

**Tillykke med din GAM opvaskemaskine. Vi håber du bliver tilfreds med dit køb.**

## TILSLUTNING

Opvaskemaskinen skal tilsluttes af en autoriseret elektriker og vvs-installatør.

- Der må tilsluttes vand på en temperatur på op til 60 grader. Desto varme vand, desto højere kapacitet kan forventes af maskinen.
- Ved vand med en hårdhed på over 14° f skal der tilsluttes eksternt vandbehandling / afkalkning før vandtilslutningen. Vandtilslutning sker med ¾" vandtilslutning.
- Vær sikker på at vandtilslutningen er åben før opstart af opvaskemaskinen.
- Vandtrykket skal være mellem 1,5 og 3 bar.

OBS OBS OBS – vigtigt ved første opstart af maskinen spørger maskinen om flg:

- Select Language – vælg det ønskede sprog
- Do you want to fill the detergent straws? – sig ja, når du har sat slangen i sæbedunken Tryk på tændknappen når der står YES i displayet. Tryk på tændknappen igen når den ber dig om at confirmere. Nu fyldes de tomme slanger med sæbe og afspænding.

## Typiske fejlkilder

Hvis maskinen har stået stille i lang tid vil sæbe og afspændingsmiddel løbe tilbage i dunkene fra slangerne. Der skal 7-8 vaske til før maskinen igen har fået fyldt slangerne.

- Maskinen vasker ikke ordentligt:
  - Maskinen er løbet tør for sæbe eller afspænding – eller SLANGERNE ER BYTTET OM. Slangen med labelen "DETERGENT / SPÜLMITTEL" er til sæben, slangen med "RINSE AID" er til afspændingen.
  - Der er gået en fase til opvarmningen – tjek i sikringsskabet at der ikke er gået en sikring. Maskinen kan fungere på kun 2 ud af 3 faser, så det er faktisk muligt at bruge maskinen selv om der er gået en sikring.
  - Der er ikke tilsluttet et afkalkningsanlæg – således vil sæbe og afspændingsmiddel fungere meget minimalt.
  - Tjek at maskinen når den korrekte temperatur i vaskekar og boiler før start af en vask.
- Maskinen tørrer ikke ordentligt
  - Maskinen er løbet tør for sæbe eller afspænding – eller SLANGERNE ER BYTTET OM. Slangen med labelen "DETERGENT / SPÜLMITTEL" er til sæben, slangen med "RINSE AID" er til afspændingen.
  - Hurtigopvaskemaskiner har ikke en egentlig tørrefunktion, så opvasken vil altid føles mere fugtig end på en alm. husholdningsmodel. Er tørringen ikke tilstrækkelig kan doseringen af afspændingsmiddel opjusteres. Kontakt din sæbeleverandør for korrekt dosering.
  - Tjek at maskinen når 85 grader i boileren før start på en vask.
- Maskinen bliver ikke varm eller bliver langsomt varm
  - Der er gået en fase til opvarmningen – tjek i sikringsskabet at der ikke er gået en sikring. Maskinen kan fungere på kun 2 ud af 3 faser, så det er faktisk muligt at bruge maskinen selv om der er gået en sikring.
  - Maskinens bundprop (se tegning nedenfor) sidder ikke ordentligt i. Hvis ikke den sidder ordentligt vil der sive vand ud af maskinen. Dette resulterer i en meget høj udskiftning af vandet med koldt vand, hvilket gør at vandet ikke kan nå at blive opvarmet.
  - Maskinens termosikring kan være gået (kontakt service eller en elektriker)

## Daglig brug

- Tryk på tændknappen i 3 sekunder for at starte maskinen. Maskinen skriver nu LOADING for at indikere af den tager vand ind.
  - Opstart maskinen i god tid før brug. Maskinen skal varme mange liter vand op før den er klar til brug. TNK skal være over 50 grader (vaskekarret) og BLR skal være over 80 grader (skylle-tanken). Hastigheden for opvarmningen afhænger af vandets indgangstemperatur og kan tage alt mellem 10 minutter (60 grader) og 40 minutter.
- Når begge temperaturer er over det angivne, så er maskinen klar til brug. Indsæt kurven og vær sikker på den ikke overstiger den tilladte højde, således at de øverste spulearme går fri af indholdet af kurven.
- Vælg vaskeprogram ved at trykke på pil op og pil ned.
- Tryk på START i 2 sekunder, når du er klar til at starte en opvask.
- Maskinen tæller ned og når der står END er maskinen klar til at blive tømt

Maskinen har en smart sparefunktion, som efter 30 minutter sænker vandets temperatur i både tanken (til 40 grader) og boileren (60 grader). Når der trykkes på maskinen vågner den op og genopvarmer vandet til 55 og 80 grader igen for hurtigt at blive klar. Denne funktion kan kobles fra.

Maskinen skal dagligt tømmes for vand og filtrene i bunden af maskinen skal rengøres dagligt. Maskinen tømmes ved at hive i bundproppen i bunden af maskinen. Har maskinen drænpumpe skal der også trykkes på drænpumpeknappen. DET ER VIGTIGT AT RØRRET ISÆTTES KORREKT EFTERSOM DER ELLERS VIL SKE EN FOR HØJ UDSKIFTNING AF VAND. DETTE GØR OPVAMNING AF MASKINENS VAND LANGSOM ELLER UMULIGT.

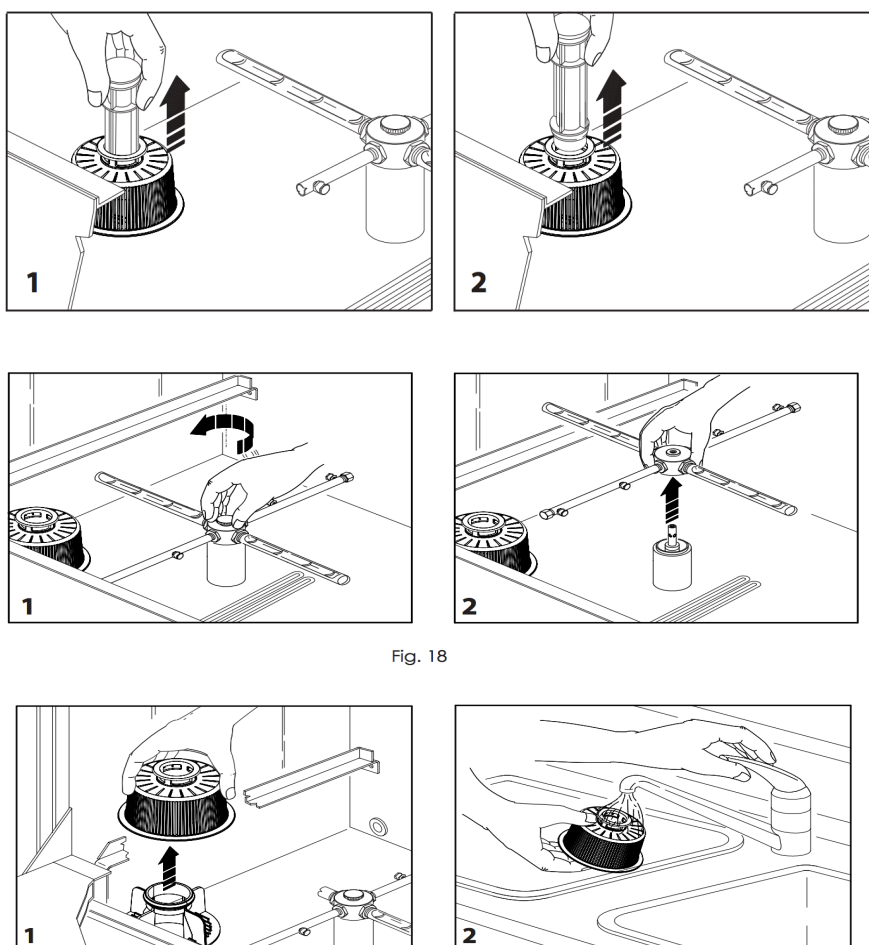








Fig. 18

## Oversigt over maskinens knapper

<div>P180</div> <div>Pronto</div> <div>TNK 55°C</div> <div>BLR 83°C</div>	Program selected / Seconds countdown
	Dishwasher status
	Tank Temperature
	Boiler Temperature
 <b>ON/OFF</b>	<b>SWITCH-ON / SWITCH-OFF</b>
 <b>START</b>	<b>WASH CYCLE START</b>
 <b>"UP" arrow</b>	<b>WASH TIME SELECTION</b> (see default parameter table)
 <b>"DOWN" arrow</b>	<b>WASH TIME SELECTION</b> (see default parameter table)
 <b>MANUAL RINSE</b>	<b>ADDITIONAL RINSE CYCLE START</b> (15 sec.)
 <b>MANUAL DRAIN</b> (if drain pump present)	<b>REMOVE OVERFLOW VALVE AND START DISHWASHER DRAINAGE</b> (dishwasher with optional extra installed only)

## Adgang til set-up menu (KUN FOR TEKNIKKERE ELLER MED SUPPORTTELEFON):

Switch the dishwasher off (Stand-By displayed)



Press the keys at the same time



Koden er:



Se oversigt over de forskellige program-punkter på s. 109-111 i den engelske manual.





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## SYMBOLS KEY

SYMBOL	DESCRIPTION
	<b>ATTENTION - RISK OF INJURIES</b> This symbol marks information and warnings which if not respected can jeopardise personal safety or damage the appliance.
	<b>ELECTROCUTION HAZARD</b> This symbol marks information and warnings which if not respected can jeopardise personal safety or damage the appliance.
	<b>BURNING HAZARD</b> This symbol marks information and warnings which if not respected can jeopardise personal safety or damage the appliance.
	<b>FALLING HAZARD</b> This symbol marks information and warnings referring to situations when using the product, where lack of attention can jeopardise personal safety.

## WARNING

Please read the following general warnings carefully.

- ▶ Please make sure you have fully read and completely understood this manual before you use the dishwasher.
- ▶ The manual must be kept within the user's reach so that it can be looked up easily and fast. Should it be damaged, destructed or lost, please ask your constructor for a new copy (see par.1.4 – PART TWO).
- ▶ **Do not use the dishwasher if you cannot look up the manual.**
- ▶ This dishwasher was designed to wash items such as glasses and plates normally used in bars and restaurants. Any other kind of usage is strictly forbidden.
- ▶ The dishwasher must be used only by trained operators.  
Untrained operators must be supervised by a manager or a colleague with enough experience in the use of dishwashers, as long as he has become enough experienced to run it on his own.
- ▶ Shut down the dishwasher once the washing cycle has finished and you no longer need to use it.
- ▶ Follow the Instruction and Maintenance Manual with outmost care both for use and maintenance operations.
- ▶ Always keep the dishwasher and the area around it clean, so that the operator and his equipment can transit fast and safely. Do not pile objects or other material that can prevent the access to the door.
- ▶ Clean the filter every day.
- ▶ Clean the whole dishwasher at least once a week.
- ▶ In case of danger, disconnect the power supply of the dishwasher immediately by pressing the on/off switch or by unplugging the machine.
- ▶ Check that the power supply cable is in good working conditions every day, especially if the connection with the power supply network is not close to the dishwasher.
- ▶ Place the supply cable correctly, so that it cannot be damaged; in particular, prevent it from being stepped on frequently, laying under doors etc.
- ▶ Carry out maintenance regularly by following the Instruction and Maintenance Manual.
- ▶ Children must be looked after in order to make sure that they are not playing with the machine.
- ▶ The protection degree of the machine is IPX1, and therefore the machine does not have to be washed with wash jets at high pressure. The maximum noise level of our dishwashers is of 74.3dB and the KpA value=2,5db

## WARNING!



## SHOCK HAZARD

### PART ONE

#### 1. Purpose of the information found in PART ONE

The purpose of the information found in PART ONE is to inform the Customer about the necessary data for the proper identification of the dishwasher.

#### 2. Reference standards

This dishwasher was designed and manufactured in compliance with the following standards: EN 60335-1, EN 60335-2-58, EMC, EN 55014, EN 61000-3-2, EN 61000-3-3, 89/392 CEE, 91/368 CEE, 93/44 CEE, 98/37/CE; directives 2002/95/CE, 2004/108/CE, 2006/95/CE.

This dishwasher also complies with the Safety and Work Hazard Prevention Regulations (applicable to dishwashers) in force at the date of manufacture. The dishwasher's connection with a suitable residual current operated circuit-breaker according to IEC 947 standard (type 1 coordination) is highly recommended; the maximum noise level of our dishwashers is 74.3dB and the value  $K_{pa}=2.5db$

#### 3. Applicability

The instructions found in this manual are suited only for the type of dishwasher specified.

#### 4. Transport

The machine is packed in a heavy cardboard crate when transported (fig. 1).

The dishwasher weight may vary between 50 and 170 kg if packed on pallet, according to the model.

The dishwasher weight may vary between 35 and 50 kg if packed in cardboard, according to the model.

## WARNING!



## INJURY HAZARD

THE USE OF EQUIPMENT AND THE OPERATIONS NOT SUITED TO THE LOADING, UNLOADING AND HANDLING OF THE DISHWASHER MAY DAMAGE BOTH THE PERSONNEL IN CHARGE WITH SUCH OPERATIONS AND THE MACHINE ITSELF. THE CONSTRUCTOR RECOMMENDS TO COMPLY TO THE STANDARDS ON LOADING, UNLOADING AND HANDLING IN FORCE IN THE COUNTRY WHERE THE DISHWASHER IS USED.

THE CONSTRUCTOR DECLINES EVERY RESPONSIBILITY FOR DAMAGES TO THINGS OR PERSONS CAUSED BY IMPROPER USE OF THE EQUIPMENT OR BY PROCEDURES NOT SUITED TO AND/OR NOT IN COMPLIANCE WITH THE LOADING, UNLOADING AND HANDLING OF THE DISHWASHER.

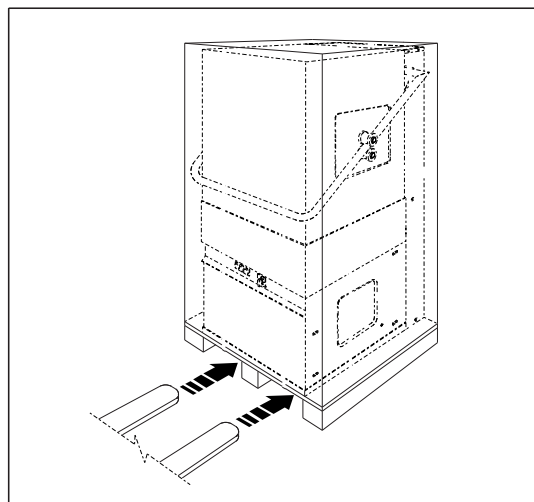


Fig. 1

Once the dishwasher has arrived to destination, check the transport documents and the number of items.

Should you find any discrepancy between the documents and the items delivered, contact your Dealer immediately.

Check the packaging conditions carefully: should it look faulty or broken, or show signs of mishandling, contact your Dealer immediately.

Please do not throw the packaging accessories away, you might need them to ship the machine back to your Dealer.

## 5. Unpacking and assembling instructions

### WARNING!



### INJURY HAZARD

**PLEASE PAY SPECIAL ATTENTION DURING UNPACKING AND ASSEMBLING OPERATIONS BECAUSE OF THE INSTABILITY OF THE DISHWASHER.**

The unpacking/assembling instructions are valid only if the machine is installed by the Customer himself.

1. Open the cardboard packaging carefully (fig. 2).

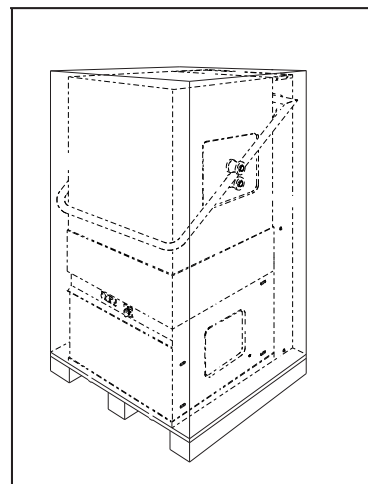


Fig. 2

If the dishwasher is packed in a cardboard crate, the machine is fully unpacked.

If the dishwasher is packed on pallet, please follow the instructions below.

2. Unscrew the two A screws that fasten the dishwasher to the transportation pallet (fig. 3)

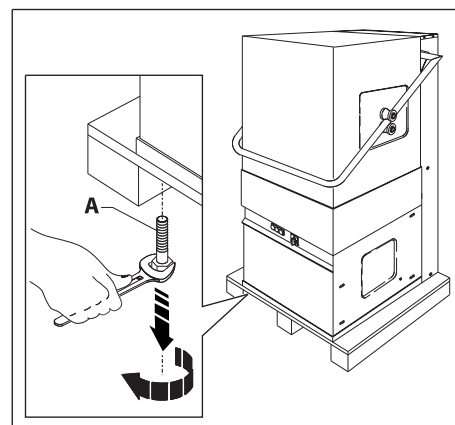


Fig. 3

3. Slide the machine across the pallet until two of the four holes provided for the supporting feet are free of obstruction (fig. 4).  
Take one supporting foot and screw it in one of the two free holes (fig. 4).  
Proceed with the assembly of the second foot following the same procedure (fig. 4).

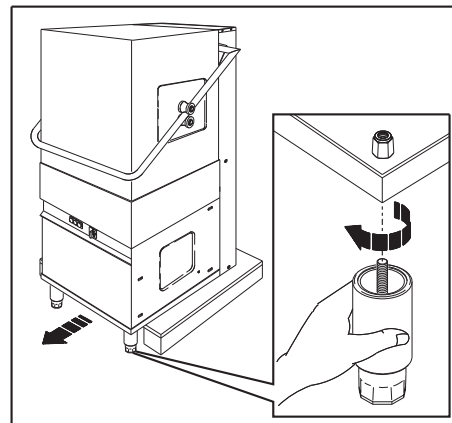


Fig. 4

4. Slide the machine further off the pallet until the first side is standing on its own two feet and the other is still supported by the pallet, so that the two remaining holes are free; then proceed as explained above.

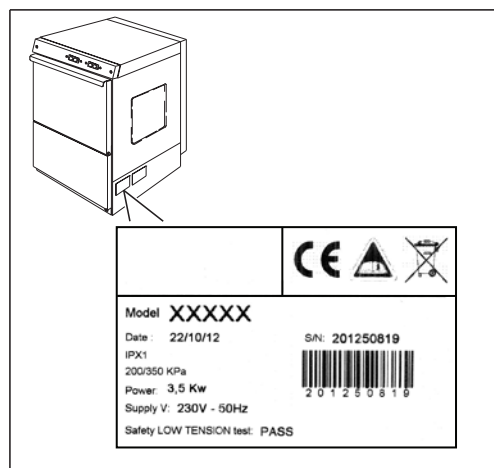
## 6. Dishwasher identification and marking

The dishwasher bears the following identification marks:

- Corporate name
- CE marking
- Indication of model and type
- Year of construction
- Test certificate

This information is printed on the label situated on the dishwasher (fig. 5) and can also be found on the declaration of conformity enclosed herewith.

Fig. 5



## PART TWO

### 1. Purpose of this manual

The purpose of this Instruction and Maintenance Manual is to provide a description of the safety measures necessary to the User, which have to be observed when using the dishwasher.

This Instruction and Maintenance Manual is to be considered as an integral part of the dishwasher. The term User comprises not only the purchaser of the dishwasher, but also the personnel involved in running, maintenance, checking and handling operations.

The information found in this manual concerns installation, putting into service and maintenance operations.

#### 1.1. Who should read this manual

This manual is addressed to the dishwasher operator and maintenance servicemen.

#### 1.2. Use and preservation of this manual

The purpose of this manual is to provide all the information you need to use and to maintain the dishwasher properly, according to the safety terms established by the Machine Directives and the unified standards.

For this reason, although the dishwasher is extremely simple to operate, this manual will have to be kept in good conditions and must be easily accessible for consultation when necessary. Please keep it clean, legible and complete in all its parts.

#### 1.3. Duration and validity of this manual

This manual is to be considered valid for the entire life of the dishwasher.

It has been drawn up according to the current state-of-the-art technology existing at the time of the construction of the dishwasher.

The manual therefore specifically refers to the dishwasher it was provided with, and is to be considered valid in the event of future updates as well .

#### 1.4. Request of a copy or of a new manual

Should your copy of this Manual be lost or damaged, please ask your Manufacturer for a new one.

Copies of the Instruction and Maintenance Manual can be requested by declaring the serial number, registration number and year of construction of the dishwashing machine (fig. 5).

Copies are available only on payment.

#### 1.5. Update

The Manufacturer reserves the right to modify the dishwasher whenever necessary and/or to update previous manuals without giving prior notice, except for special cases.

The manual will be updated by the Manufacturer in the following cases:

- if the dishwasher is returned to the Manufacturer for modifications or improvements
- if the manual contains errors or omissions that may prejudice suitable use of the dishwasher in conditions of total safety.

In such cases, the original Manual supplied to the Customer must be returned to the Manufacturer, who will provide a new updated copy.

#### 1.6. Transfer of property

In case of sale or transfer of property of the dishwasher, the customer is required to give notice to the manufacturer, specifying the address of the new owner and the date of validity of the sales contract, so that the manufacturer may inform the new owner on the limits of their liability.

#### 1.7. Customer's suggestions

Customers are invited to communicate any suggestions or proposals they consider helpful to improve the use, legibility or preservation of this manual, as in the spirit and terms of our Standards. If you want to communicate your suggestions, please contact the Manufacturer of this dishwasher.

## 1.8. Liability limits

### 1.8.1. Limits to use

This appliance must only be used for the function for which it was designed, that is to wash glasses, cups and similar items which do not exceed the maximum height of the door opening, together with the basket that contains them, as specified for the different models.

The limits of use are determined by the space available and the overall dimensions of the baskets, as well as that of the dishes that may be washed.

The dishwasher can be used only to wash plates and glasses commonly used in bars and restaurants.

The dishwasher is NOT designed to:

- Wash plates, glasses or other accessories made of plastics
- Wash glass items that are likely to explode when in contact with boiling hot liquids
- Wash baby feeding-bottles or other plates and food containers for babies.

### 1.8.2. Compliances

The rules to be observed refer in particular to:

- ▶ The operator's safety conditions
- ▶ The dishwasher's safety conditions.

The Manufacturer will accept no responsibility whatsoever if the dishwasher is used in such a way as to be in conflict with or violating the safety regulations in force in the country of use, even if they enter in force during or after purchase.

### 1.8.3. Liability

The Manufacturer will accept no responsibility whatsoever for damage or injury to things or persons in any of the following situations:

- Misuse of the washing machine

The term misuse refers to the use of the dishwashing machine with dishes and items other than those recommended in the paragraph on the Limits to Use (par. 1.8.1 – PART TWO). This can lead to damages or soiling to the rotating parts and to the splintering and/or explosion of the dishes.

Misuse is also to be considered the use of detergents or lustering products other than those recommended (such as dishwashing powder, laundry detergents specific for household dishwashers) or corrosive decalcifying products, acids and other unsuitable liquid or powdery cleaning products.

- Use of the dishwashing machine by untrained personnel

The dishwasher must be handled by trained personnel only. Untrained personnel using the machine should be supervised by a person in charge of the machine, until a certain degree of skill and safety has been achieved in the correct use of the dishwasher.

- Use not in compliance with national safety standards

The use of the machine by operators not legally employed is forbidden.

- Wrong installation

The dishwashing machine must be properly installed, both mechanically and electrically, and situated in a suitable place that does not create difficulties to operators during its use. This manual provides instructions referring to proper installation, when this is carried out by the Purchaser.

- Faulty power supply

A faulty main power supply may cause damage to the internal motor pump and to the electrical parts of the dishwasher.

The Manufacturer accepts no responsibility for any damage caused by use of the machine with power supply voltages not in accordance with the relative Standards, namely:

- lower voltage limit: -10% of nominal voltage rating
- upper voltage limit: 250 Vac for 220 Vac single-phase nominal voltage rating and 440 Vac for three-phase nominal voltage rating 380 Vac.
- Failure to carry out regular, prescribed maintenance (see chap. 6 – PART TWO)

Failure to carry out regular, ordinary maintenance is likely to cause damage or malfunction.

- Unauthorised modifications or tampering

The dishwashing machine cannot be modified, tampered with, in any part whatsoever.

- Use of non-original or unsuitable spare parts for the specific model

We recommend contacting the authorized sales office when purchasing spare parts and, in any case, to use spare parts recommended or supplied by the Manufacturer only.

- Total or partial inobservance of the instructions for use

## WARNING!



### INJURY HAZARD

**THIS MANUAL MUST BE READ CAREFULLY AND UNDERSTOOD BEFORE INSTALLING AND USING THE DISHWASHER.**

**The total or partial ignorance of the instructions for use of the dishwasher may expose personnel to safety hazards and cause damage to the machine.**

- Natural events

In case of natural events such as earthquakes, floods and so on, the Manufacturer will accept no responsibility whatsoever to refund damage or injury to people and property due to use of the dishwashing machine under these conditions, nor for partial or total regeneration of the machine.

## 2. Installation

## WARNING!



### SHOCK HAZARD

**Installation operations are to be carried out by qualified personnel in compliance with the following instructions.**

#### 2.1 Positioning and leveling

The Manufacturer delivers the dishwashing machine already mounted and complete of all accessories necessary to be used properly.

If possible, place the dishwashing machine close to the electric and water mains connections. The machine must be leveled on a flat surface by turning its 4 adjustable feet (fig. 6).

If the machine is encased in undercounter installations, its side and back panels may adhere to adjacent furniture or walls. The load and drain pipes may be left or right oriented, but once the machine is positioned, the pipes and the electric cable must not be bent or squashed.

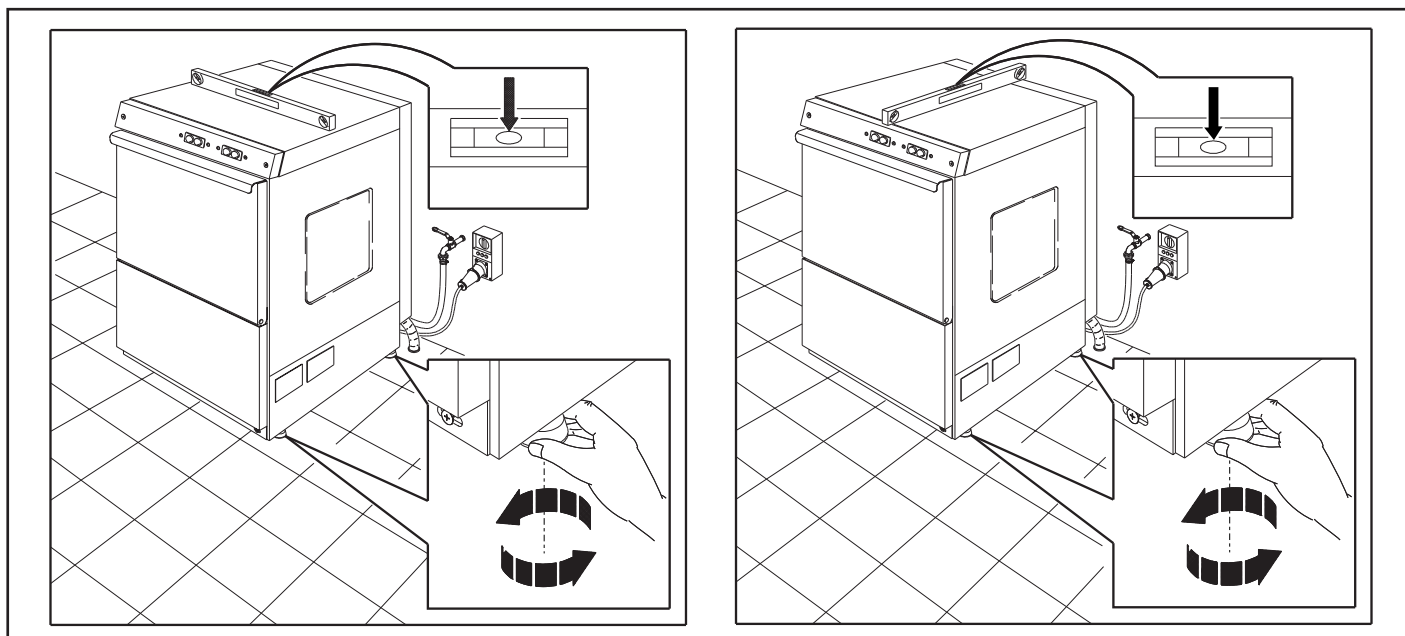


Fig. 6


## 2.2 Electrical connection



### ATTENTION!

The electrical connection has to be carried out in compliance with the laws in force in the country in which the machine is installed.

Before connecting the machine, please make sure that the voltage and the frequency of the electrical supply system correspond to what indicated in the label and that the machine is connected to an efficient earthing system;

On the back of the machine there is a clamp marked with  symbol, necessary for the equipotential connection among the different appliances.

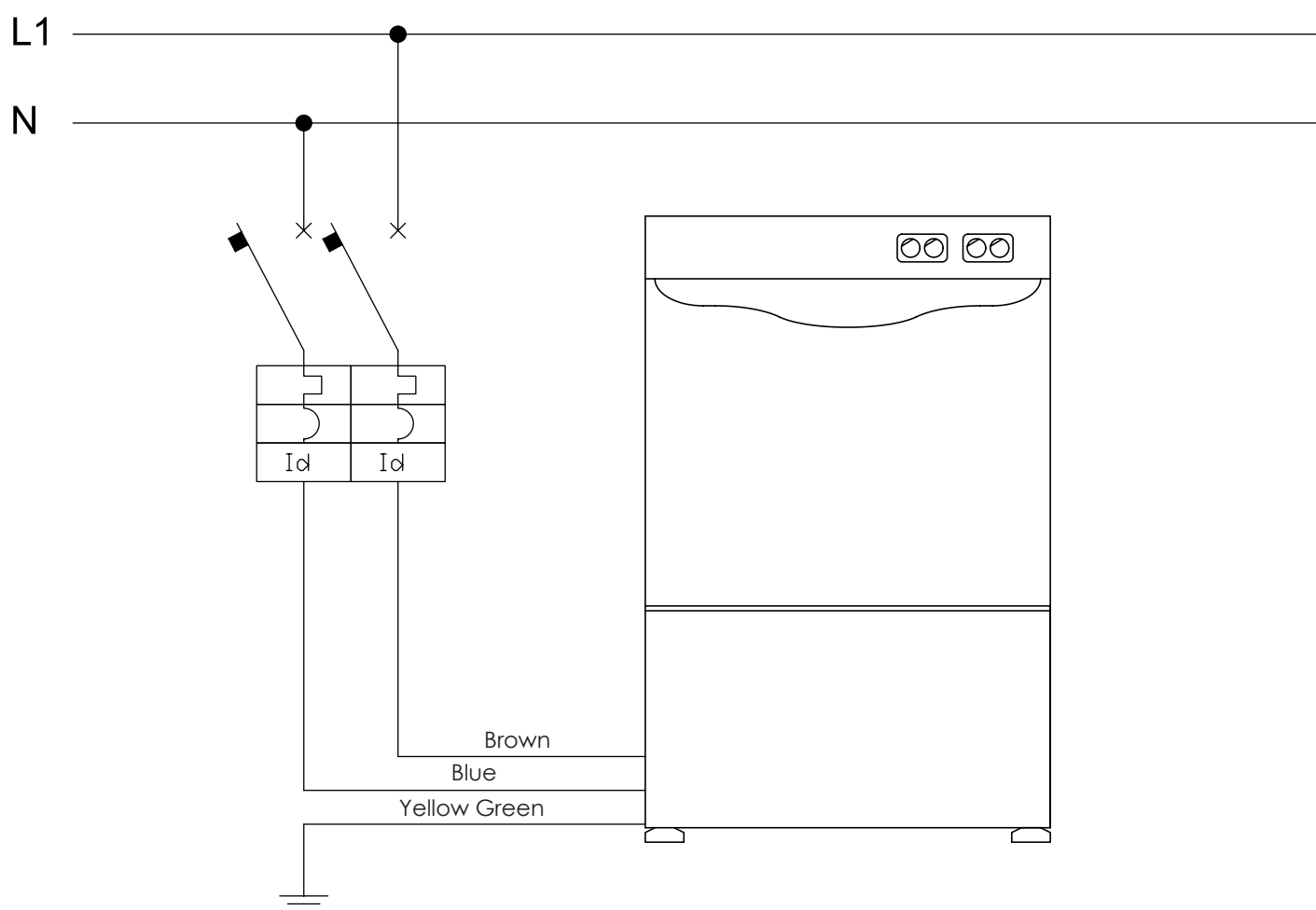
The machine must be protected upstream against the overcharges and the short-circuits by an omnipolar switch of thermal magnetic kind, with enough power of interruption, or by a load switch and fuses of gL type with adequate rate of flow.

Against the indirect contacts, immediately after the thermal magnet switch or the knife switch/fuses, you should install a differential switch with working electricity coordinated with the value of the heating element of the user's earthing system.

The power cable supplied with the machine is H07RN-F.

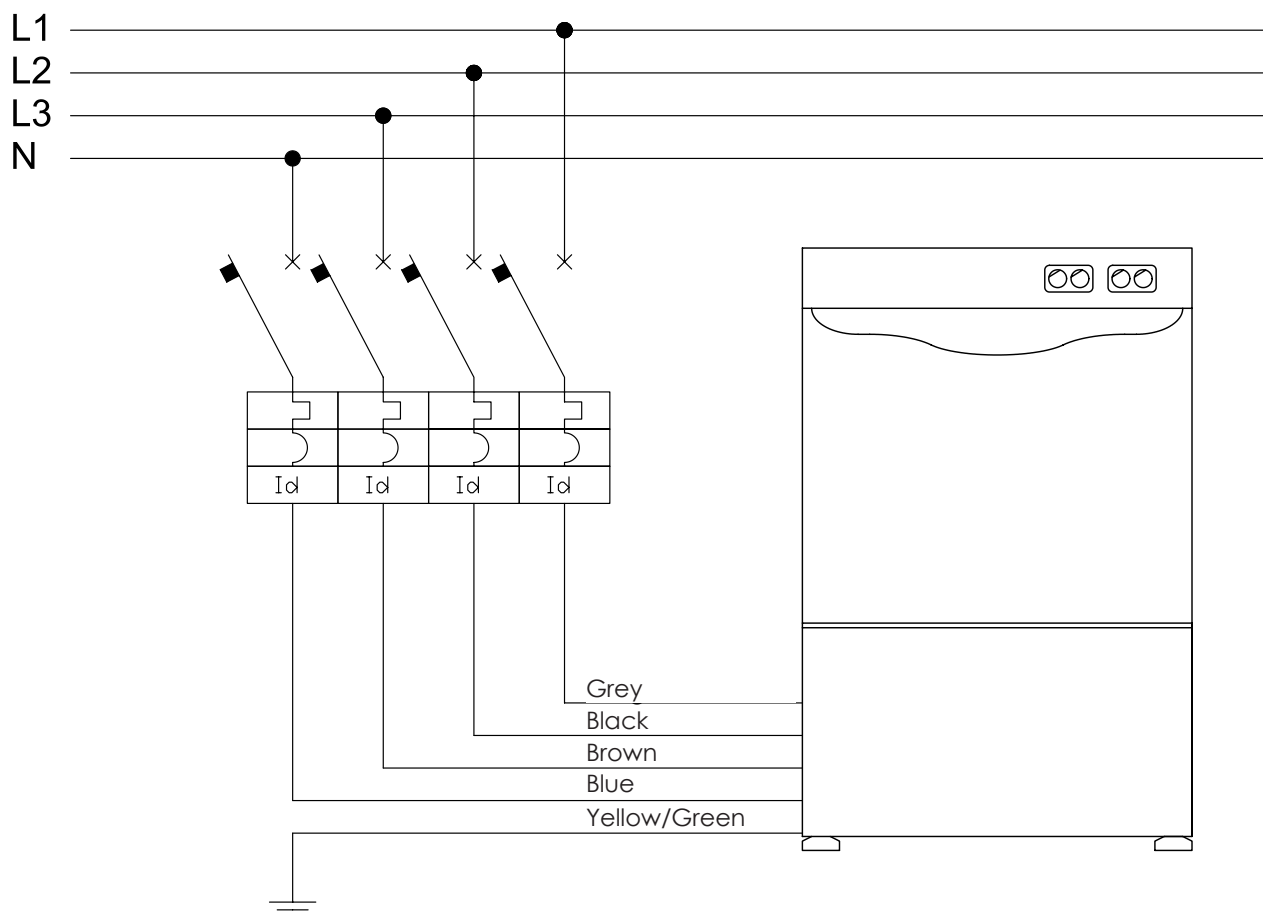
## ELECTRICAL INSTALLATION OF A SINGLE-PHASE DISHWASHER

230V+N+T

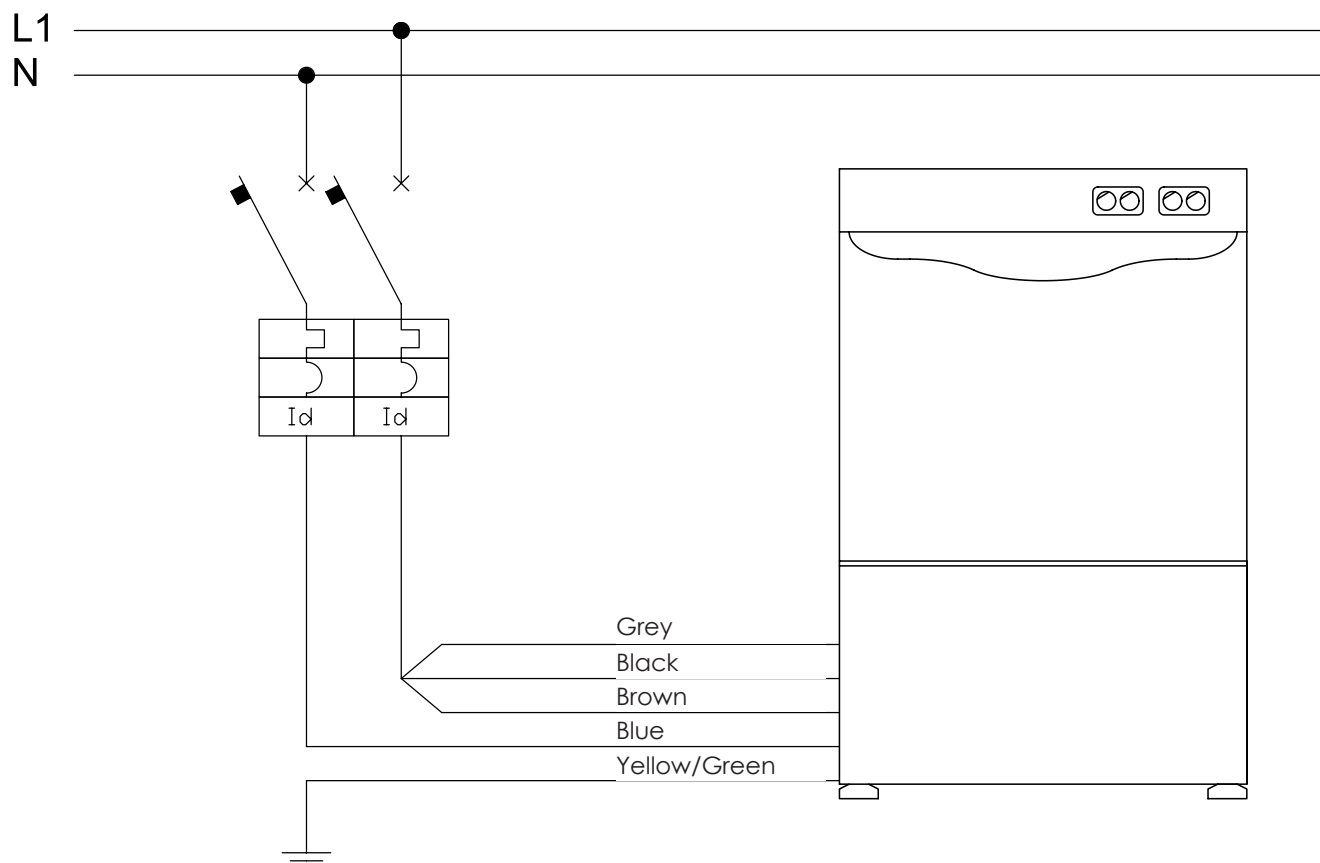


# ELECTRICAL INSTALLATION THREE-PHASE DISHWASHER

400V/3+N+T



230V+N+T (WHERE IT IS EXPECTED)



## 2.3 Earthing

The dishwasher must be connected to the earthing system of the building or to another tested and approved system in compliance with safety regulations.

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### WARNING!

It must however be understood that a good earthing system is not enough on its own to ensure safe conditions. It will therefore be necessary to install suitable safety devices capable of interrupting the mains power supply with intervention times in compliance with IEC 64-8 Regulations or other equivalent European Standard referring to electrical systems in public buildings.

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## 2.4 Water supply

Connect the load pipe supplied with the dishwasher to a water 3/4" gas intake.

The highest water supply temperature is 60°C.

The water supply pressure must respect the limits indicated in the technical data (200/350kPa).

Further indications:

- *Pressure reduction devices are recommended in those cases where the water supply is provided by means of an autoclave with a pressure that is greater than normally available from the local distribution outlet.*
- *Should the available mains water pressure be below 1.5 bar, it is mandatory to install an external pump to ensure a correct rinsing.*
- *Should the water hardness be above 14°f, it is advisable to connect the machine to an external softener, which requires regular regenerations. This will avoid lime deposits, while washing and rinsing performances will be impeccable.*
- *If water hardness is higher than 14°f, limestone forms.  
If water hardness is lower than 8°f, the dishes will not be rinsed properly.*

The connection to the water supply is to be carried out by means of a normal screw-on attachment to a water tap fitted with a handle or hand wheel (fig. 8, page 54).

It is advisable to place a fitting gasket in the connection between the water hose and the tap (fig. 8).

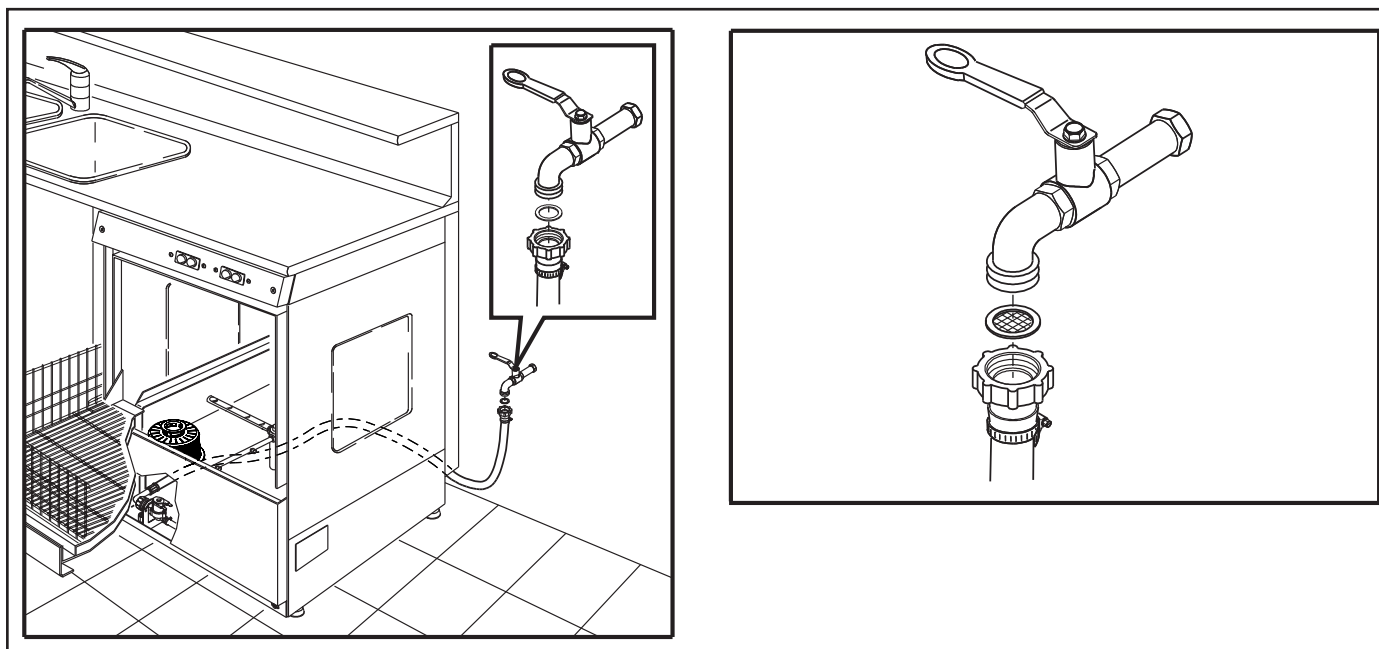


Fig. 8

## 2.5 Connection to the water drain

On the back of the machine there is an elbow connector, which can be easily orientated towards the nearest drain well. (fig.9)

Whenever water drain cannot be by gravity, the model with a built-in drain pump must be specifically requested (fig.10): see par. 2.6 – PART TWO.

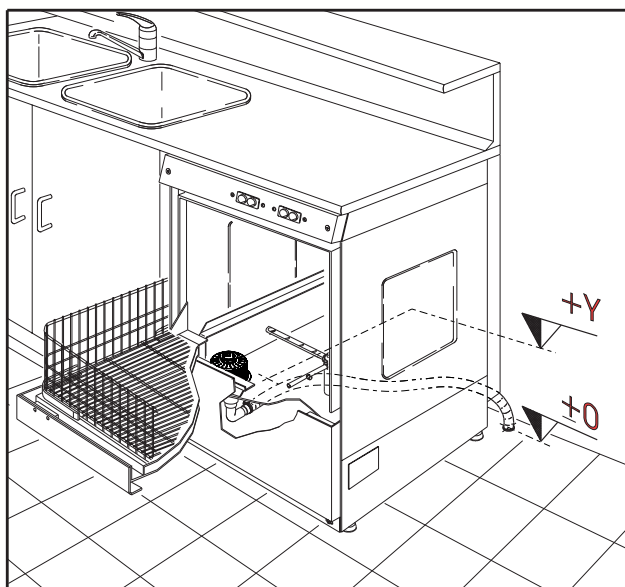


Fig. 9

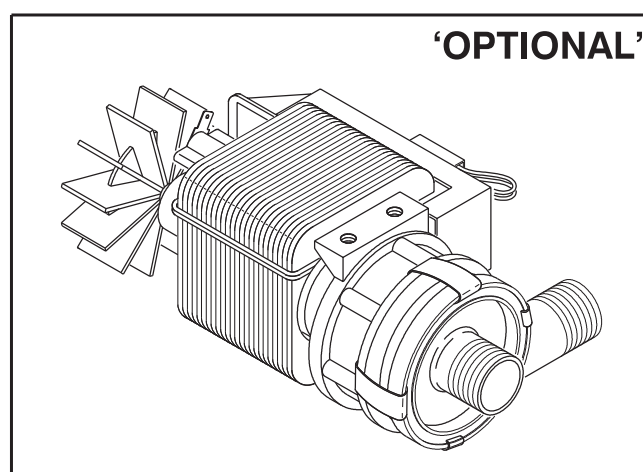


Fig.10

## 2.6 Model with drain pump

The of a drain hose can be hooked-up to the edge of a sink, or connected to an outlet in the wall; this outlet must be provided with an air breather or have a diameter larger than that of the drain hose to allow the passage of air.

If an extension is required, it must not exceed 2 m in length.



### WARNING!

If the dishwasher is hooked-up to the edge of the sink, place the end of the drain hose in such a way that prevents the blow-off water cannot reach plugs or electrical devices.

## 3 3 How to use the dishwasher

### 3.1 Type of use

The dishwashing machine has been designed for washing dishes commonly used in bars and restaurants.

### 3.2 Use conditions

The dishwashing machine may be used under any condition, providing that the operating temperature range is between +10 and +50°C.

Its use is subordinated only to the presence of the operator.

At any rate, we recommend avoiding the use of the dishwashing machine in open spaces, such as uncovered areas, improvised sheds, or other temporary installations. The operating temperatures of dishwashers are 55/60°C for tank and 85°C for boiler

### 3.3 Dishwasher types

Articles that can be washed:

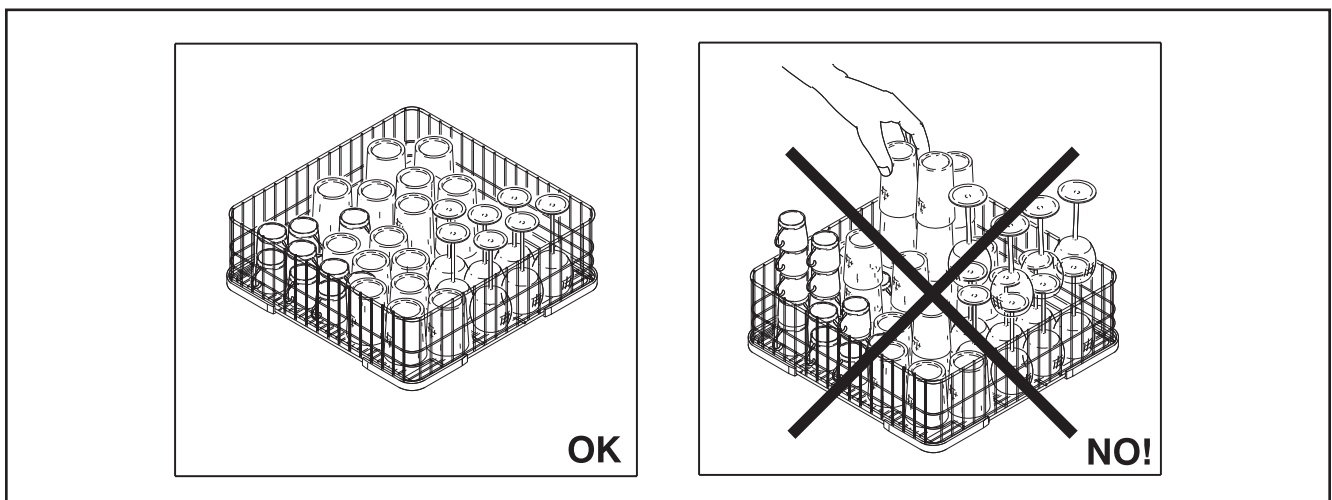
- Glass washers can wash: glasses, mugs, coffee cups, wine goblets, small plates, fruit bowls in compliance with the norms stated in the paragraph on the Limits to Use (par. 1.8.1 – PART TWO).

- All other models can wash: All other models can wash: all kinds of dishes, crockery and glasses commonly used in most bars and restaurants, within limits determined by the size of the baskets, in compliance with the norms stated in the paragraph on the Limits to Use (par. 1.8.1 – PART TWO).

### 3.4 Use limits

The dishwashing machine is to be used for washing dishes stacked flat in the basket inside the machine, up to its full carrying capacity, with no overlapping (fig. 11).

Moreover, make sure that the dishes do not prevent the rotors from rotating.



### 3.5 User's requirements

The operator should have sufficient experience in the use of equipment commonly supplied to public business concerns to prevent incorrect handling.

At any rate, the simple commands and ease of operation when using the dishwasher make it easy to acquire the necessary experience in a very short time.

The operator must always be aware of the risks (i.e. shock and burn hazards) due to use of any brand of dishwasher.

The operator has to be trained with special attention in the following cases:

- temporary employees, with little or no experience;
- personnel with little or no service practice;
- personnel with local language comprehension difficulties;
- physically handicapped personnel with limited movement capabilities.

## 4 Instructions for use

This machine must be operated by trained personnel only. It can be utilized only to wash glass, cups saucers and similar items, in compliance with the norms stated in the paragraph on the Limits to Use (par. 1.8.1 – PART TWO).

### 4.1 General functioning check-up

Before starting up normal operation, the User should check the functional characteristics of the installation by a visible inspection of connections to the dishwasher.

Regular inspection is also recommended regarding the conditions of connecting hoses and electric power supply cables (see chap. 6 – PART TWO).

### 4.2 Safety devices

#### 4.2.1 General safety devices

The dishwashing machine is enclosed inside metal cabinets that can be opened only by using appropriate tools.

#### 4.2.2 Alert signals

No alert signals are installed.

#### 4.2.3 Indicators and warning lights

##### RED POWER-ON LIGHT

The power supply is ON



##### INSERTED CYCLE SPY LIGHT

The washing cycle is running



##### TANK TEMPERATURE LIGHT OK

Temperature water tank = 60°C



##### CYCLE RINSING SPY

The rinsing cycle is running



#### 4.2.4 Interlock devices

A micro switch is fitted to the door of the machine (fig.12), in a suitable position that makes it impossible to tamper with.

This micro switch stops the water intake in the event that the door is opened, without switching off the power supply on the machine.

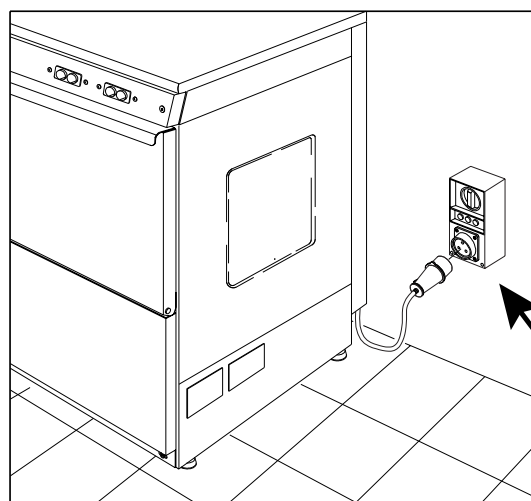


Fig. 12

#### 4.2.5 Removable and adjustable safety guards

No adjustable or removable guards are provided, as they are not necessary.

#### 4.3 Safety measures

Several basic rules must be complied with using the dishwasher:

- The dishwasher must never be removed from its original position when working
- Make sure the water supply tap is open before turning the appliance on
- Never clean with corrosive products acids, steel wool or steel brushes
- Never wash the appliance with direct or high-pressure jets of water
- At the end of the daily use, switch off the dishwasher
- Inspect the general situation of the machine before use, with a particular attention to the electric power supply connections and the operation controls
- The dishwashing machine should be clean and possibly free from residues from previous washing cycles and in good working conditions. All auxiliary accessories have to be installed correctly and working
- If for any reason the machine is not to be used, we recommend to place an "Out-of-Order" sign in a visible position and, if necessary, the electric power supply should be disconnected
- In the event that a spoon or other small object falls inside the machine tank, the tank will have to be emptied out:

1. Switch off the dishwasher (by using the POWER ON SWITCH (2), see par. 4.6) and disconnect it from the electrical network

2. Remove the overflow pipe (fig. 16)

3. Start the drain pump by pressing the DRAIN PUMP SWITCH (7) (fig. 14b, page 59), if supplied

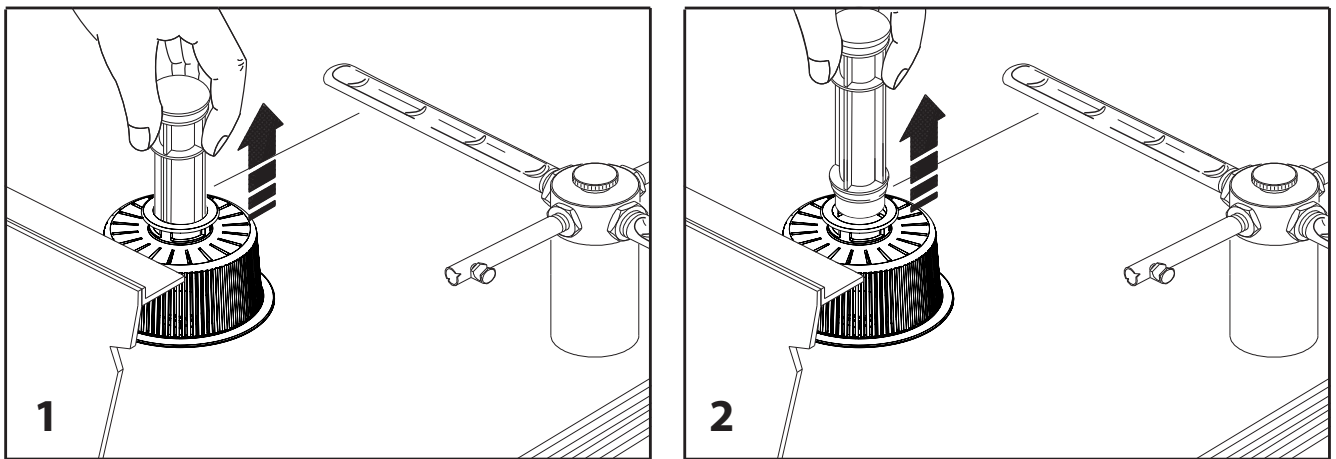


Fig. 16

Wait about five minutes to allow the heating elements to cool down before attempting to recover the stray objects.

### WARNING!



**BURN HAZARD**

#### 4.4 Idle test

Before starting the dishwasher, it is advisable to make an idle test to make sure that the machine was installed correctly.

To make the idle test, look up the instructions for use on par. 4.6 – PART TWO, skipping the phases “Detergent and rinse additive dosage” and “Supplementary rinsing”.

#### 4.5 Washing operations

A few basic rules need to be observed to ensure proper hygiene for cleaned dishes:

- Remove any food remaining from the dishes before washing them in the dishwasher (fig. 13)

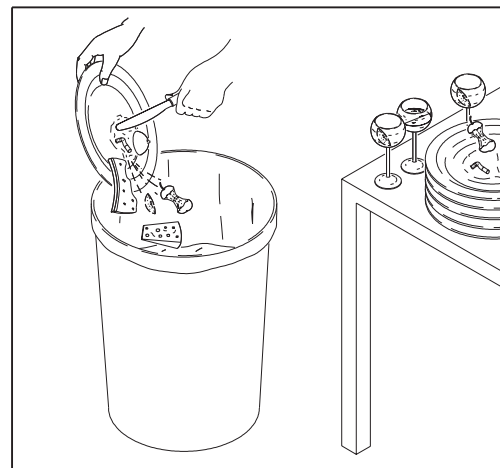



Fig. 13

- Frequently replace the water in the tank according to the number of washing cycles that have been performed; it should be done at least 3 times a day.
- Dry the washed dishes with a clean cloth
- Do not put dishes on rubber cloths or on other water-retaining materials
- The washing pump filter must be kept clean and placed correctly (see chap. 6 – PART TWO).


##### 4.5.1 Dishwasher with built-in softener

If the machine is equipped with an automatic water softener, this will perform regeneration at every wash cycle (total wash cycle duration 128 sec.).

Regeneration happens automatically and no additional operation is required.

Upon installation and every time the “NO SALT” light  (fig. 13a) switches on, the container inside the tank (fig. 13a) must be filled with salt. We recommend using specific coarse-grained salt for dishwashers (1-4 mm), pay attention not to disperse it on the bottom of the tank to avoid oxidation of the steel and jeopardising the correct operation of the dishwasher. After having filled the container securely fasten the cap.

The container can hold about 1 kg of salt, sufficient to guarantee an autonomy of about 60 wash cycles. The exhaustion of the salt inside the container is always signalled

by the “NO SALT” light  switching on. Upon switch-on of the light, immediately restore the salt and never operate the dishwasher with the light on, in order to avoid jeopardising the machine components, in this case not covered by warranty.

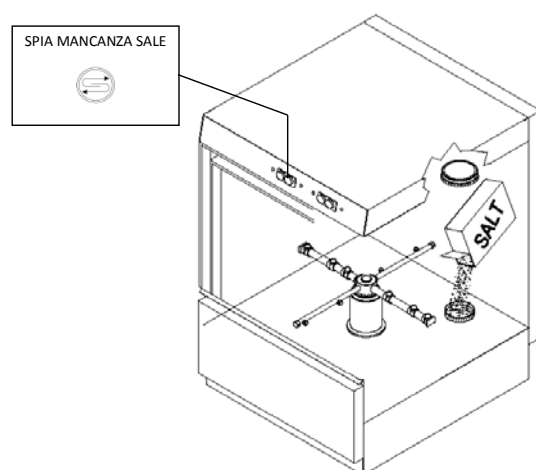


Fig. 13a

## 4.6 Electromechanical dishwasher operation

On fig. 14a, 14b, 14c e 14d you can see the control panel of the dishwasher and the reference to each control, according to the model of the dishwasher and the presence or absence of the drain pump.

### FRONT LOADING DISHWASHER

CONTROLS	REF.
IGNITION SPY LIGHT	1
IGNITION SWITCH	2
NO SALT LIGHT	3
WATER TEMPERATURE SPY LIGHT	4
INSERTED CYCLE SPY LIGHT	5
STARTING CYCLE SWITCH	6
MANUAL RINSE SWITCH	7
CYCLE RINSE SPY	8

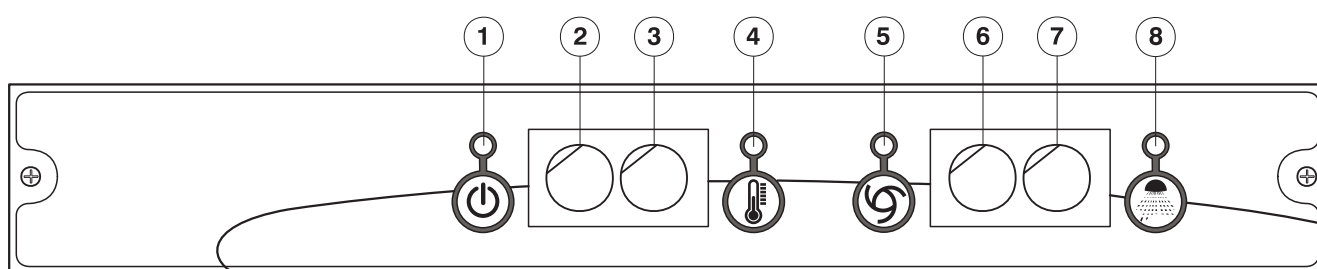


Fig. 14a

### FRONT LOADING DISHWASHER WITH DRAIN PUMP

CONTROLS	REF.
IGNITION SPY LIGHT	1
IGNITION SWITCH	2
NO SALT LIGHT	3
WATER TEMPERATURE SPY LIGHT	4
INSERTED CYCLE SPY LIGHT	5
STARTING CYCLE SWITCH	6
DRAIN PUMP SWITCH	7
CYCLE RINSE SPY	8

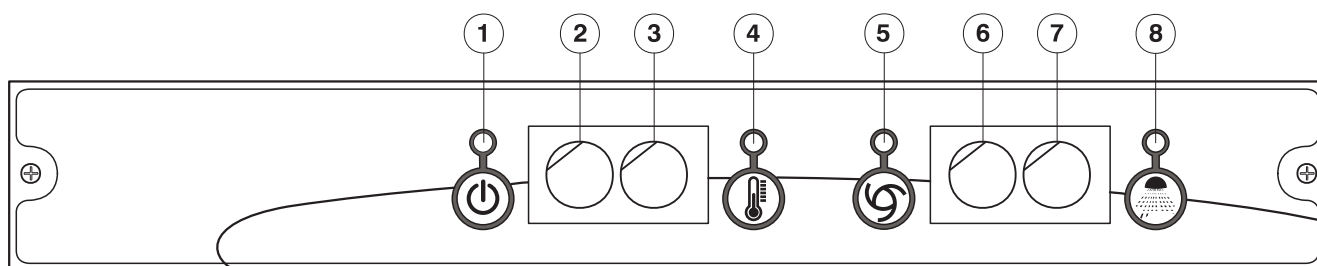


Fig. 14b

# HOOD DISHWASHER

CONTROLS	REF.
ON INDICATOR LIGHT	1
ON SWITCH	2
DRAIN PUMP SWITCH	3
TEMPERATURE INDICATOR LIGHT	4
CYCLE ENGAGED INDICATOR LIGHT	5
WASHING TIMES SELECTOR	6

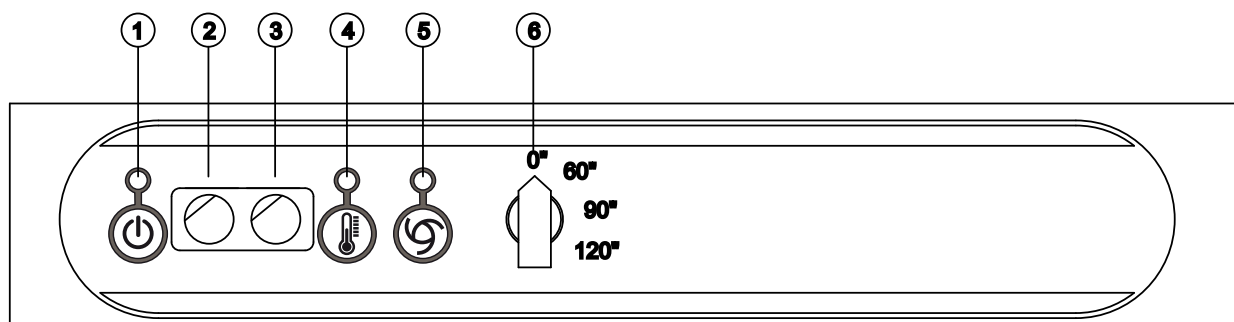


Fig. 14c

## FRONT LOADING DISHWASHER WITH WASHING TIME SWITCH

CONTROLS	REF.
IGNITION SPY LIGHT	1
IGNITION SWITCH	2
WASHING TIME SWITCH	3
WATER TEMPERATURE SPY LIGHT	4
INSERTED CYCLE SPY LIGHT	5
STARTING CYCLE SWITCH	6
MANUAL RINSE SWITCH	7
CYCLE RINSE SPY	8

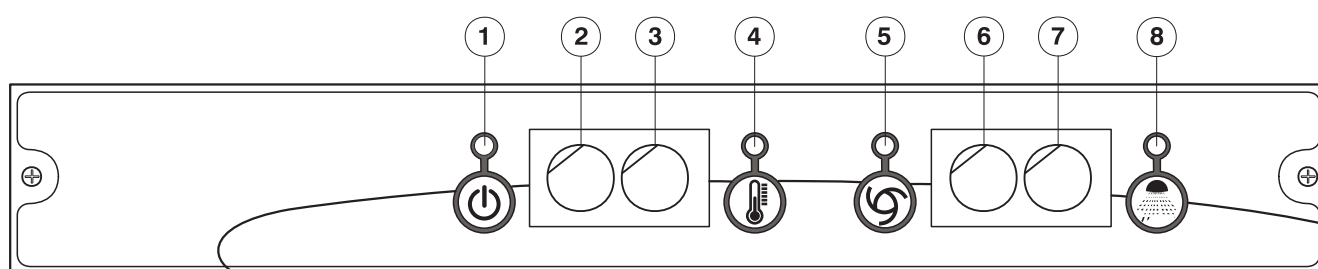


Fig. 14d

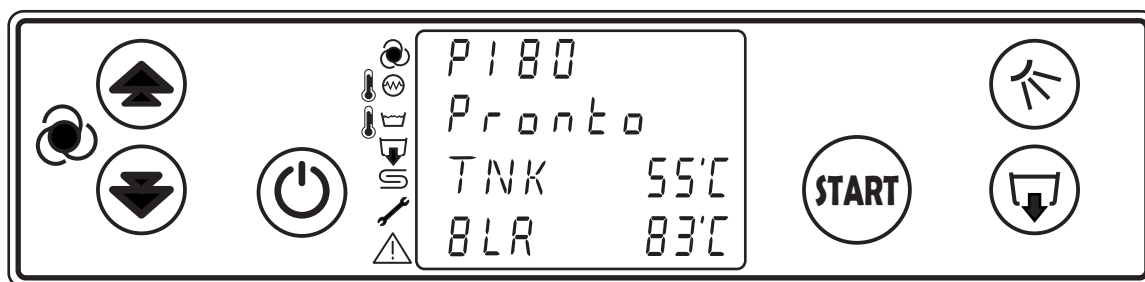
In the following pages you will find the instructions on the washing operations; some of them are automatically carried out by the dishwasher.



## WARNING

PLEASE PAY ATTENTION TO THE OPENING AND CLOSING OF THE DOOR/HOOD OF THE DISHWASHER. DO NOT USE THE DISHWASHER IF YOU ARE WEARING CLOTHES/ITEMS THAT COULD GET ENTANGLED IN THE DISHWASHER PARTS, AS THEY CAN LIMIT THE PERSONNEL'S REGULAR MOVING ABILITY.

#### 4.6.1 Electronic dishwasher operation



"UP" arrow

Allows to select washing times

Inside the menu, it allows to vary the stored parameters



"DOWN" arrow

Allows to select washing times

Inside the menu, it allows to vary the stored parameters



Manual rinse

Holding the button down starts the additional rinse cycle

Inside the menu, it allows to pass to the previous menu item



Manual drain (if drain pump present)

Holding the button down starts the manual drain cycle. At the end of the cycle, if no errors have occurred, the dishwasher switches off.

Inside the menu, it allows to pass to the next menu item



ON/OFF

dishwasher switch on and off. Holding the button inside the menu allows to exit the menu



Start:

wash cycle start

#### DISPLAY ICONS



Wash cycle (LED on during wash cycle)



Boiler temperature (if the LED is fixed, the boiler has reached the set temperature; if it flashes the boiler is heating)



Tank temperature (if the LED is fixed, the tank has reached the set temperature; if it flashes the tank is heating)



Drain (LED on while the appliance is draining)



LED on if there is no more salt in the tank and during the regeneration phase (only dishwashers with built-in water softener)



Programmed maintenance required



Alarm triggered

## DISPLAY

The display can view information provided by the board on 4 lines:

<b>FIRST LINE</b>	<ul style="list-style-type: none"> <li>• In case of error views the error code</li> <li>• With machine stopped and on, it views the cycle code (e.g. P120)</li> <li>• During the wash cycle, it views the countdown of the cycle in progress</li> </ul>
<b>SECOND LINE</b>	<ul style="list-style-type: none"> <li>• In case of an error, it views a brief description of the error</li> <li>• With machine stopped and on, it views the text "Ready "</li> <li>• If the door of the dishwasher is open, it views the text "Door Open"</li> <li>• During the cycles, it views a brief description of the cycle in progress</li> </ul>
<b>THIRD LINE</b>	<ul style="list-style-type: none"> <li>• If the dishwasher is on, it views the temperature of the tank</li> <li>• If the dishwasher is closed, it views the text "Stand-by"</li> </ul>
<b>FOURTH LINE</b>	<ul style="list-style-type: none"> <li>• If the dishwasher is on, it views the temperature of the boiler</li> </ul>




### ENERGY SAVE:

If the machine remains in standby for over 10 seconds, the backlighting of the display switches off. Press any key to reactivate it.




At the end of each cycle, the display flashes indicating the presence of the basket inside the dishwasher. The display quits flashing when the door is opened.

### OPERATION

Switch on:

- Check that the pump intake filter is perfectly clean and inserted in its housing
- Check that the overflow tube is properly inserted in its housing
- Check that any tank total filters are inserted properly.
- Close the door/hood of the dishwasher
- Connect the main wall switch
- The machine goes into **STAND-BY** and the display views the message "**STAND-BY**"
- Keep the start button  pressed for 3 sec.
- The machine starts to load water and the text "LOADING" appears on the display
- When loading is over the heating phase starts, indicated by 2 flashing LEDs near the symbols  (boiler) and  (tank) and the display views the relative temperatures (the temperatures will be visible until the machine switches off and/or empties).
- When the 2 LEDs quit flashing, the machine has reached the set temperature.

### WASH CYCLE

- Insert the basket with the dishes to be washed
- Select the washing time with the keys  or 
- Keep the key  pressed for 2 seconds until the pump switches on
- During the whole wash cycle, the following texts appear on the display:

#### FIRST LINE:

Countdown of seconds remaining until the end of the cycle: if in the meantime the temperature of the boiler drops below the minimum set temperature, the countdown blocks and the text "**Thermostop**" is displayed on the first line

## SECOND LINE:

**Pxxx – Program in progress** where Pxxx indicates the type of program selected (for example P120= program 120sec.)

## THIRD LINE:

Tank Temperature (for example "TNK=60°C")

## FOURTH LINE:

Boiler Temperature (for example "BLR"=85°C)

The following LEDs on the left side of the display also switch on:



indicating that the cycle is engaged



several times during the cycle indicating that the drain pump is on (if present) eliminating part of the suds formed on the water surface.

- At the end of the wash cycle, the text "End" appears on the second line and the display starts to flash until the door is opened.
- Open the door and remove the basket (the display quits flashing)
- Close the door; the dishwasher returns to ready status and the message " **Ready** " appears on the display

## FURTHER INFORMATION

If the door opens during the wash cycle, operation is interrupted and the display reads:

**"DOOR OPEN"**

**"OPERATION INTERRUPTED"**

When the door is closed, the cycle resumes from where it was interrupted.



If a wash cycle starts by mistake, it can be interrupted by pressing the key

## ADDITIONAL RINSE CYCLE



If you wish to perform further rinsing, press the key

The dishwasher starts rinsing for an amount of time set by the installer and the text "**Additional Rinsing in Progress**" appears on the display.

At the end of the wash cycle, the text "End" appears on the second line and the display starts to flash until the door is opened.

## DRAINING DISHWASHER WITH DRAIN PUMP

To drain the dishwasher at the end of work:

- Remove the overflow tube
- Close the door



- Press the drain button
- The drain pump switches on for the time necessary to drain the machine
- The time remaining until the tank is empty appears on the first line of the display
- The second line of the display reads "Draining in progress"
- When draining is finished, the dishwasher switches off

**ATTENTION:** if the dishwasher is still not empty at the end of the drain cycle, the alarm "ER12, drain timeout" is triggered: the dishwasher does not switch off but heating is disabled.



The error is signalled by the LED corresponding to the  symbol switching on.

Make sure that the overflow tube has been removed, switch the dishwasher off and back on and restart draining

## DETERGENT AND RINSE-AID DOSAGE

From the technical menu it is possible to associate each of the 4 programs with a different dosage of detergent and rinse-aid (only by the technician).

At every cycle, the dishwasher will automatically restore detergent and rinse-aid.

## REGENERATION

If the dishwasher has an automatic water softener, regeneration is performed automatically during standard operation, every 1÷20 cycles. This can be set on the technical menu (only by the technician) depending on the hardness of the water feeding the dishwasher.


During the wash cycle, the text "**Regeneration**" appears on the display during the regeneration phase.

If salt runs out inside the tank, the text "**Salt missing**" appears on the display and the LED corresponding



to the  symbol switches on.



To switch the dishwasher off, press the button . Before switching off the dishwasher, run a regeneration cycle for a few seconds with the display reading "**Regeneration**". When regeneration is over, the dishwasher switches off.

## PROGRAMMED MAINTENANCE

Maintenance by our service centre is foreseen every 20000 wash cycles to make sure all the critical components of the machine work properly, preventing sudden failures and lengthening dishwasher life.



When the dishwasher has reached 20000 cycles, the LED corresponding to the  symbol switches on and the text "**Maintenance Required**" is displayed.





## DEFINED ALARMS

The following is a list of the defined alarms together with a short explanation. The alarms are not all self-restorable, namely they remain until the machine has been switched off and back on. Some serious alarms place the machine in "safe" mode (total block), others allow it to continue standard operation, though with limited functions.

If after having performed the appropriate checks and having switched the machine off and back on, the alarm appears again, contact our technical service.

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
ER01	Tank loading timeout (critical): the tank has not filled within the maximum time foreseen	Valve of water mains does not supply water. Overflow tube not inserted or inserted incorrectly. Impeller water jets obstructed. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Boiler clogged with limestone. SAFE
ER02	Boiler loading timeout (critical): the boiler has not filled within the maximum time foreseen Managed only for machines with Break-Tank	Valve of water mains does not supply water. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Break-Tank level switch blocked SAFE
ER03	Tank heating timeout: the tank has not heated within the maximum time foreseen. Tank heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Tank resistance power plugs disconnected or damaged Tank resistance damaged SAFE
ER04	Boiler heating timeout: the boiler has not heated within the maximum time foreseen. Boiler heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged SAFE
ER05	Tank probe open: the tank probe is not connected or is it interrupted. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER06	Tank probe short-circuited: the tank probe is short-circuited. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER07	Boiler probe open: the boiler probe is not connected or is it interrupted. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER08	Boiler probe short-circuited: the boiler probe is short-circuited. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER09	Tank safety thermostat (critical): the tank safety thermostat has opened	Request intervention of a technician	Check that the thermostat of the circuit board triggers when it reaches the set temperature. Rearm the safety thermostat SAFE
ER10	Boiler safety thermostat (critical): the boiler safety thermostat has opened	Request intervention of a technician	Check that the thermostat of the circuit board triggers when it reaches the set temperature. Rearm the safety thermostat SAFE

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
ER11	Thermostop timeout: the boiler did not reach the set temperature during the washing thermostop phase within the maximum time foreseen. Boiler heating is disabled.	Valve of water mains does not supply water.	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged SAFE
ER12	Drain timeout: the tank pressure switch did not open at the end of the manual drain cycle	Overflow tube inserted Drain tube squashed	Drain tube obstructed Drain pump plugs damaged Drain pump damaged SAFE
ER13	Quick tank heating: the tank reached the set temperature too quickly: Tank heating is disabled	Request intervention of a technician	Pressure switch blocked and heating on with tank empty. SAFE
ER14	Panel disconnected (critical): the panel was disconnected during machine operation and therefore it is no longer controllable by the keyboard	Request intervention of a technician	Flat cable of control panel disconnected Control panel faulty SAFE
ER18	Water leakage from boiler (critical): Managed only for machines with Break-Tank	Request intervention of a technician	Water leakage from Break-Tank Water leakage from Break-Tank sleeves Water leakage from rinse pump Level switch blocked SAFE

PHASE		DISHWASHER TYPE/FIGURE REFERENCES	
		Front loading dishwasher (fig. ref. 14a or 14b or 14d).	Hood dishwasher (fig. ref. 14c).
1. Switch-on		Close the door/hood of the dishwasher. Push the IGNITION SWITCH (2): the IGNITION SPY LIGHT (1) turns on.	
2. Water loading		The water is automatically loaded into the wash tank until it reaches the top overflow pipe.	
3. Water heating		The water is automatically heated. Before starting the machine, wait for the water in the washing tank to reach the set temperature as explained in chap. DISHWASHER HEATING TIME (see chap. 12 – PART TWO). Once the water temperature reaches the set level, the WATER TEMPERATURE SPY LIGHT (4) turns on.	The water is automatically heated. Before starting the machine, wait for the water in the washing tank and in the boiler to reach the set temperature as explained in chap. DISHWASHER HEATING TIME (see chap. 12 – PART TWO). Once the water temperature reaches the set level, the WATER TEMPERATURE SPY LIGHT (3) turns on.
4. Detergents and rinse additive dosage	4a. Manual	Open the door of the dishwasher. Pour the detergent into the washing tank (fig. 15, page 69). Use one teaspoonful to start (or one cupful, if using liquid detergent); adding another half small teaspoonful (or half cup) after every second wash cycle. To produce shining dishes, add 1 small teaspoonful of lustering product into the washing tank (fig. 15, page 69) at each washing cycle.  <b>WARNING!</b>  <b>BURN HAZARD</b>	Open the hood of the dishwasher. Pour the detergent into the washing tank (fig. 15, page 69). Use 2 teaspoonful to start (or 2 cupful, if using liquid detergent); adding another 1 small teaspoonful (or 1 cup) after every second washing cycle. To produce shining dishes, add 1 small teaspoonful of lustering product into the washing tank (fig. 15, page 69) at each washing cycle.  <b>WARNING!</b>  <b>BURN HAZARD</b>
	4b. Automatic devices	If the dishwashing machine is equipped with automatic detergent and rinse additive dosing devices, the adjustments of quantities will be carried out by the installation technician. The detergent/rinse additive is automatically loaded during washing.	

PHASE	DISHWASHER TYPE/FIGURE REFERENCES	
5. Selecting the washing time	<p>If the dishwasher is set to adjust the washing time, select the time needed and push the WASHING TIME SWITCH (3) (fig. 14d): you can choose between two times, one by pressing the switch the other by not pressing it.</p>	<p>Before starting to wash, select the washing time needed by using the WASHING TIME SELECTOR (4) (if supplied).</p> <p><b>Position. 1:</b> 45 sec. washing 15 sec. rinse Total time: 60 sec.</p> <p><b>Position. 2:</b> 75 sec. washing 15 sec. rinse Total time: 90 sec.</p> <p><b>Position. 3:</b> 105 sec. washing 15 sec. rinse Total time: 1200 sec.</p> <p><b>Position. O:</b> Position O is a special position that BLOCKS the current function in use: - if the machine is washing, it will go on washing if not stopped; - if the machine is rinsing, it will go on rinsing if not stopped; - If the machine is on a stand-by position, it will not get started by opening and closing the hood.</p>
6. Washing	<p>Open the door, insert the basket with the dishes (make sure that THE dishes are placed as described on par. 3.4 – PART TWO), close the door and push the STARTING CYCLE SWITCH (6) to start the washing cycle: the INSERTED CYCLE SPY LIGHT (5) turns on.</p> <p>When the washing phase is over, the CYCLE RINSE SPY turns on (8) indicating that the rinse phase is operating: wait for it to finish.</p> <p>The rinse phase ends when the INSERTED CYCLE SPY LIGHT (5) turns off.</p>	<p>Lift the hood, insert the basket with the dishes (make sure that THE dishes are placed as described on par. 3.4 – PART TWO), lower the hood and press the closing handle downwards: the INSERTED CYCLE SPY LIGHT (5) turns on.</p> <p>The washing/rinse cycle starts automatically.</p> <p>The cycle ends when the INSERTED CYCLE SPY LIGHT (5) turns off.</p>
7. Supplementary rinse	<p><u>If the machine is set to activate the rinse cycle manually (fig. 14a or fig. 14d, according to the model) and if you want one more rinse cycle to be done, keep pressed the MANUAL RINSE SWITCH (7) as long as you want the cycle to last.</u></p>	<p>-----</p> <p>-----</p>

PHASE	DISHWASHER TYPE/FIGURE REFERENCES	
8. Dishes unloading	<p>Open the door to remove the basket with the dishes.</p> <p>If the machine is set to activate the rinse cycle manually (fig. 14a or fig. 14d, according to the model), and you do not want the dishes to be misted:</p> <ol style="list-style-type: none"> <li>1. Insert the basket with the dishes back into the dishwasher</li> <li>2. Close the door</li> <li>3. Do another rinse cycle by keeping pressed the MANUAL RINSE SWITCH (7) as long as you want the cycle to last.</li> </ol>	<p>Lift the hood to remove the basket with the dishes.</p>

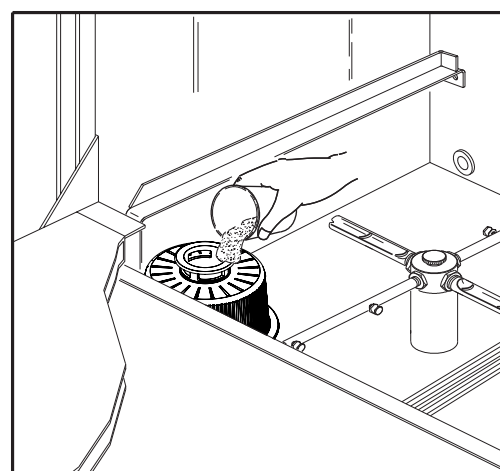


Fig. 15

#### 4.7 End of washing cycle

Every day, after use:

1. Switch off the dishwasher by pressing the IGNITION SWITCH (2) (figg. 14a, 14b, 14c or 14d, pages 59-60)
2. Remove the overflow pipe (fig. 16, page 70)
3. Let the dishwasher drain completely by starting the drain pump (if supplied). To start the drain pump, keep pressed the DRAIN PUMP SWITCH (7) (fig. 14b)
4. Cut off the electric power by turning off the main switch installed upstream the dishwasher or disconnect it from the electric network
5. Remove and clean the washing pump filter (fig. 17, page 70) and other tank filters if present
6. Carefully clean the washing tank
7. Check and, if necessary, unscrew and clean the washing and rinse pipes
8. Replace all the items removed by proceeding in inverse order
9. Leave the door/hood open for the time the machine is off.

## WARNING!



**INJURY HAZARD**



**FALL HAZARD**

WHEN THE DISHWASHER DOOR IS OPEN IT CAN BE AN OBSTACLE TO PEOPLE AND THINGS PASSING BY THE MACHINE ITSELF.

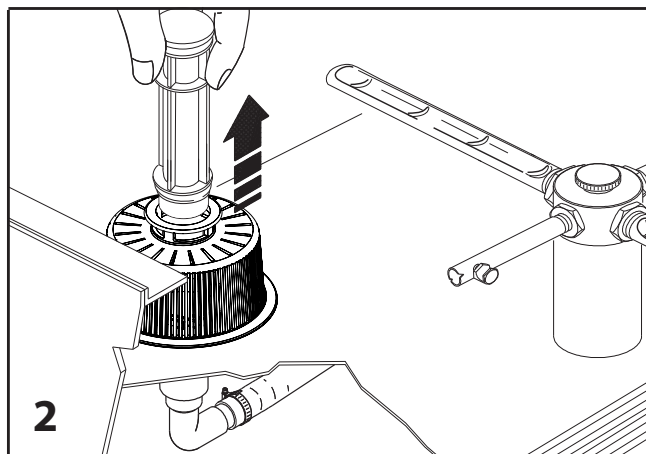
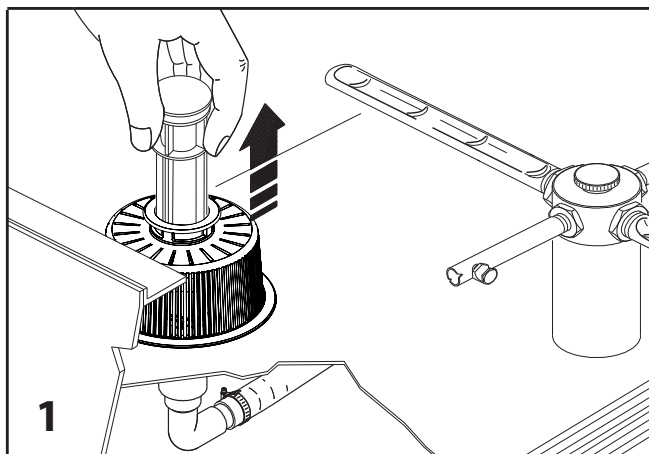


Fig. 16

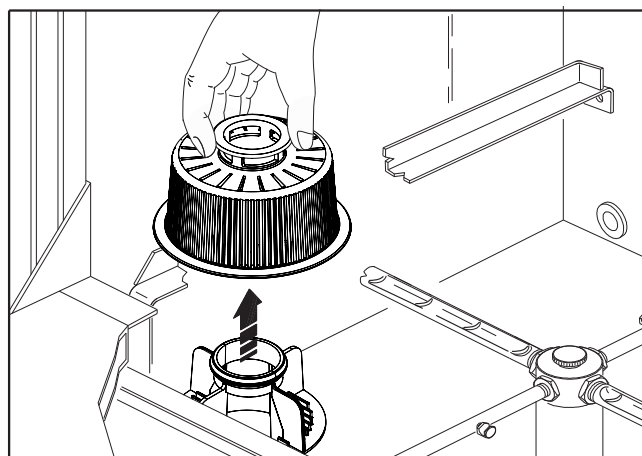


Fig. 17

## 5 Instructions for disassembly

### WARNING!



#### INJURY HAZARD

### DAMAGE HAZARD FOR THE DISHWASHER

Only skilled personnel should be allowed to disassemble the dishwasher.

We therefore recommend that the dishwasher be taken to the nearest authorised dealer in case you need to disassemble all or part of the dishwasher.

## 6 Maintenance

### WARNING!



#### INJURY HAZARD



#### BURN HAZARD



**MAINTENANCE MUST BE CARRIED OUT ONLY WHEN THE MACHINE IS SWITCHED OFF, DISCONNECTED FROM THE POWER SUPPLY NETWORK AND THE TANK IS EMPTY.**

**MOREOVER, MAINTENANCE SHOULD BE CARRIED OUT ONLY AFTER THE HEATING ELEMENTS HAVE COOLED DOWN (WAIT AT LEAST FIVE MINUTES).**

THE ONLY EXCEPTION TO THIS RULE IS THE CHECK-UP OF THE MICROSWITCH FUNCTIONING (SEE THE TABLE BELOW).

In the table below you will find a list of the necessary maintenance operations and their frequency. In case of technical problems, please contact your Dealer..

MAINTENANCE	FREQUENCY	NOTES
Washing tank cleaning	Every day	To be carried out with care.
Rotor cleaning	Every day	Dismantle the rotor by unscrewing its securing nut (fig.18, page 72), then clean it and rinse it with water . Wash the inside of the rotor arms by unscrewing the securing nut of each arm. Carry out the same operations for the upper rotor.
Washing pump filter cleaning	Every day	Remove the washing pump filter by pulling it upwards, then wash it and rinse it (fig. 19, page 72).
Washing tank filters cleaning (if supplied)	Every day	Remove the washing tank filters by pulling them upwards, then wash them and rinse them.
Rotor rotation check-up	Every day	Check manually that the rotor rotates properly.

MAINTENANCE	FREQUENCY	NOTES
Outer surfaces cleaning	Every 1-2 days	Do not use solvents on the control panel.
Micro switch functioning check-up	Every week	Check that the door microswitch works properly when the machine is on by opening/closing the door or by lifting/lowering the hood.
Power supply cable and water hoses check-up	Every 6 months	<p><b>WARNING!</b></p> <p> <b>SHOCK HAZARD</b></p> <p> <b>INJURY HAZARD</b></p> <p>In case these parts are damaged, disconnect the dishwasher from the power supply without touching the electric cable (Turn the upstream switch of the dishwasher to the "off" position or disconnect the whole power supply network to which the dishwasher is connected). Immediately contact your Dealer and have the machine repaired by qualified personnel.</p> <p>Do not use the dishwasher until it has been repaired.</p>

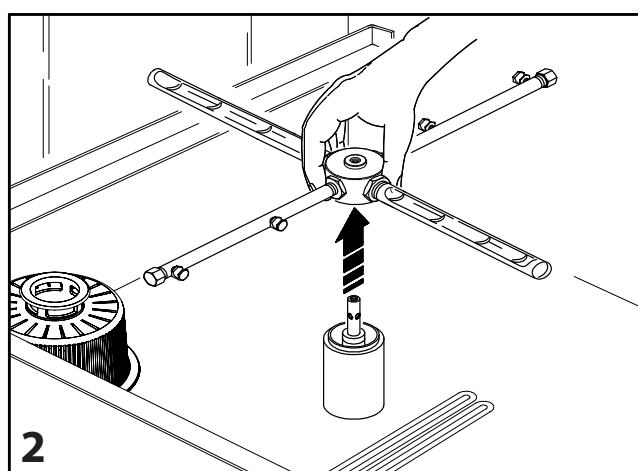
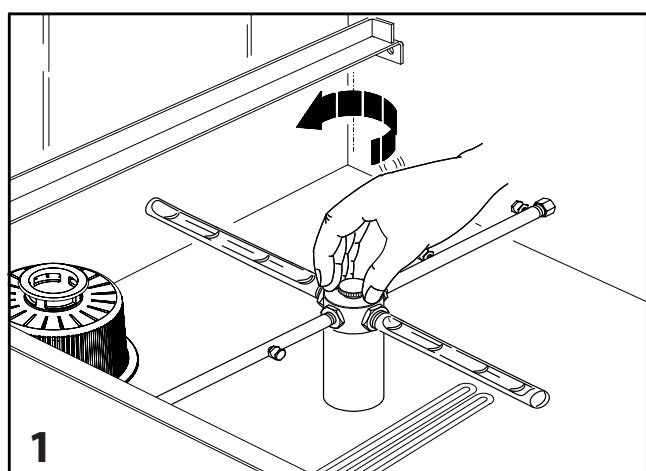


Fig. 18

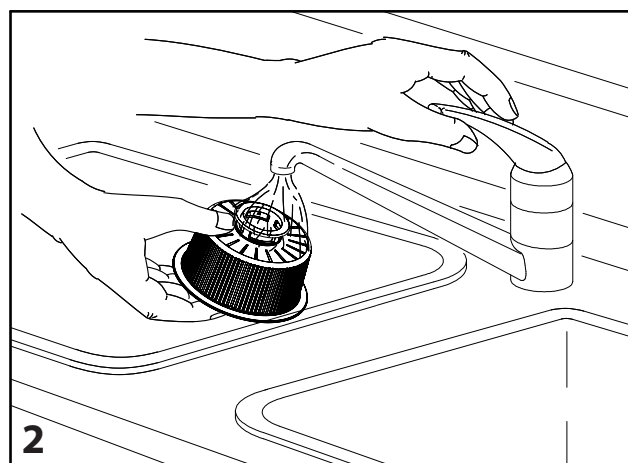
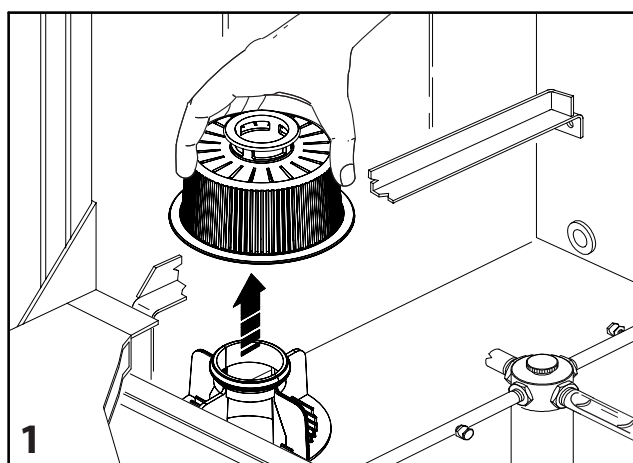


Fig. 19

## 7 Residual hazards

The alternating current mains power supply represents a source of residual hazard.

Warnings placed in convenient positions on the dishwashing machine warn the operators of these hazards, in compliance with Safety Standards, as shown here.



## 8 Instructions for emergency situations



### WARNING

Emergency situations that are likely to arise during use of the dishwasher are:

- *insulation failure*
- *electric shock*

**In all situations in which the dishwasher is not working, or not working properly, thus generating possible hazardous circumstances, the electric power supply must be immediately disconnected by switching off the upstream switch and disconnecting the mains power cord.**



**In the event of electrocution or electric shock, carefully follow the precautions set out by Safety Regulations. Do not touch the injured person directly, but switch off the upstream switch.**


**In all situations in which the dishwasher is not working, or not working properly, thus causing the hazardous situations described above, or after one of these situations has occurred, do not use the dishwasher and have it checked up and repaired by qualified personnel.**

## 9 Troubleshooting

Before leaving the factory, each machine is thoroughly tested by specialized engineers to make sure that it performs perfectly.

However, in the event a failure occurs, before calling for service, the following trouble shooting operations may be tried.

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
	Maintenance required (warning): Unlike other alarms, the message remains visible even when the appliance is off (by means of the specific icon) and is only reset by resetting the partial cycle counter by means of the specific menu item (see further on)	Request intervention of a technician	Programmed maintenance required Reset partial cycle count on technical menu.
	Regeneration in progress (warning): activated when a regeneration is performed during the wash cycle. It does not change standard machine operation in any way. Managed only for machines with built-in water softener		
	Salt missing (warning): activated when salt is missing. Managed only for machines with built-in water softener	Add salt to the specific tank.	

PROBLEM	POSSIBLE CAUSE	SOLUTION
0. The dishwasher does not turn on	THE IGNITION SWITCH (2) (fig. 14a or 14b or 14c or 14d, according to the model) is in OFF position.	Turn the IGNITION SWITCH (2) (fig. 14a or 14b or 14c or 14d, according to the model) to ON position.
	The upstream switch is in OFF position.	Turn the upstream switch to ON position.
	<p>The supply plug or the feeder cable are damaged.</p> <p><b>WARNING!</b></p> <p> <b>SHOCK HAZARD</b></p>	<p><u>In case these parts are damaged, disconnect the dishwasher from the power supply without touching the electric cable</u> (Turn the upstream switch of the dishwasher to the "off" position or disconnect the whole power supply network to which the dishwasher is connected).</p> <p><i>Immediately contact your Dealer and have the machine repaired by qualified personnel.</i></p> <p><u>Do not use the dishwasher until it has been repaired.</u></p>
1. The dishwasher does not fill with water	There is no electricity.	Wait for electricity to come back.
	Door/hood of the dishwasher is not closed.	Close the door/hood of the dishwasher.
	The filter of the water supply tap is blocked.	Clean the water supply tap.
2. Even if you press the STARTING CYCLE SWITCH the cycle does not start	Door/hood of the dishwasher is not closed.	Close the door/hood of the dishwasher.
	The upstream switch is in OFF position.	Turn the upstream switch to ON position.
	The STARTING CYCLE SWITCH was not pressed for at least 2 seconds.	Press the STARTING CYCLE SWITCH for at least 2 seconds again.

PROBLEM	POSSIBLE CAUSE	SOLUTION
3. The washing cycle is noisy	The washing pump filter (fig. 19) is blocked.	Wash and rinse the washing pump filter (fig. 19).
	The washing arms of the rotor (fig. 18) hit the items to be washed that protrude from the basket.	Place the items so that they do not get hit by the washing arms of the rotor by following the instructions on par. 3.4 – PART TWO.
4. Inadequate rinsing	The water main pressure is lower than 1,5 bar.	Contact a technician to install a supplementary pump to increase the water main pressure.
	The filter of the water supply tap is blocked.	Clean and rinse the water supply tap.
	The nozzles of the rotor are blocked.	Wash and rinse the nozzles of the rotor.
	The rotor arms do not turn freely.	- Place the items so that they do not get hit by the washing arms of the rotor by following the instructions on par. 3.4 – PART TWO. - Wash and rinse the rotor arms.
5. There is too much foam during the washing	The dishwasher is not finished with the heating of the water in the tank.	Before starting the washing cycle, wait for the water in the tank to heat as explained in chap. DISHWASHER'S HEATING TIME (chap. 12 – PART TWO). Once the set water temperature has been reached, the WATER TEMPERATURE SPY LIGHT turns on.
	Too much rinse additive was put in the dishwasher.	Put less rinse additive in the dishwasher. If the dishwasher is supplied with the rinse additive automatic dosing, please call a technician to adjust the dosing.
6. The rotor does not turn freely	The rotor arms (fig. 18) hit the items to be washed that protrude from the basket.	Place the items so that they do not get hit by the washing arms of the rotor by following the instructions on par. 3.4 – PART TWO.
	The rotor needs cleaning.	Wash and rinse the rotor.
7. The dishwasher does not drain	The drain pipe (fig. 21) is blocked.	Remove the clogging from the drain pipe.
	The drain pipe filter (if supplied – fig. 21) is blocked.	Wash and rinse the drain pipe filter.

If the problem persists even after you have followed these instructions, please contact the nearest officially appointed Service Station, reporting model data (fig. 5) and type of failure.

## 10 Personnel training

The personnel has to be trained regarding the operations for loading, unloading and start-up of the machine.

All these operations are relatively simple and require normal prudence in order to avoid injuries and accidents.

## 11 Helpful hints

Here are some helpful hints in addition to the regular dishwasher functioning:

- In case the dishwasher is supplied with automatic detergent (1)/rinse additive (2) dosing device, check the detergent and rinse additive level in the external tanks and replace or fill up if necessary (fig. 22)
- Washing and rinsing arms must be clean and equipped with spouts and taps
- Use only industrial foamless detergents
- Please use only industrial detergents and rinse-aids such as the ones that we supply or others with equivalent composition.
- Use the doses of detergent recommended in this instruction manual (par. 4.6 – PART TWO) or by the detergent manufacturer
- In case the dishwasher is supplied with automatic rinse additive dosing device, remember that, when the rinsing additive finishes, or the first time the appliance is started up, the appliance must run about 7-8 cycles to allow the dispenser to refill, and to fill intake and delivery pipelines

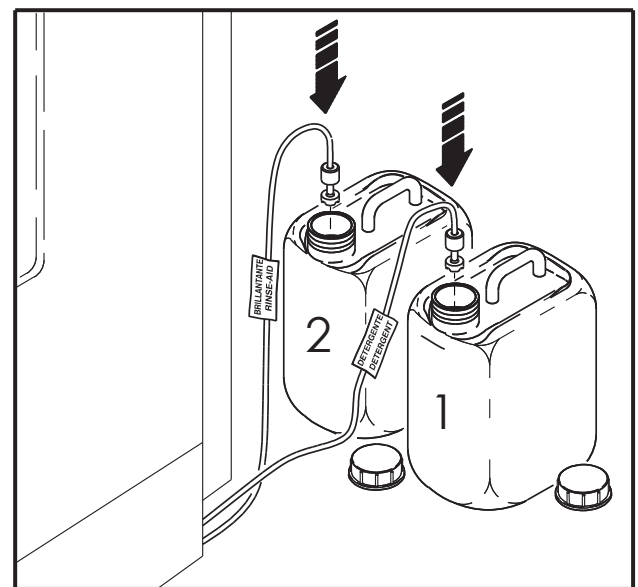


Fig. 22

## 12 Warranty

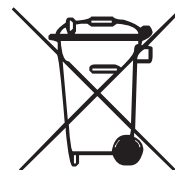
- The firm grants the proper operation of the product described in this warranty for a period of 12 months from the purchasing date.
- The warranty includes free repairs or replacement of components which the service station recognized as having material or production faults.
- The warranty will not cover:
  - damage resulting from negligence, improper use, installation not complying with the instructions shown in this manual
  - accidents, tampering, improper repairs or damage caused by unauthorised personnel
  - damages during transport from and to the customer which have not been signalled to the carrier when the goods are accepted
- Replaced faulty parts covered by warranty become the property of the construction firm.
- No refund for damages will be allowed for direct or indirect damages to persons or property resulting from the use or interrupted use of the appliance.
- The warranty is not valid for the electric components damaged by overvoltage or wrong installation.
- The appliance will not be replaced and/or the warranty extended following a failure.

## 13 Instructions for disposal

### Instructions for the disposal of electrical devices.

The label shown on the right is applied to electrical devices you have bought and means that the appliance cannot be disposed like common waste but will have to be disposed separately.

In fact, the waste deriving from electrical or electronic devices has to undergo special treatment in order to prevent the pollutants contained in the devices from spreading, and to protect the environment and human health. Moreover, it will be possible to reuse/recycle part of the material of which this waste is made up, thus reducing the depletion of natural resources and the quantity of waste to be recycled.





### WARNING

**DUE TO ITS POLICY OF CONTINUOUS PRODUCT IMPROVEMENT, THE MANUFACTURER RESERVES THE RIGHT TO MAKE ANY CHANGES DEEMED NECESSARY.**

**THE MANUFACTURER CANNOT BE HELD RESPONSIBLE IF THE INSTRUCTIONS CONTAINED IN THIS MANUAL ARE NOT OBSERVED.**

# INSTALLATION INSTRUCTIONS

	<b>For adequate measurement and calibration it requires the instruments contained in kit100</b>
	<b>All the parameters set by default have been defined according to the characteristics of our detergent and refer to the water hardness indicated in the tables. With the use of different detergents and different conditions of use requires a new dosage calibration.</b>

All the dishwasher parameters must be set by the technician when the machine is installed, by accessing the technical menu.

On pages 115-117-118 you will find our recommendations according to the detergent and water hardness.

Other parameters, (temperatures, pause time, rinse time), must be set by the technician when the dishwasher is installed, according to the conditions at the customer's premises (water pressure, water hardness, type of dishes to be washed)

The main settings are:

## DETERGENT AND RINSE AID SETTING

This must be set taking into account:

- density of the detergent used: the dosage recommended for our detergent is 0.5gr/l for soft water
- water quality: hard or soft (see tables on page 117-118 referring to our detergent)
- water pressure: it is not important in terms of the detergent and rinse aid setting but it is important to check the duration of the rinse time - section 25 of the manual on page 111.

## TEMPERATURES

Tank > by default all the programs are calibrated at 55°C

Boiler > default the temperatures are diversified according to the cycle selected, i.e.:

- 90 sec 75°C for speed but low drying quality
- 120 sec 77°C
- 150 sec 80°C for better drying quality but with a longer cycle
- 180 sec 80°C

(Refer to the parameter table on page 122)

## WASH/RINSE PAUSE

The pause between the wash and rinse cycle can be varied by setting parameter no. 24 of the technical menu. By default the pause is set at 5 sec., but it can be increased up to 15 sec., achieving, for dishwashers with a double wash cycle, greater "dripping" time of the upper wash pipes and therefore greater rinsing quality.

**Attention:** by increasing the pause time, the wash time is shortened, maintaining the total cycle time unvaried.

Example:

The 90 sec. wash cycle by default consists of these times:

70 sec. wash  
5 sec. pause  
15 sec. rinse

By increasing the pause between the wash and rinse cycle from 5 sec. to 10 sec. the result will be:

60 sec. wash  
10 sec. pause  
15 sec. rinse

## RINSE TIME

The rinse cycle time can also be varied, by setting parameter no. 25 of the technical menu. Even in this case, by increasing or decreasing the rinse time, the wash cycle time is increased or increased, maintaining the total cycle time unvaried.

## WATER PRESSURE and recommended rinse time

15 sec. for 2.5 – 3.0 bar

17 sec. for 2.0 – 2.4 bar

20 sec. for 1.5 – 1.9 bar (recommended only for warewashers fitted with boilers with greater capacity)

## DRAIN PUMP

Items 26-27-28 allow you to enable and customise the parameters relating to the operation of the drain pump:

26- Drain pump enabling: for the machines purchased with the drain pump already installed, enabling is already active; for the machines on which a drain kit is installed at a later stage, enabling is required.

27- Drain time for the manual drain program: it allows you to set the duration of the manual tank drainage. At the end of the drain cycle, the dishwasher switches off automatically.

28- Number of activations of the drain pump during the wash cycle: in order to always ensure the correct water level in the tank, the pump drains 3 times (default value) for 10 sec. each time during the wash cycle. The number of these interventions can be set between 1 and 5.

## TERMOSTOP – DELTA T

As standard the machines feature the Thermo-stop function that ensures washing and rinsing at a minimum temperature and which can be set from the technical menu (items no.32 tank DELTA T and 33 boiler DELTA T).

- Minimum boiler temperature = boiler temperature – boiler DELTA T
- Minimum tank temperature = tank temperature – tank DELTA T

If the boiler temperature drops below the minimum temperature set, the dishwasher extends the wash cycle until it reaches the minimum temperature, therefore depending on whether the customer wants the wash to be faster or slower the DELTA T can be varied.

TERMOSTOP DELTA T high, ( ES: 20°C)

greater tolerance, less accuracy and lower quality,

boiler a 80°C – 20°C ( delta t) = authorises to rinse up to 60°C

TERMOSTOP DELTA T low, ( ES:5°C)

lower tolerance, more accuracy and better rinsing quality (warmer)

boiler a 80°C – 5°C ( delta t) = authorises to rinse up to 75°C

These adjustments can only be made during installation by a technician, who knows the type of dishes to be washed, the detergent, the quality that the customer wants (speed or quality, lukewarm plates or hot plates).

## CIRCUIT BOARD START-UP

Upon installation some simple steps need to be done:

### Language selection:



1 - Select the language with the arrows



2 - Confirm by pressing and holding the key



### Filling the straws with detergent and rinse aid

The messages below will be displayed:

**DO YOU WANT TO FILL THE DETERGENT STRAWS?**

1 - With the arrows



select YES or NO and confirm with the key



2 - If NO is confirmed, the program exits

3 - If YES is confirmed the following message appears

**INSERT THE STRAWS IN THE TANKS AND CONFIRM**







4 - Confirm by pressing the key



5 - After having confirmed you exit programming and simultaneously the straws are filled with detergent: the detergent doser is activated for 50 sec., the rinse aid dispenser is activated for 30 sec.

## ELECTRONIC DISHWASHER OPERATION OVERVIEW



P180 Pronto TNK 55°C BLR 83°C	Program selected / Seconds countdown
	Dishwasher status
	Tank Temperature
	Boiler Temperature
 ON/OFF	SWITCH-ON / SWITCH-OFF
 START	WASH CYCLE START
 "UP" arrow	WASH TIME SELECTION (see default parameter table)
 "DOWN" arrow	WASH TIME SELECTION (see default parameter table)
 MANUAL RINSE	ADDITIONAL RINSE CYCLE START (15 sec.)
 MANUAL DRAIN (if drain pump present)	REMOVE OVERFLOW VALVE AND START DISHWASHER DRAINAGE (dishwasher with optional extra installed only)

## DETERGENT AND RINSE AID SETTING

- 1 - Measure the hardness of the dishwasher inlet water
- 2 - Refer to the recommended dosage table (see page 117 for the detergent and 118 for the rinse aid)
- 3 - Find the recommended dosages (first dosage and refill) for the dishwasher to be programmed according to:
  - a - Dishwasher basket size (for example 35x35)
  - b - Water hardness in inlet (for example 23°F)
  - c - c- Detergent and rinse aid recommended dosage (see bottle label)



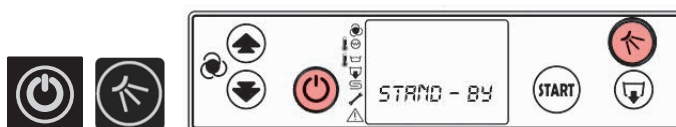
Water hardness °F	Regeneration interval
0÷15 °F	0.5
15÷25 °F	1
26÷35 °F	2
>35	3

#### 4 - Access the technical menu by following the procedure:

Switch the dishwasher off (Stand-By displayed)



Press the keys at the same time



Enter the password



5 - Proceed with  up to **item 4** and press  to fill the yellow straw with detergent

6 - Proceed with  up to **item 5** and press  to fill the blue straw with rinse aid


7 - Proceed with  up to **item 6** and set the initial detergent seconds (refer to table on page 117)

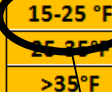
THE DOSAGES ARE CHOSEN ACCORDING TO:


d - Dishwasher basket size (for example 35x35)

e - Water hardness in inlet (for example 23°F)

DOSAGGI CONSIGLIATI DETERGENTE							
DIM. CESTO	CAPACITA' VASCA	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	13	0-15 °F	0,50	7	7	1	1
		15-25 °F	1	13	14	3	3
		25-35 °F	2	26	28	5	5
		>35 °F	3	39	43	8	8

  
 Basket size

  
 Water hardness

  
 Initial dosage

8 - Proceed with  up to **item 7** and set the initial rinse aid seconds (refer to table on page 118)

THE DOSAGES ARE CHOSEN ACCORDING TO:

a - Dishwasher basket size (for example 35x35)

b - Water hardness in inlet (for example 23°F)

DOSAGGI CONSIGLIATI BRILLANTANTE							
DIM. CESTO	CAPACITA' BOILER	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	3,20	0-15 °F	0,5	1,6	18	1	11
		15-25 °F	0,75	2,4	28	2	23
		25-35 °F	1	3,2	37	3	35
		>35 °F	1,5	4,8	56	3	35

Basket size

Water hardness

Initial dosage

9 - From **item 8** to **item 23** you can edit the parameters of the 4 cycles (boiler and tank temperatures, detergent and rinse aid dosage). **THE DURATION OF THE CYCLE CANNOT BE CHANGED.**

Adjust the detergent and rinse aid refills also according to the tables on page 117 and 118

#### SOFT PROGRAM PR1

10	Pr1 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR1 (see detergent table)
----	-----------------------------	---

DOSAGGI CONSIGLIATI DETERGENTE							
DIM. CESTO	CAPACITA' VASCA	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	13	0-15 °F	0,50	7	7	1	1
		15-25 °F	1	13	14	3	3
		25-35 °F	2	26	28	5	5
		>35 °F	3	39	43	8	8

Basket size

Water hardness

Refill at each rinse

11	Pr1 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR1 (see rinse aid table)
----	-----------------------------	---

DOSAGGI CONSIGLIATI BRILLANTANTE							
DIM. CESTO	CAPACITA' BOILER	Durezza acqua °F	g/l consigliato	primo dosaggio (g)	Primo Dosaggio (sec)	Ripristino (g)	Ripristino (sec)
35x35	3,20	0-15 °F	0,5	1,6	18	1	11
		15-25 °F	0,75	2,4	28	2	23
		25-35 °F	1	3,2	37	3	35
		>35 °F	1,5	4,8	56	3	35

Basket size

Water hardness

Refill at each rinse

## NORMAL SHORT PROGRAM PR2

14	Pr2 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR2 (see detergent table)
15	Pr2 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR2 (see rinse aid table)

## NORMAL PROGRAM PR3

18	Pr3 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR3 (see detergent table)
19	Pr3 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR3 (see rinse aid table)

## INTENSIVE PROGRAM PR4





22	Pr4 Detergent Load Time Set	DETERGENT REFILL FOR PROGRAM PR4 (see detergent table)
23	Pr4 Rinse Aid Load Time Set	RINSE AID REFILL FOR PROGRAM PR4 (see rinse aid table)





### 10 - THERMO-STOP: items 32 and 33:





if the client wants greater washing and rinsing quality, set the  $\Delta t$  at 10°C





if the client wants greater speed leave the default setting

## WASH TIME OVERVIEW

GLASSWASHER BASKET 35x35 AND 40x40								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermo-stop Boiler	Thermo-stop Tank
Cycle SOFT		90	10°F	3	5	10.0	55	40
STANDARD Cycle		120	15°F	5	10	10.5	57	40
Cycle PLUS		150	20°F	7	15	10.8	60	40
INTENSIVE Cycle		180	25°F	9	15	11.0	60	40

DISHWASHER WITH FRONT DOOR BASKET 45x45 – 50x50 – 50x60								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermo-stop Boiler	Thermo-stop Tank
Cycle SOFT		90	10°F	3	5	10.0	55	40
STANDARD Cycle		120	15°F	5	10	10.5	57	40
Cycle PLUS		150	20°F	7	20	10.8	60	40
INTENSIVE Cycle		180	25°F	9	20	11.0	60	40

HOOD TYPE DISHWASHER								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermo-stop Boiler	Thermo-stop Tank
Cycle SOFT		60	10°F	5	10	10.0	60	40
STANDARD Cycle		90	15°F	7	10	10.5	60	40
Cycle PLUS		120	20°F	9	15	10.8	63	40
INTENSIVE Cycle		240	25°F	12	10	11.5	63	40

WAREWASHER								
Cycle		Cycle characteristics					Minimum temperature (°C)	
		Cycle duration	Cycle recommended for...	Detergent Load per cycle	Rinse aid Load per cycle	PH recommended	Thermo-stop Boiler	Thermo-stop Tank
Cycle SOFT		120	10°F	5	15	10.5	60	40
STANDARD Cycle		240	15°F	7	20	10.8	60	40
Cycle PLUS		360	20°F	9	20	11.0	65	40
INTENSIVE Cycle		540	25°F	12	20	11.0	65	40

## TECHNICAL MENU

1 - Switch the dishwasher off (Stand-By displayed)



2 - Press the keys at the same time



3 - Enter the password

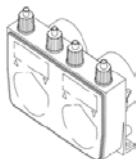













If you make a mistake while entering the password, press any key and retype

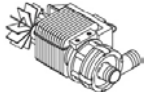






To navigate the menu use the following keys:



	Go forwards through the menu items
	Go backwards through the menu items
	Change parameter of the selected item
	Prolonged press to exit the menu

DISPLAY CUSTOMISATION					default
	1	<b>Language</b>	Allows to select the language for the display messages	Select the language with the arrows (UP or DOWN)	
	2	<b>Temperature Scale</b>	Indicates the temperature scale used for the display of the temperature during normal operation (the temperatures in the menus are always in °C)	Select °F or °C with the arrows (UP or DOWN)	°C
	3	<b>End Cycle Backlight Blink</b>	Activates the flashing of the display backlight to signal the end of the work cycle. If disabled, at the end of the cycle the backlight always stays active and only the line indicating the selected cycle flashes.	Activate or disable the flashing with the arrows (UP or DOWN)	on

DETERGENT AND RINSE AID FILLING					default	
	4	Manual Detergent Doser	Allows manual activation of the detergent doser.	By pressing the UP arrow key 	the doser is activated for 50 seconds	
			This function is only used the first time the dishwasher is installed to refill the straw with detergent			
	5	Manual Rinse Aid Doser	It allows manual activation of the rinse-aid doser	By pressing the UP arrow key 	the doser is activated for 300 seconds	
			This function is only used the first time the rinse aid			
	6	Load Detergent Time Set	It allows you to adjust the initial load of detergent		*	
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
	7	Load Rinse Aid Time Set	It allows you to adjust the initial load of rinse aid		*	
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
WASH CYCLE CUSTOMISATION					default	
PR1 Soft 	8	Pr1 Boiler Set	Boiler temperature set for program 1	Adjustable range: 65÷ 85 °C	75/80	
	9	Pr1 Tank Set	Tank temperature set for program 1	Adjustable range: 55÷ 65 °C	55	
	10	Pr1 Detergent Load Time Set	Activation time of the detergent doser for program 1	Detergent refill	*	
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
	11	Pr1 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 1	Rinse aid refill	*	
Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)						
PR2 Normal Short 	12	Pr2 Boiler Set	Boiler temperature set for program 2	Adjustable range: 65÷ 85 °C	77/80	
	13	Pr2 Tank Set	Tank temperature set for program 2	Adjustable range: 55÷ 65 °C	55	
	14	Pr2 Detergent Load Time Set	Activation time of the detergent doser for program 2	Detergent refill	*	
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)			
	15	Pr2 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 2	Rinse aid refill	*	
Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)						

PR3 Normal 	16	Pr3 Boiler Set	Boiler temperature set for program 3	Adjustable range: 65÷ 85 °C	80/85
	17	Pr3 Tank Set	Tank temperature set for program 3	Adjustable range: 55÷ 65 °C	55
	18	Pr3 Detergent Load Time Set	Activation time of the detergent doser for program 3	Detergent refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
PR4 Intensive 	19	Pr3 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 3	Rinse aid refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
	20	Pr4 Boiler Set	Boiler temperature set for program 4	Adjustable range: 65÷ 85 °C	80/85
	21	Pr4 Tank Set	Tank temperature set for program 4	Adjustable range: 55÷ 65 °C	55
	22	Pr4 Detergent Load Time Set	Activation time of the detergent doser for program 4	Detergent refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
	23	Pr4 Rinse Aid Load Time Set	Activation time of the rinse-aid doser for program 4	Rinse aid refill	*
			Check the PH using the PH metre contained in KIT100 (according to the dishes to be washed)		
	24	Pr1234 Pause Time	Pause time between wash and rinse for programs 1...4: by modifying this parameter, the wash time is modified accordingly in order to leave the total cycle time unaltered	Adjustable range: 5÷ 15sec	5
			<b>The pause between the wash and rinse cycle can be increased up to 15 sec., achieving, for dishwashers with a double wash cycle, greater "dripping" time of the upper wash pipes and therefore greater rinsing quality..</b> NOTE: by increasing the pause, the wash time decreases while leaving the total cycle time unaltered		
	25	Pr1234 Rinse Time	Rinse time for programs 1...4: by modifying this parameter, the wash time is modified accordingly in order to leave the total cycle time unaltered	Adjustable range: 10÷ 20sec	15
			Check the dynamic pressure of the supply water (while the dishwasher is loading) using the pressure gauge contained in KIT100 and set the parameter according to the pressure measured:  <b>15 sec. for 2.5 – 3.0 bar</b> <b>17 sec for 2.0 – 2,4 bar</b> <b>20 sec for 1.5 – 1.9 bar</b>  <b>Even in this case, by increasing or decreasing the rinse time, the wash cycle time is increased or increased, maintaining the total cycle time unvaried</b>		



DRAIN PUMP					default
	26	Drain Pump	It allows you to enable the relative manual drain button	Activate or disable the manual drain button, using the arrows	
	27	Manual Drain Time	Drain time for the manual drainage programme	Increase or decrease the drain time with the arrows	
	28	Drain Pump Wash Loop Number	Indicates the number of activations of the drain pump during the wash cycle  <b>In order to always ensure the correct water level in the tank, the pump drains 3 times (default value) for 10 sec. each time during the wash cycle. The number of these interventions can be set between 1 and 5.</b>	3÷5 interventions	3
WATER SOFTENER PARAMETERS					default
	29	Regeneration Interval	Sets the number of wash cycles reached, upon which regeneration is performed automatically (parameter visible only on machines with incorporated water softener)	Regeneration interval: every 1÷5 cycles	3
THERMO - STOP					default
	30	Thermo-Stop	Boiler thermo-stop enabling	Disable the thermo-stops for quick dishwasher testing	on
	31	Loading Thermo-Stop	Tank thermo-stop activation when dishwasher loading is complete	Disable the thermo-stops for quick dishwasher testing	on
	32	Thermo-Stop Boiler Set Delta	Allows you to determine the minimum temperature of the boiler (Boiler set-Thermo-stop set)	Interval 0÷20°C	20
	33	Thermo-Stop Tank Set Delta	Allows you to determine the minimum temperature of the tank (Tank set-Thermo-stop set)	Interval 0÷20°C	15
CYCLE COUNTER					default
	34	Partial Cycle Counter	Displays and allows to reset the partial cycle counter. To reset it press the "Arrow down" or "Arrow up" key and enter the password  When entering the password you can cancel the operation by holding and pressing the "On/Off" key for 3"	Rest the partial cycle counter after performing scheduled maintenance Press   enter the password 	
	35	Total Cycle Counter	Total Cycle Counter: displays the value of the total cycle counter	It cannot be reset	
PARAMETER RESET					default
	36	Reset Default	Allows to reset the default values of the <i>parameters featured in the technical menu</i> . To reset press the "Arrow up" or "Arrow down" key: one is prompted to enter a password, which if typed properly, displays a brief stand-by screen, until the parameters are fully reset. The parameters set with the machine type are reset at the relative default value according to the machine type.	Parameter reset if required. Press:   enter the password 	

	37	<b>Energy saving</b>	Allows you to set the time after which the dishwasher goes into "Energy Saving" status. The temperature of the boiler is kept at 60°C and the temperature of the tank is kept at 40°C. If it is OFF it is disabled.		30
<b>* see parameter table</b>					
	<b>After having changed the parameters press and hold the  key to store the data and exit the menu.</b>				

## PROGRAMMED MAINTENANCE

Maintenance by our service centre is required every **20,000** wash cycles to make sure all the critical components of the machine work properly, preventing sudden failures and lengthening dishwasher life.

When the dishwasher has reached **20,000** cycles, the LED corresponding to the symbol  switches on and the text "**Maintenance Required**" is displayed.

	<p><b>When the 20,00 cycles have elapsed, the display stays on even with the dishwasher in stand-by and the LED of the following icon is activated </b></p> <p><b>TECHNICAL INTERVENTION REQUIRED: perform a general check and access the technical menu to reset the cycle counter (item 34 of the menu)</b></p>
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## DEFINED ALARMS


The following is a list of the defined alarms together with a short explanation. The alarms are not all self-restorable, namely they remain until the machine has been switched off and back on. Some serious alarms place the machine in "safe" mode (total block), others allow it to continue standard operation, though with limited functions.



If after having performed the appropriate checks and having switched the machine off and back on, the alarm appears again, contact our technical service.

Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
ER01	<b>Tank loading timeout</b> (critical): the tank has not filled within the maximum time foreseen	Valve of water mains does not supply water. Overflow tube not inserted or inserted incorrectly. Impeller water jets obstructed. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Boiler clogged with limestone. SAFE
ER02	<b>Boiler loading timeout</b> (critical): the boiler has not filled within the maximum time foreseen. Managed only for machines with Break-Tank	Valve of water mains does not supply water. Water loading tube squashed behind the back	Solenoid valve filter obstructed. Break-Tank level switch blocked SAFE
ER03	<b>Tank heating timeout</b> : the tank has not heated within the maximum time foreseen. Tank heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Tank resistance power plugs disconnected or damaged Tank resistance damaged SAFE

ER04	<b>Boiler heating timeout:</b> the boiler has not heated within the maximum time foreseen. Boiler heating is disabled	Overflow tube inserted incorrectly Valve of water mains does not supply water. Water loading tube squashed behind the back	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged SAFE
ER05	<b>Tank probe open:</b> the tank probe is not connected or it is interrupted. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER06	<b>Tank probe short-circuited:</b> the tank probe is short-circuited. Tank heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER07	<b>Boiler probe open:</b> the boiler probe is not connected or it is interrupted. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER08	<b>Boiler probe short-circuited:</b> the boiler probe is short-circuited. Boiler heating is disabled	Request intervention of a technician	Damaged probe to be replaced SAFE
ER09	<b>Pump safety thermostat (critical):</b> the pump safety thermostat has opened	Request intervention of a technician	Let the wash pump cool down Check that there is no interrupted phase
ER10	<b>Boiler safety thermostat (critical):</b> the boiler safety thermostat has opened	Request intervention of a technician	Check that the thermostat of the circuit board triggers when it reaches the set temperature. Rearm the safety thermostat Check that there is no interrupted phase
ER11	<b>Thermostop timeout:</b> the boiler did not reach the set temperature during the washing thermo-stop phase within the maximum time foreseen. Boiler heating is disabled.	Valve of water mains does not supply water.	Three-phase electric plug connected incorrectly Three-phase power fuses blown Boiler resistance power plugs disconnected or damaged Boiler resistance damaged SAFE
ER12	<b>Drain timeout:</b> : the tank pressure switch did not open at the end of the manual drain cycle	Overflow tube inserted Drain tube squashed	Drain tube obstructed Drain pump plugs damaged Drain pump damaged SAFE
ER13	<b>Quick tank heating:</b> the tank reached the set temperature too quickly. Tank heating is disabled	Request intervention of a technician	Pressure switch blocked and heating on with tank empty. SAFE
ER14	<b>Panel disconnected (critical):</b> the panel was disconnected during machine operation and therefore it is no longer controllable via the keyboard	Request intervention of a technician	Flat cable of control panel disconnected Control panel faulty SAFE
ER18	<b>Water leakage from boiler (critical):</b> Managed only for machines with Break-Tank	Request intervention of a technician	Water leakage from Break-Tank Water leakage from Break-Tank sleeves Water leakage from rinse pump Level switch blocked SAFE


## WARNINGS


Alarm Code	Description	Checks performed by final user	Checks performed by repair technician
	<b>Maintenance required (warning):</b> Unlike other alarms, the message remains visible even when the appliance is off (by means of the specific icon) and is only reset by resetting the partial cycle counter by means of the specific menu item	Request intervention of a technician	Programmed maintenance required Reset partial cycle count on technical menu.


	<b>Regeneration in progress</b> (warning): activated when a regeneration is performed during the wash cycle. It does not change standard machine operation in any way. Managed only for machines with built-in water softener		
	<b>Salt missing</b> (warning): activated when salt is missing. Managed only for machines with built-in water softener	Add salt to the specific tank.	


DETERSIVO / DETERGENT					
Seconds	Grams	Seconds	Grams	Seconds	Grams
1	0.90	55	49.50	109	98.10
2	1.80	56	50.40	110	99.00
3	2.70	57	51.30	111	99.90
4	3.60	58	52.20	112	100.80
5	4.50	59	53.10	113	101.70
6	5.40	60	54.00	114	102.60
7	6.30	61	54.90	115	103.50
8	7.20	62	55.80	116	104.40
9	8.10	63	56.70	117	105.30
10	9.00	64	57.60	118	106.20
11	9.90	65	58.50	119	107.10
12	10.80	66	59.40	120	108.00
13	11.70	67	60.30	121	108.90
14	12.60	68	61.20	122	109.80
15	13.50	69	62.10	123	110.70
16	14.40	70	63.00	124	111.60
17	15.30	71	63.90	125	112.50
18	16.20	72	64.80	126	113.40
19	17.10	73	65.70	127	114.30
20	18.00	74	66.60	128	115.20
21	18.90	75	67.50	129	116.10
22	19.80	76	68.40	130	117.00
23	20.70	77	69.30	131	117.90
24	21.60	78	70.20	132	118.80
25	22.50	79	71.10	133	119.70
26	23.40	80	72.00	134	120.60
27	24.30	81	72.90	135	121.50
28	25.20	82	73.80	136	122.40
29	26.10	83	74.70	137	123.30
30	27.00	84	75.60	138	124.20
31	27.90	85	76.50	139	125.10
32	28.80	86	77.40	140	126.00
33	29.70	87	78.30	141	126.90
34	30.60	88	79.20	142	127.80
35	31.50	89	80.10	143	128.70
36	32.40	90	81.00	144	129.60
37	33.30	91	81.90	145	130.50
38	34.20	92	82.80	146	131.40
39	35.10	93	83.70	147	132.30
40	36.00	94	84.60	148	133.20
41	36.90	95	85.50	149	134.10
42	37.80	96	86.40	150	135.00
43	38.70	97	87.30	151	135.90
44	39.60	98	88.20	152	136.80
45	40.50	99	89.10	153	137.70
46	41.40	100	90.00	154	138.60
47	42.30	101	90.90	155	139.50
48	43.20	102	91.80	156	140.40
49	44.10	103	92.70	157	141.30
50	45.00	104	93.60	158	142.20
51	45.90	105	94.50	159	143.10
52	46.80	106	95.40	160	144.00
53	47.70	107	96.30	161	144.90
54	48.60	108	97.20	162	145.80


BRILLANTANTE / RINSE AID			
Seconds	Grams	Seconds	Grams
1	0.08	51	4.29
2	0.17	52	4.38
3	0.25	53	4.46
4	0.34	54	4.55
5	0.42	55	4.63
6	0.51	56	4.71
7	0.59	57	4.80
8	0.67	58	4.88
9	0.76	59	4.97
10	0.84	60	5.05
11	0.93	61	5.13
12	1.01	62	5.22
13	1.09	63	5.30
14	1.18	64	5.39
15	1.26	65	5.47
16	1.35	66	5.56
17	1.43	67	5.64
18	1.52	68	5.72
19	1.60	69	5.81
20	1.68	70	5.89
21	1.77	71	5.98
22	1.85	72	6.06
23	1.94	73	6.14
24	2.02	74	6.23
25	2.10	75	6.31
26	2.19	76	6.40
27	2.27	77	6.48
28	2.36	78	6.57
29	2.44	79	6.65
30	2.53	80	6.73
31	2.61	81	6.82
32	2.69	82	6.90
33	2.78	83	6.99
34	2.86	84	7.07
35	2.95	85	7.15
36	3.03	86	7.24
37	3.11	87	7.32
38	3.20	88	7.41
39	3.28	89	7.49
40	3.37	90	7.58
41	3.45	91	7.66
42	3.54	92	7.74
43	3.62	93	7.83
44	3.70	94	7.91
45	3.79	95	8.00
46	3.87	96	8.08
47	3.96	97	8.16
48	4.04	98	8.25
49	4.12	99	8.33
50	4.21	100	8.42

	GLASSWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	35x35	3.2	13	N.A.
	40x40	3.2	17	5.6

	DISHWASHER WITH FRONT DOOR			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	45x45	7.3	20	5.6
	50x50 (230V)	7.3	26	5.6
	50x50 (400V3N)			12
	50x60	7.3	29	12

	HOOD TYPE DISHWASHERS			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	50X50	7.3	37	12
	50X60	7.3	47	12
	60x67	7.3	53	12

	SINGLE BASKET WAREWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	60X67	12.6	48	13.6

	DOUBLE BASKET WAREWASHER			
	STANDARD RINSE			VERSION WITH BREAK-TANK
	BASKET DIM. (cm)	BOILER CAPACITY (l)	TANK CAPACITY (l)	BOILER CAPACITY (l)
	60X67	12.6+12.6	90	13.6 + 13.6

1°F = 0,56°d

RECOMMENDED DETERGENT DOSAGES							
BASKET DIM.	TANK CAPACITY	Water hardness °F	recommended g/l	first dosage (g)	First Dosage (sec)	Refill (g)	Refill (sec)
35x35	13	0-15 °F	0.50	7	<b>7</b>	1	<b>1</b>
		15-25 °F	1	13	<b>14</b>	3	<b>3</b>
		25-35°F	2	26	<b>28</b>	5	<b>5</b>
		>35°F	3	39	<b>43</b>	8	<b>8</b>
40x40	17	0-15 °F	0.5	9	<b>9</b>	3	<b>3</b>
		15-25 °F	1	17	<b>18</b>	3	<b>3</b>
		25-35°F	2	34	<b>37</b>	5	<b>5</b>
		>35°F	3	51	<b>56</b>	8	<b>8</b>
45x45	20	0-15 °F	0.5	10	<b>11</b>	3	<b>3</b>
		15-25 °F	1	20	<b>22</b>	3	<b>3</b>
		25-35°F	2	40	<b>44</b>	5	<b>5</b>
		>35°F	3	60	<b>66</b>	8	<b>8</b>
50x50	26	0-15 °F	0.5	13	<b>14</b>	3	<b>3</b>
		15-25 °F	1	26	<b>28</b>	3	<b>3</b>
		25-35°F	2	52	<b>57</b>	5	<b>5</b>
		>35°F	3	78	<b>86</b>	8	<b>8</b>
50x50 hood	37	0-15 °F	0.5	19	<b>21</b>	3	<b>3</b>
		15-25 °F	1	37	<b>33</b>	3	<b>3</b>
		25-35°F	2	74	<b>66</b>	5	<b>5</b>
		>35°F	3	111	<b>99</b>	8	<b>8</b>
50x60	29	0-15 °F	0.5	15	<b>16</b>	3	<b>3</b>
		15-25 °F	1	29	<b>32</b>	3	<b>3</b>
		25-35°F	2	58	<b>64</b>	5	<b>5</b>
		>35°F	3	87	<b>96</b>	8	<b>8</b>
60x67	53	0-15 °F	0.5	17	<b>18</b>	3	<b>3</b>
		15-25 °F	1	53	<b>58</b>	3	<b>3</b>
		25-35°F	2	106	<b>117</b>	5	<b>5</b>
		>35°F	3	145	<b>161</b>	8	<b>8</b>
60x67 hood	53	0-15 °F	0.5	27	<b>29</b>	3	<b>3</b>
		15-25 °F	1	53	<b>58</b>	3	<b>3</b>
		25-35°F	2	106	<b>117</b>	5	<b>5</b>
		>35°F	3	145	<b>161</b>	8	<b>8</b>
2 baskets 60x67	90	0-15 °F	0.5	45	<b>49</b>	3	<b>3</b>
		15-25 °F	1	90	<b>99</b>	3	<b>3</b>
		25-35°F	2	145	<b>161</b>	5	<b>5</b>
		>35°F	3	145	<b>161</b>	8	<b>8</b>

$$1^{\circ}\text{F} = 0,56^{\circ}\text{d}$$

## RECOMMENDED RINSE AID DOSAGES

BASKET DIM.	BOILER CAPACITY	Water hardness °F	recommended g/l	first dosage (g)	First Dosage (sec)	Refill (g)	Refill (sec)
35x35	3.20	0-15 °F	0.5	1.6	18	1	11
		15-25 °F	0.75	2.4	28	2	23
		25-35°F	1	3.2	37	3	35
		>35°F	1.5	4.8	56	3	35
40x40	3.20	0-15 °F	0.5	1.6	18	1	11
		15-25 °F	0.75	2.4	28	2	23
		25-35°F	1	3.2	37	3	35
		>35°F	1.5	4.8	56	3	35
45x45	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
50x50	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
50x60	7.00	0-15 °F	0.5	3.5	41	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	7	82	3	35
		>35°F	1.5	10.5	124	3	35
60x67	12.60	0-15 °F	0.5	6.5	77	1	11
		15-25 °F	0.75	5.2	61	2	23
		25-35°F	1	8	94	3	35
		>35°F	1.5	13	154	3	35

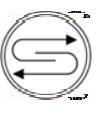


## RESIN REGENERATION FREQUENCY

For machines with built-in water softener (Soft line), run the automatic regeneration with a frequency calculated according to the inlet water hardness.

To adjust the regeneration frequency set parameter 29 in the technical menu

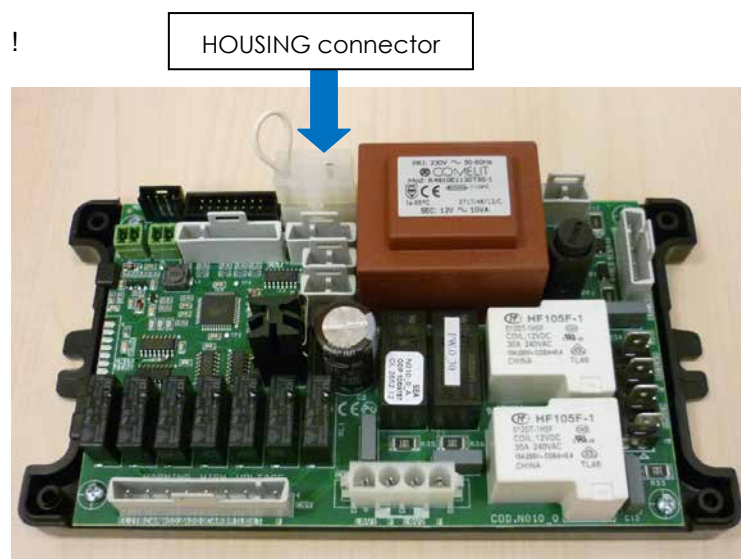
## WATER SOFTENER PARAMETERS

	29	Regeneration Interval	Sets the number of wash cycles reached, upon which regeneration is performed automatically (parameter visible only on machines with incorporated water softener)	Regeneration interval: every 1÷5 cycles
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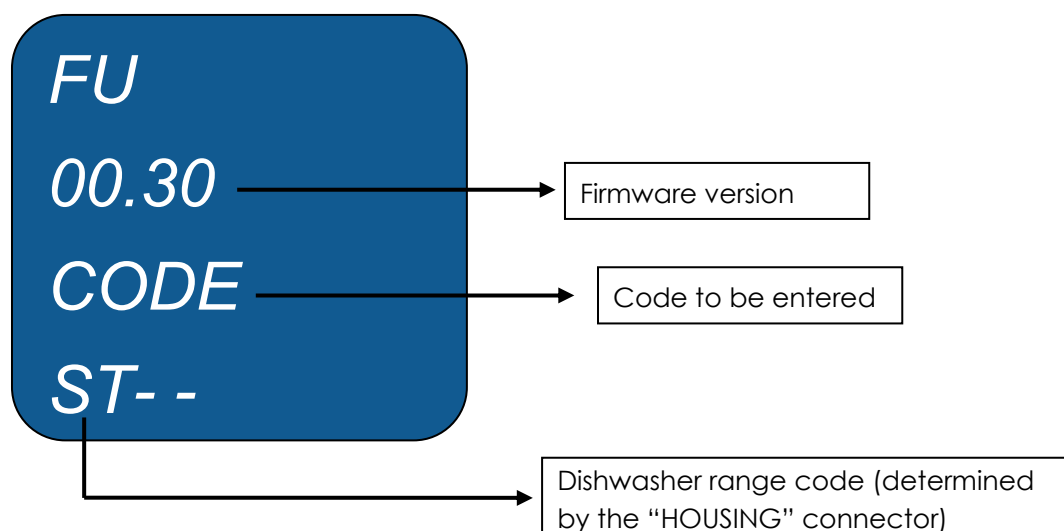
Inlet water hardness	Regeneration interval	Outlet water hardness
0÷20 °F	Not recommended for dishwasher with water softener	n.d.
20÷25 °F	5	~ 5°F
26÷30 °F	4	~ 6÷10°F
31÷35 °F	3	~ 11÷15°F
>36°F	2	~16 °F

## CIRCUIT BOARD REPLACEMENT


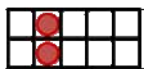
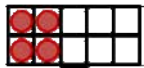

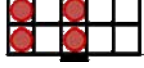
- 1 - Disconnect the dishwasher from the mains
- 2 - Disconnect the wires from the damaged circuit board
- 3 - Remove the "HOUSING" connector from the damaged circuit board



- 4 - Reconnect the new circuit board (**be careful not to invert the temperature probes**)
- 5 - Connect the "HOUSING" connector to the new circuit board
- 6 - When the circuit board is switched on again, you will be prompted to enter a code




7 - To enter the code refer to the table below

Connector	Range	Code that appears on DISPLAY
	STANDARD	ST
	BUILT-IN WATER SOFTENER	AD
	BREAK-TANK	BT
	WATER REFILL	EC
	FULL	FL

Code to be entered according to the model of the dishwasher

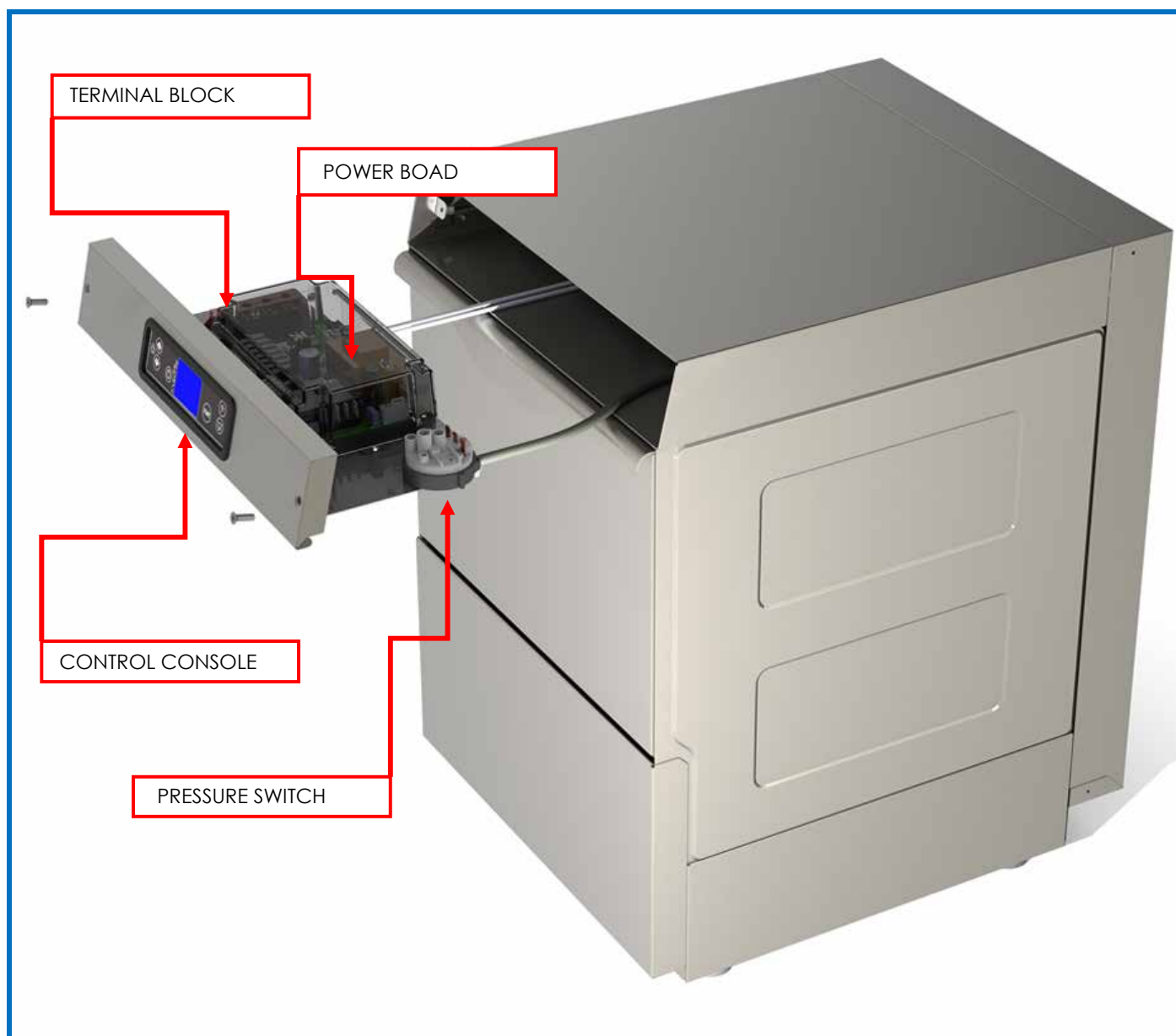
Dishwasher type	Code to be selected
<b>GLASSWASHER</b> Basket 35x35 and 40x40	10
<b>DISHWASHER WITH FRONT DOOR</b> Basket 45x45, 50x50, 50x60	20
<b>WAREWASHER</b> Basket 60x67	30
<b>HOOD TYPE DISHWASHERS</b>	40

The code is entered manually when the dishwasher is switched on for the first time by using the

arrows   and confirming by pressing and holding the **ON/OFF** button 

## TECHNICAL SPECIFICATIONS

PROBE	Ø 4,6 mm 2x0.25 mm <sup>2</sup> - NTC
CONTROL CONSOLE IP	IP54



## DEFAULT PARAMETERS

GLASSWASHER BASKET 35x35 AND 40x40												
Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	90	70	5	15	20	25	3	5	75	55	55	40
2	120	100	5	15	20	25	5	10	77	55	57	40
3	150	130	5	15	20	25	7	15	80	55	60	40
4	180	160	5	15	20	25	9	15	80	55	60	40

DISHWASHER BASKET 45x45, 50x50, 50x60												
Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	90	70	5	15	30	40	3	10	75	55	55	40
2	120	100	5	15	30	40	5	15	77	55	57	40
3	150	130	5	15	30	40	7	20	80	55	60	40
4	180	160	5	15	30	40	9	20	80	55	60	40

HOOD TYPE DISHWASHERS												
Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	60	40	5	15	40	40	5	10	80	55	60	40
2	90	70	5	15	40	40	7	10	80	55	60	40
3	120	100	5	15	40	40	9	15	83	55	63	40
4	240	220	5	15	40	40	12	10	83	55	63	40

WAREWASHER												
Times (sec)									Temperatures (°C)			
Cycle	Total Seconds	Wash	Pause	Rinse	Initial Detergent Load	Initial Rinse Aid Load	Detergent Refill	Rinse aid Refill	Boiler	Tank	Boiler Thermo-Stop	Tank Thermo-Stop
1	120	100	5	15	90	40	5	15	80	55	60	40
2	240	220	5	15	90	40	7	20	80	55	60	40
3	360	340	5	15	90	40	9	20	85	55	65	40
4	540	520	5	15	90	40	12	20	85	55	65	40