drain pipes (see paragraph E.8 *Plumbing connections*);
- make sure all the guards, safety devices and emergency switches are in place and efficient.

Check the fitting of filters and overflows

- In versions **with** supplementary Filtering System (FS), make sure the pump suction filter "1", the tank filter "2", the

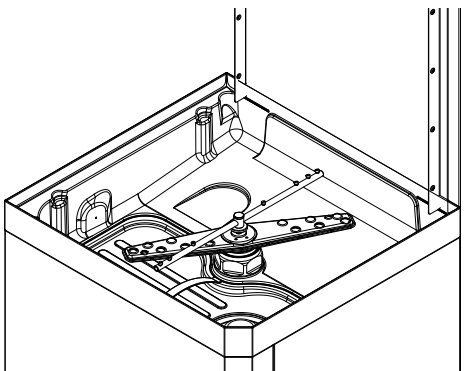
flat filter “3” and the basket filter “4” are correctly fitted (see detail “A”).

- In versions **without** supplementary Filtering System (FS) and without drain pump, make sure the filter “1”, the overflow “2” and the flat filter “3” are correctly fitted (see detail “B”).
- In versions **without** supplementary Filtering System (FS) and with drain pump, make sure the pump suction filter “1” and the flat filter “3” are correctly fitted (see detail “C”).



Check the fitting of wash and rinse arms

- Make sure the upper and lower wash and rinse arms are correctly fitted.



G.2 Detergent/rinse aid dispensers and prearrangements

If the machine is connected to a water softener and/or a reverse osmosis system, contact the detergent supplier for a specific product.

If the peristaltic dispensers are installed in the machine, the dosage of detergent/rinse aid is done automatically according to the desired concentration. The concentration of detergent/rinse aid depends on the type of product used and the hardness of the supply water (check the characteristics on the product label).



CAUTION

The peristaltic dispensers (detergent and rinse aid) and the tube inside the rinse aid dispenser require periodical maintenance (at least once or twice a year) or after prolonged machine idle periods.

1. Dishwasher with incorporated liquid detergent dispenser pump

When the appliance is filled with water for the first time in the day, pump “R” dispenses a detergent quantity in the tank providing a concentration of 2 g/l. In order to change

this value, access the parameter d_{In} (refer to H.2 *Setting the dispensers*).

At each cycle, pump “R” dispenses a detergent quantity in the tank providing a concentration of 2 g/l. In order to change this value, access the parameter d_{Et} (refer to H.2 *Setting the dispensers*). Insert the supplied hose into the detergent container.

2. Dishwashers with incorporated rinse-aid dispenser pump

When the appliance is filled with water for the first time in the day, pump “S” dispenses a rinse-aid quantity in the boiler providing a concentration of 0,1 g/l. In order to change this value, access the parameter r_{In} (refer to H.2 *Setting the dispensers*).

At each rinse cycle, pump “S” dispenses a rinse-aid quantity in the boiler providing a concentration of 0,1 g/l. In order to change this value, access the parameter r_{Ai} (refer to H.2 *Setting the dispensers*). Insert the supplied hose into the rinse-aid container.

3. Automatic dispenser arrangement for solid detergent

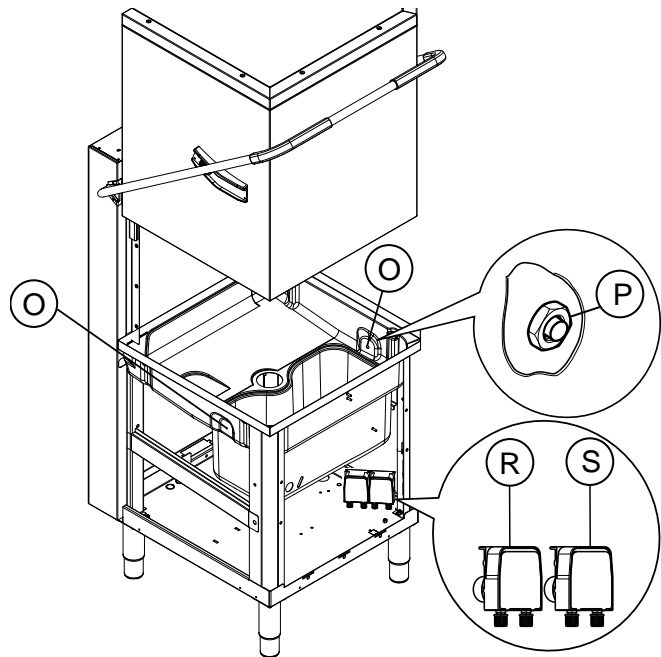
Inside the tank there is a hole “O” (\varnothing 22 mm), closed with a plug, and an injector “P” (\varnothing 22 mm) for introducing the detergent.

On the bottom of the tank there is an additional closed hole (\varnothing 22 mm) to be used for the installation of the conductivity probe.

4. Connections for automatic detergent dispenser

There are two holes (plugged) “O” (\varnothing 5 mm) for introducing the detergent. These holes may be easily identified from outside by looking for the counter sunk marks on the external panel.

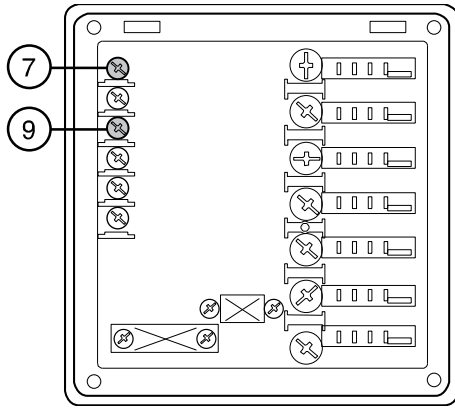
Inside the tank there is a hole “P” (\varnothing 10 mm) closed with a plug, which may be used for mounting a liquid detergent injector.



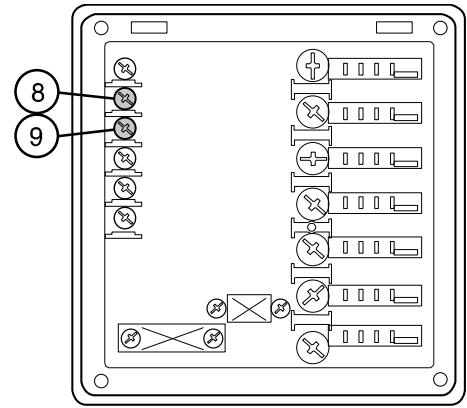
G.2.1 Electrical connections for automatic detergent and rinse-aid dispensers

Terminals are available on the power supply terminal board for the electrical connection of external dispensers working at 220 – 240 V. Max. power 30 VA.

- 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 H.2 *Setting the dispensers*).



- 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 H.2 *Setting the dispensers* paragraph).



H BEFORE FIRST USE

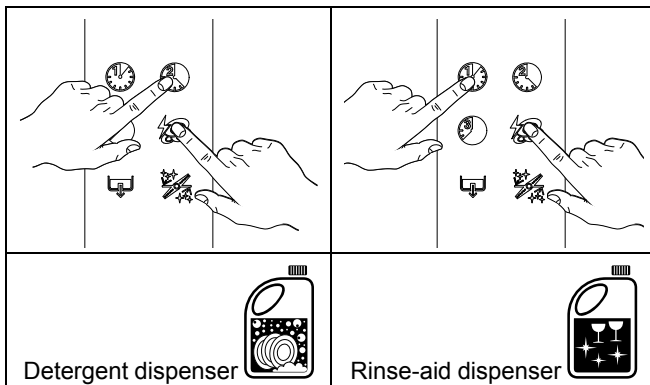
H.1 Manual activation



NOTE!

To obtain excellence washing performance, use detergent, rinse aid and descaling agent suggested by Electrolux Professional. In the Electrolux Professional web site, open the “Accessories and Consumables” web page and navigate into the dishwashing equipment tab to order most suitable detergents and accessories.

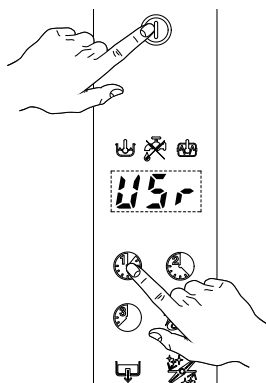
Whenever the detergent containers are replaced, it may be necessary to activate the dispensers manually in order to fill the hoses and eliminate any air. Simultaneously press the buttons, as shown in the figures below. If necessary, repeat this operation several times.



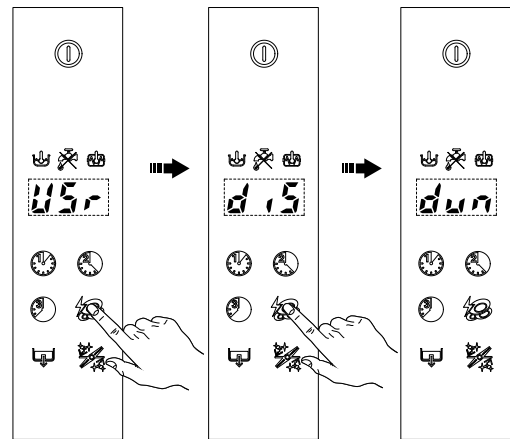
H.2 Setting the dispensers

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

Press, together, the “On/Off” and “Wash cycle 1” buttons for 5 seconds to access the programming mode and the display shows the parameter **USr**.



Press the button “L” (refer to F.1 *Control panel description*) twice to access the detergent and rinse aid adjustment parameters.



The display shows **dun** which is the first parameter of the dispenser family:

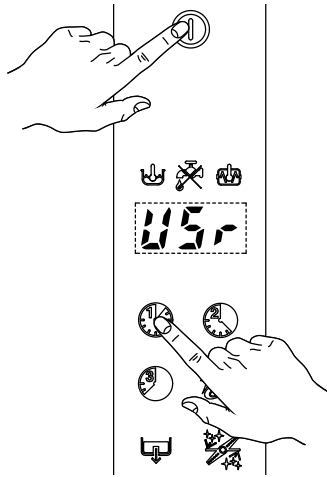
Parameter description	Value ¹
Unit of measure of dispensers (G-L = g/l or SEC = seconds)	dun G-L
Initial amount of detergent	dIn 2.00 g/l
Initial amount of rinse-aid	rIn 0.12 g/l
Amount of detergent during the cycle	dEt 2.00 g/l
Amount of rinse-aid during the cycle	rAi 0.12 g/l

1. The values given in the table refer to the factory-settings.

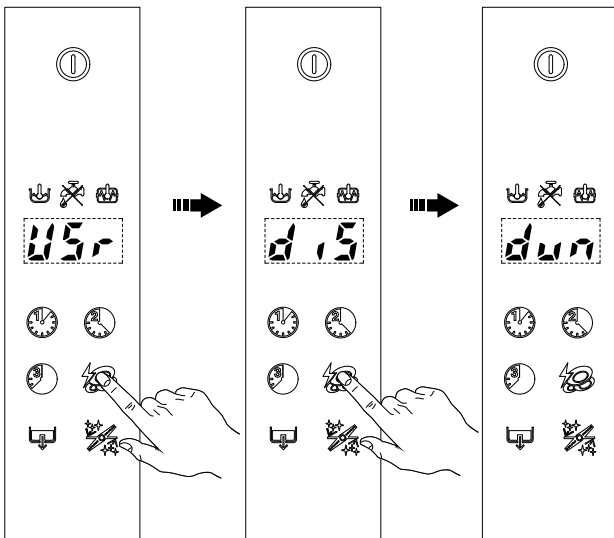
- Press the “Wash cycle 1” and “Wash cycle 2” buttons to select the parameter to modify.
- Press the button “L” to modify the parameter value.
- Press the “Wash cycle 1” and “Wash cycle 2” buttons respectively to decrease/increase the value.
- Press the button “L” to store the set value and return to parameter selection (see point 1).

For example, to adjust the parameter dIn , proceed as follows:

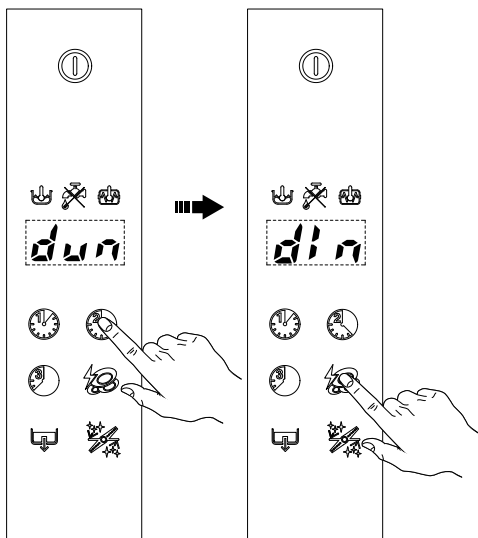
1. access the programming mode;



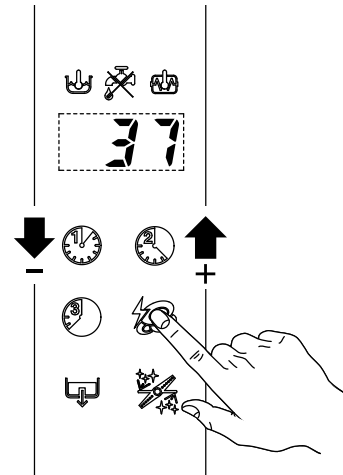
2. access the dispenser family;



3. select the parameter dIn ;



4. modify the parameter value and press the button "L" to store the set value;



5. to exit the programming mode, press the "Wash cycle 3" button.



H.3 Note for external dispenser

With external dispensers, it may be more useful to have the parameters expressed in seconds, setting the parameter dun to $SEC=seconds$. In this way the value of the parameters represents the duration in seconds.

Listed below are special values usable when external automatic dispensers are connected to the equipment:

- if $dEt=181$ the **detergent dispenser** only operates during **wash pump** operation; terminals 7-9 of the main terminal board are powered at the same time;
- if $dEt=182$ the **detergent dispenser** only operates during filling **electrovalve** operation for restoring the boiler level; terminals 7-9 of the main terminal board are powered at the same time;
- if $rAi=61$ the **rinse-aid dispenser** only operates during filling **electrovalve** operation for restoring the boiler level; terminals 8-9 of the main terminal board are powered at the same time;
- if $rAi=62$ the **rinse-aid dispenser** only operates during **wash pump** operation; terminals 8-9 of the main terminal board are powered at the same time.

Example 1

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

- $dun=SEC$ the parameter value is in seconds;
- $dIn=0$ the dispenser is not activated during filling of the tank;
- $dEt=181$ the dispenser is activated during wash pump operation and, according to the concentration of detergent detected by the sensor, the correct amount of detergent is dispensed.

Example 2

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

- $dun=SEC$ the parameter value is in seconds;
- $rAi=61$ the dispenser is activated at each wash cycle simultaneously with operation of the filling solenoid valve. In this way avoiding modifications to the wiring of the machine.

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 indicate an excess.

**NOTE!**

For electrical connections, see the wiring diagram.

**CAUTION**

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 guarantee and product liability.

I GENERAL SAFETY RULES**I.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.

I.2 Guards

The guards on the machine are:

- fixed guards (e.g. casings, covers, side panels, etc.), fixed to the machine 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 machine;
- machine electrical equipment access doors, made from hinged panels openable with tools. The door must not be opened when the machine is connected to the power supply.

**WARNING**

Several illustrations in the manual show the machine, or parts of it, without guards or with guards removed. This is purely for explanatory purposes. Do not use the machine without the guards or with the protection devices deactivated.

I.3 Safety signs to be placed on the machine 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)

**WARNING**

Do not remove, tamper with or make illegible the safety, danger and instruction signs and labels on the machine.

I.4 Instructions for use and maintenance

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

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

Any anomalous situations are signalled on the control panel display.

During maintenance several risks remain, as these could not be eliminated, and must be neutralised 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.



WARNING

Extraordinary machine maintenance operations must only be carried out by specialised personnel provided with all the appropriate personal protection equipment (safety shoes, gloves, glasses, overalls, etc.), tools, utensils and ancillary means.



WARNING

Never operate the machine, removing, modifying or tampering with the guards, protection or safety devices.

Before carrying out any operation on the machine, always consult the manual, which gives the correct procedures and contains important information on safety.

1.5 Reasonably foreseeable improper use

Improper use is any use different from that specified in this manual. During machine 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 machine 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, specialised 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 machine;
- wrong machine installation;
- placing in the machine any objects or things not compatible with its use, or that can damage the machine, cause injury or pollute the environment;
- climbing on the machine;
- non-compliance with the requirements for correct machine use;
- other actions that give rise to risks not eliminable by the Manufacturer.



WARNING

The previously described actions are prohibited!

1.6 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	Catching or dragging of the operator or other persons in the drive, during the machine work phase, due to improper actions, such as: <ul style="list-style-type: none"> • placing an arm inside the machine to remove a stuck rack without stopping the machine by operating an emergency switch; • accessing the rack handling system without stopping the machine by operating an emergency switch. 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.
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 specialised personnel may not correctly fix 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.

Residual risk	Description of hazardous situation
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.

J NORMAL MACHINE USE

J.1 Foreseen use

Our appliances are designed and optimised to ensure 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 deemed improper.

This appliance does not carry out the rinse cycle should there be no supply water; it stops all functions with an error message "A1" (also see Alarms).

J.2 Operator qualified for normal machine use

Must have at least:

- knowledge of the technology and specific experience in operating the machine;
- 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.

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 for normal machine use must:

- immediately deactivate the machine by turning the switch disconnecter to "O" or operating the main emergency switch on the equipment;
- close the machine water supply by shutting off the water.

J.3 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 tap.
- Activate the main switch by turning it to position "I".
- Switch on the dishwasher by pressing the button the On/Off button.
- Raise the hood and make sure the filters, arms and the overflow are correctly fitted in their position (refer to G Commissioning).
- Close the hood.
- The On/Off button lights up, 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.



- Warning, this dishwasher does the first tank filling through several consecutive hot rinse cycles, while the display shows the message FILL (flowing). This system let save up to 30% of time than traditional models. If the hood 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 boiler temperature during heating of the tank, raise the hood and press wash cycle 1 button.



- If the indicator "E" (refer to F.1 Control panel description) lights up, check that the water tap is open.



J.4 Wash cycles




The wash cycle includes a wash with hot water and detergent at a temperature of at least 55°C [131°F] (min. 66°C [150°F] for Marine USPH versions) and a rinse with hot water and rinse aid (min. 82°C [180°F]). This machine can operate in 2 modes, "High Productivity" and "NSF/ANSI 3 compliant". When the machine is set in "High Productivity" mode, the parameters that define the cycle times and temperature set points are the standard parameters, whereas when the machine is set in "NSF/ANSI 3 compliant" mode, the parameters are such as to ensure the "NSF/ANSI 3 compliant" test (see times table).

Table of times — Standard cycle time in "High Productivity" mode (factory default setting)

45 ¹	84	150
50 ²	84	150

1. With supply water temperature at 65°C [149°F].
2. Only for model VHT7G and VHT7IG.

Table of times — Standard cycle time in “NSF/ANSI 3 compliant” mode (factory default setting)

		
57 ¹	84	150

1. With supply water temperature at 65°C [149°F].



NOTE!

In models with Energy Saving Device (ESD) cycle duration is extended by 12 seconds. A device lengthens the cycle time if the water in the boiler has not reached the minimum temperature for correct rinsing. The cycle times and the temperature may be personalised (e.g. increase of the rinse time and temperature). The cycle times should only be set by a specialised personnel.

J.5 Operation

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



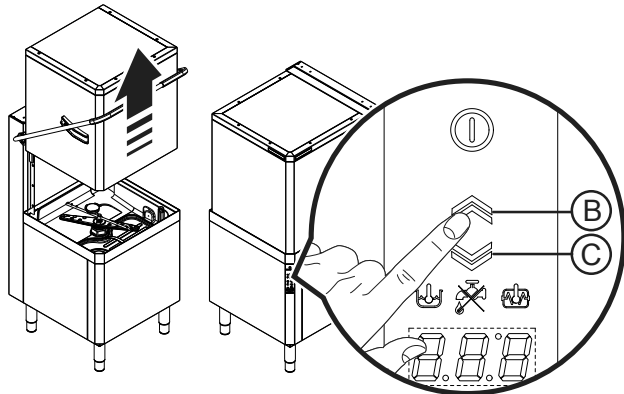
The appliance is then ready for use:

- Leave the hood.



NOTE!

With automatic machines, press the button "B" to open the hood and button "C" (Figure 23) to close it.



- Pour the required amount of detergent into the tank (in models without automatic dispenser).
- Arrange dishes in the rack, avoiding washing decorated dishes, silverware in contact with other metals and the drying of food residuals on dishes.
- Pre-wash the dishes by spraying them with cold or luke-warm water, without using any detergent.
- Insert the rack containing the dirty dishes.
- Close the hood and select the suitable wash cycle; the corresponding indicator light comes on and the wash cycle starts:

Cycle 1

For lightly soiled dishes: press button **Wash cycle 1** (see table of times).



Cycle 2 (recommended)

For normally dirty dishes: press button **Wash cycle 2** (see table of times).



Cycle 3

For very dirty dishes: press button **Wash cycle 3** (see table of times).

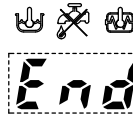


High Productivity or NSF/ANSI 3 compliant mode

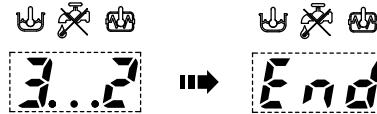
Press and hold down (5 sec.) this button to switch the machine from “High Productivity” mode to “NSF/ANSI 3 compliant” mode and vice versa. This button is off when the machine is set in “NSF/ANSI 3 compliant” mode and lights up when the button is pressed and the machine is configured in “High Productivity” mode (factory default setting).



- To stop the wash cycle, just press the selected cycle button or lift the hood.
- To continue the wash cycle, just press the selected cycle button or close the hood. 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:



- Lift the hood and remove the rack containing the clean dishes. In models with “Energy Saving Device” (ESD), before the message “END”, the display shows a countdown for a few seconds:



NOTE!

With automatic machines, the hood opens automatically at the end of the wash cycle.



IMPORTANT

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

Delime cycle (if enabled)

Press this button to run a machine water circuit delime cycle with vinegar.



It is advisable to run this cycle according to that given in the table:

Water hardness			The Delime cycle should be run approximately every: ¹	Using cycle 2 for 30 cycles/day, the Delime cycle should be run approximately every: ¹
°f	°d	°e		
5	2.8	3.5	Cycles 1500	Days 50
10	5.6	7.0	750	25
15	8.4	10.5	510	17
20	11.2	14	380	13
25	14	17.5	300	10
30	16.8	21.1	250	8

1. Considering a rinse time according to the factory settings.

Proceed as follows:

- Insert the Delime hose present in the machine, identified by an appropriate label, in a container with at least 2l of wine vinegar 6% (2l is the minimum amount of vinegar needed for a correct Delime cycle).



CAUTION

Only use wine vinegar (with 6% of acetic acid) and not other descaling substances.



WARNING

Descaling with the use of chemical substances other than vinegar must only be done by a specialised personnel.

- Remove the basket with dishes and remove the overflow “2” (refer to *G Commissioning*). Close the hood. Activate the delime cycle by pressing the delime button for at least 5 seconds.



IMPORTANT

The delime cycle lasts about 1h 30sec; during this phase the hood must not be opened and no other command can be activated until completion of the cycle in progress. If the machine is turned off during the delime cycle, at the next restart the cycle will resume exactly from where it was interrupted, until its completion.

- At the end of Delime cycle, the dishwasher sounds a series of beeps and “END” will flash on the display. Refit the previously removed overflow.

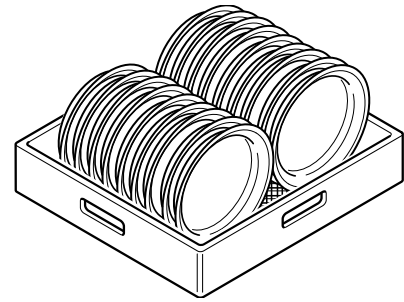


CAUTION

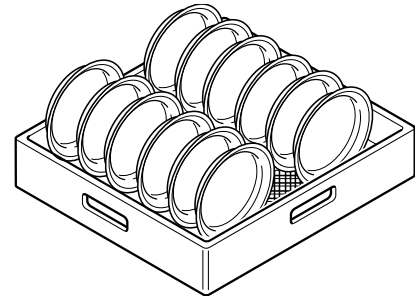
- Remove large food scraps from the dishes to prevent clogging the filters.
- The appliance will not remove burnt food deposits from dishes. Dishes with burnt-on food deposits should be cleaned mechanically/chemically (for example, pre-wash under running water) before putting them in the dishwasher.
- Failure to remove the residuals of detergent possibly used for manual prewash can cause malfunctioning of the dishwasher and compromise washing results.
- The use of “foaming” or non-specific detergents or in any case detergents used in different ways from that prescribed by the manufacturer, can cause damage to the dishwasher and compromise washing results.

J.6 Type of racks and loading

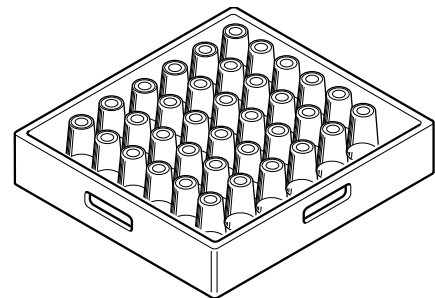
- **YELLOW** rack: for 18 plates with maximum diameter of 240 mm.



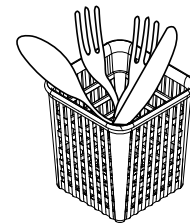
- **GREEN** rack: for 12 bowls with maximum diameter of 240 mm.



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



- **YELLOW** container for cutlery: insert 15 items, with the handles pointing downwards, in each container.



Available as accessories: dividers for glasses and rack for dishes with maximum diameter of 320 mm.



NOTE!

If only one type of dish rack is to be used, it is advisable to choose the GREEN rack.

J.7 Hood type dishwasher with incorporated continuous water softener

These models have a continuous softener in the dish-washer water circuit. By means of special resins, this device removes the calcareous substances from the feed water, supplying decalcified water for washing.

For the continuous softener to work properly the resins must be regenerated periodically, with frequency depending on the hardness of the water and the number of wash cycles carried out.

Unlike conventional water softeners, this continuous softener does not require machine stops for regenerating the resins.

Autonomy of the full salt container according to the change in inlet water hardness

Water hardness			The salt container must be filled approximately every ¹ :	Using cycle 2 for 30 cycles/day, the salt container must be filled approximately every ¹ :
°f	°d	°e		
15	8.4	10.6	2700	90
20	11.2	14	2180	73
25	14	17.6	1575	53
30	16.9	21.1	1035	35
35	19.7	24.6	855	30
40	22.5	28.1	675	23
45	25.2	31.6	450	15
50	28.1	35.1	270	9

The factory setting of max. outlet water hardness is 10 °f/ 5.6 °d/ 7 °e.

1. Considering a rinse time according to the factory settings.

J.7.1 Salt container

The water can only be softened if there is salt in the special container. The salt container must be filled when the dishwasher is started the first time and whenever the message **SAL End** appears and an audible alarm sounds.

Wash cycles can be started just the same, even if the display signals no salt; in which case the water used for washing is not softened.



CAUTION

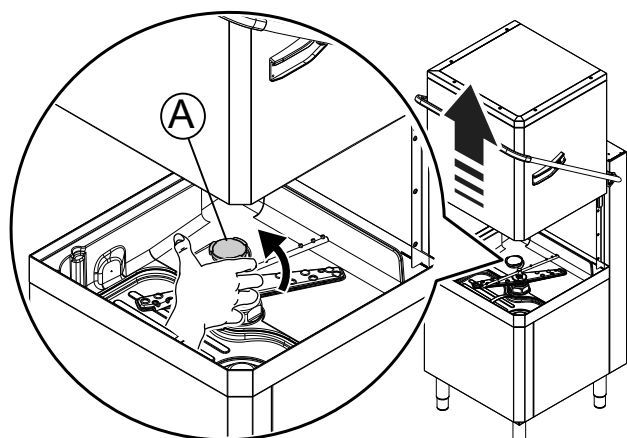
- Only use coarse salt with a purity level of 99.8% NaCl. The use of salt with a lower purity level can cause clogging of the salt container filter and malfunctioning of the water softener.
- Open the salt container only when the message **SAL End** is displayed. Opening the cap when the message **SAL End** is not displayed can cause spilling of the saline solution and compromise correct machine operation.

How to fill the salt container

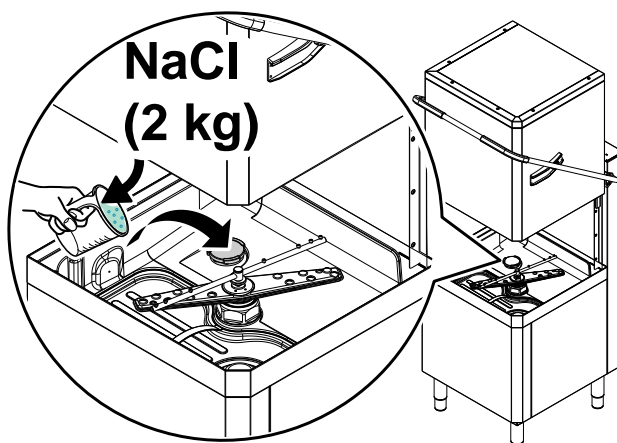
- Lift the hood and switch off the dishwasher by pressing ON/Off button.



- Unscrew cap "A" of the salt container, turning it counterclockwise.



- Pour approx. 2 kg of coarse salt [NaCl] in container "A" (an amount sufficient to fill the salt container up to the rim) using the special funnel supplied.



- Remove any traces of salt from the filling hole and the container thread of the closing cap.



NOTE!

The salt container always has water in it, therefore it is normal if water comes out during filling.

- Refit the cap of container "A", turning it clockwise and making sure it is tight.



CAUTION

Only salt may be placed in the salt container. Do not introduce any other chemical substances such as detergent, rinse aid or descaling agent, since these would inevitably damage the appliance. Such damage invalidates any warranty and relieves the manufacturer of all liability.



NOTE!

The message **SAL End** may appear for several wash cycles even after topping-up the salt, as the salt must circulate in the entire system. Correct operation of the dishwasher is not, however, affected.

K MACHINE CLEANING AND MAINTENANCE

K.1 Machine 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 machine (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.



WARNING

When using chemicals, comply with the safety notes and dosage recommendations printed on the packaging. Refer to the chapter B.11 *Personal protection equipment* for handling chemical products.



K.2 End of service and daily internal 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:

- Lift the hood and take out the rack containing the clean dishes.

In versions without supplementary filtering system

(see below picture, detail "B")

1. Remove the flat filter "1" and the overflow "2" if present.
2. Close the hood and select the drain cycle by pressing "Drain/Self cleaning" button.
3. At the end of the drain cycle, remove and clean the pump suction filter "3".

In versions with supplementary filtering system

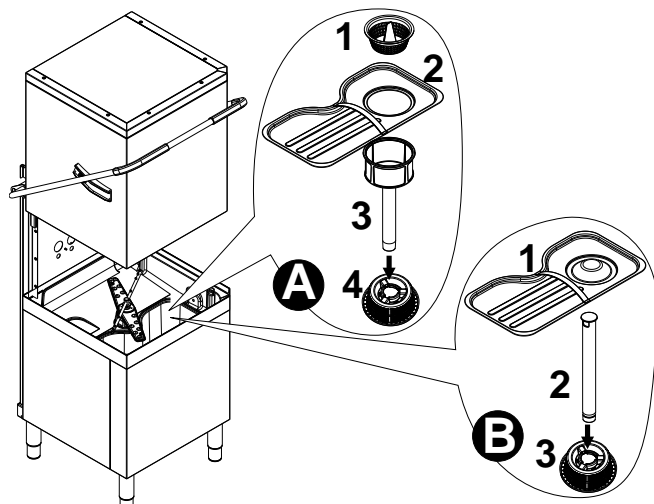
(see below picture, detail "A")

1. Remove the basket filter "1", the flat filter "2".
2. Close the hood and select the drain cycle by pressing "Drain/Self cleaning" button.
3. Wait for almost 10 seconds and lift the hood again to remove the tank filter "3".
4. Close the hood to restart the drain cycle. At the end of the drain cycle, remove and clean the pump suction filter "4".

In versions with automatic hood and supplementary filtering system

(see below picture, detail "A")

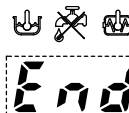
1. Remove the basket filter "1", the flat filter "2".
2. Close the hood by pressing button "A".
3. Close the hood and select the drain cycle by pressing "Drain/Self cleaning" button.
4. Wait for almost 10 seconds and deactivate the drain cycle by pressing again the same button.
5. Lift the hood again by pressing button "B" to remove the tank filter "3".
6. Close the hood and select again restart the drain cycle by pressing the same button.
7. At the end of the drain cycle, remove and clean the pump suction filter "4".



- 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.

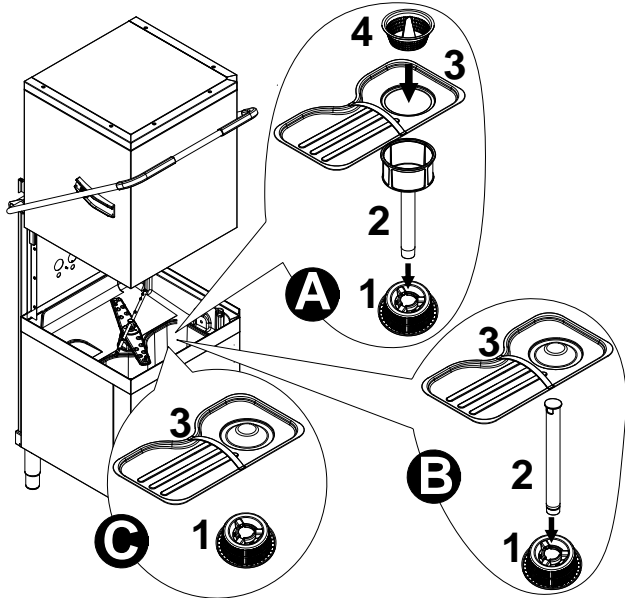


- Switch off the dishwasher by pressing the On/Off button.



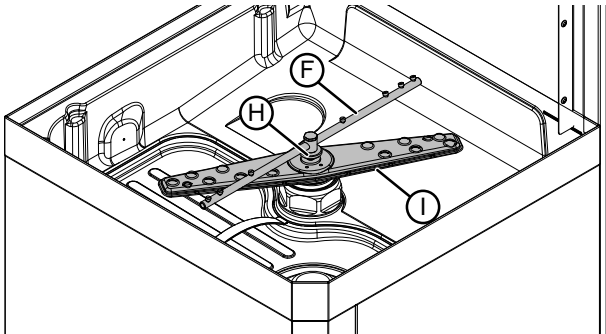
- Switch off at the mains.
- Close the water supply tap.

- Replace the filter and the overflow.



K.2.1 Cleaning the nozzle jets

- Remove the upper and lower wash arms "F" and rinse arms "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.
- Replace the upper and lower wash arms and rinse arms.

K.3 Maintenance

The inspection and maintenance intervals depend on the actual machine operating conditions (total wash hours) 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 minimise service interruptions.

It is advisable to:

- Descale the boiler, inner surfaces of the tank and the machine's pipes once or twice a year (call the Customer Care Service).
- Every month descale the wash and rinse jets with vinegar or scale remover.
- The internal tube of the peristaltic rinse aid and detergent dispenser must undergo periodical maintenance (once or twice a year).



NOTE!

It is also advisable to sign a preventive and scheduled maintenance contract with the Customer Care Service

K.3.1 Repair and extraordinary maintenance

Repair and extraordinary Maintenance have to be carried out by specialised authorised personnel. The manufacturer declines any liability for any failure or damage caused by the

intervention of an unauthorized technician by the Manufacturer and the original manufacturer warranty will be invalidated.

K.3.2 Parts and accessories

Use only original accessories and/or spare parts. Failure to use original accessories and/or spare parts will invalidate the original manufacturer warranty and may render the machine not compliant with the safety standard.

K.3.3 Prolonged period of inactivity

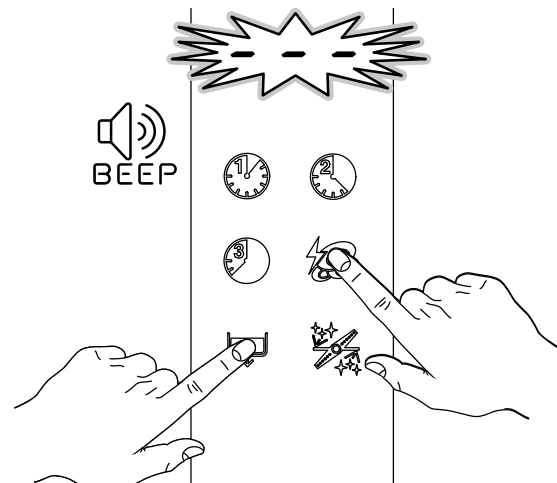
If the dishwasher is not to be used for a long time, proceed as follows:

- Close the water supply tap.
- 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 H.1 *Manual activation* at least 3 times.
- Completely drain the boiler (see paragraph K.4 *Boiler drainage*).
- Spread a thin film of Vaseline oil over all the stain-less steel surfaces.

K.4 Boiler drainage


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

- Close the hood.
- Press simultaneously and hold "Drain/Self Cleaning" button and button "L" (refer to F.1 *Control panel description*).
- A buzzer indicates the rinse pump activation and the display shows three blinking lines.
- Three beeps indicate the end of the cycle.



K.5 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.

The preventive maintenance call may be activated (see service manuals). Upon reaching the set number of cycles (e. g. 20000),  appears on the display.

This message advises calling a Customer Care service for a general check-up of the state of the machine.

K.6 Introduction



WARNING

Dismantling operations must be carried out by specialised personnel.



WARNING

Work on the electrical equipment must only be carried out by specialised personnel, with the power supply disconnected.

K.7 Waste storage

At the end of the product's life-cycle, make sure it is not dispersed in the environment. The doors must be removed before scrapping the appliance.

SPECIAL waste materials can be stored temporarily while awaiting treatment for disposal and/or permanent storage. In any case, the current environmental protection laws in the user's country must be observed.

K.8 Procedure regarding appliance dismantling macro operations

Before disposing of the machine, make sure to carefully check its physical condition, and in particular any parts of the structure that can give or break during scrapping.

The machine's parts must be disposed of in a differentiated way, according to their different characteristics (e.g. metals, oils, greases, plastic, rubber, etc.).

Different regulations are in force in the various countries, therefore comply with the provisions of the laws and competent bodies in the country where scrapping takes place. In

general, the appliance must be taken to a specialised collection/ scrapping centre.



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 any negative consequences for the environment and human health. For further information on the recycling of this product, contact the local dealer or agent, the Customer Care service or the local body responsible for waste disposal.



WARNING

Make the appliance unusable by removing the power cable and any compartment closing devices, to prevent the possibility of someone becoming trapped inside.



NOTE!

When scrapping the machine, the "CE" marking, this manual and other documents concerning the appliance must be destroyed.

L TROUBLESHOOTING

L.1 Common faults

DISHWASHER DOES NOT WASH WELL	<ol style="list-style-type: none"> 1. Check if the suction filter is dirty and clean it thoroughly. 2. Check if the wash jets are clogged by solid food remains. 3. Check that the initial amount of detergent or subsequent additions are correct. 4. The selected wash cycle is too short. Repeat the cycle. 5. Check the tank temperature. 6. Check that the dishes are stacked correctly in the racks.
GLASSES AND DISHES ARE NOT DRIED PROPERLY	<ol style="list-style-type: none"> 1. Check the instructions for the amount of rinse-aid (see H.2 <i>Setting the dispensers</i> paragraph). 2. Check that there is rinse-aid in the container and if necessary top up. 3. Check the set amount of rinse-aid (see H.2 <i>Setting the dispensers</i> paragraph). 4. Check the water temperature of the boiler.
CONDENSATION ON GLASSES	<ol style="list-style-type: none"> 1. Check that there is rinse-aid in the container and if necessary top up. 2. Check the set amount of rinse-aid (see H.2 <i>Setting the dispensers</i> paragraph). 3. Remove the rack of glasses immediately the cycle has ended.
STAINS ON THE GLASSES	<ol style="list-style-type: none"> 1. Only use "non-foaming" products for professional dishwashers.
EXCESSIVE FOAM IN THE TANK	<ol style="list-style-type: none"> 1. Check that the wash water temperature is not less than 50°C. 2. Check if the amount of product dispensed by the detergent dispenser is excessive (see H.2 <i>Setting the dispensers</i> paragraph). 3. Ensure that the tank has not been cleaned with unsuitable cleaners. Drain the tank and rinse thoroughly before new wash cycles. 4. If a foaming detergent has been used, drain and refill the tank with water until the foam disappears.
SMEARS OR SPOTS ON THE GLASSES	<ol style="list-style-type: none"> 1. Reduce the amount of rinse-aid (see H.2 <i>Setting the dispensers</i> paragraph)
THE WASH OR RINSE ARMS TURN SLOWLY	<ol style="list-style-type: none"> 1. Remove and thoroughly clean the arms. 2. Clean the wash pump suction filter.

L.2 Alarms

A1	NO WATER	<ul style="list-style-type: none">• Check that the tap is open.• Check that the water inlet filter is clean.• Check the minimum mains pressure.• Check that the overflow pipe is inserted (only for appliances without drain pump).
B1	INEFFICIENT DRAINAGE	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Check for obstruction on the waste outlet pipe and the overflow aperture.
C1 - C8	CALL THE SERVICE CENTRE	
E1 - E8	CALL THE SERVICE CENTRE	<ul style="list-style-type: none">• The appliance continues to operate, but appropriate checks by a technician are recommended.
F21 - F22 ¹	CALL THE SERVICE CENTRE	<ul style="list-style-type: none">• Resin regeneration cycles are not performed. The appliance continues to operate without water softener.

1. Only for appliances with incorporated continuous water softener.

CE

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