



Installation manual

ENGLISH



WARNING



TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT REMOVE MACHINE COVERS.

NO USER-SERVICEABLE PARTS INSIDE.

REPAIR AND INSTALLATIONS SHOULD BE DONE BY
AUTHORIZED SERVICE PERSONNEL ONLY.

This installation manual covers the following models:

Model Name	Power Configuration	Description
LF12E	3x400v+N+PE, 50Hz, 16kW	Lightfry - CE Version
LF18HC	3x400v+N+PE, 50Hz, 16kW	Lightfry High Capacity - CE Version
LF12U	3x220v+N+PE, 60Hz, 13 KW	Lightfry – ETL + NSF Version










This document is under revision and it may be subjected to modifications.
Please contact your machine supplier for the latest version.



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2 Explanations of the icons

 <i>Danger!</i>	 <i>Warning!</i>	 <i>Attention!</i>
Immediate dangerous situation that can cause sever injury or death.	Possibility of dangerous situation can cause sever injury or death.	Possible dangerous situations that can cause minor injury or damage.
 <i>Hot Surfaces</i>	 <i>Corrosive materials</i>	 <i>High Voltage</i>
Be aware of hot surfaces and risk of burning	Be aware of corrosive substances, wear protective clothing.	Danger of electrical shock or danger of life. High power components
 <i>Information</i>		
Attention or information, please be aware of the information provided		

3 Safety Information

	CAUTION	
<p>Please, for your own safety, read this manual carefully before operating the Lightfry unit</p> <hr/>		
<p>Appliance shall not be cleaned with water jets</p> <hr/>		
<p>If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similar qualified person in order to avoid a hazard</p> <hr/>		
<p>Staff using the oven must be thoroughly briefed and trained before using the Lightfry unit. Make sure that you keep this manual in a place where everyone can easily find it.</p> <hr/>		
<p>Incorrect installation, maintenance, servicing or cleaning to the oven may result in damage, injury or death.</p> <hr/>		
<p>The oven should be serviced by an authorised service partner at least once a year to ensure that the oven remains in perfect working order.</p> <hr/>		
<p>Do not install closer than 2" / 50mm from the rear side</p> <hr/>		
<p>Unit must be installed with adequate backflow water protection to comply with applicable federal, state and local regulation codes.</p>		



Hot Surfaces

The oven operates internally with hot air temperatures around 260 °C [500 °F], therefore there is a risk of burning yourself if not properly operated. Please read this manual before operating the oven, avoiding this step could cause you serious damages. Use the Cool Down function to drop the temperatures to a safe level before operating the unit internal parts.

There is a risk of burning yourself while operating the food basket container, therefore use safety high temperature gloves while operating the food basket container.

Please clean and wash the oven chamber regularly, read the user manual for instructions, failing to clean the oven will increase the risk of fire due to food and grease deposits.



Chemicals

The oven uses special formulated washing detergents that should be operated by trained personal. Remember always to use full clothing, gloves and face protection when operating the washing detergents.

In case of contact with the detergent, rinse it with water and contact your nearest hospital for assistance. Please refer to the detergent safety document for more detail information



High voltages

The machine is operated at high voltages and high currents, therefore the machine should be inspected, maintenance or repaired only by trained technicians. Always disconnect the unit from mains power before removing the machine side panels.



Liability

Performing the any of the following steps will invalidate the manufacturer's warranty and product liability;

- ✓ Avoiding to perform a daily maintenance and needed washing cycle after normal use.
- ✓ Installations and repairs that are not carried out by authorised specialist.
- ✓ Performing any technical changes to the oven that are not approved by the manufacturer.

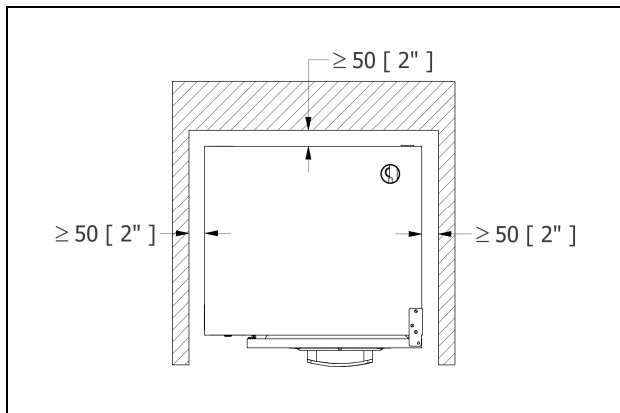
4 Lightfry - General Information



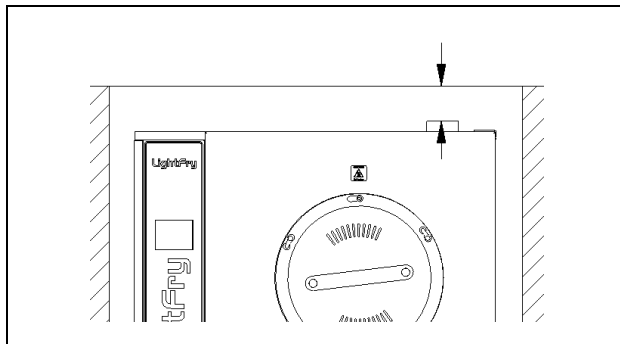
LightFry - Specifications		
	<i>Metric</i>	<i>Imperial</i>
<i>Width</i>	693 mm	27.3 inch
<i>Height</i>	711 mm	28 inch
<i>Depth</i>	645 mm	25.4 Inch
<i>Weight</i>	100 kg	220.5 pounds
<i>Max. Cooking Temp</i>	260 °C	500 °F
<i>Cooking capacity</i>	16 kg/hour	35 pounds/h
<i>Noise level</i>	67 dB	
<i>Detergent Type</i>	ECOLAB Mip SMX (recommended)	

The lightfry unit is delivered on top of a wooden pallet and cover by a cartoon box. Check always under the machine for the user manuals and the basket door handle.

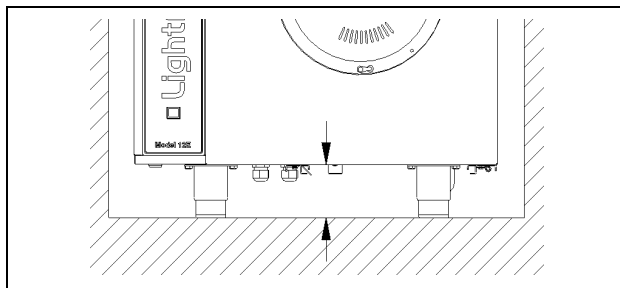
5 Recommended installation clearances



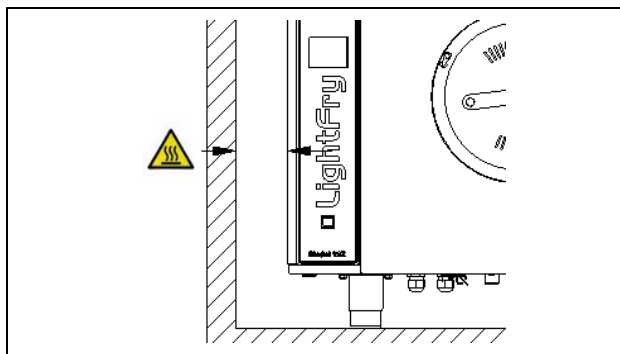
- Keep a minimum clearance of 50 mm [2 inch] on the left/right/rear side panels
- **⚠ IMPORTANT!** The back side clearance should never be lower than 50 mm [2 inch]. Lower clearances will restrict the machine ventilation system, compromising the electrical cabinet components and the cooking results.
- It is recommended to increase the left/right clearance for an easy serviceability when possible.



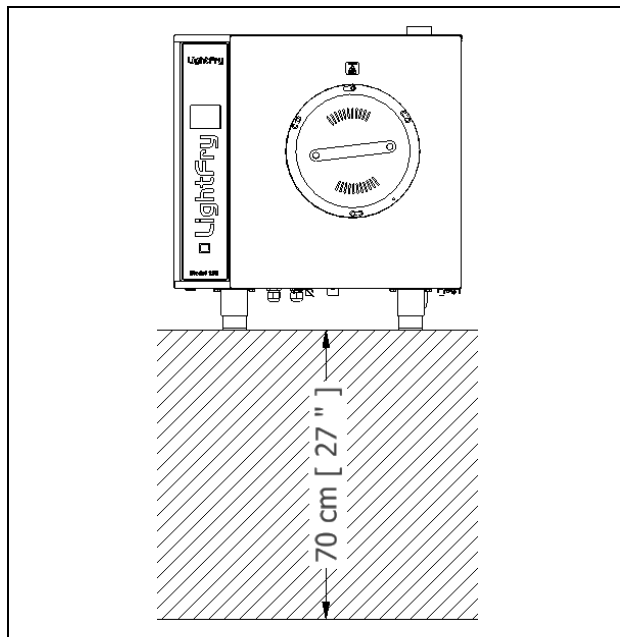
- Do not install any object on top of the unit.
- Do not connect a ventilation system directly to the exhaust pipe, allow a minimum distance of 10 cm [4 inch] between the ventilation system and the unit.
- **⚠ IMPORTANT!** Be aware of the hot air and steam vapors leaving the exhaust pipe during the cooking process.



- Do not place any object under the unit that may restrict the ventilation system.
- **⚠ IMPORTANT!** Do not install the unit on top of any heat source, allow the free movement of fresh air under the machine.



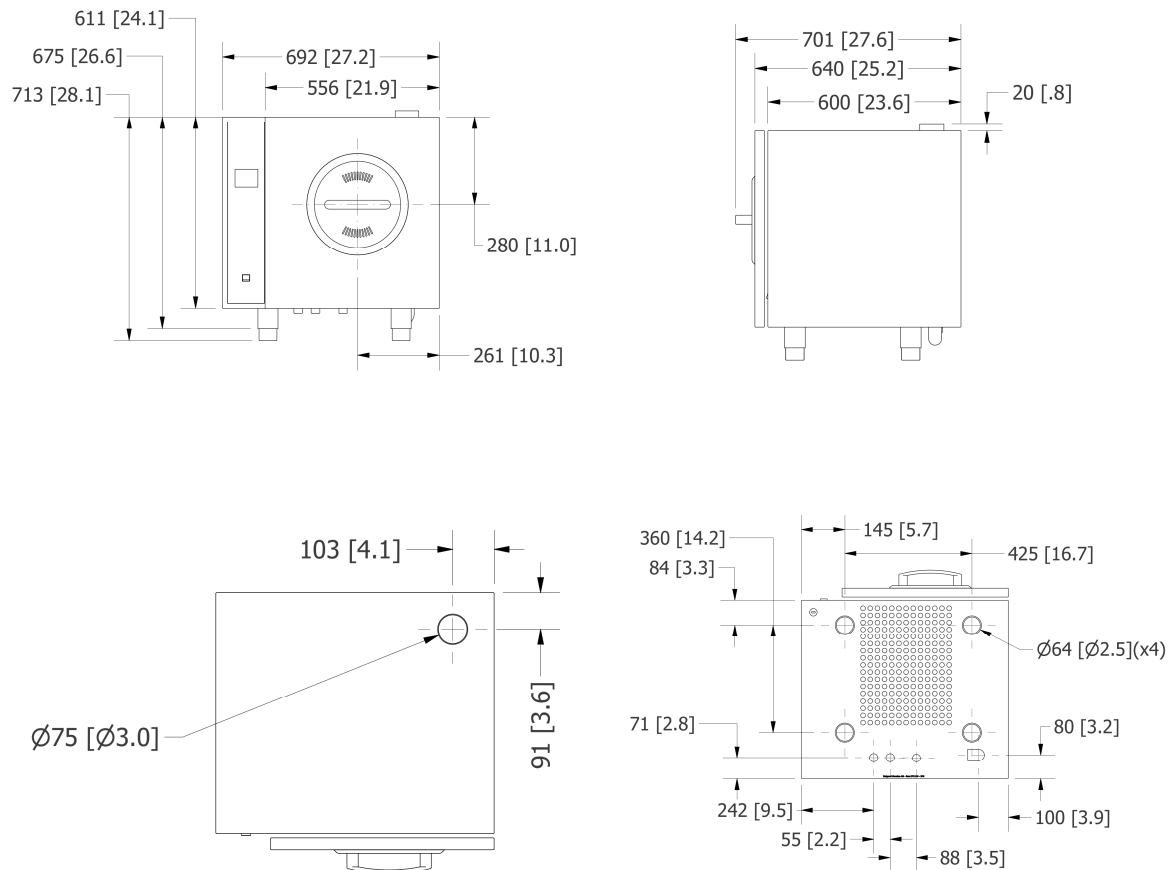
- Do not place heat sources on the machine left side, if possible.
- Keep a clearance of at least 30 cm [12 inch] on the left side from the heat source.



- Recommended installation/working height is 70 cm [27 inch].
- Use a stable surface that can handle the machine weight.
- **NOTE:** Use the adjustable legs to set the machine to the correct level.

6 Lightfry - Outer dimensions

Lightfry 3D Step files are available to download, ask your machine supplier.



Units: Millimeters [Inches]

7 Lightfry - Machine Connections

The machine external connections are located in the back side on the bottom part, see the following picture.

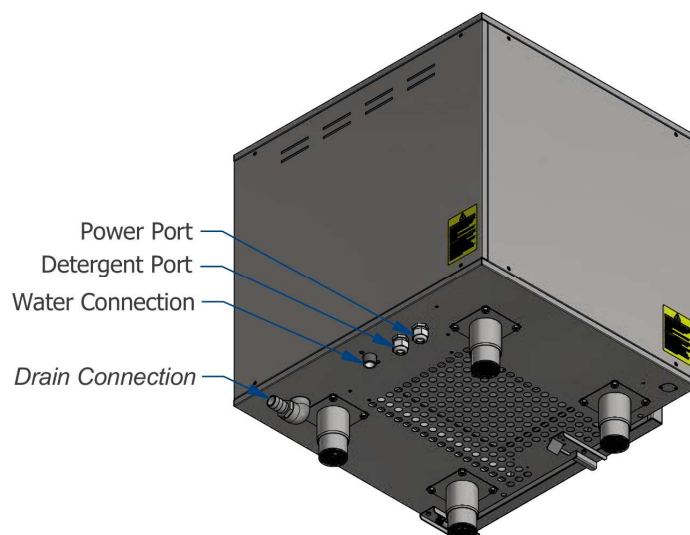


Figure 1 - Lightfry external connections

7.1 Power Port

Important notes before connecting the machine to power:

- ✓ Before connecting the unit to power make sure that the voltages values are the proper ones as is stated in the machine marking plate.
- ✓ The unit must be installed with an external and accessible all-pole disconnection device with a minimum of a 3 mm [1/8 inch] contact gap
- ✓ The unit must be connected to an earth leakage circuit breaker. Check your federal, state and local regulation codes for specific leakage circuit breaker values.
- ✓ Use copper wire only for power supply connections.
- ✓ If necessary, an equipotential bond with good contact connection must be provided in accordance with all appropriate national and local regulations
- ✓ If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similar qualified person in order to avoid a hazard

The power port is supplied with a cable gland protection that accepts power cables with minimum diameter of 9 mm [0.35 inch] up to a maximum diameter of 16 mm [0.63 inch].

It is very important to check the voltages values with a multimeter before connecting the machine, failing to do it could damage the machine permanently if the wrong voltages are applied.

The machine is provided with phase order detection. If the machine shows Error number 0 "Incorrect phase order" on start-up, switch power connections between two phase cables L1, L2 or L3. Do not use Neutral connection (blue cable) doing so will damage the machine permanently.

7.1.1 Models 12E and 18HC

Model	12E and 18HC
Power configuration	3x400v + N + PE
Total kW	16 kW
Maximum Current	26 A
Recommended external fuse	32 A

The models 12E and 18HC are provided with a **32A 5-Pin straight plug IEC309** and **1.5m of power cord**. Make sure that the electrical socket is within 1.5m to the final unit installation location.

7.1.2 Model 12U

Model	12U
Power configuration	3x220v + N + PE
Total kW	13 kW
Maximum Current	33 A
Recommended external fuse	50 A

The model 12U is provided without any power cable, therefore it is the installer responsibility to check the national and/or local regulations for proper cable section and correct installation procedures.

The power cable can be passed through the power port and connected to the input terminal block connector that is located in the back side of the unit, in the lower part of the electrical DIN rail, see following picture.

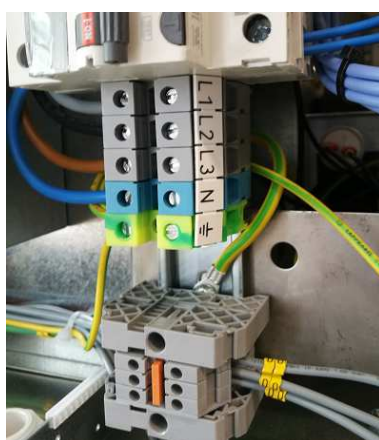


Figure 2 - Input power terminal block

The input ports are marked as Phase L1 or R phase, phase L2 or S phase, phase L3 or T phase, neutral phase N in blue and ground/protective-earth connection (PE) in green-yellow colour.

7.2 Detergent Port

The unit is provided with a cable gland protection used to pass through the hose and electrical cable for the external detergent pump installation.

See next sections for instructions about how to install the external detergent pump.

7.3 Water Connection

Water type	Cold water
Connection	¾ inch standard connection
Water pressure	4-6 bars

The incoming fresh water connection is made in the rear, bottom part of the oven. The cold water connection is a **¾-inch connection**. It's recommended to purchase a 90° elbow connection due to the low space between the floor and the machine.

It is recommended to provide an external on/off valve to block the water in case of service or removal.

7.4 Drain Connection



IMPORTANT

Make sure that the drain line is free of tight corners, hose bends and bottleneck restrictions to allow proper water drainage. If the machine doesn't drain the water within the specified time, an error will be shown

Connection	1 inch nipple connection
Max water temperature	80 °C [176 °F] approx.

The water drain connection is made in the rear, bottom part of the oven. The connection of the drain hose is a **1-inch connection**, and the hose is then locked with a hose clamp.

Note that the temperature of the discharge water is approximately 80°C (176°F), and some plastic hoses will malfunction at those temperatures due to bends and restrictions. Make sure to use the proper hose that could handle those temperatures. It is recommended to use a suction hose type.

7.5 Exhaust chimney



IMPORTANT

The external ventilation extraction system should never be connected directly to the oven chimney, doing so will alter the cooking process and the cooking quality will be compromised.

The lightfry unit exhausts are mainly water and low percentage of oil fumes present in the frozen product, be aware of water condensation in the ventilation system.

If the Lightfry unit is positioned under an external air extraction hood there is no need for any other connection. There is an extraction hood designed for the machine as an accessory, please contact your machine supplier for more information about dimension and installation.

8 Accessory installation – External detergent pump

Required components:

Quantity	Item	Notes
1 pc	External detergent pump	Type may vary depending of model
1 pc	Electrical 2-pole cable	Length may vary depending on the installation location
1 pc	Detergent hose ¼"	Type LLD-PE ¼" x 0.040, length depends on installation location.

8.1 Installation steps



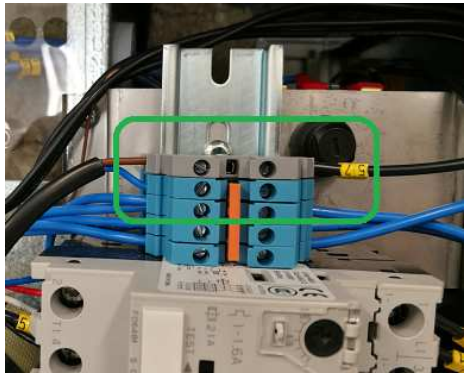

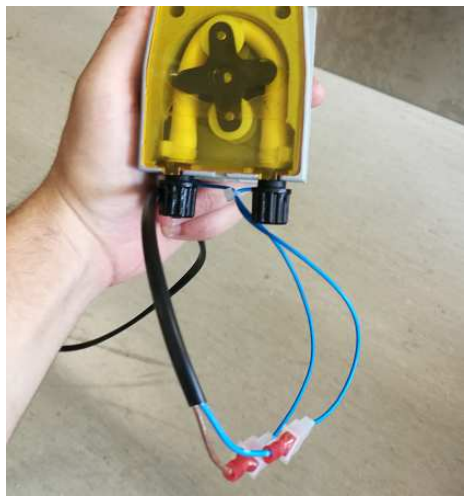
IMPORTANT

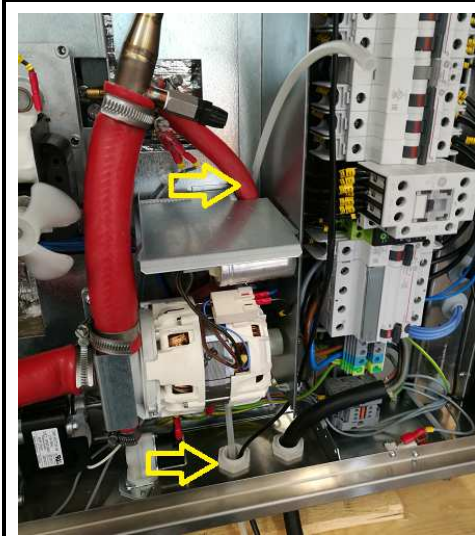
Disconnect the machine from power before opening the rear side cover.



STEP 1

- Remove the rear side cover of the machine
- Pass the detergent pump cable through the detergent port

	<p style="text-align: center;">STEP 2</p> <ul style="list-style-type: none"> • Connect the detergent pump cable in the terminal block, as shown in the picture. • One terminal to cable 57 on the grey block and the other terminal to the neutral blue block. • The port connection power ratings are: MODEL 12E and 18HC: Voltage: 230v Max current: 1A MODEL 12U: Voltage: 110v Max current: 1A
	<p style="text-align: center;">STEP 3</p> <ul style="list-style-type: none"> • Secure the detergent pump cable to the machine with a zip tie, as shown in the picture.
	<p style="text-align: center;">STEP 4</p> <ul style="list-style-type: none"> • Connect the cable to the detergent pump motor. <p>INFORMATION: the picture is for reference; the detergent pump type may vary depending on the machine model and machine final installation.</p> <p>Check your federal, state and local regulation codes regarding installation and type of external detergent pumps</p>



STEP 5

- Pass the detergent hose through the detergent port and behind the wash pump motor, as show in the picture.



IMPORTANT

Be careful and do not over bend the detergent hose during these steps.




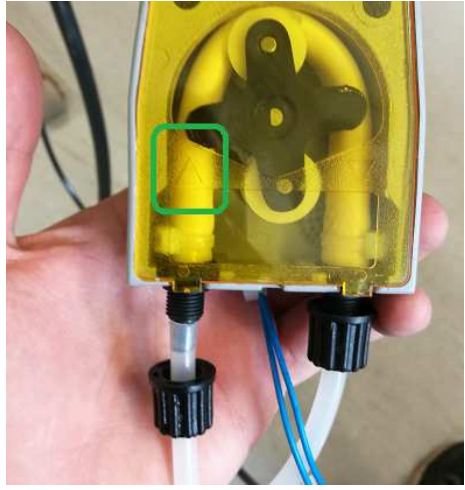


STEP 6


- Remove the end cap from the non-return check valve
- Place the end cap to the detergent hose, as shown in the picture



STEP 7

- Connect the hose to the non-return check valve, as shown in the picture. Make sure it's placed all the way in.
- Screw the end cup to the non-return check valve.

	<p style="text-align: center;">STEP 8</p> <ul style="list-style-type: none"> • Cut the detergent hose to the right length were the detergent pump is going to be installed. • Connect the detergent hose from the machine to the out port in the detergent pump motor. <p><i>NOTE:</i> The actual pump may change and the picture is for reference only.</p> <ul style="list-style-type: none"> • Screw the end cap to the out detergent pump port.
	<p style="text-align: center;">STEP 9</p> <ul style="list-style-type: none"> • Connect the hose to the input port in the detergent pump motor. <p><i>NOTE:</i> The actual pump may change and the picture is for reference only.</p>
	<p style="text-align: center;">STEP 10</p> <ul style="list-style-type: none"> • Place the hose into the detergent canister. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">  IMPORTANT </p> <p>Be aware that the hose may bend inside the canister and pick up air into the hose. Use some system that will redirect the hose to the bottom of the canister</p> </div>

		STEP 11												
<div> <div>Back</div> <div>Ouputs</div> <table> <tr> <td>1.Bask.Mot.</td> <td>7.Det. Pump</td> </tr> <tr> <td>2.Ventilation</td> <td>8.AUXAC</td> </tr> <tr> <td>3.Wash Mot.</td> <td>10.FAN Mot.</td> </tr> <tr> <td>4.Drain Mot.</td> <td></td> </tr> <tr> <td>5.Water Val.</td> <td>12.DoorLatch</td> </tr> <tr> <td>6.ExtWtrMot</td> <td>13.Speaker</td> </tr> </table> </div>		1.Bask.Mot.	7.Det. Pump	2.Ventilation	8.AUXAC	3.Wash Mot.	10.FAN Mot.	4.Drain Mot.		5.Water Val.	12.DoorLatch	6.ExtWtrMot	13.Speaker	<ul style="list-style-type: none"> Purge the detergent system using the output functions in the service menu, use the button "7.Det. Pump" Run the pump until you see the detergent fluid reach the non-return check valve in the machine. <div>  IMPORTANT </div> <div> <p>Run a rinse wash cycle after the installation of the detergent system</p> </div>
1.Bask.Mot.	7.Det. Pump													
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