



Installation manual

**Getinge Lancer Ultima model 1400 LXP**

**GETINGE** 

The model name and serial number should always be provided when ordering spare parts or during queries per telephone or written correspondence:

.....  
Serial number of the machine:

.....  
Machine model:

.....

Date of last revision: May 2020

In order to ensure that our products are continually improved, GETINGE LANCER reserves the right to make any changes to their features relating to technical developments

Drawings and photos are non-contractual

#### ORIGINAL INSTRUCTIONS

GETINGE LANCER  
30, Bd de l'Industrie  
Zone industrielle Pahin Concerto  
31170 Tournefeuille - France  
Internet: [www.getinge.com](http://www.getinge.com)

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# 1 GENERAL INFORMATION

## 1.1 INTRODUCTION TO THE INSTALLATION INSTRUCTIONS

These instructions are provided to help you with your electrical wiring and plumbing installation prior to receiving your washer. Follow them closely, they have been written with your best interests in mind.

This document also indicates the dimensions of the washer so that you can check the access to the area where the machine will be installed.

## 1.2 COPYRIGHT

All rights reserved.

GETINGE LANCER pays close attention to all technical developments and continuously seeks to improve its products and services in order to provide an adequate response to the needs of its clients. GETINGE LANCER therefore reserves the right to modify its documentation without prior notice.

## 1.3 PRODUCT LIABILITY

This washer must be used under normal operating conditions as indicated in the GETINGE LANCER user manual supplied with the machine.

Failure to follow these recommendations may result in material damage or personal injury and will render null and void any warranty or liability on GETINGE LANCER part.

Liability will not be accepted in the event of incorrect use or modification of the washer without the prior agreement of GETINGE LANCER.

## 1.4 SYMBOLS

This manual contains some extremely important warnings, instructions and notices, so the following symbols have been used to draw your attention to them.



SAFETY WARNING FOR PERSONS AND EQUIPMENT



ELECTRICAL DANGER

## 2 SHIPPING PACKAGE AND HANDLING

### 2.1 PACKING

The washer is protected by a plastic dust cover, circled on a wooden pallet and covered with a wooden box.

### 2.2 TRANSPORT

Transport indicators :

- Label « FRAGILE »
- Label « HAUT ET BAS » - « UP AND DOWN »

For machines transported by air or by sea, packaging has a tilt indicator (« TIP AND TELL ») that provides a visual indication if the machine has not remained upright during transit.

### 2.3 HANDLING

**DO NOT USE A FORKLIFT TO PUSH THE PACKAGE**



**USE A FORK LIFT OR PALLET JACK TO MOVE THE WASHER**



**BEFORE MOVING THE WASHER, CHECK THAT THE FORK LIFT AND/OR PALLET JACK ARE CAPABLE OF RAISING THE LOAD (THE WEIGHT IS WRITTEN ON THE PACKAGE OR THE SHIPPING DOCUMENTATION).**

### 2.4 STORAGE

The washer-dryer must be stocked in a dry, sheltered area whose room temperature will not be lower than 0°C (32°F) and not exceed 50°C (122°F).



**IF THE WASHER-DRYER IS NOT USED FOR A PERIOD OF 3 WEEKS OR MORE, IT IS RECOMMENDED TO REMOVE THE CHEMICAL CONTAINERS AND FLUSH THE CHEMICAL LINES WITH WATER. CONTACT GETINGE LANCER FOR ASSISTANCE.**

## 3 CONDITIONS OF USE / ENVIRONMENT

### 3.1 OPERATING ENVIRONMENT

The washer is designed to be used in the following operating environment:

- an indoor environment.
- at a maximum elevation of 2,000 meters (6,562 ft).
- at temperatures between 5°C and 35°C (41°F and 95°F).
- at a maximum of relative humidity of 80% up to 31°C (88°F) with a linear drop of 50% at 40°C (104°F).
- mains voltage fluctuations must not be greater than  $\pm 10\%$  of the rated voltage.
- normal level of transient overvoltages in the mains supply: category II of IEC 60364-4-443.

### 3.2 AFTER INSTALLATION, MAKE SURE :

- all parts have been installed as per the installation instructions
- all screws have been fully tightened.
- the parts have no sharp edges that could injure users.
- all hoses, pipes, and connections are complete and fault-free.

### 3.3 SAFETY SYMBOLS



Mandatory use of safety glasses or goggles



Mandatory use of safety gloves

### 3.4 UNPACKAGING AND SETTING IN PLACE

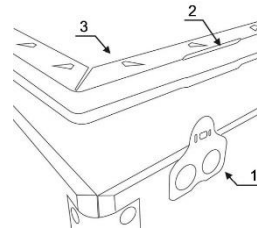


THIS MACHINE MUST BE INSTALLED AND USED ACCORDING TO THE INSTRUCTIONS CONTAINED WITHIN THIS DOCUMENT. INCORRECT INSTALLATION OR USAGE MAY CAUSE THE PROTECTION PROVIDED BY THIS EQUIPMENT TO BE IMPAIRED.



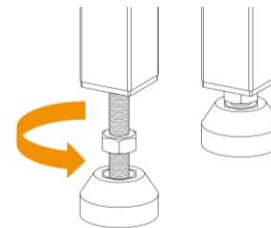
A TRAINED GETINGE LANCER SERVICE TECHNICIAN SHOULD PERFORM THE FIRST TIME START-UP.

- Remove the wooden box :
  - unfold by 180° all the tongues presents on a wooden panel.
  - free the panel from the mortise remove the panel (first upper panel).



- 1 : tongue
- 2 : mortise
- 3 : wooden panel

- Remove the pockets containing the connection hoses, leveling feet and documentation, located on the top of the machine
- Remove the plastic dust cover
- Move the washer to dedicated area.
- Level the washer by adjusting the height adjustable feet.
- Remove the protective cardboard located inside the machine on the door



#### **Environmental protection / Disposal of packing material**

The packaging has protected your washer during transport. The packing materials are environmentally friendly and recyclable. To help protect nature, dispose of the packing materials in an environmentally friendly way.

The packaging can be separated and reused in the following manner :

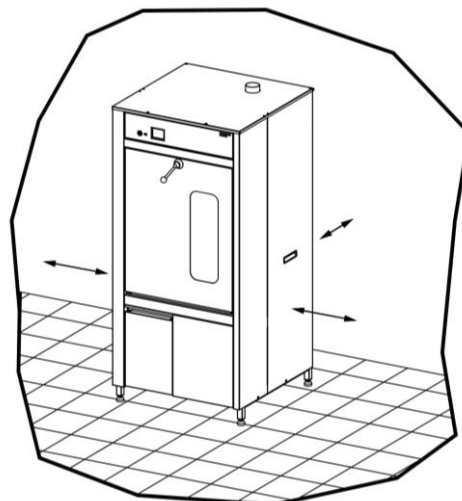
- the wooden pallet and wood panels materials can be reused (pallet recycling, grinding...) or recovered for energy (heating)
- the plastic protection can be used for energy
- cardboard materials can be reused (cardboard boxes...)



**Installation area**

The washer-dryer must be installed in the room allow sufficient space for easy replacement and periodic inspections

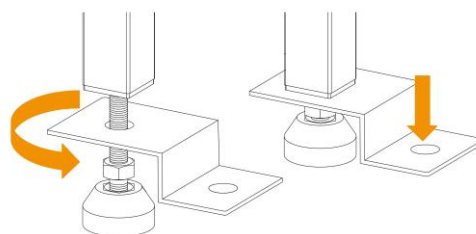
**Minimum distance of 460mm (18.11")**



**To secure the washer to the floor (kit 90010271)**

The rear feet should be mounted with plate and screwed to the ground (according to the drawing aside).

(For seismic resistant solution, it is necessary to follow local legislation, we advise you to contact certified organization to validate such device)



## 4 CHARACTERISTICS

### 4.1 1400LXP CHARACTERISTICS

**Heat loss :** 1200 Kcal/h (4761 BTU/h)

**Noise level :** 69 dBA according to Machinery Directive 2006/42/EC.

### 4.2 WASHER DIMENSIONS STD

#### Overall dimensions

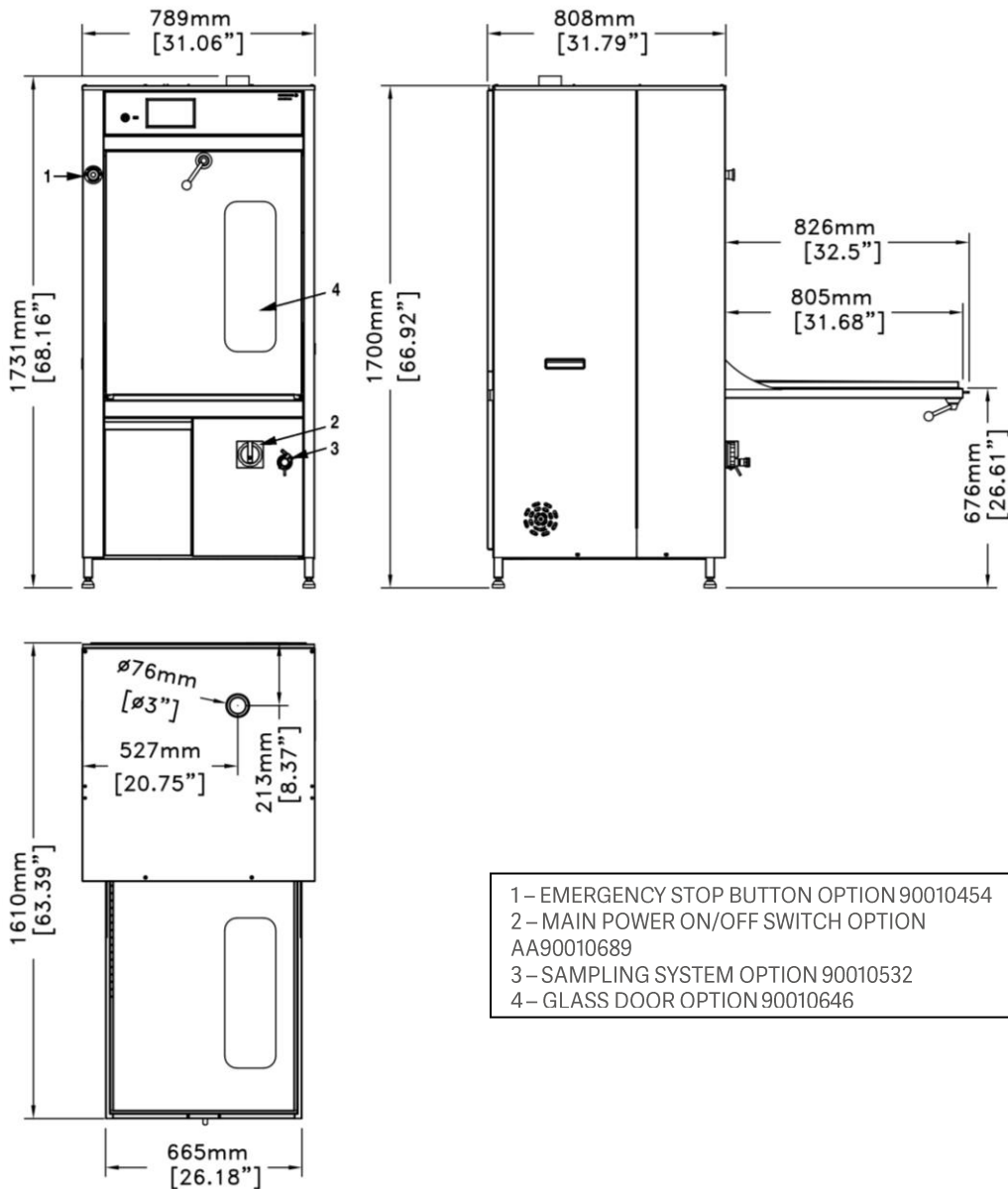
Height 1731 mm (68.15")  
 Width 789 mm (31.06")  
 Depth 808 mm (31.81")

Weight 213kg (469 lbs)

#### Chamber dimensions

Height 773 mm (30.43")  
 Width 626 mm (24.64")  
 Depth 629 mm (24.76")

Dimensions tolerances : +/- 5mm (+/- 0.2")



- 1 – EMERGENCY STOP BUTTON OPTION 90010454
- 2 – MAIN POWER ON/OFF SWITCH OPTION AA90010689
- 3 – SAMPLING SYSTEM OPTION 90010532
- 4 – GLASS DOOR OPTION 90010646

### 4.3 WASHER DIMENSIONS WATER INLET WITHOUT VALVE OPTION (90010531)

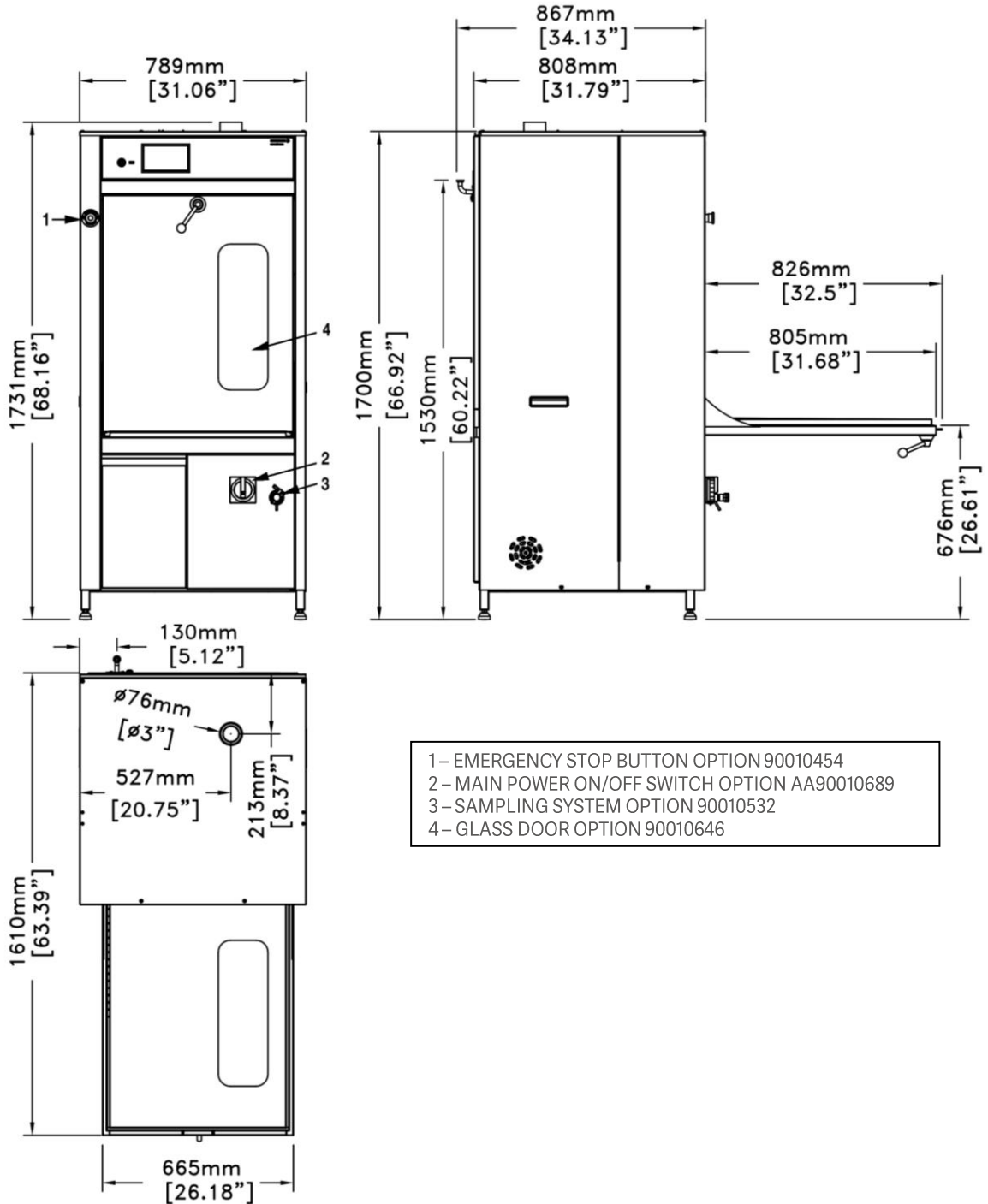
**Overall dimensions**

Height	1731 mm (68.15")
Width	789 mm (31.06")
Depth	867 mm (34.13")
Weight	213kg (469 lbs)

**Chamber dimensions**

Height	773 mm (30.43")
Width	626 mm (24.64")
Depth	629 mm (24.76")

Dimensions tolerances : +/- 5mm (+/- 0.2")



- 1 - EMERGENCY STOP BUTTON OPTION 90010454
- 2 - MAIN POWER ON/OFF SWITCH OPTION AA90010689
- 3 - SAMPLING SYSTEM OPTION 90010532
- 4 - GLASS DOOR OPTION 90010646

## 5 HYDRAULIC CONNECTIONS

### 5.1 WATER CONNECTIONS

Flush water supply lines prior to connecting to the washer. Turn off water supply valves and drain the water supply hoses.

The water supply hoses required to connect the washer to the various water inlets are provided with the machine.

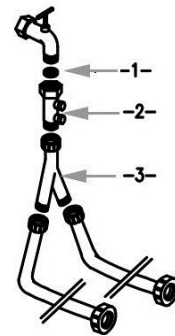
The maximum length of all connecting lines is 1,500mm (59.05") and a color-code identification label is attached to each water supply hose.

#### **WASHER WITH CE MARKING**

The cold and hot water inlets are equipped with backflow prevention devices which must be connected to the water supply.

Make the connections by fitting the strainer filters between the backflow prevention device and the threaded connection at the water supply hose.

- 1- STRAINER FILTER
- 2- BACKFLOW PREVENTION DEVICE
- 3- CONNECTING Y

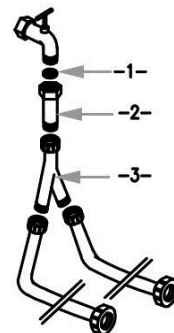


#### **WASHER WITH UL MARKING**

The cold and hot water inlets are equipped with thread size adapters which must be connected to the water supply.

Make the connections by fitting the strainer filters between the thread size adapter and the threaded connection at the water supply hose.

- 1- STRAINER FILTER
- 2- THREAD SIZE ADAPTER (IF NECESSARY)
- 3- CONNECTING Y



All connection are made on the back of the washer and are marked with identification labels.

In order to help you during the hydraulic connections of your washer/dryer, you will find in sections hereafter, the different colors of labels present on different connecting hoses and connecting fittings located on the bodywork of the washer/dryer.

The water supply valves must be located within the area shown on the drawing on page 18.

**COLD WATER:****STANDARD**

A valve with a male threaded nozzle, 20/27 diameter, (3/4" hose thread) is required.

Flow rate :	20 l/mn (5.3GPM) mini.
Pressure :	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.
Temperature :	10°C - 25°C (50 °F - 77°F)
pH :	6.5 - 9
Hardness :	25 °f maxi.
	14 °d maxi.
	14 gpg maxi
	239 ppm maxi

**COOLING DRAINING OPTION (90010447)****CONDENSOR OPTION (01060119)**

Cold water source temperature should be less than 25°C (77°F).

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

Flow rate :	20 l/mn (5.3GPM) mini.
Pressure :	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.
Temperature :	10°C - 25°C (50 °F - 77°F)
pH :	6.5 - 9
Hardness :	25 °f maxi.
	14 °d maxi.
	14 gpg maxi
	239 ppm maxi

**HOT WATER:****STANDARD**

A valve with a male threaded nozzle, 20/27 diameter, (3/4" hose thread) is required.  
If there is no hot water supply, provide an additional cold water valve.

Flow rate :	20 l/mn (5.3GPM) mini.
Pressure :	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.
Temperature :	10°C -50°C (50 °F - 122°F)
pH :	6.5 - 9
Hardness :	25 °f maxi.
	14 °d maxi.
	14 gpg maxi
	239 ppm maxi

**HOT WATER KIT OPTION (01060131)**

A valve with a male threaded nozzle, 20/27 diameter, (3/4" hose thread) is required.  
A higher temperature water (up to 80°C) may be used with this option. Please follow your facilities safety rules concerning the potential of burn risks when exposed to hot water supply hoses.

Flow rate :	20 l/mn (5.3GPM) mini.
Pressure :	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.
Temperature :	80°C (176°F) maxi.
pH :	6.5 - 9
Hardness :	25 °f maxi.
	14 °d maxi.
	14 gpg maxi
	239 ppm maxi

**PURIFIED WATER:****STANDARD**

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

Flow rate :	20 l/mn (5.3GPM) mini.	
Pressure :	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.	
Temperature :	10°C - 25°C (50 °F - 77°F)	
pH :	5 – 7.5	
Hardness :	4 °f < softened water < 8 °f	Purified water < 4 °f
	2 °d < softened water < 4 °d	Purified water < 2 °d
	14 gpg < softened w. < 28 gpg	Purified water < 14 gpg
	239 ppm < softened w. < 479 ppm	Purified water < 239 ppm

**INTERMEDIATE PRESSURE PURIFIED SUPPLY OPTION (01060206)**

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

Flow rate :	20 l/mn (5.3GPM) mini.	
Pressure :	200 kPa (2 bars ou 29 PSI) maxi.	
Temperature :	10°C - 25°C (50 °F - 77°F)	
pH :	5 – 7.5	
Hardness :	4 °f < softened water < 8 °f	Purified water < 4 °f
	2 °d < softened water < 4 °d	Purified water < 2 °d
	14 gpg < softened w. < 28 gpg	Purified water < 14 gpg
	239 ppm < softened w. < 479 ppm	Purified water < 239 ppm

***DIRECT PURIFIED WATER INLET WITHOUT VALVE OPTION (90010531)***

Located on washer, tri-clamp connection ISO + dry contact to control valve loop

	Tube diameter	Clamp diameter
TRI CLAMP	13.5 mm (0.53")	25 mm (0.98")

Provide, by Others, a stop valve close to the washer.

Water inlet hose to be provided by Others

The time of opening and closing the valve must be less than one second, for proper operation of the washer.

Water inlet hose with 13.5 mm ISO triclamp fitting to be provided by Others.

Flow rate : 20 l/min (5.3 GPM) under minimum pressure of 200 kPa (2 bar or 29 PSI) and maximum 600 kPa (6 bar or 87 PSI).

Flow rate :	20 l/mn (5.3GPM) mini.	
Pressure:	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.	
Temperature:	10°C - 25°C (50 °F - 77°F)	
pH:	5 – 7.5	
Hardness:	4 °f < softened water < 8 °f	Purified water < 4 °f
	2 °d < softened water < 4 °d	Purified water < 2 °d
	14 gpg < softened w. < 28 gpg	Purified water < 14 gpg
	239 ppm < softened w. < 479 ppm	Purified water < 239 ppm

***HOT PURIFIED WATER OPTION (01060120)***

The hot purified water must not exceed a maximum temperature of 80°C (176°F).

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

Flow rate :	20 l/mn (5.3GPM) mini.	
Pressure:	200 kPa (2 bars or 29 PSI) mini. and 600 kPa (6 bars or 87 PSI) maxi.	
Temperature:	Max 80°C (176°F).	
pH:	5 – 7.5	
Hardness:	4 °f < softened water < 8 °f	Purified water < 4 °f
	2 °d < softened water < 4 °d	Purified water < 2 °d
	14 gpg < softened w. < 28 gpg	Purified water < 14 gpg
	239 ppm < softened w. < 479 ppm	Purified water < 239 ppm



## 5.2 COMPRESSED AIR CONNECTION

A disconnecting device to remove the pressure in the hoses is required. This device must be clearly identify and lockable to guaranty the disconnection to any technician during the maintenance.

### **WASHER WITH CE MARKING**

#### **GRAVITY DROP DRAIN OPTION (01060177)**

The machine is fitted with a compressed air tube, length ~ 1.50m (59") with female threaded connection, diam. 20/27, (3/4").

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

A minimum pressure of 200 kPa (2 bar or 29 PSI) and maximum 600 kPa (6 bar or 87 PSI).

This compressed air allows the piloting of the drain valve. The consumption is minimal.

If you do not have compressed air , the drain valve can also be piloted by water, foresee then, in proximity to the washer another cold water cock with a male threaded nozzle, 20/27 diameter (3/4"), under minimum pressure of 200kPa (2 bar) and maximum 600 kPa (6 bar ).

### **WASHER WITH CE MARKING**

#### **CHEMICAL STOP VALVES OPTION (AA90010678)**

The machine is fitted with a compressed air tube, length ~ 1.50m (59") with female threaded connection, diam. 20/27, (3/4").

A valve with a threaded male nozzle, 20/27 diameter (3/4" hose thread) is required.

A minimum pressure of 500 kPa (5 bar or 72 PSI) and maximum 700 kPa (7 bar or 101 PSI).

The consumption is minimal.

**WASHER WITH UL MARKING**

***GRAVITY DROP DRAIN OPTION (01060177)***

The machine is fitted with a 10mm (3/8") ID compressed air hose, length ~ 1.50m (59").

A valve with a 10mm (3/8") hose barb fitting is required.

A minimum pressure of 200 kPa (2 bar or 29 PSI) and maximum 600 kPa (6 bar or 87 PSI).

This compressed air allows the piloting of the drain valve. The consumption is minimal.

If you do not have compressed air, the drain valve can also be piloted by water, foresee then, in proximity to the washer another cold water cock with a male threaded nozzle, 20/27 diameter (3/4"), under minimum pressure of 200kPa (2 bar) and maximum 600 kPa (6 bar).

**WASHER WITH UL MARKING**

***CHEMICAL STOP VALVES OPTION (AA90010678)***

The machine is fitted with a 10mm (3/8") ID compressed air hose, length ~ 1.50m (59").

A valve with a 10mm (3/8") hose barb fitting is required.

A minimum pressure of 500 kPa (5 bar or 72 PSI) and maximum 700 kPa (7 bar or 101 PSI).

The consumption is minimal.

### 5.3 STEAM CONNECTION

#### ***STEAM HEATING OPTION (90010451)***

The washer is fitted with two male threaded fittings (steam supply – steam return), Ø 15/21 (1/2").

Provided by others:

- a hand-operated steam supply valve, Ø 15/21 (1/2"),
- a hand-operated steam return valve, Ø 15/21 (1/2"),
- one condensate purge valve (steam trap),
- two hoses for connection to the machine with female threaded fitting Ø 15/21 - 1/2".

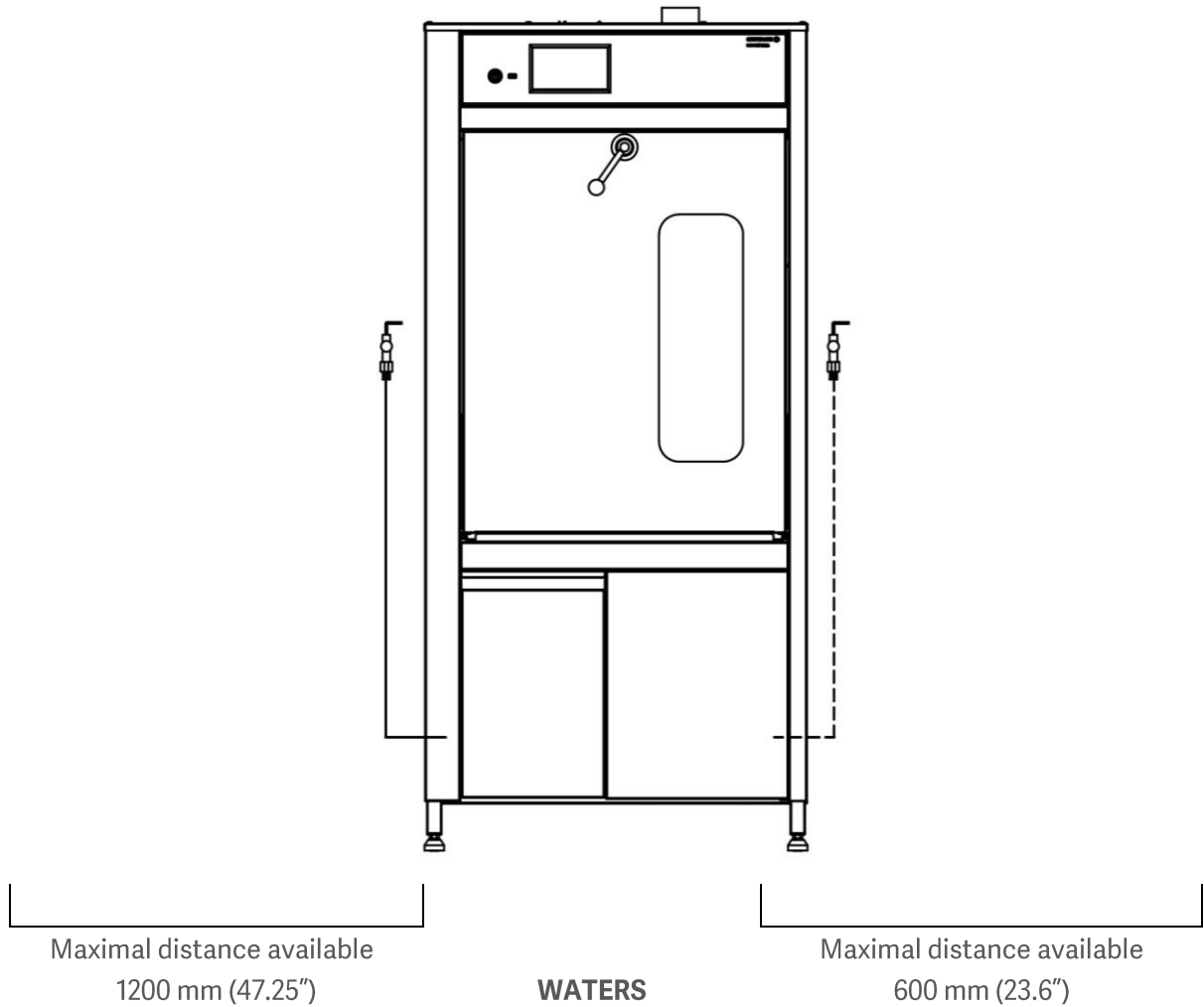
A minimum pressure of 200kPa (2 bars or 29 PSI) and maximum 600kPa (6 bars or 87 PSI) maximum is required.

Do not exceed 700kPa (7bars or 100 PSI).

The steam must be filtered (1µ).

Flow rate : 120 kg/hour (265 lb/h) - Consumption for each cycle : around 30 kg (66 lb).

## 5.4 WATERS LOCATION



WATERS MUST BE LOCATED IN THIS AREA.

Services can be installed to the left, to the right or behind the machine

**Only one connection point is required**

**DO NOT BEND OR CONSTRICT THE TUBE AS THIS COULD STOP OR SLOW DOWN THE FLOW OF WATER.**



**CHECK THAT THE SCREWS AT BOTH ENDS OF THE TUBE ARE TIGHTENED CORRECTLY TO PREVENT WATER LEAKAGE.**



**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

## 6 ELECTRICAL CONNECTION



BEFORE CARRYING OUT ANY WORK ON THE WASHER, MAKE SURE IT IS SWITCHED OFF AT THE ELECTRICAL DISCONNECT SWITCH.

ELECTRICAL SUPPLY :



CHECK FOR CORRECT VOLTAGE SUPPLY AT THE ELECTRICAL PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.



BEFORE ANY TEST, CHECK THE ROTATION DIRECTION OF THE RECYCLING PUMP.

### 6.1 ELECTRICAL CONNECTION - WASHER WITH CE MARKING

#### ELECTRICAL DISCONNECT SWITCH :



THE FOLLOWING EQUIPMENT MUST BE EASILY AND QUICKLY ACCESSIBLE NEAR THE WASHER : A DISCONNECTING SWITCH LOCKABLE IN THE OPEN (OFF) POSITION AND A DIFFERENTIAL MAGNETIC-THERMAL CIRCUIT-BREAKER WITH TYPE D TRIPPING CURVE.

#### STANDARD

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	400V Tri+N+T / 50Hz	20 A / phase	25 A / phase

#### STANDARD

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 Kw	400V Tri +T / 50Hz	20 A / phase	25 A / phase

#### STANDARD

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	220-240V Tri +T / 50Hz	34 A / phase	40 A / phase

#### STANDARD

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	200-208V Tri +T / 50Hz	38 A / phase	40 A / phase

#### HEATING (OPTION 90010451)

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	400V Tri+N+T / 50Hz	6 A / phase	10 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	400V Tri +T / 50Hz	6 A / phase	10 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	220-240V Tri +T / 50Hz	10 A / phase	16 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	200-208V Tri +T / 50Hz	12 A / phase	16 A / phase

**6.2 ELECTRICAL CONNECTION - WASHER WITH UL MARKING****ELECTRICAL SUPPLY CABLE CONNECTION AND ROUTING :**

THE ELECTRICAL CONNECTION IS MADE AT THE SCREW-TYPE TERMINAL BLOCK LOCATED BEHIND THE LOWER FRONT PANEL OF THE MACHINE USING WIRE SUITABLE FOR AT LEAST 75°C. THE TERMINALS MUST BE SECURELY TIGHTENED TO THE POWER SUPPLY WIRES.



THE POWER SUPPLY CABLE SHOULD ENTER THROUGH THE COMPRESSION GLAND ON LEFT-HAND SIDE OF THE WASHER.

CARE MUST BE TAKEN TO PREVENT THE WIRE FROM CONTACTING ANY MOVING COMPONENTS WITHIN THE MACHINE.

**ELECTRICAL PROTECTION DEVICE :**

A CIRCUIT BREAKER OR FUSES MUST PROVIDE PROTECTION FROM OVERCURRENT ELECTRICAL CONDITIONS. THE CIRCUIT BREAKER OR FUSES MUST BE LABELLED AS THE PROTECTION DEVICE FOR THE GETINGE LANCER WASHER. THE OVERCURRENT PROTECTIVE DEVICE SIZE REQUIRED FOR THIS MACHINE IS SPECIFIED BELOW OR MUST MEET LOCAL ELECTRICAL CODES.

**STANDARD**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	480V Tri +T / 60Hz	17 A / phase	20 A / phase

**STANDARD**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 Kw	400V Tri +T / 60Hz	20 A / phase	25 A / phase

**STANDARD**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	220-240V Tri +T / 60Hz	34 A / phase	40 A / phase

**STANDARD**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
13.5 kW	200-208V Tri +T / 60Hz	38 A / phase	40 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	480V Tri +T / 60Hz	6 A / phase	10 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	400V Tri +T / 60Hz	6 A / phase	10 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	220-240V Tri +T / 60Hz	10 A / phase	16 A / phase

**HEATING (OPTION 90010451)**

Total power to be supplied	Supply voltage	Consumption	Overcurrent protective device size
3.8 kW	200-208V Tri +T / 60Hz	12 A / phase	16 A / phase

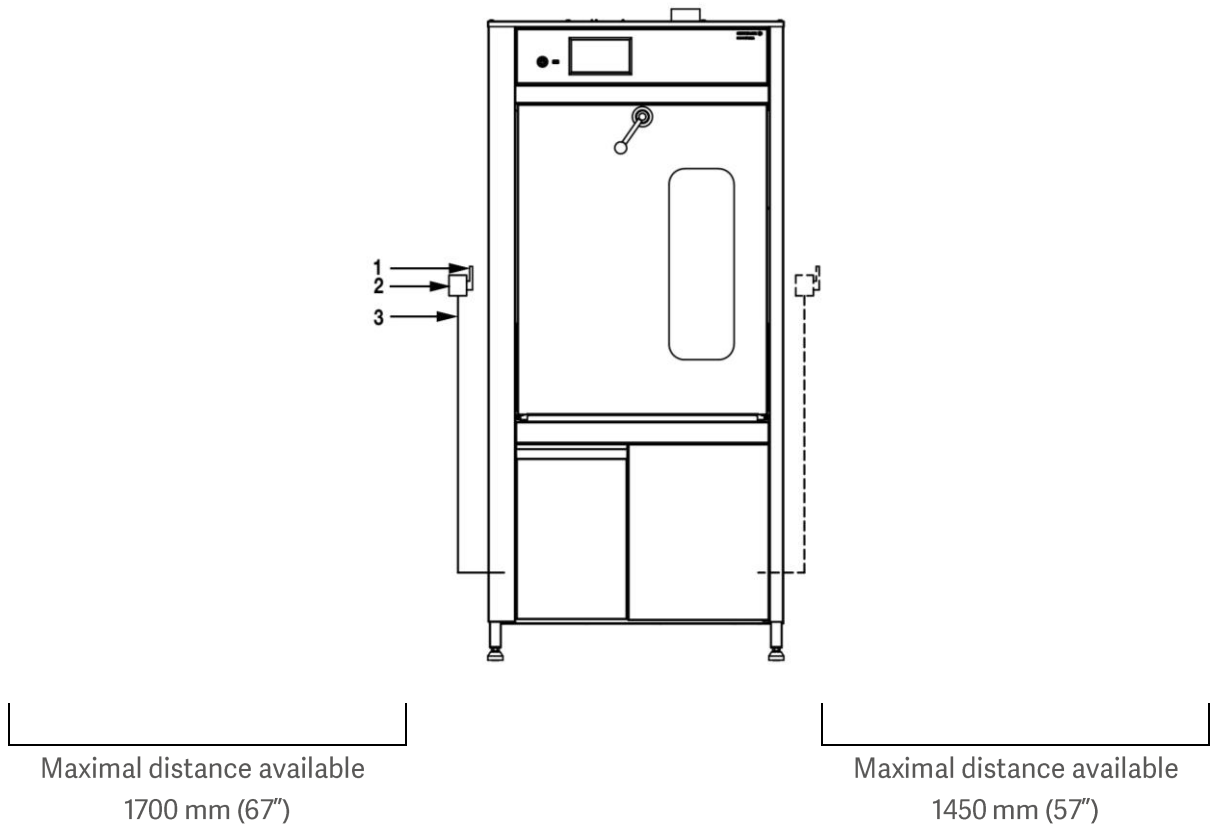
### 6.3 DISCONNECT SWITCH LOCATION - WASHER WITH CE MARKING



#### ELECTRICAL DISCONNECT SWITCH :

THE FOLLOWING EQUIPMENT MUST BE EASILY AND QUICKLY ACCESSIBLE NEAR THE WASHER : A DISCONNECTING SWITCH LOCKABLE IN THE OPEN (OFF) POSITION AND A DIFFERENTIAL MAGNETIC-THERMAL CIRCUIT-BREAKER WITH TYPE D TRIPPING CURVE.

- 1- ELECTRICAL DISCONNECT SWITCH (*PROVIDED BY OTHERS*)
- 2- CIRCUIT BREAKER OR FUSES (*PROVIDED BY OTHERS*)
- 3- ELECTRICAL CABLE (PRESTATION GETINGE LANCER)



DISCONNECT SWITCH MUST BE LOCATED IN THE AREA.

Disconnect switch can be installed to the left, to the right or behind the machine

**Only one connection point is required**

Note : A plug connection is preferred for ease of servicing.



**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**



## 6.4 DISCONNECT SWITCH LOCATION - WASHER WITH UL MARKING

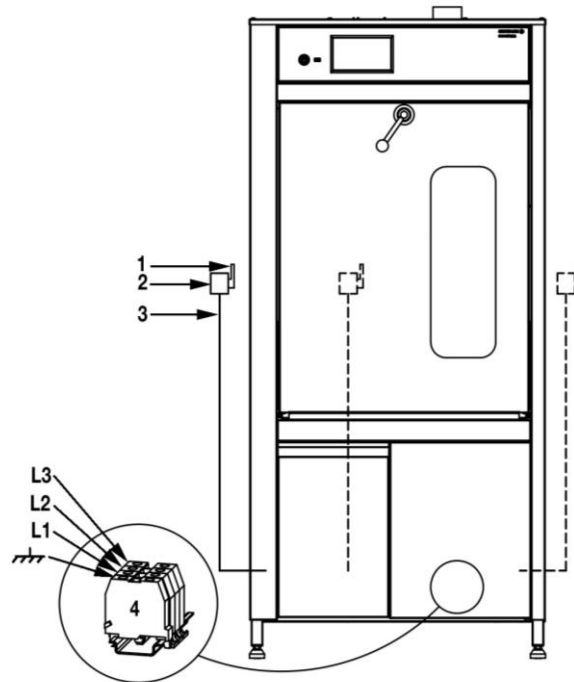


### ELECTRICAL DISCONNECT SWITCH :

THE FOLLOWING EQUIPMENT MUST BE EASILY AND QUICKLY ACCESSIBLE NEAR THE WASHER : A DISCONNECTING SWITCH LOCKABLE IN THE OPEN (OFF) POSITION.



**DURING THE INSTALLATION, YOU WILL SEE BLUE WIRES IN THE ELECTRICAL HARNESS. THESE WIRES ARE NOT APPROPRIATE TO THE UL / CSA STANDARDS AND CANNOT BE USED UNDER THESE LABELS.**



- |   |   |
|---|---|
| 1 | ELECTRICAL DISCONNECT SWITCH (PROVIDED BY OTHERS) |
| 2 | CIRCUIT BREAKER OR FUSES (PROVIDED BY OTHERS)     |
| 3 | ELECTRICAL CABLE (PROVIDED BY OTHERS)             |
| 4 | TERMINAL BLOCK (L3 ONLY ON THREE PHASE MACHINE)   |



**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

## **6.5 VOLT FREE CONTACT PACKAGE OPTION (AA90010667)**

Dry contact: programmable output for external communication / control of external equipment.

Package of 4 volt free contact with connection on the back of the washer.

The 4 volt free contact are used to signal:

- A cycle is in progress (KMF)
- The washer is in alarm (KMX)
- That the washer is in the drying phase (KMS)
- That there is a request for Purified Water (KMD)

The contacts are closed (normally open):

- [Ue] rated operational voltage:  $\leq 250$  V AC
- [Ie] rated operational current: 25A AC-7A / 8.5A AC-7B

Category of use:

- AC-7a = weakly inductive load ( $\cos \varphi = 0.8$ )
- AC-7b = motor load ( $\cos \varphi = 0.45$ ,  $I_{\text{closure}} = 6 \times I_{\text{turn off}}$ )

## 7 DISCHARGE OF WASTE WATERS

### 7.1 STANDARD

#### DRAINING

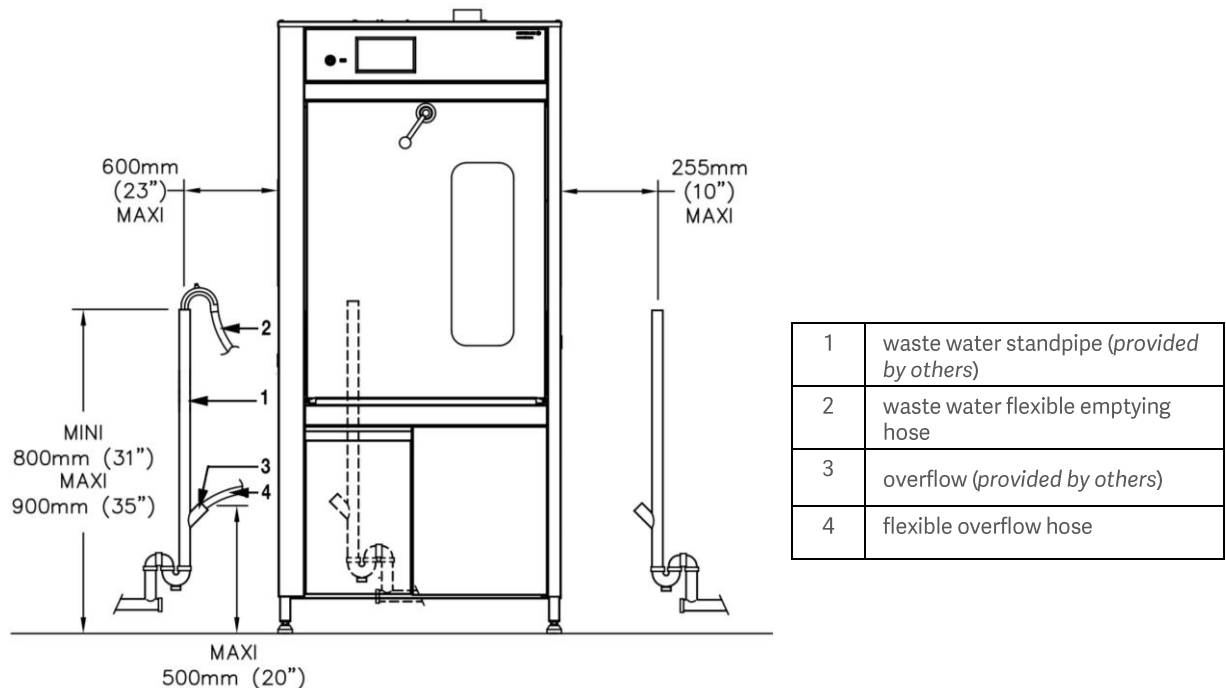
Provide a rigid standpipe and plumbing trap with :

- Height above floor level : from 800 mm (31") minimum to 900 mm (35") maximum.
- Temperature up to 95°C (203°F).
- With inner tube Ø 40mm (1.6") and capable of accepting a flow of 40 l/min (10.6 GPM).

#### OVERFLOW

Provide a rigid standpipe and plumbing trap with :

- Height above floor level : 500 mm (20") maximum.
- Temperature up to 95°C (203°F).
- With outside tube Ø 32mm (1.25") and capable of accepting a flow of 20 l/min (5.3 GPM).



Maximal distance available

600 mm (23")

Maximal distance available

255 mm (10")

THE DISCHARGE TUBE MUST BE LOCATED IN THIS AREA.

The discharge tube can be installed to the left, to the right or behind the machine

**Only one connection point is required**



**DO NOT BEND OR CONSTRICT THE TUBE AS THIS COULD STOP OR SLOW DOWN THE FLOW OF WATER.**



**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

## 7.2 DRAIN COOLING OPTION (90010447)

### DRAINING

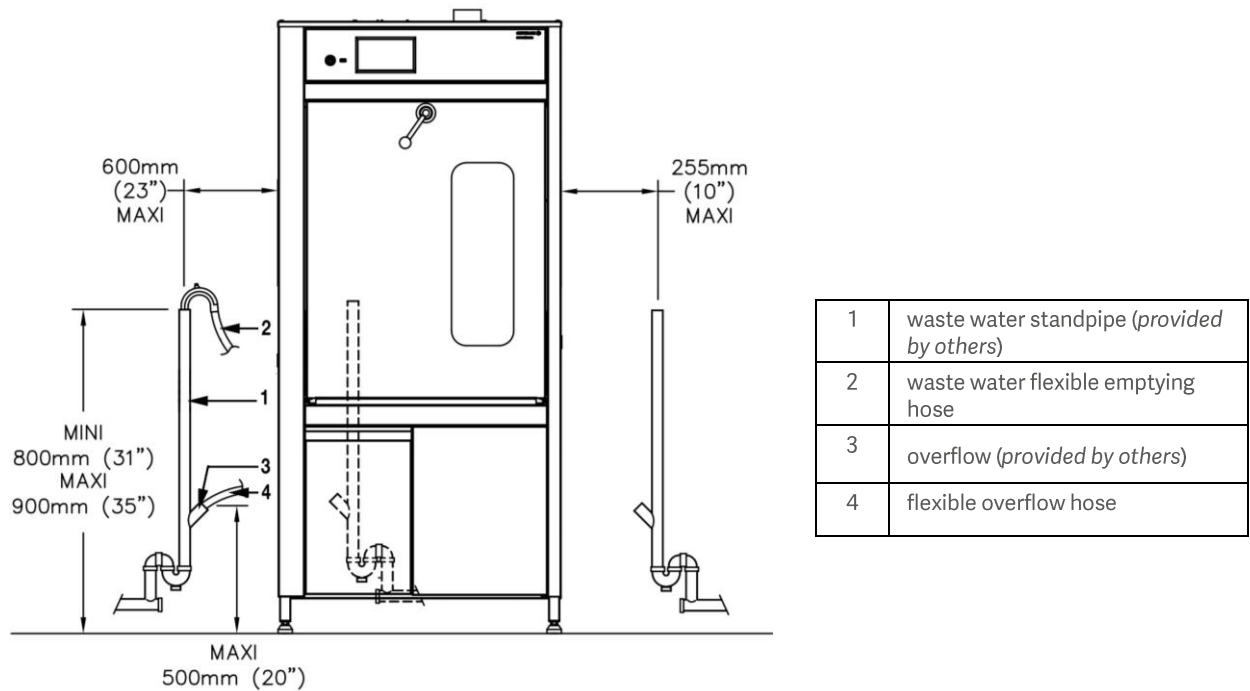
Provide a rigid standpipe and plumbing trap with :

- Height above floor level : from 800 mm (31") minimum to 900 mm (35") maximum.
- Temperature up to 60°C (140°F).
- With inner tube Ø 40mm (1.6") and capable of accepting a flow of 40 l/min (10.6 GPM).

### OVERFLOW

Provide a rigid standpipe and plumbing trap with :

- Height above floor level : 500 mm (20") maximum.
- Temperature up to 60°C (140°F).
- With outside tube Ø 32mm (1.25") and capable of accepting a flow of 20 l/min (5.3 GPM).



Maximal distance available

600 mm (23")

Maximal distance available

255 mm (10")

THE DISCHARGE TUBE MUST BE LOCATED IN THIS AREA.

The discharge tube can be installed to the left, to the right or behind the machine

**Only one connection point is required**



**DO NOT BEND OR CONSTRICT THE TUBE AS THIS COULD STOP OR SLOW DOWN THE FLOW OF WATER.**



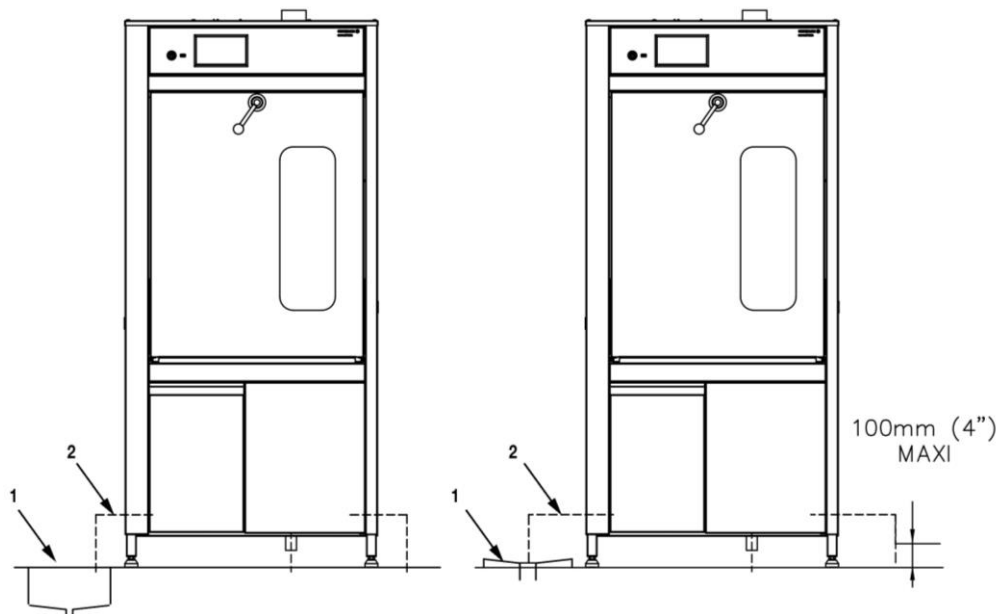
**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

### 7.3 GRAVITY DROP DRAIN OPTION (01060177)

The machine is fitted, with a draining tube external  $\varnothing$  33.7mm

Emptying is by gravity to a floor sink or floor drain tube with the following characteristics:

- At floor level minimum and 100 mm (3.93") high maximum
- Temperature up to 95°C (203°F).
- With minimum internal tube  $\varnothing$  40mm (1.6") and capable of accepting a flow of 40 l/min (10.6GPM).



- 1- FLOOR SINK (PROVIDED BY OTHERS)  
 -2- DISCHARGE TUBE (PROVIDED BY OTHERS)

FLOOR DRAIN (PROVIDED BY OTHERS)



**AN AIR GAP IS NECESSARY TO ISOLATE THE WASHER FROM THE DRAINING NETWORK (OPEN CONNECTION).**



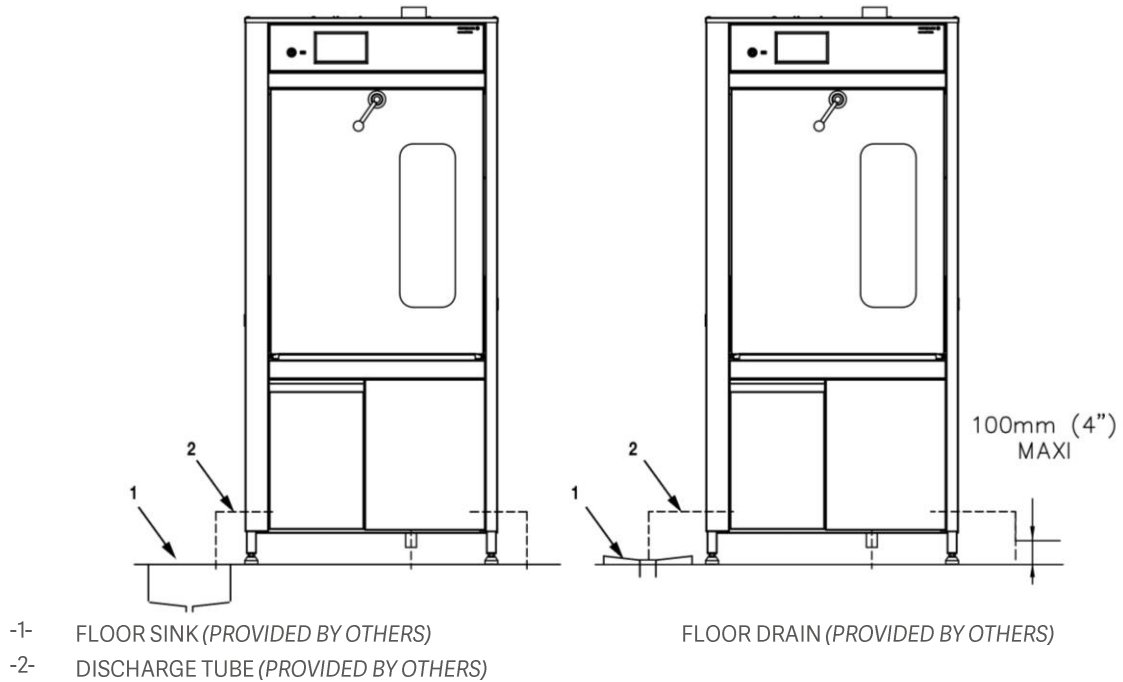
**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

## 7.4 GRAVITY DROP DRAIN OPTION (01060177) + DRAIN COOLING OPTION (90010447)

The machine is fitted, with a draining tube external  $\varnothing$  33.7mm

Emptying is by gravity to a floor sink or floor drain tube with the following characteristics:

- At floor level minimum and 100 mm (3.93") high maximum
- Temperature up to 60°C (140°F).
- With minimum internal tube  $\varnothing$  40mm (1.6") and capable of accepting a flow of 40 l/min (10.6GPM).



**AN AIR GAP IS NECESSARY TO ISOLATE THE WASHER FROM THE DRAINING NETWORK (OPEN CONNECTION).**



**ENSURE THAT THE MINIMUM CLEARANCE REQUIREMENT IS MAINTAINED BETWEEN THE WASHER AND UTILITY CONNECTION POINT.**

## 8 DISCHARGE OF EXHAUST VAPOR

The machine discharges hot moist air, causing condensation in the exhaust. Horizontal sections of exhaust ducting will require drains at the lowest points.

The machine is equipped with an exhaust fan.

**TO AVOID PRESSURE PROBLEMS IN THE CHAMBER, DO NOT BLOCK THE HOT MOIST AIR EXHAUST TUBE.**



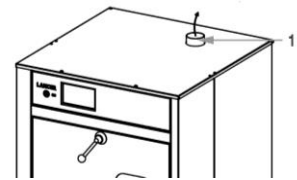
**A DIRECT (HARD PIPE) CONNECTION BETWEEN THE WASHER'S EXHAUST TUBE AND BUILDING EXHAUST SYSTEM IS NOT ALLOWED FOR SAFETY REASONS.**

Two solutions are available to extract hot moist air:

### 8.1 EXTRACTION DIRECTLY INTO THE ROOM

The room must be well ventilated.

-1- hot moist air exhaust tube

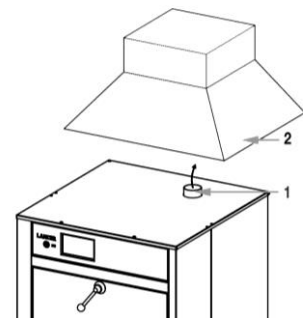


### 8.2 EXTRACTION WITH AN EXHAUST HOOD

Provide, by others, an exhaust hood placed between 300mm (12") minimum and 1000mm (40") maximum above the washer exhaust tube.

-1- hot moist air exhaust tube

-2- exhaust hood



#### **STANDARD**

Characteristics:

- Air flow : 120 m<sup>3</sup>/H (70 CFM)
- Maximum temperature : 95°C (203°F)
- Maximum relative humidity : 95%

#### **CONDENSOR OPTION (01060119)**

Characteristics:

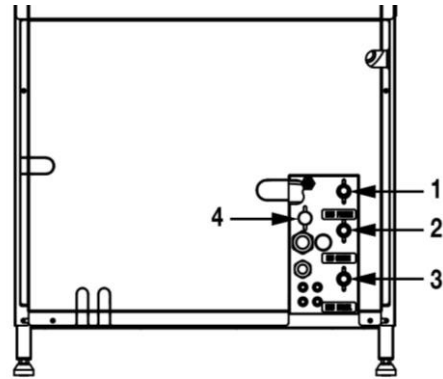
- Air flow : 120 m<sup>3</sup>/H (70 CFM)
- Maximum temperature : 60°C (140°F)
- Maximum relative humidity : 70%

## 9 CONNECTIONS ON THE WASHER

### 9.1 WATERS

#### 9.1.1 STANDARD

- 1 COLD WATER
- 2 HOT WATER
- 3 PURIFIED WATER
- 4 COLD WATER FOR CONDENSER OPTION (01060119) AND/OR COOLING DRAINING OPTION (90010447)

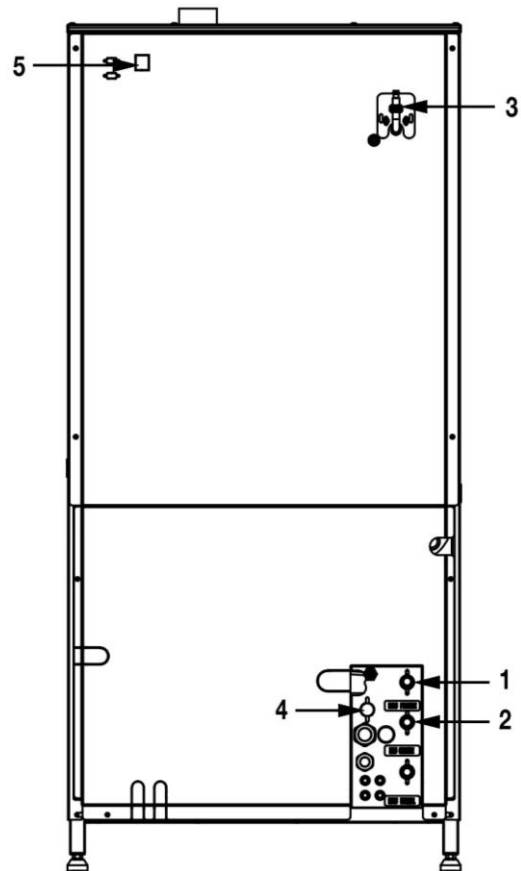


#### 9.1.2 DIRECT PURIFIED WATER INLET WITHOUT VALVE (90010531)

- 1 COLD WATER
- 2 HOT WATER
- 3 PURIFIED WATER
- 4 COLD WATER FOR CONDENSER OPTION (01060119) AND/OR COOLING DRAINING OPTION (90010447)
- 5 DRY CONTACT



It is not allowed to connect at this plug any electrical supply.

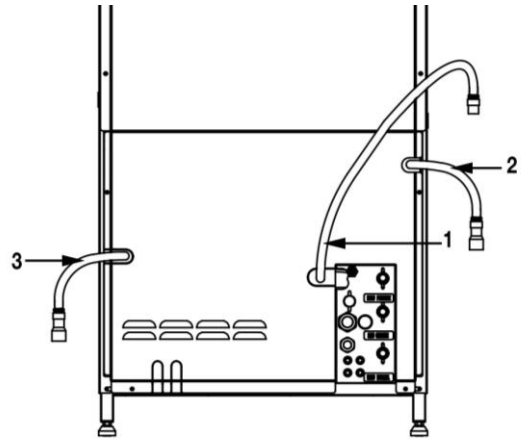




## 9.2 DRAIN

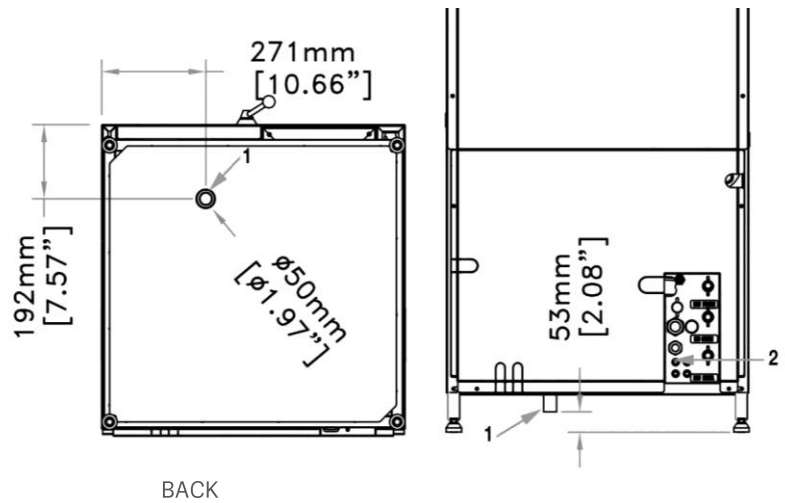
### 9.2.1 STANDARD / DRAIN LIFTING PUMP

- 1 WASTE WATER FLEXIBLE EMPTYING HOSE
- 2 FLEXIBLE OVERFLOW HOSE
- 3 FLEXIBLE OVERFLOW HOSE WITH CONDENSER OPTION (01060119) (REPLACE NUMBER 2)



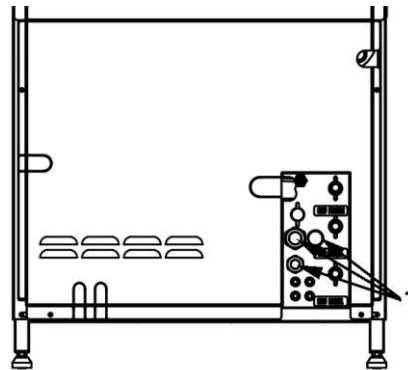
### 9.2.2 GRAVITY DROP DRAIN OPTION (01060177)

- 1 WASTE WATER DRAINING Ø 33.7MM (1.3")
- 2 COMPRESSED AIR



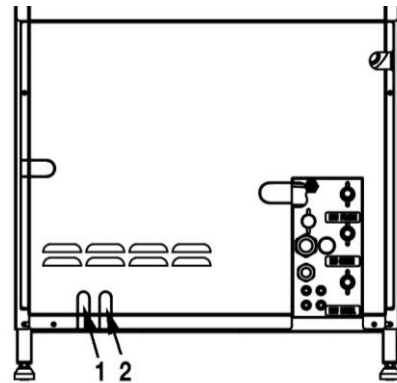
### 9.3 ELECTRICAL

- 1 ELECTRICAL CABLE  
(ONLY ONE CABLE, OUTPUT DEPENDING  
TENSION)



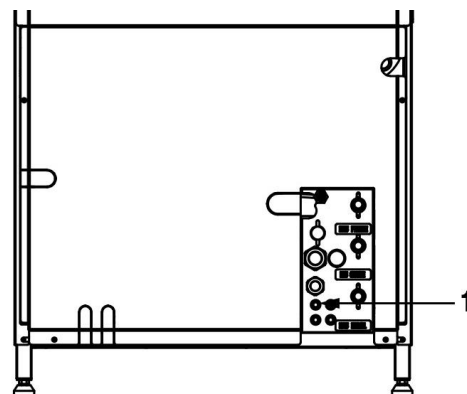
### 9.4 STEAM HEATING OPTION (90010451)

- 1 STEAM FEED
- 2 STEAM RETURN



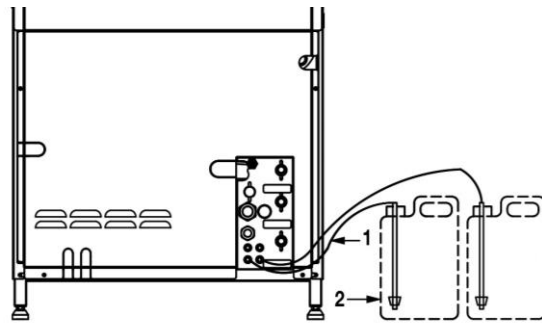
### 9.5 CHEMICAL STOP VALVES (AA90010678 / 90010230)

- 1 COMPRESSED AIR



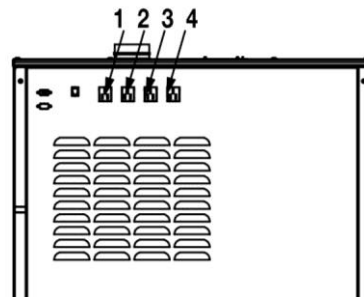
### 9.6 ADDITIONAL DOSING PUMP (01060218/01060220)

- 1 PRODUCT SUCTION TUBE + LEVEL SWITCH
- 2 ADDITIVE TANK (BY OTHERS)



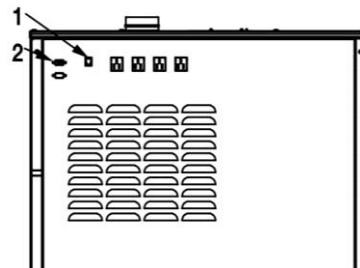
### 9.7 VOLT FREE CONTACT / PILOT (OPTION 90010667)

- 1 ADDITIONAL VOLT FREE CONTACT / PILOT TO SIGNAL A CYCLE IN PROGRESS (KMF)
- 2 ADDITIONAL VOLT FREE CONTACT / PILOT TO SIGNAL AN ALARM (KMX)
- 3 ADDITIONAL VOLT FREE CONTACT / PILOT TO SIGNAL THAT THE WASHER IS IN DRYING PHASE (KMD)
- 4 ADDITIONAL VOLT FREE CONTACT / PILOT TO SIGNAL A REQUEST FOR PURIFIED WATER (KMD)



### 9.8 RS232 AND ETHERNET PORT (OPTION AA90010676)

- 1 RS232
- 2 ETHERNET PORT



## 10 WASHING PRODUCTS

The washing and operational performance of the washer has been validated with the GETINGE LANCER line of cleaning chemicals. The use of GETINGE LANCER cleaning chemicals guarantees good results and long life of your machine.

### 10.1 GETINGE LANCER LLL DETERGENT

GETINGE LANCER LLL DETERGENT is particularly adapted to the washing of laboratory glass-ware

- Use in machine Specially formulated for use in all disciplines within laboratories
- Producing high quality and analytically clean results
- Phosphate free and fully biodegradable
- Without risk over the aluminium, the plastic and the rubber
- Available in container of 10 liters
- Ref: LLL
- Dose of 6-10 ml per liter (water hardness values between 200 and 400 ppm)



### 10.2 GETINGE LANCER NLL NEUTRALISANT

GETINGE LANCER NLL NEUTRALISANT is particularly adapted to the final rinse of laboratory glass-ware.

- Use in machine. For the final rinse of the glass-ware
- Mostly used with laboratory washers
- Acetic acid based
- Available in container of 10 liters
- Ref: NLL
- Dose of 5 ml per liter



**Contact your local distributor for washing products and application specific solutions.**

## 11 INSTALLATION OF THE WASHING PRODUCTS

### 11.1 STANDARD LEVEL SENSORS

The chemical suction diptubes are identified by the following labels :

#### 11.1.1 NON-FOAMING DETERGENT



Place a container of NON-FOAMING LIQUID DETERGENT inside the drawer. Remove the cap from the detergent container and insert the detergent suction tube into the detergent container. Tighten the cap.

IT IS STRICTLY PROHIBITED TO USE SOLVENTS AS DETERGENT.

PLEASE REFER TO SUPPLIERS MATERIAL SAFETY DATA SHEET FOR SPECIFIC INFORMATION REGARDING THE DETERGENT TO BE USED IN THIS MACHINE.

#### 11.1.2 NEUTRALIZING ACID



Place a container of NEUTRALIZING ACID inside the drawer. Remove the cap from the acid container and insert the acid suction tube into the acid container. Tighten the cap.

THE USE OF NITRIC AND CHLORHYDRIC ACID IS PROHIBITED. ONLY DILUTE PHOSPHORIC, ACETIC AND CITRIC ACIDS CAN BE USED.

PLEASE REFER TO SUPPLIERS MATERIAL SAFETY DATA SHEET FOR SPECIFIC INFORMATION REGARDING THE ACID TO BE USED IN THIS MACHINE.

#### 11.1.3 ADDITIONAL PRODUCTS (01060218/01030222)

Place a container of the additional product next to the washer at a maximum height of 150 mm (6") above floor level. Remove the cap from the container and insert the suction tube into the container. Tighten the cap.

GETINGE LANCER supply,

LIQUID DETERGENT reference "LLL" in container of 10 liters.

LIQUID NEUTRALISANT reference "NLL" in container of 10 liters.

Dimensions of 10 liters containers : 200 x 230 x 320 mm.



**BEFORE CARRYING OUT ANY WORK ON THE WASHER, MAKE SURE IT IS SWITCHED OFF AT THE DISCONNECTING SWITCH.**

## 11.2 LONGER LEVEL SENSORS 1041MM (AA90010665)

The chemical suction diptubes are identified by the following labels :

### 11.2.1 NON-FOAMING DETERGENT



Place a container of NON-FOAMING LIQUID DETERGENT next to the washer at a maximum height of 150 mm (6") above floor level. Remove the cap from the detergent container and insert the detergent suction tube into the detergent container. Tighten the cap.

IT IS STRICTLY PROHIBITED TO USE SOLVENTS AS DETERGENT.

PLEASE REFER TO SUPPLIERS MATERIAL SAFETY DATA SHEET FOR SPECIFIC INFORMATION REGARDING THE DETERGENT TO BE USED IN THIS MACHINE.

### 11.2.2 NEUTRALIZING ACID



Place a container of NEUTRALIZING ACID next to the washer at a maximum height of 150 mm (6") above floor level. Remove the cap from the acid container and insert the acid suction tube into the acid container. Tighten the cap.

THE USE OF NITRIC AND CHLORHYDRIC ACID IS PROHIBITED. ONLY DILUTE PHOSPHORIC, ACETIC AND CITRIC ACIDS CAN BE USED.

PLEASE REFER TO SUPPLIERS MATERIAL SAFETY DATA SHEET FOR SPECIFIC INFORMATION REGARDING THE ACID TO BE USED IN THIS MACHINE.

### 11.2.3 ADDITIONAL PRODUCTS (01060218/01030222)

Place a container of the additional product next to the washer at a maximum height of 150 mm (6") above floor level. Remove the cap from the container and insert the suction tube into the container. Tighten the cap.



**BEFORE CARRYING OUT ANY WORK ON THE WASHER, MAKE SURE IT IS SWITCHED OFF AT THE DISCONNECTING SWITCH.**

## 12 PRECAUTIONS BEFORE USING YOUR WASHER



**NEVER USE YOU WASHER WITHOUT PRIOR TRAINING.**

Your washer is now properly positioned and installed.

You must read user manual in order to learn how the washer operates.

All personnel using the washer () must have received complete training on use.

This training must be carried out on a regular basis and always before the washer is used for the first time.

A record of this training must be stored as evidence that the users attended and understood the contents of the course.

Training should include:

- How the washer functions
- How to load items on the baskets
- The use of the different processing programs
- Review of alarms and the procedure to follow in case of alarm
- Everyday maintenance of the washer (cleaning of external parts, filters...)
- Knowledge of the chemical products utilized
- Management of consumables (change of paper, product containers...)
- The different levels of traceability (if applicable)

**GETINGE** 

 Manufacturer:  
30, Bd de l'Industrie  
Zone industrielle Pahin Concerto  
31170 Tournefeuille - France

[www.getinge.com](http://www.getinge.com)