

Miele



Installation plan

PLW 8616

en - GB, AU, NZ

M.-Nr. 11 238 822

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Information on the installation plan

For safe installation and commissioning of the washer-disinfector please read the installation plan, the service documentation, the operating instructions and the programming manual.

This installation plan includes the dimensions of the washer-disinfector, the technical data and the installation requirements to be met on the customer's site.

The washer-disinfector is generally referred to as "the machine" in this installation plan.

The dimensions provided in figures are indicated in mm. Dimensions given in any other units are labelled accordingly.

The machine's equipment will vary by version and can be expanded with additional options. The installation plan describes the maximum equipment configuration.

Certain connections are not required for every equipment version, e.g. a steam connection or cold water connection for the steam condenser.

Optional extras

CT	Combi tank
DP	Drain pump
DU 900	Drying unit and top-box panelling
DU 900 RV	Drying unit and top-box panelling with ventilation slots
DV	Drain valve
EL	Electric heating
EL/S	Steam heating/electric heating
FP 900	Plinth
SC	Steam condenser
TC 900	Top-box panelling

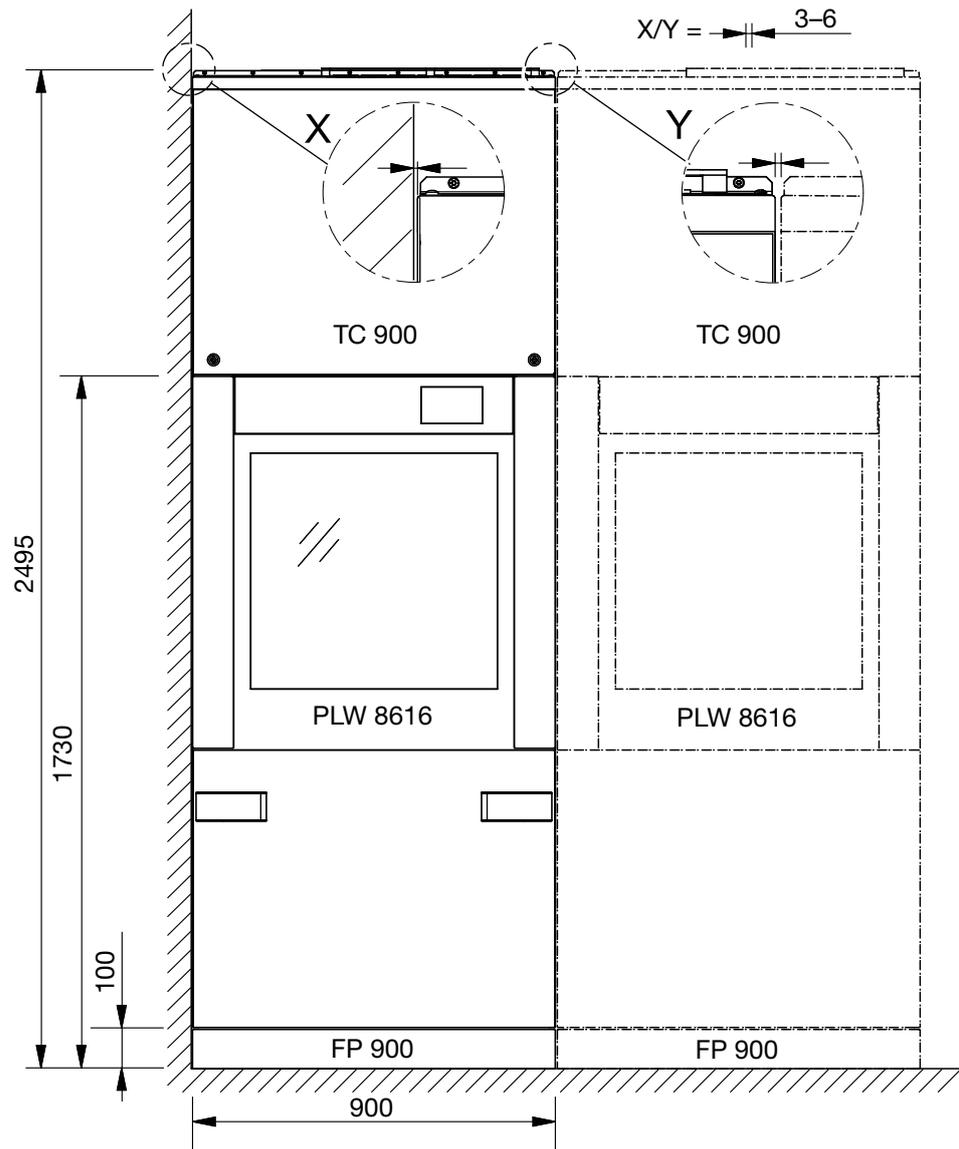
Installation requirements

This machine must only be installed and commissioned by the Miele Customer Service Department or a suitably authorised technician.

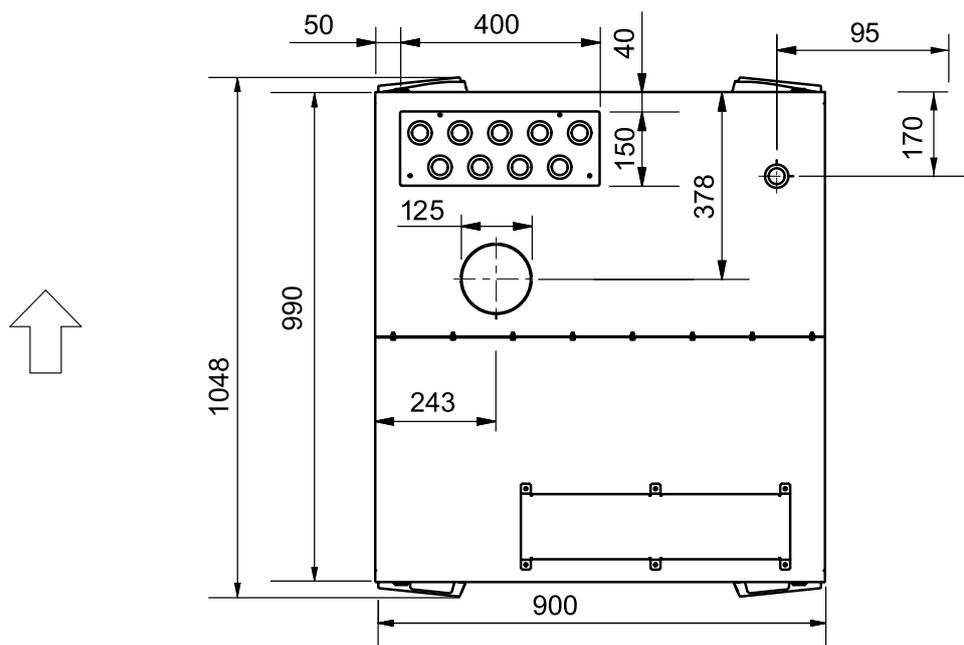
Installation should only be performed in accordance with valid regulations, relevant standards and health and safety codes.

Appliance dimensions

Front view

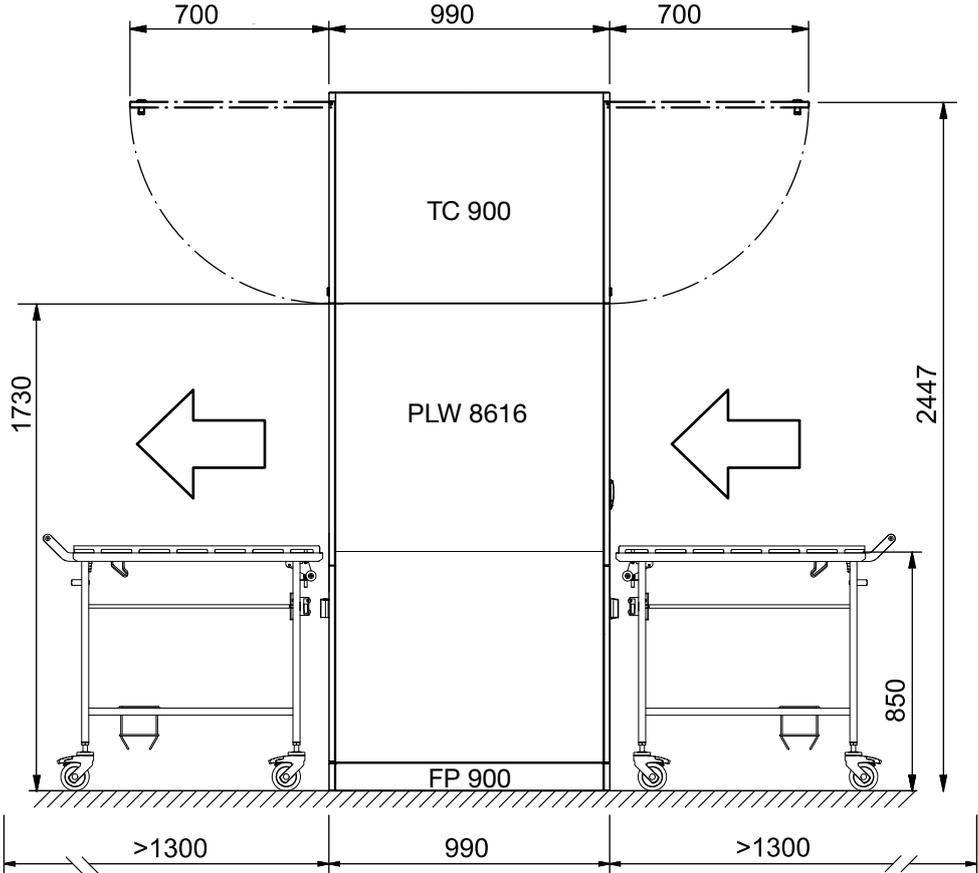


View from above of top-box paneling (TC)

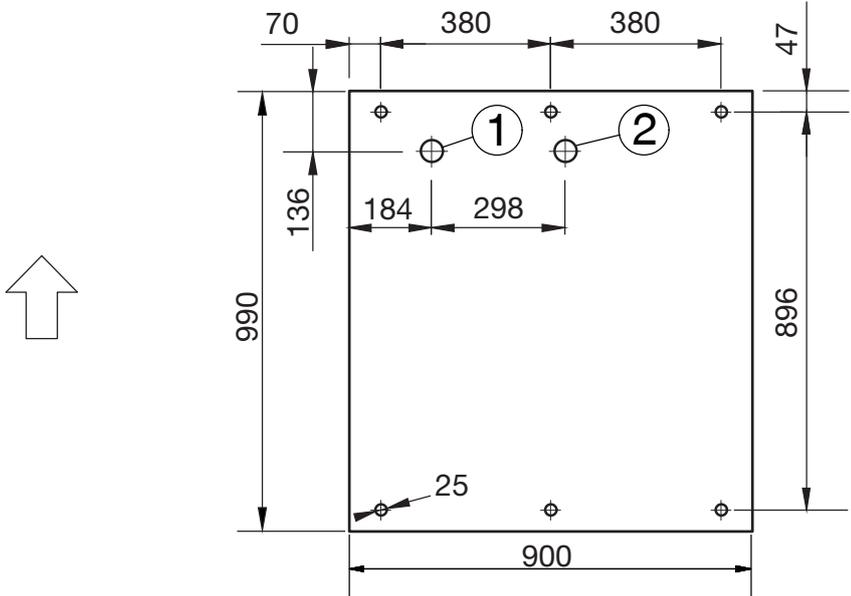


Appliance dimensions

Side view



View from above of plinth (FP)



① Floor tray drainage

↑ Infeed/outfeed direction

② Waste water

Installation notes

Installation

Plinth (FP)

A plinth is needed for installing the machine. The plinth is fitted with height-adjustable feet and a drip tray for condensation water, for example.

Top-box panelling (TC)

The top-box panelling (TC) provides access to the technical equipment above the wash cabinet, e.g. the drying units, for maintenance and servicing purposes. To enable the top-box panelling to be placed pre-assembled on the machine, a clear height of at least 2.62 m is required. If there is a clear height of between 2.50 m and 2.62 m, the top-box panelling must be dismantled. The individual parts must then be reassembled above the machine and riveted again.

Mount the cover provided onto the top-box panelling using watertight hose feed-throughs. If stopcocks or screw connections are not watertight, the cover will stop water getting into the machine.

Panelling on the customer's site

On the customer's site, mount the panelling with inspection flaps from the top-box panelling as far as the ceiling. Supply lines can be accessed from the outfeed side of the machine.

Multiple side-by-side installation

Several machines can be installed side-by-side in a row. A gap of 3–6 mm is required between two machines or between a machine and a partition wall.

The plinths of the individual machines can be connected together.

<p>The gaps must be sealed with a flexible sealant when installation is complete on the customer's site.</p>
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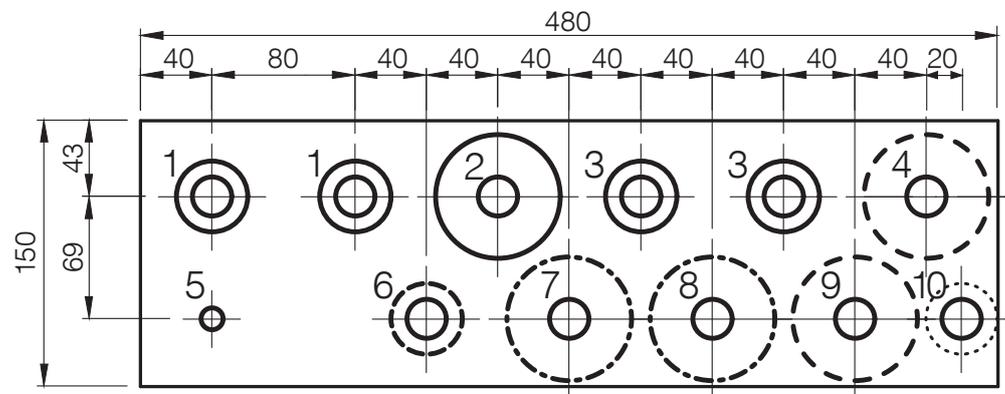
Supply lines

The connections for the supply lines are located above the top-box panelling on the machine.

The supply lines on the customer's site and the exhaust duct must stop 2650 mm above the top edge of the finished floor so that the top-box panelling (TC) can be mounted on the machine.
A height of 2800 mm is recommended for the supply lines in the second row of the installation area; this provides easier access to the stopcocks.

Installation area on the customer's site

The supply lines on the customer's site must be located above the machine. The installation area requires minimum dimensions of 480 x 150 mm:

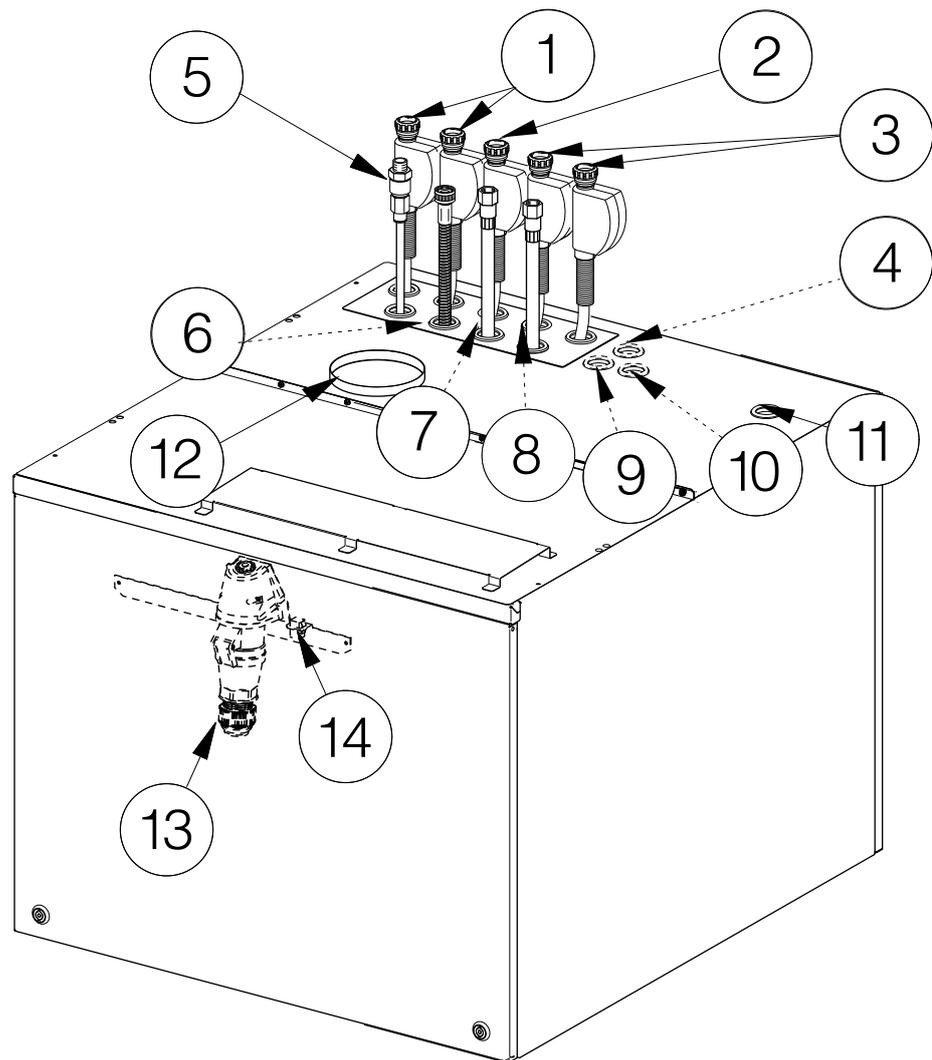


- ① 2 x demineralised water
- ② 1 x hot water
- ③ 2 x cold water
- ④ Cooling circuit flow (optional)
- ⑤ Compressed air, technical grade
- ⑥ Cold water intake, steam condenser (optional)
- ⑦ Steam supply pipe (optional)
- ⑧ Steam condensate pipe (optional)
- ⑨ Cooling circuit return line (optional)
- ⑩ Drain pump for waste water pipe (optional)

Installation notes

Connections on the top-box panneling (TC)

The ducting and cables shown below are also routed through the machine's cover, but not in the installation area:



- ⑪ Feed-throughs for:
 - Mains connection cable
 - Data cable
 - Equipotential bonding (optional)
 - External voltage for the potential-free contacts on the connection module (optional)
 - Cables to the potential-free contacts on the connection module (optional)
- ⑫ Vent ducting
- ⑬ CEE socket for mains connection cable
- ⑭ Data cable for the Ethernet plug
- ① to ⑩, see “Installation area on the customer’s site”

Electrical connection

All work on the electrical connection must be carried out by the Miele Customer Service Department or a qualified electrician.

The installation of the machine must comply with measurement category CAT II in accordance with IEC 61010-1.

The machine is connected to the electricity supply from above. You will need a power cable that is at least 1500 mm long inside the top-box panelling.

The mains voltage must not fluctuate by more than $\pm 10\%$ around the nominal voltage.

Plug connection

The machine should be connected to the electricity supply via a socket. The CEE socket connection for the electrical connection is located inside the top-box panelling. The mains connection cable must be connected to the CEE socket connection on the customer's site.

Hard-wired

If the machine is hard-wired to the power supply, install a power switch capable of disconnecting the machine at all poles on the customer's site. This power switch must have a contact gap of at least 3 mm.

The socket or the power switch must be accessible after the appliance has been installed. An electrical safety test must be carried out after installation and after any maintenance work.
The mains connection cable must be laid protected from the risk of thermal damage.

Residual current device (RCD)

For added safety, every machine should be protected by an RCD type B with a trip current of 30 mA.

The RCD must be installed so that it is easily accessible.

Clockwise rotating field

Machine phases must be connected in the correct sequence (clockwise rotating field). The clockwise rotating field determines the direction in which the motorised drives in the machine will rotate.

Equipotential bonding

The machine is able to accommodate equipotential bonding. The terminal screw (M 8) is located on the infeed side, above the lift-up sliding door.

Equipotential bonding should be carried out if possible on the customer's site.

Installation notes

Steam connection (optional)

Dual-heated machines with steam and electric heating (EL/S) must be connected to dry industrial steam. The hoses for steam and condensate can be pulled out of the top-box panelling by around 300 mm.

A stopcock, a dirt trap and a dewatering drain must be installed in the steam pipe on the customer's site.

Mount a non-return valve directly after the condensate trap on the customer's site to stop any knocking in the cold condensate pipes when the machine is starting up.

The connections on the customer's site must have the following flat-sealing external threads:

- Steam supply pipe 3/4"
- Condensate discharge pipe 1/2"

Install stopcocks for the steam pipe and the condensate pipe on the customer's site.

The stopcocks must be accessible after the machine has been installed.

Compressed air connection

Oil-free, technical-grade compressed air is necessary for controlling the machine's door.

In machines with a steam connection, technical-grade compressed air is also needed for controlling the steam valves.

A stopcock and a socket with a female 1/2" quick-release lock must be provided on the customer's site for the connection as well.

The compressed air hoses can be pulled out of the top-box panelling by around 900 mm.

Network connection

The machine is fitted with an Ethernet interface. The RJ45 network connection is located inside the top-box panelling, above the wash cabinet.

A network connection must be provided above the machine on the customer's site. When installing the network cable and electrical connection in parallel, you will need a 1500 mm length of cable inside the top-box panelling. Use CAT5 network cables or higher.

 Unauthorised access poses a health risk.

Settings in the cleaning machine, e.g. parameters for disinfection or the dispensing of process chemicals, may be changed as a result of unauthorised access via the network.

Under no circumstances should it be possible to access the cleaning machine via the Internet or other public or unsecured networks, either directly or indirectly (e.g. using port forwarding)!

The IP addresses from 192.168.10.1 to 192.168.10.255 are reserved for the Customer Service Department. They must never be set in the internal network.

1. The machine should be operated only in a separate network segment which meets one of the following requirements:
 - It is physically separated from other network segments
 - Access to the segment is restricted by a firewall or a router which has been configured accordingly
2. Limit access to this separate network segment to persons requiring access in the course of their work.
3. Use strong passwords to protect access to systems that are connected to the machine.
4. Configure the Ethernet interface.

The network connections and machines connected to the network must comply with IEC 62368-1.

Network protocols

The machine supports communication via the following network protocols:

Network protocols	Description	Port
DHCPv4	Assigning dynamic IPv4 addresses	68/UDP
DHCPv6	Assigning dynamic IPv6 addresses	546/UDP
HTTPS	Web interface for configuring the cleaning machine	443/TCP

The ICMPv4 and ICMPv6 protocols are also supported.

Installation notes

Water connection

Water inlet

The machine must only be connected to fully vented pipework. A brief increase in the water pressure can damage components of the machine.

The quality of the incoming water must correspond to the drinking water specification of the country in which the machine is being operated.

The machine must be connected to cold, hot and demineralised water. The water inlet hoses can be pulled out of the top-box panelling by around 900 mm. The connections on the customer's site must have 3/4" flat-sealing external threads. Install stopcocks for the water inlet hoses on the customer's site.

The stopcocks must be accessible after the machine has been installed.

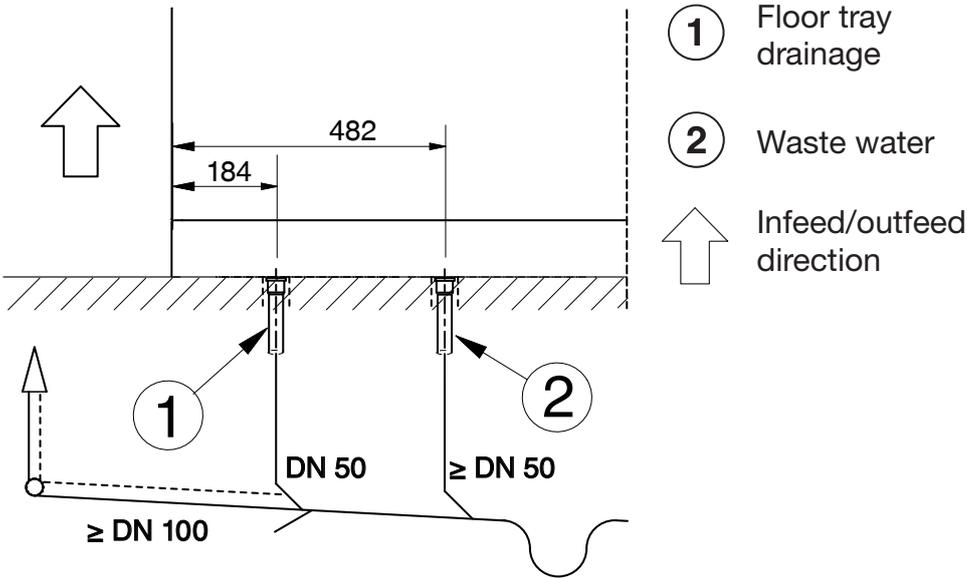
Drainage

The waste water must be collected via a sloping, suitably sized manifold \geq DN 100.
 The waste water pipes must be temperature-resistant to at least 94 °C. Mount an odour trap on the customer’s site.

If several machines are being installed in a row, the manifold must be capable of collecting the corresponding volume of waste water. If the waste water is draining too slowly, the programme time can be extended in the machine’s control system while the programme sequence is running. Also install a flow restrictor such as a reducer or an orifice on the drain valve.

Drain valve (DV)

Water drains out through the drain valve by the force of gravity. Two core hole bores for waste water and floor tray drainage are required underneath the machine. The DN 50 connection pipes must be connected perpendicularly to the manifold with a slight bend in the direction of flow. The connection pipes must terminate so that they are flush with the finished floor level.



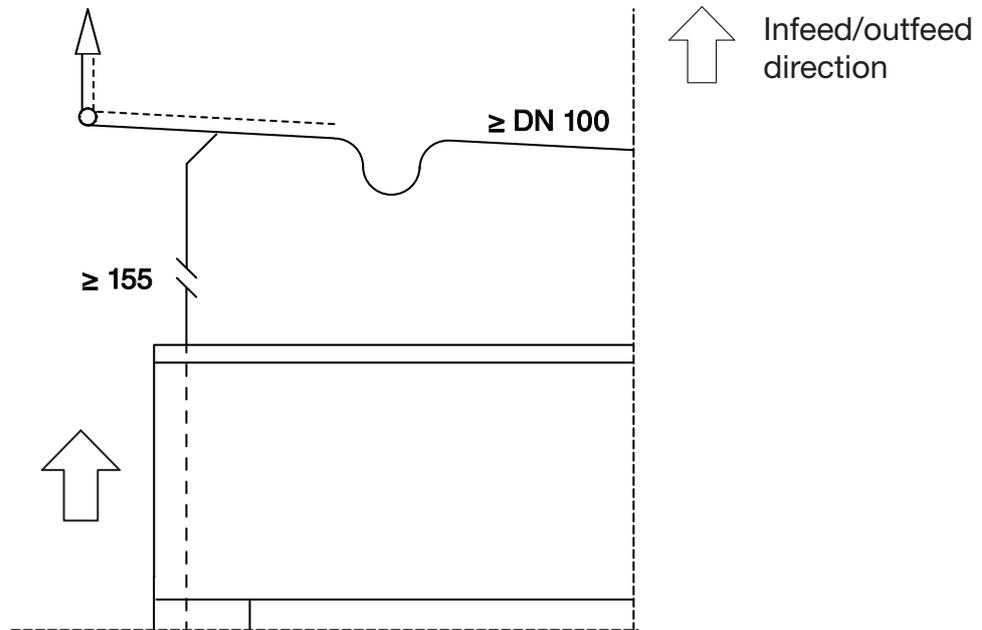
Detailed front view of the plinth area

You will also need a drain pipe of length “plinth height + 45 mm” to connect the machine’s water drainage with the connection pipe.

Installation notes

Drain pump (DP)
(optional)

The machine can be fitted with a drain pump. The drain pump pumps the waste water to a floor drain or a waste water pipe on the ceiling. The maximum delivery head is 3000 mm.



Detailed front view of top-box panelling

Waste water pipe on the ceiling:

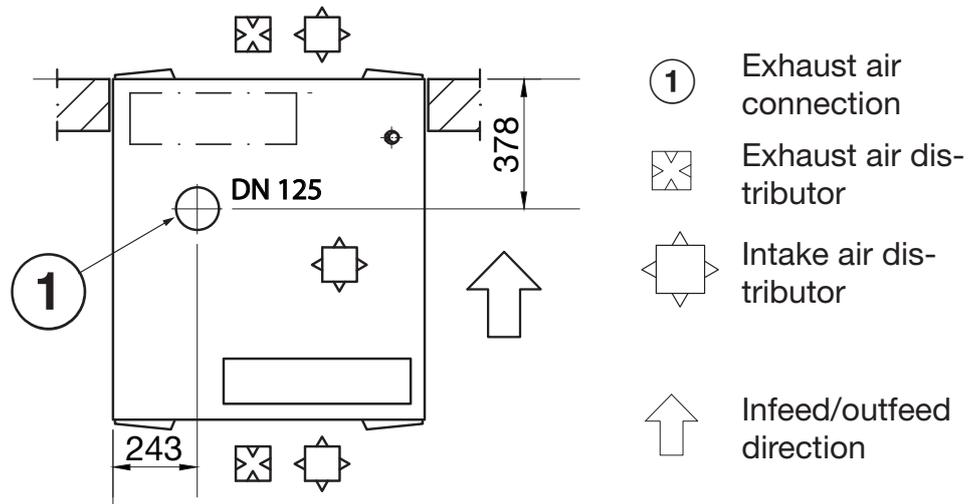
The drain hose is located to the left of the machine when viewed from the infeed side. The drain hose can be pulled out of the top-box panelling by around 600 mm.

Floor drain:

The drain hose must be installed in an arc inside the machine to stop waste water flowing back. The minimum delivery head is 200 mm, measured above the non-return valve in the machine.

Exhaust duct

The machine must be connected to a ventilation or air conditioning system. Each machine requires a constant flow rate of $350 \text{ m}^3/\text{h}$ for the exhaust duct during operation. The ventilation and air conditioning system above the top-box panelling (TC) must take in a sufficient volume of air to match the exhaust volume. If there is no air intake pipe, top-box panelling with ventilation slots must be used on the in-feed side.



View from above of top-box panelling (TC)

If the machine is connected to an air conditioning system, a steam condenser must be installed upstream to remove moisture from the exhaust air.

If the machine is connected to an extraction system that is vented into the open air, you do not need a steam condenser.

Install the vent ducting so it slopes in the direction of the exhaust air flow; this is to stop condensate flowing back into the machine. Drain the condensate pipe at the lowest point.

Install separate vent ducting for each machine if possible.

If vent ducting for several machines is being installed together, the output of the on-site exhaust system must be calculated and dimensioned appropriately for the flow rate.

The heat output during operation must be removed by the ventilation and air conditioning system.

Installation notes

Steam condenser (optional)

If the machine's vent ducting is connected to an air conditioning system, a steam condenser must be installed upstream to remove moisture from the exhaust air.

The steam condenser must be operated in combination with a drying unit.

Install stopcocks in the steam condenser's water inlet on the customer's site.

The stopcocks must be accessible after the machine has been installed.
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Steam condenser (SC)

The steam condenser (SC) can be connected to cold water or a cooling circuit provided on the customer's site.

Connected to cold water

You need a cold water connection on the customer's premises for the steam condenser's water inlet. The connection hose has an inner diameter of 13 mm.

The water from the steam condenser is routed to the machine's drainage via a free-flowing section.

Connected to a cooling circuit

To connect the steam condenser to the cooling circuit, you need 3/4" control valves and a conversion kit with two connecting hoses (optional accessories). The connecting hoses have an inner diameter of 13 mm and are 2000 mm long.

The solenoid valves supplied with the machine and the free-flowing section are not used.

Connection module

The machine is fitted with a connection module whose potential-free inputs and outputs can be used to query operating statuses and control external components. The connection module contains 3 plugs: plug 5 (yellow) has 4 inputs, plug 6 (green) has 5 outputs and plug 7 (red) has 4 outputs.

The assignment of the inputs is fixed. The voltage at the inputs must be 200–240 V AC.

The assignment of the outputs can be modified, see table “Possible assignment of potential-free outputs”. The voltage at the outputs of a plug can be either 12–24 V DC or 200–240 V AC.

The same voltage must be used at all the outputs in a particular plug.

Damage to the relay contacts

The outputs on the connection module must not be loaded with more than 1 A to protect the relay contacts from damage.

Attach external connector relays or contactors if higher ratings are switched at the outputs of the connection module.

Inputs

- Peak-load negotiation of the electric heating
- Fill level monitoring for the external dispenser canisters
- Dispensing monitoring for the external dispenser pumps
- External message

Installation notes

Potential-free outputs

Parameter	The contact is activated ...
Off	–
Active drying	When the drying unit is active
Programme running	When a programme is running
Operation	When the machine is switched on
Malfunction	When a fault is present
Infeed side door status	When the door on the infeed side is opened
Outfeed side door status	When the door on the outfeed side is opened
Programme finished	Between the end of the programme and opening the door
Pause with rinse	When the water intake is active in the Pause programme stage
Drainage Standard	When standard water drainage is active during the programme sequence
Drainage Recycling	When recycling water drainage is active during the programme sequence
Cold valve	During water intake through the set valve
Valve hot	
Demin. cold	
Demin. hot	
Cold valve delayed	During water intake through the set valve: a. Delayed by the set "Water intake start delay" b. Brought forwards by the set "Water intake stop delay"
Valve hot delayed	
Demin. cold delayed	
Demin. hot delayed	
DOS 7 external	As a signal for external dispenser pump 7
DOS 8 external	As a signal for external dispenser pump 8
DOS 9 external	As a signal for external dispenser pump 9
DOS 10 external	As a signal for external dispenser pump 10
DOS 1 control	When dispenser pump 1 is active
DOS 2 control	When dispenser pump 2 is active
DOS 3 control	When dispenser pump 3 is active
DOS 4 control	When dispenser pump 4 is active
DOS 5 control	When dispenser pump 5 is active
DOS 6 control	When dispenser pump 6 is active
External drainage contact	When the "External drainage contact" parameter is active while water is draining

Dimensions

Height including plinth	1770 mm
Height including plinth and top-box panelling	2495 mm
Width	900 mm
Depth	990 mm

Weight

Version	PLW 8616 EL
Net weight including plinth and top-box panelling	466 kg
Net weight including EL/S, DU, SC, CT	639 kg
Operating weight	815 kg
Max individual load (5 cm ² foot)	1333 N
Max. surface load (load-bearing capacity of floor)	9.0 kN/m ²
Optional extras	
Steam heating/electric heating (EL/S)	5 kg
Drying unit (DU)	115 kg
Steam condenser (SC)	52 kg
Combi tank (CT)	13.5 kg

Electrical connection

Voltage	3N AC 400 V
Frequency	50 Hz
Fuse rating	3 x 32–35 A
Heater rating	18 kW
Total rated load	20 kW
Mains connection cable cross-section	5 x 6
Mains connection cable on customer's site, length inside TC	1.5 m
Connection	CEE

Dual-heated machines in "steam" heating mode (optional)

Fuse rating	3 x 20 A
Total rated load	10 kW

Technical data

Steam connection (optional)

Quality	Dry industrial steam
Steam pressure	250-1000 kPa
Peak capacity for steam and condensate pipe	50 kg/h
Steam pipe, with stopcock on customer's site, flat-sealing external thread	3/4"
Condensate pipe, with stopcock on customer's site, flat-sealing external thread	1/2"

Compressed air connection

Compressed air, technical grade	ISO 8573-1: Class 4
Pressure	600–800 kPa
Peak capacity	5 l/min
Connection on the customer's site with stopcock and socket with ♀ quick-release lock	1/2"

Water inlet

Water connections	
- Cold water	2
- Hot water	1
- Demineralised water	2
Water temperature	
- Cold water	5–20 °C
- Hot water	5–65 °C
- Demineralised water	5–65 °C
Connection on the customer's site with stopcock, flat-sealing external thread	3/4"
Water connection pressure	200–1000 kPa
Flow rate	14 l/min
Max. water hardness	0.710 mmol/l / 4 °dH
Demineralised water	
Recommended conductivity	<15 µS/cm
Chloride content	<100 mg/l
pH value	5–8
Steam condenser (optional)	
Water temperature	5–20 °C
Connection on the customer's site with stopcock, flat-sealing external thread	3/4"

Drainage

Drain valve (DV)

Max. water temperature	94 °C
Max. transient flow rate	162 l/min
Drain connection on the customer's site for the machine	DN 50
Drain connection on the customer's site for the floor tray	DN 50
Waste water pipe	≥ DN 100

Drain pump (DP) (optional)

Max. water temperature	94 °C
Max. transient flow rate	162 l/min
Min. delivery head	200 mm
Max. delivery head	3000 mm
Hose inner diameter (Ø)	22 mm
Waste water pipe	≥ DN 100

Cooling circuit* (optional)

Cooling capacity	3.5 kW
Spread	6/12 °C
Max. connection pressure	800 kPa
Pressure loss in steam condenser	25 kPa

* In combination with a steam condenser

Exhaust air

Exhaust duct	DN 125
Flow rate during operation	350 m ³ /h*
Temperature	
With steam condenser	45–48 °C
Without steam condenser	70–95 °C
Relative humidity	
With steam condenser	65–100 %
Without steam condenser	80–100 %

* The ventilation and air conditioning system must take in a sufficient volume of air within the top-box panelling; alternatively, if there is no air intake pipe, top-box panelling with ventilation slots is available for use on the infeed side.

Technical data

Operating conditions

Ambient temperature	5–40 °C
Relative humidity:	
Minimum	10 %
Maximum, for temperatures up to 31 °C	80 %
Linear decreasing for temperatures up to 40 °C	50 %
Max. altitude above sea level	1500 m

Emission values

Heat dissipation

Infeed side	600 W
Outfeed side	600 W
Load items once unloaded	1400 W

Sound pressure level

Sound pressure level LpA during cleaning and drying	<65 dB(A) re 20 µPa
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Storage and transportation conditions

Ambient temperature	-20 to +60 °C
Relative humidity	10–85 %
Air pressure	500–1060 hPa
Maximum floor load on transport route	6 kN

Site access dimensions including transport pallet

Height	1960 mm
Width	1000 mm
Depth	1130 mm

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