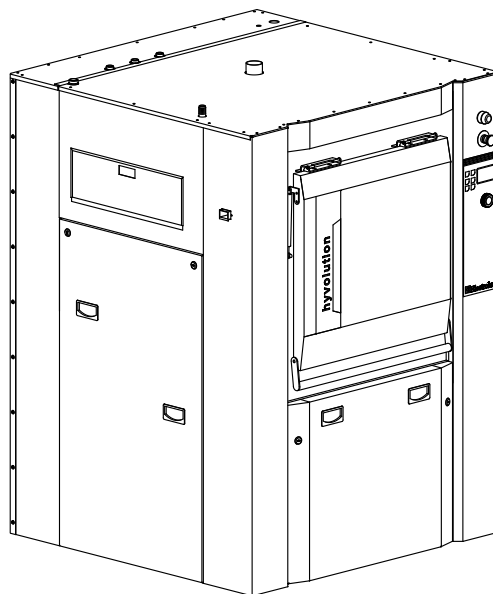


Installation manual Washer-extractors

WH5-WHB5 500H
WS5-WSB5 500H



Electrolux
PROFESSIONAL

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The manufacturer reserves the right to make changes to design and component specifications.

1 . Safety precautions

This machine should be installed in conformance to the health and safety regulations, and only used in a sufficiently aerated area. Check the instructions before installing or using the machine.

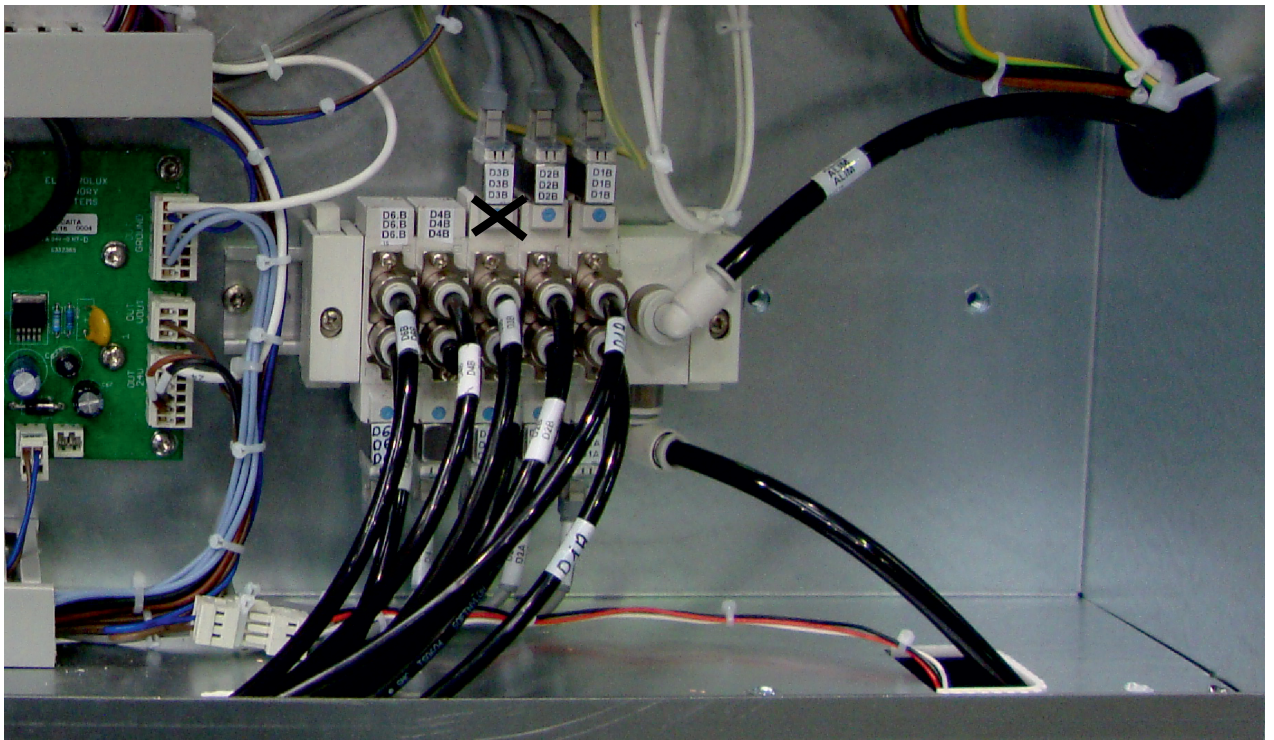


CAUTION



Before any use, to retire all the parts needed to install the machine put in the drum , please follow these actions

1. connect compressed air.
2. Remove the side housing cabinet.
3. Press with a screwdriver on D3B (see picture below).
4. Open the loading door.
5. Open the drum doors , with precautions, maintain the 2 doors.
6. Get the package and instructions.





CAUTION



Before any use, it is compulsory to read the instruction handbook.
Users must have learnt how the machine operates.
This device must not be installed in places accessible to the public.
The machine is only intended for water-wash use.
Do not allow minors to use the machine.
Do not hose down the machine with water.
Only use detergent intended for water-wash of textiles Never use dry cleaning agents.
It is forbidden to wash textiles soaked with solvents.
The machine's door lock must under no circumstances be bypassed.
If the machine develops a fault, this must be reported to the person in charge as soon as possible. This is important both for your safety and that of others.
DO NOT MODIFY THIS APPLIANCE.
Servicing shall be carried out only by authorized personnel.
Only authorized spare parts shall be used.
When performing service or replacing parts, the power must be disconnected.
When the power is disconnected, the operator must see that the machine is disconnected (that the plug is removed and remains removed) from any point to which he has access. If this is not possible, due to the construction or installation of the machine, a disconnection with a locking system in the isolated position shall be provided.
In accordance with the wiring rules : mount a multi-pole switch prior to the machine to facilitate installation and service operations.
In order to prevent damage to the electronics (and other parts) that may occur as the result of condensation, the machine should be placed in room temperature for 24 hours before being used for the first time.
In case of a gas heated machine, do not assemble the machine on premises containing a dry cleaning machines or other similar machines.
Please wash only items offering appropriate distribution inside the drum. Do not wash items such as mattresses or shoes. Call our technical departments before washing nonstandard items. Noncompliance with these instructions may void the manufacturer's guarantee in case of abuse of the washer-extractor.



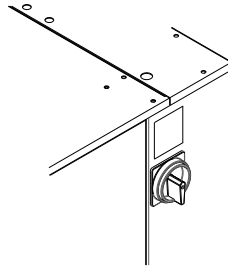
CAUTION



For the following countries : AT, BE, BG, HR, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IS, IE, IT, LV, LT, LU, MT, NL, NO, PL, PO, PT, RO, SK, SI, ES, SE, CH, TR, UK : This appliance shall not be installed where the public has access.
For other countries : This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety and understand the hazards involved. Children should be supervised to ensure that they do not play with the appliance.

**IMPORTANT**

The identification plate is located on the right side near the main switch.



Never use the main switch as an emergency stop. Use it only when the machine does not work in progress. Instead of that, use the emergency stop buttons in both sides of the machine.

**IMPORTANT**

Make sure not to overload the machine. Maximum mass of dry cloth is found in Technical data.
Sound pressure level is found in Technical data.

**IMPORTANT**

Never try to open the outer drum door before the complete stop of the cage.

**CAUTION**

Disconnect all the sources of energy before any intervention on the machine.



The machines comply with the European Directive EMC (Electromagnetic Compatibility). They have been tested in laboratory and approved as such. It is so prohibited to add wires or nonshielded electric cables in the cabinets, strands or cables' troughs. Considering that the volume of the outer drum is superior to 150 litres, the standard kept for the electric part is the IN 60204.

**CAUTION**

With AIDO(Automatic Inner Door Opening) option, Take care of the disc of the opening system above your head. Risk of cutting with the edge of the disc!!

Take care also of the locking system on your side; risk of cutting with the edge of the plate!!

**CAUTION**

When you put your hands into the drum, take care of the edge of the outer drum doors on yours sides. Risk of cutting with the edge of the metal plate!!

**CAUTION**

The machine can work without the protective casing when the electric supply is not cut off.

Interlock the main isolating switch with a padlock.

Close the steam or gas inlet valves.

**IMPORTANT**

Ensure that the machine is not loaded beyond its nominal capacity (see "Specific load" in the instruction booklet's technical characteristics).

An excessive load has consequences for the lifetime of the machine's organs, as follows:

- Rapid destruction of the suspension elements (springs, shock absorbers);
- Excessive fatigue of motorization elements (engine, belt);
- Rapid reduction of lifetime of drum bearings (rolling bearings);
- Opening and destruction of drum doors and tank doors during oil dehydration.

This is particularly important for your safety and that of others.

The consequence is an immediate cancellation of the warranty.



THINK OF THE ENVIRONMENT!

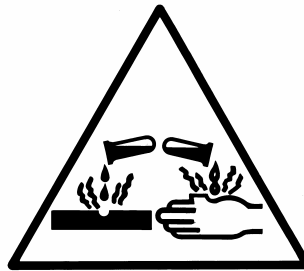


The use and handling of chemical products such as detergent, chlorine, acids, descaling agents, etc may create hazards for health and environment ; the following precautions should be taken:

- Do not breathe the dusts or steam;
- Avoid contact with skin or eyes (may cause burns);
- In case of important spillage, wear a protecting mask, gloves, and eye protectors;
- Handle with care;
- Consult the use and first aid advice on the packing;
- Do not dispose pure products in the environment.





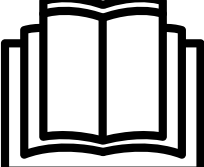
WARNING



The use and handling of chemical products such as detergent, chlorine, acids, antiliming agents etc... may create hazards for health and environment ; the following precautions should be taken.








- Do not breathe the dusts or steam.
- Avoid contact with skin or eyes (may cause burns).
- In case of important spillage, wear a protecting mask, gloves, and eye protectors.
- Handle with care.
- Consult the use and first aid advice on the packings.
- Do not dispose pure products in the environment.

1.1 Symbols

	Caution.
	Caution, presence of dangerous current.
	Read the instructions before using the machine.

1.2 Personal protection equipment

Given below is a summary table of the Personal Protection Equipment (PPE) to be used during the various phases of the machine's service life.

Phase	Protection garments 	Safety footwear 	Gloves 	Glasses 	Ear protectors 	Mask 	Safety helmet 
Transport		X	O				
Handling		X	O				
Unpacking		X	O				
Installation		X	O				
Normal use	X	X	X	X			
Adjustments	O	X					
Routine cleaning	O	X	X	O			
Extraordinary cleaning	O	X	X	O			
Maintenance	O	X	O				
Dismantling	O	X	O				
Scrapping	O	X	O				

Legend : X : PPE required ; O : PPE available or to be used if necessary.

Normal use : Safety footwear must be defined for a use on a wet floor. And use glasses and gloves to manipulate chemical products.


1.3 Preliminary instructions



WARNING


Risk of jamming when opening the lower door for unloading

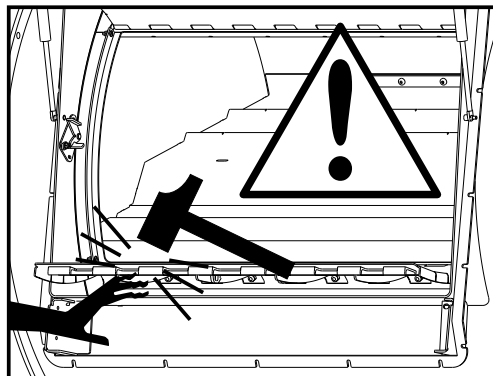




WARNING

Risk of jamming with trolley and lower door when opening (if trolley height = 900mm)



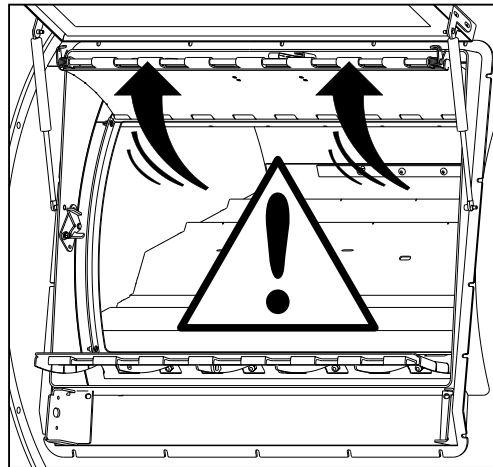




WARNING



Risk of the upper door being raised quickly on loading



WARNING



After the installation, Send back the commissioning form ,signed document, to Electrolux to validate the warranty of the product.

2 Environmental information

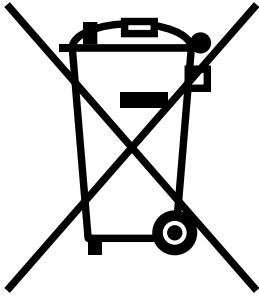
Concerned by providing the end user with useful and necessary environmental information, we wish to precise:

- Data about energetic consumptions, wastes (atmospheric and liquid) and sound level are indicated in the paragraph «Technical characteristics».
- Foreseeing its recycling, this machine is fully dismantable.
- This machine is free from any asbestos.
- In conformity with French regulations.
- In the other countries, we recommend that you comply with the legislation in force in the country where the machine is installed.
- In France, all owners of packing waste producing a weekly volume below 1100 litres can forward these to the local collection and treatment department. If exceeding this volume, the owners of packing waste will ensure their valuation by reuse, recycling or, any other action aiming at producing reusable materials or energy... or provide them contractually to a certified intermediate authorised to transport, trade or broke waste.

Therefore, this forbid:

- land filling raw waste;
- open air burning or incineration without energy collection.
- Packaging of our machines are according with the french legislation related to environment requirements.

For additional information, do not hesitate to consult with our environmental department.



Scrapping of machine

When the machine is no longer to be used, it must be submitted to a recycling facility for destruction. The majority of the components in the machine can be reused, but it also contains other materials that must be taken care of in the correct way. Therefore, never mix the machine or its parts with domestic waste as this may lead to health hazards or damage to the environment.

3 Data plate explanation

In this chapter, you will find the explanation of the different data input on the data plate of your product.

- Commercial name : Usual name of your product (i.e. WB6–20).
- Type : Type of your product (you have the same on the Declaration of Conformity CE if delivered with CE certification).
- Model : Model of your product (can be different of commercial name) (i.e WSBA6180H17 for commercial name WB6–20) .
- Serial Number : serial number of your product which indicate the week of the production of your product (the first 4 digit indicate the year and the week of production) and the plant where it has been produced (finish by 17)
- Product N°: Product number of your product.
- Date : The date of the end of manufacture of your product
- Capacity : for washer product, the maximum loaded weight of linen for your product (in kg)(i..e. 20 kg for WB6–20)
- Some technical data depending of the heating of your product : see list below :
- Some technical data depending of the voltage ordered.
the voltage looks like that 380–415V 3 50–60Hz
under this, you find the protection request for your product (i.e 16 A)
- Different logos are available on your data plate .
They represent the different certification obtained for your product
CE, EAC
ETL intertek for USA and Canada countries
- QR code : when you scan it, you will be able to obtain the full documentation for your product (Complete installation and user manuals)
- Standardized protection index of your product : IP24D

Electrical heating :

- P.Max : maximum power installed of your product
- Power of the motorization in kW and its isolation class (F) .
- Heating power in W .



Commercial name : IC44821

Type : IC44821


Model : IC44821


Serial N° : 0472001417

Product N° : 988310101000H

Capacity : - kg

P.Max : 37700 W

 0.37 kW Isol.Class. : F

 36450 W

x

380-415 V  3 50 Hz

 63 A



For safety reasons use only original spare parts.



IP24D Date : 18/11/2020

Made in France by
Electrolux Laundry Systems France
10430 Rosières-près-Troyes - FRANCE



32101642E

Gas heating :

Left side

- P.Max : maximum power installed of your product
- Power of the motorization in kW and its isolation class (F) .
- Heating power in W .
- Gas approval number depending on your machine except ETL product (begin by1312/.....)

Right side

- Qn (Hi) : heating power of your product
- Installed gas type , its pressure, its injector diameter and its consumption .
- 3 Other gas type compatible with their pressure, their injectors diameter



Commercial name : IC64819

Type : IC648.....

Model : IC64819



Serial N° : 0472005017

Product N° : 9882030011

Capacity : - kg

P.Max : 1000 W

 0.37 kW Isol.Class. : F

 39 W
380-415 V  3 50 Hz
 16 A


Qn(Hi) 39 kW
 Natural Gas, G20 20 mBar, Ø 3.3 mm.
 Mn/Vn 4.13 m3/h
 Type FR.II2Esl3+

LPG, G30 30 mbar Ø 1.85 mm.

LPG, G31 37 mbar Ø 1.85 mm.

Natural Gas, G25 25 mbar Ø 3.3 mm.

For safety reasons use only original spare parts.



1312/1312AS2174

IP24D Date : 16/11/2020

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32101642E



Steam heating :

Left side

- P.Max : maximum power installed of your product
- Power of the motorization in kW and its isolation class (F) .
- Heating power in W .

Right side

- P.Maxi. (kPa) maximum pressure

For additional information, do not hesitate to consult with our quality department.

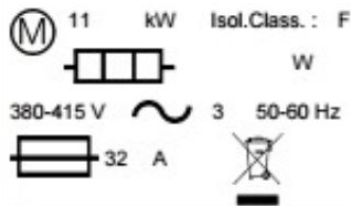


Commercial name : WPB4700H
 Type : WPB4700H
 Model : WPB4700H

Serial N° : 0472005117
 Product N° : 98646370021000F
 Capacity : 70 kg
 P.Max : 11700 W



P. maxi. 600 kPa



For safety reasons use only original spare parts.



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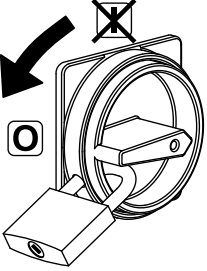
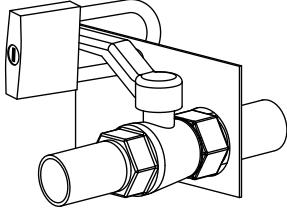
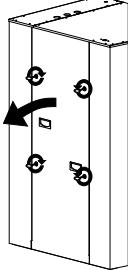
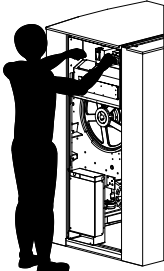
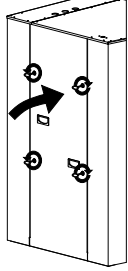
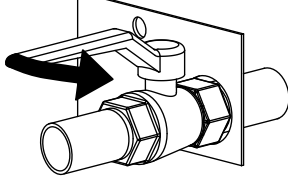
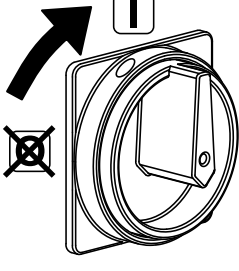


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4 Locking and tagging procedure

A red insert at the beginning of this instruction handbook schematically shows the locking and tagging procedure described below. If you wish, you can detach this insert and display it close to the machine to remind maintenance personnel of the safety instructions.

1		<p>Always respect items 2, 3 and 4 carefully before doing any repair or maintenance work on the machine.</p>
---	--	--

2		<p>Put the main switch to Off and lock the handle with a padlock in one of the three holes provided for this purpose.</p>		<p>Close the stop valves for the other supplies (steam, gas, thermal fluid, compressed air) to stop and lock their handle with a padlock.</p>
3		<p>Open the fixed protectors (casings, doors) with the key provided or a special tool.</p>		<p>Do the maintenance.</p>
4		<p>Close and carefully lock the fixed protectors.</p>		
5			<p>Unlock the stop valves and the main switch.</p>	

5 Handling

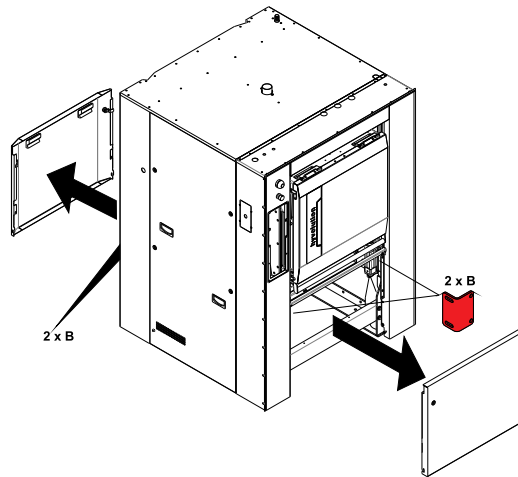


Important




It is obligatory that all these operations are undertaken by handling specialists.


Before any handling, check that the four transport locks fitted are still in place and well-tightened. To do so, remove the front and rear casings and check presence of four locks (B).



5.1 Lifting with a fork-lift truck

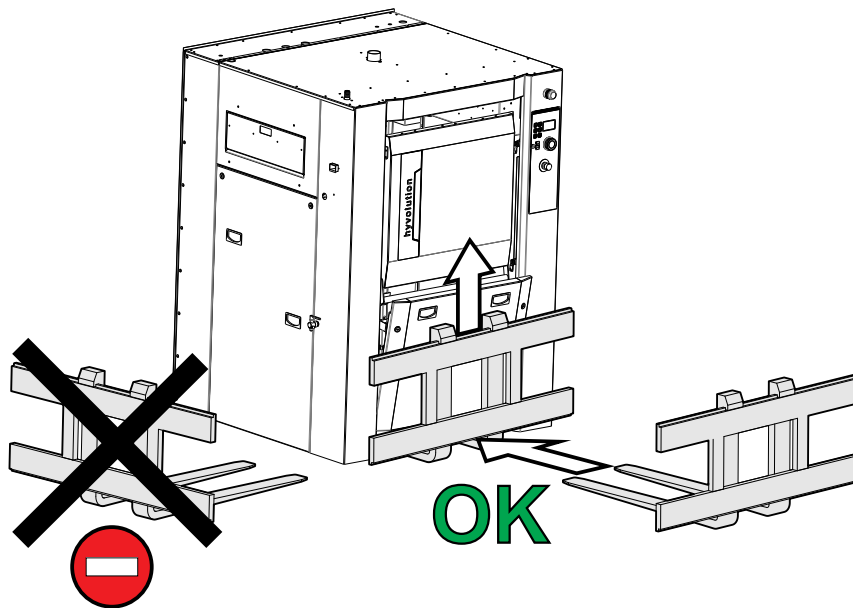


Warning



You should never handle the machine in its longitudinal side (any other than shown on the drawing below) with a fork-lift truck. Important risk of parts deterioration for those fixed under the machine.


This can be carried out from the front or back, at the centre of the machine.




5.2 Lifting with handlings straps

Lifting in that case can only be done with handling straps (minimum capacity 1000 daN / 2200 lb) which bear weight of the machine.

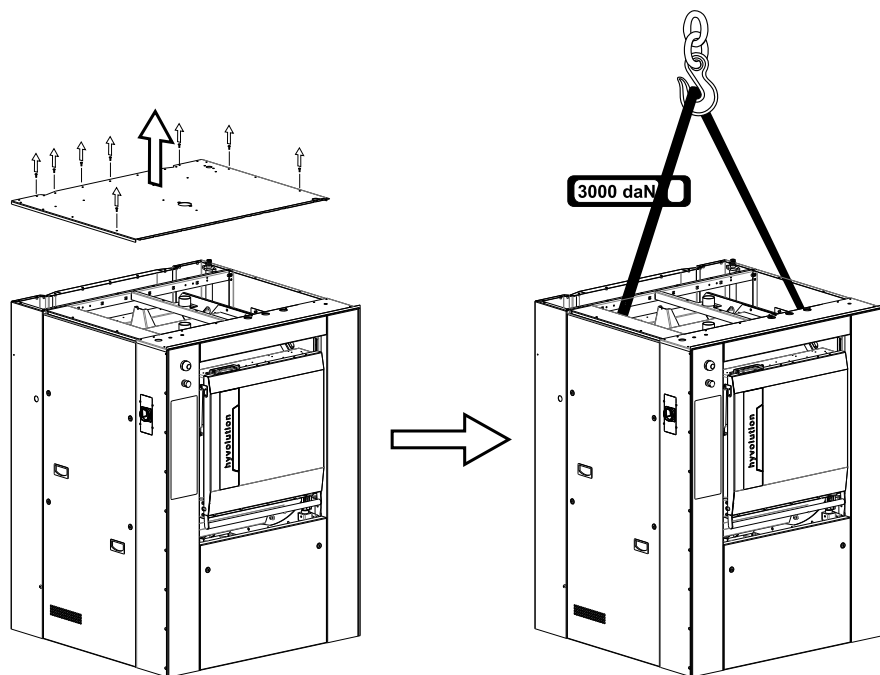
Remove the top cover and pass the straps in the lifting holes.



Caution



Make sure to place the straps correctly to avoid any bending of parts of the machine.



Caution



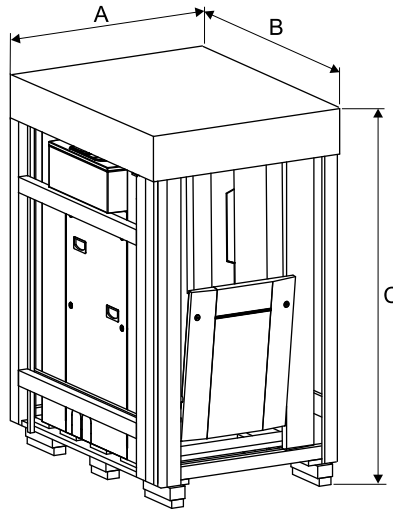
In order to avoid any bending of casings, you should never climb and stand on top of the machine.



6 Packing-Weight

6.1 Packing

Packing dimensions in mm/in	Size A	Size B	Size C
Washer extractor type WH5500H	1570 / 61.81	1520 / 59.85	1980 / 77.95
Washer extractor type WHB5500H	1570 / 61.81	1520 / 59.85	1980 / 77.95



6.2 Weight

Weight in kg/lb (machine + crate)*	
Washer extractor type WH5500H	x
Washer extractor type WHB5500H	1280 / 2822

* Precise weight depends on accessories fitted.

7 Technical characteristics

7.1 Technical data

	Units	WH5500H	WHB5500H
Drum diameter	mm	920	920
Drum length	mm	800	800
Drum volume	litre	500	500
Opening inner drum doors (LxH)	mm	670x470	670x470
Opening outer drum door (LxH)	mm	645x738	645x738
G-factor, max.		350	350
Specific load 1/10	kg	50	50
Floor area	m ²	1.63	1.63
Max. unbalance	kg	6.5	6.5
Net weight	kg	x*	1170*
Weight loaded (high level)	daN	300	300
Water volume, washing (low level)	l	125	125
Water volume, washing (high level)	l	250	250
Heat loss		3 % of installed heating power	

* Precise weight depends on accessories fitted.

7.2 Connections

Water	Units	WH5500H	WHB5500H
Water valves connection	mm-BSP	DN20–3/4"	DN20–3/4"
Capacity at 250 kPa	l/min	70	70
Functioning limits for water valve	kPa	50–300	50–300
Water consumption for a wash program ¹	l	542	542

Drain	Units	WH5500H	WHB5500H
Drain connection, outer \varnothing	mm	75	75
Double drain connection (option) outer \varnothing	mm	75	75
Maximum drain flow rate	l/min	240	240
Waste water collector	DN-mm	150	150

Air vent	Units	WH5500H	WHB5500H
Air vent connection, outer \varnothing	mm	60	60

Liquid detergents	Units	WH5500H	WHB5500H
Liquid detergents connection, outer \varnothing	mm	25	25

Steam	Units	WH5500H	WHB5500H
Steam inlet, standard	mm-BSP	DN20–3/4"	DN20–3/4"
Steam inlet, low pressure	mm-BSP	DN25–1"	DN25–1"
Recommended steam pressure	kPa	300–600	300–600
Recommended steam pressure (low pressure heating)	kPa	less than 50	less than 50
Functioning limits for steam valve (not for low pressure)	kPa	100–600	100–600
Steam instantaneous flow rate at 600 kPa	kg/h	72	72
Steam consumption for a normal cycle ¹ ISO 93 98–4 standard type B	kg at 600 kPa	21.6	21.6
Steam consumption for a normal cycle ¹ ISO 93 98–4 standard type B	kg at 50 kPa	26.8	26.8

Indirect steam	Units	WH5500H	WHB5500H
Thermic fluid inlet or indirect steam heating	mm-BSP	DN15–1/2"	DN15–1/2"
Thermic fluid return or indirect steam heating	mm-BSP	DN15–1/2"	DN15–1/2"
Maximum supply pressure	kPa	600	600
Installed calorific power	kW	131	131
Average calorific consumption	kWh	6.3	6.3
Inner volume thermic fluid	l	2.4	2.4

1. ISO 93 98–4 standard type C.

Gas	Units	WH5500H	WHB5500H
Gas connection	mm-BSP	DN20–3/4"	DN20–3/4"
Combustion products evacuation	mm	125	125

Electricity	Units	WH5500H	WHB5500H
Supply voltage	V	380/415	380/415
Frequency	Hz	50/60	50/60
Electric cable (section)	mm ²	See chapter "Feeder cable section"	
Rated electric power, gas heating	kW	8.7	8.7
Rated electric power, electric heating	kW	38.5	38.5
Rated electric power, steam heating / indirect steam heating	kW	8.4	8.4

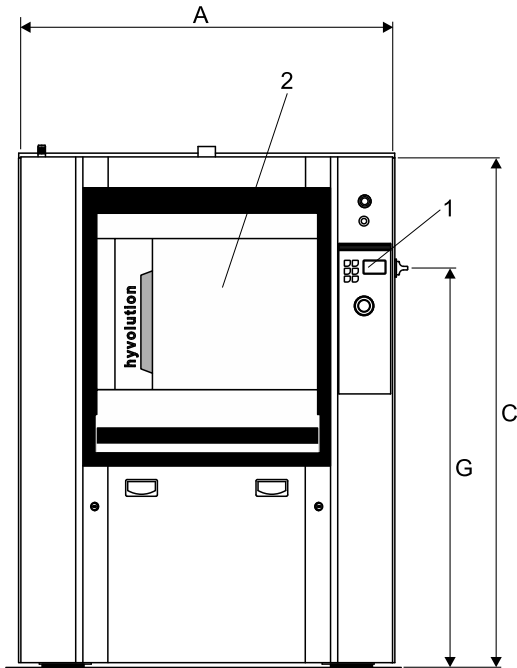
Heating	Units	WH5500H	WHB5500H
Installed heating power, gas heating	kW	40	40
Installed heating power, electric heating	kW	36	36
Electric consumption for a standardized cycle, gas heating	kWh	0.8	0.8
Electric consumption for a standardized cycle, electric heating	kWh	10.7	10.7
Electric consumption for a standardized cycle, steam heating	kWh	1.2	1.2

Floor load	Units	WH5500H	WHB5500H
Frequency of the dynamic force	Hz	13.75	13.75
Max transmitted floor load	daN	1808+-75	1808 +-75
Max. pressure transmitted to floor	kPa	11.77	11.77

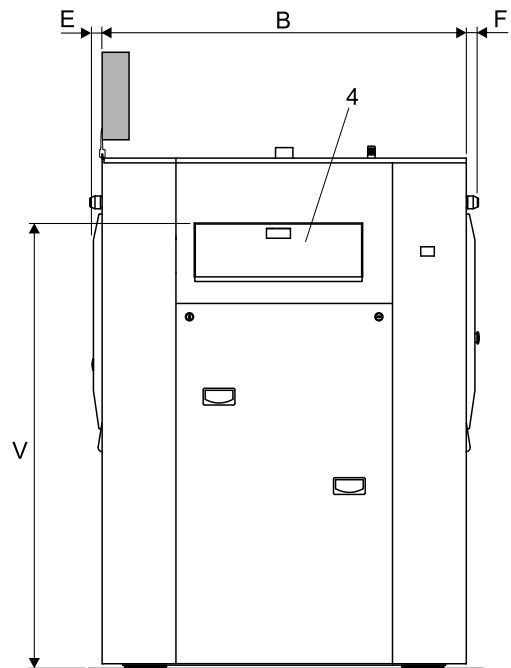
Compressed air	Units	WH5500H	WHB5500H
Compressed air inlet	mm	6/8	6/8
Min./max. compress air pressure	bar	4.5/6	4.5/6
Consumption	l/h	50	10

7.3 Dimensions — WHB5500H

WHB5500H												
A	B	C	D	E	F	G	H	I	J	K	L	M
1300	1265	1770	920	40	40	1385	330	450	570	220	195	80
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
160	840	670	240	70	1135	635	650	1560	85	270	860	2330

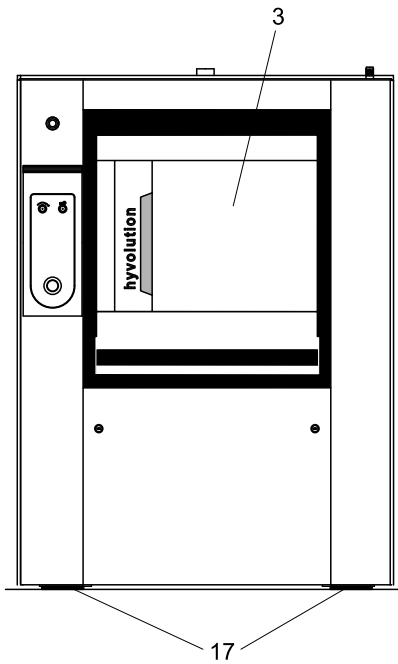


Front view

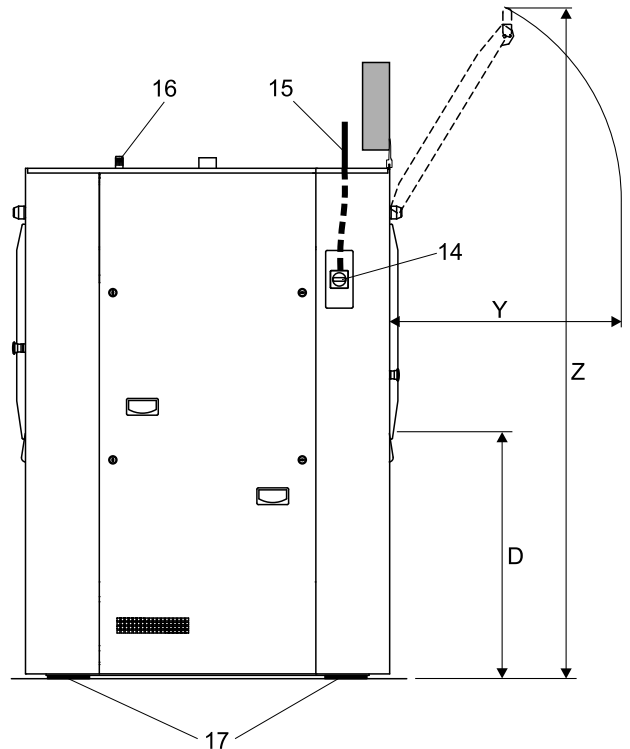


Left view

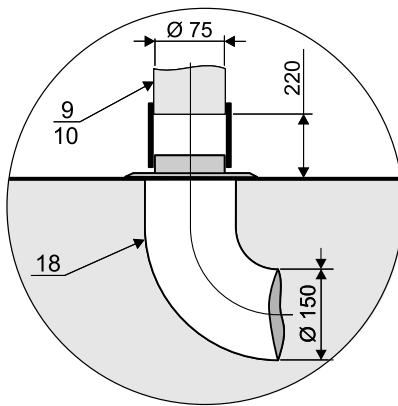
1	Control panel	10	Double drain connection (option)
2	Loading door	11	Air vent connection
3	Unloading door	12	Electrical connection
4	Detergent container	13	Compressed air inlet
5	Cold hard water inlet	14	Main switch
6	Hot water inlet	15	Electric cable
7	Cold soft water inlet (option)	16	Liquid detergents inlet
8	Steam connection	17	Rubber plate
9	Drain connection	18	Waste water collector



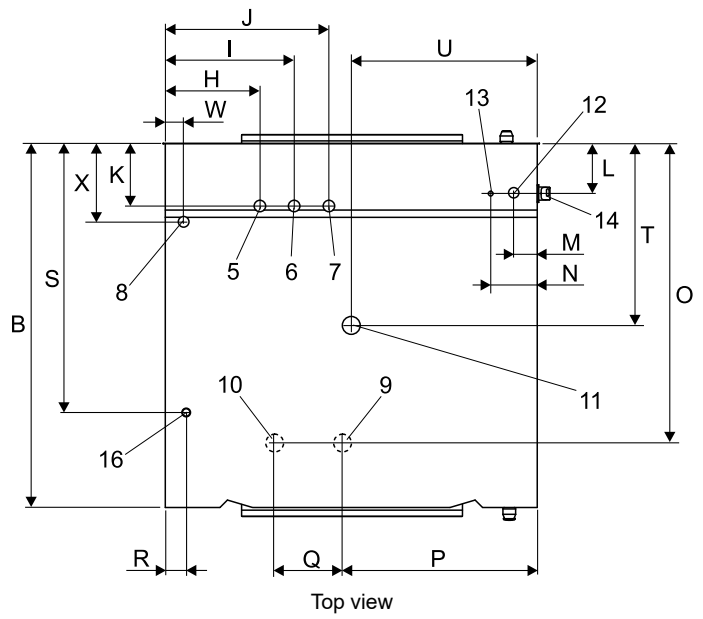
Back view



Right view



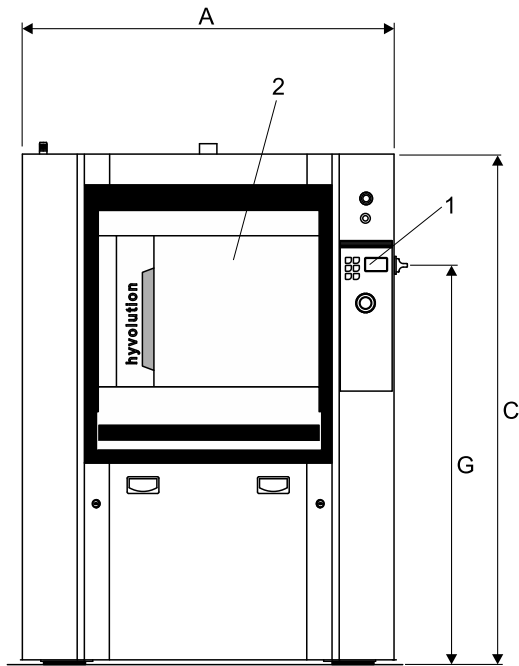
Drain connection



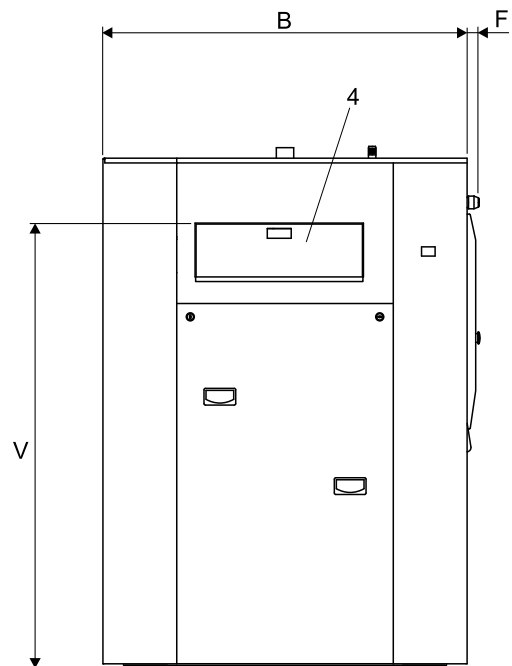
Top view

7.4 Dimensions — WH5500H

WB5500H												
A	B	C	D	E	F	G	H	I	J	K	L	M
1300	1265	1770	920	—	40	1385	330	450	570	220	195	80
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
160	840	670	240	70	1135	635	650	1560	85	270	860	2310

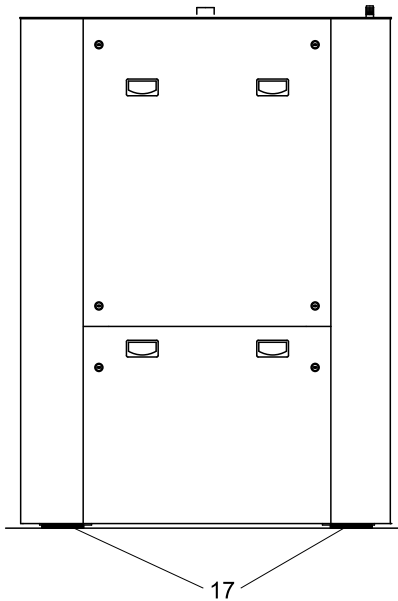


Front view

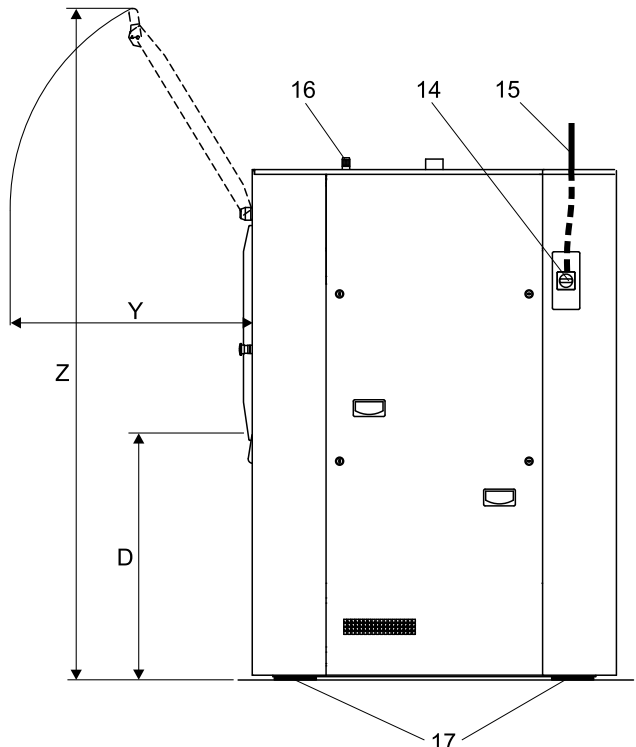


Left view

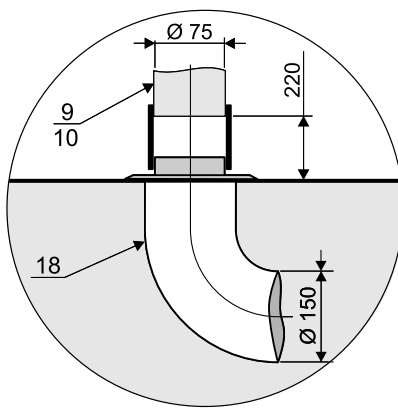
1	Control panel	10	Double drain connection (option)
2	Loading door	11	Air vent connection
3	Not used	12	Electrical connection
4	Detergent container	13	Compressed air inlet
5	Cold hard water inlet	14	Main switch
6	Hot water inlet	15	Electric cable
7	Cold soft water inlet (option)	16	Liquid detergents inlet
8	Steam connection	17	Rubber plate
9	Drain connection	18	Waste water collector



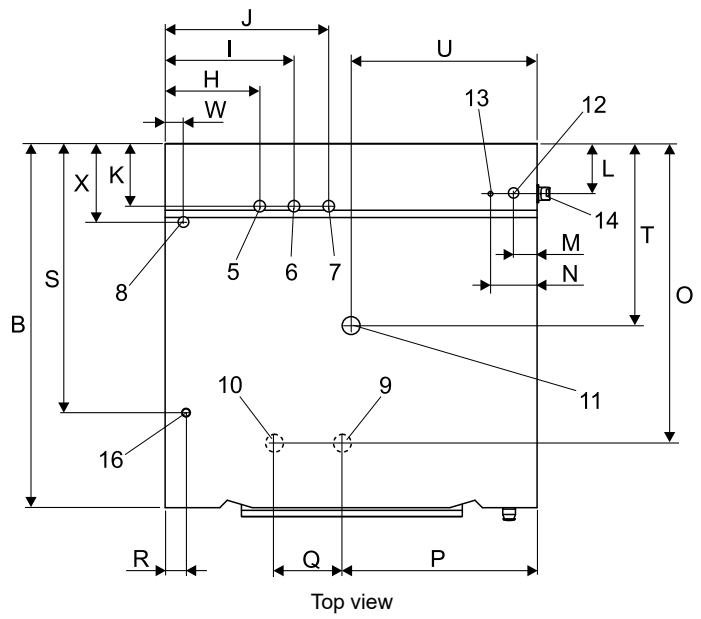
Back view



Right view



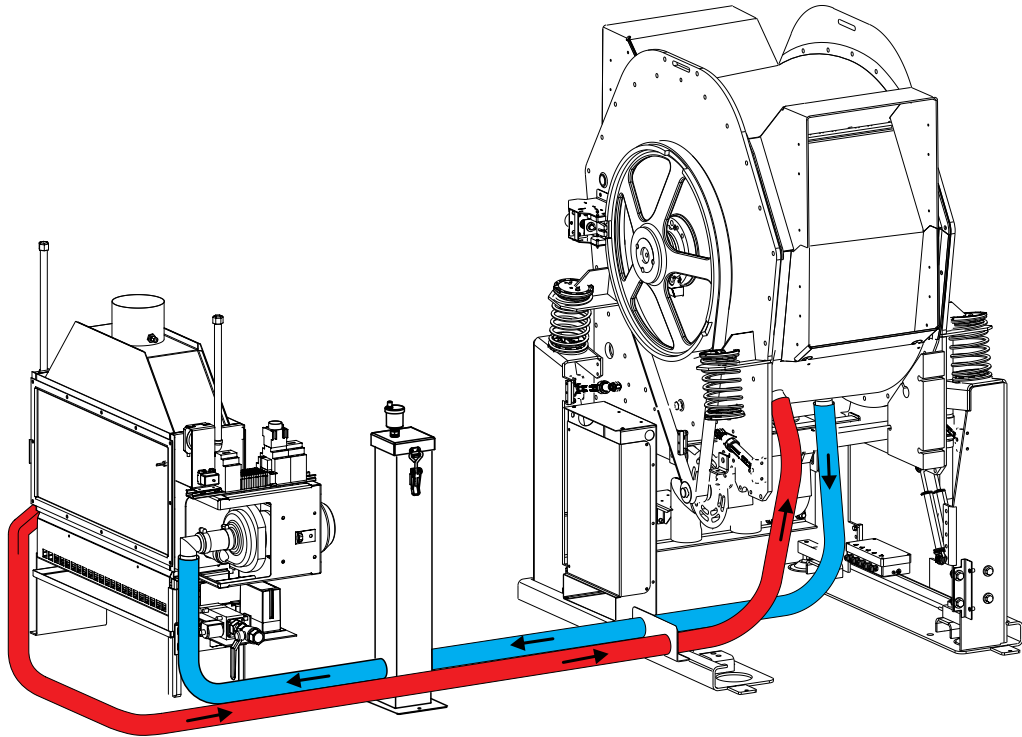
Drain connection



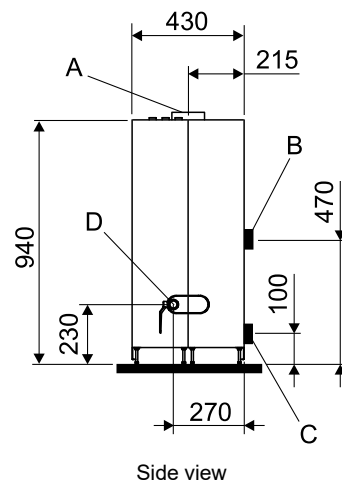
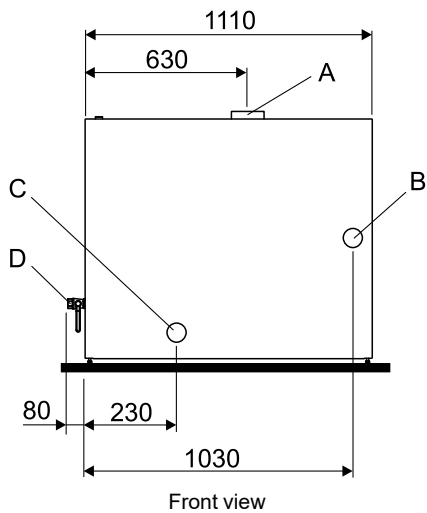
Top view

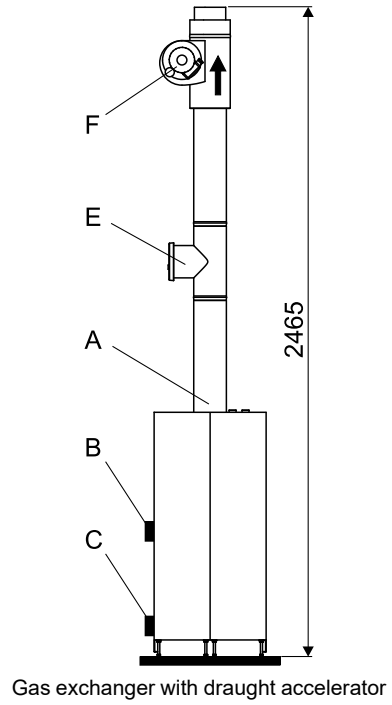
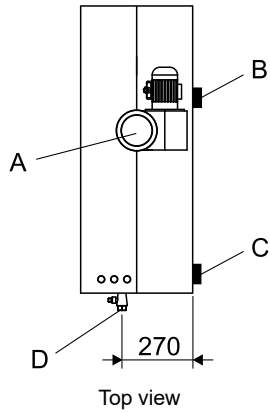
7.5 Gas heating

Gas exchanger



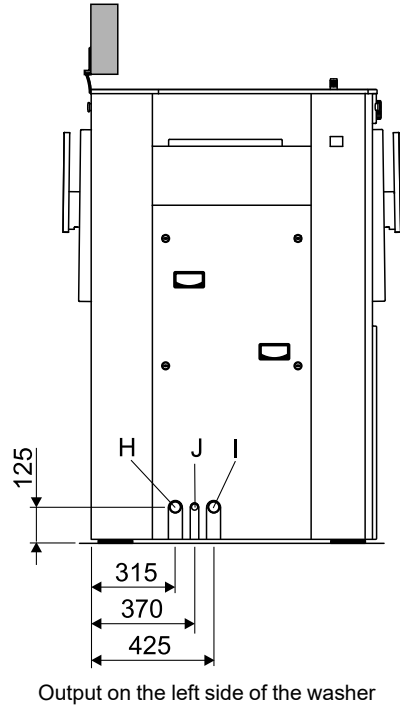
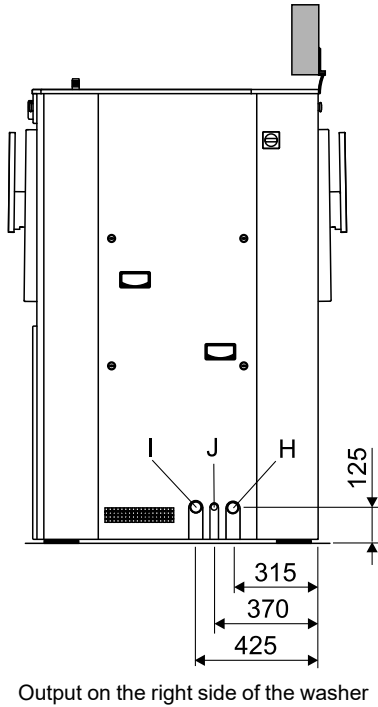
A	Evacuation of burn gas	Ø 125 mm
B	Exchanger output	Ø 36/40 mm
C	Exchanger input	Ø 36/40 mm
D	Gas connection	DN 20 mm (3/4" BSP)
E	Regulator	
F	Draught accelerator	






7.5.1 Washers — WHB5 500H

H	Input machine/exchanger (higher plug on the outer drum)
I	Output machine/exchanger (lower plug on the outer drum)
J	Hole for electric cable to gas exchanger




7.5.2 Connection of the gas exchanger with the washer

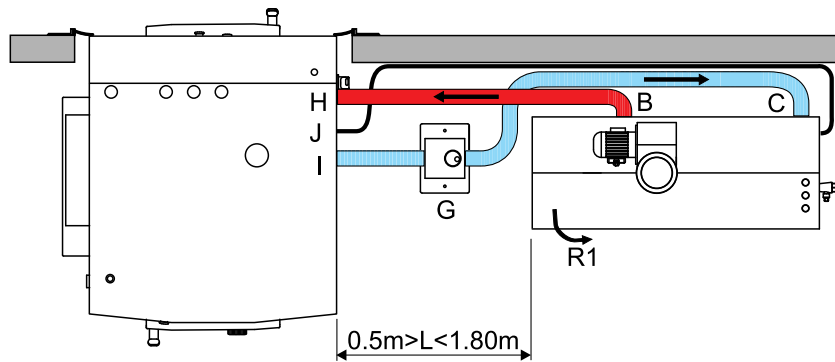
B	Exchanger output
C	Exchanger input
G	Filter
H	Input machine/exchanger (higher plug on the outer drum)
I	Output machine/exchanger (lower plug on the outer drum)



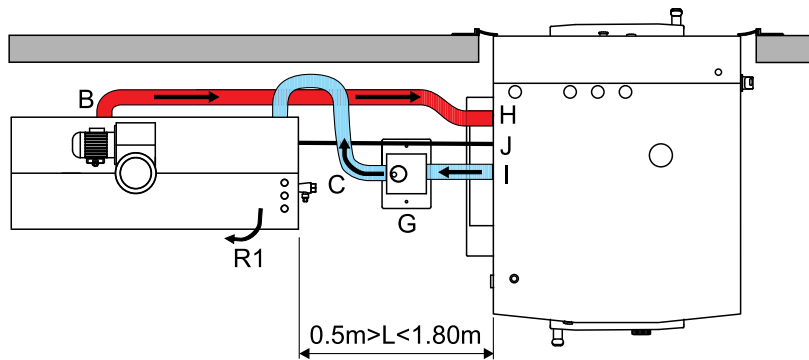
Important



The gas exchanger pump must always be connected to the lower plug on the outer drum.



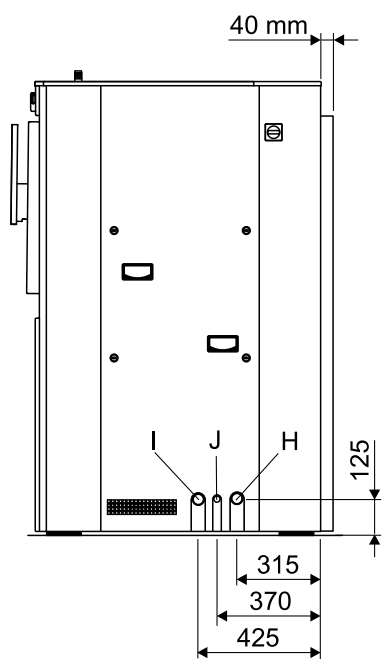
Layout of the gas exchanger on the right side of the washer (recommended)
You can rotate it by 90° (R1)



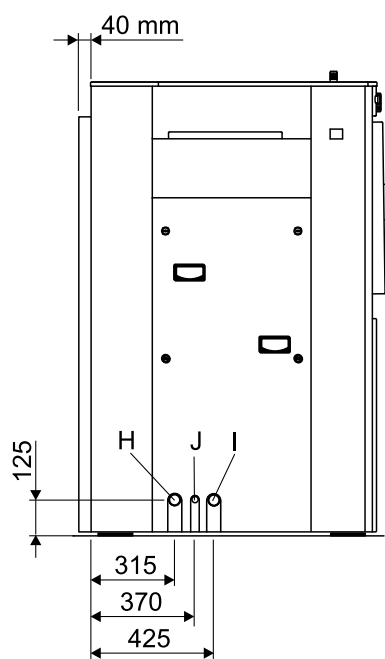
Layout of the gas exchanger on the left side of the washer
You can rotate it by 90° (R1)

7.5.3 Washers — WH5 500H

H	Input machine/exchanger (higher plug on the outer drum)
I	Output machine/exchanger (lower plug on the outer drum)
J	Hole for electric cable to gas exchanger



Output on the right side of the washer



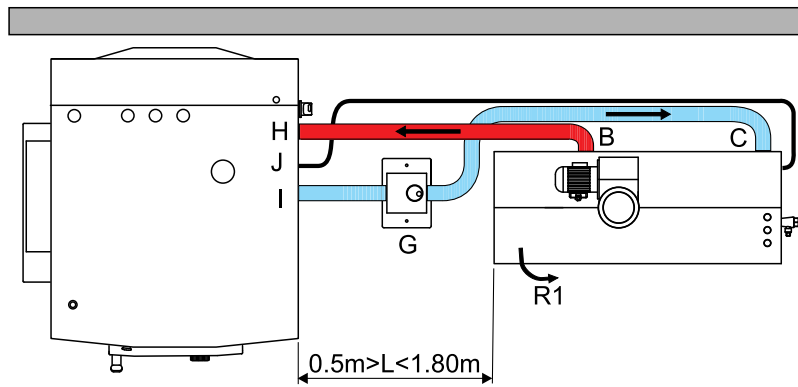
Output on the left side of the washer

7.5.4 Connection of the gas exchanger with the washer

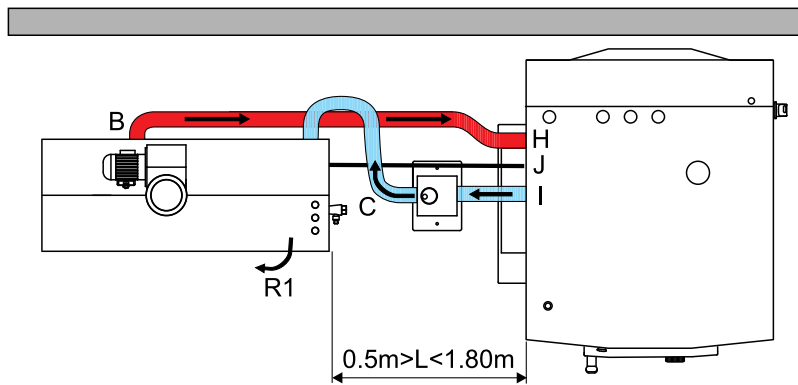
B	Exchanger output
C	Exchanger input
G	Filter
H	Input machine/exchanger (higher plug on the outer drum)
I	Output machine/exchanger (lower plug on the outer drum)

Important

The gas exchanger pump must always be connected to the lower plug on the outer drum.



Layout of the gas exchanger on the right side of the washer (recommended)
You can rotate it by 90° (R1)



Layout of the gas exchanger on the left side of the washer
You can rotate it by 90° (R1)

8 Sound levels

The sound power level of the machine is determined by using ISO 3747:2012.

According to test code EN50571 : 2013 annex CC, the sound power level at extraction and during washing are according to the table:

Washing	dB(A)	64
Extraction	dB(A)	83

9 Working place lighting

The lighting should be designed so as to avoid eye strain for the operator ; it should be uniform without any glare, and should be sufficient to detect any hazards.

The average lighting value on the working place recommended by the clothing industry for inspecting linen is **500 lux**. Whenever possible, the working place should be illuminated by daylight.

10 Supplies

Take the box placed inside of the inner drum.

1. Accessories delivered with each machine

- 1 instruction handbook + converter handbook + spare parts catalogue + 2 electrical schematics + 1 maintenance poster
- 3 keys for casings
- 2 or 3 stainless steel flexible pipes 3/4" + 4 or 6 fibre seals
- 2 or 3 water filters 3/4"
- 2 or 3 male nipples 3/4"
- 1 connection bellow \varnothing 60 + 1 collar
- 1 connection bellow \varnothing 75 mm + 2 collars for drain
- 1 connection nozzle
- 4 fixing dowels
- 4 bolsters (see explanation for the setting)

2. Accessories delivered with each steam heating machine

- 1 steam electrovalve
- 1 steam flexible
- 1 steam filter
- 1 pipe union

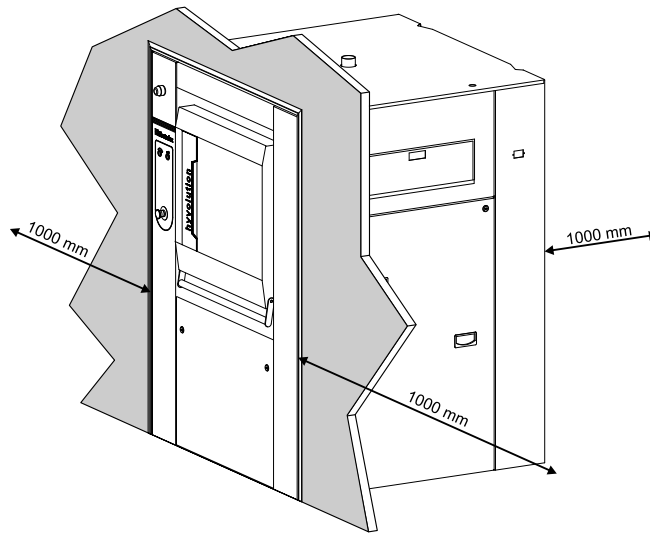
3. Accessories delivered with each gas heating machine

- 4 meters blue flexible pipes
- 2 pipes \varnothing 125 mm (5"), length 500 mm (20") to be connect at the chimney
- 1 T-square pipe \varnothing 125 mm (5") and an anti-bursting chimney regulator to be connected over the gas exchanger
- 1 draught accelerator to extract the exhaust of burn gas, to be connected at the chimney (in 3 parts)
- 4 collars \varnothing 40–60

4. Accessories delivered with each barrier washers

- 1 rubber seal + aluminium extruded sections + 40 screws
- 4 flange safety locks (machines with weighing equipment)
- 1 opening inner drum lever (with manual opening door)

11 Barrier partition

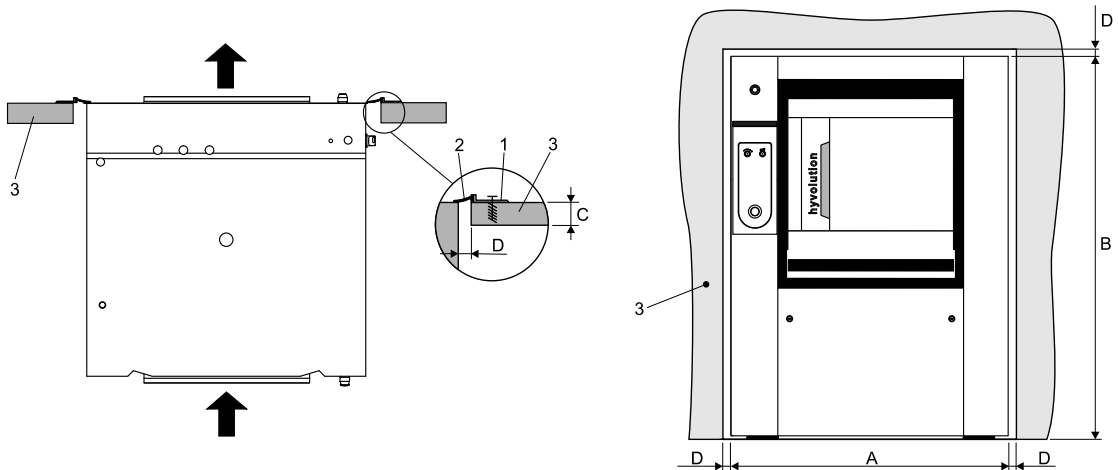


Leave at least 1 m (40") (according to the recommendation in standard EN 60204) between the machine, a wall or any other machine at the sides.

1	Rubber seal
2	Washer-extractor
3	Barrier partition

mm/in	A	B	C	D
WHB5500H	1290	1770	*	30

* Minimum 70 mm (2.76"), maximum 100 mm (4"),.



- The barrier partition (3) shall be built after the installation of the machine.
- Line up the barrier partition (3) with the machine (2).
- Mount the rubber seal (1) on the cutoff edge of the machine (2).

If machines are to be installed in an existing wall thicker than 100 mm (4"), we recommend you order our special aseptic frame kit.

12 Mechanical installation

Depending on its destination, the washer extractor is delivered bare or may be placed on a transport pallet and/or packed with plastic film.

In some cases, it may be delivered in a crate, or in maritime packing (wood box).

12.1 Unpacking

Take off the plastic film or remove the machine from his transport pallet.

Please refer to the handling chapter in this instruction handbook for a description of handling operations.



Important



Check that no damage has been caused during transport.

12.2 Installation

The installation must be done by competent technicians in accordance with local codes and regulations. When there are not local codes and regulations, the installation must be comply with European standards applicable.

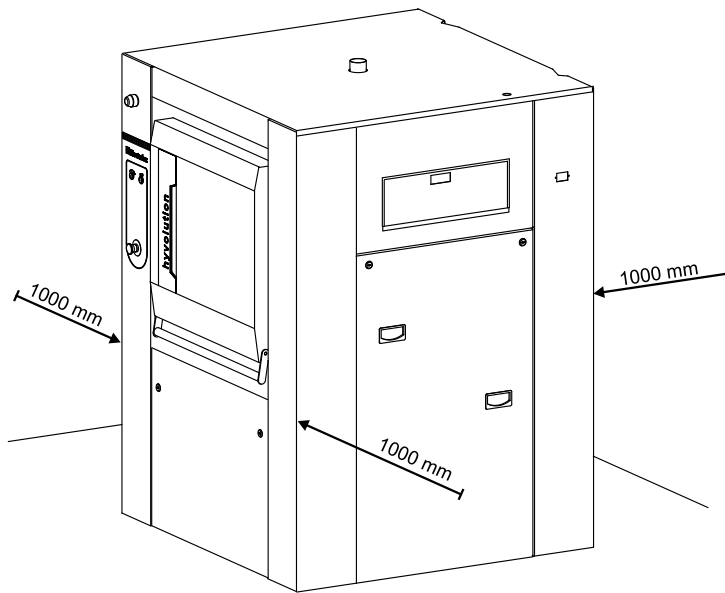
The machine must be installed on a perfectly even surface, strong and horizontal, capable resisting to the efforts shown in the technical characteristics.

Adjustment of the machine by addition of level plate should be avoided.

Control the horizontal level using a water level placed on the machine's sole.

Place the washer extractor so that it is easy for the user and the service technician to do their work.

Leave at least 1 m (40") (according to the recommendation in standard EN 60204) between the machine, a wall or any other machine at the sides.



12.3 Installing the shock absorber runners

Preparation of the ground and the machine.

- Carefully degrease the ground and the machine's base plates.

Positioning the shock absorber runners.

- Place each shock absorber runner (P) at its respective location (see diagram) raising each of the machine's support points in series and taking care to let the runner inside of the base plates.

Commissioning the machine

- Time: before commissioning the machine, each support point must be embedded by being crushed in by the runner's upper layer and the lower layer must have been pushed into the porosity in the ground. The crushing time is 2 hours at an ambient temperature of 18 °C.



Warning



Electrical safety device.
As rubber is a very good electric insulating material, the earthing of the machine is compulsory.

Moving machines sealed with the shock absorber runners

- Moving machines sealed with the shock absorber runners

12.4 Instructions for securing the machine on the ground



Caution



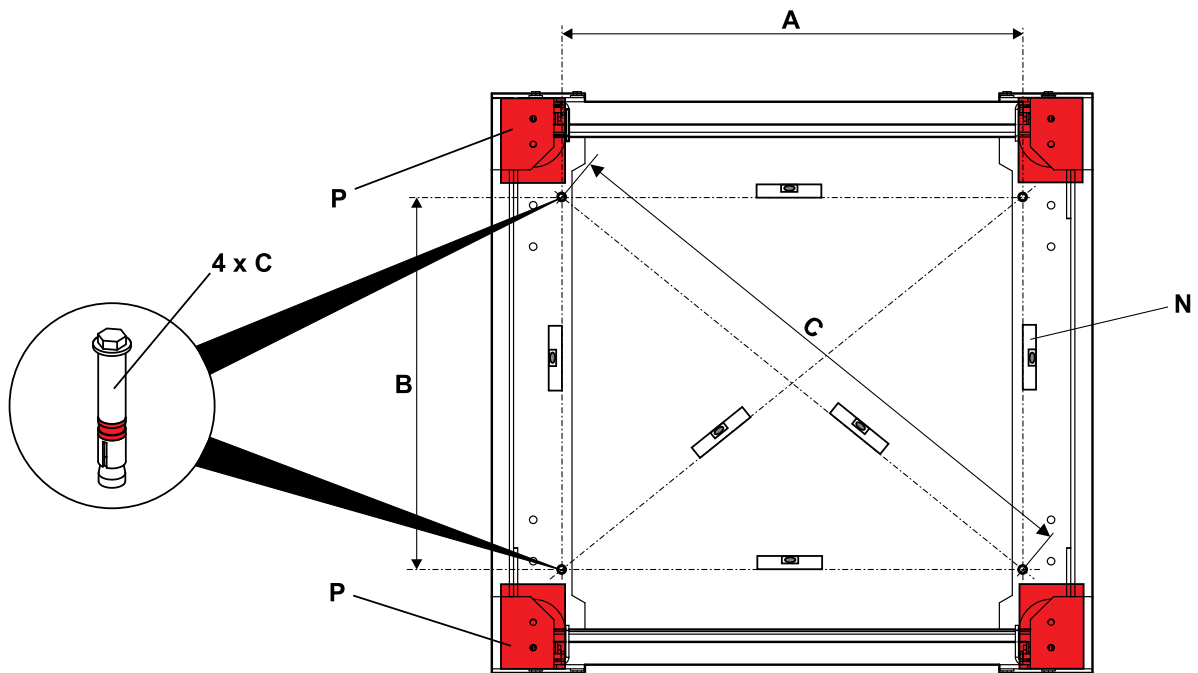
Only for machines without weighing equipment.

Place the machine on a perfectly even surface and horizontal.

Control this using a water level (see drawing).

Each point must be level.

	A	B	C
WH5500H	891 mm	720 mm	1145 mm
WHB5500H	891 mm	720 mm	1145 mm



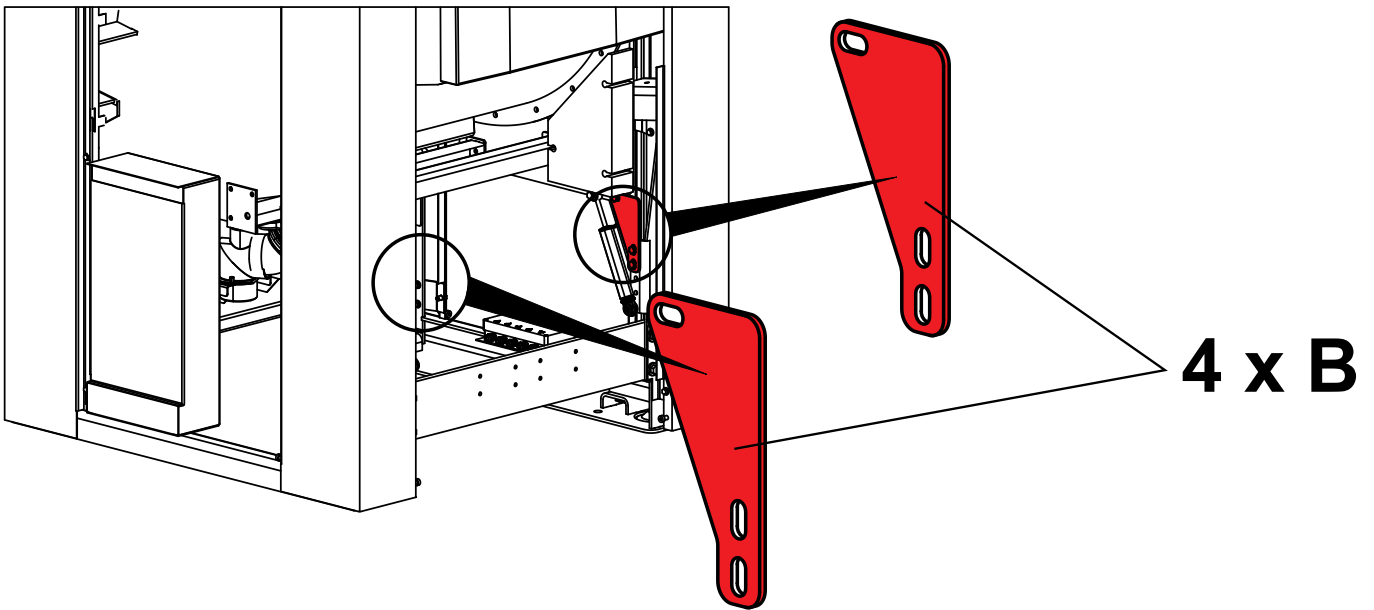
Mark out the drill holes for the securing dowels and drill them so as to insert the 4 dowels, they will secure the machine to the floor.

Put the machine in position and secure it with the dowels without tighten.

Bolsters: P

Water level: N

Fixing dowels: C



Important



Never handling the machine without the transportation bridles.

14 Drain connection

The machine's exhaust sleeve outside diameter is of 75 mm (3"). It is located underneath the machine.

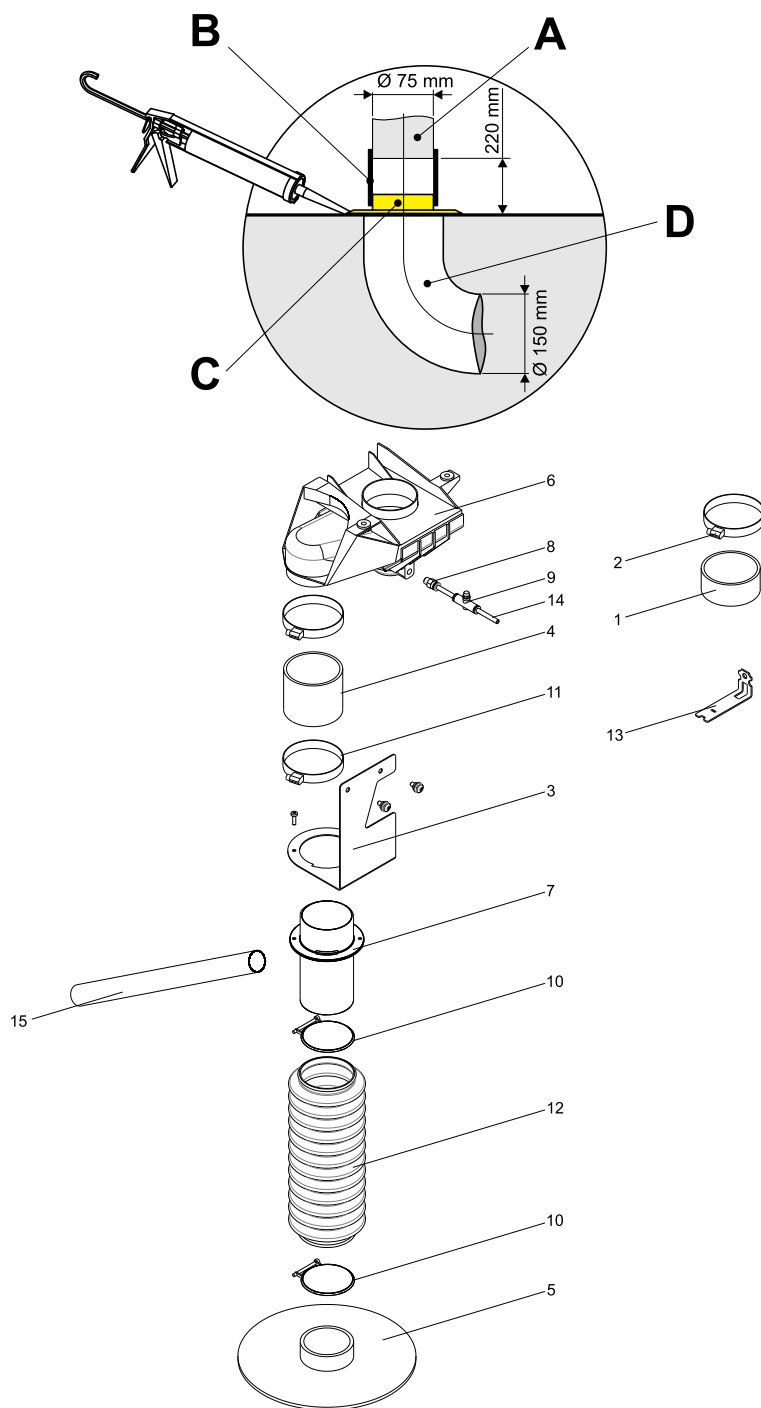
The waste water collector diameter 150 mm (6") (manufactured by customer) should have a 3 cm/m (3 %) slope and resist to a temperature of 90 °C (194 °F). It should be connected to the waste water general network in accordance with local codes and regulations.

Adapt and connect the machine's exhaust sleeve to the waste waters' collector (rubber bend and connection nozzle are supplied in the machine with collars).

Drawing of drain connection to waste waters' collector

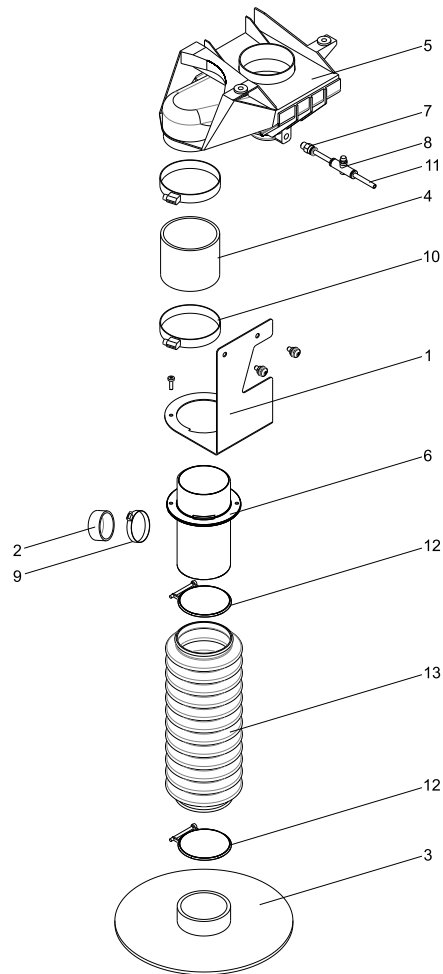
1. Connect the hose (B) to the connect nozzle (C).
2. Seal and fix the nozzle (C) using 2 screws.
3. Then connect the hose (B) to the drain's evacuation sleeve (A).

A	Drain's evacuation sleeve
B	Connection hose
C	Connection nozzle
D	Waste water collector



14.1 Option Double Drain connection

It is possible to connect the simple drain or the double drains to the washer extractor. Instead of rep1 and 2 of previous graphic, the second drain below is possible.



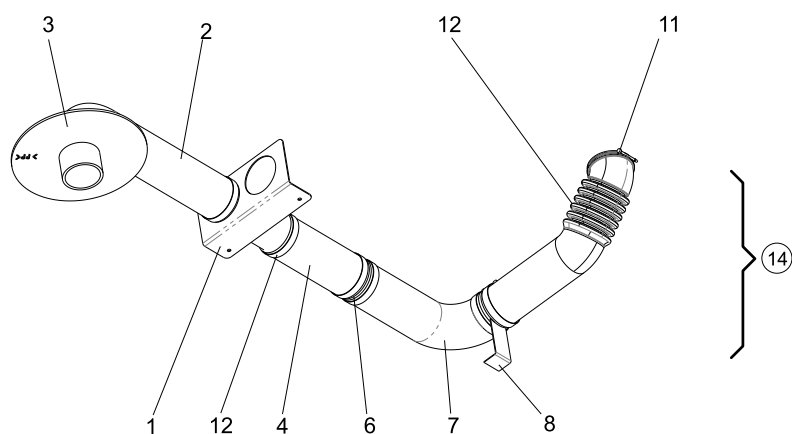
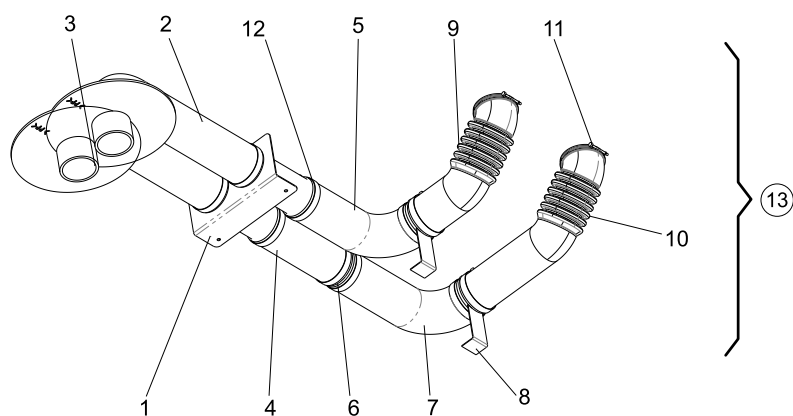
14.2 Drain connection at the left of the machine

All washers

It is possible to connect the simple drain or the double drains on the left side of the washer extractor.

Remove the casings from the washer for easy access to the drain valve.

Adapt and connect the various hoses and their collars to the washer as show in the drawing above for one or two drain connection.



611596

Issue	Month	Year
01	02	17

Rep	Code
13	55015026
14	55015028

Replace the casings after taking care to remove the pre-cut of the left casing to allow the pass of the rubber hose.

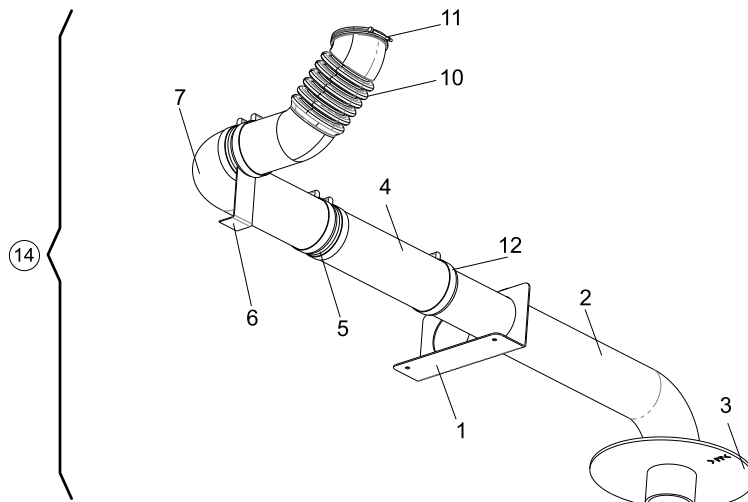
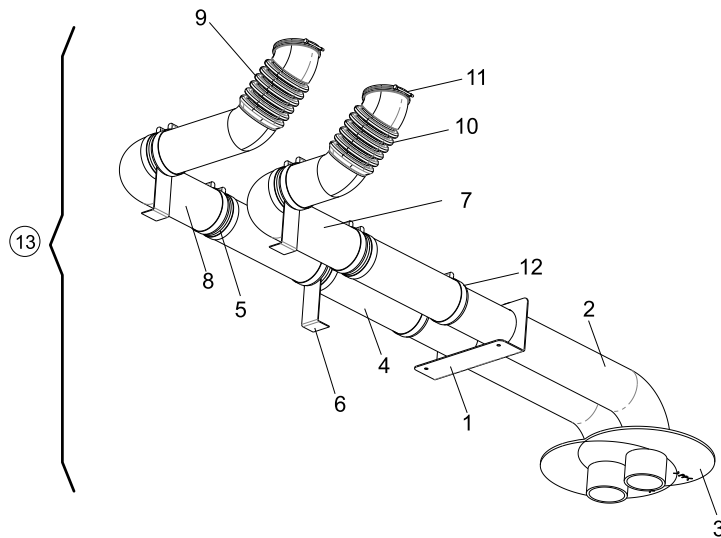
14.3 Drain connection at the right of the machine

All washers

It is possible to connect the simple drain or the double drains on the right side of the washer extractor.

Remove the casings from the washer for easy access to the drain valve.

Adapt and connect the various hoses and their collars to the washer as show in the drawing above for one or two drain connection.



611597

Issue	Month	Year
01	02	17

Rep	Code
13	55015025
14	55015027

Replace the casings after taking care to remove the pre-cut of the right casing to allow the pass of the rubber hose.

15 Waters connections

Washer extractors are assembled in standard execution with two waters inlet.

One hot water and one hard water. On option, a third water inlet (soft) is possible.

The supply pipes to the machine should be fitted with manual shut-off valves to facilitate installation and service. Fit filters to the manual shut-off valves with Teflon. Refer to local utilities regulations when fitting nonreturn valves. A screen at the entrance to the machine filter should be necessarily mounted, it must have a mesh size of 0.3 mm

Any malfunction of water solenoid or water pneumatic valves due to a absence or a poor maintenance of the filters will not be taken under warranty.

The following values apply to water pressure:

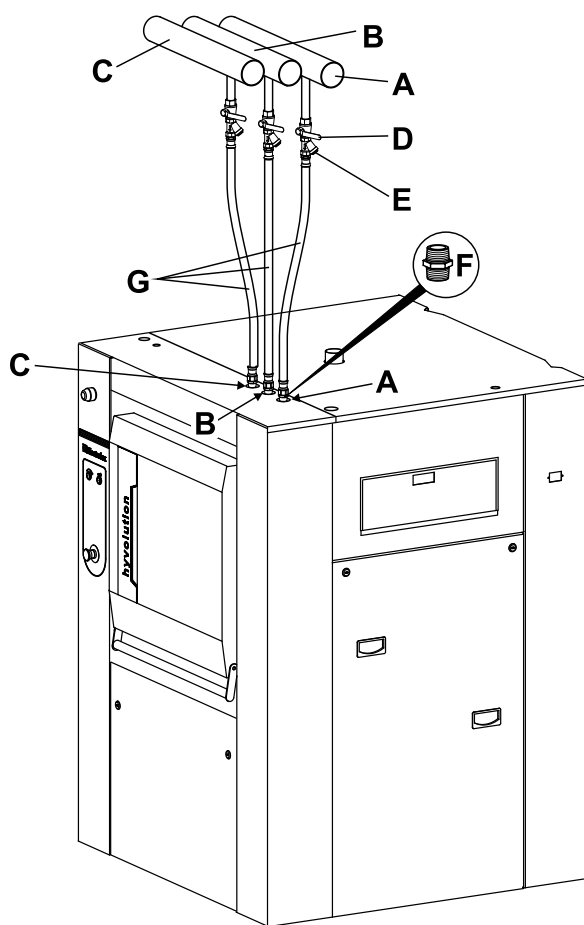
Water supply pressure, 50 kPa (7.25 psi) mini.

Water supply pressure, 300 kPa (43.5 psi) maxi.

The hoses should be flushed through before being connected to the machine.

The hereunder example sketch shows the connection of the machine to the different inlets.

- A Cold soft water inlet (option) DN 20 (3/4" BSP)
- B Hot water inlet DN 20 (3/4" BSP)
- C Hard water inlet DN 20 (3/4" BSP) only this one for Clean Room Option
- D Manual stop valve DN 20 (3/4" BSP) (provided by customer)
- E Water filter (provided)
- F Male nipple DN 20 (3/4" BSP) (provided)
- G Flexible pipe DN 20 (3/4" BSP) (provided)



16 Liquid detergents connection



Caution



Liquid detergents are particularly aggressive.

We advise you to use only products with pH lower than 9 in order to avoid the machine's rubbers from being attacked.

Dilute imperatively all of your detergents before letting them flow into the machine.



ADVISE IF USING LIQUID DETERGENTS

After use, there is always chemical remaining in the liquid detergents' dosing pipes.

When the machine is not running, this detergent may slowly drip and so, quickly corrode the parts in contact with. In order to avoid (ex. corrosion of the drum or by bleach), we advise you to forecast a device to drain every night the distribution pipes of the liquid detergents.



Caution



The running of detergents must be independent from the running of the machine.

The control information of detergents must imperatively be relayed.

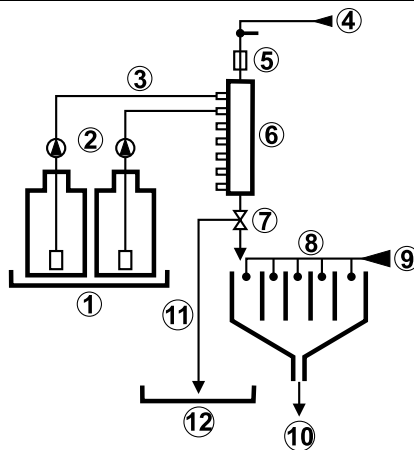
It is imperative to use armoured wires for every connection in the electrical box.

16.1 Connection scheme of liquid detergents

We advise you to use one of the two systems shown hereby to connect your liquid detergents.

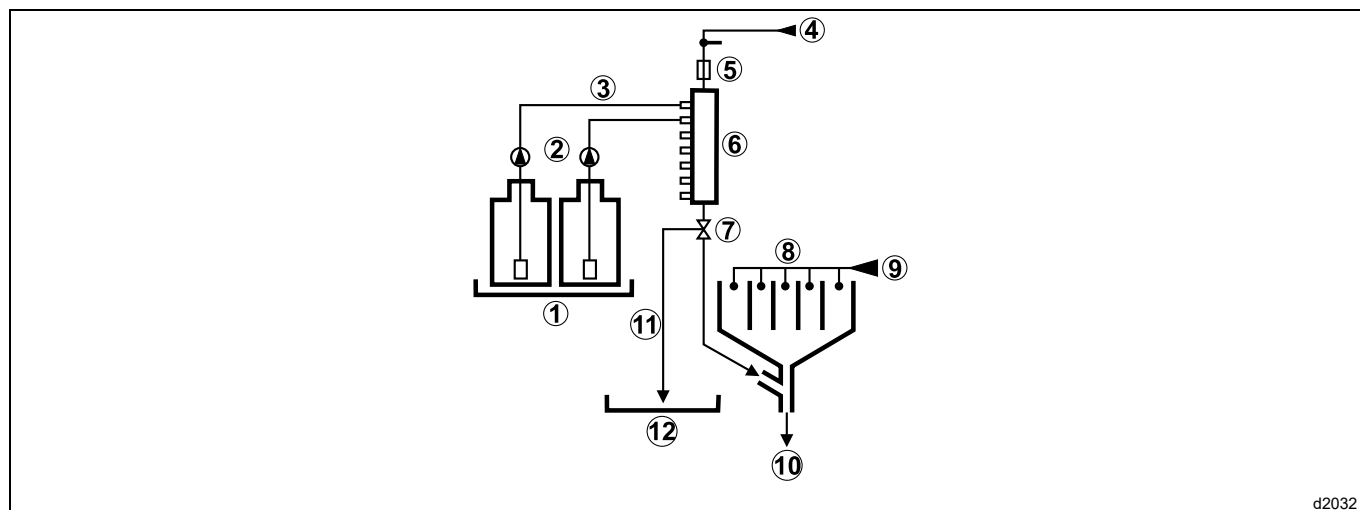
Single inlet dose controller with a compulsory rinsing device.

1	Retention tank	7	3 way valve
2	Pump	8	Scoops + Rinsing
3	Liquid detergents	9	Water
4	Water	10	Washer extractor
5	Soap box rinsing electrovalve	11	Toward retention tank
6	Dose controller	12	Retention tank



Multi-inlet dose controller with a compulsory rinsing device.

1	Retention tank	7	3 way valve
2	Pump	8	Scoops + Rinsing
3	Liquid detergents	9	Water
4	Water	10	Washer extractor
5	Soap box rinsing electrovalve	11	Toward retention tank
6	Dose controller	12	Retention tank



d2032

16.2 Electrical liquid detergents' connection

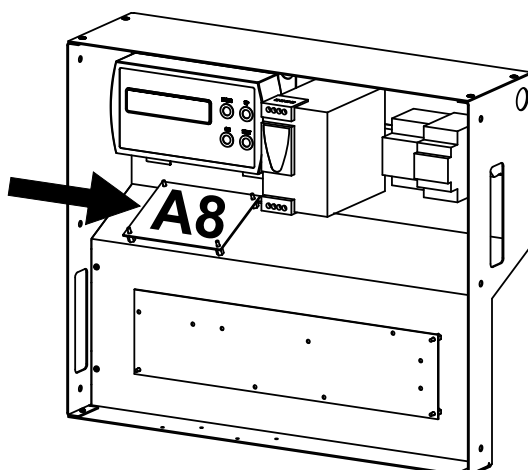


Electrical installation must be carried out by an authorized personnel.



The A8 output relay card allows to connect from 1 to 16 electrovalves of liquid detergents.

The card is situated in the electric box.

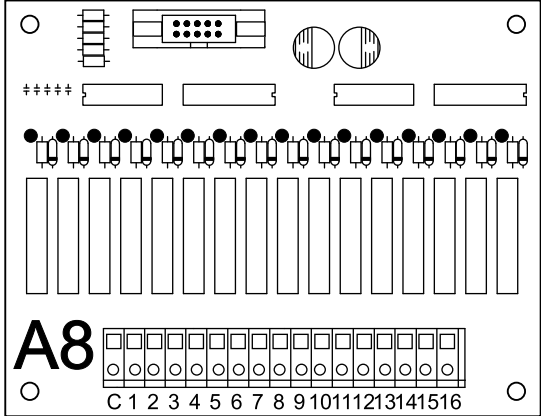


Carry the connection cables by the partition crossing and the cable through of the machine.

To connect the wires on the J802 terminal block, introduce a screwdriver in the upper aperture to open the cable clamp.

Connection on the A8 output relay card

C	Common of signals
1	Signal 1
2	Signal 2
3	Signal 3
4	Signal 4
5	Signal 5
6	Signal 6
7	Signal 7
8	Signal 8
9	Signal 9
10	Signal 10
11	Signal 11
12	Signal 12
13	Signal 13
14	Signal 14 (controlled by water level)
15	Signal 15 (controlled by water level)
16	Signal 16 (reserved)



The diagram shows the A8 output relay card with a terminal block labeled 'A8' at the bottom. The terminals are numbered C, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16. Above the terminal block, there are several components: a terminal block with 16 pins, a terminal block with 4 pins, a terminal block with 2 pins, and a terminal block with 16 pins. The terminal block with 16 pins is labeled 'A8' and has terminals numbered C, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16. The terminal block with 4 pins is labeled '****+'. The terminal block with 2 pins is labeled '****+'. The terminal block with 16 pins is labeled 'C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16'.

Supply voltage : 250 V~ maximum

Maximum intensity : 6 A.

17 Steam connection

For transport reasons, the steam electrovalve is dismantled and placed in the cardboard box supplies.

The inlet pipe to the machine has to be fit with a manual stopping valve to ease installation and maintenance.

Hereunder values apply to the steam pressure:

Recommended pressure: 300 at 600 kPa (3 at 6 kg/cm²) (43.5 at 87 psi)

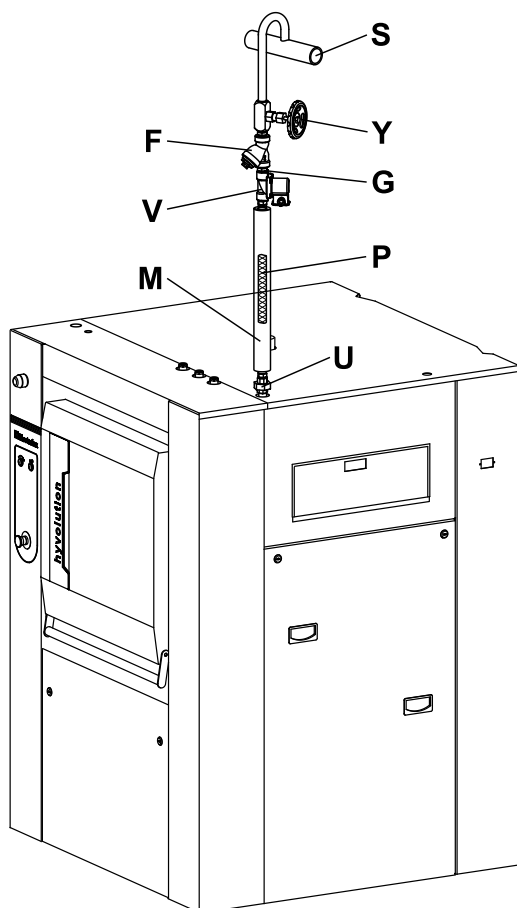
Limiting of values:

- **mini. 100 kPa (1 kg/cm²) (14.5 psi)**
- **maxi. 600 kPa (6 kg/cm²) (87psi)**

Connection size: DN 20 (¾" BSP).

Assemble the set (U.P.M.V.G.F.Y) between the machine and steam piping.

- S** Steam inlet
- Y** Manual stop wheel valve DN 20 (¾" BSP) (provided by customer)
- F** Steam filter DN 20 (¾" BSP) (provided)
- G** Nipple DN 20 (¾" BSP) (provided by customer)
- V** Steam electrovalve DN 20 (¾" BSP) (provided)
- P** Steam special flexible pipe DN 20 (¾" BSP)(provided)
- M** Insulating (provided)
- U** Pipe union DN 20 (¾" BSP) (provided)



18 Gas exchanger installation

The gas exchanger can be installed indifferently on the left or on the right of the machine according to the available place. Holes are provided on the sole of the machine on the two sides.



Caution



The machine should be installed in conformity with the regulations and standards enforced and situated in a correctly ventilated room.



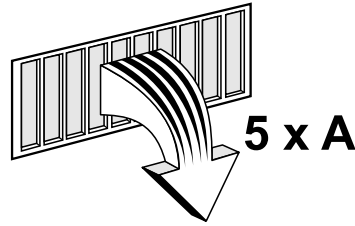
Important



Any repairing or maintenance operation should be carried out by a specialist.

18.1 Connection of the evacuation pipe of the gas exchanger

18.1.1 Fresh air inlet



To allow the gas exchanger to work at its best, it is important that the laundry air inlet passes through an opening from the outside.

The fresh air arrival must be equivalent to the volume of evacuated air.

In order to prevent drafts in the room, the best solution is to place the air inlet behind the machine.

It is essential that the rooms should be ventilated.

The free section of the air inlet must be five times greater than the section of the evacuation pipe.

Do not forget to allow for the fact that grills often occupy half the total area of the free air opening.

18.1.2 Evacuation duct

It is recommended that a separate smooth walled evacuation duct should be connected to each machine, providing the least possible resistance to air.

Check that the shaft flow is at least twice the capacity of the gas exchanger draught accelerator.

- Draught accelerator maximum flow rate with no pressure : 260 m³/h (152 cfm).
- Maximum pressure available with no flow : 27 mm H₂O (1" H₂O).
- Maximum admissible head loss on evacuation : 15 mm H₂O (0.6" H₂O) at point (P).
- Average temperature of exhaust coming out of the gas exchanger : 140 °C (284 °F).
- Provided an upper ventilation of 7 dm² (1.1 sq. ft) and a lower one of 14 dm² (1.5 sq. ft) in your laundry.
- For gas heating, the required combustion fresh air supply should be not less than 2 m³/h (1.17 cfm) per kW, either 80 m³/h (47 cfm) minimum.

These conditions are absolutely essential for the correct working of the machine.

Note!

If the flow is insufficient due to an excessive pressure loss, a safety pressure switch will automatically switch the heating off.

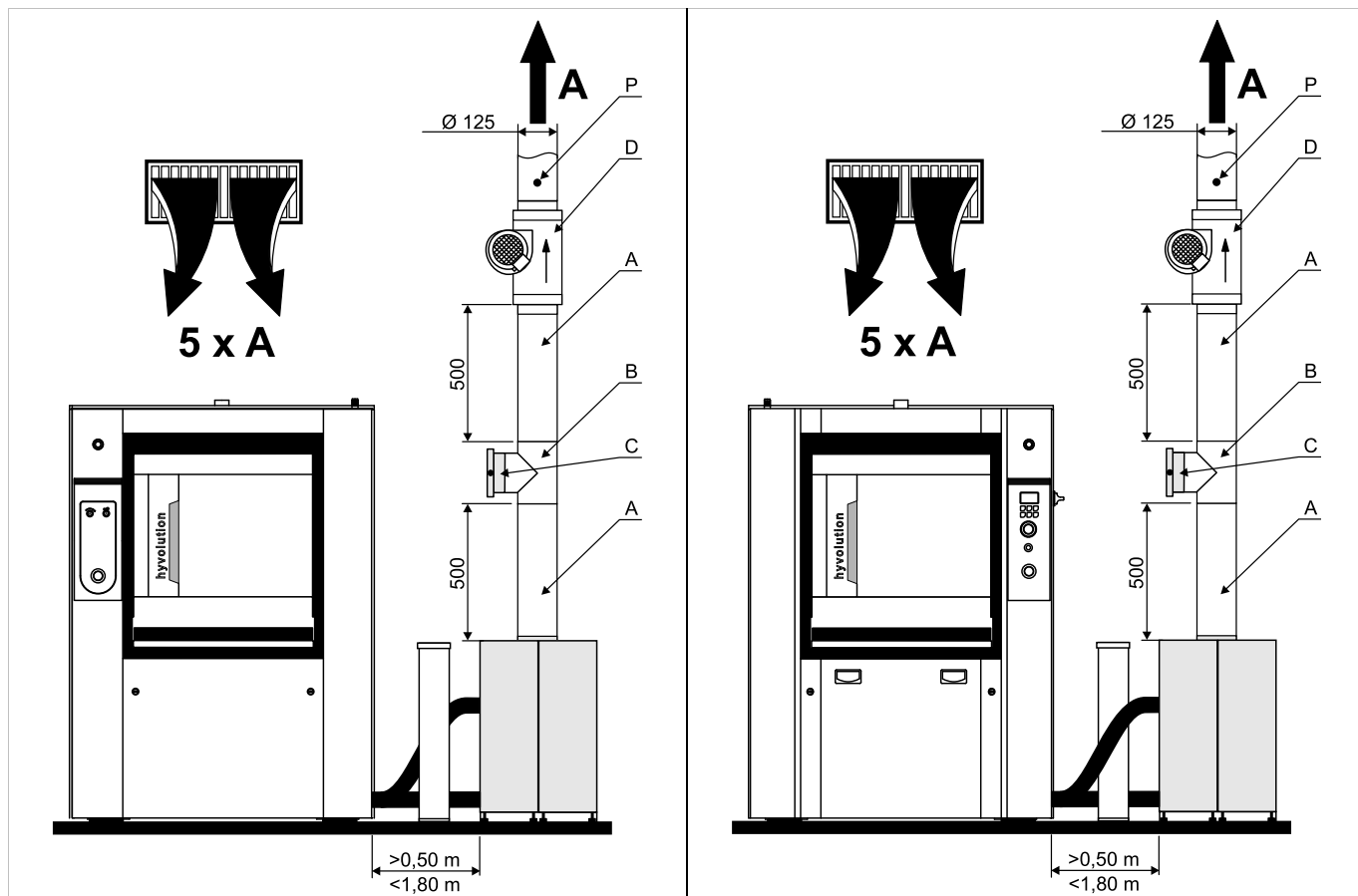
18.2 Installation of the exhaust of burn gas

Connect the whole set of pipes on your chimney pipe, that is to say.

- A Aluminium pipe length 500 mm (20")
- B T-square pipe
- C Chimney regulator
- D Draught accelerator

Note!

It is necessary to install the gas exchanger at the ground level.



Installation on the left side of the washer (detergent container side)

Installation on the right side of the washer (motion side)

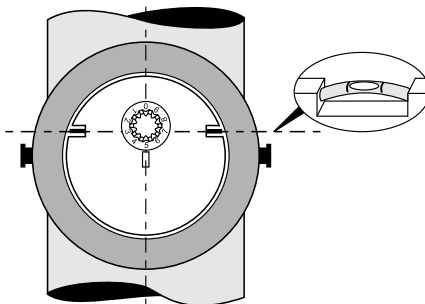


Caution



Evacuation of burn gas from a machine with gas heating must never be connected to the evacuation used for a dry cleaning machine or other machine of the same type.

18.3 Installation of the chimney regulator



For a correct running of the installation, this chimney regulator must always have its axle of rotation of his flap perfectly horizontal.

The adjustment toothed wheel has to be positioned on the mark no 7.

18.4 Gas connection



Caution



The installation, connection and gas arrival adjustments for the machine must be done by qualified personnel only.

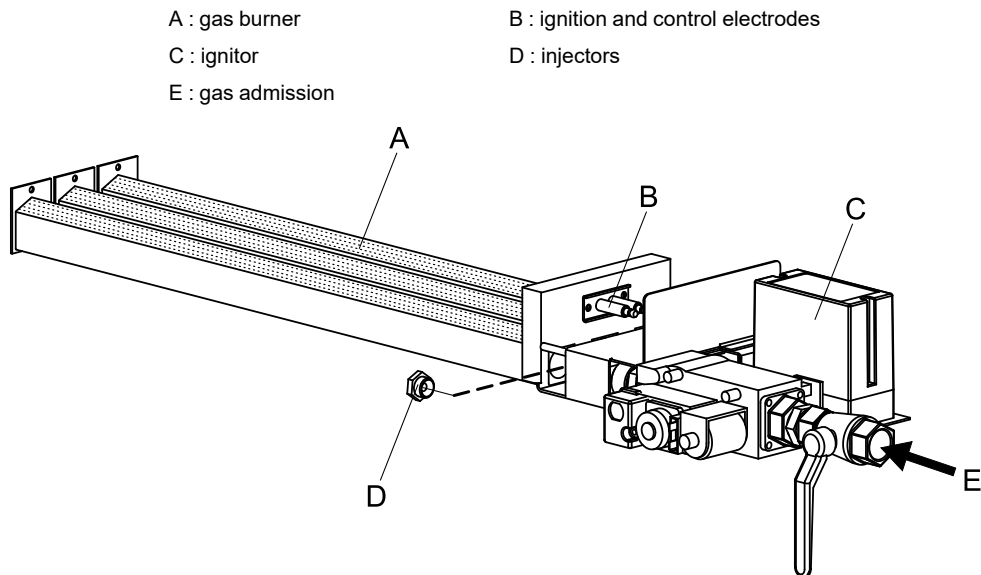
Note!

The customer must install a filter and a manual stop valve on the supply side of the machine if **NATURAL GAS** is used.

For **BUTANE 28-30 mbar** or **PROPANE 37 or 50 mbar**, the customer must install a filter, a manual closing valve and a pressure reducer.

Check that the diameter of injectors is adequate for the kind of gas of your installation (see table). The machine is delivered with extra injectors in a plastic envelope. There is also a sheet metal plate with a cork joint or an adjusting head to feed the machine with another gas.

Connect the installation at the exchanger : DN 20 (3/4" BSP).



The gas exchanger is adjusted at the plant to be suitable for the kind of gas specified on the order. If you have to supply your machine with gas in a family different from the gas for which your machine was adjusted, proceed as follows.



Important



Testing pressures

According to the EN 437 standard, the values of the testing pressures mentioned in our various documents are values for static pressure taken at the gas inlet connection of the machine ; the heating of the machine being on.

18.4.1 Changing to a gas in the same family (type H or L)

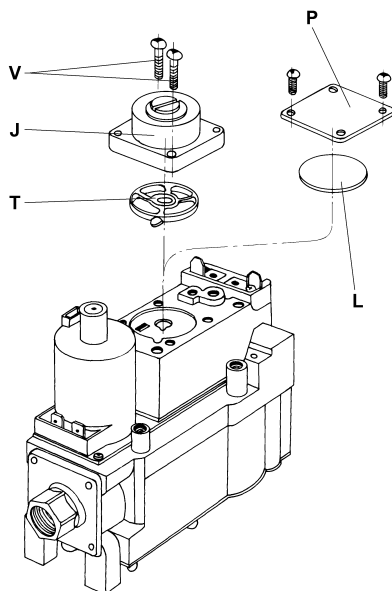
Change the 3 injectors with joints (see tables of correspondences).

18.4.2 Changing to a gas in a different family (from type H or L to butane or propane)

- Change the 3 injectors with joints (see tables of correspondences).
- Unscrews the fixing screws (V) and remove the adjusting head (J) as well as its cork (T), keep these parts in case a change would be necessary.
- Replace it by the cork (L) and the plate (P).
- Screw the two screws and block.

18.4.3 Changing a gas from one family to another (from butane or propane to type H or L)

- Change the 3 injectors with joints (see tables of correspondences)
- Unscrews the fixing screws (V) and remove the plate (P) as well as the cork (L), keep these parts in case a change would be necessary.
- Set the cork (T) and the adjustment head (J).
- Screw the two screws and block.



Important

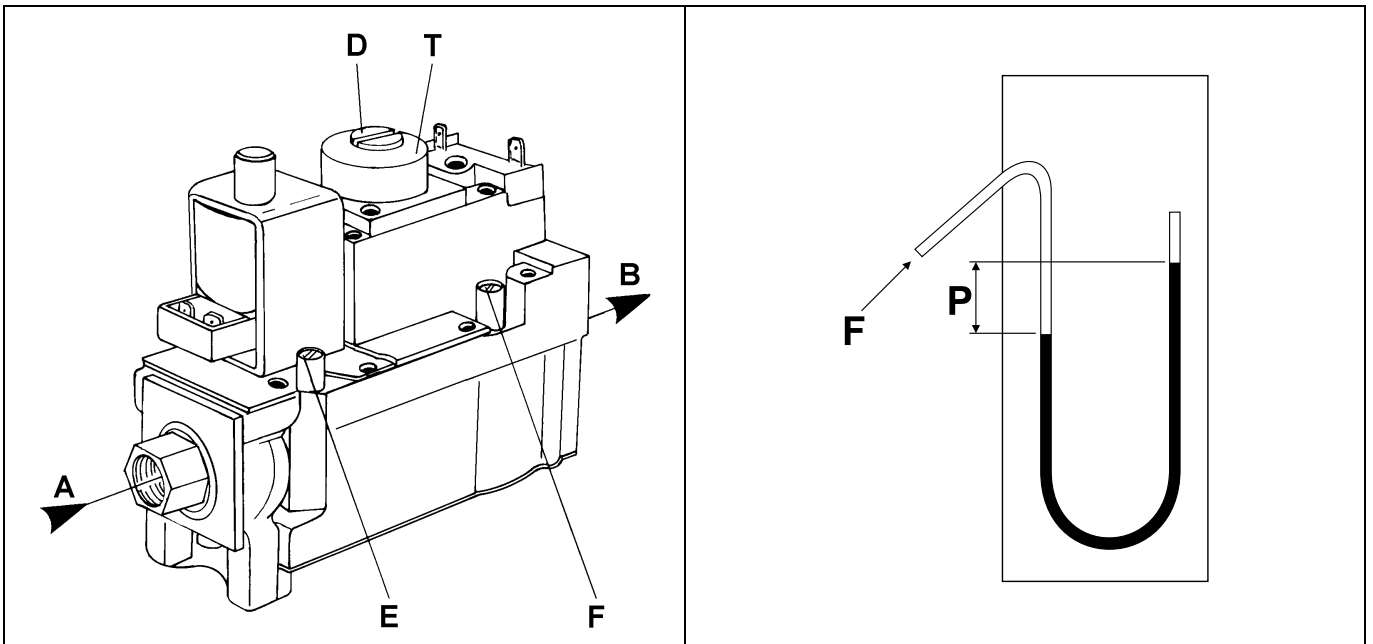


Adjustments should be made by qualified personnel only.

18.5 Adjustment and checking of the outlet pressure

The gas outlet pressure of the electrovalve is adjusted at the factory. If you have to make another adjustment, proceed as follows.

- A Inlet
- B Outlet
- D Outlet pressure regulator adjustment screw plug
- E Inlet pressure tapping
- F Outlet pressure tapping
- T Head regulation



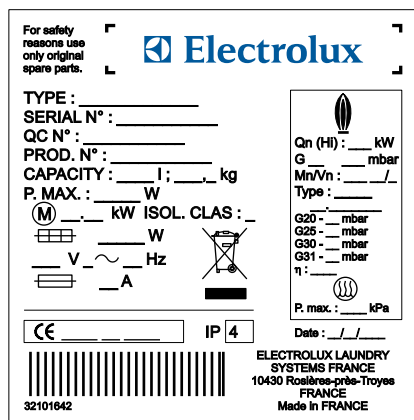
1. Close the gas inlet and remove the binding screw from the pressure tapping (F) and connect the manometer tube.
2. The electricity supply must be energized otherwise gas will not be supplied to the burner.
3. Open and check the gas inlet main burner using the manometer on the pressure tapping (F).
4. Remove the pressure regulator cap (D).
5. Using a screwdriver, slowly turn the adjustment screw until the required pressure (P) is indicated on manometer (see tables on the following pages). Turn the adjustment screw clockwise to increase and counter-clockwise to decrease gas pressure.
6. Reset the pressure regulator cap, close off the gas inlet, remove the manometer tube and put the binding screw back in (F).

18.6 Legend of symbols used

- I machine working with only one gas family
 - II machine working with two gas families
 - 1 1st family : caol gas or town gas (for information : not used here)
 - 2 2nd family : natural gas
 - 3 3th family : liquefied petroleum gas (LPG)
 - H natural gas with high calorific value (type G20)
 - L natural gas with low calorific value (type G25)
 - E natural gas with high and low calorific value (type G20)
 - LL natural gas with low calorific value (type G25)
 - Esi natural gas with high and low calorific value with adjustment (type G20)
 - B butane gas (type G30)
 - P propane gas (type G31)
 - B/P butane and propane gas (type G30 and G31)
 - 3+ butane/propane gas with couple of pressure 30/37 (type G30 and G31)
-
- Qn (Hi) nominal heat emission express in relation to the net calorific value
 - Mn nominal mass (for butane/propane gas)
 - Vn nominal volume (for natural gas)

AT	Austria	EE	Estonia	IE	Ireland	NO	Norway
BE	Belgium	ES	Spain	IS	Iceland	PL	Poland

BG	Bulgaria	FI	Finland	IT	Italy	PT	Portugal
CH	Switzerland	FR	France	LT	Lituanie	RO	Romania
CY	Cyprus	GB	Great Britain	LU	Luxembourg	SE	Sweden
CZ	Czech Republic	GR	Greece	LV	Latvia	SI	Slovenia
DE	Germany	HR	Croatia	MT	Malta	SK	Slovakia
DK	Denmark	HU	Hungary	NL	Netherlands	TR	Turkey



Country	Category	Gas	Pressure (mbar)
AT-DK-FI-IT-SE-BG-CZ-HU-LT-LV-NO-RO	I2H	G20	20
DE-LU-PL	I2E	G20	20
BE	I2E (S) B	G20/G25	20/25
	I3P	G31	37
DE-LU-MT	I3P	G31	30
FR	I12ESI3P	G20/G25	20/25
		G31	37/50
BG-CH-CY-CZ-ES-EE-GB-GRHU-HR-IE-LT-PT-PL-RO-SI-TR	I12H3P	G20	20
		G31	37
NL	I12L3P	G25	25
		G31	50
CH-ES-SK-LV	I12H3P	G20	20
		G31	50

TABLE OF CORRESPONDENCES — Washer-Extractor WH5500H & WHB5500H

Category index	Type of gas	Working supply pressure in mbar	Hi in MJ/m ³	Ø of injectors in mm	Pressure at injectors in mm H ₂ O	Heat emission Qn in kW (Hi)	Consumption Mn in kg/h (Hi)**	Consumption Vn in m ³ /h**
*2E, 2H, 2ESI	G20	20	34.02	2.90	153	40	-	1.90
2L, 2ESI	G25	25	29.25	3.20	154	40	-	2.10
3P	G31	37	46.34	1.85	regulator out of operation	40	1.40	-
3P	G31	50	46.34	1.70	regulator out of operation	40	1.40	-

*For Belgium, no work is allowed between G20 and G25.

** normal cycle : prewash 3 min at 35 °C, drain. 2 min, main wash 4 min at 65 °C, drain 2 min, rinse 2 min, extract. 2 min, rinse 2 min, extract 2 min, rinse 2 min, extrac. 10 min (cold water supply at 15 °C).

Note!

G20 (H) = natural gas, Lacq type (20 mbar)

G25 (L) = natural gas, Groningue type (20 or 25 mbar)

G31 = propane gas (28/30, 37, 50 mbar)



Important



Tightness test after installation.

The gas leak test is performed as follows :

1. Paint pipe joints, pilot gas tubing connections and inspect outlets with rich soap and water solution ; do not use an aggressive soap.
2. Put the machine into service. Bubbles indicate a gas leak.
3. Eliminate this leak.

Note!

After all intervention, re-seal (red varnish) the following adjustment organs:

— regulator of pressure.

In case of changing of gas, the stick for the adjustment has to be modified.



Important



Check-out

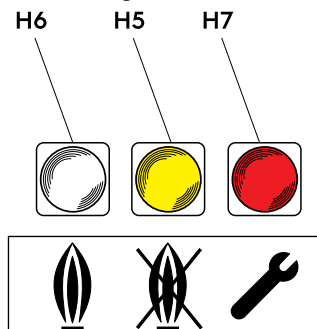
Before leaving, put the appliance into operation and allow to run a complete cycle.

Watch to ensure that all burner system components function correctly.

18.7 Control panel Gas exchanger :

Three indicators are situated on the top of the gas exchanger.

- White indicator (H6) light = "Gas heating on"
- Yellow indicator (H5) light = "ignition gas burner fault indicator"
- Red indicator (H7) light = "water fault in gas exchanger"



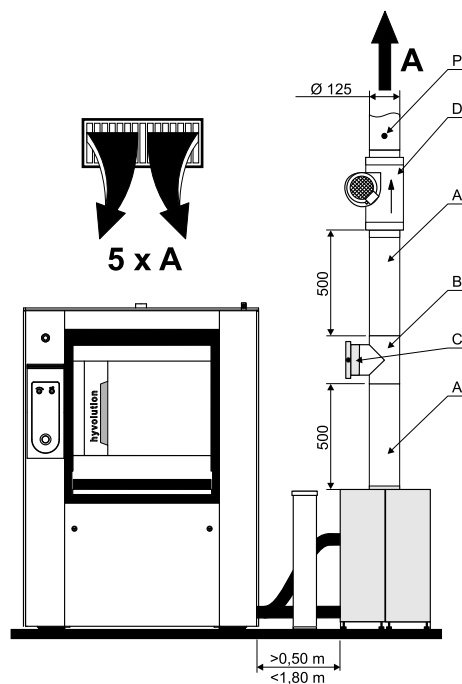
The yellow and red indicator remains on if a fault occurs when the gas burner ignites or if no water is detected inside the gas exchanger, the gas heating does off and the machine stops functioning.

Verify the working of the gas exchanger.

If the fault remains, consult your after-sales service.

18.8 Electrical connection of gas exchanger to the washer machine

You have to connect the motor of extraction (D) to the gas exchanger



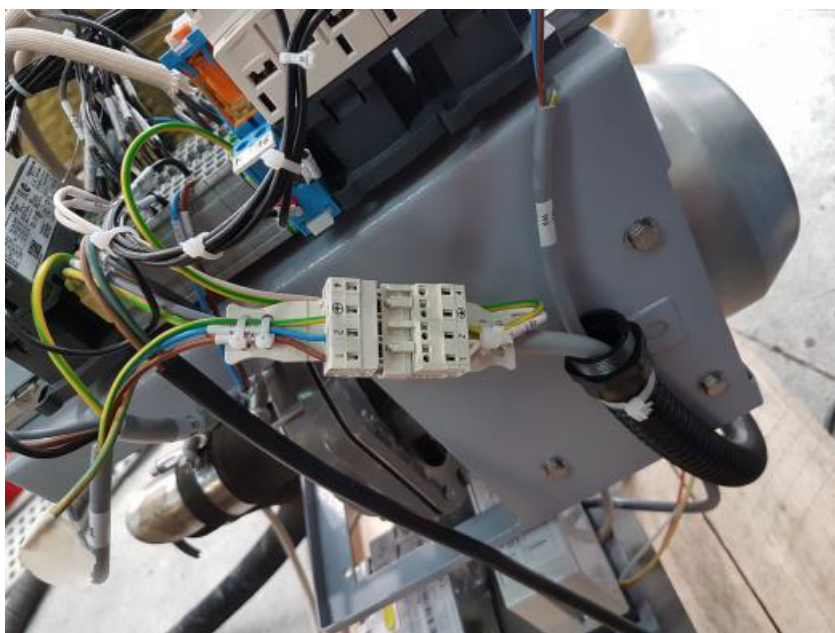
To do this, recover the power cable W5 which is rolled around the motor M4 for transportation.



Unroll it, and fix it on the pipe as here under picture (boiler air vent pipe).



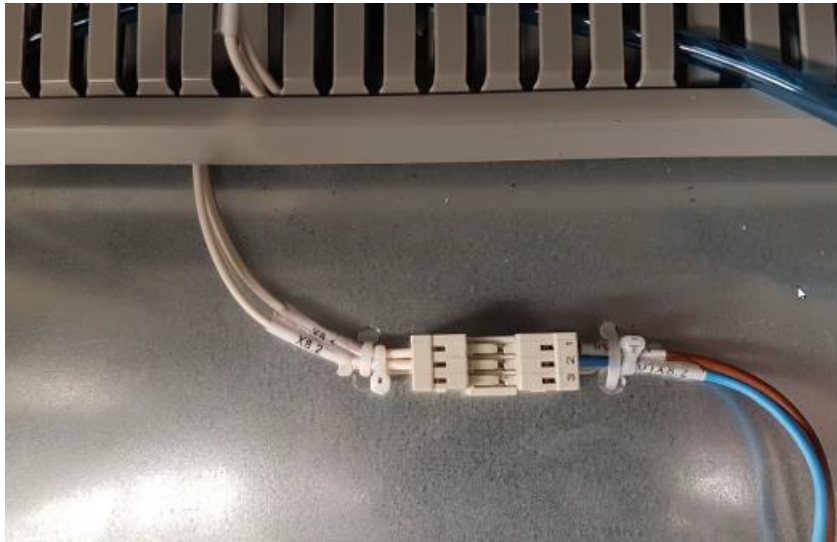
Connect cable W5 to gas boiler on connector X W5.



18.8.1 Gas boiler connection

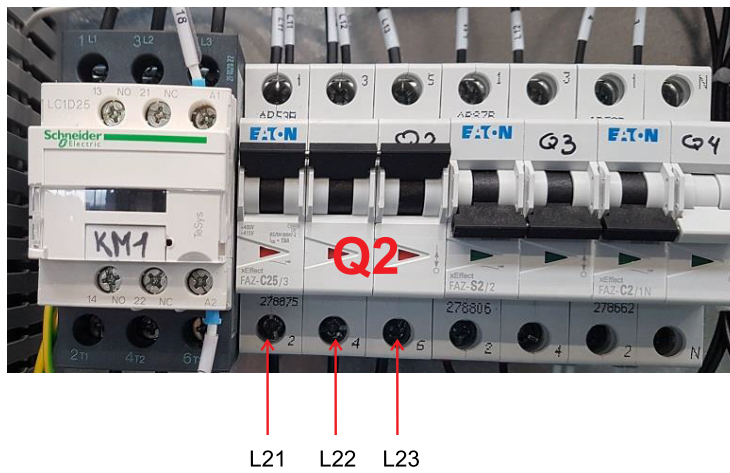
Heating signal

Take cable W6 on the boiler and connect it to the connector X W6 fix in the electrical cabinet of the washer



Gas boiler power supply

Connect the power cable on breaker output Q2 : L21/L22L23.



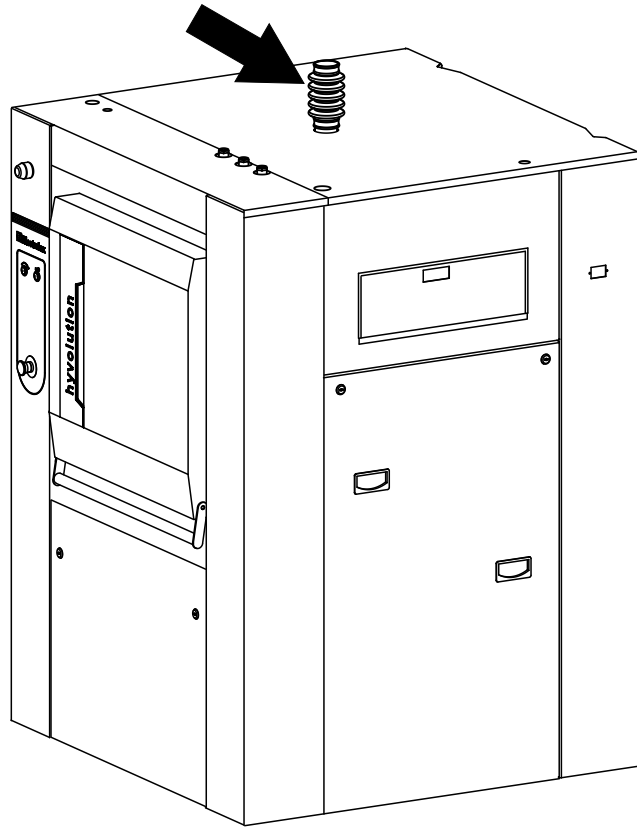
Do not forget to also plug the ground cable.

19 Air vent connection

The air vent of the outer drum opens on the top of the machine. Connect the connection bellow $\varnothing 60$ to this opening.

Connect the air vent, to the outside of the laundry in accordance with the legislation.

The air vent should resist to 100 °C (212 °F) temperature and allow the condensates to return to the machine.



20 Note about the A.C. power

According to the EN 60204-1:1997 standard, the machine is provided for A.C. supplies corresponding to the extracted characteristics below :

4.3.2 A.C. supplies

Voltage:

Steady state voltage: from 0.9 to 1.1 of nominal voltage.

Frequency:

from 0.99 to 1.01 of nominal frequency continuously.

from 0.98 to 1.02 short time.

Harmonics:

Harmonic distortion not to exceed 10 % of the total r.m.s. voltage between live conductors for the sum of the second through to the fifth harmonic. An additional 2 % of the total r.m.s. voltage between live conductors for the sum of the sixth through to the 30th harmonic is permissible.

Voltage unbalance:

Neither the voltage of the negative sequence component nor the voltage of the zero sequence component in three-phase supplies shall exceed 2 % of the positive sequence component.

Voltage interruption:

Supply interrupted or at zero voltage for not more than 3 ms at any random time in the supply cycle. There shall be more than 1 second between successive interruptions.

Voltage dips:

Voltage dips shall not exceed 20 % of the peak voltage of the supply for more than one cycle. There shall be more than 1 second between successive dips.

21 Feeder cable sections

The feeder cable sections mentioned in our literature are given only as a guide.

To obtain a value perfectly suited to your own application and which takes account of the different correction factors in respect of your plant, refer to the tables below.

Table 1 (in accordance with EN Standard 60204-1)

Values given for:

- Cable with copper conductors
- Cable with PVC insulation (for other insulants see Table 3)
- Ambient temperature 40°C max. (for others see Table 2)
- Three-phase cable under load without including starting currents
- BT / C/ E cable layout.

Maximum Admissible Current

Cable section	Seated in Cable Duct or Cable trough	Wall fixing	Cable tray
	B2	BC	E
3 x 1.5 mm ²	12.2 A	15.2 A	16.1 A
3 x 2.5 mm ²	16.5 A	21 A	22 A
3 x 4mm ²	23 A	28 A	30 A
3 x 6 mm ²	29 A	36 A	37 A
3 x 10 mm ²	40 A	50 A	52 A
3 x 16 mm ²	53 A	66 A	70 A
3 x 25 mm ²	67 A	84 A	88 A
3 x 35 mm ²	83 A	104 A	114
3 x 50 mm ²	-	123 A	123 A
3 x 70 mm ²	-	155 A	155 A

Table 2 (correction factors for different ambient temperatures)

Ambient temperature	Correction factor
30 °C	1.15

35 °C	1.08
40 °C	1.00
45 °C	0.91
50 °C	0.82
55 °C	0.71
60 °C	0.58

Table 3 (correction factors for different cable insulating materials)

Insulating material	Max. Working temperature range	Correction factor
PVC	70°C (158 °F)	1.00
Natural or Synthetic Rubber	760°C (140 °F)	0.92
Silicone Rubber	120°C (248 °F)	1.60

Table 4 (B2, C and correction factors for cable grouping)

Number of cables	B2	E	E
	Seated in Cable Duct	Wall fixing or Cable trough	Cable tray
1	1.00	1.00	1.00
2	0.80	0.85	0.87
4	0.65	0.75	0.78
6	0.57	0.72	0.75
9	0.50	0.70	0.73

The total current included for using Table 1 should be the maximum rated current for the machine divided by the product of the different correction factors. Other correction factors may also be applied ; consult the cable manufacturers.

Calculation : Example

- The machine has a rated current of 60 A.
- The ambient temperature is 45 °C ; Table 2 gives a correction factor of 0.91.
- Rubber cable insulant : Table 3 gives a correction factor of 0.92.
- The cable is fixed directly to the wall (Column C), with 2 cables side by side. Table 4 gives a correction factor of 0.85.

$$\text{Total current : } \frac{60 \text{ A}}{0.91 \times 0.92 \times 0.85} = 84 \text{ A}$$

Taking Column C in Table 1 (wall fixing), we obtain a minimum cable section of : 3 x 25 mm².

22 Electricity power supply



Prior to use, the washer-extractor should be connected to a multi-pole switch prior to the machine to facilitate installation and service operations.



Caution



The electrical installation of the machine must be undertaken by qualified personnel.



Caution



Ensure that the electrical voltage is correct and that the power of your supply is sufficient, before connecting the machine.



Caution



The main switch is located on the right side of the machine , identified by this sticker.



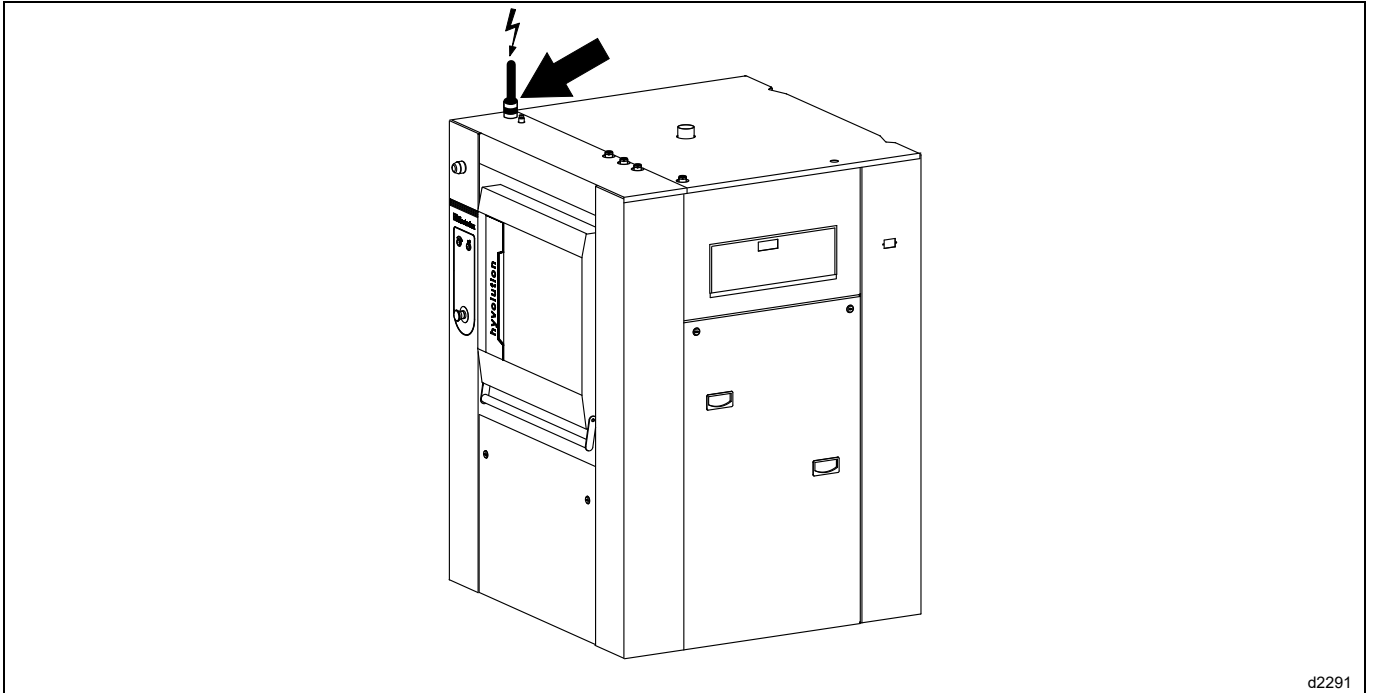
Note!

The use of power electronics (converter or filter for example) may lead to unexpected release of breakers with 30 mA differential current device.

Therefore a Type B residual differential protection system with reinforced immunity of 300 mA in accordance with standard NFC 15100 must be used for our washing machines.

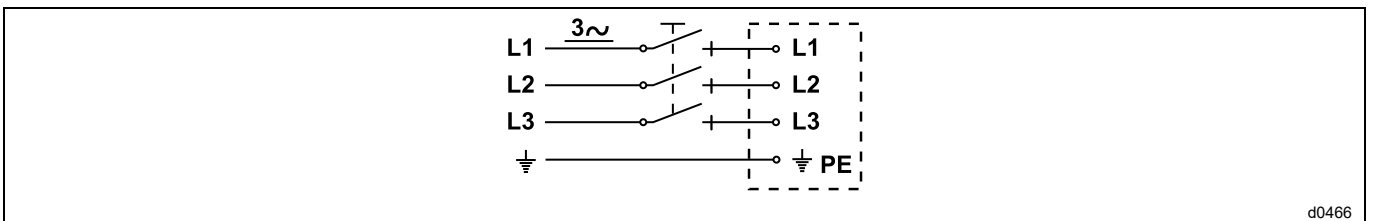
To avoid these untimely activations, you ought to use differential protecting systems with residual current only, having a high level of reinforced immunity as regards leakage transient current.

Pass the power supply cable of the machine through the stuffing box on the top of the machine.



d2291

For each machine, install a fixed multipolar circuit breaker (or fuses protector) in the laundry main cabinet.



d0466

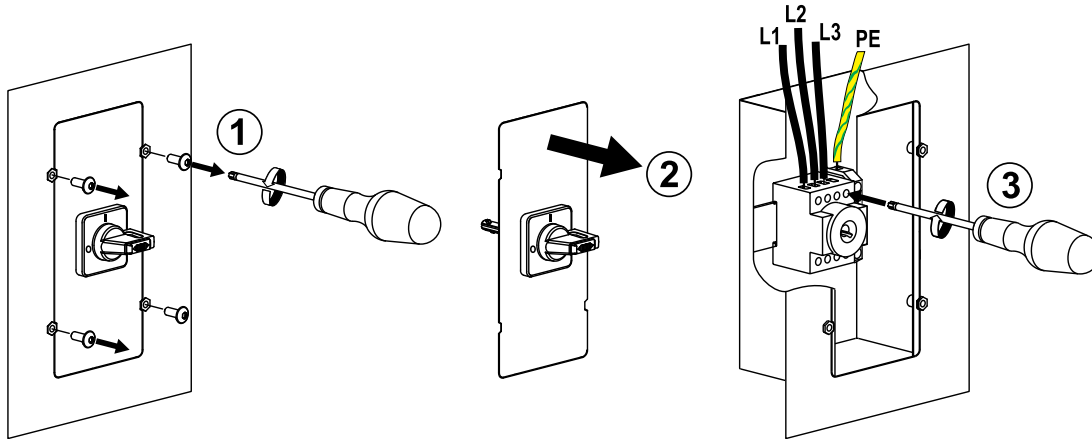
Connect the power supply cable on the machine main switch. Connect the 3 phases on the main switch (see marks L1, L2, L3) and connect the earth wire on the earth terminal (PE) of this main switch. (see chapter “Function checks”).



Caution



In case of a machine with integrated weighing, you must use a flexible power supply cable to connect the machine.



Machine type	Heating	Supply Voltage	Rated Power	Rated Intensity	Connection cable section	Protection
WH5500H	Gas	380/415 V 3+E ~ 50/60 Hz	5 kW	12 A	4 x 2.5 mm ²	3 x 16 A
	Electric	380/415 V 3+E ~ 50/60 Hz	38 kW	57 A	4 x 16 mm ²	3 x 63 A
	Electric	230 V 3+E ~ 50/60 Hz	38 kW	97 A	4 x 25 mm ²	3 x 125 A
	Electric	200 V 3+E ~ 50/60 Hz	38 kW	87 A	4 x 25 mm ²	3 x 125 A
	Electric	480 V 3+E ~ 50/60 Hz	38 kW	50 A	4 x 16 mm ²	3 x 63 A
	Steam	380/415 V 3+E ~ 50/60 Hz	5 kW	12 A	4 x 2.5 mm ²	3 x 16 A
	Steam	230 V 3+E ~ 50/60 Hz	5 kW	21 A	4 x 6 mm ²	3 x 25 A
	Steam	480 V 3+E ~ 50/60 Hz	5 kW	10 A	4 x 2.5 mm ²	3 x 16 A
WHB5500H	Gas	380/415 V 3+E ~ 50/60 Hz	5 kW	12 A	4 x 2.5 mm ²	3 x 16 A
	Electric	380/415 V 3+E ~ 50/60 Hz	38 kW	57 A	4 x 16 mm ²	3 x 63 A
	Electric	230 V 3+E ~ 50/60 Hz	38 kW	97 A	4 x 25 mm ²	3 x 125 A
	Electric	200 V 3+E ~ 50/60 Hz	38 kW	87 A	4 x 25 mm ²	3 x 125 A
	Electric	480 V 3+E ~ 50/60 Hz	38 kW	50 A	4 x 16 mm ²	3 x 63 A
	Steam	380/415 V 3+E ~ 50/60 Hz	5 kW	12 A	4 x 2.5 mm ²	3 x 16 A
	Steam	230 V 3+E ~ 50/60 Hz	5 kW	21 A	4 x 6 mm ²	3 x 25 A
	Steam	480 V 3+E ~ 50/60 Hz	5 kW	10 A	4 x 2.5 mm ²	3 x 16 A

23 Compressed air connection



Caution



The compressed air admitted to the distributors and jacks must be purified to the following values:

- it must be free from solid particles larger than 5 µm. The filter present on our machines has a filtration of 5µm.
- It should not contain more than 1.5 g of water / m³
- It should not contain more than 5 mg of oil condensate / m³

The customer should arrange the installation of filter/lubricator device, as well as a pressure regulator (manometer) on the machine's compressed air supply.

The manual stopping valve lockable in closed position (provided by customer) should be installed on the machine's compressed air supply.

The supply pipe should accept a pressure of at least 1 Mpa (10 bar) (145 psi).

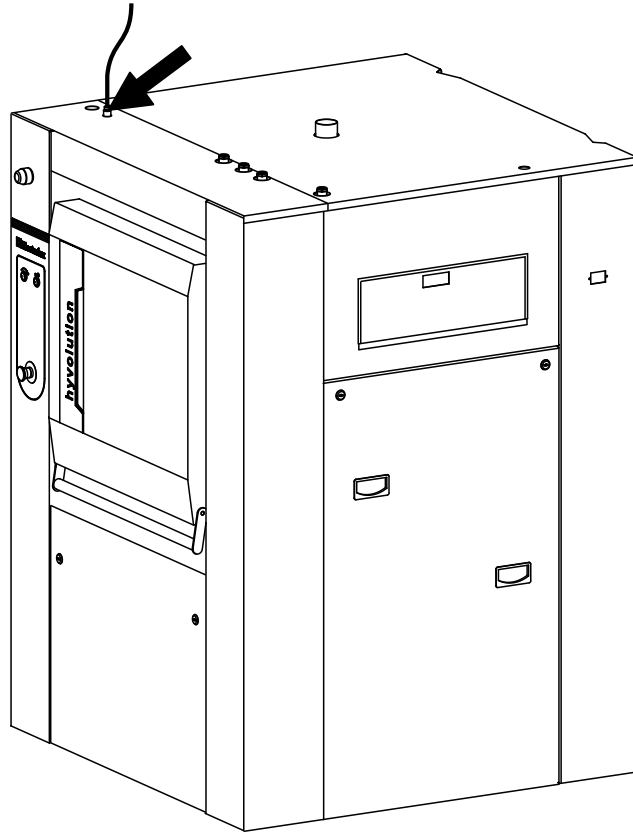
- Connection diameter: rapid action hose coupling DN 6 (0.24") for hose Ø 6/8 mm.
- Advised pressure: 550-700 kPa (5,5-7 bar) (80-102 psi).
- Minimum pressure: 550 kPa (5,5 bar) (80 psi).
- Maximum pressure: 700 kPa (7 bar) (102 psi).
- Consumption 50 l/h.



Important



To avoid too big head losses, the compressed air supply pipe should be bigger in diameter than the coupling diameter (DN 8 for example); in this case, put a 6/8-8/10 adapter.



23.1 Compressed air standard ISO 8573–1

This chapter explains the required by our product for the air compressed quality, from the standard EN ISO 8573-1. This standard shows the quality of the compressed depending on the particles inside it, the tolerance of these particles give a classification of the required compressed air for our product.

Show in the table below the classification :

ISO 8573–1:2010	First Digit			Second Digit			Third Digit
	Solid particles			Water			Oil
	Max.number of particles per m3			Mass concentration	pressure dew point	Liquid	Total oil content (liquid, aerosol and vapour)
	0.1 ... 0.5 µm	0.5... 1 µm	1 ... 5 µm	mg/m3	°C	g/m3	mg/m3
0	In accordance with specifications by device user, stricter requirements than Class 1						
1	< 20,000	< 400	< 10	-	< -70	-	0.01
2	< 400,000	< 6,000	< 100	-	< -40	-	0.1
3	-	< 90,000	< 1,000	-	< -20	-	1
4	-	-	< 10,000	-	< +3	-	5
5	-	-	< 100,000	-	< +7	-	-
6	-	-	-	< 5	< +10	-	-
7	-	-	-	5 ... 10	-	< 0.5	-
8	-	-	-	-	-	0.5 .. 5	-
9	-	-	-	-	-	5 ... 10	-
X	-	-	-	> 10	-	> 10	> 10

So, the customer should arrange the installation of filter device, as well as a pressure regulator (manometer) on the machine's compressed air supply.



Important



To ensure the proper functioning of pneumatic devices (cylinders, distributors, clamps, silencers) of our products, the following air quality is recommended:

Particles = class **7**

Water = class **4**

Oil = class **4**

Recommended air quality class **[7;4;4]**, this means that:

For dust, we tolerate between 5 and 10 mg of dust per cubic meter of compressed air.

For water, we tolerate a dew point which does not exceed 3°C

For oil, the presence of 5 mg of oil per cubic meter of compressed air is tolerated

24 Function checks



Caution



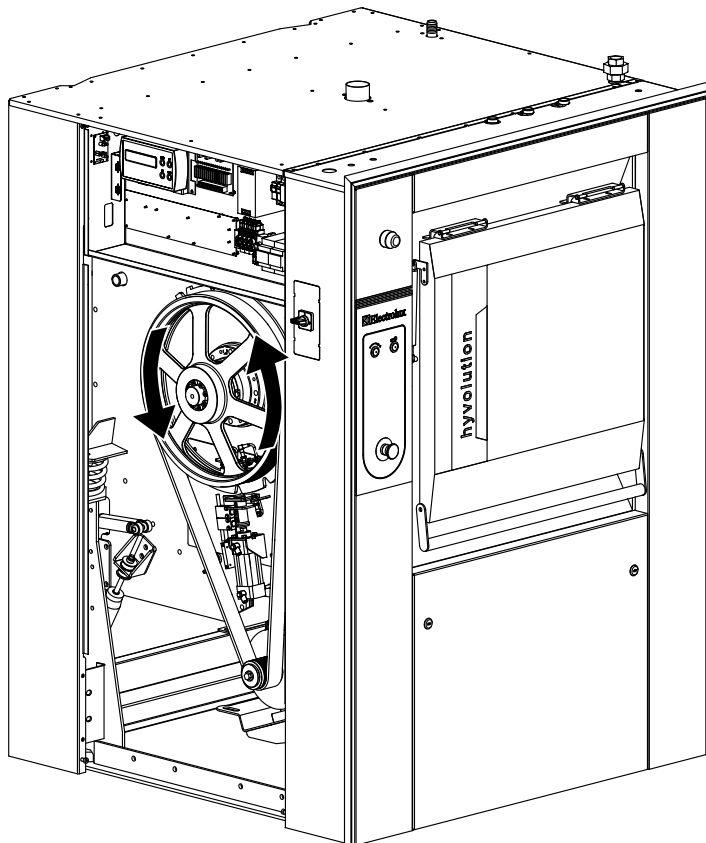
Before putting the machine into service, carry out the working tests.

The operating inspection must be done by an approved technician.

Manual operation

The procedure for operating the various machine functions manually is described in the chapter "Machine operation" under the heading "Manual operation".

- Switch on the machine's main switch and check the voltage on the three phases (3 x 400 volts).
- Check the direction of rotation of the inner drum during spinning. The inner drum should rotate as shown by the arrow on the drawing below. Check this point especially if you have changed the machine's motor or frequency converter.



- Check the direction of rotation of the circulating pump and of the draught accelerator gas heating.



The exchangers of the gas heated machines have a water circulating pump. Before the first start of the machine, you must check if this pump is priming well. Therefore, it is necessary to fill the machine with water and to run only the circulating pump, without heating, by pushing, with an isolated screwdriver, on the manual control of the exchanger's KM3 contactor. To be sure that the pump is well primed (10 to 15 seconds), you must pay attention to a change in the running noise when the water goes through the circuit.

- Check that the inner drum is empty.
- Open the manual valves controlling the water and steam supplies (for steam heating machines).
- Operate the machine manually to fill with cold water, then hot water. Check that these water supplies are connected as they should be.
- Start the machine on wash action, and check that the motor is revolving alternately in the both ways, as normal for wash action.
- Start heating by programming a final temperature. Check that the steam valve opens or the heating element relay reacts, as appropriate.
- Check that the detergents container is working as they should.
- Check the water and steam connections and the drain valve for signs of any leakages.
- Empty the water from the machine and open its door.

Automatic operation

- Check that the external switch or switches are switched on and that the manual valves for water and steam (if the machine has steam heating) are open.
- Run one of the machine's built-in (standard) with heating.
- Check that the program proceeds normally, and the water filling, detergent filling, heating and motor action are all working in accordance with the program display on the display screen.

Final checking

If all function checks have been satisfactory, reassemble all protection casings.

25 Conversion of measurement units

This following is a list of correspondences of the main frequency used units, to avoid the need to use measurement unit conversion table.

bar	1 bar = 100 000 Pa 1 bar = 1.019 7 kg/cm ² 1 bar = 750.06 mm Hg 1 bar = 10 197 mm H ₂ O 1 bar = 14.504 psi	British thermal unit	1 Btu = 1 055.06 J 1 Btu = 0.2521 kcal
calorie	1 cal = 4.185 5 J 1 cal = 10 ⁻⁶ th 1 kcal = 3.967 Btu 1 cal/h = 0.001 163 W 1 kcal/h = 1.163 W	Continental horse power	1 ch = 0.735 5 kW 1 ch = 0.987 0 HP
cubic foot	1 cu ft = 28 316 8 dm ³ 1 cu ft = 1 728 cu in	cubic inch	1 cu in = 16.387 1 dm ³
foot	1 ft = 304.8 mm 1 ft = 12 in	gallon (U.K.)	1 gal = 4.545 96 dm ³ or l 1 gal = 277.41 cu in
gallon (U.S.A.)	1 gal = 3.785 33 dm ³ or l 1 gal = 231 cu in	horse power	1 HP = 0.745 7 kW 1 HP = 1.013 9 ch
inch	1 in = 25.4 mm	joule	1 J = 0.000 277 8 Wh 1 J = 0.238 92 cal
kilogramme	1 kg = 2.205 62 lb	kg/cm²	1 kg/cm ² = 98 066.5 Pa 1 kg/cm ² = 0.980 665 bar 1 kg/cm ² = 10 000 mm H ₂ O 1 kg/cm ² = 735.557 6 mm Hg
pound	1 lb = 453.592 37 g	meter	1 m = 1.093 61 yd 1 m = 3.280 83 ft 1 m = 39.37 in
cubic meter	1 m ³ = 1 000 dm ³ 1 m ³ = 35.214 7 cu ft 1 dm ³ = 61.024 cu in 1 dm ³ = 0.035 3 cu ft	pascal	1 Pa = 1 N/m ² 1 Pa = 0.007 500 6 mm Hg 1 Pa = 0.101 97 mm H ₂ O 1 Pa = 0.010 197 g/cm ² 1 Pa = 0.000 145 psi 1 MPa = 10 bar
psi	1 psi = 0.068947 6 bar	thermie	1 th = 1 000 kcal 1 th = 10 ⁺⁶ cal 1 th = 4.185 5 x 10 ⁺⁶ J 1 th = 1.162 6 kWh 1 th = 3 967 Btu
watt	1 W = 1 J/s 1 W = 0.860 11 kcal/h	watt-hour	1 Wh = 3 600 J 1 kWh = 860 kcal
yard	1 yd = 0.914 4 m 1 yd = 3 ft 1 yd = 36 in	temperature degrees	0 °K = -273.16 °C 0 °C = 273.16 °K t °C = 5/9 (t °F-32) t °F = 1.8 t °C + 32



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