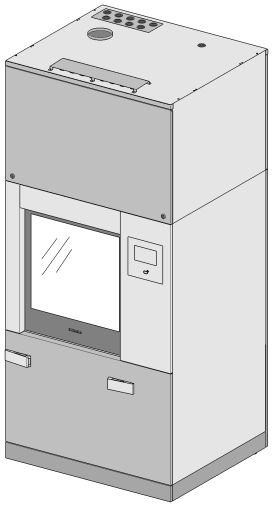
Miele



Installation plan

PLW 8617

To avoid the risk of accidents or damage to the machine, it is **essential** to read these instructions as well as the service documents before it is installed, commissioned and used for the first time.

en - GB, IE

M.-Nr. 11 238 940

Installation notes

Please read and observe the installation plan, operating instructions, programming manual and the service documents regarding installation and setting up of this machine.

Types of heating

This model is available with two different types of heating:
– Electric (EL)
– Steam and electric (D/EL)

This installation plan describes the **maximum number of connection options**. Depending on the appliance and model version, individual connection options may not be required.

Purpose of the installation plan

The installation plan provides you with information on the technical data as well as the site conditions required for installing the machine.

To ensure that you set up and use the machine safely, please also read and observe the operating instructions and the service documents.

Installation of several machines

Several machines can be installed in a row. A **gap** of **5 mm** is required between two machines. A gap of **3 mm** is required between a **machine** and a **partition wall**.

The gaps must be **sealed with suitable flexible sealant** after installation on site.

The drip trays of the individual machines can be connected together. Alternatively, a continuous drip tray can also be installed in the plinth.

Mobile plinth

The single-door appliance can be installed on a mobile plinth. This makes the rear of the appliance accessible for maintenance and repairs, even when it is installed in a row or against a wall. The screw for adjusting the height of the mobile plinth is size M10 (width across flats 17 mm).

Producing the front panel

Mount the cover provided with watertight hose feed-throughs on the appliance. This will prevent water from entering the appliance in the event that control valves or hose connections leak.

On site, mount a front panel with a lockable service panel above the appliance. The supply connections can be accessed from the infeed side.

Electrical connection

Install the electrical connection in accordance with national legal requirements, health and safety regulations and applicable standards. The installation must comply with measurement category CAT II in accordance with IEC 61010-1.

Plan a thermally insulated mains connection cable path. The mains connection cable with 32 A CEE coupling (socket) should have a length of 3 m on site, starting from above the intended position of the appliance.
We highly recommend the installation on site of a **type B residual current device with a trip current of 30 mA** on the mains connection cable to the appliance. The residual current device must be installed so that it is easily accessible.

The top edge of the top-box panelling is at a height of 2495 mm.

The electrical connection of the appliance is established from above. Establish the connection with the appliance using the existing **plug-and-socket connection**. This makes it easier to perform safety inspections during maintenance or repair work. A 5 x 32 A CEE socket is located inside the top-box panelling (MAV). To establish the connection to the existing plug-and-socket connection, you will require a cable at least 1500 mm in length inside the top-box panelling. Route the mains connection cable so that it does not rest on the wash cabinet.

Appliance phases must be connected in the correct sequence (**clockwise electromagnetic field**).

⚠ Power cable on hot wash cabinet
Power cable may overheat and result in fire.
Secure cables, including test cables, so that they cannot rest on or lie directly above the wash cabinet.

Faulty components must only be replaced by genuine Miele original spare parts. Only when these parts are fitted can the safety standards of the machine be guaranteed. If the connection cable is faulty it must only be **replaced by a Miele approved service** technician to protect the user from danger.

Equipotential bonding

Equipotential bonding should be carried out if required. You will find the position of the screw connection point for equipotential bonding (PA) in the machine in the “Illustrations” section. The screw connection point is size M8 x 25 mm. On site, plan the equipotential bonding connection at a maximum distance of 4 m from the machine. Equipotential bonding and earthing must be carried out before the machine is commissioned.

The mains voltage may **fluctuate** by up to +10% and -6%.

Installation notes

Instructions for routing the connections

Plan the central control valves for water, steam and compressed air so they are easily accessible. Only use suitable control valves.

The lines for high-pressure steam and condensate require their own control valves. They require a dirt trap and condensate trap in the supply line for high-pressure steam. On site, check and install a **non-return valve** for the condensate line if necessary.

For the standard installation, route the supply lines vertically from the ceiling. The on-site connections must end at a height of 2800 mm above the finished floor level. Secure the lines once they have been routed.

Supply connection

The cold water connection, hot water connection and the deionised water supply as well as the connections for high-pressure steam, condensate and compressed air must be routed from the ceiling. To connect the machine to the on-site connections, allow the hoses to be pulled out of the MAV:

- Steam 300 mm
- Water 900 mm
- Compressed air 900 mm

Water line connection

The connections have a ¾" external thread.

Steam line connection

The connections for high-pressure steam and condensate have a 1/2" external thread.

Compressed air connection

Depending on the equipment, the machine has compressed air connections for industrial and medical compressed air. **Industrial compressed air must be available to control the door.** The connections must be separate from one another.

- The industrial compressed air requires an on-site coupling socket for a Lumit 1/2" female quick-release fastener (e.g. type KKA 6S-04M from SMC).
- The medical compressed air requires an on-site coupling socket with a nominal width of 10 mm (e.g. type KD4-1/2-A from Festo).

Installing a steam condenser

If you connect the **vent to an air conditioning system**, a **steam condenser** must be installed. If the appliance is vented into the open air, you do not need a steam condenser.

The following types of steam condenser are available:

- Normal steam condenser
- Heat-recovery steam condenser

Observe the following when you equip the appliance with a steam condenser:

- The water inlets (cold water as well as demineralised water if necessary) for the steam condenser must be routed **from the ceiling**.
- Install the mains switches and central control valves so they are **easily accessible**.
- In the case of an **appliance with steam heating**, install a non-return valve directly downstream of the appliance's condensate separator. This prevents surges when the appliance is started up.
- Route the **feed and return lines for the cooling circuit** vertically from the ceiling. The cooling circuit feed line and cooling circuit return line are connected to the nozzles on the steam condenser. To do this, you will require a hose with an **internal diameter of 14 mm** and a **nominal pressure of 800 kPa**.
- Only use the intended conversion kits (UBS) containing pressure hoses for the supply line and drain.
- Allow the connection hoses to hang down **from the ceiling to a length of approximately 1.5 m**.
- Align the line sections correctly and fasten them securely.
- The ends of the cooling circuit feed and return lines should terminate within the installation area of the appliance using hose sleeves.
- If there is no cooling circuit, connect the steam condenser to a cold water connection.
- If a steam condenser with heat recovery is used, only demineralised water with a maximum temperature of 20 °C may flow into the system.

Installation notes

Drain connection – appliances with drain valve (DV)

Observe the following instructions when connecting a drain with a drain valve:

- Plan the drains for both the drain connection and the drip tray in the floor.
- Use materials with a **temperature resistance of at least 94 °C**.
- The **drain manifold – minimum diameter 100 mm** (DN 100) – is installed under the floor.
- Fit an **odour trap** on site.
- Check whether the dimension of the drain manifold is sufficient for the intended number of appliances. If the cross-section of the line is too small and the manifold has a large number of bends, this will impede the appliance's drainage performance. This can cause the **drainage time to increase**.
- Take into account the extra time it will take to drain the water when programming the appliance. Also install a flow restrictor (drain orifice or reducer) on the drain valve.
- Route the **connection cable** (DN 50) to the **drain manifold** and connect them. The connection must be **perpendicular with a slight bend in the direction of flow** of the drain manifold.
- All bushings and the Konfix connectors of the drain hoses must be securely fastened and terminate so that they are flush with the finished floor level. To connect the drain to the appliance, you will require an **additional section of drain hose** above the finished floor to bridge the gap to the plinth. The **length of the hose** must be **145 mm**, without bushing or Konfix. Prepare the section of drain hose. Then install the section of drain hose and connect the machine to the drain connection. If you are planning to install the plinth/drip tray later on, seal the ends of the tube initially.
- For **connections to metal hoses**, a straight **adapter** (HTS 50/50 with HTGM 50/50 F rubber sleeve) is required to connect the suds container to the on-site floor drain.

Drain connection – appliances with drain pump (DP)

Observe the following instructions when connecting a drain with a drain pump:

- The drain manifold (at least DN 100) can be installed:
  – Under the floor
  – To the ceiling
- Observe the maximum delivery head of 3 m for the drain pump.
- Fit an odour trap on site.
- If the machine is drained towards to the ceiling, it is advisable to use pipelines instead of hoses. If necessary, DN 25 to DN 40 pipes can be used. High temperatures, pressures and mechanical loads from the pump place additional strain on the hose and reduce the time that it will be able to function without problems.
- If you are installing several appliances in a row, you can create a plinth drip tray specifically for your requirements. You can place the drain hoses in this tray.
- Hose feed-throughs in the side walls of the casing are not possible for structural reasons.
- Ventilation to atmosphere must be fan assisted. Dry contacts are available to alert the fan controls to start the fan. The permissible flow rates can be found under Technical data at the end of this manual.

Vent connection

Provide an air intake of 350 m^3/h (peak value in the drying phase) for each appliance on the unclean side for the satisfactory extraction of vapours. Connect the appliance to the ventilation or air-conditioning system. If necessary, connect a steam condenser upstream. Install the ducting with a slope in the direction of the extract air flow. This prevents any condensate from flowing back into the appliance. Drain the system at the lowest point.

Install separate ducting for each appliance. Ducting for several appliances must not be combined!

Connection module fan control

Dry contacts are available on the appliance for the connection. The connections are located on the unclean side in the top-box panelling.

The contacts can support a maximum load of
200–240 V/1 A/50–60 Hz.

⚠ When assigning the dry contacts, it is not permitted to have a mains voltage and, for example, an extra-low voltage next to each other.
Maintain a sufficient distance between contacts with incompatible voltages.

Network connection

⚠ **It must not be possible to access the appliance via the Internet as well as other public or unsecured networks.**
Unauthorised persons could have unauthorised access to the appliance settings with the option of making undesired changes.

– Use a **firewall**.
– Operate Miele appliances and the associated process data computer in a **separate network (VLAN)**.
– Ensure that the network components are **configured and updated securely**.
– Enable only required protocols in the network to avoid unnecessary traffic.
– Also observe the **safety instructions provided in the operating instructions** regarding integrating the appliance in your network environment (section: Network connection).

Supported network protocols

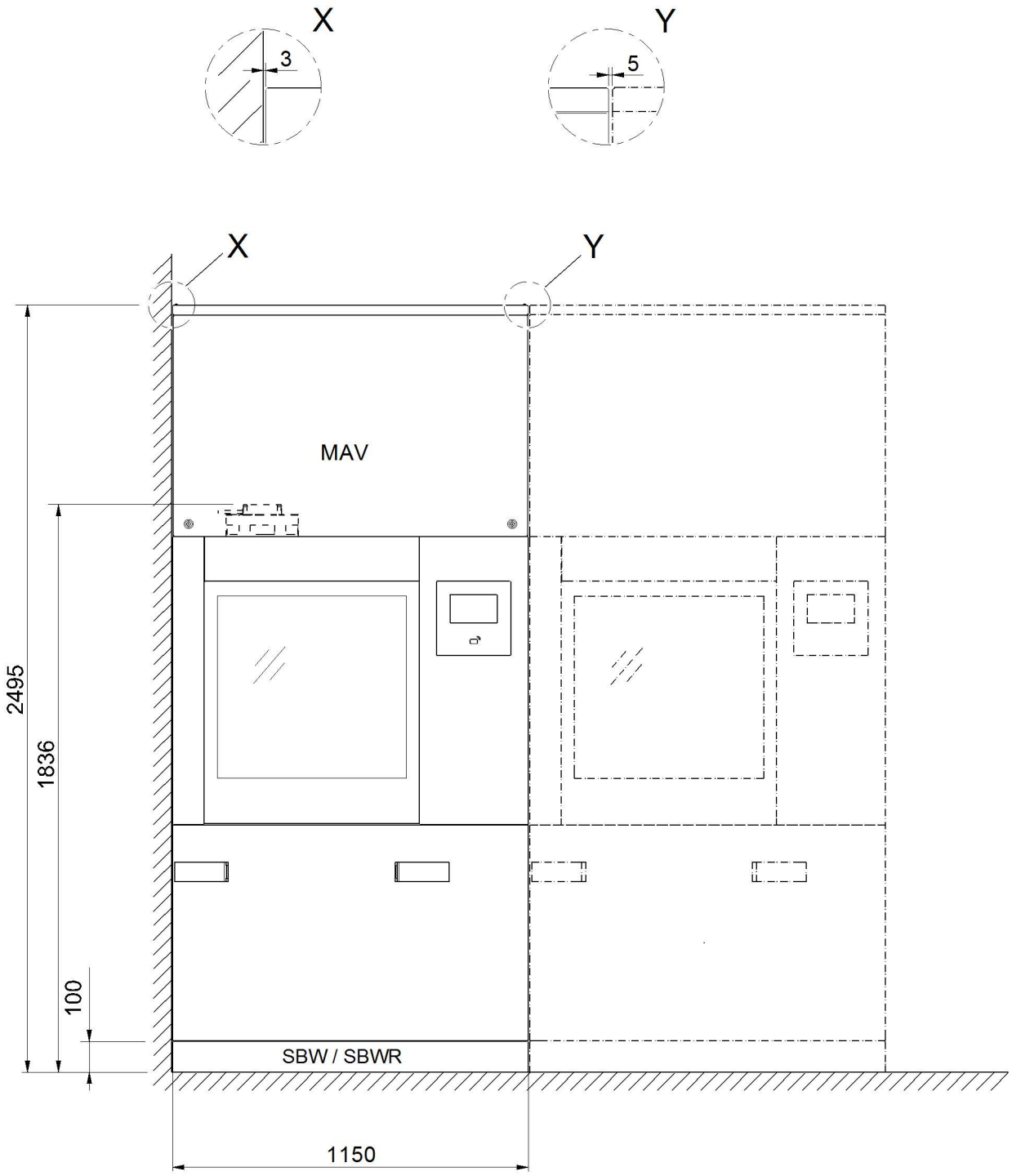
Network protocols	Description	Port
DHCPv4	Assigning dynamic IPv4 addresses	68/UDP
DHCPv6	Assigning dynamic IPv6 addresses	546/UDP
NTP	Time server	123/UDP
HTTPS	Web interface for configuring the cleaning machine	443/TCP

The **ICMPv4** and **ICMPv6** protocols are also supported.

The machine has an RJ45 network connection. Ideally, network sockets are to be installed above the appliance on site. Use **CAT 5e cables or better**. When you route the network cable through the opening in the electrical connection, you will need a **cable length** of approximately **100 mm** inside the top-box panelling to connect to the appliance.

Only appliances that are compliant with IEC 60950-1, IEC 62368-1 and IEC 61010-1 must be connected to these interfaces.

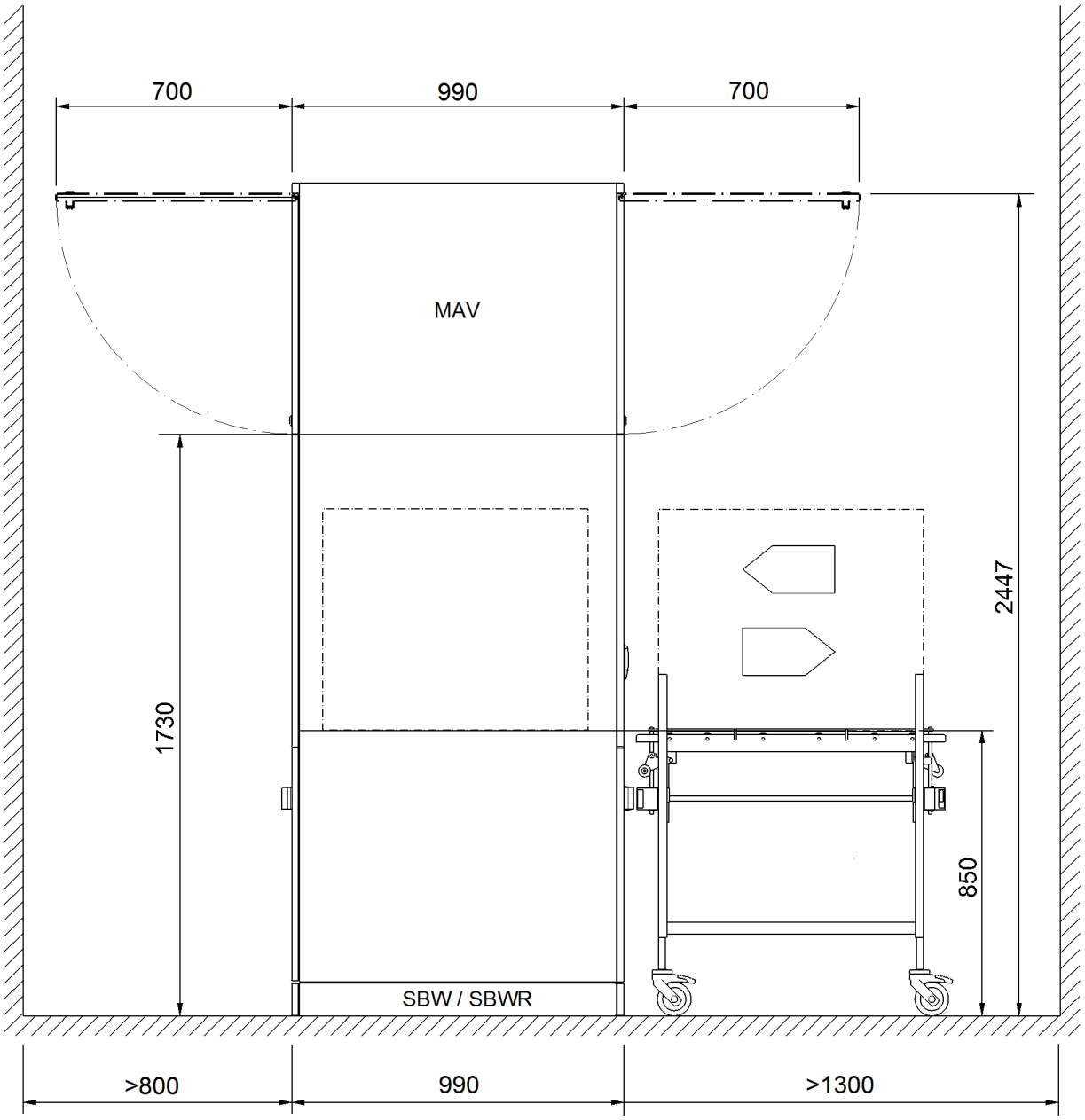
Dimensions from front view



MAV	Top-box panelling
SBW	Plinth drip tray
SBWR	Plinth drip tray, on castors

Figures

Dimensions from side view



MAV	Top-box panelling
SBW	Plinth drip tray
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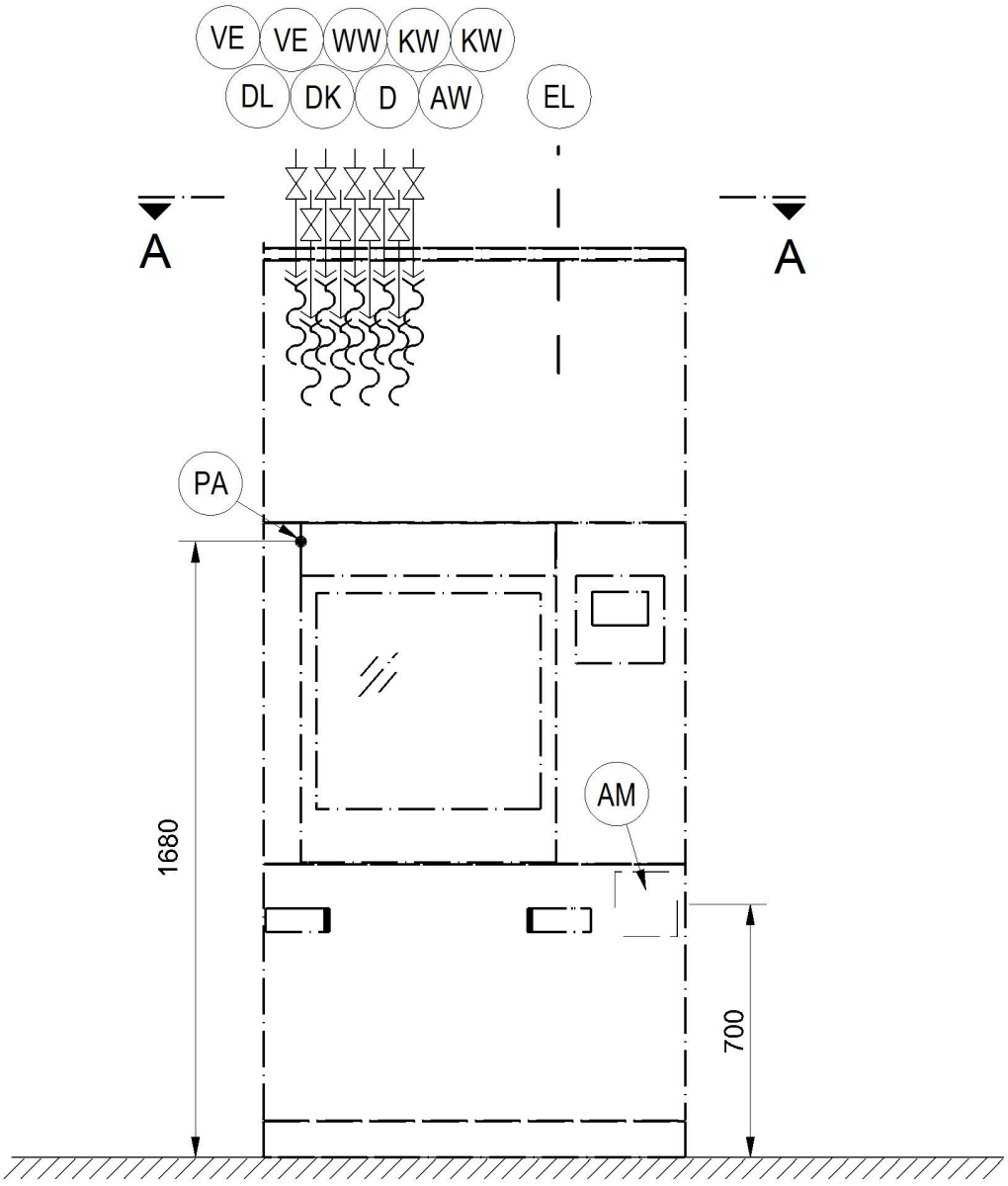
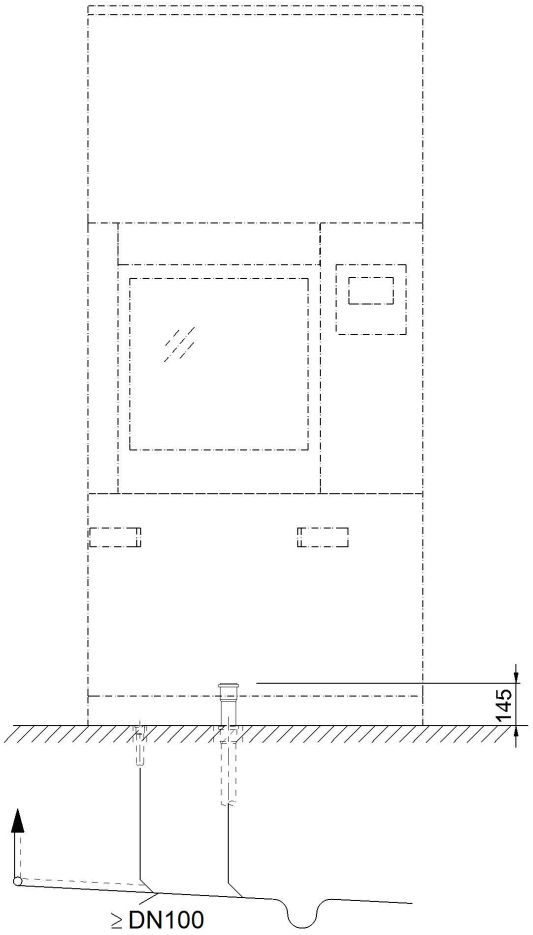
Connections

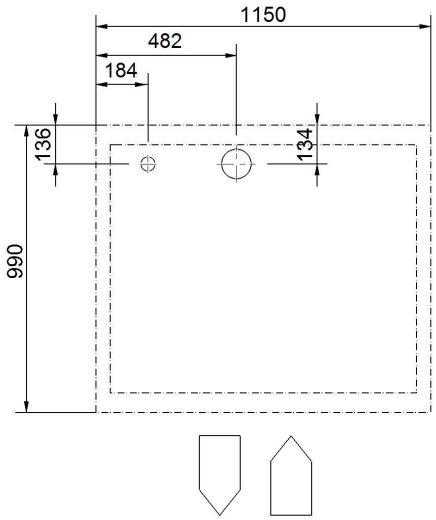


EL	Electrical connection	PA	Equipotential bonding
KW	Cold water connection	WW	Hot water connection
DK	Cold water connection, steam condenser	D	Steam line connection
VE	DI water connections – Boiler – Steam condenser (DK option)	DL	Compressed air connection – Industrial use
AW	Waste water	NW	Network connection

Figures

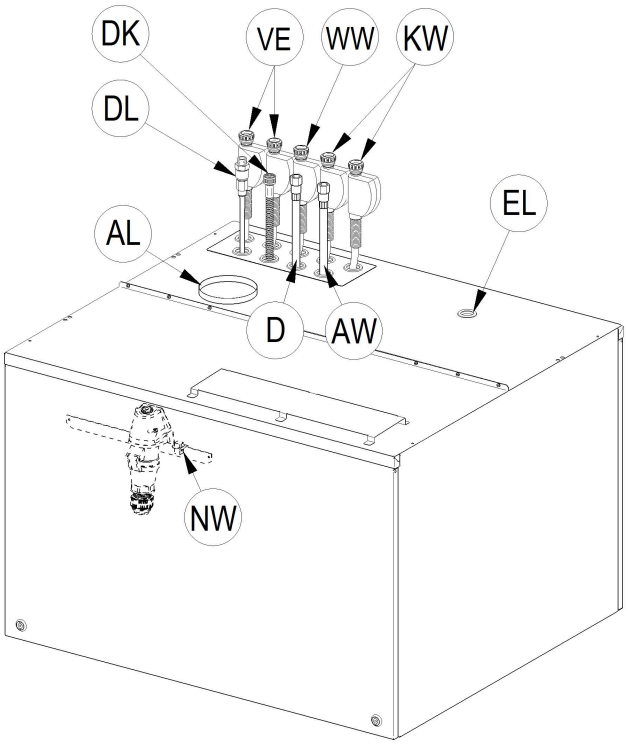
Floor drain



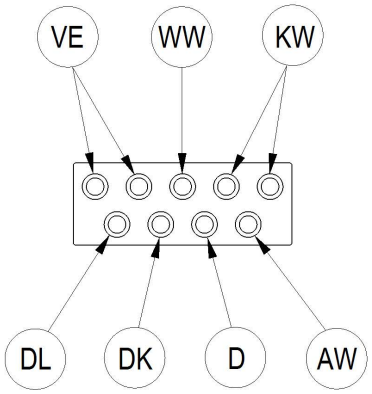


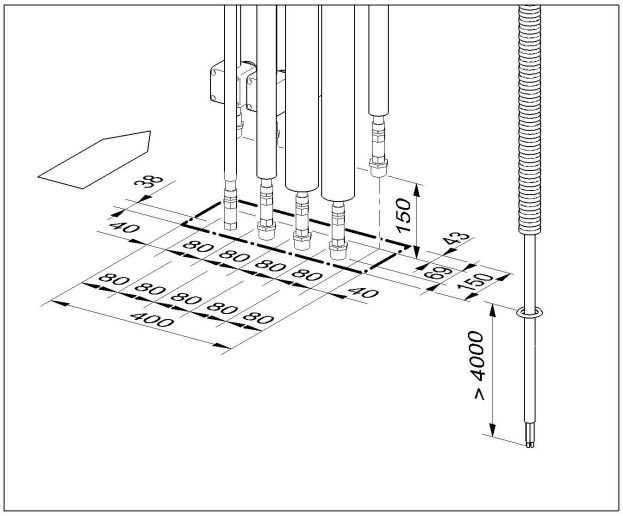
Observe the height!
The on-site supply lines must end at a height of 2800 mm above the finished floor level.

Top-box panelling connections



Installation field – supply lines on site





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Electrical connection

Voltage (standard version)	3N AC 400V/50Hz
Power rating	21 kW
Fuse rating	3 x 32-35 A
Mains connection cable, min. cross-section	5 x 6 mm^2
Min. mains connection cable length (H05(07)RN-F) from top edge of top-box panelling with ceiling installation	4 m
Equipotential bonding and earth conductor: pin with external thread, washers and nut, provided with appliance, size	M8

– On-site PA connection at max. distance of 4 m from appliance

Note:
For devices with a combined **electric/steam** heater a variant with a power rating of 9 kW and 3 x 16 A fuse is also available.

Cold water

Minimum temperature	5 °C
Maximum temperature	20 °C
Max. permitted water hardness	4 °dH
Minimum flow pressure	200 kPa
Maximum pressure	1000 kPa
Flow rate	15 l/min
On-site threaded union in accordance with DIN 44991 (flat sealing)	3/4''

Warm water

Minimum temperature	5 °C
Maximum temperature	65 °C
Max. permitted water hardness	4 °dH
Minimum flow pressure	200 kPa
Maximum pressure	1000 kPa
Flow rate	15 l/min
On-site threaded union in accordance with DIN 44991 (flat sealing)	3/4''

Demineralised water
(in accordance with EN 285/ISO 17665)

Minimum temperature	5 °C
Maximum temperature	65 °C
Overall water hardness of demineralised water	<3 °dH <0.5 mmol CaO/l
Max. conductivity (e.g. for surgical instruments)	15 µS/cm
Evaporation residue	<500 mg/l
pH value	5-8
Chloride content	<100 mg/l
Recommended flow pressure	300 kPa
Minimum flow pressure with increased intake time and process cycle times	200 kPa
Maximum pressure	1000 kPa
Flow rate	15 l/min
On-site threaded union in accordance with DIN 44991 (flat sealing)	3/4''

Waste water drain valve (DV)

Maximum temperature	94 °C
Drain	DN 50
External diameter of collection tray drainage	50 mm
Max. temperature of collection tray drainage	70 °C

Waste water drain pump (DP)

Maximum waste water temperature	94 °C
Connection for drain pump	DN 50
Max. drain pump delivery head from bottom edge of appliance	3 m
Max. transient flow rate	160 l/min
Drain pump drain hose (int. dia. x wall thickness x l)	22 x 3 x 3000 mm
Hose sleeve, to be provided on site	22 x 30 mm
Connection for steam condenser drain hose (optional), only required if a steam connector is connected to the cold water supply.	
Diameter	DN 50
Max. delivery head	3 m
Max. transient flow rate	150 l/min
Drain hose (int. dia. x wall thickness x l)	14 x 3 x 2500 mm
Hose sleeve, to be provided on site	14 x 30 mm
Condensate drain hose connection (steam condenser)	
Diameter	DN 50
Max. delivery head	3 m
Max. transient flow rate	160 l/min
Drain hose (int. dia. x wall thickness x l)	6 x 2 x 2500 mm
Hose sleeve, to be provided on site	6 x 20 mm

Drain manifold

Minimum diameter for 3 to 5 appliances	DN 100
Minimum diameter for 5 to 8 appliances	DN 150

Compressed air

Industrial use (min.–max.)	600-800 kPa

Heating steam

Appliance version with electrically heated drying unit (TA/E)	
Steam pressure	250–1000 kPa
Boiling point	139–184 °C
Peak capacity	50 kg/h
On-site threaded union (conical)	1/2" external thread

A dirt and condensate trap is to be provided on site directly upstream of the appliance's steam connection. Steam should be dry and subscribe to TRD 611. Steam pressure has a direct impact on the programme durations. Due consideration of this should be given when designing the steam supply system.

Steam condenser (optional)

Steam condenser hose connector Ø (ext. dia. x l)	14 x 25 mm
Internal diameter for the on-site connection hose to the steam condenser	14 mm
Connection hose length from hose sleeve	1500 mm

Appliance data

Height including plinth/drip tray	1836 mm
Height including plinth/drip tray and top-box panelling	2495 mm
Width	1150 mm
Depth	990 mm
Net weight incl. plinth/drip tray, top-box panelling, etc.	550 kg
Floor load in operation	8 kN/m^2
Min. access width, incl. transport pallet	1090 mm
Min. access height, incl. transport pallet	1930 mm

Extraction

The connector has the dimension DN 125 mm

I. Connection without steam condenser to external fan-assisted venting system:	
Flow rate of on-site venting system in the wash programme	100 m^3/h
Flow rate of on-site venting system in the drying programme	350 m^3/h
Mean temperature/max. transient	70 °C / 95 °C
Relative humidity mean/max. transient	80 % / 100 %
II. Connection with steam condenser to external fan-assisted waste air system:	
Flow rate of on-site venting system in the wash programme	100 m^3/h
Flow rate of on-site venting system in the drying programme	350 m^3/h
Mean temperature/max. transient	28 °C / 32 °C
Relative humidity mean/max. transient	<70 % / 100 %

Heat dissipation rate to installation site

During the wash process	0.6 kWh
From load whilst unloading, max. (longest programme with full load carrier)	1.4 kWh

Ambient conditions

Permitted ambient temperature	5-40 °C
Max. relative humidity up to 31 °C	80 %
Rel. humidity, declining proportionally to 40 °C	50 %
Transport conditions – permitted temperature range	-20-60 °C
Transport conditions – permitted relative humidity	10-85 %
Transport conditions – permitted air pressure	500-1060 hPa
Max. installation altitude above sea level	1500 m

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