

**Hood type Dishwasher
Undercounter Dishwasher
Glasswasher**



GENERAL INSTRUCTIONS FOR INSTALLATION, USE AND MAINTENANCE

eVO CONCEPT

W MODELS



MOD:

COP-174W

COP-504 W

CO-502 W

CO-402 W



CODE: 12119601
REV. : 04 (2015)



READ FIRST



THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE.

READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.



WARNING



IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

Model:	Purchased From:
Serial:	Location:
Date Purchased:	Date Installed:
Purchase Order:	For Service, Call:

LIMITED WARRANTY

One Year Parts & Labor Warranty: Fagor Commercial, Inc. ("Fagor") warrants to the first-end-user purchaser (the "User") that the Fagor brand equipment sold hereunder, except for parts and accessories which carry the warranty of a supplier (the "Equipment") will be free from defects in material and factory workmanship under normal conditions of use and maintenance for a period of (1) one year from the date of Installation (Warranty Commencement Date), but in no event to exceed (15) fifteen months from the date of shipment.

Warranty Coverage: If there is a defect in material or factory workmanship covered by this Warranty reported to Fagor during the period the applicable Warranty is in force and effect, Fagor will repair or replace, at Fagor's option, that part of the Equipment that has become defective. Fagor will cover labor cost within one year from the Warranty Commencement date or 15 months from shipment date, whichever occurs first. Fagor shall bear all labor costs in connection with the installation of these replacement parts, provided that, the installation is conducted by Fagor or its authorized representative. Charges for warranty travel time to round trip total (2) two hours or up to 100 miles. Any charges exceeding those stated herein must have prior authorization by Fagor. In case Fagor deems the equipment non-repairable, said equipment will be replaced and the replacement unit(s) will carry the same warranty period from the original unit's installation date (Original Warranty Commencement Date).

Exclusions from and Conditions to Warranty Coverage: This Warranty does not cover parts or accessories, which (a) carry the warranty of a supplier or (b) are abused. Application of this Warranty is further conditioned upon the following:

- Installation. The Equipment must be properly installed in accordance with Fagor's installation procedures and instructions and reviewed and tested by a professional technician.
- No Alteration. The Equipment must not have been modified or altered from its condition at the date of original installation.
- Use. FAGOR EQUIPMENT IS NOT DESIGNED FOR PERSONAL, FAMILY OR HOUSEHOLD PURPOSES, AND ITS SALE FOR SUCH PURPOSES IS NOT INTENDED. IN THE EVENT THE EQUIPMENT IS SO USED, THIS WARRANTY SHALL BE NULL AND VOID, AND THE EQUIPMENT SHALL BE DEEMED TO HAVE BEEN SOLD "AS IS-WHERE IS" WITHOUT ANY WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF TITLE, NON-INFRINGEMENT, MERCHANT-ABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
- Water Quality. Water supply should have hardness between .25 and 3.0 grains per gallon, pH level between 6.5 – 7.5 and TDS level less than 60 PPM. Equipment failure due to inadequate water supply is not covered by this Warranty.
- Proper Maintenance and Operation. The Equipment must be properly maintained and operated in accordance with Fagor's maintenance and operating procedures. All service, labor and parts must be acquired from Fagor or its authorized service representative for the User's area.
- Minor Parts. No labor will be associated with the replacement of minor items such as, and not limited to, switches, pilot lights, gauges, fuses, etc. or replacement of wear items such as curtains, squeeze tubes, etc.
- This warranty is void if failure is a direct result of handling &/or transportation, fire, water, accident, misuse, acts of God, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for purpose other than it was originally intended.

Failure to comply with any of these conditions will void this Warranty. In addition, this Warranty does not cover defects due to apparent abuse, misuse or accident.

Fagor will have no responsibility to honor claims received after the date the applicable Warranty expires. Notwithstanding the foregoing, any claim with reference to the Equipment or any parts therefore for any cause shall be deemed waived unless submitted by the User to Fagor within thirty (30) days after the date the User discovered, or should have discovered, the claim. In connection with all claims under this Warranty, Fagor will have the right, at its own expense, to have its representatives inspect the Equipment at the User's premises and to request all of User's records pertaining to the Equipment to determine whether a defect exists, whether the conditions set forth in this Warranty have been satisfied, and whether or not the applicable Warranty is in effect.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY REPRESENTATION OF PERFORMANCE AND ANY IMPLIED WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO OTHER WARRANTIES ARE AUTHORIZED ON BEHALF OF FAGOR UNLESS SPECIFICALLY ISSUED BY FAGOR.

Fagor shall have no liability for incidental or consequential losses, damages or expenses, loss of sales, profits or goodwill, or punitive or exemplary damages directly or indirectly arising from the sale, handling or use of the Equipment or from any other cause relating thereto, whether arising in contract, tort, warranty, strict liability or otherwise. Fagor's liability hereunder in any case is expressly limited, at Fagor's election, to repair or replacement of Equipment or parts therefore or to the repayment of, or crediting the user with, an amount equal to the purchase price of such goods.

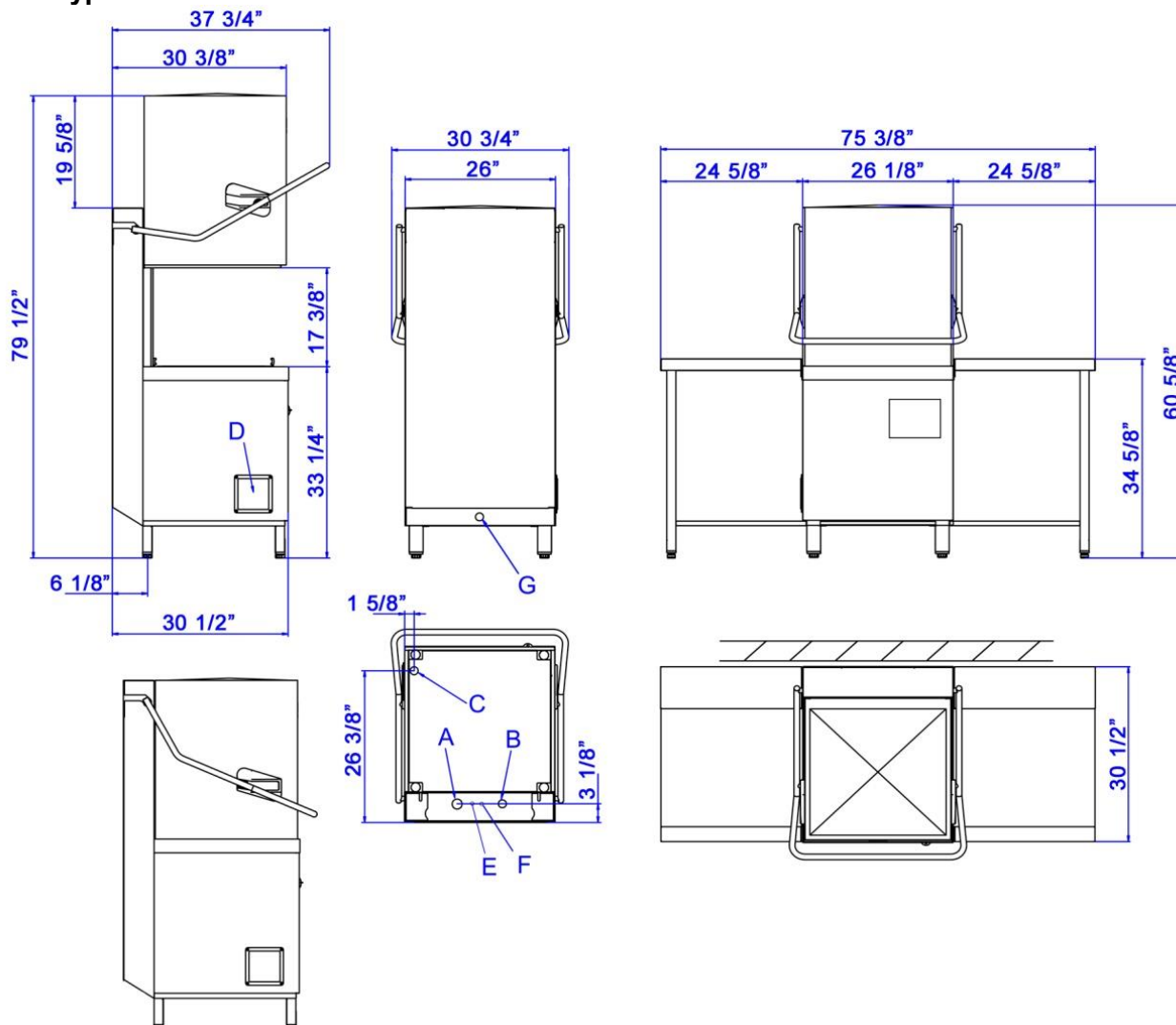
1. INDEX

1.	INDEX.....	4
2.	GENERAL MEASUREMENTS AND CONNECTIONS	5
3.	QUICK STARTUP GUIDES	7
4.	ELECTRICAL DIAGRAM	9
5.	ELECTRIC DIAGRAMS LEGEND.....	10
6.	GENERAL INFORMATION AND WARNINGS	11
7.	PRODUCT DETAILS	11
7.1	SPECIFICATIONS.....	12
8.	INSTALLATION INSTRUCTIONS.....	14
8.1	Removal of packaging.....	14
8.2	Positioning and levelling.....	14
8.3	Electrical connection	15
8.4	Hydraulic connection.....	16
8.5	Drainage connection.....	17
8.6	Hydraulic rinse aid dispenser (CO MODELS).....	18
8.7	Electric rinse aid dispenser (COP MODELS).....	18
8.8	Detergent dispenser	19
8.9	Pressure pump.....	20
8.10	Recycling.....	20
9.	USE AND MAINTENANCE INSTRUCTIONS.....	21
9.1	Operation.....	21
9.1.1	Control panel symbols	21
9.1.2	Switching on the machine	21
9.1.3	Preparation of the dishes	22
9.1.4	Selecting the wash cycle.....	22
9.1.5	Stopping the wash cycle and end of wash cycle.....	22
9.1.6	Drainage of the machine	22
9.1.7	Switching off the machine	23
9.1.8	Cleaning the machine at the end of the day	23
9.2	Useful tips.....	23
9.2.1	Maintenance.....	24
9.2.2	Rinse aid and detergent.....	24
9.2.3	Hygiene practices	24
9.2.4	Optimum results	24
9.2.5	Prolonged non use.....	24
10.	FAULTS, ALARMS AND BREAKDOWNS	25
10.1	Error diagnosis.....	26
10.2	DISPLAY ALARMS	27

				
WARNING	HAZARDOUS VOLTAGE	PLEASE READ INSTRUCTIONS	PROTECTIVE EARTH	EQUIPOTENTIAL BONDING

2. GENERAL MEASUREMENTS AND CONNECTIONS

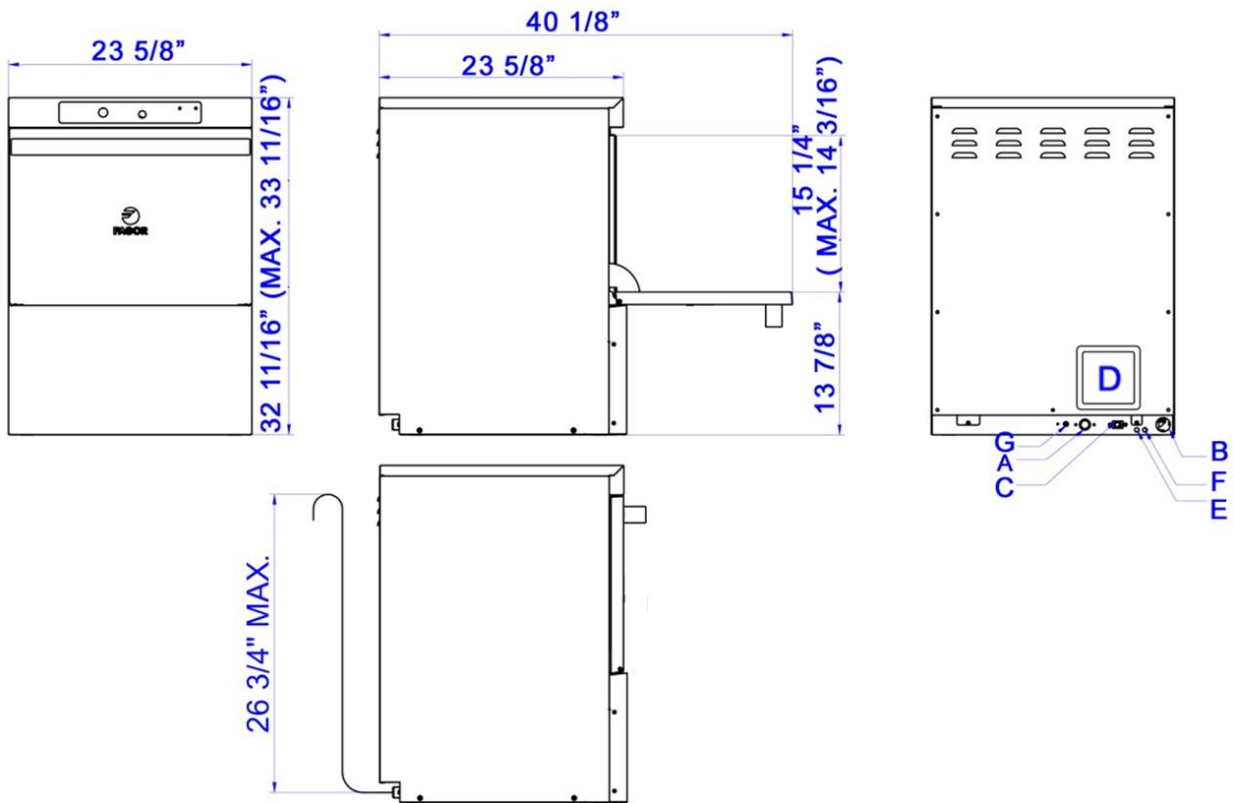
Hood type Dishwasher COP-174W



A	B	C	D	E	F	G
Water inlet	Drain hose	Power Supply Cable Strain Relief	Terminal Box	Rinse aid inlet	Detergent inlet	Equipotential bond

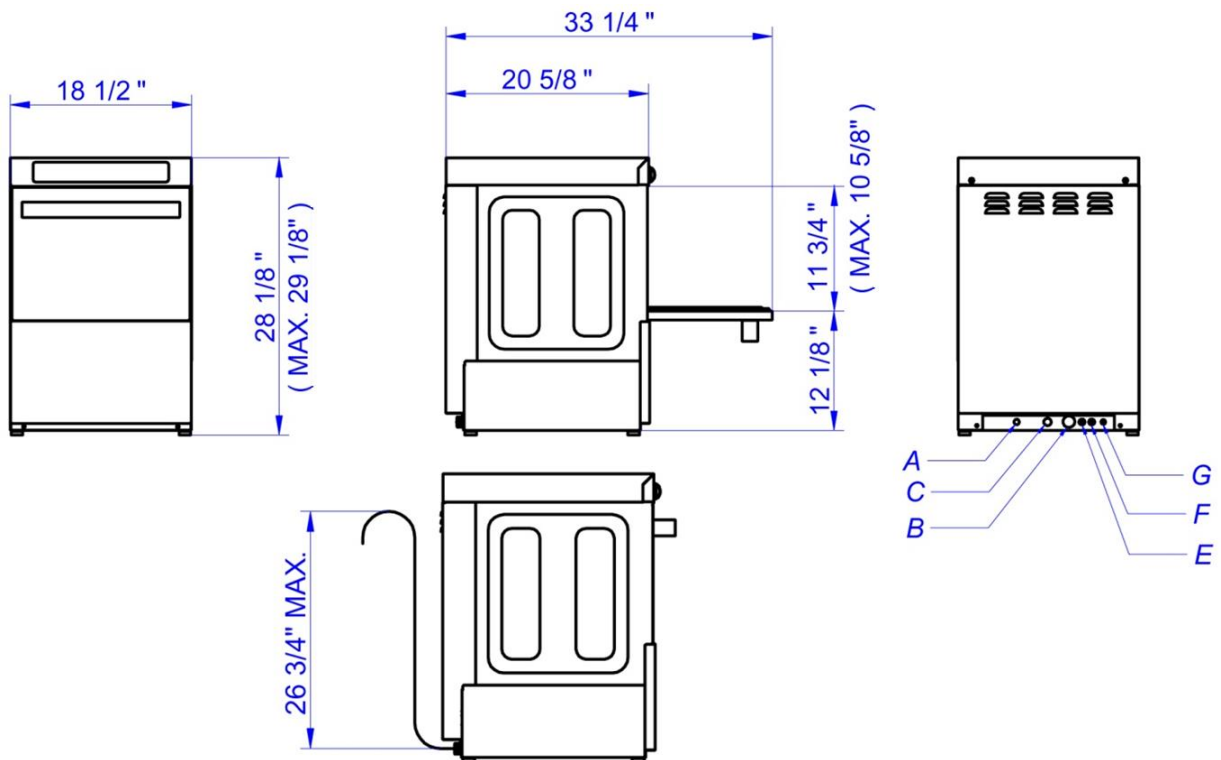
Undercounter Dishwasher

CO-502 W / COP-504 W



Glasswasher

CO-402 W



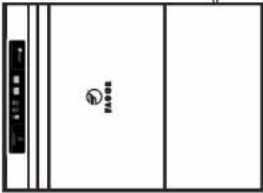
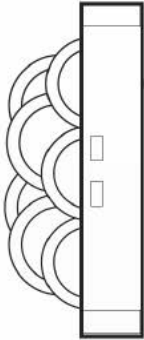
A	B	C	D	E	F	G
Water inlet	Drain hose	Power Supply Cable Strain Relief	Terminal Box	Rinse aid inlet	Detergent inlet	Equipotential bond

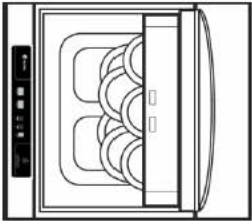
3. QUICK STARTUP GUIDES

QUICK START GUIDE - EVO Undercounter dishwashers

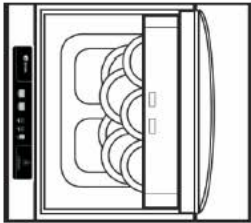
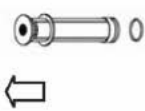


WASH

- 1  Check chemical levels
- 2  Turn on: Hold the on/off button for 5 seconds
- 3  Wait for wash temperature to read 162°F / 72°C
- 4  Pre-scrap wares thoroughly
Place in rack

- 5  Load rack into dishwasher
Close door, press and hold P1, P2 or P3 for 1 second to start wash cycle
- 6  Wash cycle is extended if the final rinse water is not up to 180° / 82°C.
Cycle is complete when green light turns off
- 7  When cycle finishes, clean inside the unit and replace components

DRAIN

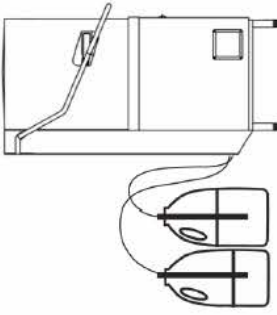
- 1  Open the door
- 2  YES
Remove overflow tube
- 3  NO!
Scrap Basket
- 4  Hold power button for 5 seconds to turn machine off

QUICK START GUIDE - EVO Hood-type dishwashers



WASH

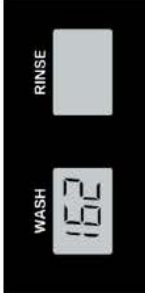
- 1**



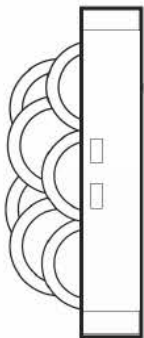
Check chemical levels
- 2**



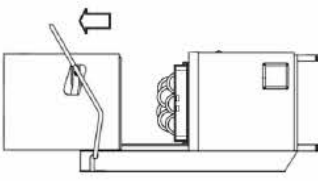
Turn on: Hold the on/off button for 5 seconds
- 3**



Wait for wash temperature to read 162°F / 72°C
- 4**



Pre-rinse wares thoroughly
Place in rack
- 5**



Lift hood and load rack into dishwasher
- 6**



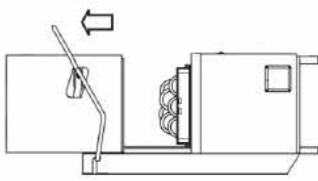
Close door, press and hold P1, P2 or P3 for 1 second to start wash cycle
- 7**

WASH CYCLE IS EXTENDED IF THE FINAL RINSE WATER IS NOT UP TO 180° / 82°C.

Cycle is complete when green light turns off

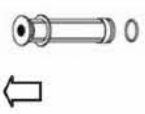
DRAIN

- 1**



Lift hood, remove rack
- 2**

YES



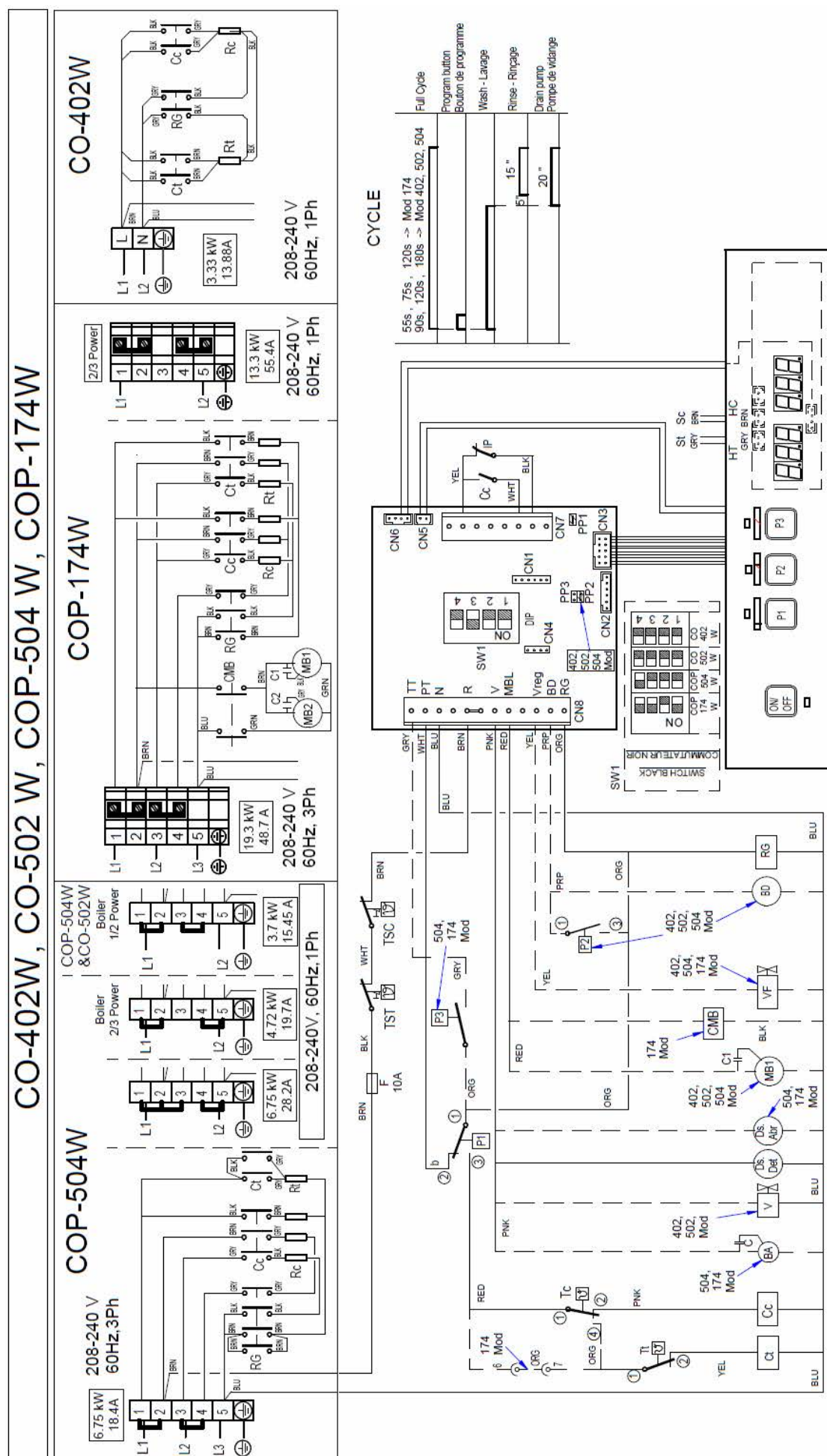
Remove overflow tube
- 3**

KEEP HOOD OPEN UNTIL WATER HAS DRAINED. CLEAN INSIDE THE UNIT AND REPLACE COMPONENTS
- 4**



Hold power button for 5 seconds to turn machine off

4. ELECTRICAL DIAGRAM



5. ELECTRIC DIAGRAMS LEGEND

	ENGLISH	FRANÇAIS
	Grounding	Mise à terre
	Terminal block bridge	Pontage pour bloc de jonction
BA	Rinse pump	Pompe de rinçage
BD	Drain pump	Pompe de vidange
C1, C2	Capacitor	Condensateur
CMB	Wash pump contactor	Contacteur pompe de lavage
Cc	Boiler heating contactor	Contacteur chauffage surchauffeur
Ct	Tank heating contactor	Contacteur chauffage cuve
CP	Door relay	Relais de porte
Ds. Abr.	Rinse Aid dispenser	Distributeur de produit de rinçage
Ds. Det.	Detergent dispenser	Distributeur de détergent
F	Fuse	Fusible
IG	Main switch	Interrupteur général
IP	Door microswitch	Micro porte
L1 L2 L3	Power Supply Phases	Phases d'alimentation
MB1, MB2	Wash Pump	Pompe de lavage
P1	Tank Pressure switch	Pressostat de cuve
P2	Drain pump Pressure switch	Pressostat de Pompe de vidange
P3	Boiler Pressure switch	Pressostat de surchauffeur
PP2	Soft Start Jumper	Soft Start Cavalier
Rc	Boiler heating element	Resistance surchauffeur
RG	Main Relay	Relais principal
Rt	Tank heating element	Resistance cuve
TC	Boiler thermostat	Thermostat surchauffeur
TSC	Boiler Hi-limit thermostat	Thermostat Limiteur surchauffeur
TST	Tank Hi-limit thermostat	Thermostat Limiteur de cuve
TT	Tank thermostat	Thermostat de cuve
V	Water solenoid valve	Electrovanne d'eau
VF	Water solenoid valve	Electrovanne d'eau

		COLOUR		COULEURS
BLU	=	Blue	=	Bleu
YEL	=	Yellow	=	Jaune
YEL/GRN	=	Yellow / green	=	Jaune / vert
WHT	=	White	=	Blanc
GRY	=	Grey	=	Gris
BRN	=	Brown	=	Marron
BLK	=	Black	=	Noir
ORG	=	Orange	=	Orange
RED	=	Red	=	Rouge
PNK	=	Pink	=	Rose
GRN	=	Green	=	Vert
PRP	=	Purple	=	Pourpre

6. GENERAL INFORMATION AND WARNINGS

This manual has been created to help you understand the operation, installation and maintenance of the machine. It contains all the necessary information and warnings to ensure that the appliance is installed and used correctly, together with information about the characteristics and possibilities offered, so that you may enjoy your machine to the full.



BEFORE STARTING THE APPLIANCE, PLEASE READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL CAREFULLY.

The manual should be kept safely to hand for future reference.

If the machine is sold or transferred, please pass the manual to the new user.



THIS APPLIANCE IS EXCLUSIVELY FOR PROFESSIONAL USE, AND SHOULD ONLY BE USED BY QUALIFIED PERSONNEL.

- The positioning and installation, and all repairs or modifications, should always be carried out by an **AUTHORISED TECHNICIAN**, in accordance with the applicable legislation of the country. The manufacturer does not accept liability if the machine is incorrectly installed.
- The installation, incorrect adjustment, inappropriate maintenance or use of the appliance may cause material damages and injuries.
- The dishwasher should be correctly levelled and care taken to ensure that none of the electric cables, water or drainage hoses are trapped or kinked.
- **DO NOT** climb on top of the dishwasher or place heavy objects on top of the machine as it has only been designed to bear the weight of the basket of plates to be washed.
- **The dishwasher is designed for washing plates, glasses and other kitchenware with traces of human food. Any other objects must not be washed in the machine.**
 - If your machine breaks down, please call the **Technical Service Centre**.
 - Unqualified or unauthorised personnel must **NOT** try to repair the machine.
 - Use of spare parts other than original parts will cancel the guarantee.
- During all maintenance operations, the dishwasher must be disconnected from the main power supply at the mains power switch, and the water intake tap must be closed.
- Abrasive or corrosive products, acids, solvents and chlorine-based detergents must **NOT** be used to clean the appliance, as this may damage the components.
- Detergents or sanitizers shall not be manually added to the machine.
- This appliance has been designed for use in ambient temperatures between 41 °F and 104 °F.
- Only the baskets, soaps and rinse aids recommended by the manufacturer should be used.



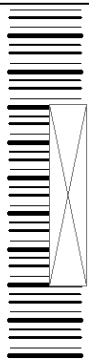
Failure to comply with these instructions or the incorrect use of the appliance shall relieve the manufacturer of any obligations regarding the guarantee or possible claims.

7. PRODUCT DETAILS

As it is an industrial product, it is characterised for having a high dishwashing capacity. The characteristics of the product are listed below to help you understand your machine better.

All the appliances have a nameplate which identifies the appliance and indicates its technical characteristics. This data plate is located on one side of the machine. Under no circumstances should the data plate be removed from the unit. The data plate is essential to identify the particular features of your machine and is of great benefit to installers, operators and maintenance personnel. It is recommended that, in the event the data plate is removed, you copy down the essential information in this manual for reference before installation.

DATA PLATE

FAGOR 			MOD. 1 MOD N. 2 SERIAL N. 3 V Ph Hz kW A  A		Made in EU 
		Water Inlet Max. Temperature 140°F Water pressure: 15-25 psi IPX3		4 5	

1: APPLIANCE MODEL NAME

4: ELECTRICAL SPECIFICATIONS

2: APPLIANCE REFERENCE

5: WATER INLET SPECIFICATIONS

3: SERIAL NUMBER + MANUFACTURE DATE

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

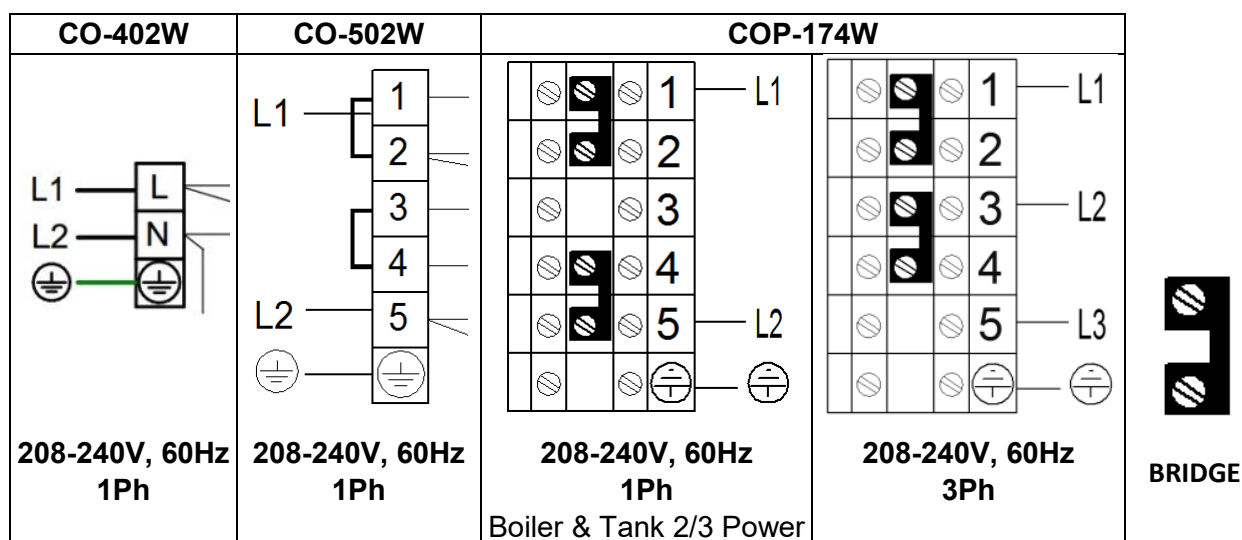
7.1 SPECIFICATIONS

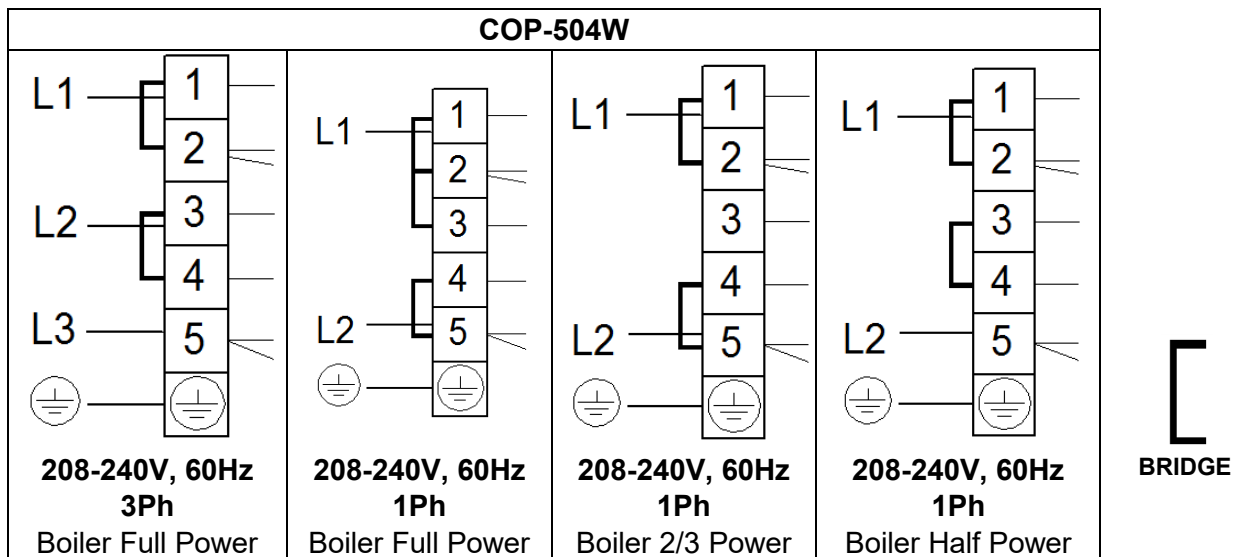
MODEL	RACKS PER HR.	DISHES PER HR.	GLASSES PER HR.	WASH TANK (gal)	GALLONS PER CYCLE	INLET MAX. TEMP.	FLOW RINSE PRESSURE
COP-174W	60	1500	2160	7.5	0.53	140 °F	PRESSURE PUMP (inlet 7 – 58 psi)
COP-504W	37	925	1332	5.4	0.53		
CO-502W	30	750	1080	5.4	0.6		25psi ± 5psi
CO-402W	22	242	352	4	0.6		

MODEL	WASH PUMP MOTOR	MIN. TEMP.		HEATING ELEMENTS		OPERATING CYCLE TIME (s)			
		WASH	RINSE	WASH TANK (kW)	BOILER (kW)	WASH	DWELL	RINSE	TOTAL
COP-174W	(2) 1 hp	162°F	180°F	4.75	12.75	35/55/100	5	15	55/75/120
COP-504W	1 hp	162°F		3	5.8/3.9/2.9	70/100/160			90/120/180
CO-502W	1 hp	162°F		3	2.9	70/100/160			90/120/180
CO-402W	1/3 hp	162°F		2.15	2.9	70/100/160			90/120/180

MODEL	WIDTH	DEPTH	HEIGHT	MAX CLEARANCE FOR DISHWARE	RACK	SHIPPING WEIGHT (lbs)	SHIPPING VOLUME (cu ft)
COP-174W	26"	30 1/2"	60 5/8"	17 3/8"	20" x 20"	356	22.5
COP-504W	23 5/8"	23 5/8"	32 11/16"	14 3/16"		170	15
CO-502W	23 5/8"	23 5/8"	32 11/16"	14 3/16"		170	15
CO-402W	20 7/8"	26 3/4"	35	10 5/8"	16" x 16"	105	10

MODEL	CONNECTION TYPE	Voltage (V)	Total Load (A)	Total Power (kW)	Pump Load (A)	Pump Power (kW)	Tank Power (kW)	Boiler Power (kW)
COP-174W	208-240V 60Hz 3Ph	208V	42,18	14,48	2 x 2,36	2 x 0,49	3,68	9,81
		220V	44,61	16,19	2 x 2,50	2 x 0,55	4,12	10,98
		240V	48,66	19,27	2 x 2,72	2 x 0,65	4,90	13,07
COP-174W Boiler & Tank 2/3 Power	208-240V 60Hz 1Ph	208V	47,97	9,98	2 x 2,36	2 x 0,49	2,45	6,54
		220V	50,74	11,16	2 x 2,50	2 x 0,55	2,74	7,32
		240V	55,35	13,28	2 x 2,72	2 x 0,65	3,27	8,71
COP-504W Boiler Full Power	208-240V 60Hz 3Ph	208V	15,07	5,07	2,36	0,49	2,29	4,58
		220V	15,94	5,67	2,50	0,55	4,12	5,12
		240V	17,39	6,75	2,72	0,65	4,90	6,10
COP-504W Boiler Full Power	208-240V 60Hz 1Ph	208V	24,38	5,07	2,36	0,49	2,29	4,58
		220V	25,78	5,67	2,50	0,55	4,12	5,12
		240V	28,13	6,75	2,72	0,65	4,90	6,10
COP-504W Boiler 2/3 Power	208-240V 60Hz 1Ph	208V	17,04	3,54	2,36	0,49	2,29	3,05
		220V	18,02	3,96	2,50	0,55	4,12	3,42
		240V	19,66	4,72	2,72	0,65	4,90	4,07
COP-504W Boiler Half Power	208-240V 60Hz 1Ph	208V	13,37	2,78	2,36	0,49	2,29	2,29
		220V	14,14	3,11	2,50	0,55	4,12	2,56
		240V	15,43	3,70	2,72	0,65	4,90	3,05
CO-502W	208-240V 60Hz 1Ph	208V	13,37	2,78	2,36	0,49	2,29	2,29
		220V	14,14	3,11	2,50	0,55	4,12	2,56
		240V	15,43	3,70	2,72	0,65	4,90	3,05
CO-402W	208-240V 60Hz 1Ph	208V	12,03	2,50	1,02	0,21	1,64	2,29
		220V	12,73	2,80	1,08	0,24	4,12	2,56
		240V	13,88	3,33	1,18	0,28	4,90	3,05





8. INSTALLATION INSTRUCTIONS



The dishwasher shall be installed in accordance with local codes, or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1, and Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96.



The positioning and installation, and all repairs or modifications, should always be carried out by an **AUTHORISED TECHNICIAN**, in accordance with the applicable legislation of the country.

The installation, incorrect adjustment, inappropriate maintenance or use of the appliance may cause material damages and injuries.

8.1 Removal of packaging

Remove packaging from the machine 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 machine until the problem has been assessed.

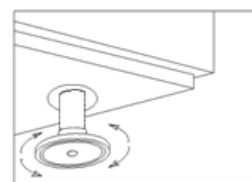
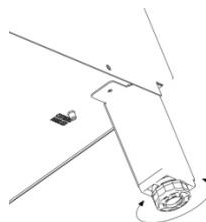


Packaging (plastic, expanded polyurethane, staples, etc...) must not be left in the reach of children, they are a potential hazard.

The machine should be moved using a fork-lift truck or similar to avoid damage to the structure. Transport the machine to the installation location and then remove packaging. All the packaging can be recycled. Dispose of packaging correctly.

8.2 Positioning and levelling

This appliance has adjustable feet. This is done by turning the leveling stands to the desire height. For optimum operation, it is essential that the machine is correctly levelled. The flooring on which the machine is to be installed must be able to bear the full weight of the machine.



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

8.3 Electrical connection



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

The dishwasher shall be installed in accordance with local codes, or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1, and Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96.”.



THIS APPLIANCE, WHEN INSTALLED, MUST BE ELECTRICALLY GROUNDED

The manufacturer cannot accept any responsibility for damage caused from a failure to observe grounding instructions.



- Refer to the wiring diagram, the machine data plate and technical specifications for service size requirements.
- Check that the mains voltage corresponds to that indicated on the nameplate.
- The power-supply cord shall be Type S, SE, SO, SOO, ST, STO, or STOO (with or without W at the end).
- The power supply cord wire size must be suitable for the rated current of the machine (amperage load). Use copper conductors only.
- The appliance must be grounded using the ground connection of the terminal block of the appliance.
- An all phase Circuit Breaker must be installed near to the appliance between the power supply and the appliance in accordance to required consumption guidelines. Switch the circuit breaker to “OFF” when servicing the appliance. It is recommended that it has lockout-tagout capabilities. 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, the supplier should be notified immediately.

When a number of appliances are installed in line, they should all be ground bonded at the point provided for that purpose.

To access the connection strip, release the cover of the machine's rear in the undercounter dishwashers and on the left lower side of the hood type dishwashers. The power cable is connected to the connection strip. It is also possible to change the machine configuration here.



The manufacturer will not be held liable for any personal or material damage to the machine resulting from incorrect installation or failure to comply with the manufacturer's specifications.



It is the personal responsibility and obligation of the customer to contact a qualified electrician to assure that the electrical installation is adequate.

8.4 Hydraulic connection

The new hoses supplied with the appliance should be used (do not reuse old hoses).

Before connecting the machine to the water supply, the water quality should be tested.

Recommended water quality:

pH:	6.5 to 7.5
Free Chlorine:	Less than 0.2 ppm (mg/L)
Chlorides:	Less than 30 ppm (mg/L)
Hardness:	Less than 3 gpg (52 ppm)
Conductivity:	400 – 1.000 μ S/cm
Silica:	Less than 12 ppm (mg/L)

Alkalinity:	Less than 50 ppm (mg/L)
Total Dissolved Solids (TDS) :	Less than 60 ppm
Sulfates:	Less than 40 ppm
Iron:	Less than 0.1 ppm
Copper:	Less than 0.05 ppm
Manganese:	Less than 0.05 ppm

Water installation is carried out as shown in **Fig 3** and **Fig 4**. The water line to the dishwasher must provide 25psi $\pm$ 5psi of flow rinse pressure. The hot water heater should be set to deliver 140°F (not lower than 122°F) water temperature to the dishwasher for best results. Use 3/4" copper tubing inlet line.

CAUTION: Do not confuse static pressure with flow pressure. Static pressure is the line pressure in a "no flow" condition (all valves and services are closed). Flow pressure is the pressure in the fill line when the solenoid valve is opened during the cycle.

It is necessary to remove all foreign debris from the water line that may potentially get trapped in the valves or cause an obstruction, prior to connecting to the machine.

Use only the supplied hoses (3/4" Female hose connector) at the water connections. Failure to do so may result in damage to the solenoid valve threads and leaking. Tighten by hand. Connect the bent side of the hose to the machine. Adaptor supplied for 3/4" female garden hose connection.

FOR HARD WATER SUPPLIES WITH A HARDNESS OF OVER 3 gpg OR 5°Fh AND PH BEYOND THE RANGE OF 6.5 – 7.5, A WATER CONDITIONER/DESCALER MUST BE INSTALLED.

Slowly turn on the water supply to the machine after the incoming fill line and the drain line have been installed. Check for any leaks and repair as required. All leaks must be repaired prior to placing the machine in operation.

In addition to water quality, the pressure of the mains water supply must be considered. This is important to ensure the machine operates correctly.

In areas where the pressure fluctuates or it is higher than the recommended pressure, a water pressure regulator shall be installed between the shut-off cock and the water hose (**Fig. 3**).

Required water dynamic pressure measured at pressure gauge 25psi $\pm$ 5psi (CO models).

Required water dynamic pressure measured at water inlet between 15-58 psi (COP models).

If the water pressure is less than required (25psi $\pm$ 5psi for COP models), installation of a water pump is required as shown in **Fig. 4**.

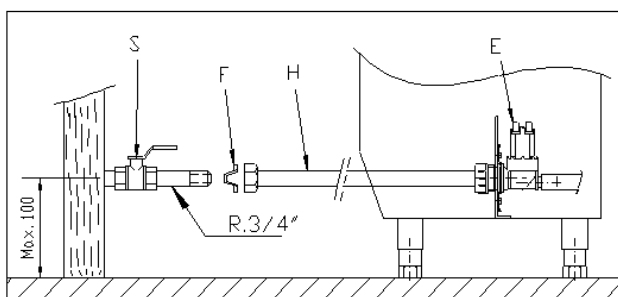


Fig. 3. Direct connection of water input hose.

S → SHUT-OFF COCK

F → FILTER

E → WATER VALVE

B → ELECTRIC PRESSURE PUMP

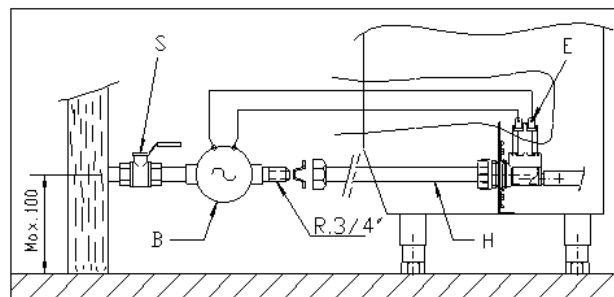


Fig. 4. Pressure pump connection.

The following requirements are necessary for the correct hydraulic installation of the machine.

- The hydraulic circuit must be fitted with a valve to shut-off the water supply.
- Check that the mains pressure is within the range indicated.
- To optimise the work of the machine, the water temperature at the machine intake should be within the following range: 122 °F (50 °C) < Hot water Temp < 140 °F (60 °C)
- If using hot water, the water temperature must not exceed 60 °C / 140 °F.
- All the machines should have a 3/4" screw-on connection.

8.5 Drainage connection

Attach the drain hose as shown in Fig. 5. It is recommended to affix a siphon pipe to prevent odors. All piping from the machine to the drain must be a minimum 1-1/2" I.P.S. There should also be an air gap between the machine drain line and the drain. For natural overflow efficiency use floor drain.

The water draining from the machine must flow freely and therefore the drainage pipe should be lower than the drainage outlet (**Fig.5**). If the drainage pipe is not lower, a drainage pump will be required. This must not be mounted at a height of more than **26 3/4"** (**Fig 6**). In this case, the pump may be requested at the time of purchase or subsequently.

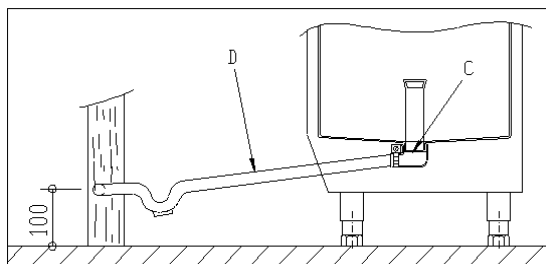
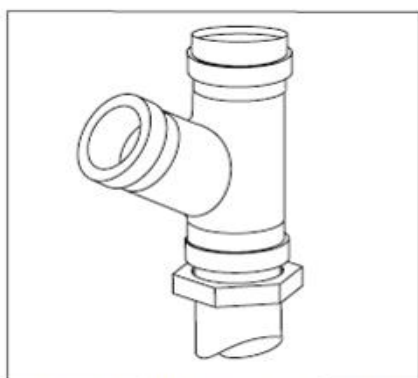
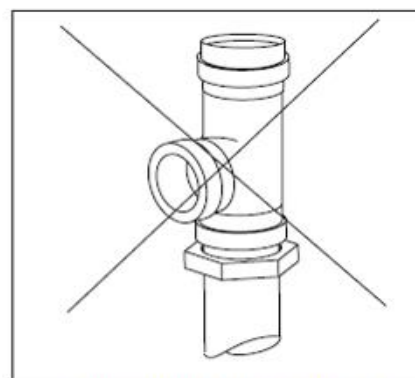


Fig 5. Drainage installation.

D: Drain hose C: Drain collector



The dishwasher flexible drain hose must be connected to a WYE fitting.



Do not connect the dishwasher flexible drain hose to a TEE fitting.

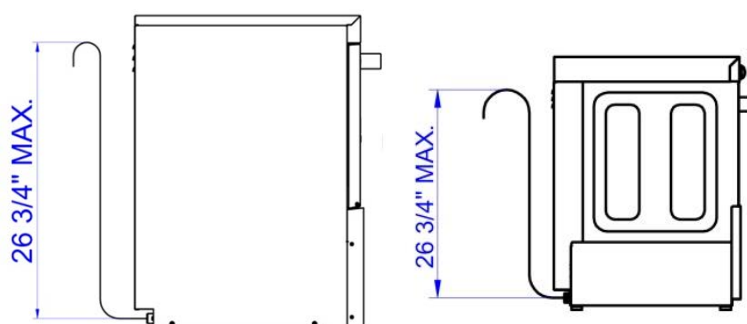


Fig 6. Installation of drainage at a height using drainage pump.



The drainage pump must only be installed by personnel authorised by the manufacturer, and the manufacturer does not accept liability in the event of incorrect installation.

8.6 Hydraulic rinse aid dispenser (CO MODELS)

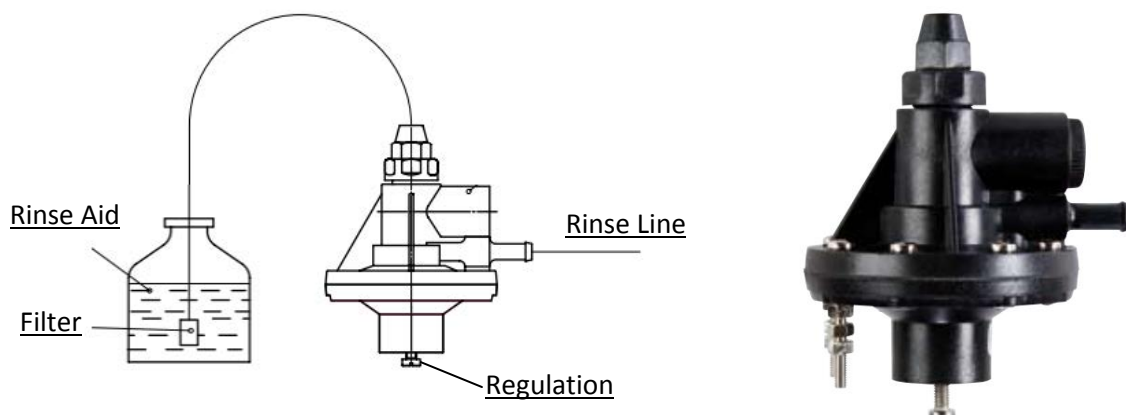
Installation: Take the tube located in the back of your machine marked “Rinse Aid” and place inside rinse container.

Tubes are transparent to provide you visible mean that chemicals are being dispensed.

Operation: This dispenser absorbs the rinse aid when it detects a loss in pressure during rinsing. That is, when the filling solenoid valve closes, a vacuum is created that makes the rinse aid dispenser absorb the fluid to which it is connected.

Adjustment: The dispenser should be adjusted when the machine is installed to ensure that the wash is optimised from the start. The setting should be adjusted according to the type of rinse aid and the water hardness.

WATER PRESSURE MUST BE MINIMUM 20 PSI AT THE PRESSURE GAUGE FOR THE RINSE AID DISPENSER TO OPERATE PROPERLY.



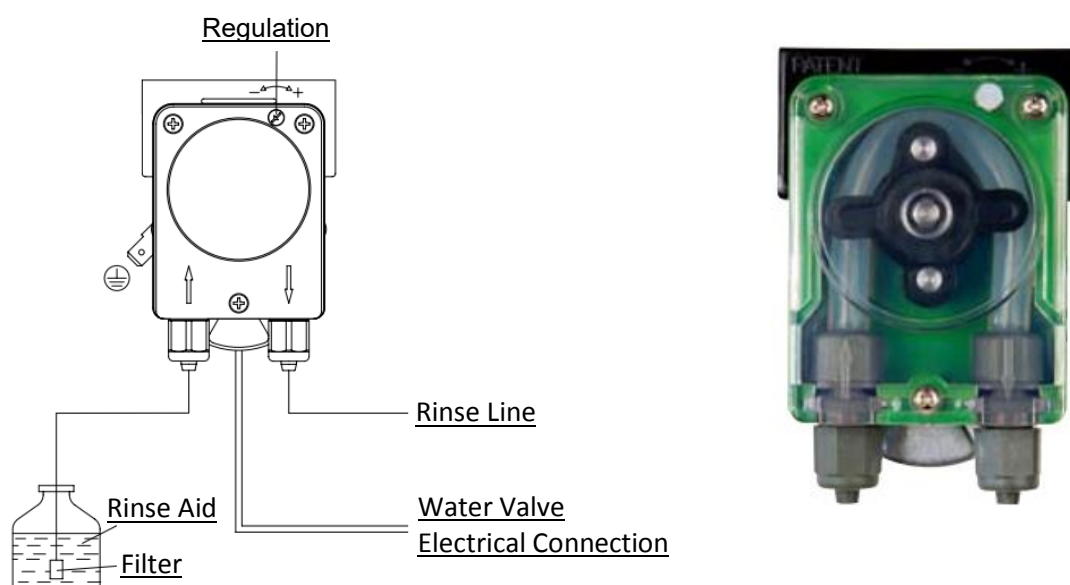
8.7 Electric rinse aid dispenser (COP MODELS)

Installation: Take the tube located in the back of your machine marked “Rinse Aid” and place inside rinse container.

Tubes are transparent to provide you visible mean that chemicals are being dispensed.

Operation: this dispenser absorbs the rinse aid when the rinse pump is switched on. That is, when the machine is filling and when the machine is running the rinse cycle.

Adjustment: The dispenser should be adjusted when the machine is installed to ensure that the wash is optimised from the start. The setting should be adjusted according to the type of rinse aid and the water hardness.



In order to maintain dishwasher at optimum conditions, it is requested to remove lime and corrosion deposits on a frequent basis. A de-liming solution should be available from your chemical supplier. Read and follow all instructions on the label of the de-liming solution. Operations:

- Fill the machine. Add the correct amount of de-liming solutions as recommended by the de-liming solution manufacturer. The water capacity of the tank can be verified on the specification sheet of this manual.
- Remove detergent and rinsing tubes from containers so no chemicals go to the machine.
- Run the machine for the recommended period of time. As many cycles as needed.
- Turn off the machine and open the door.
- When clean, drain and re-fill the machine.
- Run machine for 3-4 cycles to remove de-liming solution.
- Drain the machine.

If desired you can control the amount of Chemical being dispensed by opening the bottom front panel of the machine. Locate the detergent dispenser and regulate according to the flow. For the Rinse, turn the button counterclockwise to get more rinse aide and clockwise for less. Verify all connections to the dispenser are hand tighten to prevent any leaks. Control and maintain the level of detergent and rinse aid of the tanks. Keep chemical tubing and filters submerged.



It is recommended that the rinse aid product and the dispenser setting are defined by a technician specialised in the use of chemical products in order to ensure a more efficient wash.

8.8 Detergent dispenser

This ensures that the correct measure of detergent is supplied to the machine.

Use **ONLY Commercial Grade, High Temperature, Low Suds Liquid Detergent**. Fagor doesn't recommend any specific brand name of chemicals. Contact your local chemical distributor for questions concerning your chemical needs.

All machines come equipped with an internal Detergent and Rinse dispenser.

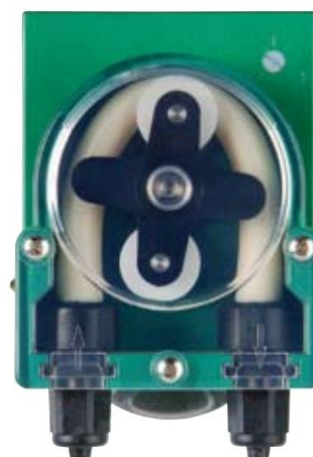
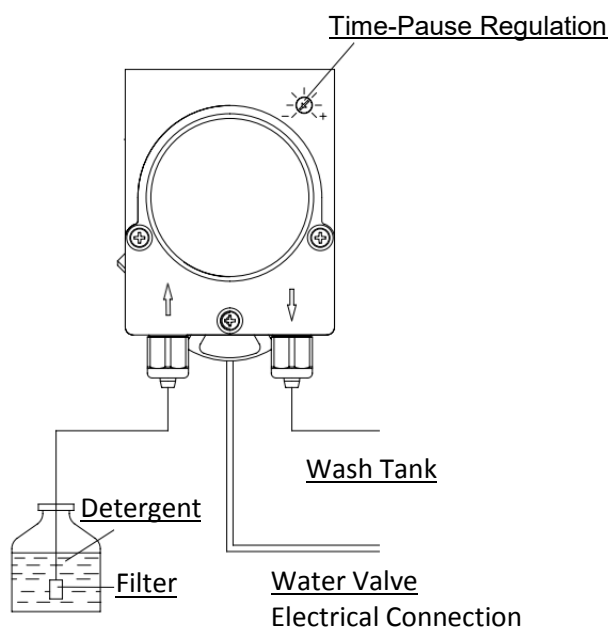
Installation: the detergent dispenser input is in the wash tank front part, above the maximum water level.

Take the tube located in the back of your machine marked "Detergent" and place inside detergent container.

Tubes are transparent to provide you visible means that chemicals are being dispensed.

Operation: the detergent dispenser is activated when the machine is taking water, whether it is in rinse cycle or whether it is filling.

Settings: the quantity of detergent used should be adjusted on installation to ensure that the wash is optimised from the start.



	It is recommended that the detergent and the dispenser setting are defined by a technician specialised in the use of chemical products in order to ensure a more efficient wash.
	If you require the installation of an NON FAGOR Detergent and/or Rinse pump, a form MUST be fill out prior to installation by your installer. Failure to do so will void your Warranty. This form can be located inside your dishwasher. If lost, please contact Fagor to get a copy.
	The detergent pump and rinse dispensing pump will only work during the process of fill and rinse.

8.9 Pressure pump

If the mains water pressure is less than 20psi at pressure gauge, you have the option of installing a pressure pump. If the pressure is less than 20psi at pressure gauge the machine may operate incorrectly. The electrical connections for the pressure pump are shown in the electric circuit diagram. The water connection to the pressure pump is shown in **Fig 4**.

If the mains water pressure is less than 20psi at pressure gauge please contact your supplier or the manufacturer to request the PRESSURE PUMP KIT.

	The pressure pump must only be installed by personnel authorised by the manufacturer, and the manufacturer does not accept liability in the event of incorrect installation.
---	---

8.10 Recycling

The product packaging consists of:

- A wooden pallet.
- Cardboard.
- A polypropylene band.
- Expanded polyethylene.



All the packaging used around the machine can be recycled. The correct disposal of these products will help to protect the environment. For further information regarding the recycling of these products, please refer to the relevant office of the local body. Dispose of these materials in accordance with current legislation.

9. USE AND MAINTENANCE INSTRUCTIONS



BEFORE STARTING THE APPLIANCE, PLEASE READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL CAREFULLY.

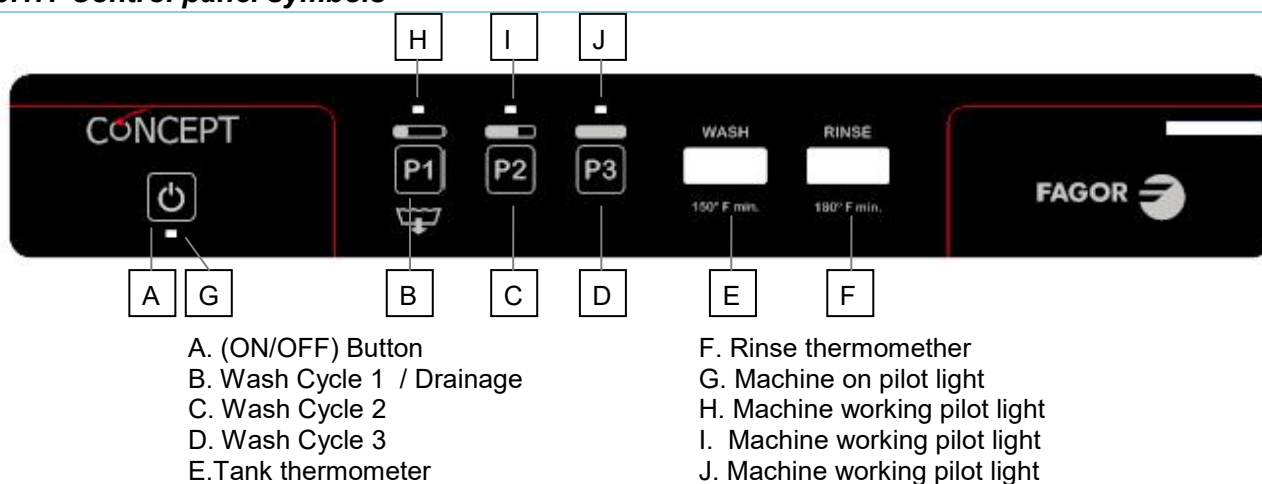


THE APPLIANCE IS EXCLUSIVELY FOR PROFESSIONAL USE, AND SHOULD ONLY BE USED BY QUALIFIED PERSONNEL.

9.1 Operation

The steps required to optimise the operation of your dishwasher are shown below, with all the available options.

9.1.1 Control panel symbols



9.1.2 Switching on the machine

Before switching on the machine, check the following:

- ✓ The mains switch must be on.
- ✓ The water stop cock must be open.
- ✓ There must be water in the mains network.
- ✓ The corresponding filters must be in place.
- ✓ The overflow should be mounted in place.

To switch on the machine just press the *ON-OFF* button once for 1.5 seconds.

9.1.2.1 Filling and heating

In the CO models, when the machine is switched on, it will start to fill. First the rinse boiler is filled and then the wash tub. The filling process may last a few minutes. Once the wash tub is full, the boiler and the tub start to heat up. Although it is possible to start the wash process, this is not recommended as the water inside the machine is not yet at the ideal temperature. When the machine has reached the ideal temperature for washing the dishes properly, a light comes on, advising the user that the machine is ready. The required temperature of the machine is 85 °C / 185 °F in the rinse boiler and 65 °C / 150 °F in the wash tub. It is recommended that the water in the dishwasher is changed every 40/50 washes or twice a day.

In the COP models, the filling is thermostatic. This means that when the water boiler is full, the boiler heats the water to a temperature of 65 °C / 150 °F and then the tank is filled. This process is repeated each time the boiler is emptied during the filling cycle. This filling system is more efficient but it helps to reduce the electricity consumption as when the machine has been filled, the water is at the correct temperature.



The hood/door must be closed for the machine to start filling. For safety reasons, if the hood/door is open, the machine will not fill.

The machine you have purchased has a safety thermostat in the boiler and another for the tub, so that in the event of the breakdown of any of the main thermostats, the safety thermostats switch off the corresponding heating.

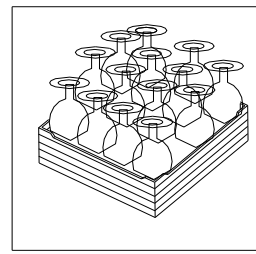
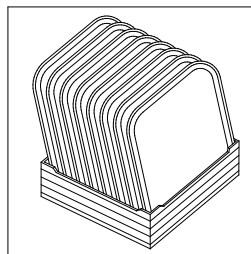
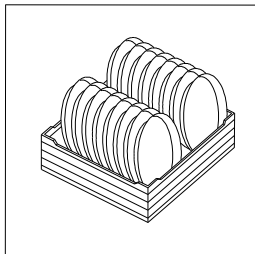
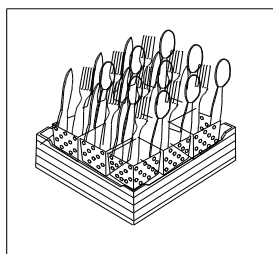


During the first heating of the day, the boiler may reach a higher temperature than that mentioned above due to heating inertia. This is normal. If pressurised steam is observed coming out of the rinse branch nozzles, while the boiler is heating, the technical service should be notified.

9.1.3 Preparation of the dishes

Before washing the dishes, the preparatory steps below should be followed:

- Remove the largest pieces of waste from the dishes before placing them in the baskets.
- Wash glassware first.
- Put the plates in the rack basket.
- Place the glasses upside down.
- Place the cutlery in the cutlery baskets with the handles downwards. The different pieces of cutlery can be mixed.
- Place the cutlery baskets in the lower baskets.



9.1.4 Selecting the wash cycle

Before starting the wash cycle, place the corresponding basket containing the dishes in the machine and close the hood/door. A wash cycle must be selected in order to start the wash. Each wash cycle corresponds to a wash time that should be selected according to the user requirements. Press one of these three programmes and depending on selected programme, one or other led will switch on, the wash cycle will start automatically.



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



If you start your dishwasher prior to your boiler reaching a minimum of 180° F (83°C), YOU WILL HAVE AN EXTENDED WASH CYCLE!

9.1.4.1 Thermo-stop

The thermo-stop is designed to ensure a constant rinse at the maximum temperature. This means that the machine continues washing until the boiler reaches the ideal temperature. Then the rinse cycle starts.



If the mains water temperature is less than 50 °C / 122 °F, the installation of this system may reduce the wash capacity of the glass washer.

9.1.5 Stopping the wash cycle and end of wash cycle

The wash cycle can be stopped in the following ways:

- By switching off the machine → the cycle stops completely.
- By opening the hood/door → when the hood/door is closed, the cycle continues.

At the end of the wash cycle, remove the basket and leave the dishes to dry naturally. Remove the dishes from the basket with clean hands, taking care not to burn yourself as the dishes are extremely hot.

9.1.6 Drainage of the machine

The dishwashers has two types of drainage; gravity drainage or using a drainage pump, which is optional.

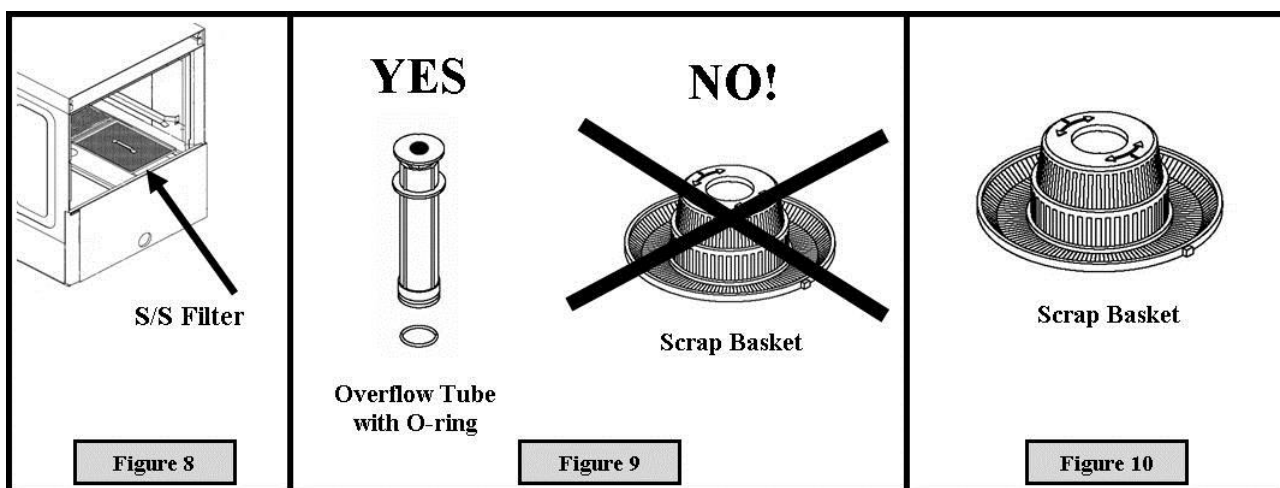
9.1.6.1 Drainage by gravity

To drain the machine in this way, just remove the overflow from the machine and it will drain naturally. For reasons of safety, this method of drainage should only be used with the machine switched off.

9.1.6.2 Drainage using the drainage pump (Optional)

The drainage using the drainage pump option is only available on request. The drainage pipe must always be fitted on a siphon to prevent the return of odours. To drain the machine using this method, proceed as follows:

- Open the door and remove the Front Right S/S Filter. (Fig. 8)
- Remove the overflow tube by inserting a finger into the top of the tube. (Fig. 9)
- Press the button P1  during 3 seconds, the led H will illuminate during operation.
- Wait until the led turns off.
- At the end of the cycle (approx. 160 s), the machine may be switched off.
- Take out scrap basket for cleaning by twisting to the left. (Fig. 10)
- Replace scrap basket, lock into position by twisting to the right and replace overflow tube with O-ring.
- Replace S/S filter back into position (Fig. 8).
- Press ON/OFF button to turn unit OFF.
- Wipe clean and dry the machine if the day is completed. Leave door open until the next day's operations or to one of the time settings to begin using the machine again.
- To avoid the risk of damage from oxidization or corrosion from chemicals, keep all steel surfaces clean.



To drain the machine with the drainage pump, the hose must be at a height (max. 31 1/2" in undercounter dishwashers or 26 3/4" in glasswashers).

9.1.7 Switching off the machine

To switch off the machine, just press the *ON-OFF* button once for 1.5 seconds.

The machine should not be switched off during the wash process as this will stop the tableware inside the machine from being cleaned properly.

9.1.8 Cleaning the machine at the end of the day

At the end of the day, the filters, wash distributors, rinse branches and other accessories must be cleaned. This is necessary to prolong the service life of the machine. To ensure the efficient washing of the dishes, the dishwasher must be perfectly clean and disinfected.

9.2 Useful tips

Read the useful tips listed below carefully to allow you to get the most out of your dishwasher.

9.2.1 Maintenance

Always clean the machine correctly to prolong the service life of the machine.

- Remove any waste from the machine at the end of each day.
- Do not use abrasive, corrosive or acid products, chlorine-based detergents, solvents or petrol derivatives to clean the machine.
- Do not spray off the machine and the immediate vicinity (walls, floors) with a water hose, steam cleaner or pressure washer.
- In order to prevent water from entering into the machine uncontrolledly, make sure that the machine's plinth is not flooded when cleaning the floor.
- Do not use pressurised water to clean the machine.
- Only wash tableware, glassware or kitchenware that has been used for human food.
- Check that the wash distributors rotate correctly every day.
- Check the salt, rinse aid and detergent levels at the start of each day.
- If the power cable is damaged, it must be replaced by the manufacturer, after-sales service or authorised technical personnel in order to prevent risks.

9.2.2 Rinse aid and detergent

If you change the rinse aid or detergent, the settings should be adjusted accordingly. This adjustment must be carried out by qualified personnel. Only use detergents suitable for industrial dishwashers. Do not use foam-producing detergents. Detergents designed for domestic use should not be used under any circumstances.



When handling chemical substances, the safety instructions must be observed. Use suitable protective clothing, gloves and safety goggles when handling chemical substances. Do not mix different detergents.

9.2.3 Hygiene practices

- Do not touch clean dishes with dirty or greasy hands.
- Use clean sterilised cloths to thoroughly dry the dishes.
- Wait until the machine reaches the correct wash temperature to ensure a thorough disinfection and wash.
- Drain the wash tub at least twice a day or every 40/50 wash cycles.

9.2.4 Optimum results

To obtain optimum dishwashing results, the manufacturer recommends you proceed as follows:

- Wash the dishes when the machine is ready.
- Always ensure the different dispensers are correctly adjusted.
- Keep the dishwasher thoroughly clean.

9.2.5 Prolonged non use

If the machine is kept out of service for a long period of time (holidays, temporary closure...), please observe the following:

- Drain the machine completely, including the boiler.
- Clean the machine thoroughly.
- Leave the hood/door of the machine open.
- Close the water intake valve.
- Switch off the mains power supply.
- If there is a risk of frosts, ask your technical service to protect the machine against frosts.

10. FAULTS, ALARMS AND BREAKDOWNS

The steps to be followed in the event of a fault or operating error are described below. The possible causes and possible solutions are listed in the following table. In the event of doubt, or if you are unable to resolve the problem, please contact the technical service.



Do not handle electrical components, as there is a risk of death as the components are live.

FAULT	POSSIBLE CAUSE	SOLUTION
The machine does not come on.	There is no power supply.	Check whether the magneto-thermal circuit breaker has been triggered.
	The fuses have blown.	Call the technical service to analyse the reason why.
	Main switch open.	Close switch.
The machine does not fill with water.	Water entrance valve closed.	Open the water valve.
	Rinse nozzles blocked.	Clean nozzles and check branches for build-up of lime.
	Solenoid valve filter blocked.	Call the technical service to clean the filter.
	Rinse pump faulty.	Call the technical service to replace the pressure switch.
	Pressostat is broken.	Call the technical service to replace the pressure switch.
Unsatisfactory wash.	Wash distributors obstructed.	Clean distributors thoroughly.
	Shortage of detergent.	Call the technical service to reset the dispenser.
	Dirty filters.	Clean the filters thoroughly.
	Presence of foam.	Unsuitable detergent. Call the technical service to supply correct detergent.
		Too much rinse aid. Call the technical service to reset the dispenser.
	Temperature of lower tub at 50 °C / 122 °F.	Thermostat faulty or incorrectly set. Call the technical service to repair it.
	Length of cycle too short for level of dirt on dishes.	Select a longer cycle.
Dishes and kitchenware are not dry.	Water too dirty.	Drain the wash tub and fill with clean water.
	There is no rinse aid	Fill the rinse aid container.
	Rinse aid low.	Call technical service to adjust dispenser.
	Dishes left inside dishwasher for too long.	When the dishwasher finishes, remove the basket from the machine and allow to dry naturally.
Scratches or stains on dishes.	Rinse temperature lower than 80 °C / 176 °F.	Call technical service to analyse problem.
	Too much rinse aid.	Call technical service to adjust rinse aid dispenser.
	Water too chalky.	Check water hardness and if possible run regeneration cycle immediately.
	Not enough salt in salt deposit.	Fill salt deposit where applicable.
	Traces of salt in tub.	When filling the salt deposit, take care not to spill salt in the tub.

Machine stops during operation.	Electrical installation overloaded.	Call technical service to modify electrical installation.
	Machine protection has tripped.	Reset safety device and if it trips again, call technical service.
Machine stops and fills with water when it is washing.	Pressure switch pipe blocked.	Empty the tub and clean thoroughly.
	Pressure switch faulty.	Call the technical service to replace it.
	Overflow incorrectly mounted.	Mount overflow correctly.
The machine does not start with the wash cycle.	Hood/door is not closed properly.	Close the hood/door correctly and if it is seen to re-open alone, call the technical services to adjust the tensioners.
	Hood/door micro switch faulty.	Call the technical service to replace it.
Machine does not drain completely.	Machine not levelled correctly.	Level the machine In the event of doubt, please contact your technical service.
	Pressure switch faulty.	Call the technical service to replace the pressure switch.



NOTE: If a fault occurs and is not listed in the above table, please call the technical service. The manufacturer reserves the right to modify the technical characteristics with prior warning.

10.1 Error diagnosis

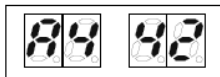
ERROR	DESCRIPTION	CONSEQUENCE
1	DOOR OPEN	The ON/OFF LED lights up for 0.5 seconds and then remains unlit for 2 seconds before lighting up again. This continues as long as the door is open and the selected cycle is unfinished.
2	TANK FILL	The ON/OFF LED light up twice for 0.5 seconds each time and then remains unlit for 2 seconds, then lighting up again twice. This continues while the water in the tank does not reach the correct level in the specified time.
3	TANK DRAINAGE	The ON/OFF LED lights up three times for 0.5 seconds each time and then remains unlit for 2 seconds, then lighting up again three times. This continues while the drainage pump does not drain the water in the tank to the correct level in the specified time.
4	BOILER HEATING	The ON/OFF LED lights up four times for 0.5 seconds each time and then remains unlit for 2 seconds, then lighting up again four times. This continues while the water in the boiler does not reach the correct temperature in the specified time.
5	TANK HEATING	The ON/OFF LED lights up five times for 0.5 seconds each time and then remains unlit for 2 seconds, then lighting up again five times. This continues while the water in the tank does not reach the correct temperature in the specified time.

10.2 DISPLAY ALARMS

The display may show different alarms for the temperature probes. The alarm is shown on the corresponding display (tank temperature display or boiler temperature display).

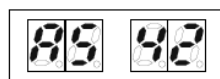
A4

- “Temperature probe open” alarm.
Verify proper connections at the circuit board and probe sensor.



A5

- “Temperature probe short-circuit” alarm.
Replace temperature probe.





FAGOR COMMERCIAL

Fagor Commercial Inc.

13105 NW 47th Avenue

Miami, FL. 33054, USA

T. 305 779 0170

Fax. 305 779 0173

1-866-GO FAGOR

www.fagorcommercial.com