

Service Manual

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SERVICE MANUAL “CONVEYOR BELT DISH WASHER”

CONVEYOR BELT DISH WASHER

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1. INTRODUCTION

Dear customer,

We would like to thank you for the confidence you have placed in our brands and in our product. We are sure that this machine will meet your requirements.

This manual is designed to offer the information necessary for the installation, start-up, and maintenance of the unit.

The equipment must only be used for the purposes established by the manufacturer. Inappropriate use of the same may result in risks to the integrity and safety of users and damage to the equipment. This machine may only be used by professionals or qualified personnel. Any other use will be in conflict with the intended use and is therefore hazardous.

The guarantee does not cover damage to glass components, or damage to insulation material or damage due to the incorrect installation of the equipment, or to inappropriate use, inadequate maintenance or poor repair processes.

This Service Manual is a guide to help in the maintenance of the machine.

This equipment is subject to changes and modifications for its technical progress.

2. OPERATING TESTS

The correct operation of the equipment you have purchased has been certified by a rigorous quality control test.

The performance of the equipment has been satisfactorily tested.

The supplier may require the defective part to be returned for analysis and statistics.

The company will correct any possible errors or defects provided that the machine has always been used in accordance with the instructions in the manual.

IN THE EVENT OF REPAIR OR REPLACEMENT OF PARTS, ALWAYS PROVIDE THE CODE AND THE SERIAL NUMBER OF THE APPLIANCE, FOUND ON THE SPECIFICATIONS PLATE.

Please read the Installation, Use and Maintenance Manual supplied with the machine closely as this contains safety directives that must be observed for your own safety.

No liability is accepted resulting from the misuse of the machine or its handling by unauthorised and/or unqualified personnel.

3. PICTOGRAMS



Danger Risk of imminent danger that may lead to serious physical injury or loss of life. Failure to observe this instruction may result in property damage or personal injury.



Caustic substances Failure to observe this instruction may result in property damage or personal injury.



Risk of fire Failure to observe this instruction may result in property damage or personal injury.



Burn hazard Failure to observe this instruction may result in property damage or personal injury.



Danger High voltage Failure to observe this instruction may result in property damage or personal injury.



Important Potentially hazardous situation that may lead to serious physical injury or loss of life. Failure to observe this instruction may result in property damage or personal injury.



Warning Situation requiring attention. Failure to observe this instruction may result in damage to machine or operator injury.



Technical Attention Requires specialised technical attention.



Crush hazard Requires special attention.

4. PACKAGING

Remove packaging from the equipment and check for damage during transportation. If any damage is observed, immediately notify the supplier and the transport company. In the event of doubt, do not use the equipment until the problem has been assessed.



Packaging (plastic, wood, staples, etc.) must not be left in the reach of children, it is a potential hazard. It is a potential hazard.

The machine must be handled using the appropriate means. A fork-lift truck or similar may be necessary to prevent damage to the machine structure. Transport the equipment to the installation location and then remove its packaging.

4.1. RECYCLING



All the packaging can be recycled. Dispose of packaging correctly. This machine does **NOT** contain components which may damage the environment if not correctly processed. The machine must not be disposed of in the municipal waste.

At the end of the machine's useful life, it must be disposed of in accordance with the current local legislation, which can be obtained from the local authorities.

Recycle packaging material correctly at the selective collection points. Deposit packaging material in the correct bins for recycling.

Help to protect the environment and public health, and to recycle waste from electrical and electronic equipment. Do not dispose of the machine with domestic waste. Take the product to the local recycling centre or contact your local office.

Depending on the features, the materials can be recycled. By recycling and other ways of processing electrical waste and electronic equipment, you can significantly contribute to protecting the environment.

Protect the environment by disposing of waste at the waste disposal points established for this purpose.

The European standard 2012/19/EU Directive on Waste Electrical and Electronic Equipment indicates that this appliance must not be disposed of as a domestic appliance. It must be correctly disposed of in order to optimise the recycling of materials and to protect the environment.

5. GENERAL INFORMATION AND WARNINGS



BEFORE INSTALLING OR STARTING TO USE THE MACHINE, PLEASE READ CLOSELY THE INSTRUCTIONS IN THE INSTALLATION, USER AND MAINTENANCE MANUAL SUPPLIED WITH THE MACHINE.



THIS APPLIANCE IS INTENDED EXCLUSIVELY FOR PROFESSIONAL USE AND MAY ONLY BE USED BY QUALIFIED PERSONNEL. IT MUST BE INSTALLED AND REPAIRED EXCLUSIVELY BY AN AUTHORISED AND QUALIFIED TECHNICAL SUPPORT SERVICE.



THE MANUFACTURER MAY NOT BE HELD LIABLE FOR ANY PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE INCORRECT INSTALLATION, USE, MAINTENANCE OR REPAIR, OR CAUSED BY FAILURE TO COMPLY WITH THE STANDARDS AND INSTRUCTIONS PROVIDED.



- THE PLACEMENT, INSTALLATION, REPAIRS AND/OR MODIFICATIONS MUST ALWAYS BE CARRIED OUT BY AN AUTHORISED TECHNICIAN IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE APPLICABLE REGULATIONS.

- ANY INSTALLATIONS, ADJUSTMENTS OR REPAIRS CARRIED OUT BY UNAUTHORISED PERSONNEL, INCORRECT MAINTENANCE OR USE, THE USE OF SPARE PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER AND ANY OTHER TYPE OF ALTERATION TO THE APPLIANCE MAY CAUSE DAMAGE OR INJURY AND RESULT IN LOSS OF COVER UNDER THE WARRANTY.

- ENSURE THAT THE EARTH CONNECTION OPERATES CORRECTLY AND EFFICIENTLY.

- IF THE APPLIANCE BREAKS DOWN, PLEASE CALL THE TECHNICAL SERVICE CENTRE. DO NOT TRY TO REPAIR IT OR ALLOW UNAUTHORISED OR UNQUALIFIED PERSONNEL TO DO SO.

- DO NOT CHANGE THE POSITION OF OR HANDLE THE MACHINE COMPONENTS, AS THIS MAY AFFECT THE OPERATING SAFETY.

- THE DISHWASHER MUST BE CORRECTLY LEVELLED AND THE ELECTRICAL CABLES, WATER AND DRAINAGE HOSES MUST NOT BE TRAPPED OR CONTAIN KINKS.

- THE APPLIANCE HAS BEEN DESIGNED TO OPERATE AT AMBIENT TEMPERATURES RANGING FROM 5 °C TO 40 °C AND MUST NOT BE USED AT TEMPERATURES BELOW 5 °C.

- THIS EQUIPMENT HAS BEEN DESIGNED FOR CLEANING DISHES OR SIMILAR. ANY OTHER USE WILL BE CONSIDERED INADEQUATE.

- ABRASIVE OR CORROSIVE PRODUCTS, ACIDS, SOLVENTS, OR CHLORINE/HYPOCHLORITE-BASED DETERGENTS MUST NEVER BE USED.



- THE APPLIANCE OR ANY OF ITS PARTS MUST NEVER BE USED AS A SUPPORT AND OBJECTS MUST NOT BE PLACED ON TOP OR BELOW

- DO NOT OPEN THE DOOR OF THE MACHINE WHILE THE MACHINE IS OPERATING. DO NOT IMMERSE HANDS IN THE WASHING SOLUTION. SWITCH OFF THE APPLIANCE AND DRAIN THE TUB BEFORE ACCESSING THE INSIDE OF THE MACHINE.

- DO NOT INSTALL THE APPLIANCE IN PLACES EXPOSED TO JETS OF WATER



- WAIT AT LEAST 10 MINUTES AFTER SWITCHING OFF THE MACHINE BEFORE CLEANING THE INSIDE OF THE APPLIANCE.

- DO NOT INSERT HANDS AND/OR TOUCH THE INTERNAL PARTS OF THE TANK WHILE THE MACHINE IS OPERATING AND WAIT 10 MINUTES AFTER THE WASH TANK HAS DRAINED.

6. SAFETY INSTRUCTIONS

6.1. FOR YOUR SAFETY



Do not store or use inflammable and/or corrosive liquids or gases near the equipment. The operation of the machine must never be entrusted to minors or individuals with physical, mental or sensory disability. Nor to individuals without the experience and/or necessary knowledge, unless under the supervision of a safety manager.

The machine must only be operated by hand. Any damage resulting from the use of sharp, pointed objects or similar will invalidate all warranty rights.

To avoid the risk of accidents and damage to the machine, operators must receive adequate safety training by means of relevant courses, seminars and programmes.



Warning: The incorrect adjustment, substandard cleaning or installation, or inadequate maintenance or service, together with the renovation of the machine may result in property damage and/or personal injury, or even loss of life. Please read the instructions in the manual supplied with the machine carefully before starting the machine.



- **NOT** recommended: the use of the machine with non-drinking water
- **NOT** recommended: the use of the machine without regular maintenance
- **NOT** recommended: the use of the machine in conditions of hygiene or places that do not meet local regulations
- **NO** recommended: the supply of the machine with waste water, seawater or water with chemical, physical or biological characteristics that does not meet the limits relating to drinking water

6.2. SAFETY MEASURES FOR THE USE OF THE MACHINE



- Always open the door of the machine carefully.
- Use suitable protective clothing.
 - Always open the door very slowly (hot steam) (burn hazard).
 - Use protective clothing when inserting or removing accessories from the hot cooking chamber (burn hazard).
- The exterior temperature of the appliance may reach over 60 °C. Only touch the control elements (burn hazard).
- Do not interfere with the fan rotor (risk of injury).
- Do not store explosive or inflammable substances close to the appliance (risk of fire).

6.3. FOR CLEANING



- Always use adequate protective clothing while working: protective goggles and gloves, face mask, etc.
- Observe the safety instructions given in the "Cleaning" section.
 - Before handling any chemical cleaning product, read the product specification sheet carefully and use **PPE** as indicated.
- Do not open the equipment door. Risk of injury to skin or eyes.

6.4. RISK OF ELECTRIC SHOCK



Do not open the compartments marked with this symbol. Access is restricted to qualified personnel authorised by FAGOR INDUSTRIAL. Failure to comply with this regulation will render the guarantee void and expose the user to the risk of injury or even loss of life.

6.5. OTHERS

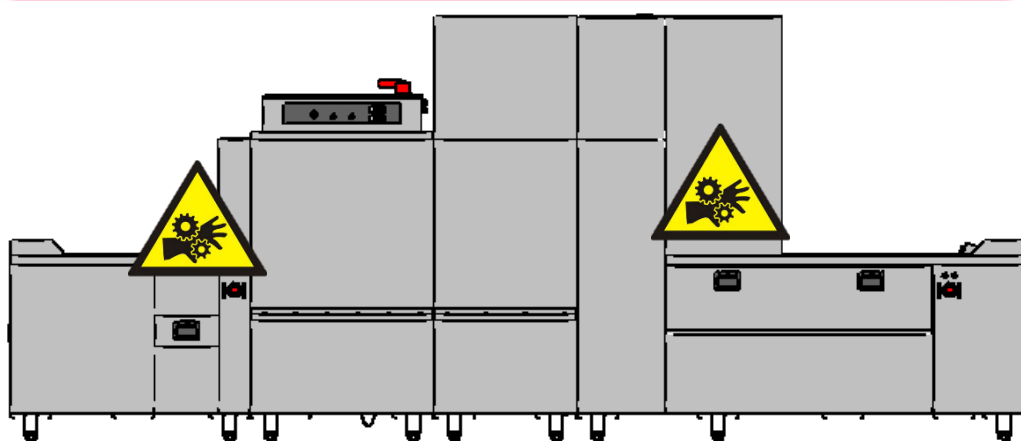


- It is strictly forbidden to delete, alter, manipulate or suppress the safety devices. Failure to comply with this warning may result in severe risk for the health and safety of individuals.
 - Use of spare parts other than original parts will cancel the guarantee.
 - To prevent the contamination of recipients and to maintain hygiene standards, the elements in contact with food and surrounding zones should be cleaned after each use.
- Before switching on the newly installed appliance for the first time, the inside should be cleaned with a cloth soaked in soapy water to eliminate the odours associated with a new appliance.
- This equipment has been designed for use in ambient temperatures between 5 and 40 °C
 - Do not leave flammable products or objects inside the tub or in its vicinity

- **Never use** the equipment for any of its components as a ladder or means of support, and do not deposit objects on top of the machine.
- Do not open the door of the machine while the machine is operating. Switch off the appliance before accessing the inside of the machine.
- No not install the appliance in places exposed to jets of water.

6.6. MACHINE SAFETY

- **Doors with magnetic switches:** When the door(s) is/are lifted, the prewash, wash, rinse and basket feed functions are stopped.
- **Doors with hook fastenings:** The doors have hook fastenings to prevent them from falling when fulling open.
- **Safety Lock:** if any element blocks the feed, the Safety Lock system, on detecting the obstruction, stops the feed to prevent any element from being forced.
- **Limit switch:** this switch, mounted on the output of the dishwasher stops the machine when a plate, tray, basket... touches it.



Risk of trapping / crushing

Access to motors, pumps and live areas is protected by closed panels secured with bolts. It is strictly forbidden to open any panel and/or access the interior of the appliance or the electric box; only a qualified and authorised technical assistance service may install, repair or carry out maintenance work to the appliance.

Use of the machine must be supervised by an operator.

It is dangerous to touch the mains switch with wet hands.



- **If the feed belt is blocked, remove the obstacle before restarting the appliance.**
- **Before removing objects that have fallen inside the machine, the appliance must be at a complete standstill and disconnected.**
- **Do not insert hands in the machine when it is running.**
- **Do not approach the feed mechanism, especially if wearing jewellery or loose clothing.**
- **In the event of breakdown and/or the incorrect operation of the machine, switch off the appliance at the mains and refrain from carrying out direct intervention or attempts to repair.**

7. UPKEEP

To maintain the quality of the stainless steel, ensure good hygiene and prevent the incorrect operation of the machine, it must be cleaned every day. Follow the instructions given in the "Cleaning" chapter. If the machine is not cleaned correctly and as often as necessary, dirt, grease and traces of food may build up in the tub.



- To prevent rust, clean away traces of food every day.
- Do not use high pressure cleaners.
 - Do not clean the machine with products containing acid or expose it to the effects of acid vapours. Acid damages the steel and may result in discolouration.
 - Use suitable cleaning products. The use of unsuitable products may damage the machine and invalidate warranty rights.
- Do not use abrasive cleaning products or scrubs.
- **Daily cleaning of the door seal with a small quantity of non-abrasive detergent will extend its useful life.**

8. PROLONGED PERIOD OF INACTIVITY

If the machine is going to be inactive or out of service for a long period of time (holidays, temporary closure, maintenance, etc.), the following should be observed:



- The machine must be fully drained.
- The machine must be thoroughly cleaned.
- Leave the door of the machine open.
 - Switch off the mains power switch
 - Check the water supply.
 - The appliance must not be left in environments with temperatures less than **5 °C**
- Leave the door ajar to allow the air to circulate and to prevent the appearance of mould and bacteria.

9. MAINTENANCE



WARNING: This machine requires regular maintenance to guarantee the requirements for which it has been designed and maintenance of the improvements as stated by the manufacture.

With these guidelines we would like to offer help so that the chill blaster always works perfectly throughout its useful life.



- Inspection, maintenance and repair work must be performed by a specialised **Official Technical Service**.



- When performing cleaning, inspection, repair or maintenance work, the power supply must be disconnected from all the machine power points.
- When the machine is moved to another location, make sure that all moving and/or removable parts are correctly secured, the water tanks have been emptied, the mains power cable and the water connection and drainage pipes have been duly disconnected. When returning the machine to its original location, it must be immobilised again. Check that the power supply line and the water and drainage connection pipes are installed in accordance with the regulations.
- To ensure that the machine is in perfect technical order, it should be inspected at least once a year by an **"Official Technical Service"**.

9.1. DAILY MAINTENANCE

The appliance should be cleaned every day.

For the correct working and maintenance of the appliance, it should be cleaned every day using degreasing products specifically designed for this.



IMPORTANT: Sand-based or abrasive products must **NOT** be used. Nor should a hose be used to clean the outside of the appliance as this could affect the internal components.

The appliance must always be switched off for **Manual Cleaning**.


Do Not use products or tools which may scratch the glass.



To ensure the stainless steel maintains its high quality, for hygienic reasons and to prevent the faulty operation of the machine, it must be cleaned every day.

- **To prevent the tub from rusting, clean the machine every day.**

- Leave the machine door ajar if it is to be out of service for a length of time (e.g. overnight).

 It is essential to carry out all the necessary and relevant cleaning operations in order to increase the service life of the machine and to ensure its correct operation. To ensure efficient operation of the machine, it must be perfectly clean and disinfected.

The machine is made of high quality stainless steel. However, under certain conditions, corrosion may appear.

After switching off and draining the machine every day:

- Disconnect the energy supply.
- Remove the frames and clean with a brush under a strong jet of water.
- Replace and install all the parts correctly.
- Thoroughly clean the chamber; attached food waste should be removed with a brush.
- At the end of the day, the door of the machine should be left open.

9.2. EVERYDAY CLEANING

Before carrying out any cleaning operations, the appliance must be disconnected at the mains.

The appliance must be switched off if cleaning with water. Panels should not be moved to access electrical components except by technical staff authorised to carry out maintenance and repair operations.

The detergents are highly active and therefore extreme caution should be taken as they could cause irritation to the skin or eyes. The manufacturer's instructions must be strictly observed.



When applying detergents and degreasing products, rubber gloves, face mask and protective goggles must be worn, in accordance with the applicable safety regulations.

If the oven is cleaned everyday, the operation can be completed quickly, giving an appliance in perfect condition and ready for use the next day.

The inside of the cooler should be cleaned with great care.

- Do **NOT** wash the machine with direct jets of water, as filtrations into the electrical components could affect the normal operation of the machine.
- We recommend cleaning the outside of the unit daily with a damp cloth and following the direction of the stainless steel honing. It must be rinsed and dried correctly.
- Use neutral soaps and avoid chlorine-based or abrasive substances.
- Abrasive or corrosive products, acids, solvents, or **CHLORINE/HYPOCHLORITE-based detergents must never be used.**
- **DO NOT** use tools that could cause cuts resulting in rust.
- Remove hard deposits by applying water and soap or neutral detergents, and using a plastic or wooden spatula if necessary.
 - Clean the inside of the chamber to prevent the build-up of dirt with neutral chlorine-free non-abrasive detergents
 - The zones around the appliance should also be cleaned everyday with soap and water, avoiding chlorine-based or toxic detergents. Rinse with clean water and dry thoroughly
- The appliance must be switched off if cleaning with water. Panels should not be moved to access electrical components except by technical staff authorised to carry out maintenance and repair operations.
- Do **NOT** clean the machine with products containing acid or expose it to the effects of acid vapours. This could damage the passivating chrome-plated steel coat, resulting in possible discolouration of the machine.
- To clean, use detergents suitable for use with products in contact with food.
- Do **NOT** use abrasive or corrosive products or acids, solvents and chlorine-based detergents as these may damage the components of the equipment.
- Observe the detergent instructions.
- Only use specific cleaning products. The use of unsuitable cleaning products may damage the machine and invalidate warranty rights.
- Do **NOT** use abrasive cleaning products or scrubs.
- **If the cleaning of the machine is inadequate, the build-up of grease and traces of food inside the tub may damage the stainless steel.**
- **Use protective clothing, protective gloves, goggles and face masks in accordance with local legislation.**
- **Do not store chemical cleaning products inside the machine.**





- Contact a cleaning product distributor for detailed information about the methods and products available for the regular disinfection of the machine.
 - Only use products suitable for use with industrial equipments.
 - The guarantee does not cover damage caused by the incorrect use of chemical products.
- When handling chemical substances, the product safety instructions and recommended doses must be observed. Use protective clothing, gloves and safety glasses when handling chemical products.

9.2.1. REGULAR CHECKS PERFORMED BY THE USER



- It is recommended that there are no heat sources near to the cooler.
- The appliance should be levelled to prevent excess vibrations.
- The door seal should be in good condition and the door should close with a hermetic seal.
- Check that the drainage pipe is not blocked.

9.3. SPECIALISED MAINTENANCE

To ensure that the equipment is in perfect and safe condition, it should be maintained and serviced by an Authorised Service Centre at least once a year.



DANGER

- High voltage
- Before removing the panel from the machine, accessing components and carrying out work on live components, disconnect the machine from the power supply.

Use the resources and tools suited to each operation on the machine.

Call the technical service twice a year to have the machine serviced:

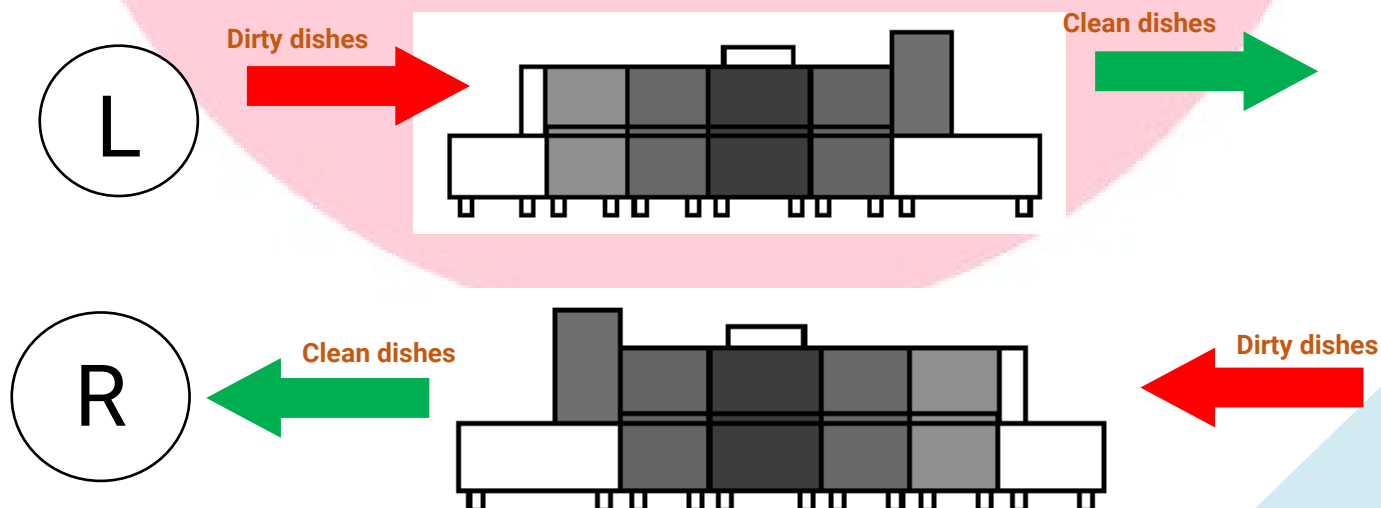
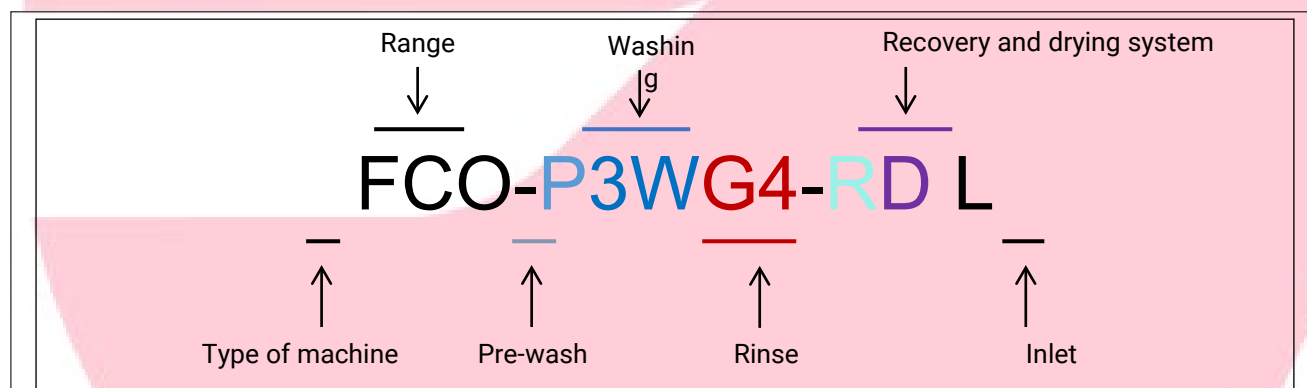
- Cleaning of water filter.
- Cleaning of lime on the resistors, pipes and surfaces of the equipment. The use of phosphoric-based products is recommended.
- Inspection of the condition of the seals.
- Inspection of the condition of the parts.
- Checking the correct operation of the dispensers.
 - Tightening of the electrical connections on the terminals, once a year.
 - Check that the temperature of the premises does not exceed that indicated for your machine.
 - The guarantee will be made void if there is insufficient ventilation.
- Check that the doors close properly.
- Do not disassemble the mobile components guards or front panels without first **having turned the appliance off**.
- Gloves must be worn before accessing the appliance area, given the existence of high temperatures of some components, with the resulting risk of burns.
- If the supply hose is damaged, it should be replaced by authorised technical personnel in order to avoid risks.
- If it is replaced, the earth pin must be positioned again.
- If a cable requires replacement, the cross-section must never be reduced.
- If it is necessary to disassemble the inner lid of the electrical installation, it is extremely important to leave it exactly as it was when reassembling it.



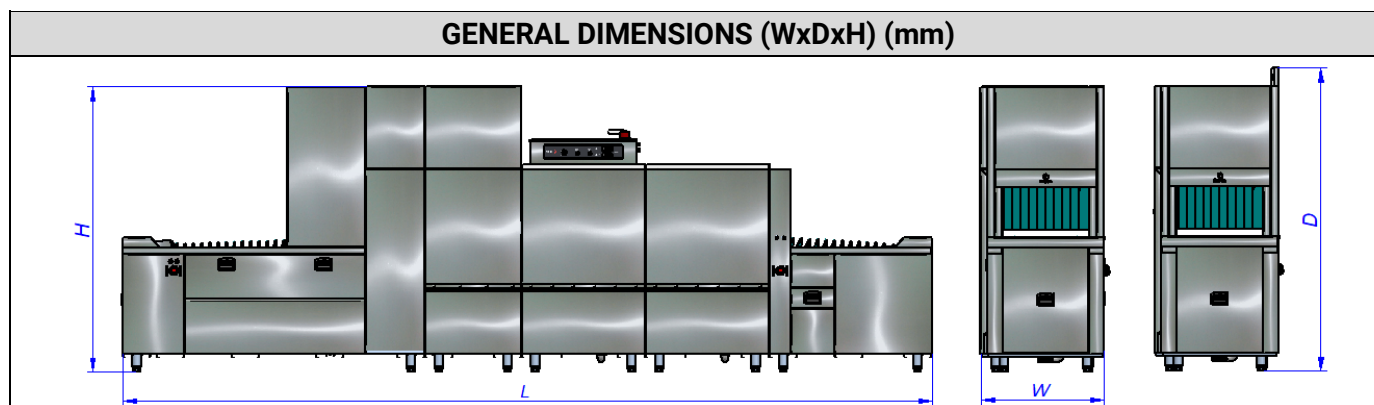
10. PRODUCT RANGE

FCO-W4-RD	FCO-PW4-RD	FCO-P2W4-RD	FCO-P3W4-RD

- **Type of machine:** FLIGHT (BELT)
 - **Range:** CONCEPT
- **Composition:**
 - PREWASH
 - WASH / 2WASH / 3WASH (WASH/2WASH/3WASH)
 - TYPE OF RINSE: 4 PUMP/ G4 GAS PUMP
- **Heat Recovery system** (standard)
- **Drying tunnel** (standard)
- **Inlet:**
 - LEFT ENTRY
 - RIGHT ENTRY



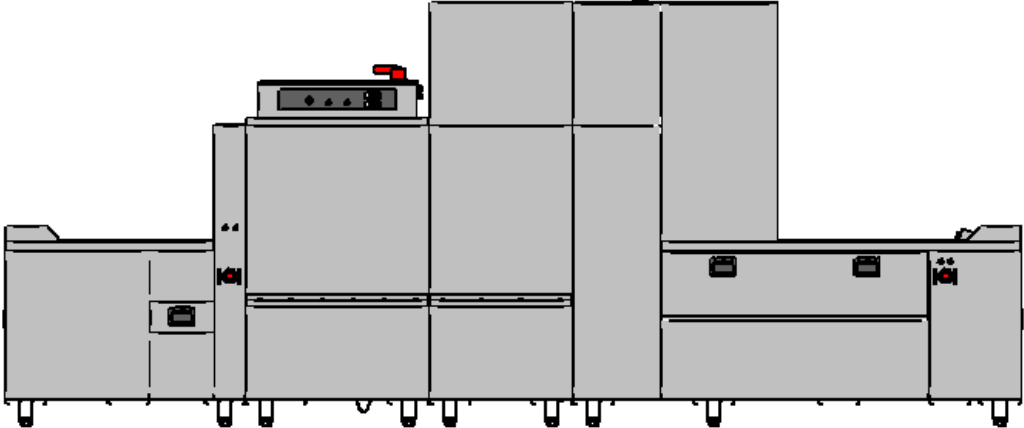
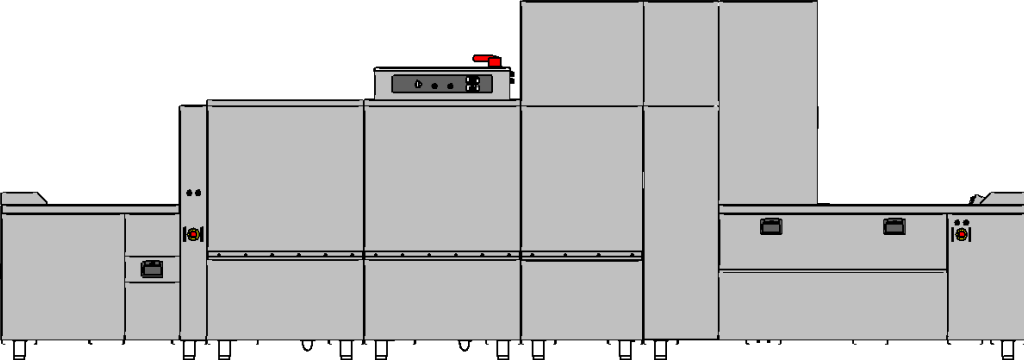
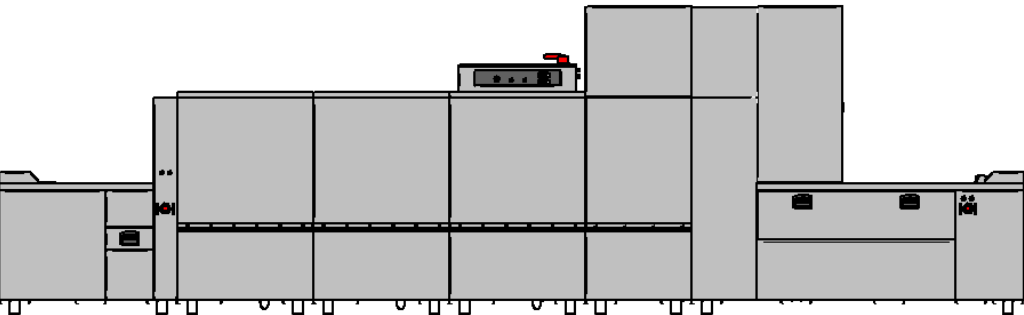
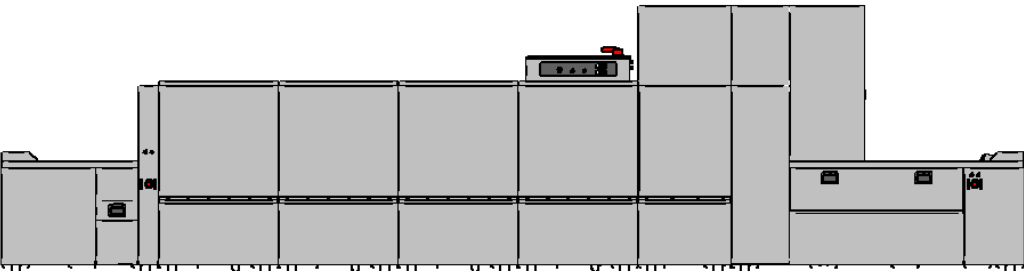
11. DIMENSIONS



L x W x H (mm)		FCO-W4-RD	FCO-PW4-RD	FCO-P2W4-RD	FCO-P3W4-RD
STANDARD	L	4990 mm	5890 mm	6790 mm	7690 mm
+ FDM-700		5690 mm	6590 mm	7490 mm	8390 mm
+ FDM-700 (BIS)		6390 mm	7290 mm	8190 mm	9090 mm
	W	900 mm	900 mm	900 mm	900 mm
	H	2070-2140 mm			
	D	2200-2270 mm			

	FCO-W4-RD	FCO-PW4-RD	FCO-P2W4-RD	FCO-P3W4-RD
FCO	900 kg	1200 kg	1500 kg	1800 kg
+FDM-700	+130 kg	+130 kg	+130 kg	+130 kg
+ FDM-700 (BIS)	+260 kg	+260 kg	+260 kg	+260 kg

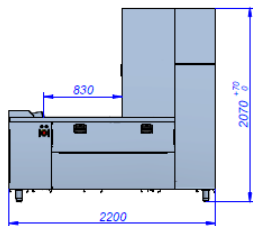
	FCO-W4-RD	FCO-PW4-RD	FCO-P2W4-RD	FCO-P3W4-RD	
L	•	•	•	•	Input module
P	-	•	•	•	Cold water pre-wash
W	•	•	-	-	Main wash
2W	-	-	•	-	Main dual wash
3W	-	-	-	•	Triple Main Wash
4(TA)	•	•	-	-	Triple pre-rinse +Progressive Dual Rinse
4(QA)	-	-	•	•	Quadruple pre-rinse +Progressive Dual Rinse
R	•	•	•	•	Energy recovery system
D	•	•	•	•	Drying
FDM-700	○	○	○	○	Extra drying module
FDM-700 (BIS)	○	○	○	○	

FCO-W4-RD	L+W+4(TA)+U	 <p data-bbox="1190 472 1382 539">+FDM-700 +FDM-700 bis</p>
FCO-PW4-RD	L+P+W+4(TA)+U	 <p data-bbox="1190 931 1382 999">+FDM-700 / +FDM-700 bis</p>
FCO-P2W4-RD	L+P+2W+4(QA)+U	 <p data-bbox="1190 1326 1382 1393">+FDM-700 / +FDM-700 bis</p>
FCO-P3W4-RD	L+P+3W+4(QA)+U	 <p data-bbox="1190 1682 1382 1749">+FDM-700 / +FDM-700 bis</p>

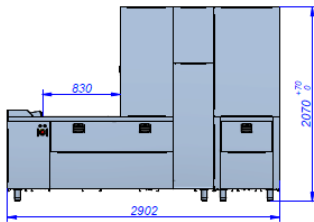
12. SUPPLY OPTIONS

Module configuration

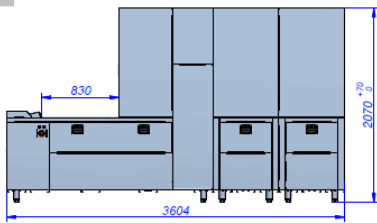
Unload module & dryer



Standard Unload module with one dryer

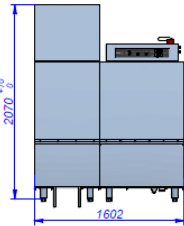


Unload module with two dryers

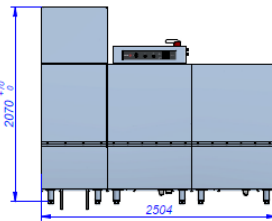


Unload module with three dryers

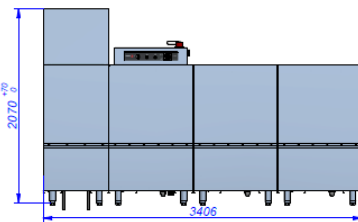
Rising & Washing module



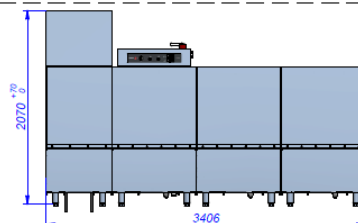
FCO-W4 / FCO-WG4
Energy recovery system
Triple pre-rinse
Double fresh water rinse (80-85 °C)
Main wash module (55-65 °C)
Max. Production: 3100 dishes/H



FCO-PW4 / FCO-PWG4
Energy recovery system
Triple pre-rinse
Double fresh water rinse (80-85 °C)
Main wash module (55-65 °C)
Cold pre-wash module (40-45 °C)
Max. Production: 4600 dishes/H

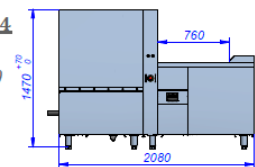
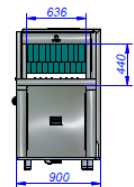
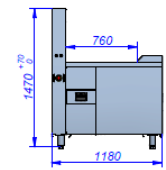


FCO-P2W4 / FCO-P2WG4
Energy recovery system
Triple pre-rinse
Double fresh water rinse (80-85 °C)
Main wash module (55-65 °C)
Hot wash module (55-65 °C)
Cold pre-wash module (40-45 °C)
Max. Production: 6600 dishes/H



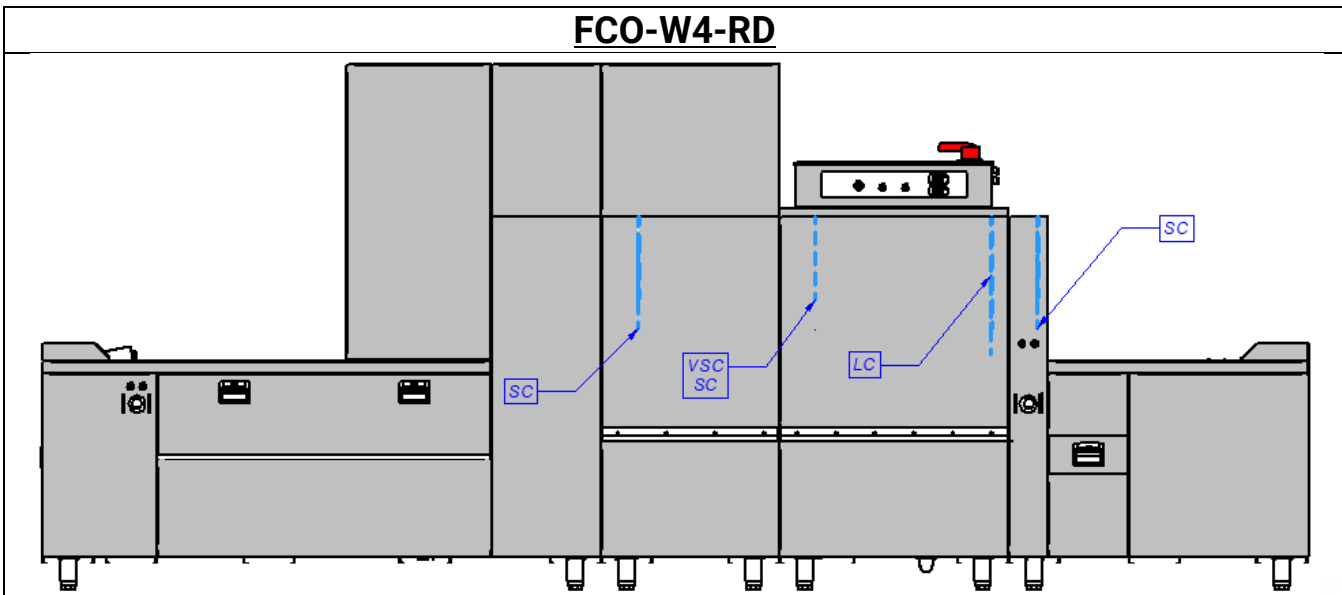
FCO-P3W4 / FCO-P3WG4
Energy recovery system
Triple pre-rinse
Double fresh water rinse (80-85 °C)
Main wash module (55-65 °C)
Two hot wash modules (55-65 °C)
Cold pre-wash module (40-45 °C)
Max. Production: 8600 dishes/H

Load module

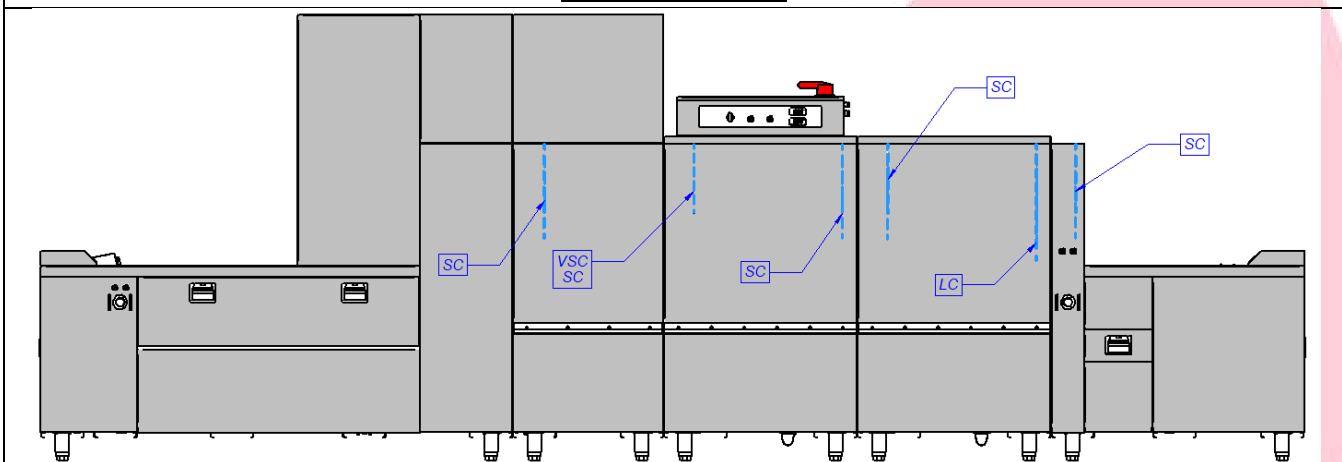


13. POSITION OF CURTAINS

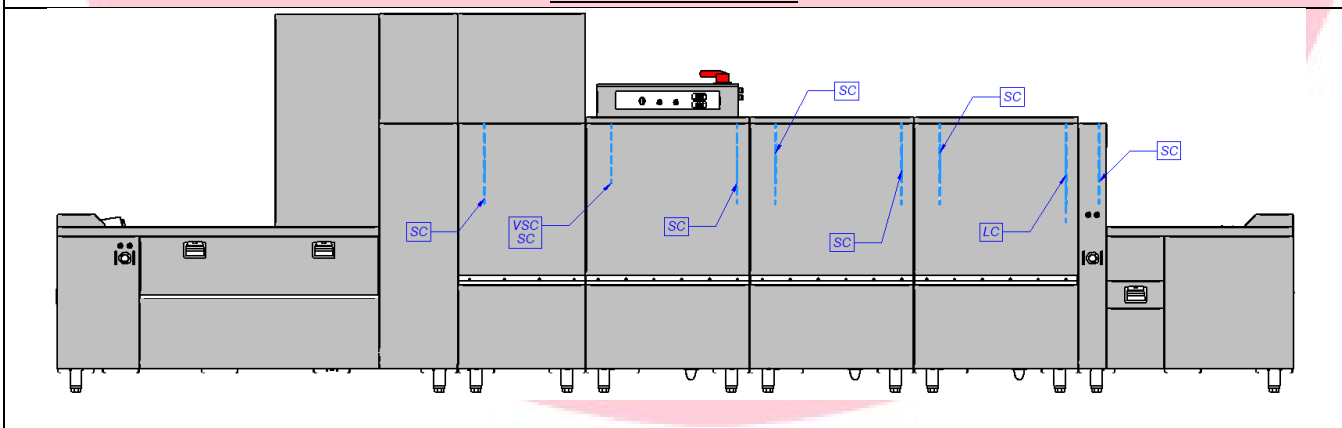
FCO-W4-RD



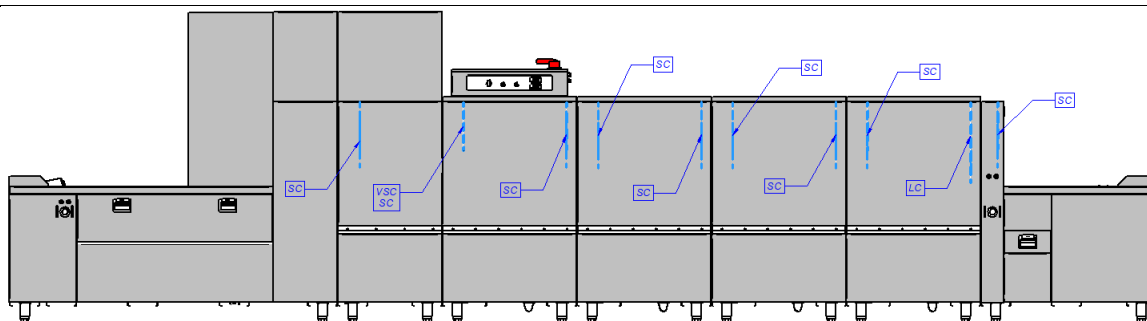
FCO-PW4-RD



FCO-P2W4-RD



FCO-P3W4-RD



VSC	Very short curtain (only for isothermal tray belt)
SC	Short curtain
LC	Long curtain

14. TECHNICAL DATA

14.1. MACHINE SPECIFICATIONS

The machine you have just purchased is a specialised product for the cooking of food, used in restaurants and hostelry. As it is an industrial product, it is characterised for having a high capacity.

All the appliances have a specifications plate which identifies the appliance and indicates its technical characteristics, it is located on one side of the machine. **Do not remove the plate from the unit.**

SPECIFICATIONS PLATE

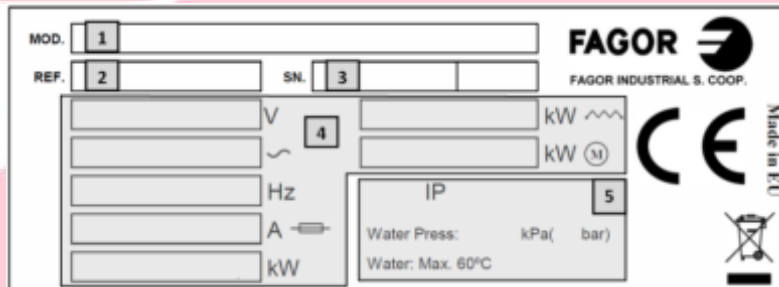
1: NAME OF THE UNIT

2: CODE OF THE UNIT

3: SERIAL NUMBER + DATE OF MANUFACTURE

4: ELECTRICAL SPECIFICATIONS

5: WATER SPECIFICATIONS



These details should be quoted when the Technical service is called.



In appliances consisting of various modules, you will find a specifications plate with a mark indicating the total electrical values of the appliance, in order to dimension the electrical connection.

If a module is added to the appliance, the new configuration must be indicated.

VALOR TOTAL / TOTAL VALUES / VALEURS TOTALES / GESAMTWERTE / VALORI TOTALI					
CCO-225 / 400V 3N~	<input checked="" type="checkbox"/>	kW	kW	A	A
HW		36,0	32	60,8	80
HW + CDT-600		45,6	41	75,3	80
CW		45,0	41	73,8	80
CW + CRS-700		54,6	38	70,9	80
CW + CDT-600		45,0	50	88,3	100
CW + CRS-700 + CDT-600		42,6	47	85,4	100

The operating configuration of the appliance must always be displayed and the electricity connection must be in line with this configuration.

14.2. PRODUCTION

MOD.	 /h (1)	 /h (2)	Water L/h	Tank	Boiler	kg	NS
FCO-W4 RD / WG4 RD	3100-2325-1575	770-580-395	190-230	100 L	21 L	750 kg	< 72 dB
FCO-PW4 RD / PWG4 RD	4600-3520-2490	1140-880-620	190-230	200 L		900 kg	
FCO-P2W4 RD / P2WG4 RD	6600-4970-3350	1650-1250-840	220-270	300 L		1050 kg	
FCO-P3W4 RD / P3WG4 RD	8600-6410-4275	2140-1600-1070	220-270	400 L		1300 kg	

Under the **DIN 10534** standard, the machine has an "I" speed.

14.3. POWER

MOD.	CONNECTION →		400V 3N□			230V 3□		
	Total	Total	Fuse	Wire	Total	Fuse	Wire	
	kW	Amp.	(A)	Section	Amp.	(A)	Section	
FCO-W4-RD	53.8	79 A	125	25 mm ²	137 A	180	70 mm ²	
FCO-W4 RD + DM-700	63.25	93 A	125	35 mm ²	161 A	225	95 mm ²	
FCO-W4 RD + FDM-700 (bis)	72.7	107 A	125	35 mm ²	184 A	225	95 mm ²	
FCO-WG4 RD	17.93	28 A	32	4 mm ²	47 A	63	10 mm ²	
FCO-WG4 RD + FDM-700	27.38	41 A	63	10 mm ²	71 A	100	25 mm ²	
FCO-WG4 RD + FDM-700 (bis)	36.83	55 A	100	25 mm ²	95 A	160	50 mm ²	

MOD.	CONNECTION →		400V 3N□			230V 3□		
	Total	Total	Fuse	Wire	Total	Fuse	Wire	
	kW	Amp.	(A)	Section	Amp.	(A)	Section	
FCO-PW4-RD	53.4	79 A	125	25 mm ²	136 A	180	70 mm ²	
FCO-PW4 RD + FDM-700	63.85	92 A	125	35 mm ²	160 A	225	95 mm ²	
FCO-PW4 RD + FDM-700 (bis)	72.3	106 A	125	35 mm ²	183 A	225	95 mm ²	
FCO-PWG4 RD	20.53	31 A	32	4 mm ²	54 A	63	10 mm ²	
FCO-PWG4 RD + FDM-700	29.98	45 A	63	10 mm ²	78 A	100	25 mm ²	
FCO-PWG4 RD + FDM-700 (bis)	39.43	59 A	100	25 mm ²	101 A	160	50 mm ²	

CONNECTION →		400V 3N□			230V 3□		
MOD.	Total	Total	Fuse	Wire	Total	Fuse	Wire
	kW	Amp.	(A)	Section	Amp.	(A)	Section
FCO-P2W4 RD	68	100 A	125	35 mm ²	172 A	225	95 mm ²
FCO-P2W4 RD + FDM-700	77.45	113 A	160	50 mm ²	196 A	300	120 mm ²
FCO-P2W4 RD + FDM-700 (bis)	86.9	127 A	160	50 mm ²	220 A	300	120 mm ²
FCO-P2WG4 RD	35.13	53 A	63	16 mm ²	91 A	125	25 mm ²
FCO-P2WG4 RD + FDM-700	44.58	66 A	100	25 mm ²	114 A	160	50 mm ²
FCO-P2WG4 RD + FDM-700 (bis)	54.03	80 A	125	25 mm ²	138 A	180	70 mm ²

CONNECTION →		400V 3N□			230V 3□		
MOD.	Total	Total	Fuse	Wire	Total	Fuse	Wire
	kW	Amp.	(A)	Section	Amp.	(A)	Section
FCO-P3W4 RD	82.6	121 A	160	50 mm ²	209 A	300	120 mm ²
FCO-P3W4 RD + FDM-700	92.05	135 A	160	50 mm ²	233 A	300	120 mm ²
FCO-P3W4 RD + FDM-700 (bis)	101.5	148 A	200	70 mm ²	257 A	300	120mm ²
FCO-P3WG4 RD	49.73	74 A	125	25 mm ²	127 A	180	70 mm ²
FCO-P3WG4 RD + FDM-700	59.18	87 A	125	25 mm ²	151 A	180	70 mm ²
FCO-P3WG4 RD + FDM-700 (bis)	68.63	101 A	125	35 mm ²	175 A	225	95 mm ²

15. INSTALLATION OF THE MACHINE



THE MANUFACTURER MAY NOT BE HELD LIABLE FOR ANY PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE INCORRECT INSTALLATION, USE, MAINTENANCE OR REPAIR, OR CAUSED BY FAILURE TO COMPLY WITH THE STANDARDS AND INSTRUCTIONS PROVIDED.

15.1. LOCATION

It is necessary to install an extraction hood for the optimum operation of the appliance.

Place the equipment in a sufficiently ventilated room, in accordance with the current regulations, to prevent the formation of unacceptable concentrations of harmful substances in the installation site.

The equipment should be installed in accordance with its dimensions. Appliances must only be installed on and/or against fireproof surfaces.

Inspect final location of the equipment prior to installation to prevent damage during use.

Unless otherwise indicated, the parts that have been protected by the manufacturer must not be manipulated by the installer.



- **The placement, installation, repairs and/or modifications must always be carried out by an authorised service technician in accordance with the manufacturer's instructions and the applicable regulations.**
- **Do not change the position of or handle the machine components, as this may affect the**

operating safety.

- The appliance must be correctly levelled and the electrical cables, gas pipes, water and drainage hoses must not be trapped or contain kinks.
- The appliance has been designed to operate at ambient temperatures ranging from 5 °C to 40 °C and must not be used at temperatures below 5 °C.
- The appliance or any of its parts must never be used as a support and objects must not be placed on top.
- Do not install the appliance in places exposed to jets of water.
- This appliance must be installed in accordance with the current applicable legislation. It may only be installed on premises which are correctly ventilated in order to prevent the formation of unacceptable concentrations of substances harmful to human health.
- You must check that there are no gas leaks. NEVER use a flame to check for leaks.
- The gases leaving the fluepipe are at high temperatures and may cause burns. Do NOT obstruct the fluepipe output.
- The parts which are protected must not be handled.

If there is a smell of gas:



- Immediately close the gas mains tap.
- Try to ventilate the premises
- Avoid the formation of sparks or flames
- Leave the room and contact your gas supplier

15.2. LEVELLING

Fagor Industrial recommends that the place where the appliance is to be installed should be analysed prior to installation to check that it is suitable.

For optimum operation, it is essential that the appliance is correctly levelled.

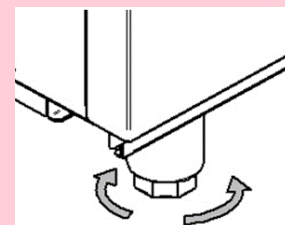
The appliances have adjustable legs to ensure they are correctly levelled. Turn the leg to obtain the required height. The flooring on which the appliance is to be installed must be able to bear its full weight.

The installation location must be able to withstand the weight of the appliance.

The height of the legs can be adjusted by turning them to ensure that the appliance is correctly installed. It is essential that the machine is correctly levelled.

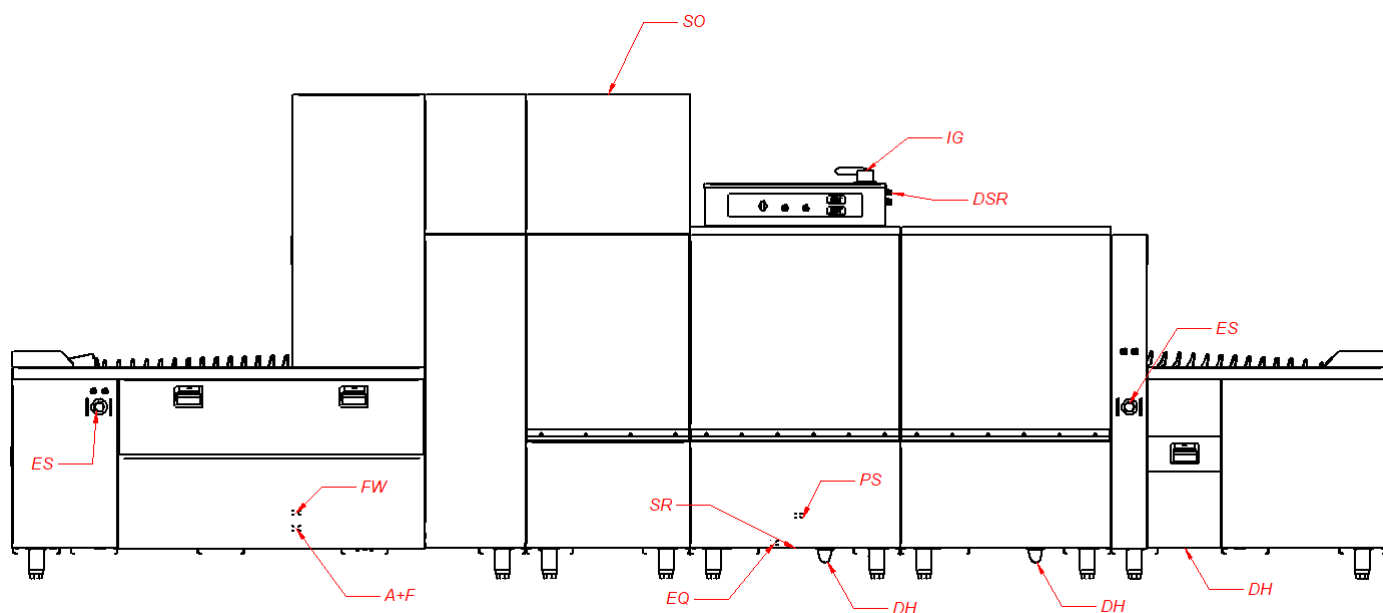
Electrical cables, water and drainage hoses must not be trapped or contain kinks.

Turn the leg clockwise to extend and anticlockwise to shorten.

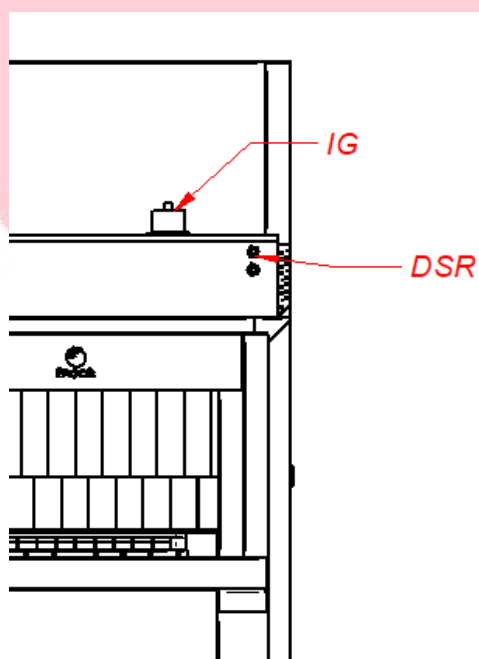


The installation of this appliance requires electrical and hydraulic connections, and an adequate ventilation/extraction system due to the steam emitted by the machine.

16. CONNECTIONS



A+F	Cold water inlet BREAK TANK
	Tub filler
FW	water inlet
DH	Drainage hose
SR	Stuffing box
PS	Mains supply
EQ	Equipotential connection
ES	Emergency push button
IG	Power switch
DSR	Packing gland for dispensers
DE	Elect. connection Rinse aid / detergent dispensers / Limit switch



SEÑAL / SIGNAL / SIGNAL:

2	LLENADO Y ACLARADO FILL & RINSE REPLISSAGE & RINÇAGE FÜLL & KLARSPÜLEN RIEMPIMENTO & RISCACQUIO
1	
3	ACLARADO / RINSE RINÇAGE / KLARSPÜLEN RISCACQUIO
1	
4	LAVADO / WASH LAVAGE / WASCHEN LAVAGGIO
1	
5	230V 1N~ (max 2A)
1	

16.1. ELECTRICAL CONNECTION

Before connecting the appliance to the power supply, check that the network voltage and frequency correspond to those indicated on the appliance nameplate. Check that the cross-section of the power cable is appropriate for the required consumption.

It is essential that the electrical installation where it is going to be connected has an EARTHING SOCKET, in addition to the appropriate protection of the magneto-thermal switch and differential.



An AUTHORISED TECHNICIAN should always carry out the appliance's electrical connection.

The legal standards in force in each country on connections to the mains should be taken into account.

- The specifications plate indicates the maximum power in kilowatts (kW) and amperes (A) for the correct sizing of the installation components (line, power supply cable...). If the configuration is changed, the values must be revised.
- Check that the mains voltage corresponds to that indicated on the appliance nameplate.
- The electric cable should be flexible, with an oil-proof covering, and it should not weigh less than the cable in an ordinary sleeve made of standard polychloroprene or an equivalent synthetic elastomer (H05RN-F or H07RN-F).
- The electrical cord must correspond to standard **EN 60335-1:2002** "ordinary polychloroprene sheathed flexible cable"
- The cross-section of the power cable must be suitable for the rated current of the machine.
- The machine must be connected to earth using the connection on the machine connection strip.
- The manufacturer will not be held liable for possible damage originated by failure to observe this requirement.
- Near the appliance and easily accessible to the user, between the power supply and the appliance, a suitable omnipolar cut-off Circuit Breaker with a minimum contact separation of 3 mm must be installed. This device should be used to disconnect the appliance during installation, repair, cleaning and maintenance work. The manufacturer will not be held liable for damage originated by failure to observe this requirement.
- A suitable safety switch / Residual current device must be installed near the appliance between the power supply and the appliance. The manufacturer will not be held liable for damage originated by failure to observe this requirement.
- If any faults are observed during the installation of the equipment, the supplier should be notified immediately.

To access the connection strip, release the front panel, pass the cable sleeve through the stuffing box on the lower exterior base and connect as shown on the strip.



VERY IMPORTANT: Before installing the left side panel, attach the electrical supply hose securely to the stuffing box.



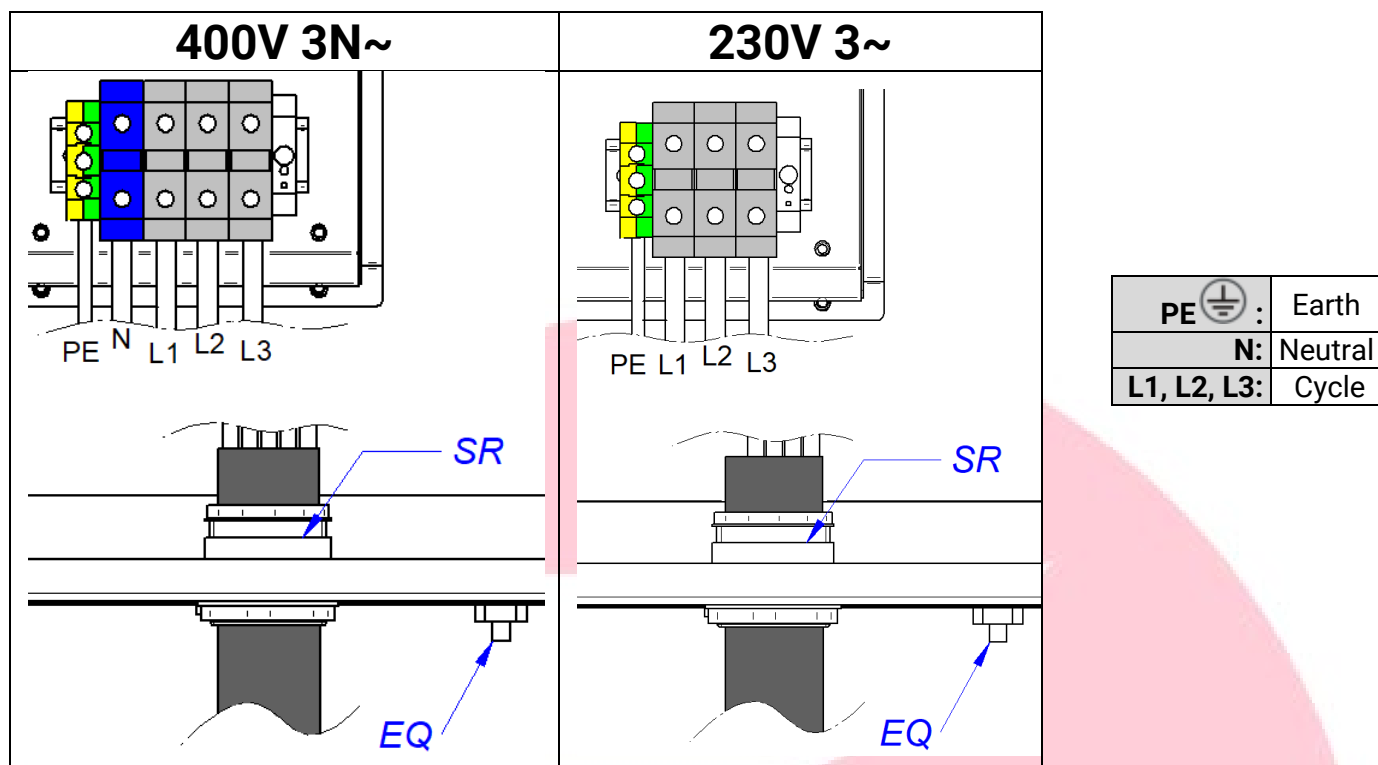
When several appliances are installed in series, they should be earthed to each other using the point assigned for this purpose, located in the oven base, at the back. The connection is represented by the symbol

The voltage configuration of the machine is stipulated on the nameplate (FACTORY ELECTRICAL CONNECTION). All the machines are equipped with a terminal box for configuring voltage and power/amperage options (230 V 1 N~, 230 V 3~ o 400 V 3 N~).

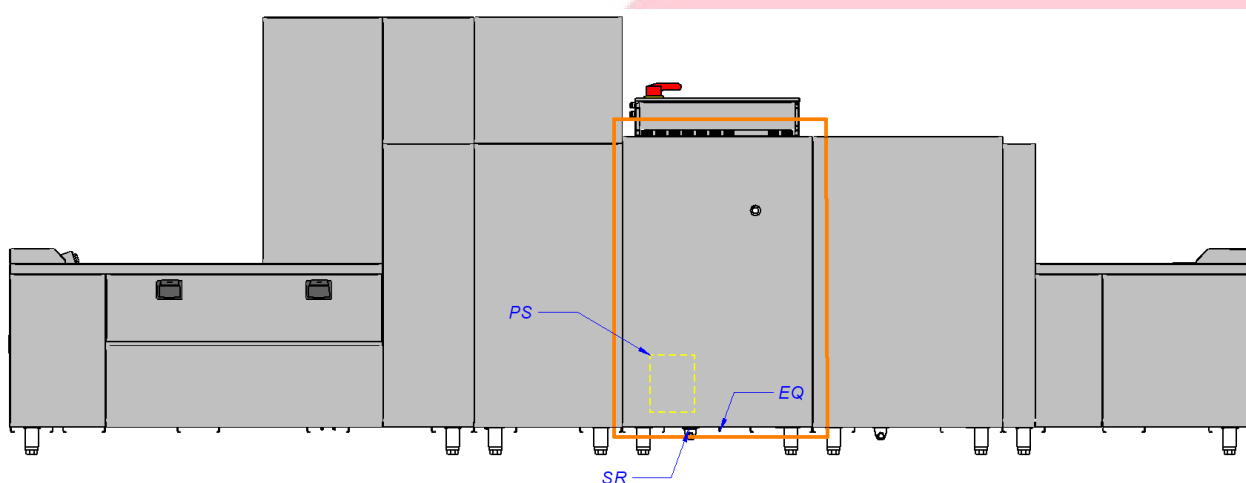
To access the connection strip, remove the front cover. This allows the power cable to be connected and the machine configuration to be changed if required.

If the configuration is modified, this should be indicated on the side of the nameplate using the labels supplied.

The power cable must be secured using the packing glands.



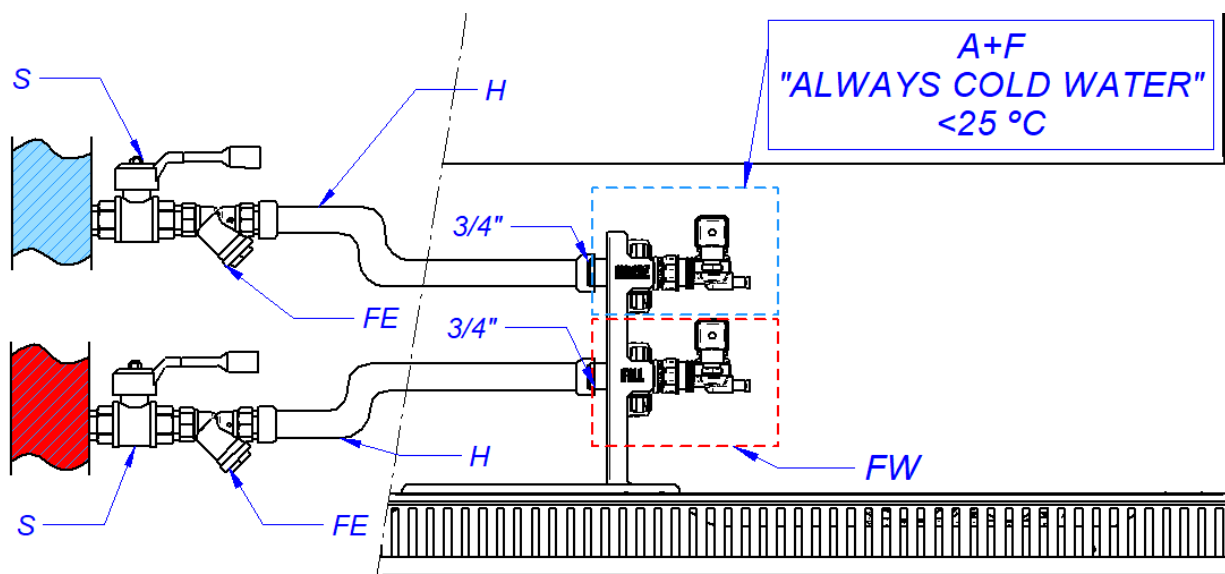
The voltage, amperage and connection configuration is given on the specifications plate. To complete the electrical connection, remove the rear panel protecting the electrical panel in order to access the connection strip PS. To do so, remove the bolts on the upper and lower part of the panel.



First insert the power cable through the packing gland SR and connect it to the connection strip PS. The power cable must be secured using the packing gland SR. It is also possible to complete the electrical connection of the detergent / rinse aid dispensers (please refer to the corresponding chapter). On completion of the electrical installation, replace and fasten the rear panel.

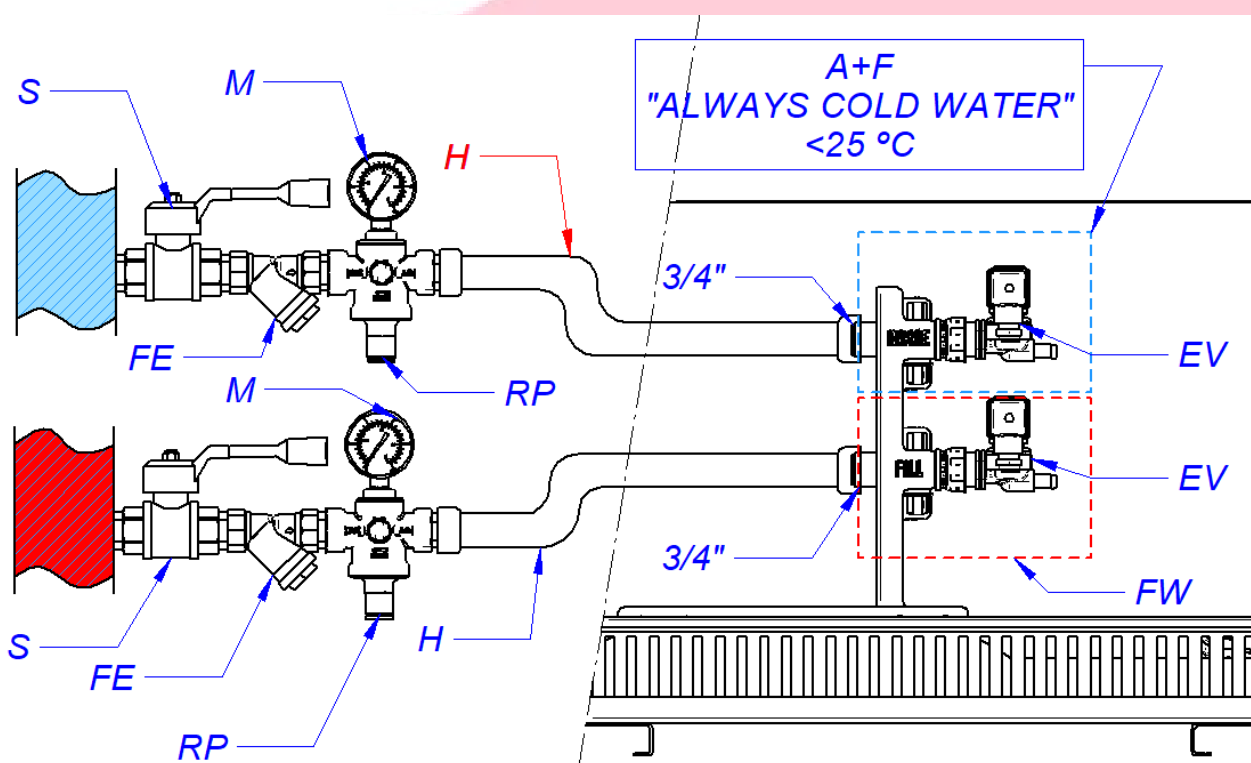
16.2. HYDRAULIC CONNECTION

The pressure of the incoming water should be between 200 and 400 kPa ($2\div 4 \text{ kg/cm}^2 = 2\div 4 \text{ bar}$). We recommend 250 kPa.



pH: $6,5 \div 7,5$
Total water hardness: $5 \div 10 \text{ °fH}$
 $3.5 \div 7 \text{ °eH}$
 $2.8 \div 5.6 \text{ °dH}$
Impurities: $\varnothing < 0.08 \text{ mm}$
Chlorides: $\leq 150 \text{ mg/l}$
Chlorine: $0.2 \div 0.5 \text{ mg/l}$
Conductivity: $400 \div 2,000 \text{ }\mu\text{S/cm}$

S	Water shut-off valve
FE	Exterior filter
RP	Pressure reducer
M	Manometer
H	Water inlet hose
A+F	Water inlet and filter
EV	Solenoid valve



EQUIVALENCES OF THE DEGREE OF WATER HARDNESS					
	CaCO ₃ Ppm: Parts per million	°D °D: German degrees	°F °F: French degrees	°A °A: American degrees	°E °E: British degrees
°F	10	0.56	1	10	0.7
°A	1	0.056	0.1	1	0.07
°E	14.26	0.8	1.47	14.26	1
°D	17.85	1	1.785	17.85	1.25

If the water quality does not meet the specified requirements, contact a professional able to advise on the water treatment systems necessary to make the water suitable and to provide a solution.

If the water hardness is higher than that indicated, a descaler should be installed to prevent the build-up of lime on the machine and to permit optimum results.

In addition to water quality, the pressure of the mains water supply must be considered. This is important to ensure the unit operates correctly. The dynamic pressure of the water inlet must be within the values indicated in the following table.

If the water pressure is higher than the recommended pressure, a pressure regulator must be mounted.

If the water pressure is lower than the recommended, a pressure pump must be installed. Please contact your supplier or the manufacturer to request the **PRESSURE PUMP KIT**.

The water inlet temperature in the unit is also important. Hot water should be used to optimise the machine operation, as the use of cold water will increase the times required to reach the operating temperatures and productivity will be reduced. If using hot water, the water temperature must not exceed 60 °C / 140 °F.

WATER INLET TEMPERATURE	Min.	Max.
Connection A+F (RINSE)	10°C / 50 °F	25 °C / 77 °F
Connection FW (FILL)	10 °C / 50 °F	65 °C / 149 °F

For the correct hydraulic installation of the machine, you must:

- Connect the appliance to a water supply which complies with the requirements specified above. All the machines have a 3/4" screw-on water hose connection. Old or used hoses must **NOT** be used.
- Install a shut-off valve on the water supply close to the machine in an accessible position.
- Check that the mains pressure is within the range indicated above.
- Check that there are no leaks

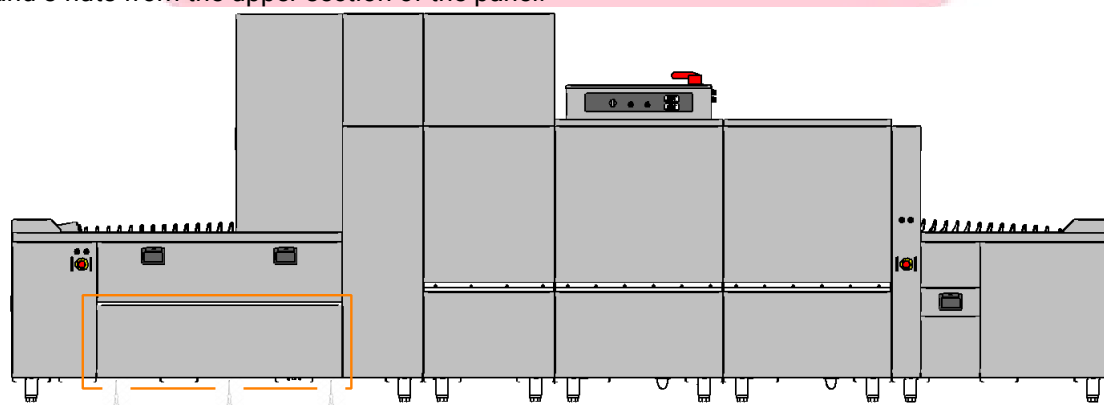
Each model is designed to operate within a temperature range for the incoming water. Therefore if the incoming water does not fulfil the specified requirements, the wash and rinse temperatures may not be reached in the required time or may not be correct.

The temperature of the hot water must not exceed 65 °C / 149 °F and the cold water temperature must not be less than 10 °C / 50 °F.

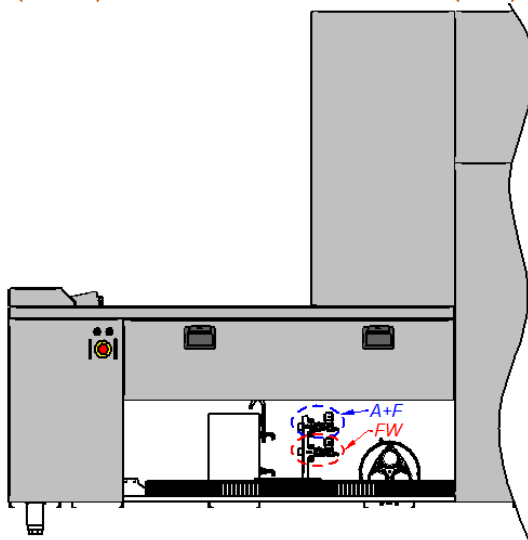
If using water at temperatures below 10 °C / 50 °F, the VERY COLD WATER KIT must be ordered separately.

For the correct hydraulic installation of the machine, you must:

- Make sure that the water does not contain waste (new installation, etc.). Therefore before connecting the appliance to the mains, run the water through the drainage until it comes out clean to avoid blocking the appliance filter.
- Remove the lower front panel from the machine outlet. To do so, remove 3 bolts from the lower section and 3 nuts from the upper section of the panel.



- Connect the appliance to a water supply which complies with the requirements specified above. All the machines have a $\frac{3}{4}$ " screw-on water hose connection. Old or used hoses must **NOT** be used. Connect the rinse water inlet hose to **A+F (RINSE)** and the tub filler hose to **FW (FILL)**.



- Install a shut-off valve on the water supply close to the machine in an accessible position.
- A filter must be installed after the shut-off valve and before the appliance and should be easily accessible for cleaning.
- Check that the mains pressure is within the range indicated above.
- Check that there are no leaks
- Once the water supply has been connected, replace and secure the lower front panel with the nuts and bolts removed above.

STANDARD FILTER SYSTEMS

A) Fine filter

If the water contains impurities such as sand, iron particles or floating substances, we recommend the use of a fine filter at the water input.

B) Activated carbon filter

If the water has a high chlorine content over 0.2 mg/l (this information can be obtained from the relevant water board), an activated carbon filter should be installed.

C) Installation of osmosis recirculation

When the chloride concentration is above 150 mg/l (this information can be obtained from the relevant water board), an osmosis recirculation installation should be mounted. In this case, please remember that the minimum conductivity value is 400 μ S.

D) Water descaling

For water with a high level of limescale (without chloride load) the water should be treated. Systems: H+. Interchange of ions or Kleensteam. We strongly advise against the use of sodium/ion exchangers (normally used in dish washers) due to the formation of sodium sediment and the delay in boiling with common salt.

When selecting filter systems (A, B, C, D), we recommend you contact a specialist water treatment company (for example: BRITA).

16.2.1. HYDRAULIC CONNECTION (only UK: IRN R160)

To be carried out by the installer: a certified double check valve, or other device suitable for preventing the return of the water, of at least "fluid category 3", must be fitted on each of the drinking water connections to the appliance.

Never use detergents which represent a risk higher than the category 3 fluids.

Mount a mains tap on each appliance.

Rinse the water pipe before connecting it to the appliance.

16.3. WASTE WATER CONNECTION

The machine drainage hose must be connected to the drain so that water draining from the machine flows freely under gravity; therefore, the drain must be lower than the drainage hose of the appliance with a slope of at least $\approx 3\% \div 5\%$.

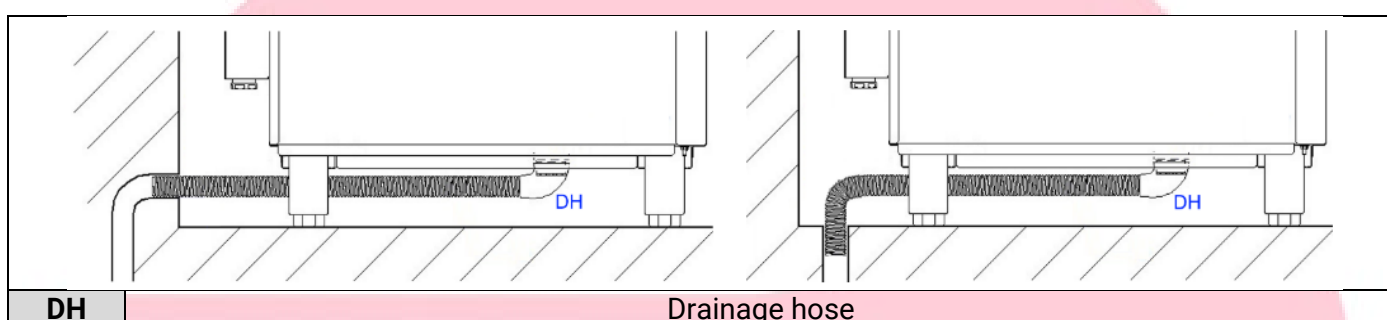
The machine drainage hose must be connected to a sump with a drain trap to prevent the return of bad odours. Check that the drainage system operates correctly and is not blocked. Incorrect installation of the appliance may result in the incorrect operation.

Ensure the measurements for the drainage are correct:

The average temperature of the waste water from the machine is 55 °C.

Incorrect installation of the appliance may result in the incorrect operation of it.

The installation should be in such a way as to ensure that the installed drainage outlet is below the appliance outlet with a suitable slope to ensure drainage ($\approx 3\% \div 5\%$).



16.4. VENTILATION OF THE PREMISES

The machines must be installed in such a way as to allow adequate ventilation to prevent the unauthorised concentration in the premises of steam and products emitted during operation, which may be harmful to health. The installation of an extraction hood is recommended for the extraction of smoke and steam in accordance with Standard **UNE-100165:2004**. It is advisable that the hood sticks out 200-400 mm from the front part of the appliance.

16.5. CHEMICAL DISPENSERS' CONNECTION

The appliance does not have detergent and rinse aid dispensers, but is designed to permit the installation of external dispensers.

To complete this installation, the dishwasher must be switched off at the mains using the disconnection switch and the mains switch, and the water inlet tap closed.

The following installation and adjustment must be carried out by authorised and qualified personnel.
Contact a qualified chemical product supplier to determine the most suitable product and dose in order to optimise the wash.
The guarantee does not cover damage caused by the incorrect installation or use of dispensers and chemical products.

The correct selection and dosing of detergent and rinse aid is essential for obtaining an optimum wash. **Only use liquid or solid detergent specially designed for use with industrial dishwashers and which is non-foaming at high temperatures.** Detergents designed for domestic use should not be used under any circumstances.

The detergent and rinse aid containers must be placed close to the appliance. The results of the wash should be assessed after two fills and at least three wash cycles in order to stabilise the doses. There should not be any foam in the tub after running the cycles.

Scratched dishes and the formation of foam in the wash solution are usually an indication of excess rinse aid. Dishes with too many water drops or which are slow to dry are usually a sign of insufficient rinse aid.

SEÑAL / SIGNAL / SIGNAL:

2	LLENADO Y ACLARADO FILL & RINSE REMPLEISSAGE & RINÇAGE FÜLL & KLARSPÜLEN RIEMPIMENTO & RISCACQUIO
3	ACLARADO / RINSE RINÇAGE / KLARSPÜLEN RISCACQUIO
4	LAVADO / WASH LAVAGE / WASCHEN LAVAGGIO
5	230V 1N~ (max 2A)

CONVEYOR BELT DISH WASHER

To connect the dispenser water installation, remove the front panel from the outlet, the main wash lower panel and the main wash rear panel of the machine.

- For the front panel of outlet **A**, first remove the nuts and screws fastening the panel.
- For the front panel of main wash **B**, remove the screw from the lower section of the panel. To remove, lift the door and turn the front panel slightly upwards at the lower section and then remove.
- For the rear panel of main wash **C**, take out the two upper screws and the two lower screws from the panel to remove it.

16.6. DETERGENT DISPENSER

The conveyor belt dishwasher has two zones for adding detergent to the main wash, depending on the type of detergent used. (solid or liquid).

LIQUID DETERGENT

To add liquid detergent, the main wash tank has an input located in the upper section of the front of the tub, marked with a label. This input is covered by a cap. In addition, the same label indicates the area where the conductivity probe should be mounted on the main wash tub.

A stainless steel packing gland should be used, as detergent is an abrasive product and plastic packing glands wear faster.

INSTALACIÓN DE LA SONDA DE CONDUCTIVIDAD PARA EL DETERGENTE

DETERGENT CONDUCTIVITY PROBE INSTALLATION

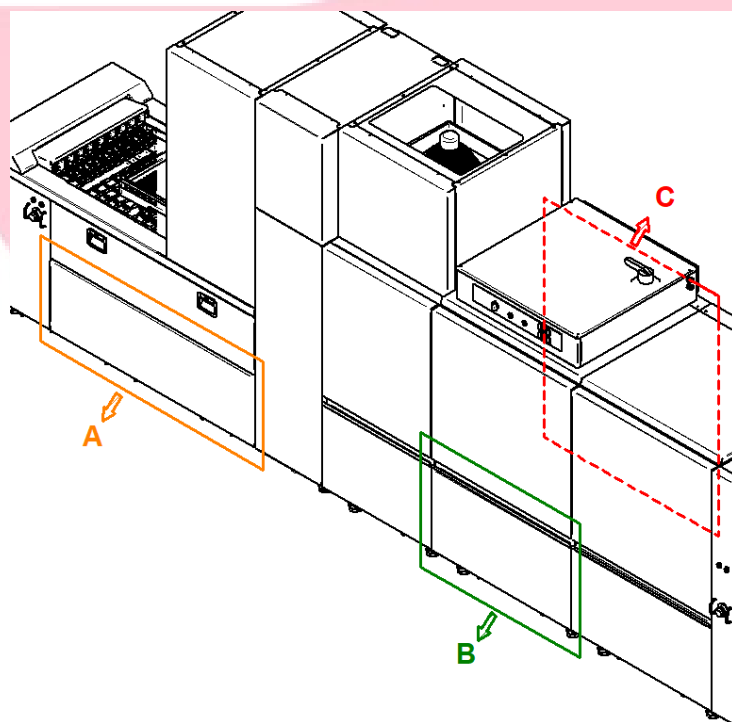
Agujero de sonda
Probe hole

El lavavajillas tiene un agujero de Ø23 para instalar la sonda de conductividad en la cuba de lavado principal. Este agujero está tapado con un tapón. Hay que quitar el tapón para instalar la sonda.

LDI (entrada de detergente líquido): esta es la entrada que dispone el lavavajillas para introducir el detergente líquido a la cuba de lavado.

The dishwasher has in the main wash tank, a Ø23 hole to install the conductivity probe. This hole is covered with a plug. The plug must be removed to install the probe.

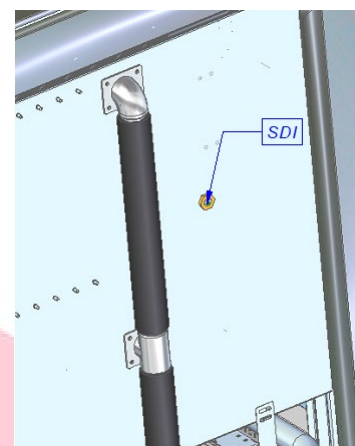
LDI (Liquid Detergent Input): this is the entrance that the dishwasher has to introduce the liquid detergent to the main wash tank.



SOLID DETERGENT

To add the SDI (Solid Detergent Input), on the rear of the main wash box there is an opening onto which a bushing should be mounted for adding solid detergent to the main wash tub. This opening is covered by a cap.

The bushing for the detergent supply is not included with the machine.



After mounting the bushing, the solid detergent input pipe is connected to the machine. The rear panel has a hole and a bushing for the correct mounting of the detergent input pipe. After securing the detergent pipe, replace and fasten the main wash rear panel.

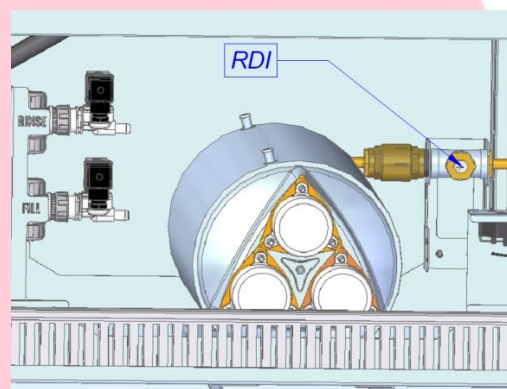
16.7. RINSE AID DISPENSER

The rinse aid input **RDI** is located in the lower section of the machine outlet.

The cap shown in the figure should be removed. This will provide an inlet with 1/8" thread where the rinse aid dispenser pipe can be connected.

In ECO models with hot water gas generator, the rinse aid dispenser connection should be on the hot water generator itself.

After the rinse aid pipe has been installed, replace and fasten the lower front panel of the machine outlet.



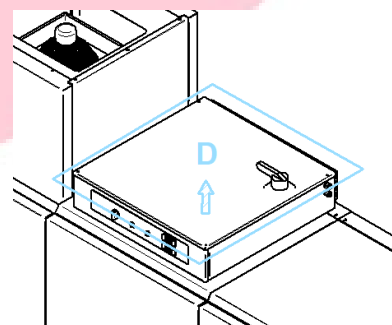
16.8. FEEDERS' ELECTRICAL CONNECTION

To complete the electrical connection of the detergent and rinse aid dispensers, remove the upper cover protecting the electrical panel in order to access the connection strip for the dispensers **DE**.

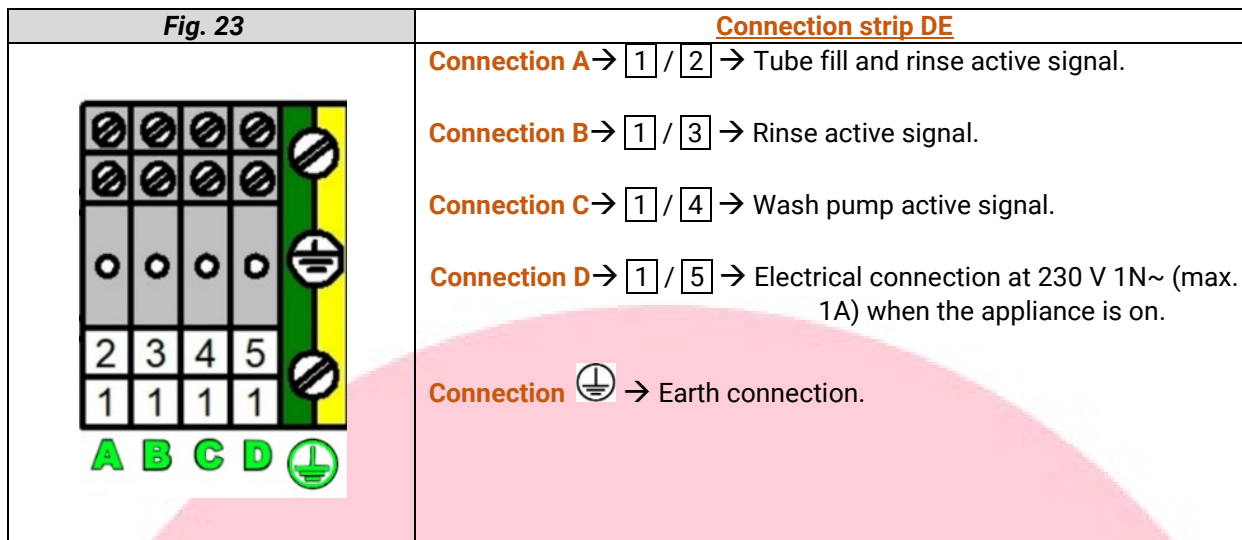
First switch the mains switch **IG** to **OFF** in order to remove cover D. Next, remove the fastening screws and release the cover.



IG



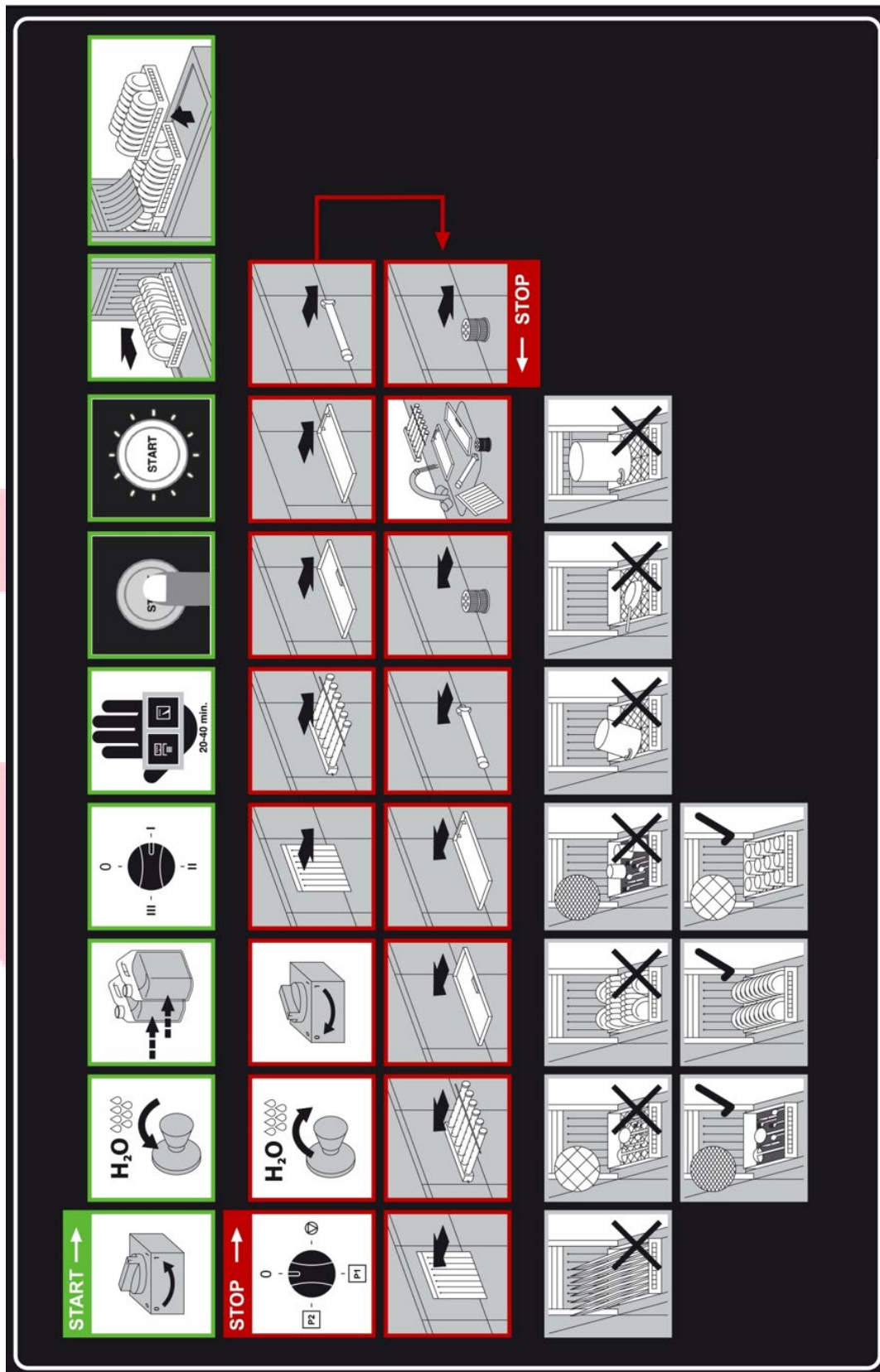
The rinse aid / detergent dispenser connection cables must be inserted through the two packing glands **DSR** and connected to the rinse aid /limit switch connection strip **DE**. The connection options are:



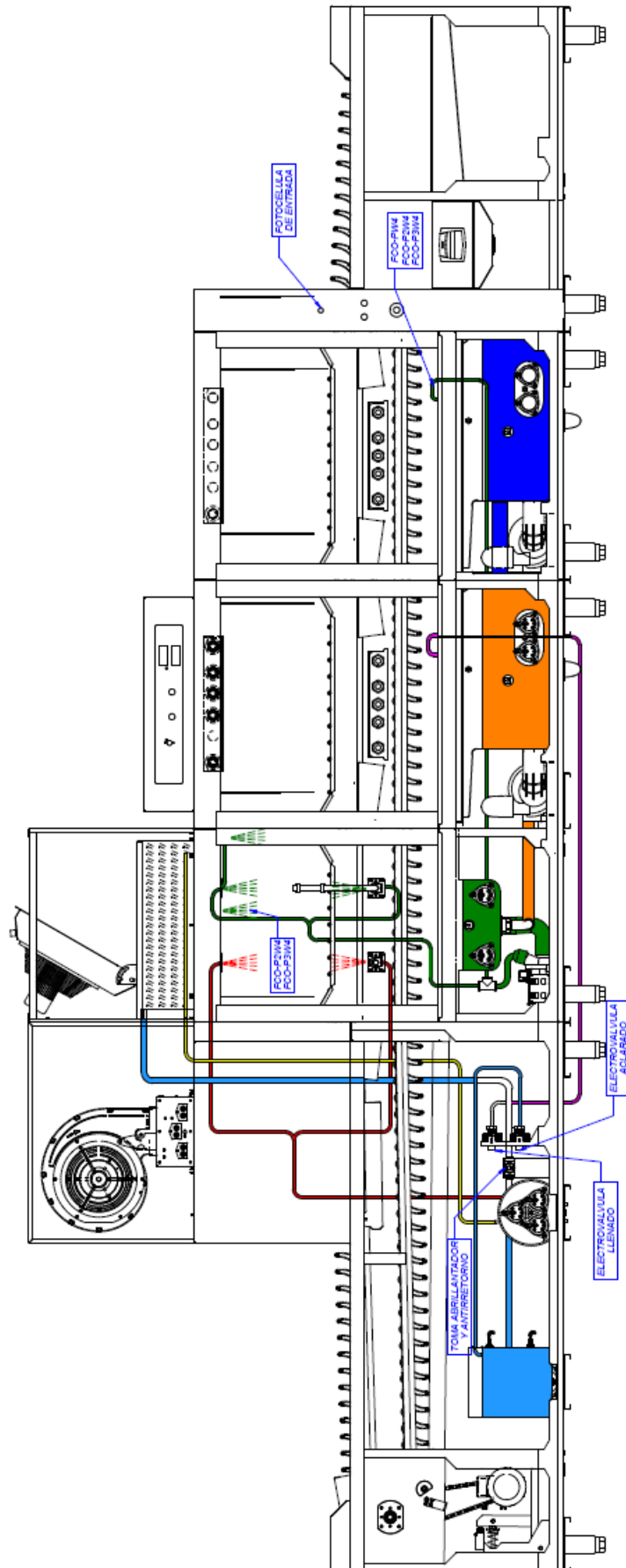
On completion of the electrical connection, the cover of the electric panel must be replaced and secured.

17. USE OF CONVEYOR BELT DISH WASHER

17.1. QUICK START-UP GUIDE

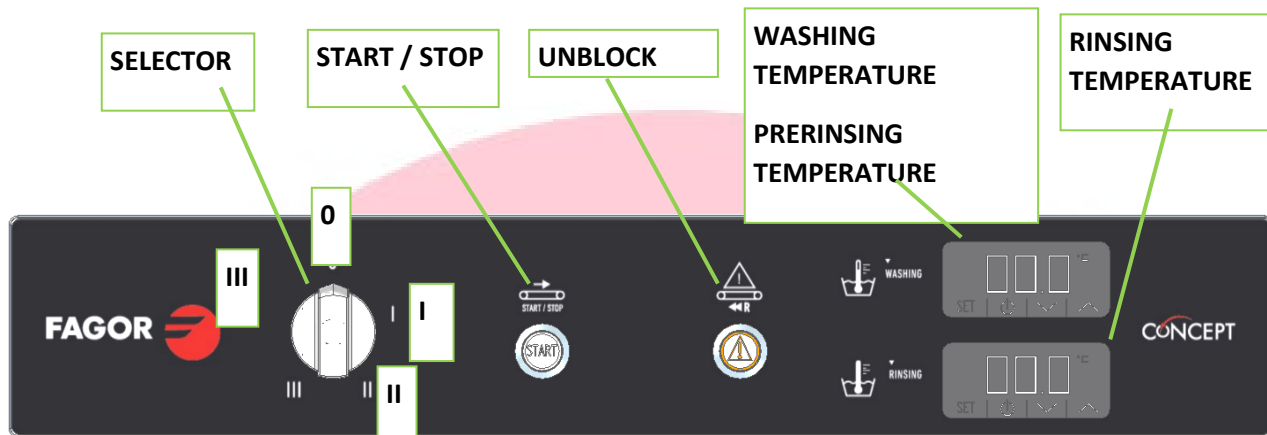


17.2. HYDRAULIC CIRCUIT



17.3. CONTROL PANEL

FCO-W4 RD / FCO-PW4 RD / FCO-P2W4 RD/ FCO-P3W4 RD



SELECT	Cycle selector switch
0	Machine off
I	Slow speed (I)
II	Intermediate speed (II)
III	High speed (III)
START / STOP	Stop/start button and light Blocked warning light
UNLOCK CONVEYOR MOTOR	Return button
WASHING TEMPERATURE/PRERINSING TEMPERATURE	Wash Tank Temperature Control/Pre-rinse Tank Temperature Control
RINSING TEMPERATURE	Boiler temperature control

17.4. INITIAL START-UP (AUTHORISED SERVICE TECHNICIAN)

Before starting the appliance, use a functional test to check that the electrical protection system is operating correctly.

The machine must have been installed and/or inspected by qualified personnel, who will start the machine for the first time, check the appliance operates correctly and provide the operating instructions to the user.

The manufacturer does not accept responsibility for an incorrect installation or start-up.

Before switching on the machine, check that the wash distributors, filters and trays are correctly positioned.

17.5. FIRST FILL AND ACTIVATION OF THE BOILER

THIS OPERATION MUST ALWAYS BE PERFORMED AFTER DRAINING THE BOILER.



BEFORE DRAINING THE BOILER, THE RINSE TEMP DISPLAY MUST ALWAYS BE DEACTIVATED

THE MANUFACTURER DOES NOT ACCEPT ANY RESPONSIBILITY FOR PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE NON-COMPLIANCE OF THE ABOVE INSTRUCTIONS.

Activate the magneto-thermal switch and set the mains switch **IG** to **ON**.

Open the water shut-off valve.


Using the **SELECT** switch, select position **I, II or III**. The **WASH TEMP** display lights up and water starts to fill the appliance.

VERY IMPORTANT: As this is the first fill, the boiler and the break tank will be empty and the boiler heating must not be activated; the **RINSE TEMP** display must continue switched off.

If the boiler is empty and **RINSE TEMP** is activated, immediately move the **SELECT** control switch to position **0** to switch off the appliance.



To switch off the heating turn the appliance back on. The **RINSE TEMP** display flashes several times before starting. After the fourth flash (not before) press and hold down the ON/OFF button of the

display  until the display switches off.

If the display does not switch off in 5 seconds, immediately switch off the appliance and try again.



Check that water enters in the machine (the doors must be closed).

When the boiler is full, water will start to come out through the rinse arms in order to fill the tank. If the door is opened, the fill will stop. The rinse arms can be watched from the basket output of the appliance. Now it is possible to activate the boiler heating using the **RINSE TEMP** display, by pressing the ON/OFF button on the

display  for 3 seconds.

Once the pre-wash, wash and pre-rinse tanks are full and the appliance is operative and the heating starts, the following checks on the appliance operation should be run:

- Check that there are no water leaks in hoses, joints, etc.
- Check that the tank levels are correct, below the overflow drainage.
- Check that the curtains are correctly mounted.
- Check the correct operation of the detergent and rinse aid dispensers if installed.
- Check the correct operation of the limit switch.
- Check the correct operation of the emergency button.
- Check that the appliance stops if the doors are opened.
- Check that the temperatures are correct and the heating operates correctly.
- Check that the wash and rinse cycle run correctly.
- **IMPORTANT!** Check the rotation of the conveyor gear motor, wash motor pumps, rinse motor pump, drying fans and energy recovery system fan. If they rotate in the opposite direction, change the phases of the machine connection.



This test must only be performed by an authorised technical service. Failure to comply with this requirement may endanger the user of the machine and result in the incorrect operation of the dishwasher.

17.6. CONFIGURATION OF HEATING TEMPERATURES

The heating temperatures of the tank and the boiler can be configured using the digital thermometers **WASH TEMP** and **RINSE TEMP**.

The preconfigured and nominal recommended temperatures are 85 °C in the boiler and 65 °C in the tank. If these values are changes, adequate wash and/or rinse temperatures cannot be guaranteed.




If one of the digital thermometers is replaced, the nominal heating value must be configured.

The digital thermometers permit the configuration of temperatures within the following ranges:

RINSE TEMP → Boiler: Temp range between 70 and 85 °C

WASH TEMP → Tank: Temp range between 50 and 65 °C

The procedure for changing the temperature parameters is as follows:

<p>1</p>	<p>When the appliance is switched on, the keys on the electronic thermometers are unlocked.</p> <p>They lock automatically after 30 seconds of inactivity.</p> <p>To unlock the keypad, press SET for several seconds. When this is pressed, Loc (Locked) is displayed, when the keypad is unlocked this changes to UnL (Unlocked).</p>	
<p>2</p>	<p>After unlocking the thermometer keypad, the true temperature continues to be displayed.</p> <p>Press SET once and the thermometer enters the temperature range configuration: the default temperature is displayed and the upper left green icon  flashes.</p>	
<p>3</p>	<p>Use the  and  buttons to increase or lower the nominal heating temperature configured, within the ranges specified above.</p> <p>RINSE TEMP → <u>Boiler</u>: Temp range between 70 °C and 85 °C WASH TEMP → <u>Tank</u>: Temp range between 50 °C and 65 °C</p>	
<p>4</p>	<p>Once the required heating temperature has been configured, confirm the temperature by pressing SET once. The temperature display again displays the true temperature and the keypad automatically locks after 30 seconds of inactivity.</p>	

17.7. ADDITIONAL TEMPERATURE DISPLAY

The electronic thermometers installed in these dishwashers control two temperatures each. The **RINSE TEMP** thermometer controls:

- The boiler heating temperature 85 °C (displayed).
- The boiler pre-heating temperature **Standby** 70 °C (**NOT** displayed)

The **WASH TEMP** controls:

- The temperature of the main wash tank 65 °C (displayed).
- The temperature of the pre-rinse tank 70 °C (display hidden).

To display the pre-rinse tank temperature, proceed as follows:

<p>1</p>	<p>When the appliance is switched on, the keys on the electronic thermometers are unlocked.</p> <p>They lock automatically after 30 seconds of inactivity.</p> <p>To unlock the keypad, press SET for several seconds. When this is pressed, Loc (Locked) is displayed, when the keypad is unlocked this changes to UnL (Unlocked).</p>	
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2	<p>After unlocking the thermometer keypad, the true temperature continues to be displayed. Wash tank WASH TEMP</p> <p>Press ▼ for a few seconds. The thermometer enters the additional temperature configuration.</p>	
3	<p>Use the buttons ▲ and ▼ to scroll up or down the configuration menu. Go to section Pb2 and press SET once to display the pre-rinse temperature.</p>	
4	<p>To return to the initial position, press . The main wash tank temperature is displayed again WASH TEMP.</p>	

17.8. PREPARATION AND SWITCHING ON THE MACHINE

Before switching on the machine:

- ✓ Make sure that the machine is clean (filters, trays, distributors, arms...).
- ✓ Make sure that elements such as filters, trays, distributors, arms, overflow and curtains are correctly mounted in their respective positions.
- ✓ Open the water mains tap and check that there is water.
- ✓ Close the doors of the appliance.
- ✓ Activate the magneto-thermal switch and set the mains switch **IG** to **ON**. If there is no current, check that the emergency button has not been pressed.



To start filling the machine, it is essential that the doors are totally closed. If any of the doors are open, only the wash tanks will fill. The appliance does not operate if it detects that the door is open.

Using the **SELECT** switch, select position **I**, **II** or **III**. The **WASH TEMP** and **RINSE TEMP** displays light up and water starts to fill the appliance.

The fill and machine preheating processes take place. This process may last about 30 minutes.

When all the machine tanks are full and hot, the dishwasher enters **AUTOMATIC PRE-HEATING MODE**. Refer to the chapter on the preheating system for details about its operation.

The machine will be operative once the digital thermometers reach the temperatures in the tank, **WASH TEMP** > 60 °C, and in the boiler, **RINSE TEMP** > 70 °C.

The appliance has an automatic energy saving function which, while the appliance is not washing, makes the boiler lower the maintenance temperature to approximately 70°C. When the appliance starts to wash dish again, the boiler heating nominal value is activated to the defined value (85°C by default).



During the first heating of the day, the boiler may reach higher temperatures than normal due to the heating inertia as the boiler water is cold. This is normal.

17.9. AUTOMATIC WEIGHING SYSTEM

The machine has an automatic preheating system. Once all the wash tanks have been heated, the system automatically activates the wash pumps to keep all the parts of the machine hot. The system prevents the wash temperatures from dropping when cold dishes are placed inside the machine. This process is repeated every 20 minutes.

17.10. WASH PROCESS



The door must be closed for the wash cycle to start. For safety reasons, if the door is open, the machine will not start the cycle.



- **IF THE FEED BELT IS BLOCKED, REMOVE THE OBSTACLE BEFORE RESTARTING THE APPLIANCE.**
- **BEFORE REMOVING OBJECTS THAT HAVE FALLEN INSIDE THE MACHINE, THE APPLIANCE MUST BE AT A COMPLETE STANDSTILL AND DISCONNECTED.**
- **DO NOT INSERT HANDS IN THE MACHINE WHILE IT IS RUNNING.**
- **TO AVOID THE RISK OF ENTANGLEMENT, DO NOT APPROACH THE FEED MECHANISM, ESPECIALLY IF WEARING JEWELLERY OR LOOSE CLOTHING.**
- **IN THE EVENT OF BREAKDOWN AND/OR THE INCORRECT OPERATION OF THE MACHINE, SWITCH OFF THE APPLIANCE AT THE MAINS AND REFRAIN FROM CARRYING OUT DIRECT INTERVENTION OR ATTEMPTS TO REPAIR.**

Once the appliance has reached the conditions required to start the wash and the dishes has been correctly stacked in the baskets, the wash process is performed as follows:

- Using the **SELECT** switch, select position **I**, **II** or **III**. After selecting the required wash speed, press the **START/STOP** button to start the conveyor belt. If the machine runs for 10 minutes without detecting any dishes, it will automatically stop.
- Once the conveyor belt is moving, the plates, baskets, trays or kitchenware can be inserted through the entrance to the appliance. Before inserting the dishes, prepare it correctly. Do not exceed the height (440 mm) and width (630 mm) limit of the machine entrance as this may lead to damage to the machine and the elements to be washed.
- When the wash process starts, the boiler automatic energy saving function is deactivated and the heating is activated to obtain a rinse temperature between 80-85 °C.
- The machine has an automatic photocell dish detector system. When the dishes are placed on the conveyor belt, the photocell detects the dishes and the wash, rinse and drying process starts.



If, with the first dish, the rinse does not reach a temperature of 80-85 °C, do not insert any more dish for a while and allow the machine to return to the ideal operating temperature.

- The dishes come out through the opening at the exit of the machine. If there is a build-up of dishes in the unloading zone, the machine stops automatically until these dishes have been removed from this zone. When the dishes have been removed, the dishwasher automatically starts again and the wash process continues. Allow the dishes to dry naturally for a minute. The following health aspects should be noted:
 - The dish should be handled with clean hands or wearing gloves in order not to contaminate it. Be careful as the dishes will be hot.
 - Do not dry the dish with kitchen towels or cloths that are not sterile.
 - Operators must strictly observe all hygiene requirements when handling clean dishes and cutlery.
- Stop the machine at regular intervals in order to remove any waste which has collected in the trays of the appliance.

17.11. PREPARATION OF THE DISHES

Before starting the wash process, the dishes should be prepared correctly. It is essential to comply with the following requirements:

- ✓ Remove large pieces of waste and quickly rinse all the dishes before placing it in the baskets.
- ✓ Soak the cutlery and even the plates when these are to be washed if they have not been used recently.
- ✓ **NEVER** rinse/soak with domestic detergents, bleach or similar products, as these react with those used in the appliance, creating large quantities of foam. Only use clean water.
- ✓ First wash glassware ((tumblers, glasses, jugs, ...)).

CONVEYOR BELT DISH WASHER

- ✓ Place wineglasses, cups and glasses upside down in the basket (the concave part facing downwards).
- ✓ Check that the maximum height of the items to be washed does not exceed 440mm and a width of 630 mm
- ✓ Do not overload the conveyor belt. Leave space to permit the wash water to clean the items.
- ✓ Insert the trays with the concave part (hollow part) facing downwards, and on alternate racks so that the wash process is more efficient.
- ✓ Insert plates on a slant with the internal surface facing upwards on the belt with plate spikes and insert them with the front of the plates facing the entrance.
- ✓ Place cutlery in a basket without spikes with a thicker base and spread out.



17.12. WASH CYCLE

The machine cycle consists of a pre-wash, wash, first drain, pre-rinse, final rinse, second drain and drying cycle. The machine can be ordered with several drying cycles.

The tank thermostat maintains the wash water temperature at between 50 - 65 °C and motor pumps circulate this water with detergent towards the wash arms. The jets of water reach the dishes from different directions in order to guarantee a uniform wash.

The pre-wash and wash system are activated when the photocell sensor detects the dishes at the entrance to the machine, and are stopped a set time after the last dish to be washed has been detected.

There is a drainage zone between the wash zone and the pre-rinse zone which allows the detergent to drain off the dish towards the wash tub.

A preliminary rinse takes place in the pre-rinse zone to remove most of the detergent remaining on the dishes. This water is recirculated from the pre-rinse tank heated to 70 °C.

In the final rinse zone, clean water heated to between 80 °C - 85 °C, mixed with rinse aid is used to remove the detergent from the dishes, which at the same time regenerates the wash tank water, thus reducing the level of dirt in the tank.

The rinse system is activated when the sensor detects dishes entering the machine, and is automatically stopped after a predefined time.

There is a second drainage zone between the final rinse zone and the drying zone which allows the dishes to drain before entering the drying process.

An optional drying module is available for heating and expelling air at a temperature of 50 - 60 °C so that the dishes come out completely dry. The dryer is automatically deactivated several minutes after the last basket has come out. The machine can be ordered with more than one drying zone to guarantee the correct drying of any type of dish.



If the water input temperature is lower than the specified temperature, the times required to return to the operating temperatures will increase and production rates will be lower.

17.13. INTERRUPTING THE WASH PROCESS

The wash and rinse cycles are deactivated a set time after the detection of the start of the cycle and the conveyor belt stops automatically after 10 minutes without detecting any dishes.

If, at any time, it is necessary to interrupt the wash process, the best way is to press the **START/STOP**: The conveyor belt stops and the wash and rinse processes are interrupted. Press the button again to resume the wash process and conveyor belt movement.

Other ways to stop the machine, but which are **NOT RECOMMENDED** unless absolutely necessary, include the following:

- Selecting position **0** using the **SELECT**: This will switch off the machine. The wash process is not restarted. Any basket that is in the appliance when the machine is stopped should be reinserted as the wash has been interrupted and not completed correctly.

- Opening the door (**CAUTION!**): The conveyor belt stops and the wash and rinse processes are interrupted, but hot water may splash and cause burns.
- Press the emergency button **ES** to switch off the machine which will stop operating completely. **ONLY USE IN THE EVENT OF EMERGENCY.**

17.14. DRAINAGE AND SWITCHING OFF THE MACHINE

At the end of the working day or when it is necessary to change the wash water because it is too dirty, the wash tank should be drained.

First switch off the machine to drain the wash tanks.

To switch off the machine, select position **0** using the switch **SELECT**.

To drain the machine remove the overflow valves on the wash tanks.

The pre-rinse tank only requires draining once a day. As with the wash tanks, the pre-rinse tank is drained by removing the pre-rinse overflow valve.

At the end of the work day, the machine should be emptied and the water disconnected using the water shut-off valve, together with the electricity, using the magneto-thermal switch/setting the mains switch **IG** to **OFF**, and the machine cleaned (follow the instructions for cleaning given in the manual).

Leave the door open to help dry the inside of the machine and to prevent bad odours when the machine is not in use.



IMPORTANT:
WAIT AT LEAST 10 MINUTES AFTER SWITCHING OFF AND DRAINING THE MACHINE BEFORE CLEANING THE INTERIOR.

18. LIMIT SWITCH/MICRO SWITCH

During the wash process, dishes, trays, kitchenware or baskets may collect in the dishwasher output zone. When these reach the plate limit switch at the dishwasher output, the micro switch/limit switch is activated and the machine stops. The machine will automatically continue with the wash process when the dishes, trays, kitchenware or baskets are removed from the output zone and the limit switch is released.



19. EMERGENCY STOP

The appliance has two easily-identifiable red and yellow Emergency Stop buttons **ES**. **ONLY USE IN THE EVENT OF EMERGENCY.**

EMERGENCY BUTTON OFF



EMERGENCY BUTTON ON



RESET

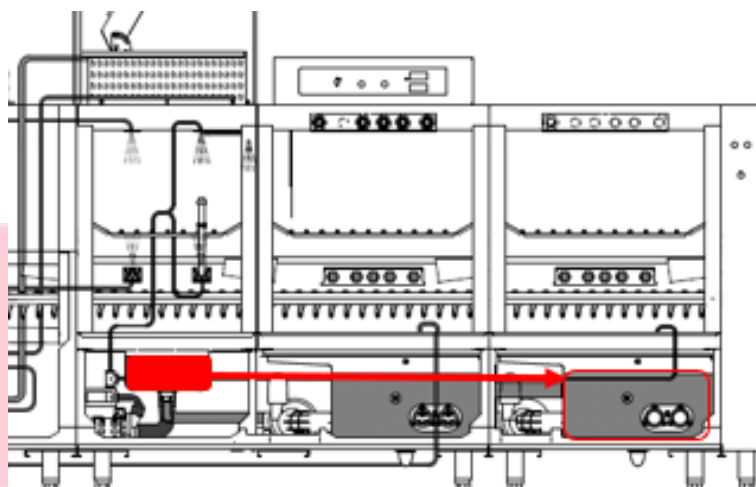
Press the Emergency Stop button to switch off the machine which will stop operating completely. When the emergency button is pressed, the green circle around the button (visible when the button is deactivated) disappears.

To reset the emergency button, turn it in either direction until it is no longer pressed in.

Any basket that is in the appliance when the machine is stopped should be reinserted as the wash has been interrupted and not completed correctly.

20. MULTITANK

In addition to the multi-tank system, the pre-rinse tank and the pre-wash tank are also connected. Part of the clean water from the pre-rinse tank is used to renew the dirty water from the pre-wash tank.



21. ENERGY RECOVERY SYSTEM

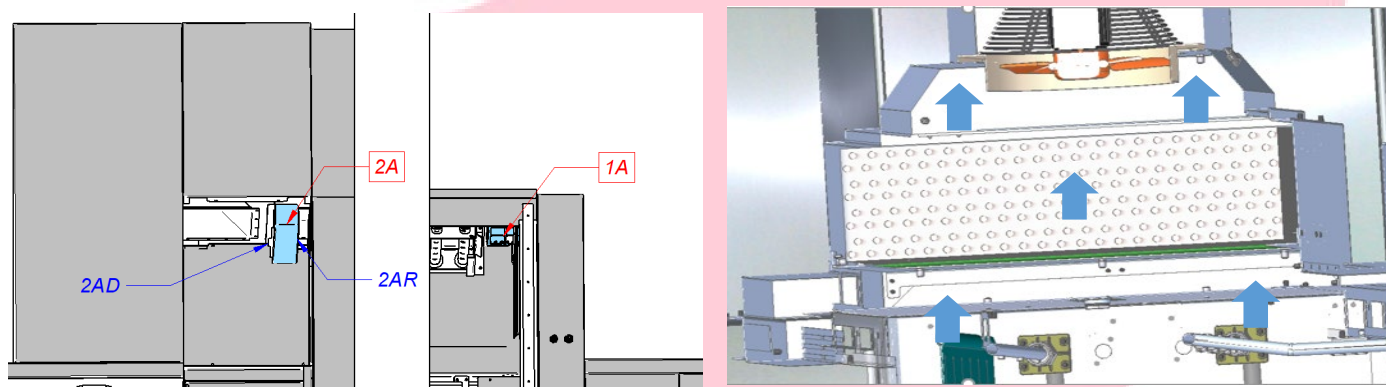
This dishwasher has a complex energy recovery and drying system. To obtain the dishwasher performance required, the different vents in the systems shown must be adjusted.

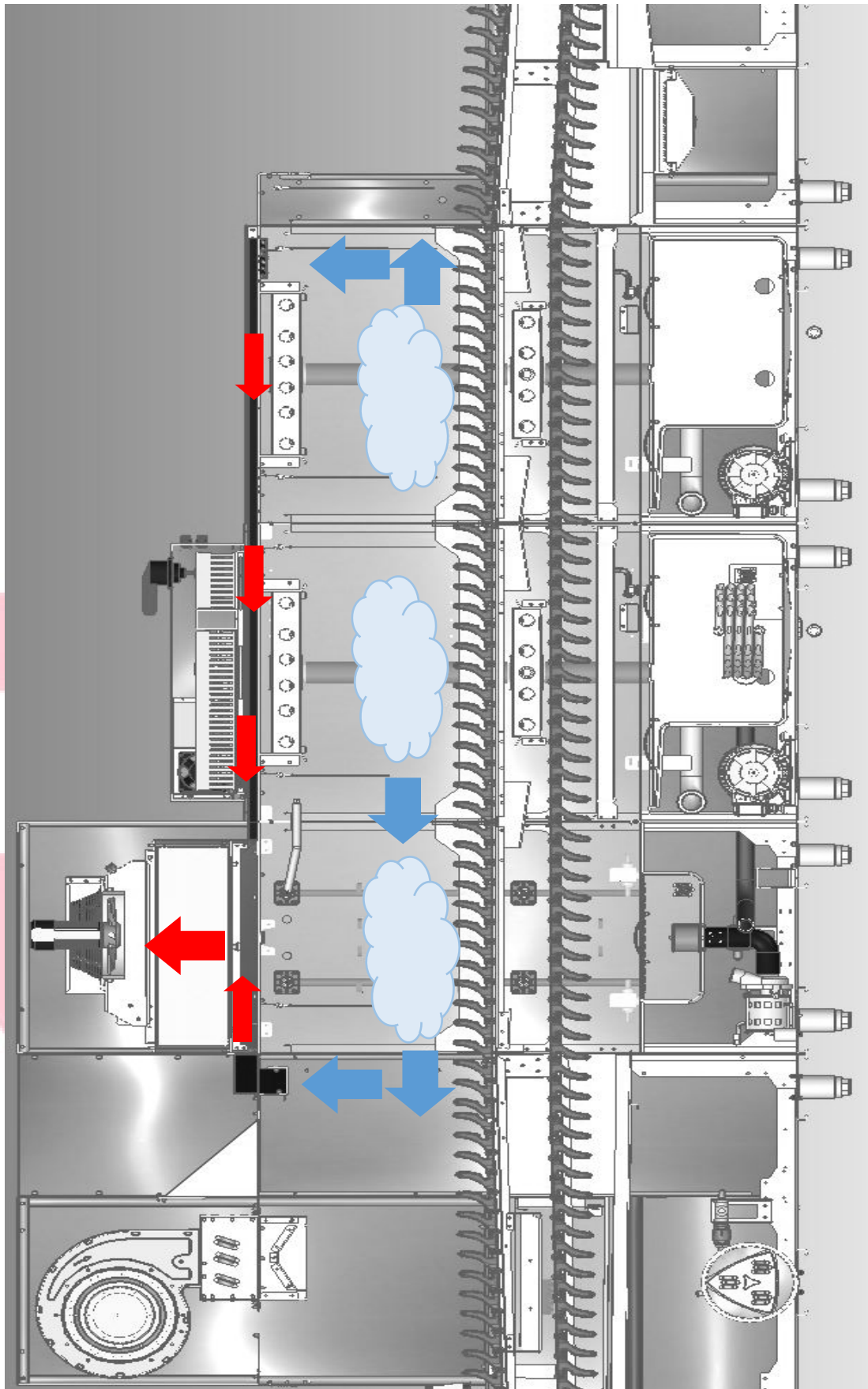
21.1. ENERGY RECOVERY SYSTEM

The dishwasher has a dual suction energy recovery system with a flow of 900 m³/h and 0.09 kW.

The first steam suction **1A** takes place at the machine entrance, removing a large part of the steam emitted from the dishwasher at the entrance. This entrance has an adjustable vent for varying the amount of steam suctioned according to the machine environment.

The second suction **2^a** takes place after the dishwasher rinse module (the area with most steam). This suction can be controlled in order to adjust the dishwasher energy recovery performance. Control **2AR** in the neutral zone is used to control the quantity of steam generated in the rinse zone. Control **2AD** is used to control the air flow which helps the drying system to the energy recovery system.





22. RECIRCULATED AIR DRYING SYSTEM

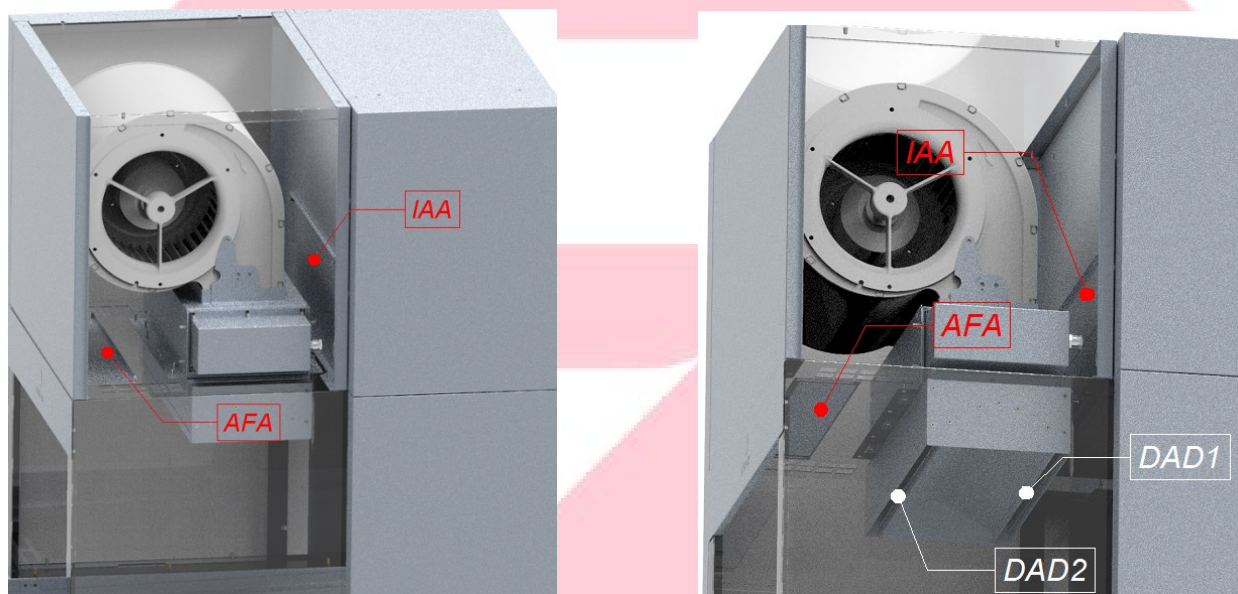
The dishwasher has a high-power recirculated air drying system. For optimum drying results, adjust the recirculated air vents to control the amount of recirculated hot air and the amount of clean dry air taken from the exterior. It also allows the air output from the output manifold to be controlled in order to increase the air pressure or temperature. The air control **IAA** controls the amount of hot air from the machine interior. If this vent is opened completely, there may be excess moisture in the drying system. If the **IAA** control is completely closed, the drying temperature will fall.

The air control **AFA**, controls the amount of clean air entering the drying system. Too much clean air will lower the drying temperatures.

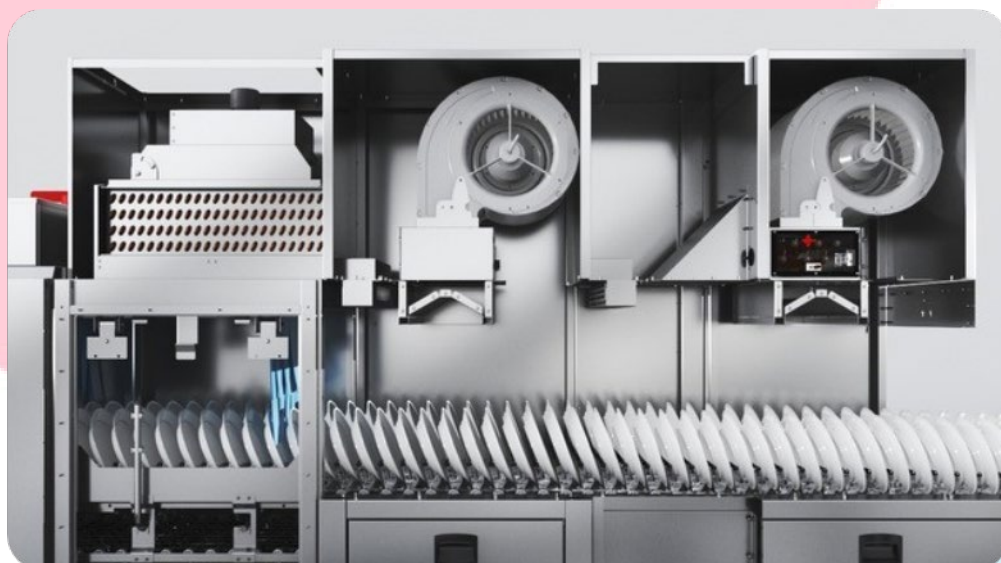
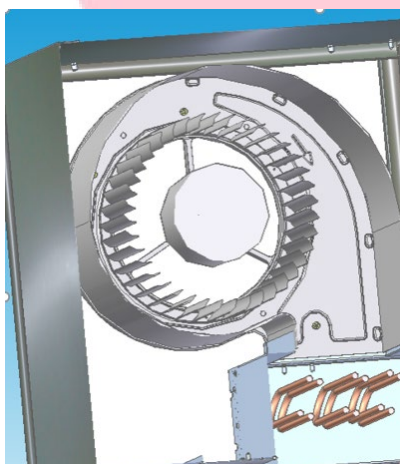
The dryer air impellers **DAD1** and **DAD2** are used to increase the air speed, direct the air output and increase the drying temperature.

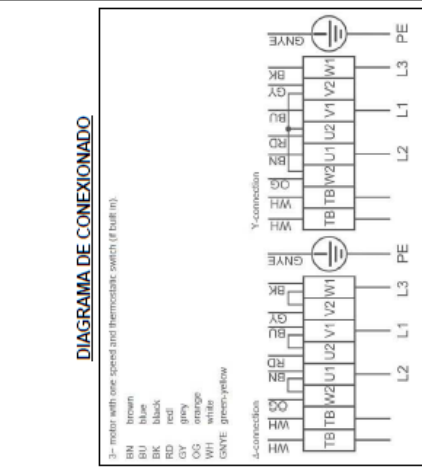
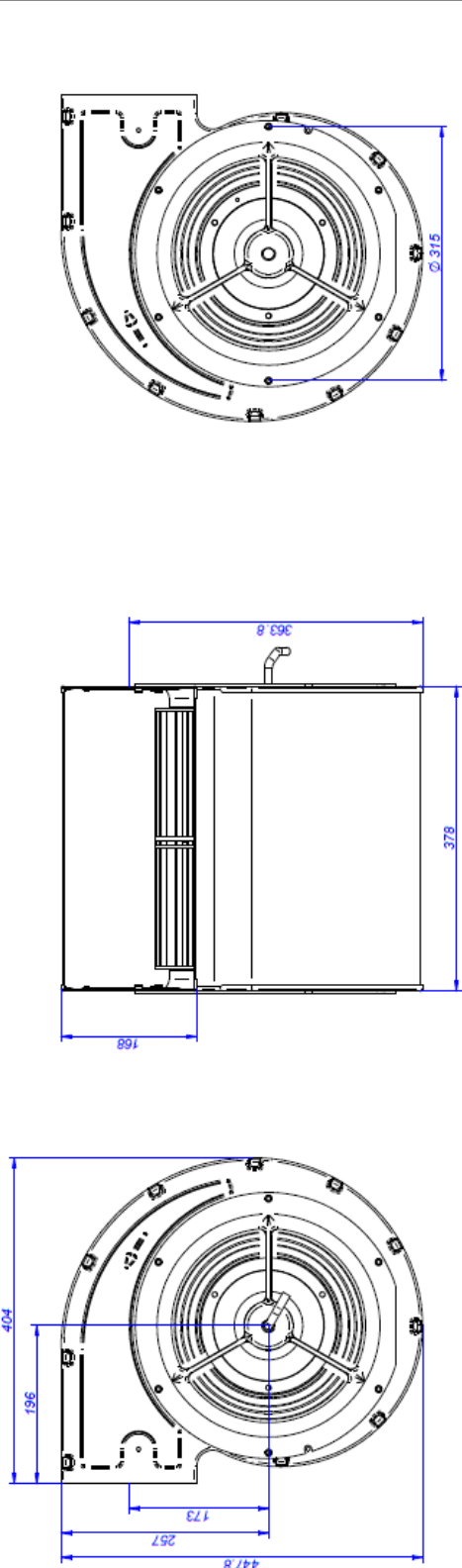


Incorrect adjustment of the impellers may significantly reduce the wash and rinse temperatures or expel the steam towards the entrance.



Dryer Fan Motor 1950 W providing 5500 m³/h + 7.5 kW heating power





Technical data

Article number: 131532
 Type: RD2BS-4DW-JR.AL
 Designation: Double inlet centrifugal fan with spiral housing.
 Rated values: 3-230/400V ±10%, D.Y 50Hz P=1,95kW
 5,00/3,40A, 1200/min COSY 0,82 PsF min.OPA 50°C
 3-230/400V ±10%, D.Y 60Hz P= 2,10kW
 5,70/3,30A ±10%, 1330/min COSY 0,87 PsF min.380PA 40°C
 3-205/400V±10%, D.Y 60Hz P= 2,20kW
 4,70/3,30A ±10% 1420/min COSY 0,84 PsF min.410PA 40°C

Supply cable axial: 9x 0,50 mm² x 110 cm from shaft-end

Electrical connection: -40

Min. operating temperature [°C]: IP54Z

Type of protection: 155

Thermal class: Connection diagram: 1360-106XB

Connection diagram: 1x fitted

Rating plate: thermal contact

Motor protection: zzz_xx

Control: open

Condensation holes open: Housing made of aluminium unpainted

Housing paint: Aluminium

Material impeller: RAL 7032 (pebble grey)

Colour motor: 2,5

Balancing quality: Without fixing bracket

Fixing bracket: With alloy ring, bearing sealing with V ring

Special bearing: Conceived for individual application in a industrial dishwashers.

Field of application: 21/30

Weight kg: Efficiency class: 39,4 %

ERP Data: Efficiency grade: $N_{actual} = 45,9 / N_{rated} = 44^*$
 *ErP 2015

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<td>QV</td> <td>M 0,15</td> <td>QV</td> <td>M 0,15</td> <td>QV</td> <td>M 0,15</td> </tr> <tr> <td>QW</td> <td>M 0,15</td> <td>QW</td> <td>M 0,15</td> <td>QW</td> <td>M 0,15</td> </tr> <tr> <td>QX</td> <td>M 0,15</td> <td>QX</td> <td>M 0,15</td> <td>QX</td> <td>M 0,15</td> </tr> <tr> <td>QY</td> <td>M 0,15</td> <td>QY</td> <td>M 0,15</td> <td>QY</td> <td>M 0,15</td> </tr> <tr> <td>QZ</td> <td>M 0,15</td> <td>QZ</td> <td>M 0,15</td> <td>QZ</td> <td>M 0,15</td> </tr> <tr> <td>RS</td> <td>M 0,15</td> <td>RS</td> <td>M 0,15</td> <td>RS</td> <td>M 0,15</td> </tr> <tr> <td>RT</td> <td>M 0,15</td> <td>RT</td> <td>M 0,15</td> <td>RT</td> <td>M 0,15</td> </tr> <tr> <td>RV</td> <td>M 0,15</td> <td>RV</td> <td>M 0,15</td> <td>RV</td> <td>M 0,15</td> </tr> <tr> <td>RW</td> <td>M 0,15</td> <td>RW</td> <td>M 0,15</td> <td>RW</td> <td>M 0,15</td> </tr> <tr> <td>RX</td> <td>M 0,15</td> <td>RX</td> <td>M 0,15</td> <td>RX</td> <td>M 0,15</td> </tr> <tr> <td>RY</td> <td>M 0,15</td> <td>RY</td> <td>M 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0,15	CY	M 0,15	CZ	M 0,15	CZ	M 0,15	CZ	M 0,15	DS	M 0,15	DS	M 0,15	DS	M 0,15	DT	M 0,15	DT	M 0,15	DT	M 0,15	DV	M 0,15	DV	M 0,15	DV	M 0,15	DW	M 0,15	DW	M 0,15	DW	M 0,15	DX	M 0,15	DX	M 0,15	DX	M 0,15	DY	M 0,15	DY	M 0,15	DY	M 0,15	DZ	M 0,15	DZ	M 0,15	DZ	M 0,15	ES	M 0,15	ES	M 0,15	ES	M 0,15	ET	M 0,15	ET	M 0,15	ET	M 0,15	EV	M 0,15	EV	M 0,15	EV	M 0,15	EW	M 0,15	EW	M 0,15	EW	M 0,15	EX	M 0,15	EX	M 0,15	EX	M 0,15	EY	M 0,15	EY	M 0,15	EY	M 0,15	EZ	M 0,15	EZ	M 0,15	EZ	M 0,15	FS	M 0,15	FS	M 0,15	FS	M 0,15	FT	M 0,15	FT	M 0,15	FT	M 0,15	FV	M 0,15	FV	M 0,15	FV	M 0,15	FW	M 0,15	FW	M 0,15	FW	M 0,15	FX	M 0,15	FX	M 0,15	FX	M 0,15	FY	M 0,15	FY	M 0,15	FY	M 0,15	FZ	M 0,15	FZ	M 0,15	FZ	M 0,15	GS	M 0,15	GS	M 0,15	GS	M 0,15	GT	M 0,15	GT	M 0,15	GT	M 0,15	GV	M 0,15	GV	M 0,15	GV	M 0,15	GW	M 0,15	GW	M 0,15	GW	M 0,15	GX	M 0,15	GX	M 0,15	GX	M 0,15	GY	M 0,15	GY	M 0,15	GY	M 0,15	GZ	M 0,15	GZ	M 0,15	GZ	M 0,15	HS	M 0,15	HS	M 0,15	HS	M 0,15	HT	M 0,15	HT	M 0,15	HT	M 0,15	HV	M 0,15	HV	M 0,15	HV	M 0,15	HW	M 0,15	HW	M 0,15	HW	M 0,15	HX	M 0,15	HX	M 0,15	HX	M 0,15	HY	M 0,15	HY	M 0,15	HY	M 0,15	HZ	M 0,15	HZ	M 0,15	HZ	M 0,15	IS	M 0,15	IS	M 0,15	IS	M 0,15	IT	M 0,15	IT	M 0,15	IT	M 0,15	IV	M 0,15	IV	M 0,15	IV	M 0,15	IW	M 0,15	IW	M 0,15	IW	M 0,15	IX	M 0,15	IX	M 0,15	IX	M 0,15	IY	M 0,15	IY	M 0,15	IY	M 0,15	IZ	M 0,15	IZ	M 0,15	IZ	M 0,15	JS	M 0,15	JS	M 0,15	JS	M 0,15	JT	M 0,15	JT	M 0,15	JT	M 0,15	JV	M 0,15	JV	M 0,15	JV	M 0,15	JW	M 0,15	JW	M 0,15	JW	M 0,15	JX	M 0,15	JX	M 0,15	JX	M 0,15	JY	M 0,15	JY	M 0,15	JY	M 0,15	JZ	M 0,15	JZ	M 0,15	JZ	M 0,15	KS	M 0,15	KS	M 0,15	KS	M 0,15	KT	M 0,15	KT	M 0,15	KT	M 0,15	KV	M 0,15	KV	M 0,15	KV	M 0,15	KW	M 0,15	KW	M 0,15	KW	M 0,15	KX	M 0,15	KX	M 0,15	KX	M 0,15	KY	M 0,15	KY	M 0,15	KY	M 0,15	KZ	M 0,15	KZ	M 0,15	KZ	M 0,15	LS	M 0,15	LS	M 0,15	LS	M 0,15	LT	M 0,15	LT	M 0,15	LT	M 0,15	LV	M 0,15	LV	M 0,15	LV	M 0,15	LW	M 0,15	LW	M 0,15	LW	M 0,15	LX	M 0,15	LX	M 0,15	LX	M 0,15	LY	M 0,15	LY	M 0,15	LY	M 0,15	LZ	M 0,15	LZ	M 0,15	LZ	M 0,15	MS	M 0,15	MS	M 0,15	MS	M 0,15	MT	M 0,15	MT	M 0,15	MT	M 0,15	MV	M 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23. SAFETY LOCKING SYSTEM: ADJUSTMENT

The machine is fitted with a safety locking system, which stops the appliance and notifies the user with a light and acoustic signal if a blockage or impediment is detected in the feed system. The **BLOCK** button flashes at the same time as the acoustic signal is heard..

Proceed as follows:

- If the **BLOCK** button is pressed, the traction system reverses the conveyor slightly, with the aim of releasing any blockage or impediment that may have occurred.
- Open the door, find the obstruction and release the blockage or remove the object causing the obstruction.
- Close the door and press **START/STOP** to resume the wash process.

This system must be adjusted according to the required traction force of the dishwasher. The machine is supplied set to the standard traction force necessary for machine.



This adjustment must only be performed by an authorised technical service. Failure to comply with this requirement may endanger the user of the machine and result in the incorrect operation of the dishwasher.

To adjust the system first disconnect the water using the shut-off valve, and then the electricity, using the magneto-thermal switch/ setting the mains switch **IG** to **OFF**.

The system is adjusted by tightening or loosening a spring mounted on the dishwasher output module where the conveyor motor is located. Locate the module containing the conveyor motor and remove the motor cover panel **E** located at the rear of the output.

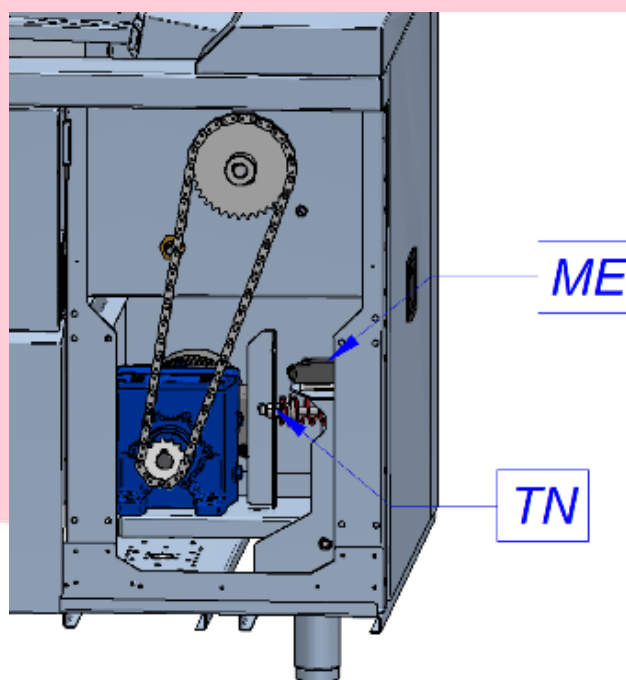
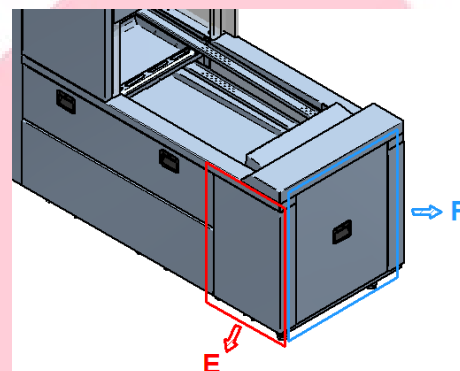
To remove the first panel, first remove the side panel **F**. To do so, undo the two bolts fastening the lower part of the panel.

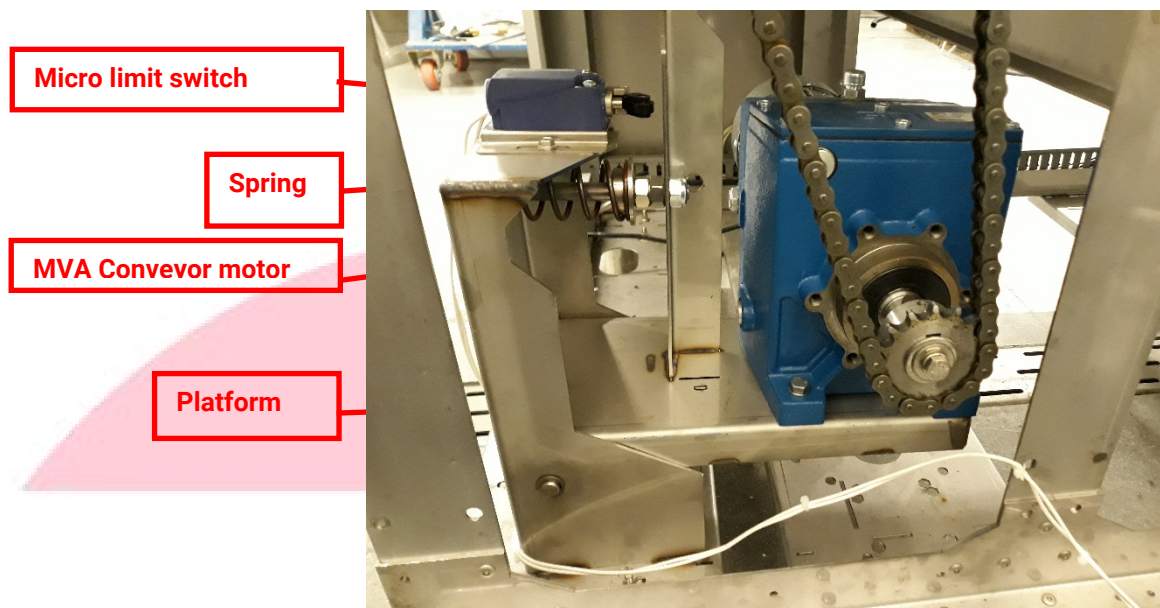
To adjust the traction force, move the nut **TN** and with the dishwasher loaded, test until the required adjustment is obtained.

A more accurate adjustment can also be obtained by moving the micro limit switch **ME** slightly.

Pull the belt gently to check that the traction safety system operates correctly. Check that the reversal system operates correctly.

Once the traction force of the belt has been adjusted, replace panels **E** and **F**.





23.1. ADJUSTMENT OF CONVEYOR BELT TENSION

After installing the dishwasher, it is necessary to check the tension of the conveyor belt to ensure that the traction system operates correctly. The traction system is located at the machine entrance. The procedure for ensuring the tension is correct is as follows:

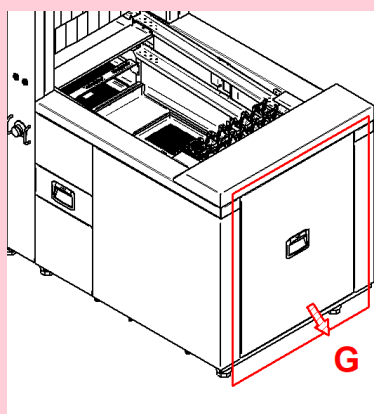
Remove the side panel from the machine entrance **G**. To remove the panel, release the two bolts securing it on the lower part of the panel.

Remove the water cover panel **H**, releasing the three bolts fastening it.

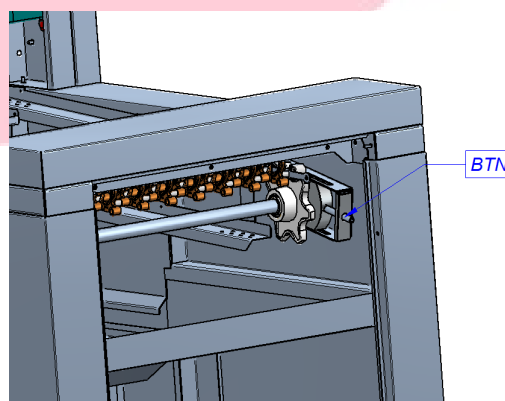
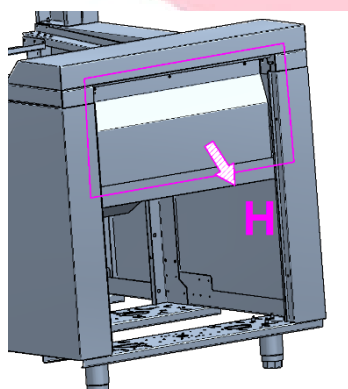
Undo the tensor lock nuts **BTN** and tighten or loosen the conveyor belt as required.

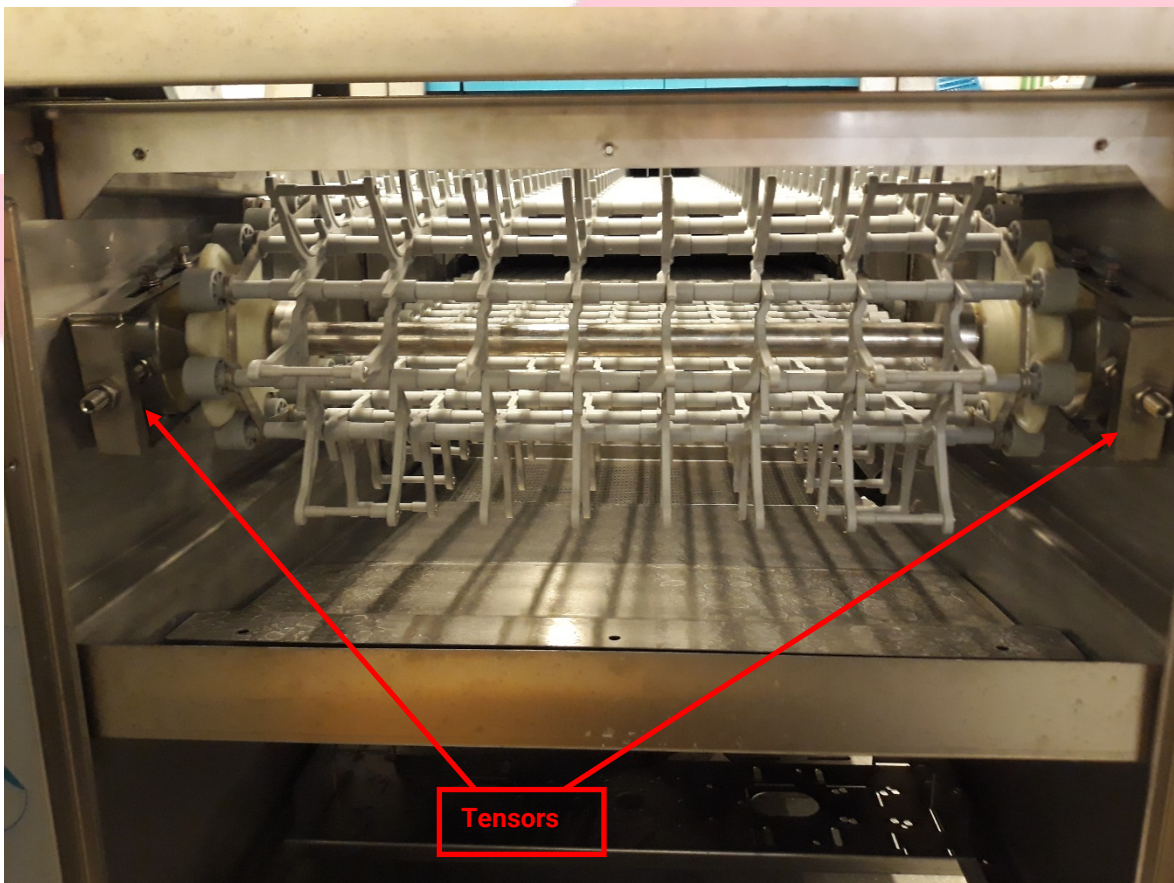
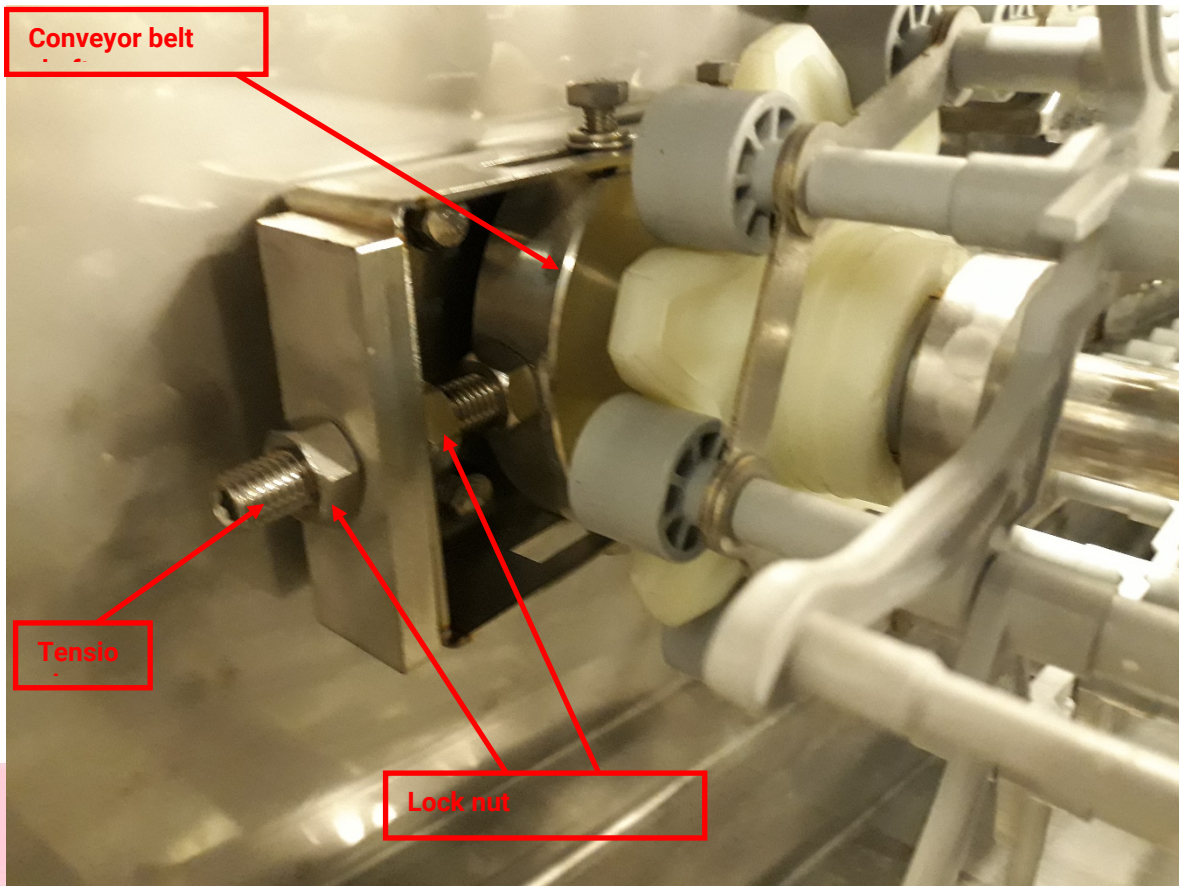


The correct tension prevents the dishes from falling from the conveyor belt prongs, allows the belt to move smoothly and prevents the traction system from being forced and creating a system overload.

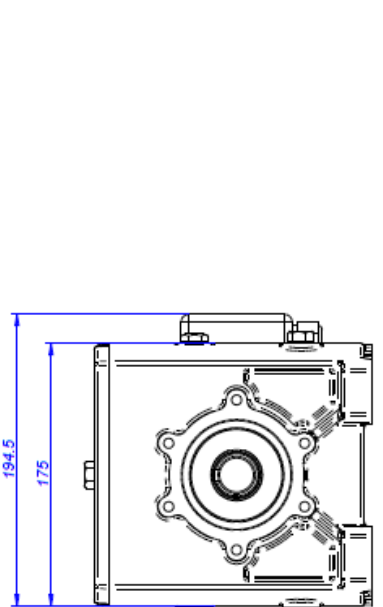
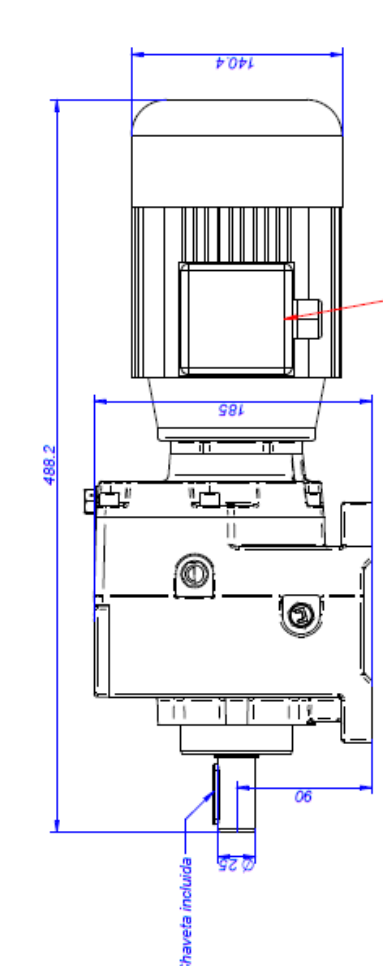


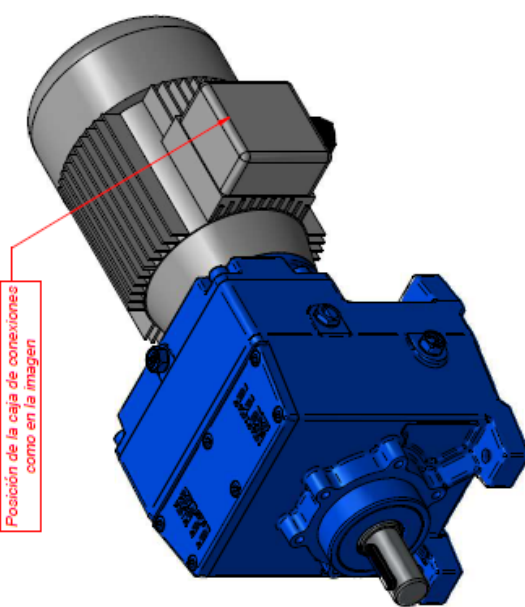
After adjusting the system, replace and tighten the lock nuts **BTN**. Then fasten the water cover panel **H** and the side panel **G**.





24. TRACTION SYSTEM



CARACTERÍSTICAS

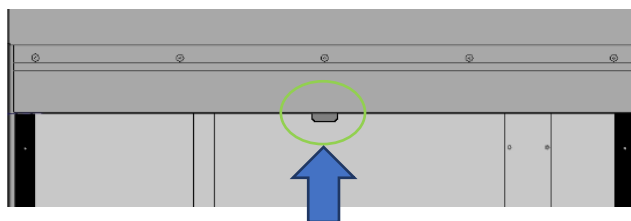
Reductor:
 Ref: MNHL25_3_PAM_71_B14
 Reducción: 117.73
 Eje de salida: Ø25 mm
 Chaveta incluida

Motor:
 Ref: H71 TN B14
 Tensión: 380-420V / 440-480V - 220-240V / 250-280V
 Corriente: 1.4 / 0.82A
 Frecuencia: 50 / 60Hz
 Velocidad de salida: 1390 / 1660 rpm
 IP 54
 Aislamiento clase F
 Cosφ : 0.67
 Potencia: 0.25 kW - 0.3kW
 Corriente de fuga < 0.75mA
 Rigidez dielectrica > 1500V
 Sin térmico de motor

-		Motorreductor 230V AC 3 50/60Hz 0.25kW		12227959		QTY		MATERIAL		TREATMENT	
Nº		TÍTULO		LAVAVAJ. CINTA		Very Coarse		FAGOR		A3	
GENERAL TOLERANCES:		ISO 2768-1		LAVAVAJ. CINTA		Very Coarse		PABDE INDUSTRIAL		DESIGN CENTER: ONA	
HORIZONTAL POSITIONING		ISO 2768-2		LAVAVAJ. CINTA		Very Coarse		DESIGNED BY		DOC STATUS: DI	
Fines		Fines		LAVAVAJ. CINTA		Very Coarse		VALIDATED BY		SHEET: 1 / 1	
H1		H1		LAVAVAJ. CINTA		Very Coarse		B. OTIOLA		SCALE: 1:3.03	
H2		H2		LAVAVAJ. CINTA		Very Coarse		R. VILLAR		ISSUE DATE:	
H3		H3		LAVAVAJ. CINTA		Very Coarse		PROPOSED BY:		R. VILLAR	
H4		H4		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H5		H5		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H6		H6		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H7		H7		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H8		H8		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H9		H9		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H10		H10		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H11		H11		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H12		H12		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H13		H13		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H14		H14		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H15		H15		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H16		H16		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H17		H17		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H18		H18		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H19		H19		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	
H20		H20		LAVAVAJ. CINTA		Very Coarse		DATE		08.01.2019	

25. DOOR LOCKING SYSTEM

The doors have an automatic locking system in the door fully open position, to make cleaning and access to the inside of the appliance easier by preventing the door from closing. To lock the door in this position, raise it to the maximum opening height.



To unlock and close the door, gently push the locking part, located behind the door and in the centre, towards the interior of the appliance.

26. TEMPERATURE PROBE

26.1. TEMPERATURE SONDE 1,5 M



Sonda NTC, 1,5mt
Codigo: EVTPN615F200

26.2. TEMPERATURE SONDE 3 M



CARACTERÍSTICAS:

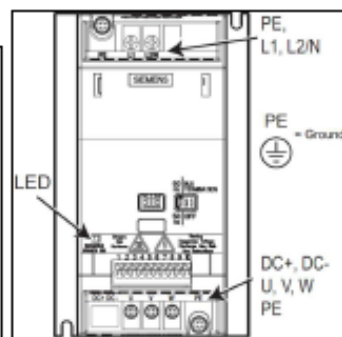
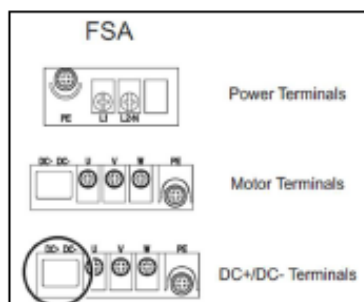
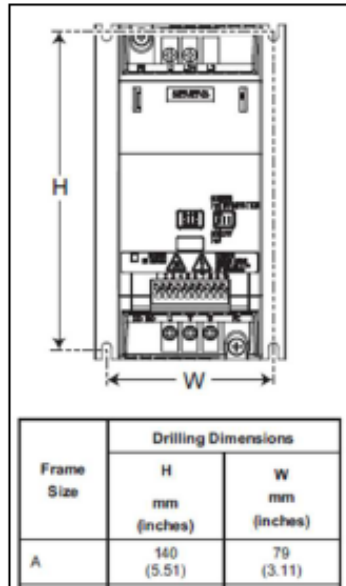
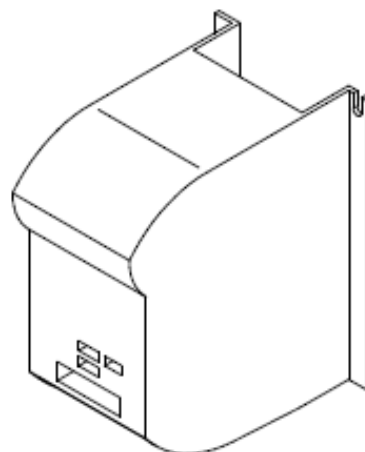
Sonda NTC EVTPN630F200
Longitud: 3 metros

27. FREQUENCY VARIATOR

The frequency variator controls the conveyor motor. A second frequency variator controls the rinse pump, which adjusts the flow supplied by the rinse pump to the transport speed of the machine.

VARIADOR FRECUENCIA Siemens 230V, 0,37 Kw, 6SL3211-0AB13-7UA0

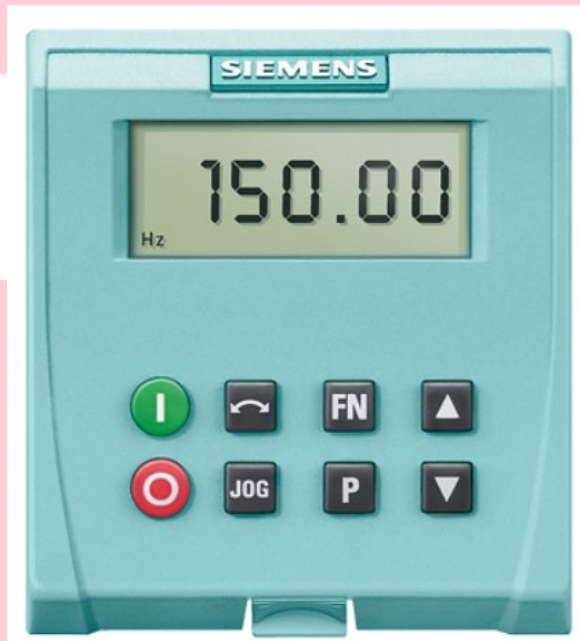
Variador Siemens		Aj. Fabr
Parámetro		
P0100	0	Europa 50Hz
P0304	230	Vn (Tensión nominal)
P0305	1,8	In (Consumo nominal)
P0307	0,37	Pn (Potencia nominal)
P0310	50	Fn (Frecuencia nominal)
P0311	1400	Rpm (velocidad nominal)
P0700	2	Control Terminal
P1000	2	Control Consigna ADC
P1080	25	fmin (Frecuencia minima)
P1082	50	fmax (Frecuencia maxima)
P1120	5"	T ac (tiempo aceleración)
P1121	5"	T dec (tiempo frenada)
P3900	1	Grabacion de datos
P0003	3	Nivel Experto
P0005	27	Visualizar Corriente Salida
P0611	18000	I2t
P0640	150%	Imax (consume maximo)
P1210	6	Reset
P1300	2	Modo parabola, Ventilador
P1800	18	F.Base Khz
P2000	55	F ref (frecuencia ref. Consigna)



Fixing bolts tightening torques:
 Drehmomente für Befestigungsschrauben: FSA = [M4] - 2.5 Nm (22.12 lbf.in)
 Couples de rotation pour vis de fixation: FSB = [M4] - 2.5 Nm (22.12 lbf.in)
 Par para tornillos de sujeción: FSC = [M5] - 4.0 Nm (35.40 lbf.in)
 Coppie torcenti per viti di fissaggio:

Terminal tightening torques:
 Anzugsmomente für Schraubklemmenanschlüsse: FSA = 0.96 Nm (8.50 lbf.in)
 Couple de serrage des bornes: FSB = 1.50 Nm (13.30 lbf.in)
 Pares de apriete para los terminales de tornillo: FSC = 2.25 Nm (19.91 lbf.in)
 Coppie di serraggio per connessioni con morsetti a vite:

-	VARIADOR FRECUENCIA SIE 0,37KW	-	12024329		
Nº	TITLE	QTY	CODE	MATERIAL	TREATMENT
GENERAL TOLERANCES: ISO 2768-1 Very Coarse				SHEET FORMAT: A4	
DESIGN CENTER: ONA					
MAT STATUS:					
DOC STATUS: LI					
HORNOS		DESIGNED BY: M Mallo	VALIDATED BY: A.G.	DATE: 29.06.2017	SHEET: 1 / 1
ISO 2768-2		PROPOSED BY: -		ISSUE DATE:	
12024329					

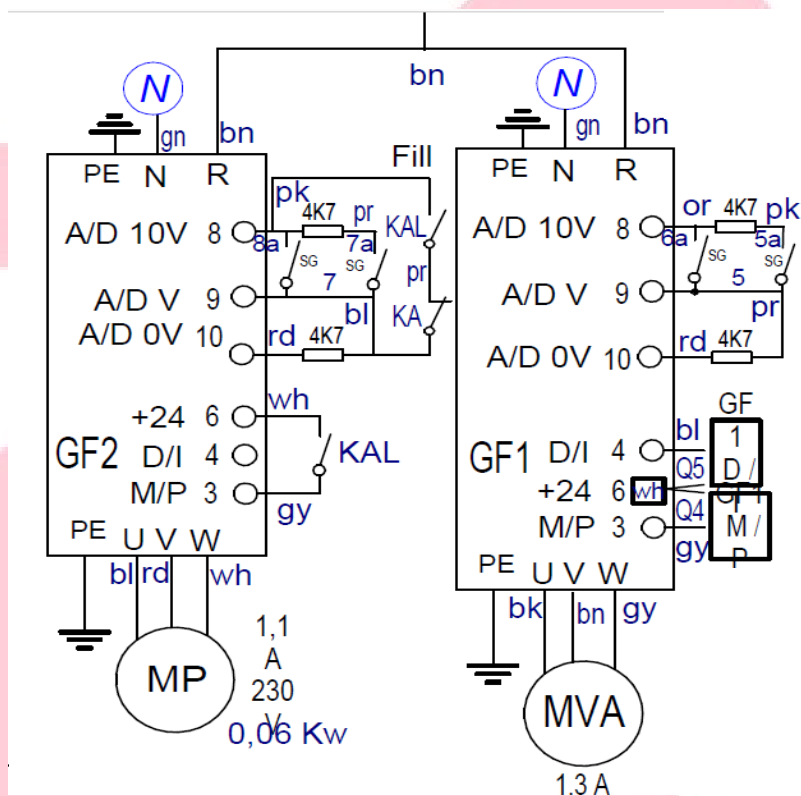


Programming keypad code
12031666

To check the frequency variator of the conveyor motor, measure the following voltages:

MP (Rinse Pump)

- Voltage Input
 - o $R \div N \approx 230 \text{ V CA}$
- Output to motor
 - o $U \div V \approx 215 \text{ V CA}$
 - o $U \div W \approx 215 \text{ V CA}$
 - o $V \div W \approx 215 \text{ V CA}$
- Speed setting
 - o C1 speed I
 - Contacts 8, 9 and 10 $\approx 0 \text{ V DC}$
 - o C2 speed II
 - Contacts 9 and 10 $\approx 5 \text{ V DC}$
 - o C3 Low speed
 - Contacts 8 and 10 $\approx 10 \text{ V DC}$
- Run/Stop setting
 - o Contacts 3 and 6 $\approx 24 \text{ V DC}$



MVA (conveyor motor)

- Voltage Input
 - o $R \div N \approx 230 \text{ V CA}$
- Output to motor
 - o $U \div V \approx 215 \text{ V CA}$
 - o $U \div W \approx 215 \text{ V CA}$
 - o $V \div W \approx 215 \text{ V CA}$
- Speed setting
 - o C1 speed I
 - o Contacts 8, 9 and 10 $\approx 0 \text{ V DC}$
 - o C2 speed II
 - o Contacts 9 and 10 $\approx 5 \text{ V DC}$
 - o C3 Low speed
 - o Contacts 8 and 10 $\approx 10 \text{ V DC}$
- Run/Stop setting
 - o Contacts 3 and 6 $\approx 24 \text{ V DC}$
- Left/right direction of rotation setting
 - o Contacts 4 and 6 $\approx 24 \text{ V DC}$

27.1. FREQUENCY VARIATOR PARAMETERS

Parameter	Definition	Value					
		Conveyor motor				Rinse pump	
		W	PW	P2W	P3W	W+PW	P2W+P3W
P0010	Start programming	1	1	1	1	1	1
P0100	Value in kW 50 Hz	0	0	0	0	0	0
P0304	Vn (V)	230	230	230	230	230	230
P0305	IN (A)	1.8	1.8	1.8	1.8	1.8	1.8
P0307	PN (kW)	0.27	0.27	0.27	0.27	0.27	0.27
P0310	Fn (Hz)	50	50	50	50	50	50
P0311	rpm (Nom)	1395	1395	1395	1395	1395	1395
P0700	Terminal	2	2	2	2	2	2
P1000	ADC setting	2	2	2	2	2	2
P1080	F. Min. (Hz)	22	29	29	37	55	61
P1082	F. Max. (Hz)	43	53	57	74	66	76
P1120	Time ON (s)	5	5	5	5	5	5
P1121	Time OFF (s)	0	0	0	0	0	0
P3900	End programming and recording data	1	1	1	1	1	1
P0003	Expert level	3	3	3	3	3	3
P0005	Output current display	27	27	27	27	27	27
P0611	Overload activation time (seconds)	1216	1216	1216	1216	1216	1216
P0640	Current overload (%)	150	150	150	150	150	150
P1210	Automatic restart	6	6	6	6	6	6
P1300	Lineal mode (V/f)	0	0	0	0	0	0
P1800	Base f. Khz	16	16	16	16	16	16
P2000	Setting reference f. Hz	72	90	96	120	60.5	68.5
Display (Med. Freq. Hz)W		32.5	43	43	55.5	125/133	150/140

28. TEMPERATURE CONTROL



The thermostat controls two temperatures at the same time.
 The rinse thermostat controls the boiler temperature in the Rinse Temperature and Standby Temperature ranges.
 The Tank thermostat controls the Main Wash Tub Temperature and the Pre-rinse Temperature.

28.1. THERMOSTAT PROGRAMMING PARAMETERS

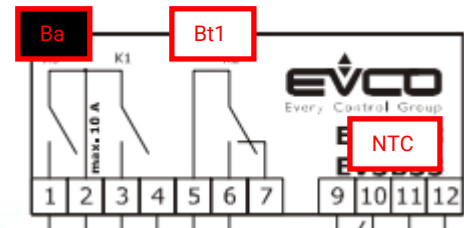
To access the thermostat programming, press **SET** for 4 sec. until accessing parameter **PA**

Parameter	Value	
	W/PW	P2W/P3W
PA	17	
SP	65	85
P1	0	
P2	0	
P4	2	
P8	0	
r0	2	
r1	50	70
r2	65	85
r5	1	
c2	0	
A1	0	
A4	20	
A6	0	
F0	3	
F1	68	70
F3	0	
HE3	0	
POF	0 - off button deactivated	
	1 - rinse activated	
PAS	17	
Press "SET" for 4 s to save changes		

28.2. THERMOSTAT CONNECTION

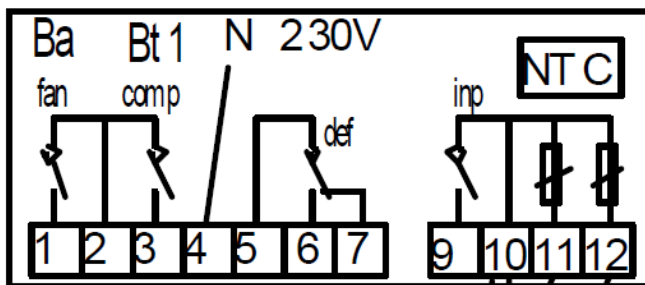
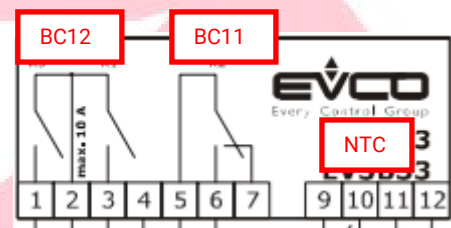
Boiler Thermostat 85 °C and Standby boiler 70 °C

- Contact 1 – Output to **KBA** (Pre-rinse Thermostat Auxiliary Relay)
- Contact 2 – Phase **R**
- Contact 3 – Output to **KBT1** (Tank Thermostat Auxiliary Relay)
- Contact 4 – Neutral **N**
- Contact 10 – Common temperature probe
- Contact 11 – Temperature probe
- Contact 12 – Temperature probe



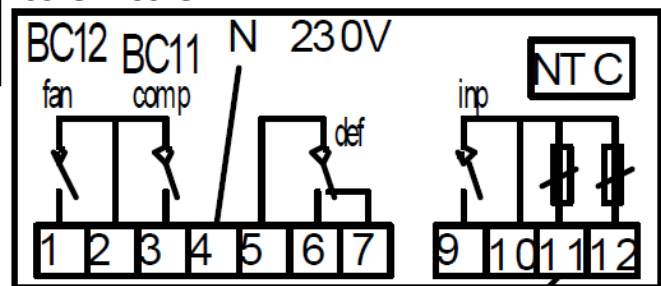
Wash Thermostat 65 °C and Pre-rinse thermostat 70 °C

- Contact 1 – Output to **KBC12** (Boiler Thermostat Auxiliary Relay)
- Contact 2 – Phase **R**
- Contact 3 – Output to **KBC11** (Boiler Safety Thermostat)
- Contact 4 – Neutral **N**
- Contact 10 – Common temperature probe
- Contact 11 – Temperature probe
- Contact 12 – Temperature probe



SET Lavado 65°C
 SET Ac lavado 85°C

60°C 85°C



na r b ve

am/ve

12165 965

8 9

vi r rs ve

am/ve

6 7

28.3. THERMOSTAT MANUAL

EVCO S.A. | FORNIDOR/2023 | INQ. 04.003.0033 | Pág. 1 de 21 | PT 2014

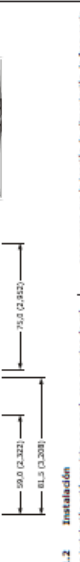
EVCO EV3B23/EV3B33

Controladores básicos para pizzerías de bebidas, amarríos, mesas refrigeradas y mostradores para pizzerías de baja temperatura, con estrategias para el ahorro energético

IMPORTANTE
Leer con atención este documento antes de la instalación y respetar todas las advertencias, conservar este documento con el dispositivo para futuras consultas. No utilizar el dispositivo como dispositivo de seguridad. El dispositivo debe alimentarse respetando las características locales en relación con la instalación de los aparatos eléctricos y electrónicos.

3.1. DIMENSIONES E INSTALACIÓN

Las medidas se expresan en mm (in).
59,0 (2,322) es la profundidad con bornas fijas de tornillo; 83,0 (3,267) es la profundidad con bornas extraíbles de tornillo.



3.2. Instalación

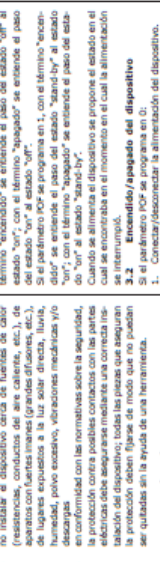
La instalación está prevista en panel, con soportes de al-
to.
asegure que la tensión de alimentación, la frecuencia eléctrica y la potencia eléctrica se encuentran dentro de los límites indicados; consultar el capítulo 8.
colocar el dispositivo antes de efec-
tuar cualquier tipo de conexión a los cables posibles de aquéllos de señal.
para las reparaciones y para información relativa a dis-
positivo contactar la red de ventas EVCO.

3.3. Advertencias para la instalación

El dispositivo debe quedar protegido entre 0,8 y 2,0 mm (0,031 y 0,078 in).
asegure que las condiciones de trabajo del dispositi-
vo (temperatura de uso, humedad de uso, etc.) se
encuentran dentro de los límites indicados; consultar el capítulo 8.
no instalar el dispositivo cerca de fuentes de calor (resistencia, conductos del cable caliente, etc.), de aparatos con fuentes térmicas (grandes motores, etc.), de dispositivos que generen campos magnéticos, de descargas, polvo excesivo, vibraciones mecánicas y/o de interferencias.
la conexión con las normativas sobre la seguridad, la protección contra posibles contactos con las partes móviles del dispositivo, todas las tareas que impliquen la protección deben fijarse de modo que no puedan ser quitadas sin la ayuda de una herramienta.

2. CONEXIÓN ELÉCTRICA

2.1. Conexión eléctrica



2.2. Advertencias para la conexión eléctrica

no usar las bornas de la conexión eléctrica
utilizando
aerostalladores eléctricos o neumáticos.
no utilizar el dispositivo para calentar cables, la humedad puede condensarse, dentro de un
período de unos minutos, una hora antes de conectarlo a la alimen-
tación.

1A. Alarma entrada multifuncional o alarma presostato

Soluciones:
- comprobar las causas que han generado la ac-
ción de la entrada, véase los parámetros
principales consecuentes;
- el efecto establecido con el parámetro I0

COH. Alarma condensador sobrecalentado

Soluciones:
- comprobar la temperatura del condensador;
- véase el parámetro O5
- el dispositivo seguirá funcionando regularmente
después de un tiempo de funcionamiento regular-
mente

CS6. Alarma compresor sobrecalentado

Soluciones:
- comprobar la temperatura del condensador;
- véase el parámetro C7
- apagar y volver a encender el dispositivo: si al
volver a encender el dispositivo la temperatura
sigue aumentando, el dispositivo C7, será necesario
desconectar la alimentación y limpiar el conde-
nsador.
- véase el parámetro C7, será necesario
desconectar la alimentación y limpiar el conde-
nsador.
- véase el parámetro C7, será necesario
desconectar la alimentación y limpiar el conde-
nsador.

**6FD. Alarma descongelación concluida por duración máxi-
ma**

Soluciones:
- comprobar el nivel estado de la señal de
descongelación, consultar los parámetros G2, G3 y
G11.
- tocar un botón para restablecer la visualización
normal.
- el dispositivo seguirá funcionando regularmente
después de un tiempo de funcionamiento regular-
mente

7. Errores

7.1. Errores

7.1.1. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.2. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.3. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.4. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.5. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.6. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.7. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.8. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

7.1.9. Errores

Soluciones:
- comprobar que la sonda sea del tipo ITC NTC;
- controlar el parámetro P0
- controlar la conexión dispositivo-sonda
- comprobar la conexión de la sonda al termostato
- las acciones consecuentes:
- la actividad del compresor dependerá de los
parámetros C4 y C5
- la alarma de descongelación no será activada
- el compresor no se activará

4. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "149".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "149".

5. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "150".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "150".

6. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "151".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "151".

7. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "152".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "152".

8. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "153".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "153".

9. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "154".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "154".

10. Tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "155".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "155".

11. Desde el punto 4, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "156".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "156".

12. Desde el punto 5, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "157".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "157".

13. Desde el punto 6, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "158".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "158".

14. Desde el punto 7, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "159".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "159".

15. Desde el punto 8, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "160".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "160".

16. Desde el punto 9, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "161".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "161".

17. Desde el punto 10, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "162".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "162".

18. Desde el punto 11, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "163".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "163".

19. Desde el punto 12, tocar el botón [A/B] [o el botón] [V] dentro de 15 s para programar "164".

Si se presiona el botón [A/B] [o el botón] [V] durante 15 s, la pantalla mostrará "164".

5.2. Indicaciones

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.3. Alarmas

Alarma entrada micro puerta
- comprobar la temperatura ambiente; véase el parámetro A1
- comprobar la temperatura ambiente; véase el parámetro A1
- comprobar la temperatura ambiente; véase el parámetro A1
- comprobar la temperatura ambiente; véase el parámetro A1

5.4. Datos técnicos

Objetivo del dispositivo de mando: dispositivo de mando
- el efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.5. Señalizaciones e indicaciones

Señalización de funcionamiento normal
- el efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.6. Bloqueo/desbloqueo del teclado

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.7. Programación del sensor de trabajo

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.8. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.9. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.10. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.11. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.12. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.13. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.14. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.15. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.16. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

5.17. Programación de los parámetros de configuración

El efecto establecido con el parámetro I0
- el efecto establecido con el parámetro I0

29. PROGRAMMED RELAY

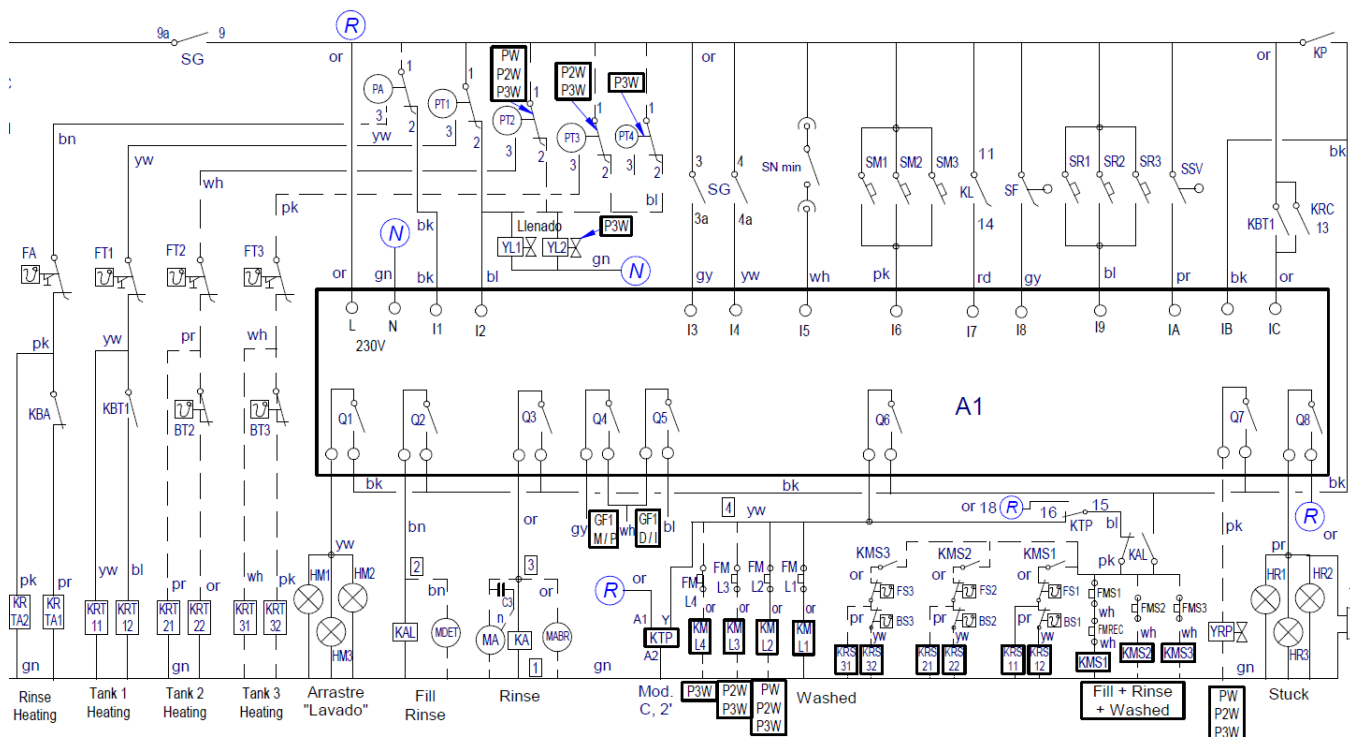
Tensión de entrada: 100...240VAC, 50 / 60 hz
 N° de entradas: 12 entradas digitales
 N° de salidas: 8 salidas digitales
 Referencia: SR2 E201FU
 Salidas rele 8A
 Consumo Potencia 11 VA,
 Homologación UL
 Vida eléctrica rele 500.000 ciclos a 0,9A
 Endurance mecánica 10.000.000 ciclos
 Temperatura max trabajo de 55°C
 Par de apriete 0.5 N.m
 Tensión de aislamiento 1760 V
 Número de líneas de esquema de control 120 con Ladder programac

Relé 230V AC 50/60Hz 8A 8vía PROGRAMABLE		12159493		MATERIAL		TREATMENT	
Nº	QTY	CODE	12159493	FAGOR		A3	
TITLE		ARRASTRE		FAGOR INDUSTRIAL		DESIGN CENTER: ONA	
ISO 2768-1		ISO 2768-2		DESIGNED BY: R.VILLAR		MAT STATUS: DI	
GENERAL TOLERANCES		VERY COARSE		VALIDATED BY: R.VILLAR		DOC STATUS: 1 / 1	
ISO 2768-1		ISO 2768-2		DATE: 13.02.2017		SCALE: 1:1	
MINI TO MOUNTING		ARRASTRE		Error: Sin referencia			
PROPOSED BY: R.VILLAR		ISSUE DATE:					

CONVEYOR BELT DISH WASHER

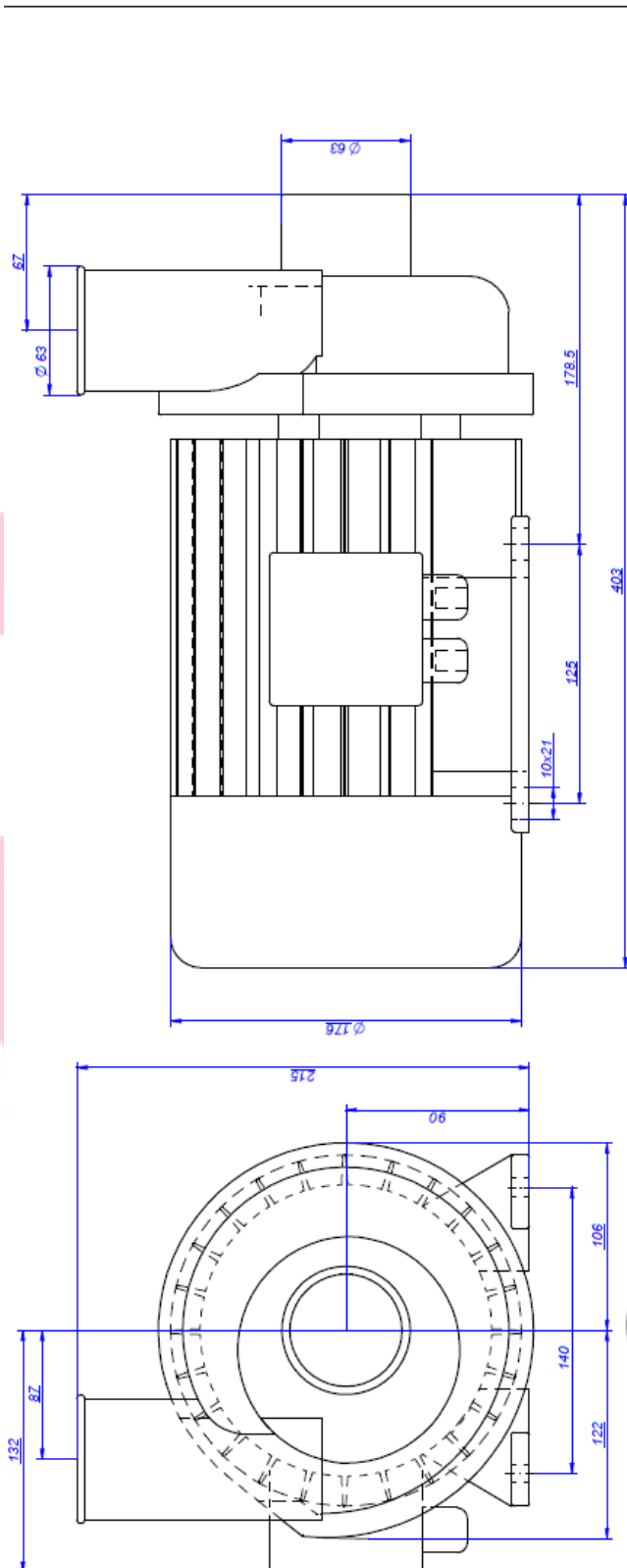
The programmed relay controls the machine operation and coordinates the different signals. Each model of machine has their own particular programmed relay. This relay is only supplied programmed by Fagor Industrial.

Model of machine	Programmed relay code
FCO-W4	12242933
FCO-PW4	12242934
FCO-P2W4	12242935
FCO-P3W4	12242936



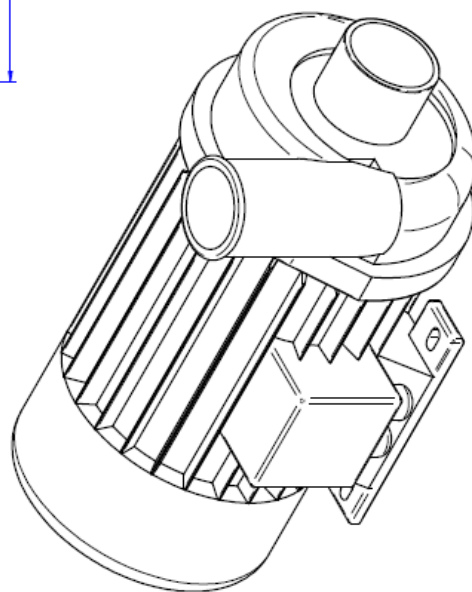
30. WASH MOTOR PUMP

30.1. MOTOR PUMP 50 Hz Code 12024381 – MOTOR PUMP 60 Hz Code 12023318



CARACTERÍSTICAS:

- Refer. FIR.....TYPE 2275
- Potencia.....2.6 Kw
- R.P.M.....2800
- Intensidad.....10.5.8 A.
- Caudal.....960 l/min.



- Motobomba 220380V. 60Hz.		① Z514101000	
Zk/N°	Materia/Material	Kas. Zk/N° Cód.	Gainza atxiera/Tratamiento
-	-	Z511001000	Pendi orokorrak
Zk/N°	Caril.	Material	Tolerancias generales
-	-	-	< 5 ± 0.2
①	Alkatea/Modificaciones	Propuesta de Data/Fecha	5 ± 25 ± 0.2
-	-	03-7-23	25 ± 50 ± 0.5
-	Introducc version 220380V. 60Hz.	-	α ± 1°
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
Manizua/Dibujado	Sinatura/Firma	Data/Fecha	Gainza pendia
Proiektua/Proyectado	Iritia	26-06-2002	Mecanizado superior
Egiaztatu/Comprobado	Egiaztatu/Comprobado	11-07-2002	-
Escola/Escola	Escola/Escola	-	-
1:2		LAVAVAJILAS	
-		-	
-		-	
Plano hau ezin daiteke erabili, ez berrizatu, gure baimenik gabe.			

33. TROUBLESHOOTING

A list of possible causes and solutions in the event of anomalies or operating errors is given below.

FAULT	POSSIBLE CAUSE	ACTION
The machine does not come on.	The appliance does not receive mains power.	Check whether the magneto-thermal circuit breaker or the differential switch has tripped.
	Emergency button activated.	Check whether the emergency button is activated.
	Blown fuses.	Call the technical service to have it replaced and the cause analysed.
	General switch in OFF mode.	Turn the general switch to ON.
Water does not enter the machine.	Interruption to the supply of water or the intake water valve is closed.	Check whether there is water in the main system and open the shut-off valve.
	Rinse pump does not work.	Call the technical service to replace it.
	Rinse nozzles blocked.	Clean the nozzles. If there is a build-up of lime on the arm, contact the technical service to have the appliance cleaned.
	Solenoid valve filter blocked.	Call the technical service to have it cleaned.
	Faulty solenoid valve.	Call the technical service to replace it.
	Pre-rinse pressure switch broken.	Call the technical service to replace it.
	Wash pressure switch broken.	Call the technical service to replace it.
	Door open	Check that all the machine doors are closed.
Incorrect wash.	There is no detergent.	Refill the detergent.
	Insufficient detergent.	Call the technical service to reset the dispenser.
	Wash distributors obstructed.	Clean distributors thoroughly.
	Distributors incorrectly mounted.	Check that wash distributors are correctly mounted.
	Dirty filters.	Clean the filters thoroughly.
	Presence of foam.	Inadequate detergent. Change detergent.
		Use of bleach during plate clearing process. Do not use bleach or domestic detergents.
Too much rinse aid. Call the technical service to reset the dispenser.		
Temperature in tank less than 50 °C / 122 °F.	Faulty thermostat or incorrect setting. Contact the technical service.	
Dirt on the dishes.	Select a lower wash speed according to the dirt on the dishes. Check that the plate clearing is performed correctly.	
Water too dirty.	Drain the wash tub and fill with clean water.	

FAULT	POSSIBLE CAUSE	ACTION
Dishes and kitchenware are not dry.	There is no rinse aid	Fill the rinse aid container.
	Insufficient rinse aid.	Call the technical service to reset the dispenser.
	Dishes left inside dishwasher for too long.	Remove the dishes at the end of the wash cycle and leave to dry by evaporation for a minute.
	Rinse temperature lower than 80 °C / 176 °F.	Allow the boiler to reach the rinse temperature before starting the cycle. If the problem persists, call the technical service.
	Dryer module does not operate correctly.	Contact your Technical Assistance Service.
Dishes stained or scratched.	Too much rinse aid.	Call the technical service to reset the dispenser.
	High water hardness.	Check the water hardness, it should be less than 10 °fH.
Machine stops during operation.	Check whether the magneto-thermal circuit breaker or the differential switch has tripped.	Reset safety device and if it trips again, call technical service.
	Drop in water level.	Check that the overflow valves are correctly inserted.
		Kitchenware incorrectly mounted on the conveyor belt. Insert the dishes or kitchenware correctly.
	The limit switch has been activated.	Check it is operating correctly. If this is not case, call the technical assistance service.
Machine stops and fills with water when it is washing.	Door closed sensor faulty.	Call the technical service to replace it.
	Overflow incorrectly mounted.	Mount overflow correctly.
	Pressure switch pipe blocked.	Empty the tub and clean thoroughly.
	Pressure switch faulty.	Call the technical service to replace it.
The machine does not start with the wash cycle.	Door is not closed properly.	Close the door properly. If the door opens on its own, contact the technical service to have the tensioners tightened.
	Door closed sensor faulty.	Call the technical service to have it repaired.
	Entrance photocell sensor faulty.	Contact your Technical Assistance Service.
Machine does not drain completely.	Machine not levelled correctly.	Level the machine In the event of doubt, please contact your technical service.
	Drainage pipe blocked	Call the cleaning service.

35. ELECTRICAL DIAGRAM LEGEND

Simb / LENG		ESPAÑOL	ENGLISH	FRANÇAIS
H1, I2, I3, I4, I5	=	Puntos conexión dosificadores.	Feeder connection points	Points raccordement doseurs
A1	=	Control Electrónico	Electronic Control	Contrôle électronique
AEV	gas	Control Combustión Caldera	Boiler Combustion Control	Contrôle Combustion Chaudière
AG	gas	Control Electrónico caldera	Electronic Control	Contrôle électronique
BA / Ba	=	Termostato de Aclarado / NTC	Rinse Thermostat / NTC	Thermostat de rinçage / NTC
BC11 / Bc11	=	Termostato Calderín Temperatura Max. / NTC	Boiler max Thermostat / NTC	Thermostat Chaudière max / NTC
BC12 / Bc12	=	Termostato Calderín Temperatura min. / NTC	Boiler min Thermostat / NTC	Thermostat Chaudière min / NTC
BS 1, 2, 3	=	Termostato Secado	Drying Thermostat	Thermostat séchage
BT 1 / Bt1	=	Termostato Tanque 1 / NTC	Washed Thermostat 1 / NTC	Thermostat lavage 1 / NTC
BT 2, 3	=	Termostato Tanque 2, 3	Washed Thermostat 2, 3	Thermostat lavage 2, 3
Cl, 2, 3, 4, 5, 6, 7	=	Condensador eléctrico	Electric condenser	Condensateur électrique
E	gas	Encendedor, generador de chispa	Spark generator	Générateur d'étincelles
F	=	Fusible	Fuse	Fusible
FA	=	Termostato Seguridad Aclarado	Rinse Hi-limit Thermostat	Thermostat Limiteur rinçage
FC1	E	Termostato Seguridad Calderín	Boiler Hi-limit Thermostat	Thermostat Limiteur séchage
FC	gas	Termostato Seguridad Generador	Boiler Hi-limit Thermostat	Thermostat Limiteur séchage
FML1,2,3,4	=	Termico Motor Bomba Lavado	Wash Pump Motor Thermal Overload	Thermique Moteur pompe lavage
FMREC	=	Termico Motor Recuperador	Recover Motor Thermal Overload	Thermique du Moteur Recuperateur
FMS 1, 2, 3	=	Termico Motor Secado 1,2	Drying Motor Thermal Overload	Thermique du Moteur Séchage
FS 1, 2, 3	=	Termostato Limitador Secado	Drying Hi-limit Thermostat	Thermostat Limiteur Chaudière
FT 1,2,3	=	Termostato Seguridad Tanque	Washed Hi-limit Thermostat	Thermostat Limiteur lavage
G	=	Fuente Alimentación	Power Supply	Source De Courant
GF 1, 2	=	Variador de Frecuencia	Variable frequency drive	Variateur de fréquence
HB	gas	Lampara Indicador control gas bloqueado	Control gas locked Light	Voyant de contrôle de gaz bloqué
HC	gas	Lampara Indicador calentamiento	Heating light	Voyant de chauffage
HDC	gas	Lampara Indicador de cal	Line indicator light	Voyant témoin de chaux
HM 1, 2, 3	=	Lampara Indicador Marcha	Operation light	Voyant de fonctionnement
HR 1, 2, 3	=	Lampara Indicador Atorado	Stuck Indicator Light	Voyant Bloqués
KA	=	Rele Auxiliar de Aclarado	Rinse Auxiliary Relay	Relais auxiliaire rinçage
KAL	=	Rele Auxiliar Llenado y Aclarado	Fill and Rinse Auxiliary Relay	Relais auxiliaire remplissage et rinçage
KBA	=	Rele Auxiliar Termostato Aclarado	Auxiliary Relay Rinse Thermostat	Relais auxiliaire thermostat rinçage
KBC12	E	Rele Auxiliar Termostato Calderín	Auxiliary Relay Boiler Thermostat	Thermostat Relais auxiliaire Chaudière
KB11	=	Rele Auxiliar Termostato Tanque 1	Auxiliary Relay Tank Thermostat 1	Thermostat Relais auxiliaire cuve 1
KDES	=	Rele Desincrustante (gas)	Descaling Relay	Relais de Détartrage
KL	=	Rele Auxiliar Accionamiento Lavado	Auxiliary Relay Washing Actuator	Actionneur auxiliaire lavage
KML 1,2,3,4	=	Contacto Bomba lavado	Wash Pump Contactor	Contacteur pompe lavage
KMPL	=	Contacto Bomba PreLavado	Prewash Pump Contactor	Contacteur Pompe pré-lavage
KMREC	=	Contacto Motor Recuperador	Contactor Motor Recover	Contacteur moteur Recuperateur
KMS 1,2,3	=	Contacto Motor Secado	Drying Motor Contactor	Contacteur moteur Séchage
KP	=	Rele de Puerta	Door Relay	Relais de porte
KRC 11,12,13	E	Contacto Calentamiento Calderín	Boiler Heating Contactor	Contacteur Chauffage Chaudière
KRS 1x,2x,3x	=	Contacto Calentamiento Secado	Drying Heating Contactor	Contacteur chauffage séchage
KRT 1x, 2x,3x	=	Contacto Calentamiento Tanque	Tank Heating Contactor	Contacteur Chauffage Cuve
KRTA 1,2	=	Contacto Calentamiento Aclarado	Rinse heating Contactor	Contacteur chauffage Rinçage
KTP, KTPN	=	Temporizador	Timer	Temporisateur
MA	=	Moto Bomba Aclarado	Pump Rinsing	Pompe Rinçage
MABR	=	Dosificador Abillantador	Rinse doser	Doseur tensoactive
MCL	gas	Moto Bomba circulación calentamiento Lavado	Heating circulation pump Washing	Pompe circulation chauffage Lavage
MDET	=	Dosificador Detergente	Detergent doser	Doseur détergent
MDG	gas	Bomba Desague Generador Agua caliente	Drain Pump Hot Water Generator	Pompe vidange générateur d'eau chaude
MDST	gas	Bomba circulación desincrustante	Descaling circulation pump	Pompe circulation détartrage
ML 1,2,3,4	=	Moto Bomba Lavado	Washed Pump	Pompe de lavage
MP	=	Moto Bomba Llenado	Filling Pump	Pompe de remplissage
MPL 1,2	=	Moto Bomba PreLavado	Prewash Pump	Pompe à pré-lavage
MREC	=	Motor Recuperador	Motor Recovery	Moteur Récupérateur
MS 1,2,3	=	Motor Secado	Drying motor	Moteur de séchage
MSV	gas	Motor Sopiante caldera	Boiler Blowing Fan	Ventilateur soufflement chaudière
MVA	=	Motor Arrastre	Advance Motor	Moteur d'entraînement
MVE	=	Ventilador Cuadro Electrico	Fan	Ventilateur
PA	=	Presostato Aclarado	Rinsed tank Pressure Switch	Pressostat de rinçage
PL	=	Presostato Prelavado	Prewash tank Pressure Switch	Pressostat de pré-lavage cuve
PT 1,2,3,4	=	Presostato Tanque	Washed tank Pressure Switch	Pressostat de lavage cuve
Q	=	Interruptor General de seguridad	Disconnect Switch	Interrupteur Général de sécurité
RC11,12,13	E	Resistencia Calentamiento Calderín	Boiler Element Heating	Resistance Chauffage Chaudière
RS 1, 2, 3	=	Resistencia Calentamiento Secado	Drying Element Heating	Resistance Chauffage séchage
RT 1X, 2X, 3	E	Resistencia Calentamiento Tanque	Washed Tank Element Heating	Resistance Chauffage cuve lavage
RTA	=	Resistencia Calentamiento Aclarado	Rinse tank Element Heating	Resistance Chauffage rinçage
SA	=	Interruptor Accionamiento Aclarado	Rinsing actuator Switch	Interrupteur d'actionneur rinçage
SB	gas	Pulsador Reset control combustion	Reset control combustion switch	Bouton réinitialisation contrôle combustion
SDN	gas	Detector Nivel Caldera	Boiler Level Switch	Détecteur niveau chaudière
SDV	gas	Detector de llama caldera	Boiler flame detector	Détecteur de flamme de chaudière
SE 1, 2	=	Pulsador Parada de emergencia 1,2	Emergency 1,2 stop push button	Bouton-poussoir Arrêt d'urgence 1,2
SF	=	Interruptor Fin recorrido	Safety end Switch	Interrupteur fin de course
SG	=	Interruptor general.	Power On	Interrupteur général
SL rec, em	=	Accionamiento Lavado Optico. Receptor y emisor	Wash actuator Switch	Interrupteur d'actionneur de lavage
SM 1,2,3	=	Pulsador Marcha / Parada	Start / Stop push button	Bouton de démarrage / arrêt
SN max	E	Interruptor Nivel max	Max level switch	Interrupteur de niveau max
SN min	E	Interruptor Nivel min	Min level switch	Interrupteur de niveau minimum
SP 1, 2, 3, 4, 5, 6	=	Interruptor Paneles	Panels switch	Interrupteur de panneau
SPA	=	Interruptor Puerta Aclarado	Rinse Door Switch	Interrupteur de porte de rinçage
SPPL	=	Interruptor Puerta PreLavado	Prewash Door Switch	Interrupteur de porte pré-lavage
SPT 1,2,3,4	=	Interruptor Puerta Tanque Lavado	Tank Door Switch	Interrupteur de porte cuve
SR 1, 2, 3	=	Interruptor Retroceso Desenganche	Reverse stuck Switch	Interrupteur marche arrière à la blocage
SST	gas	Pulsador marcha ciclo desincrustacion	Descaling cycle start push button	Bouton démarrage cycle détartrage
SSV	=	Interruptor Seguridad Enganchon	Overload stuck Switch	Interrupteur marche à la blocage
T	=	Alarma Enganchon	Buzzer alarm stuck	Alarme buzzer blocage
TRF	=	Transformador	Transformer	Transformateur
Y	gas	Electrovalvula Llenado Generador Agua caliente	Hot Water Generator Filling Solenoid Valve	Electrovanne remplissage générateur eau chaude
YA	=	Electrovalvula Llenado y Aclarado	Filling and Rinse Solenoid Valve	Electrovanne Remplissage et rinçage
YB	E	Electrovalvula Llenado Booster	Booster Filling Solenoid Valve	Electrovanne remplissage booster
YG 1, 2	gas	Electrovalvula de gas	Gas solenoid valve	Electrovanne gaz
YL 1,2	=	Electrovalvula Llenado Tanque	Filling Tank Solenoid Valve	Electrovanne de remplissage
YRP	=	Electrovalvula Regeneracion Prelavado	Regeneration valve Prewash tank	Electrovanne régénération Cuve pré-lavage
Z	=	Filtro de EMC	EMC filter	Filtre EMC
COLOR	=	COLORES	COLOUR	COULEURS
bk, n	=	Negro	Black	Noir
bl, a	=	Azul	Blue	Bleu
bn, m	=	Marrón	Brown	Marron
gn, ve	=	Verde	Green	Vert
gy, g	=	Gris	Grey	Gris
or, na	=	Naranja	Orange	Orange
pk, rs	=	Rosa	Pink	Rose
pr, vl	=	Violeta	Purple	Violet
rd, r	=	Rojo	Red	Rouge
wh, b	=	Blanco	White	Blanc
yw, am	=	Amarillo	Yellow	Jaune
yw/gn, am/ve	=	Amarillo/verde	Yellow / green	Jaune / vert

37. ASSEMBLY OF MODULES

This type of dishwasher can be sent to the customer in three modules. To install the machine correctly, proceed as follows:

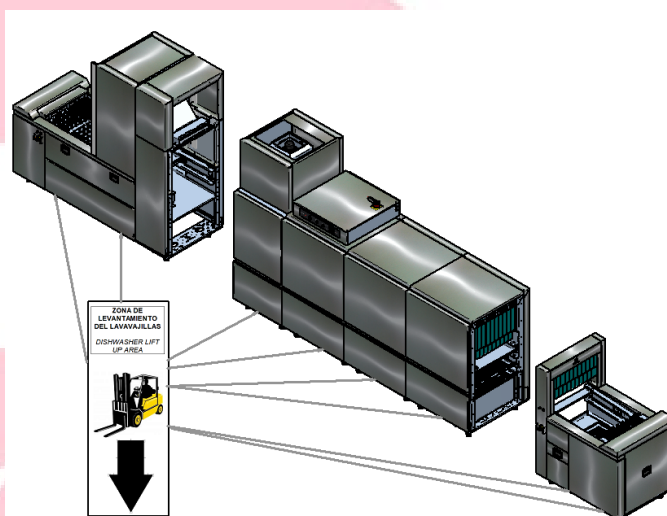
The dishwasher must be installed in a suitable zone. The following points are recommended:

1. The area in which the dishwasher is to be installed must be on firm and level ground.
2. The zone must have adequate ventilation.
3. The electrical and hydraulic connections (water inlet, steam extraction and drainage) must be correctly installed.

37.1. ASSEMBLY OF MODULES

To assemble the modules, proceed as follows:

1. Place the machine in the installation zone. Use a fork-lift truck to move the machine into position. The machine lifting points when using a fork-lift truck or truck stacker are marked on the dishwasher.



DO NOT DRAG THE DISHWASHER. THIS MAY DAMAGE THE LEVELLING FEET. THE MANUFACTURER DOES NOT ACCEPT RESPONSIBILITY FOR DAMAGE TO THE DISHWASHER RESULTING FROM FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS.

2. Remove the panels adjacent to the module connection zone.
3. Mount the EPDM seals around the perimeter of the connection between the dishwasher modules. Some modules have windows in the connection zone to allow the air to circulate. In this case it is necessary to cut the EPDM seal so that these windows are not covered. To mount the seals correctly; first attach the two horizontal seals and then the two vertical seals, which overlap the horizontal seals. **(See image 1)**



IT IS IMPORTANT THAT THE EPDM SEALS OVER THE VENTILATION WINDOWS ARE CUT OUT. IF THIS IS NOT THE CASE, THE MACHINE OPERATION MAY BE COMPLETELY ALTERED.

4. Apply silicone (included) to the EPDM seals to ensure the seal is correct. **(See figure 2).**

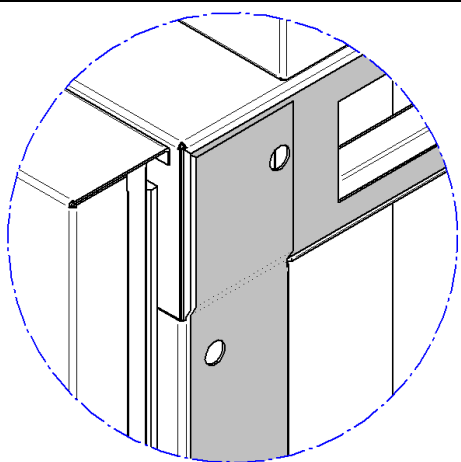


Image - 1: Place the vertical seals over the horizontal seals.

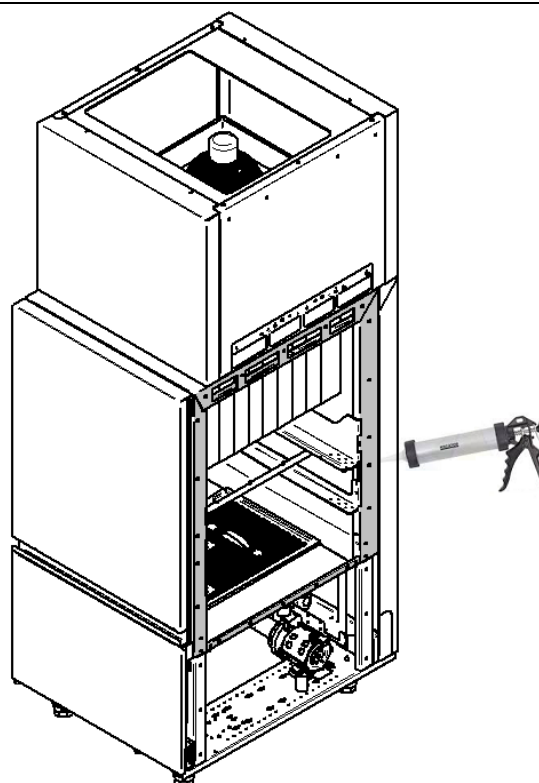


Image - 2: Apply silicone to the EPDM seals

5. Align the modules, remembering that the guides over which the conveyor belt travels must be perfectly in line.
6. Fasten the M8 bolts (included) for the assembly of the modules. Use an impact screwdriver to secure the bolts with the correct torque.

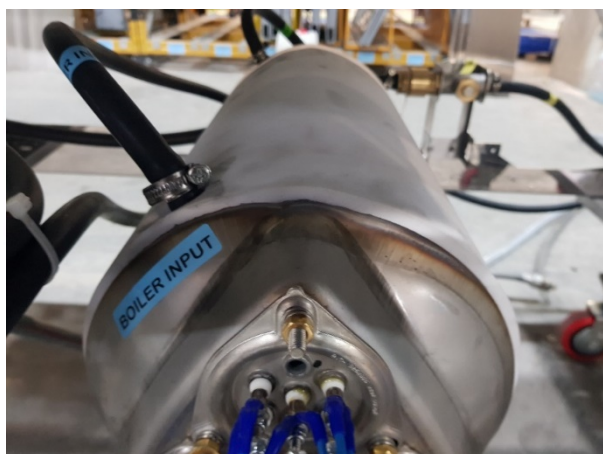
37.2. DISHWASHER HYDRAULIC CONNECTION

For the hydraulic connection, it is only necessary to join the pipes marked in the zones shown in the photos.



Connect the **BOILER OUTPUT** pipe to the connection marked on the boiler. Use the clamp supplied.

Image - 3: BOILER OUTPUT connection of the electric boiler



Connect the **BOILER INPUT** pipe to the connection marked on the boiler. Use the clamp supplied.

Image - 4: BOILER INPUT connection of the electric boiler



Connect the **RINSE** pipe to the connection marked on the rinse aid connection. Use the clamp supplied.



Image - 5: RINSE connection

Connect the **RINSE** pipe to the connection marked on the rinse aid connection. Use the clamp supplied.

Image - 6: FILL connection in FCO-P2W4 and FCO-P3W4 models



Connect the **RINSE** pipe to the connection marked on the rinse aid connection. Use the clamp supplied.

and FCO-PW4 models

Image - 7: FILL connection in FCO-W4

37.3. DISHWASHER ELECTRICAL CONNECTION

The connection of the electrical installation is simple as electrically it is only necessary to join the different connectors of the modules to join them together. All the connectors, once connected, should be covered with silicone (supplied) to prevent moisture from entering the electrical system.

The only part of the electrical connection which must be performed separately is the boiler. To connect the boiler, proceed as shown in the drawing below. The position of the temperature probes is important as this may affect the correct operation of the dishwasher. (See figure 8).

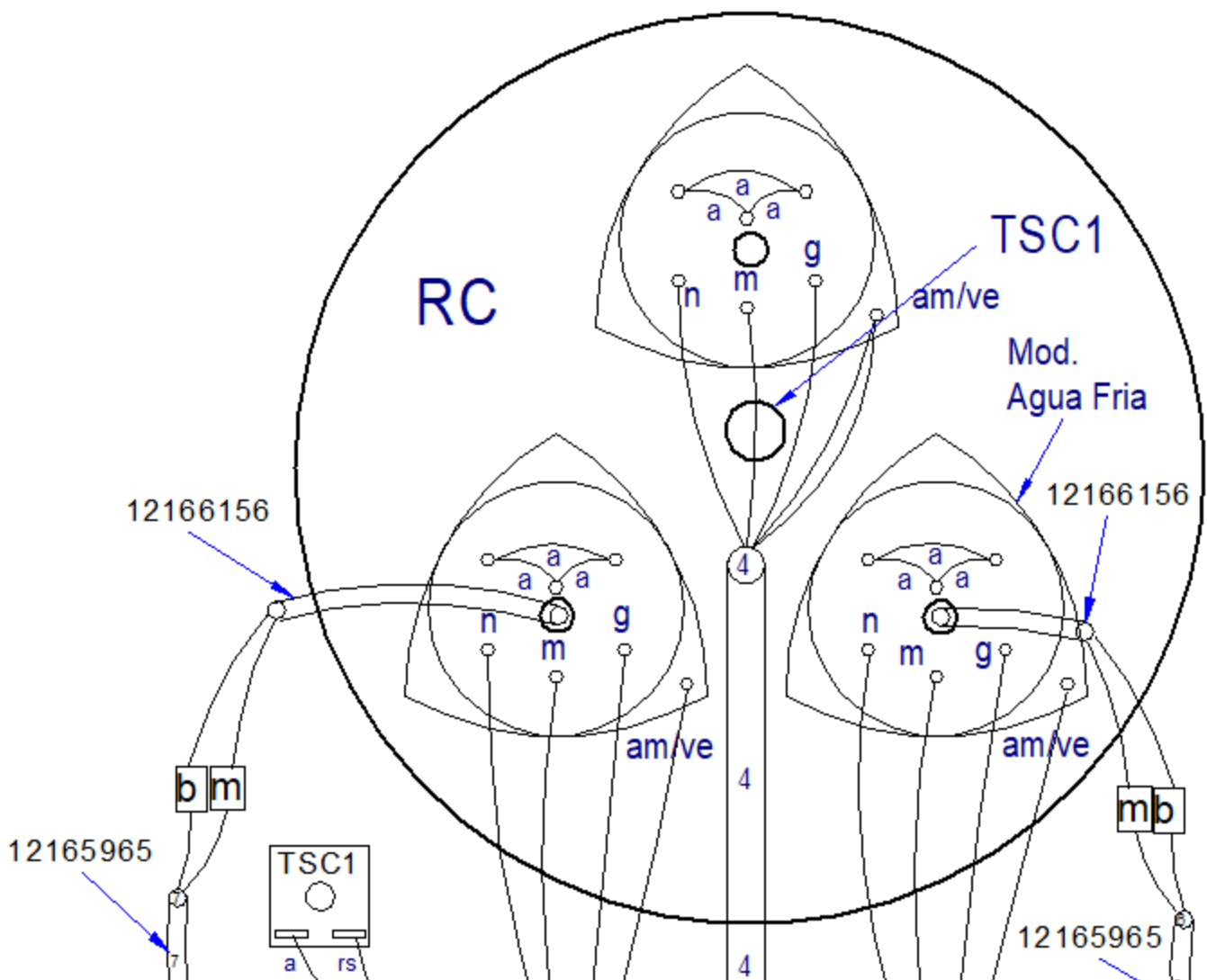


Figure - 8: Diagram of assembly of electric boiler.

37.4. ASSEMBLY OF THE CONVEYOR BELT

The assembly of the conveyor belt is one of the most important parts of the machine, as if not installed correctly, it may cause major damage to the traction system and to the conveyor belt itself.

The belt is always sent in three parts in the MODULES KIT. The installer should join these together on inserting it into the dishwasher.

Proceed as follows for the correct installation of the conveyor belt.

1. Unpack the conveyor belt and open it out on the ground to see the position of the belt. The position of the belt is as shown in figures 9, 10 and 11.

<p>Dish and basket belt</p>	 <p>DIRECCION DE ENTRADA ENTRY DIRECTION</p> <p>Figure - 9</p>
<p>Isothermal tray belt</p>	 <p>DIRECCION DE ENTRADA ENTRY DIRECTION</p> <p>Figure - 10</p>
<p>Kitchenware belt</p>	 <p>DIRECCION DE ENTRADA ENTRY DIRECTION</p> <p>Figure - 11</p>

2. Join the three pieces of the conveyor belt together using the spacer bushings, shafts and wheels supplied.
3. Tighten the conveyor belt. When tightening the belt, observe the following:
 - a. The correct tension prevents the dishes from falling from the conveyor belt prongs, allows the belt to move smoothly and prevents the traction system from being forced and creating a system overload.
 - b. Start the machine and check that the belt moves correctly and in the correct direction.
 - c. Lock the BTN tensor after confirming that the tension is correct. **(See figure 12).**

4. After installing the conveyor belt, insert the corresponding panels of the entrance module.

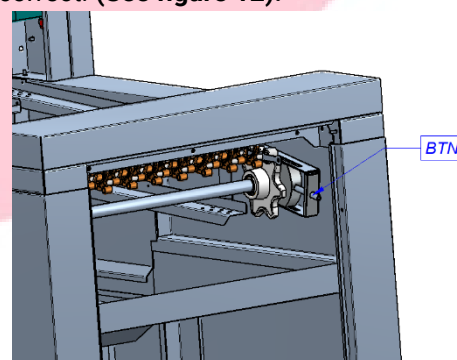


Figure - 12: BTN tensor for tightening the conveyor belt.

38. CHECK-LIST FOR START-UP

CHECK-LIST FOR THE INSTALLATION AND START-UP OF FAGOR MODULAR COMPACT CONVEYOR DISHWASHERS

This checklist should be completed separately for each dishwasher in clearly legible writing.

To validate your rights to guarantee, please ask the Technical Service installing the dishwasher to complete the present checklist and send it, duly completed, to the corresponding branch of Fagor Industrial, within 15 days of the installation and start-up of the dishwasher.

Company or premises where dishwasher is installed:

Contact person:

Position in the company: email:

Address:

Town: Province:

POST CODE: Telephone: FAX:

Dish washer model: Serial No.:

Installing company: Operator:

Date of installation (D/M/Y):/...../.....

Date of start-up (D/M/Y):/...../.....

Installation no complaints with complaints

Dear installer:

Please record the following information corresponding to the different fields. If the values obtained differ significantly from the data recommended by the manufacturer in the manual, please notify the customer and the corresponding branch of Fagor Industrial.

We hereby confirm that the start-up has been carried out in accordance with the attached checklist and conforms to current local /national specifications and legislation. The dishwasher has been delivered free of defects. The user has been instructed in the use, cleaning and maintenance of the equipment.

Fagor Industrial recommends the establishment of regular preventive maintenance carried out by an official and/or authorized Technical Service.

Signed / Date / Installer

Signed / Date / Customer

1. Checking installation

- a) Is the floor level?
If "NO", what is the difference in level? _____ %
- b) Is there any other equipment at less than 500 mm from the dishwasher?
If "YES", what type of equipment? _____
- d) Has a hood/extractor system been installed?
- d) Is the machine level?

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

2. Electrical Installation

- a) What voltage is shown on the registration plate? _____ AC / _____ V / _____ Hz
- b) What voltage is available at the installation? _____ AC / _____ V / _____ Hz
- c) Measured voltage at the installation:

Phase 1 - Phase 2 => _____ V	Phase 1 - Neutral => _____ V
Phase 1 - Phase 3 => _____ V	Phase 2 - Neutral => _____ V
Phase 2 - Phase 3 => _____ V	Phase 3 - Neutral => _____ V
Neutral - Earth => _____ V	

- d) Electrical consumption by phase:
Phase 1 _____ A Phase 2 _____ A Phase 3 _____ A

- e) Are there any electrical protections in the installation?
If "Yes", what types?
Thermal magnetic switch _____ A Fuses _____ A Differential switch _____ mA
- f) Have the electrical connections been checked and retightened?
- f) Can the electrical panel be accessed by the user?

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

3. Hydraulic Installation

- a) Is there a water filter installed?
If "Yes", what type and make of filter? _____
- b) Is the water supply to the dishwasher independent?
WARNING: Water intake $\frac{3}{4}$ "
- c) Is the cut-off tap for the water supply to the dishwasher independent?
- c) Can the cut-off tap for the water supply to the oven be accessed by the user?
- e) Is the drainage connection fixed?
If "Yes", is the siphon trap independent for the dishwasher?
- f) Is the drainage pipe material resistant to 110 °C?
- g) What material are the drainage pipes made from? _____

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

- h) Water intake pressure _____ bar.
- i) Water intake temperature _____ °C
- j) Water quality: D. total _____ °f D. carbonates _____ °f Conduc. _____ µs pH _____

4. Gas installation

- b) Is the gas supply to the generator independent?
- c) Is the cut-off tap for the gas supply to the generator independent?
- c) Can the cut-off tap for the gas supply to the oven be accessed by the user?
- d) Has the generator been converted to gas?
- e) Is the gas control to the generator independent?
If "Yes", what type and make of equipment? _____
- f) Is the gas pipe rigid?
If "Yes", what is the diameter of the gas pipe? _____ mm.
- g) Type of gas specified on registration plate:
 LPG (B-G30) LPG (P-G31) NG (G20) NG (G21) Other G _____
- h) Type of gas available in the installation:
 LPG (B-G30) LPG (P-G31) NG (G20) NG (G21) Other G _____
- i) Height of installation _____ metres above sea level.
- j) Pressure of gas connected:
Static pressure => _____ mbar Dynamic pressure => _____ mbar
- k) Burner combustion:
CO2 => _____ % CO => _____ ppm

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

5. Operating tests and instructions for customer

- a) Are the electrical connections secure and in accordance with legislation?
- b) Are the hydraulic connections watertight?
- c) Are the gas connections water and airtight?
- d) Are all the dishwasher operating modes operating correctly?
- e) Has the customer received instructions on the use and handling of the dishwasher?
- f) Has the customer received instructions on the daily cleaning of the dishwasher?
- g) Has the customer been provided with a copy of the dishwasher operating manual?
- h) Is the drive motor adjusted?
- i) Drying tunnel 1 OK?
- j) Drying tunnel 2 OK?
- k) Drying tunnel 3 OK?
- l) Energy recovery OK?
- m) Exit conveyor micro saturation OK?
- n) Temperatures:
1 Wash _____ °C 2 Wash _____ °C 3 Wash _____ °C
Pre-rinse _____ °C Rinse _____ °C Dry _____ °C

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
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FAGOR INDUSTRIAL

FAGOR INDUSTRIAL S. COOP.
Santxolopetegi auzoa, 22
20560 Oñati, Gipuzkoa (Spain)
T. (+34) 943 71 80 30
info@fagorindustrial.com

www.fagorindustrial.com

Service Manual



ONNERA GROUP