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Combi oven
Convotherm maxx

maxx 20.10 ES/EB, maxx 20.20 ES/EB
Installation manual - Original, ENG

Advancing Your Ambitions

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1 General information

1.1 Environmental protection

Statement of principles

Our customers' expectations, the legal regulations and standards and our company's own reputation set the quality and service for all our products.

We have an environmental management policy that not only ensures compliance with all environmental regulations and laws, but also commits us to continuous improvement of our green credentials.

We have developed a quality and environmental-management system in order to guarantee the continued manufacture of high-quality products, and to be sure of meeting our environmental targets.

This system fulfils the requirements of ISO 9001:2015 and ISO 14001:2015.

Environmental protection procedures

We observe the following procedures:

- Use of residue-free compostable wadding materials
- Use of RoHS-compliant products
- REACH chemical law
- Multiple re-use of cardboard packaging
- Recommendation and use of bio-degradable cleaning agents
- Recycling of electronic waste
- Environmentally friendly disposal of old appliances

Join us in our commitment to protect the environment.

1.2 Structure of customer documentation

Contents of the appliance documentation

Book type	Contents
Installation manual	▪ Describes how to move, set up and install the appliance, and how to put the appliance into service ▪ Describes the hazards and appropriate preventive measures relevant to all installation tasks ▪ Contains the technical data
User manual	▪ Describes the working procedures and operating steps for cooking and cleaning ▪ Contains the servicing schedule and information on troubleshooting ▪ Describes the hazards and appropriate preventive measures relevant to operation
Operating instructions	▪ Describes the appliance user interface ▪ Contains instructions on how to use the software

Documentation for accessories

For information on operating accessories (e.g. condensation hood), please refer to the relevant accessory instructions in the Product Info Portal.

1.3 About this installation manual

Who should read the installation manual

Name of target group	Tasks
Owner of the combi oven or owner's member of staff who is responsible for the appliance and for the operating personnel	▪ Made aware of all safety-related functions and devices of the combi oven by the start-up engineer ▪ Instructed by the start-up engineer on how to operate the appliance ▪ Provides assistance as instructed with conveying the appliance within the establishment and setting up the appliance. See 'Owner Obligations on page 17' for further details
Equipment mover	Transportation within the facility
Service engineer	▪ Setting up the appliance ▪ Installing the fully automatic oven cleaning system ▪ Putting the appliance into service and removing the appliance from service
Electrical installation engineer	▪ Connecting the appliance to the building's electrical supply ▪ Disconnecting the electrical connection
Plumber	▪ Connecting the appliance to the building's water connection ▪ Disconnecting the water connection ▪ Connecting the appliance to the building's drain connection ▪ Disconnecting the drain connection
Start-up engineer (Service engineer)	▪ Overall responsibility for putting the combi oven into service ▪ Instructing the user

Notation for decimal points

A decimal point is always used in order to achieve international standardization.

1.4 Essential reading relating to safety

Safety information in the appliance documentation

Safety information relating to the combi oven appears only in the installation manual and the user manual.

The installation manual contains the safety information for the tasks covered by the manual and which are performed when transporting, setting up and installing the appliance and when putting the appliance into service and removing the appliance from service.

The user manual contains the safety information for the tasks covered by the manual and which are performed during cooking, cleaning and servicing work.

The safety information contained in the user manual and installation manual must always be considered to be part of the operating instructions. The safety information contained in the user manual and installation manual must always be observed when performing tasks that go beyond merely operating the software.

Parts of this document that must be read without fail

If you do not follow the information in this document, you risk potentially fatal injury and property damage.

To guarantee safety, all people who work with the combi oven must have read and understood the following parts of this document before starting any work:

- the chapter 'For your safety' on page 12
- the sections that describe the activity to be carried out

Danger symbol

Danger symbol	Meaning
	Warns of potential injuries. Heed all the warning notices that appear after this symbol to avoid potential injuries or death.



Form of warning signs

The warning signs are categorized according to the following hazard levels:

Hazard level	Consequences	Likelihood
 DANGER	Death / serious injury (irreversible)	Immediate risk
 WARNING	Death / serious injury (irreversible)	Potential risk
 CAUTION	Minor injury (reversible)	Potential risk
NOTICE	Damage to property	Potential risk

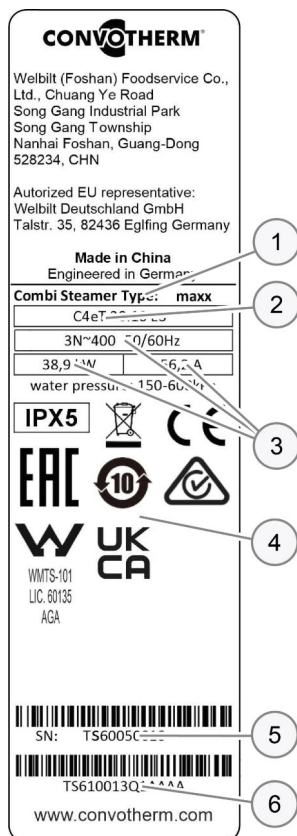
2 Design and function

2.1 Identifying your combi oven

Position of type plate

The type plate is located on the left-hand side of the combi oven.

Layout and structure of the type plate

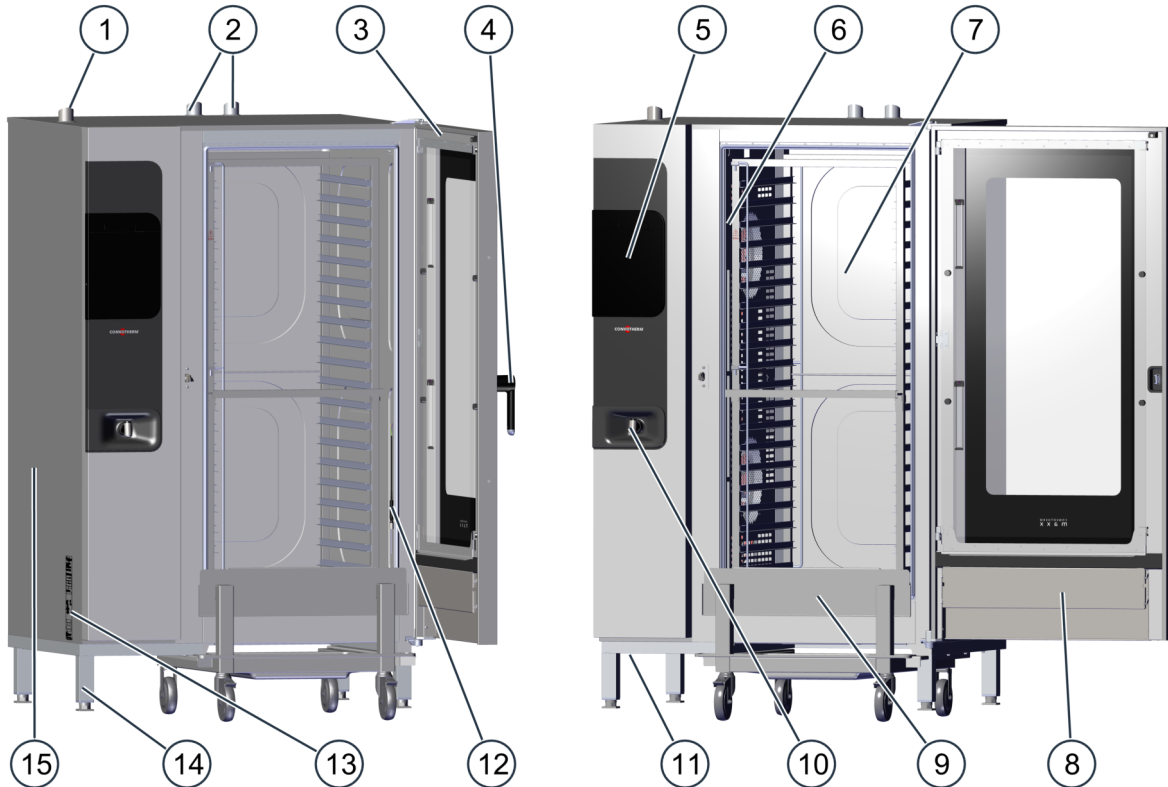


Item	Name	
1	Name of appliance Combi Steamer (also "combi oven")	
2	Trade name	
	Element	Meaning
	C4	Appliance series Convotherm maxx
	eT	easyTouch-Controls
	numbers xx.yy	Appliance size
	EB	Electric appliance with boiler
	ES	Electric appliance with water injection
	-N	for appliances with an NSF certificate
3	Electrical values	
4	Certification marks	
5	Serial number	
	Element	Meaning
	Heating method	Electric appliance (X)
	Steam generation method	- Injection (S) - Boiler (B)
	Appliance size	20.10 (6) 20.20 (7)
	Year of manufacture	2026 (26) 2027 (27) ...
	Month of manufacture	- January (01) - February (02) - March (03) ...
	Sequential number	4 digits
6	Part number	

2.2 Design and function of the combi oven

Components and function

The following illustration shows a size maxx 20.20 combi oven as an example for all appliances:



Item	Name	Function
1	Ventilation port (quantity: 1)	▪ Draws in ambient air to remove moisture from the cooking chamber ▪ Smooths out any pressure fluctuations in the cooking chamber
2	Air vent (quantity: 2)	Allows hot vapour to escape
3	Appliance door	Closes the cooking chamber
4	Door handle	▪ Opens and closes the appliance door ▪ On-latch position for opening the appliance safely ▪ Antibacterial material with silver ions ("HygieniCare")
5	Operating panel	Used for operating the appliance
6	Suction panel	▪ Distributes the heat evenly inside the cooking chamber ▪ Separates the fan compartment from the cooking chamber
7	Cooking chamber	Contains the food during cooking operation
8	Built-in preheat bridge in appliance door	Used for safety purposes during preheating and reduces energy wastage
9	Loading trolley	Holds standard-sized food containers
10	Recoil hand shower (optional)	▪ Intended solely for rinsing out the cooking chamber with water ▪ Retracts automatically into the holder after use ▪ Antibacterial ("HygieniCare")
11	Ventilation slots underneath the appliance	▪ Used for appliance ventilation ▪ Must not be covered
12	Core temperature probe (optional)	Used for measuring the core temperature

Item	Name	Function
13	Type plate	Identifies the appliance
14	Appliance feet	Can be adjusted in height to allow the appliance to be positioned horizontally
15	Side panel	Covers the appliance wiring compartment
16	Ethernet connection RJ45 (on the back of the appliance)	Used for connecting to a network or to the cloud

2.3 Layout and function of the operating panel

Layout and elements of the operating panel



Item	Name	Function
1	ON/OFF Appliance switch	Switches the combi oven on and off
2	USB-A port	For connecting a USB stick
3	Full touchscreen display	Central controls for appliance ▪ Appliance operated by touching icons on the control panel (full touch display) ▪ Status displays

3 For your safety

3.1 Basic safety code

Object of this safety code

This safety code aims to ensure that all persons who use the combi oven have a thorough knowledge of the hazards and safety precautions, and that they follow the warning notices given in the user manual and on the combi oven. If you do not follow this safety code, you risk potentially fatal injury and property damage.

Referring to the user manuals included in the customer documentation

Follow the instructions below:

- Read in full the chapter 'For Your Safety' and the chapters that relate to your work.
- Always keep to hand the manuals included in the customer documentation for reference.
- Pass on the user manuals included in the customer documentation with the combi oven if it changes ownership.

Ground rules for installation

Installation must comply with all national and regional laws and regulations and comply with the local regulations of the relevant utility companies and local authorities and with other relevant requirements.

Working with the combi oven

Follow the instructions below:

- Only those persons who satisfy the requirements stipulated in this user manual are permitted to use the combi oven.
- Only use the combi oven for the specified use. Never, under any circumstances, use the combi oven for other purposes that may suggest themselves.
- Take all the safety precautions specified in this user manual and on the combi oven. In particular, use the prescribed personal protective equipment.
- Only stand in the working positions specified.
- Do not make any changes to the combi oven, e.g. removing parts or fitting un-approved parts. In particular, you must not disable any safety devices.

3.2 Intended use of your combi oven

Intended use

- The combi oven is designed and built exclusively for cooking various foods in standardized food containers (e. g. GN containers, baker's norm baking trays). Steam, convection and combi-steam (non-pressurized superheated steam) are used for this purpose.
- The food containers can be made of stainless steel, ceramic, plastic, aluminium, enamelled steel or glass. Glass food containers must not exhibit any form of damage.
- The combi oven is intended exclusively for professional, commercial use and not for the continuous mass production of food. (IEC 60335-2-42).

Restrictions on use

Some materials are not allowed to be heated in the combi oven:

- NO dry powder or granulated material
- NO highly flammable objects with a flash point below 270 °C, such as highly flammable oils, fats, plastics
- NO food in sealed tins or jars

Requirements to be met by personnel

- The combi oven must only be operated and installed by personnel who satisfy specific requirements. Please refer to 'Requirements to be met by personnel, working positions on page 23' for the training and qualifications requirements.
- Personnel must be aware of the risks and regulations associated with handling heavy loads.

Requirements relating to the operating condition of the combi oven

- The combi oven must only be operated when all safety devices and protective equipment are fitted, in working order and fixed properly in place.
- The manufacturer regulations for operating and servicing the combi oven must be observed.
- The combi oven must not be loaded over the maximum permissible loading weight for the given model or shelf allowance; see 'Technical Data on page 66'.

Requirements relating to the operating environment of the combi oven

Specified operating environment for the combi oven

- The ambient temperature lies between +4 °C and +35 °C
- NOT a toxic or potentially explosive atmosphere
- NEVER use or store gasoline or other flammable vapours, gases or liquids in the vicinity of a combi oven
- A dry kitchen floor to reduce the risk of accidents

Specified properties of the installation location

- NO fire alarm, NO sprinkler system directly above the appliance
- NO flammable materials, gases or liquids above, on, beneath or in the vicinity of the appliance

Mandatory restrictions on use

- Shelter from rain and wind must be provided if operated outdoors
- Appliance must NOT be shifted or moved during use

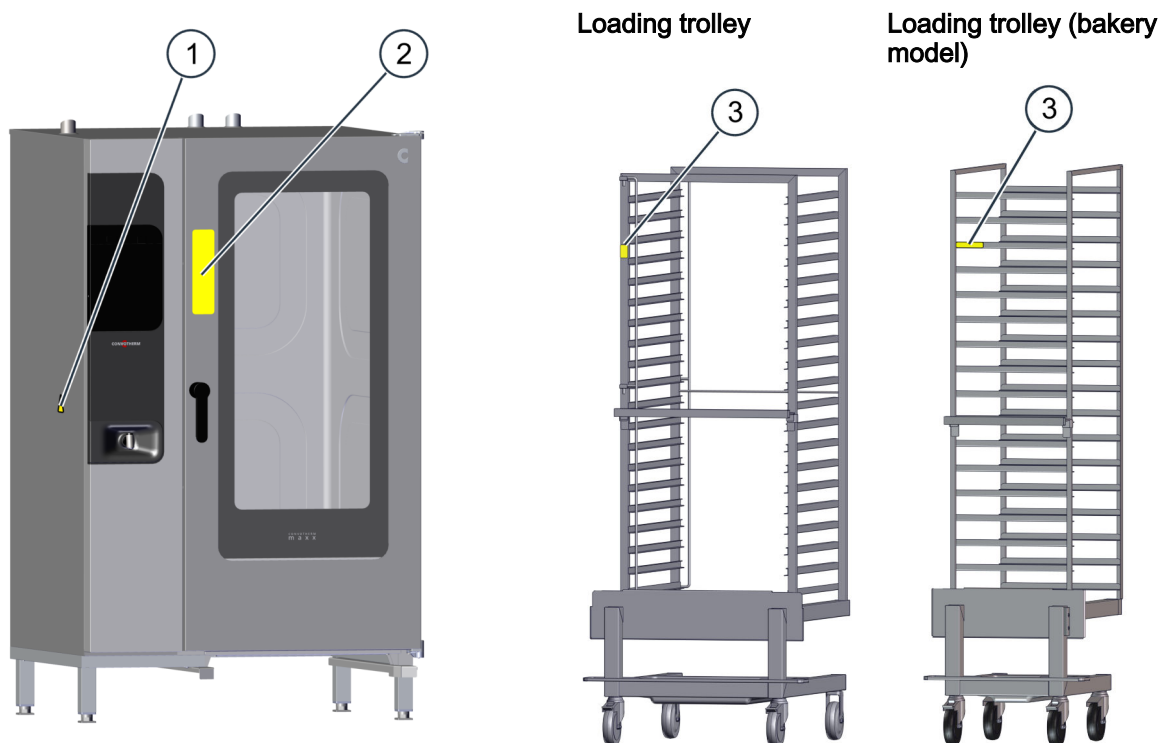
Cleaning requirements

- Use only cleaning chemicals that have been approved by the manufacturer.
- Use only materials specified by the manufacturer for cleaning; please refer to the 'Cleaning Instructions' in the user manual.
- High-pressure cleaners must NOT be used for cleaning.
- Water spray or jets must NOT be used for cleaning the exterior. Use of an external water spray is permitted solely for cleaning the cooking chamber.
- The combi oven must NOT be treated with acids or exposed to acid fumes, except for the purpose of descaling the cooking chamber by an authorized service company in accordance with the manufacturer's instructions.

3.3 Warning Signs on the Combi Oven

Positioning of warning signs

The following illustration shows a size maxx 20.20 combi oven as an example for all appliances:



Obligatory warning signs

The following warning signs are supplied as adhesive labels and must be affixed to the combi oven and the optional accessories by the installation engineer in a clearly visible position in the marked areas, depending on the installation situation.

Range	Warning sign	Description
1		Warning of dangerous electrical voltage / electric shock There is a risk of electric shock from live parts if the safety cover is opened.
2		Hot steam and vapour hazard warning There is a risk of scalding from hot steam and vapour escaping when the appliance door is opened.
2 and 3		Standard model Warning of hot liquids Spillage of hot liquid foods can result in scalds if the upper shelf levels are loaded with liquids or foods that produce liquid during cooking. Do not use shelf levels that lie above your sightline for liquid foodstuffs or food that will liquefy during cooking.

Range	Warning sign	Description
2 and 3		Bakery model Warning of hot food, hot food containers There is a risk of burns from hot food and hot food containers if food containers tip out of the shelf levels or food slips off food containers that are not held level. This risk is particularly high for shelf levels that lie above the sightline of the user.
3		Tip-over hazard warning for the loading trolley There is a risk of the loading trolley toppling over if moved. Always take great care when moving the loading trolley. When moving the loading trolley, watch out for objects in the way or unevenness in the floor.

3.4 Owner obligations

Personnel for working at the combi oven

The owner must ensure that all work relating to transportation, setting up and installing the appliance, and taking the appliance out of service is performed solely by qualified personnel as specified in 'Requirements to be met by personnel, working positions on page 23'.

Personnel for working on electrical parts

The owner/operator must ensure that only qualified electricians carry out installation, putting into service, servicing, maintenance or repair work on the combi oven.

Electrical installation, putting into service, servicing, maintenance, repair and testing work on the combi ovens must be carried out solely by authorized service representatives and in accordance with the documentation specified by Convotherm for initial start-up, servicing, maintenance and repair.

The required tasks must be performed solely by qualified electricians who are suited to do so because of their training and recent professional experience and who have the requisite knowledge of relevant standards, rules and accident prevention regulations.

Every qualified electrician who carries out installation, initial start-up, service, maintenance or repair work must have read and understood the installation manual.

Rules for working on electrical parts

The combi oven's electrical connection must be made in accordance with the respective valid regulations, accepted engineering standards and the procedures listed in the installation manual.

Before putting the appliance into service and after any servicing, maintenance or repair work, electrical safeguards and all protective equipment (mechanical and electrical) must be checked for compliance and proper function, and, if stipulated by applicable regulations, relevant measurement-based verification and documentation provided.

Before starting any work, the appliance must be disconnected from the power supply, protected against being switched on again, and checked to verify that it is actually de-energized.

After de-energization has been ascertained, a waiting time of at least 15 minutes is mandatory to allow full discharge of the DC bus capacitors.

To ensure operational and functional safety, all electrical connections must be checked and all mandatory electrical tests required for putting the appliance into service and operating the appliance must be carried out.

Cybersecurity

The owner must ensure that the measures they take in order to ensure cybersecurity are always up to date with the latest developments.

3.5 Hazards arising from the appliance

General rules for working with the appliance

The combi oven is designed to protect the user from all hazards that can reasonably be avoided by design measures.

The actual purpose of the combi oven, however, means that there are still residual risks; you must therefore take precautions to avoid them. A safety device can provide you with a certain degree of protection against some of these hazards. You must always ensure, however, that these safety devices are in place and in working order.

The nature of these residual risks and what effect they have are described below.

Moving heavy loads

When conveying and setting up the appliance, the following hazards can arise when moving heavy loads:



Risk of injury from overstressing your body

When?

- When moving or lifting the appliance

How can I avoid the hazard?

- ▷ Use a forklift truck or pallet truck to place the appliance in the installation position or to move it to a new position
- ▷ Always use the correct number of persons and observe the limits specified for lifting and carrying when adjusting the appliance position (guide value: 15 to 55 kg max., depending on age and gender)
- ▷ Observe the local occupational safety regulations
- ▷ Wear personal protective equipment

Loss of stability of appliance

When conveying and setting up the appliance, the following hazards can arise when moving the appliance:



Risk of body parts being crushed if the appliance is dropped

When?

- When moving or lifting the appliance

How can I avoid the hazard?

- ▷ Use suitable handling gear
- ▷ Move the appliance slowly and carefully, and secure it against tipping over
- ▷ Be aware of the centre of gravity to keep the appliance balanced
- ▷ Avoid jolts

Live parts

The following hazards can arise at the appliance when performing any installation work:



Risk of electric shock from live parts

Where?

- Under covers
- Under the operating panel
- On the mains power lead

How can I avoid the hazard?

- ▷ Switch off all connections to the power supply
- ▷ Take protective measures at every power switch to ensure that the power cannot be switched on again
- ▷ Wait 15 minutes to allow the DC bus capacitors to discharge
- ▷ Ensure that all electrical connections are in perfect condition and fixed securely
- ▷ Make sure that the statutory safety checks have been carried out.

Missing protective equipotential bonding system

The following hazards can arise at the appliance when performing any installation work:



Risk of electric shock from live parts

Where?

- On the appliance and on adjacent metal parts
- On the appliance and on adjacent metallic accessories

How can I avoid the hazard?

- ▷ Before preparing the appliance for first-time use, make sure that the appliance, including all metallic accessories, is connected to a equipotential bonding system.

Contact with cleaning agents

The following hazards can arise at the appliance when performing any installation work:



Risk of chemical burns or irritation to skin, eyes and respiratory system from contact with cleaning agents and their fumes

When?

- When fitting the cleaning system
- When handling cleaning chemical containers
- When aggressive cleaning chemicals are used

How can I avoid the hazard?

- ▷ Wear personal protective equipment
- ▷ Observe the labels of the cleaning chemicals or the corresponding safety data sheets
- ▷ Only use the specified cleaning chemicals

Sharp-edged sheet-metal parts

Working on the appliance can entail the following hazards:



Risk of cuts from sharp edges

When?

- When carrying out servicing work behind sheet-metal parts with sharp edges
- When handling sharp-edged sheet-metal parts

How can I avoid the hazard?

- ▷ Exercise caution when performing these tasks
- ▷ Wear personal protective equipment

General hazards

Over and above the hazards mentioned here, also be aware of the general dangers associated with the kitchen environment; please refer to the chapter 'For Your Safety' in the user manual.

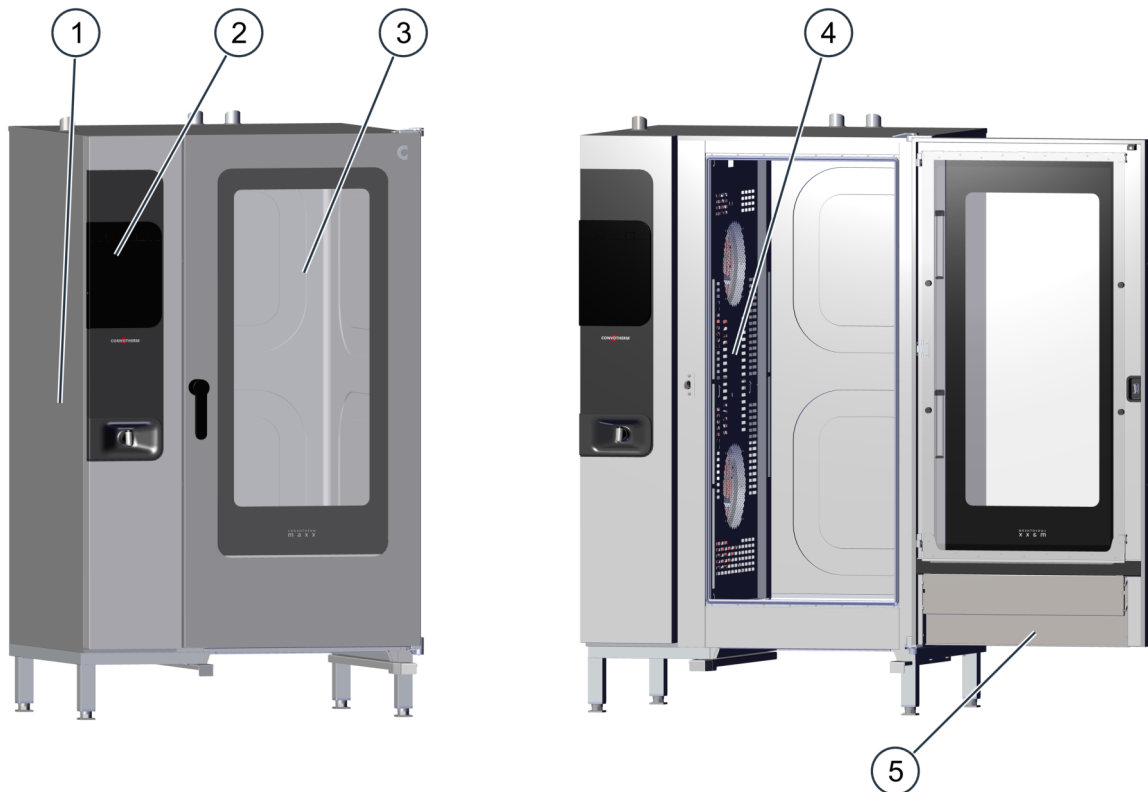
3.6 Safety devices

Meaning

The combi oven has a number of safety devices to protect the user from hazards. It is absolutely essential that all safety devices are fitted, secured correctly and in working order when operating the combi oven.

Position and function

The following illustration shows a size maxx 20.20 combi oven as an example for all appliances:



Item	Safety device	Function	Check
1	Covers can only be removed using a tool	Prevents live parts from being touched accidentally Prevents access to the moving fan wheel from the wiring compartment	Check that the covers are in place
2	Operating panel can only be removed using a tool	Prevents live parts from being touched accidentally	Ensure that the operating panel is in place
3	Appliance door	Protects the user and outside environment from hot steam	Check regularly for scratches, cracks, indentations etc. and replace door if any are found
4	Suction panel in cooking chamber; can only be removed using a tool	Prevents access to the moving fan wheels and ensures good heat distribution	See 'Releasing and securing the suction panel' in the user manual
5	Built-in preheat bridge in appliance door	Prevents scalding from escaping steam when the loading trolley is not in the appliance during preheating	None

Item	Safety device	Function	Check
6 (no picture)	Safety thermostat for cooking chamber	Switches off the appliance if temperature too high	An error code is output in the event of a fault (Please contact an authorized service company to reset the safety thermostat)
7 (installed by customer)	Disconnecter	Used to disconnect the appliance from the power supply during cleaning, repair and servicing work and in a hazardous situation	There is no need for the user to perform a test.

Safety measures

The following measures increase the safety additionally:

Measure	Function	Check
Door switch of the appliance door (electric door sensor)	- When the appliance door is opened, the switch stops: - rotation of the fan wheel (comes to a stop after a few seconds) - operation of the heating element - Distribution of the cleaning agents by the fully automatic oven cleaning system - Prompt to close the appliance door	Check door switch at low temperature Action: - Open the appliance door fully - Press Start Result: Motor must not start up.
Appliance door handle with venting position	Prevents scalding of user's face and hands from escaping steam	When the appliance is at a low temperature, check the door positions as described in 'Opening and Closing the Appliance Door Safely' in the user manual.
Restart after power failure in case cleaning agent was left in the appliance	Restarts fully automatic oven cleaning in a defined state after power failure	None

3.7 Requirements to be met by personnel, working positions

Requirements to be met by personnel

The table shows the skills required to perform the specified roles. One person may perform more than one role depending on need and organization of work, provided this person has the skills required for the role concerned.

Role	Skills required	Tasks
Owner of the combi oven or owner's member of staff who is responsible for the appliance and for the operating personnel	Knows the regulations associated with handling heavy loads	- As the representative for the entire team of operating personnel, is made aware of all safety-related functions and devices of the combi oven by the start-up engineer - As the representative for the entire team of operating personnel, is instructed by the start-up engineer on how to operate the appliance - Provides assistance as instructed with conveying the appliance within the establishment and setting up the appliance.
Equipment mover	- Trained in the use of a pallet truck and forklift truck - Knows the regulations associated with handling heavy loads	Transportation within the facility
Service engineer	- Is an employee of an authorized service company - Has relevant technical training - Is trained in the particular appliance - Knows the regulations associated with handling heavy loads - Can assess whether the electrical, water supplies and the wastewater system have been connected correctly.	- Setting up the appliance - Installing the fully automatic oven cleaning system - Putting the appliance into service - Removing the appliance from service
Electrical installation engineer	- Is an employee of an authorized service company - Has relevant professional training - Is a qualified electrician and knows the applicable technical standards	- Connecting the appliance to the building's electrical supply - Disconnecting the electrical connection
Plumber	- Is an employee of an authorized service company - Has relevant professional training	- Connecting the appliance to the building's water connection - Disconnecting the water connection - Connecting the appliance to the building's drain connection - Disconnecting the drain connection
Start-up engineer (Service engineer)	- Is an employee of an authorized service company who has overall responsibility for preparing the combi oven for first-time use - Has relevant technical training - Is trained in the particular appliance - Knows the regulations associated with handling heavy loads - Can assess whether the connections to the electrical supply, water and wastewater system have been installed correctly, and knows the applicable technical standards.	- Instructing the owner and/or member of staff with relevant responsibility - Checking the work steps and conditions according to the checklists

Working positions when installing the appliance and putting the appliance into service

The working position for personnel installing the appliance and putting the appliance into service is the entire appliance area.

3.8 Personal protective equipment

Moving and setting up the appliance

Activity	Materials used	Personal protective equipment
▪ Transportation within the facility ▪ Setting up the appliance in the installation location	▪ Forklift truck or pallet truck	▪ Protective gloves ▪ Safety boots ▪ Hard hat (e.g. when heavy loads are being lifted, working over-head,...)

Installation, putting into service and removal from service

Activity	Materials used	Personal protective equipment
Installing and removing (from service) the ▪ Electrical connection ▪ Network connection ▪ Water connection ▪ Drain connection	Tools and equipment depend on the task	Work wear and personal protective equipment depending on the job that needs doing as specified in national regulations
Fitting and removing the fully automatic oven cleaning system	Tools and equipment depend on the task	Items of protection equipment, depending on cleaning agent being used: ▪ Breathing mask ▪ Safety goggles ▪ Protective gloves ▪ Protective clothing/apron The EC safety datasheet for the relevant cleaning agent contains a more precise specification of these items. An up-to-date copy can be obtained from the manufacturer. Refer to the label on the cleaning agent concerned.
▪ Putting the appliance into service ▪ Instructing the user	Tools and equipment depend on the task	Work wear as specified in country-specific standards and directives (BGR 111 in Germany) for kitchen work, in particular: ▪ Protective clothing ▪ Heat protective gloves (compliant with EN 407 in European Union) ▪ Safety boots
Dismantling the appliance (removal from service)	▪ Lifting straps ▪ Suitable lifting gear ▪ Forklift truck or pallet truck	▪ Protective gloves ▪ Safety boots ▪ Hard hat (e.g. when heavy loads are being lifted, working over-head,...)

4 Transportation

4.1 Conveying the appliance to the installation location

Space required for conveying the appliance

Make sure that there is enough width and height along the entire route used for conveying the appliance to ensure it can get through to its installation location.

The table below shows the dimensions of the appliances including packaging, which are needed to determine the minimum doorway dimensions required to allow the appliance to be brought to its installation location:

		20.10	20.20
Width	[mm]	1170	1415
Height	[mm]	2150	2150
Depth	[mm]	970	1150

Load bearing capability for conveying the appliance

Provide moving equipment that is rated capable of carrying the load.

Refer to the weight of the appliance including packaging to determine the minimum load capacity of the means of transport, see 'Dimensions and weights on page 66' in the Technical data.

Conveying the appliance to the installation location for the first time

Please observe the following points when conveying the appliance:

- Always move the appliance on a pallet.
- Always move the appliance in an upright position.
- Use a forklift truck or pallet truck to lift the appliance.
- Move the appliance slowly and carefully, and secure it against tipping over.
Make sure that you do not knock against things with the appliance.
Avoid moving appliance along uneven routes or up or down steep slopes.

4.2 Preparing to unpack

Preparing to unpack

Perform the following tasks before unpacking the appliance:

- Check the outer packaging for damage.
- Take the unpacking instruction leaflet out of the shipping documents.

4.3 Scope of delivery

Appliance and Accessories

The following parts are supplied:

- 1x combi oven
- 1x loading trolley
- 1x suction nozzle with hose for cleaning agent
- 1x suction nozzle with hose for rinse aid
- 1x empty canister 10 litres for cleaning agent (depending on region)

Documentation

The following documents are supplied with the appliance:

- 1x Installation manual
- 1x User manual (hardware)
- 1x Operating instructions (software)

Other

The following additional materials are included with the appliance:

- 1x sheet with warning sign adhesive labels

5 Setting up the appliance

5.1 Adjacent systems

Dealing with the exhaust air

During operation, the combi oven generates heat and moisture, which mainly escape upwards into the surrounding air as hot vapour from the air vent. It is not permitted to connect air ventilation pipes directly to the air vent of the combi oven.

The manufacturer recommends using a fume extractor hood or ceiling-fitted ventilation equipment to extract the exhaust air from the room in which the combi oven is operating.

In order to avoid the risk of fire or other damage to the building such as corrosion, mould growth and/or reduced stability, there must be a sufficiently large distance between the top of the appliance and the ceiling. This distance depends on the following factors:

- For guidance on the minimum vertical clearance, see 'Requirements for the installation location' on page 29
- Type of air-vent system
- the nature of the ceiling in the installation location

It is a fundamental requirement that the combi oven always be set up, installed and operated in accordance with national and local standards and regulations (in the latest version).

5.2 Requirements for the installation location

Meaning

This section contains information to help you choose a suitable installation location for the appliance. Inspect the intended installation location carefully to ensure it is suitable before bringing the appliance there and starting the installation.

Regulations for setting up the appliance

National, regional and local standards and regulations relating to workplaces in professional kitchens must be observed.

For appliances with an NSF certificate, the National Sanitation Foundation (NSF) regulations must also be observed.

The rules and regulations of the regional authorities and supply companies that apply to the installation site concerned must be observed.

Rules for setting up the appliance safely

To prevent hazards that arise from the installation location and environment of the appliances, the following rules must be observed:

- Compliance with the operating conditions must be possible. For operating conditions, see 'Requirements relating to the operating environment of the combi oven' on page 13.
- There is a fire hazard from the dissipated heat from hot surfaces. Therefore there must not be any flammable materials, gases or liquids above, on, beneath or in the vicinity of the appliance. When choosing where to install the appliance, it is essential to remember this requirement together with the information in the topic 'Adjacent systems on page 28' and the minimum space required for the appliance.
- Heat sources in the vicinity of the appliances must be at a minimum distance of 500 mm.
- The minimum distance to deep-fat fryers or appliances using hot, uncovered fat in the vicinity is 1.00 m. The appliance must be installed in such a way that liquid from the appliance or liquid from cooking processes cannot reach deep-fat fryers or appliances using hot, uncovered fat.
- The appliance must not be installed directly under a fire alarm or sprinkler system. Fire alarm installations and sprinkler systems must be set up to handle the level of steam and vapour expected to escape from the appliance.
- It must be possible to set up the appliance in the installation position so that it cannot tip over or slide about. The supporting surface must comply with requirements.
- With the equipment currently fitted in this model, the appliance must not be used in environments in which the appliance might be subject to strong vibrations or jolting (e.g. on vehicles or on ships).

Requirements for the flooring

The flooring must have the following properties:

- The flooring must be flat and horizontal.
- The supporting surface must be able to bear the weight of the appliance.

The appliance weight depends on the model and fitted equipment and is made up of the following values:

- Weight of your combi oven when empty
- Maximum permissible loading weight
- Maximum weight of cleaning chemicals

Add up the following individual weights to find the total appliance weight:

		20.10	20.20
Individual weights			
Weight of combi oven when empty	[kg]	See weight excluding packaging in 'Technical data' on page 66	
Maximum permissible loading weight	[kg]	100	180
Maximum weight of cleaning agents	[kg]	20	20

5.3 Space required

Actual space requirements

Far more room than the specified space requirement is needed in front of the appliances to operate the combi ovens safely, in particular to handle hot food safely.

For the distance that is actually needed between the top of the combi oven and the ceiling, please refer to the topic 'Adjacent systems on page 28'.

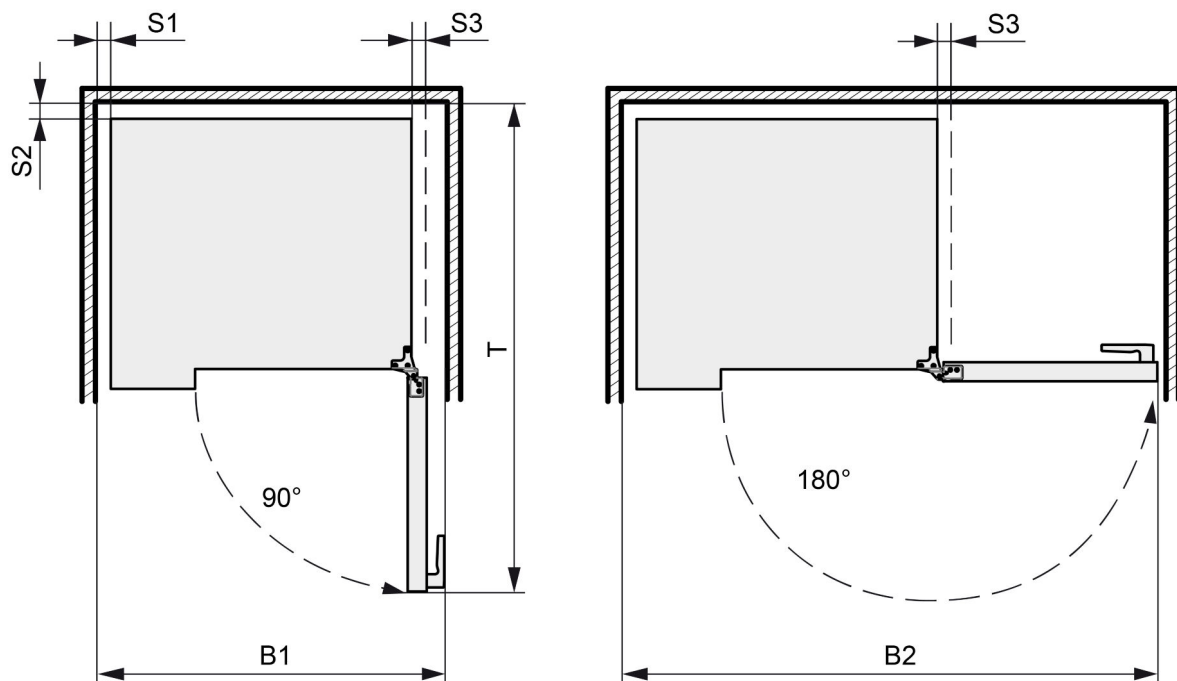
Larger wall gaps are generally recommended to provide access for servicing.

In the installation location, the following parts must not be covered, obstructed or blocked (see also 'Design and function of the combi oven on page 9'):

- Air vent on the top of the appliance
- Ventilation port on the top of the appliance
- Ventilation holes in the appliance floor

Space required - width and depth

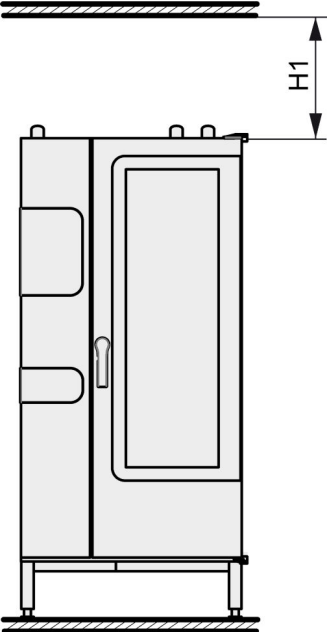
The following diagram and table show the space required for the appliance for different installation and operating situations. They also show the minimum horizontal distances from adjacent walls and surfaces. The safety clearances on the left, right and rear must always be complied with.



			20.10	20.20
Meaning				
B1	Width requirement, appliance door open at 90°	[mm]	1064	1309
B2	Width requirement, appliance door open at 180°	[mm]	1505	1955
T	Depth requirement when opening the appliance door	[mm]	1430	1835
S1	Safety clearance on left-hand side	[mm]	50	50
S2	Safety clearance at rear	[mm]	50	50
S3	Safety clearance on right-hand side	[mm]	50	50

Height requirement

The following diagram and table show the vertical space needed by the appliance:



The service engineer who is responsible for setting up the appliance must take into account the nature of the ceiling and any adjacent systems that may be used (air ventilation system, vapour extractor hood etc.) when designing the particular clearance needed between the top of the appliance and the ceiling. In this context, the vertical distance H1 must be understood as a guide value for the minimum vertical clearance.

		20.10	20.20
Meaning			
H1	Guide value for the minimum vertical clearance	[mm] 500	500

5.4 Taking the appliance off the pallet

⚠ Rules for lifting the appliance safely

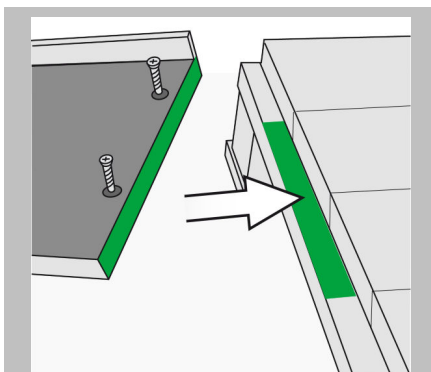
Observe the following rules to prevent the appliance toppling over:

- Always lift the appliance carefully and secure it against tipping over.
- Be aware of the centre of gravity to keep the appliance balanced.

Taking the appliance off the pallet

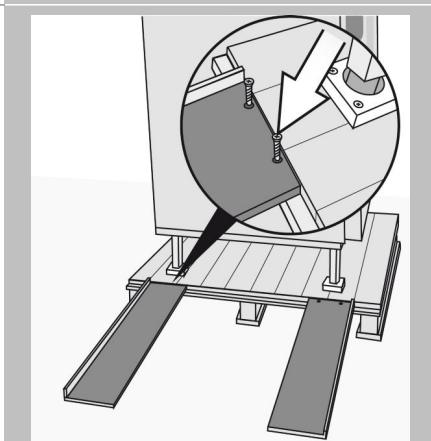
The weight of your appliance is given under 'Technical data' on page 66.

1.



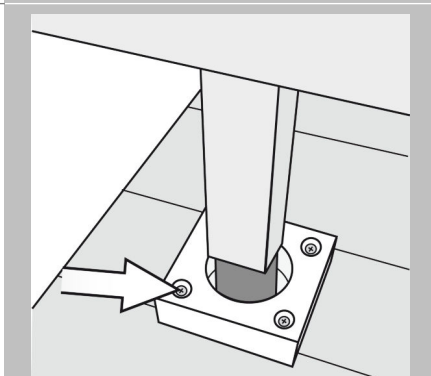
On one side of the appliance, place the slides on the green markers with the safety lip facing outwards in each case. Make sure that you push each slide right up against the pallet so that the screws have sufficient material to screw into.

2.



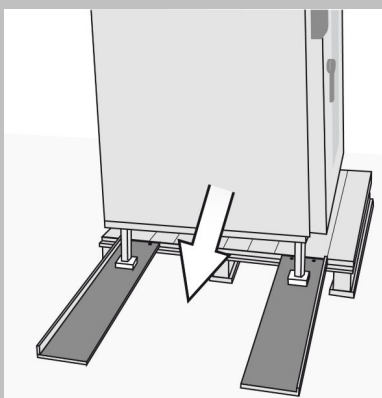
Screw the two slides onto the pallet.

3.



Remove all the screws from the slide blocks.

4.



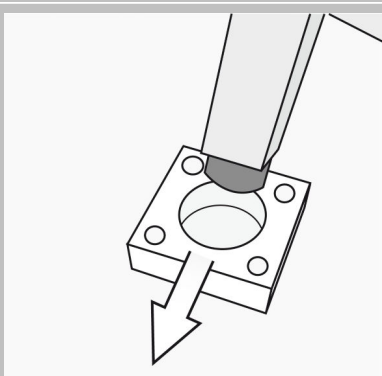
⚠ WARNING

Risk of crushing from the appliance tipping over

- Before sliding the appliance off the pallet, make sure that the slides are screwed firmly to the pallet.
- Take care not to let an appliance foot slip off the side of the slide.
- Be careful when transferring the appliance from the slide onto the non-slip floor.

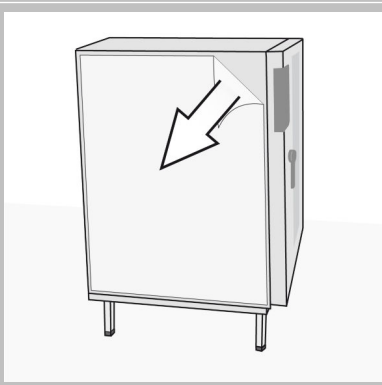
Use at least two people to slide the appliance, on the slide blocks, down the slides and onto the floor to the installation location.

5.



Lift up the combi oven slightly and remove the slide blocks.

6.



Remove the protective plastic from the combi oven.

5.5 Setting up the appliance on the floor

⚠ Rules for setting up the appliance safely

Observe the following rules to ensure that the appliance is installed in a stable situation:

- It must be possible to set up the appliance in the installation position so that it cannot tip over or slide about. The supporting surface must comply with requirements.
- It must be possible to wheel the loading trolley up to the cooking chamber on a flat surface that is clear of obstructions.
- The appliance must not be installed directly above a drainage gutter.

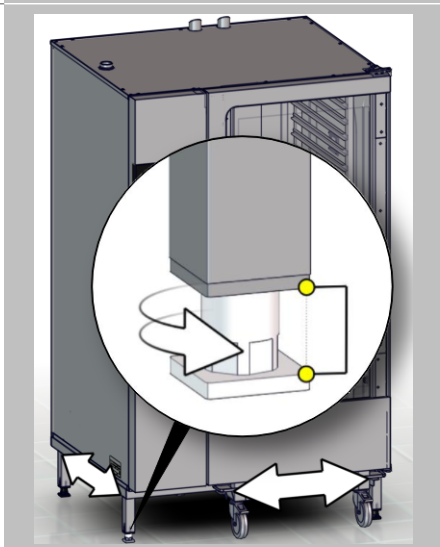
Setting up the appliance

1.



Position the appliance on the floor.

2.



Ensure the appliance is horizontal by adjusting the height of the appliance feet.

Use a spirit level to ensure the unit is horizontal in all directions.

Make sure that the loading trolley can move freely into the appliance and stands horizontally in the appliance.

The absolute tilt of the appliance in operation must not exceed max. 2° (3.5%) .

6 Installation

6.1 Electrical installation

6.1.1 Planning the electrical installation

Meaning

It is crucial to the safe and reliable operation of the appliance that the electrical system is installed carefully and correctly. All the rules and regulations listed here, and the described procedure, must be strictly followed.

⚠ Rules for safe electrical installation of the appliance

Observe the following rules to prevent hazards caused by faulty electrical connections:

- The case of the appliance must be grounded and connected to the equipotential bonding system in accordance with the recognized codes of practice.
- The connection to the protective equipotential bonding system must be made using a green/yellow single wire or 1-pole cable with stranded wire on the earthing bolt of the appliance. The conductor cross-section should be at least 10 mm².
- All electrical connections must be checked when the appliance is put into service to ensure cables are laid correctly and connections are made properly.

Regulations for the electrical installation

Observe the following requirements to prevent hazards caused by faulty electrical connections:

- The electrical supply must be connected in accordance with German VDE requirements 0100 and/or with applicable local regulations of the professional associations and of the relevant utility.

Equipment provided by customer and electrical installation regulations

The table below shows what equipment must be provided by the customer and what regulations must be observed when connecting the appliance.

Equipment	Rules
Fuse	The appliance must be protected against short circuits and overloads and connected in accordance with the applicable local regulations and country-specific installation regulations.
Protective equipotential bonding system	The appliance must be incorporated in a protective equipotential bonding system. Protective equipotential bonding system: Electrical connection that ensures that the frames of electrical equipment and any external conductive components are at an equal (or practically equal) potential.
RCD for detecting all current types (type A)	If the installation regulations require protection by a residual-current device (RCD), then suitable residual-current devices meeting the relevant national regulations must be used. If the installation includes more than one appliance, one residual-current device must be provided for each appliance.
Disconnecter for fixed connection	An easily accessible all-pole disconnector with a minimum contact separation of 3 mm must be installed close to the appliance. The appliance must be connected after this disconnector. The disconnector is used to disconnect the appliance from the electrical supply for cleaning, maintenance, servicing and repair work.

Recommended residual-current device for single-phase variable frequency converter

The appliance is fitted with two single-phase variable frequency converters and built-in EMC filter plus an EMC line filter. These devices may result in a leakage current of more than 3.5 mA per variable frequency drive.

Fit a residual current device (RCD) of type A/B .

Recommended residual-current device for three-phase variable frequency converter

The appliance is fitted with one three-phase variable frequency converter and built-in EMC filter plus an EMC line filter. These devices may result in a leakage current of more than 3.5 mA per variable frequency drive.

Fit a residual current device (RCD) of type B .

Properties of the residual-current device

The residual-current device (RCD) must have the following properties:

- Filter for filtering out RF currents
- "Time delayed" trip characteristic for RCD devices with trip threshold ≤ 30 mA: prevents RCD being tripped by charging currents of capacitors and parasitic capacitances when appliance is switched on.
- "Leakage current protection, type SI" trip characteristic for RCD devices with trip threshold ≤ 30 mA: insensitive to nuisance tripping

Mains supply connection

The power cord must be an oil-resistant, sheathed and flexible cable in accordance with IEC 60245 (e.g. H05RN-F, H07RN-F). A maximum cable length of 5 m is recommended.

The appliance does not need to be connected in a specific phase configuration or direction of rotation.

The cross-section of the mains supply cable must be specified in accordance with the recognized codes of practice.

6.1.2 Carrying out the electrical installation

Requirements

Check that the following requirement has been met:

- The connection point of the appliance is disconnected from the customer power supply and protective measures taken to ensure the power cannot be switched on again.

Checking the supply ratings and electrical connections

- | | | |
|----|---|---|
| 1. |  | Remove the side panel from the appliance.
The circuit diagram and spare parts list are located in the wiring compartment. |
| 2. |  | Check that the electrical supply ratings on the type plate (see 'Identifying your combi oven on page 8') match the figures for the building's power supply and those given in the circuit diagram. It is only permitted to connect the appliance if all these values tally with each other. |
| 3. |  | Check all screw connections and terminals on the appliance.
The connections may have worked loose during transport. |

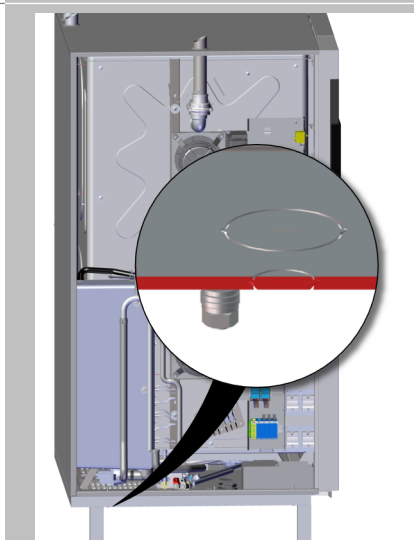
Carrying out the electrical installation

1.



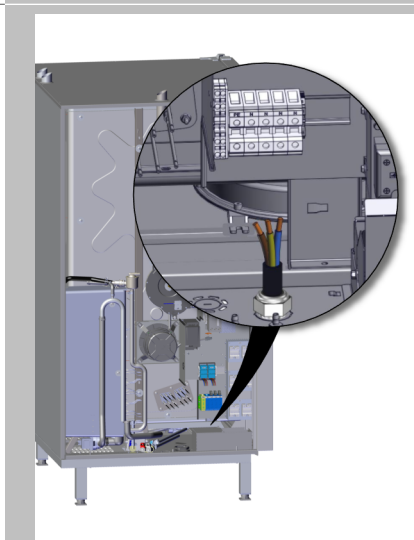
Loosen the screws on the left side panel of the appliance and remove the side panel of the appliance.

2.



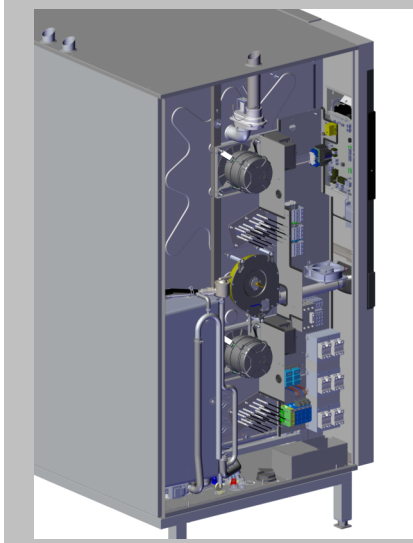
Connect the appliance to a protective equipotential bonding system at the designated connection point. The connection to the protective equipotential bonding system must be made using a green-yellow single wire or 1-pole cable with green-yellow stranded wire on the earthing bolt of the appliance. The conductor cross-section should be at least 10 mm²

3.



Use the mains power cable to connect the power supply to the appliance at the -1X0 terminal block. Make sure that the cable gland is tightened firmly because it also acts as a cable strain relief.

4.



For C4 ES:

Reset the safety thermostat for the cooking chamber if necessary.

For C4 EB:

Reset the safety thermostats for the cooking chamber and boiler if necessary.

5.



Fit the side panel on the appliance and check that it is fixed correctly in place.

6.1.3 Connecting an energy optimization system

Purpose of an energy optimization system

You can connect the combi oven to an energy optimization system (e.g. SICOTRONIC). An energy optimization system smooths out peaks in power consumption that occur during operation of your appliances, and can thereby help to reduce your energy costs.

Configuring an energy optimization system

The energy optimization system must be configured as follows:

- The connecting lines between the appliance and the energy optimization system should not be longer than 5 m. If this is not possible, the connection must be carried out using an intermediate relay located at a maximum distance of 5 m from the appliance.
- The continuous switch-on time for the combi oven must be set to at least 8 minutes to be certain that the target cooking temperature is reached.
- The energy optimization system must not disconnect the power for longer than 30 seconds because the cooking result cannot be guaranteed for a longer interruption in the power supply.

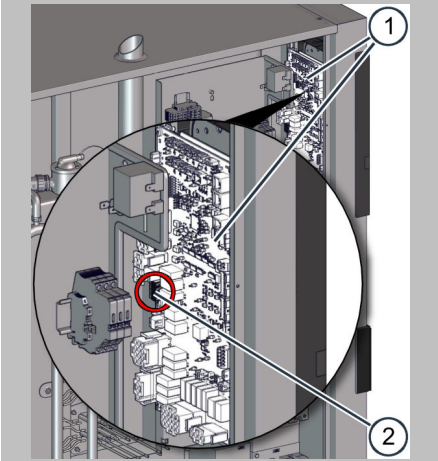
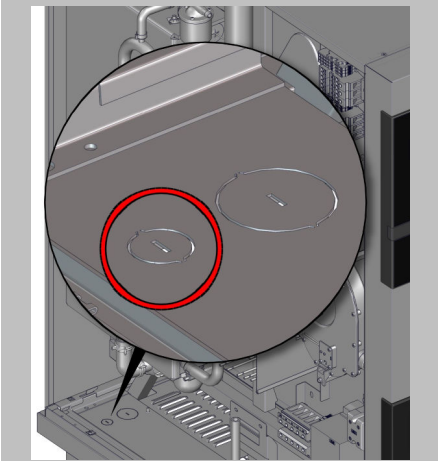
When connecting the system, refer to the circuit diagram and operating instructions of the energy optimization system.

Accessories required

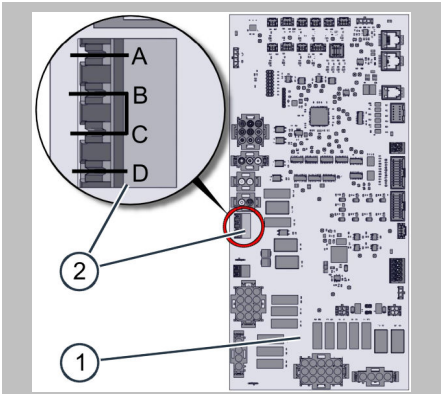
You need the following parts to connect the energy optimization system:

- Connecting cable for energy optimization system
- Cable gland M20
- Cable ties

Connecting an energy optimization system

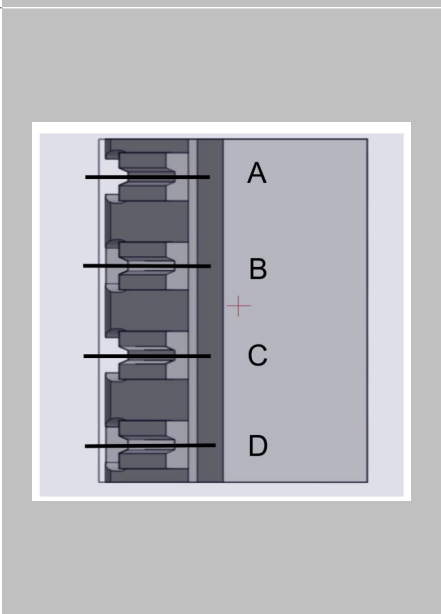
1.  Disconnect the energy optimization system and the combi oven from the power supply.
2.  Remove the side panel from the combi oven in order to access terminal block -X37 (2) on the system interface board (SIB) (1) in the area behind the operating panel.
3. 
 - Tap out the smaller, pre-perforated knock-out in the floor panel of the combi oven, at the position indicated.
 - Insert the cable gland in the knock-out then feed the connecting cable for the energy optimization system through the cable gland into the wiring compartment of the combi oven.
 - Route the connecting cable to the SIB and fix it in the wiring compartment, e. g. using cable ties to attach it to an existing wiring harness.

4.



Remove the wire link between the terminals (B) and (C) on terminal block -X37 (2).

5.



Connect the terminals (A), (B), (C) and (D) of terminal block -X37 (2) to the energy optimization system.

Terminal	Combi oven	Energy optimization system
A	Phase, when combi oven is on	-
B	Phase, when combi oven heating element is on	Switching relay
C	Heater enable, B and C must be connected by switching relay in the energy optimization system in order to enable heating	Switching relay
D	Neutral	-

6.



Refit the side panel on the combi oven.

7.



Put the combi oven and energy optimization system into operation.

6.1.4 Connecting the water treatment filter monitor

Purpose of the water treatment filter monitor

You can provide an electrical connection from the combi oven to the remote status indicator of a connected water treatment filter. The combi oven software will then monitor the status of the water treatment filter. A warning message tells you when the filter capacity is down to only 10% so that you know that the water treatment filter will need changing soon.

Accessories required

- 2-core connecting cable (approx. length 2 m); recommended: Ölflex H05VV5-F, 2 x 0.5 mm
- DN 50 diaphragm grommet
- Cable ties

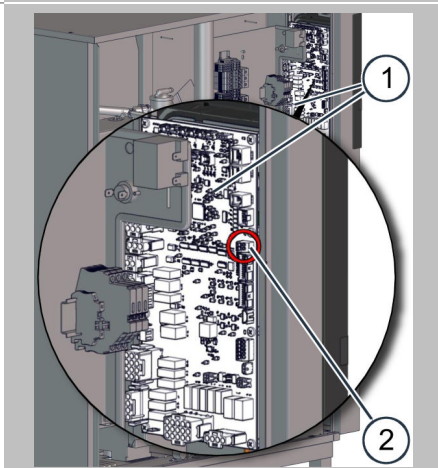
Connecting the water treatment filter monitor

1.



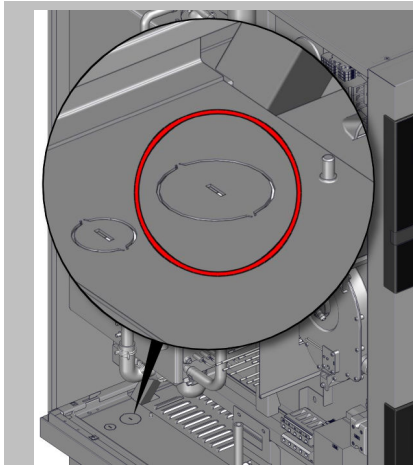
Disconnect the combi oven from the power supply.

2.



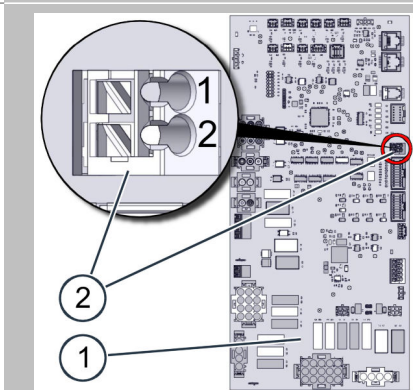
Remove the side panel from the combi oven in order to access terminal block X33 (2) on the system interface board (SIB) (1) in the area behind the operating panel.

3.



- Tap out the larger, pre-perforated knock-out in the floor panel of the combi oven, at the position indicated.
- Insert the diaphragm grommet in the knock-out then feed the connecting cable for the water treatment filter monitor through the grommet into the wiring compartment of the combi oven.
- Route the connecting cable to the SIB and fix it in the wiring compartment, e. g. using cable ties to attach it to an existing wiring harness.

4.



Connect the connecting cable for the water-treatment filter monitor to the combi oven in accordance with the PIN assignment shown below.

PIN	Assignment
1	Signal
2	GND

5.



Refit the side panel on the combi oven.

6.



Put the combi oven and energy optimization system into operation.

6.2 Network connection

6.2.1 Planning the network connection

Meaning

Safe and reliable operation of the appliance depends on access to the Internet, and therefore it is crucial to that the network connection is installed carefully and correctly.

Contact your Service partner with regard to this matter.

Customer-installed equipment and rules relating to the network connection

The table below shows what equipment must be provided by the customer and what regulations must be observed when connecting the appliance.

Equipment	Rules
Ethernet connection RJ45	There must be a network connection for the combi oven installed close to the appliance. When connecting more than one combi oven, a dedicated network connection must be installed for each appliance. Alternatively, the appliances can be networked together by additionally installing a router.

Position of the network port



Item	Name	Function
1	Ethernet connection RJ45	Network port on the rear of the combi oven

6.2.2 Connecting to the network

Installation procedure

Follow the steps below to establish an Internet connection:

-  1. Use a network cable to connect the network socket on the combi oven to the network socket which the customer has pre-installed and given clearance for use.
-  2. When putting the combi oven into service, check whether the 'KitchenConnect®' Internet icon in the user interface indicates that the connection is enabled.

Checking the network connection

Indicator in easyTouch	Button	Meaning
	White 'KitchenConnect®'	Internet is enabled, installation successful
	Grey 'KitchenConnect®'	Internet is disabled, installation unsuccessful

6.3 Water connection

6.3.1 Water supply

Regulations for the water connection

Water pipes and connections must comply with local and national regulations. In particular these include:

- DIN 1988 part 2 and part 4
- EN 61770
- EN 1717

For appliances with an NSF certificate, the following regulations must also be observed:

- Regulations of the National Sanitation Foundation (NSF)
- International Plumbing Code 2003
- International Code Council (ICC)
- Uniform Plumbing Code 2003, International Association of Plumbing and Mechanical Officials (IAPMO)

The appliance must be installed with suitable backflow protection to comply with applicable federal, state, and local codes.

For Australia and New Zealand:

Water installation must be done in compliance with AS/NZS 3500 Plumbing and Drainage Code.

For Denmark, Sweden, Norway and Finland:

Only connect the combi oven to a water supply source with an inlet water pressure between 0.15 MPa and 0.60 MPa. If the water pressure is higher, a pressure regulator must be installed upstream of the appliance.

Connecting the water supply

The appliance is designed to be permanently connected to the customer's water supply. The water connection must be fitted with a stopcock. Dirt filters must be provided.

Connecting the water supply with a flexible connecting pipe

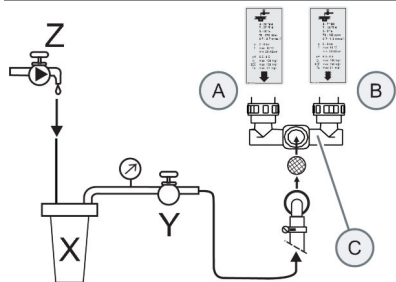
The combi oven can be connected to the water supply using a flexible DN10 connecting pipe to DIN EN 61770 with a 3/4" screw connection. Dirt filters must be provided.

Water quality and water hardness

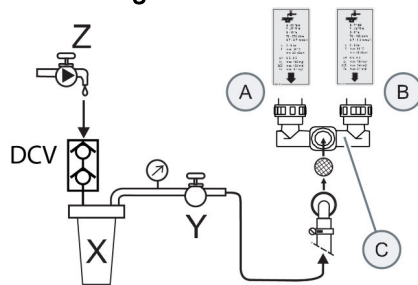
- Find out the water quality and water hardness from your local water supply company, or test the water quality as described in 'Testing the water quality' on page 54.
- Information on the required drinking water quality is given under 'Technical Data' on page 66.
- If necessary, provide suitable water treatment measures. For instance these may be installing a water filter and/or a water treatment system.
- Test the water quality as described in 'Testing the water quality' on page 54 to ensure that after water treatment, the water meets the specified quality values.
- Please note that the indicated recommended values refer to the general hardness (GH °dH, TH, ppm CaCO₃ or mmol/l alkaline earth ions). Other minerals dissolved in water can also create deposits. The need to remove deposits will increase depending on which types of these minerals are present in the water and the service life of the appliance. The deposits can be removed with a chemical cleaning agent such as a descaler or by connecting a water treatment system (partial demineralization). Consult the Technical Service team for the right measures to take in individual cases.

Connection diagram with water treatment

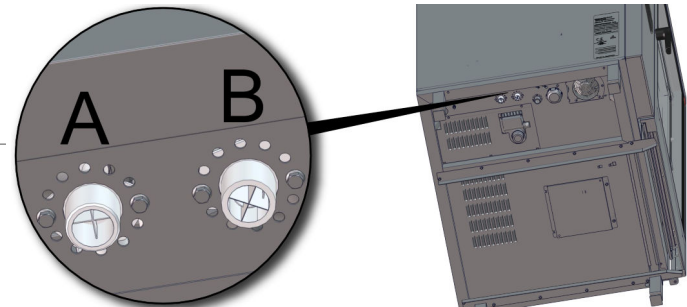
Connection diagram



United Kingdom:



Connections on the appliance

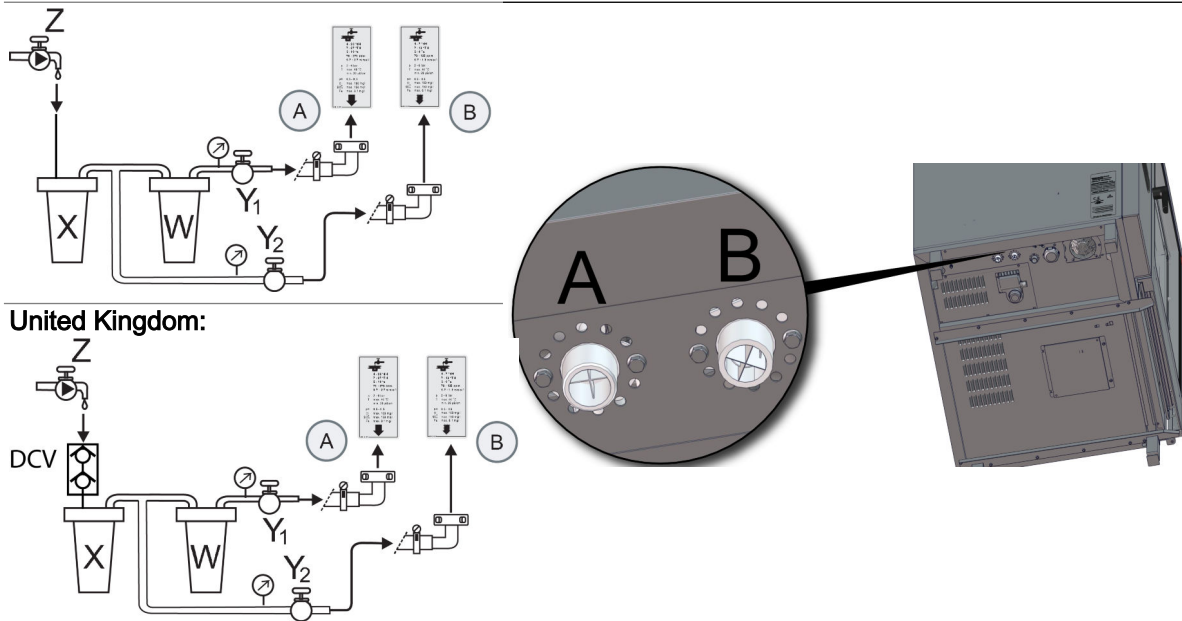


Item	Name	Explanation
A	Water connection for boiler and water injection	Drinking water quality, see 'Technical data on page 66'
B	Water connection for cleaning system and recoil hand shower	Drinking water quality, see 'Technical data on page 66'
Z	On-site water pipe with stop-cock	Water quality: Drinking water
X	0.08 mm sediment filter	A 0.08 mm sediment filter must be installed if the water has a high level of impurity.
Y	Shut-off device with dirt filter	Water tap
DCV	Double check valve	The regulations for sanitary installations in Great Britain require this component to be fitted before any installed filtration or treatment devices.

Connection diagram with water treatment

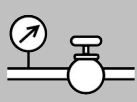
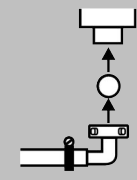
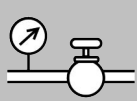
Connection diagram

Connections on the appliance



Item	Name	Explanation
A	Water connection for boiler and water injection	Drinking water quality, see 'Technical data on page 66'
B	Water connection for cleaning system and recoil hand shower	Drinking water quality, see 'Technical data on page 66'
Z	On-site water pipe with stop-cock	Water quality: Drinking water
X	0.08 mm sediment filter	A 0.08 mm sediment filter must be installed if the water has a high level of impurity.
W	Water treatment	A water treatment system must be installed to comply with the nominal values.
Y	Shut-off device with dirt filter	Water tap
DCV	Double check valve	The regulations for sanitary installations in Great Britain require this component to be fitted before any installed filtration or treatment devices.

Installing the water supply

1.		Flush the water connection of the customer's water supply pipe (Z).
2.		Fit the sediment filter (X) and, if necessary, a water treatment system (W).
3.		Fit a separate shut-off device for each appliance (Y or Y1/Y2).
4.		Fit a suitable backflow preventer (V) in the water supply line (see connection diagram). For the United Kingdom: Fit the required check valve (DCV) in the water supply (see connection diagram).
5.		Connect the appliance as shown in the 'Connection drawing' on page 74.
6.		Flush through the sediment filter by operating the recoil hand shower.
7.		Once the water supply has been installed, close the shut-off device.
8.		Inform the user about the service intervals for the filters, and the water treatment system if applicable.

6.3.2 Test the water quality

Materials required

You will need the following materials:

- 1 sample container for taking samples
- 1 conductivity meter (part no. 3019007)
- Analysis kit for measuring general hardness and carbonate hardness, including two analysis containers (part no. 3019010)
- Protective gloves

Test the water quality

Measure the electrical conductivity and general hardness of the water By following the instructions included with the tester and analysis kit.

Compare the measured values with the recommended values; see 'Technical data on page 66'.

6.3.3 Drain connection

Regulations for the drain connection

You must comply with local and national regulations on the design of the drain connection and on the composition of the wastewater. These include:

- DIN 1988-100
- DIN EN 1717
- Local wastewater regulations

For appliances with an NSF certificate, the following regulations must also be observed:

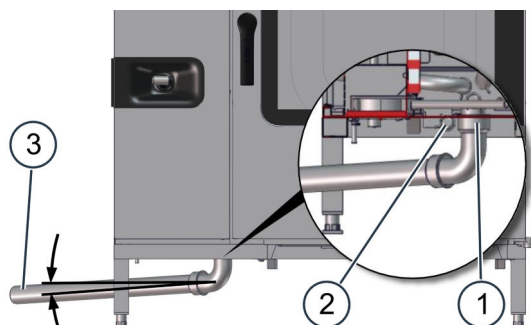
- International Plumbing Code

⚠ Rules for safe installation of the drain connection

Observe the following rules to prevent hazards caused by a faulty drain connection:

- There must be no restriction or reduction in the cross-section of the drain pipe.
- The slope of the drain pipe must be at least min. 3.5% (2°).
- If more than one appliance is connected to one drain pipe, this pipe must be large enough to allow the wastewater to flow out unchecked.
- The appliance must be connected to the drain using a NON-flexible pipe. Drainage into an open tub or channel is recommended; alternatively, a fixed connection can be installed.
- Due to possible vapours, open drains or ducts must be located at least 60 cm outside the footprint of the appliance.

Connection diagram



Item	Name	Function
1	Appliance drain	▪ On the appliance floor, connection point C, see 'Connection drawing' on page 74
2	Safety overflow	▪ On the appliance floor, connection point M, see 'Connection drawing' on page 74 ▪ Used to drain away water in the event of a fault (blockage).
3	Drain pipe DN 50	▪ Minimum internal diameter = 46 mm ▪ Min. slope min. 3.5% (2°) Drain options: ▪ Open tank ▪ Gully ▪ Fixed connection

Connecting the appliance to the drain

Connect the appliance as shown in the connection diagram.

6.4 ConvoClean installation

6.4.1 Layout of the fully automatic oven cleaning system with canisters

Cleaning agent and rinse aid

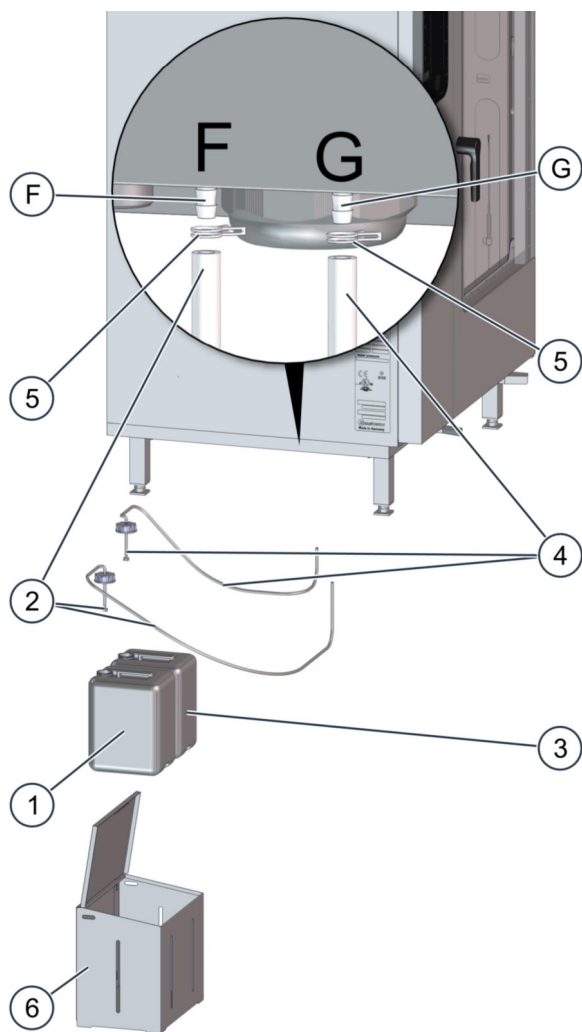
Use only the cleaning fluids specified here to clean the combi oven.

NOTICE! Damage resulting from improper use of cleaning chemicals invalidates any warranty claims.

The following table shows the approved cleaning agent and rinse aid:

Name	Product	Label color
Cleaning agents	ConvoClean forte / new	red
Rinse aid	ConvoCare	green

Layout of the fully automatic oven cleaning system with connected canisters



Parts of the fully automatic oven cleaning system with connected canisters

Item	Name	Colour coding
F	Appliance connector for rinse aid supply	green (lettering)
G	Appliance connector for cleaning agent supply	red (lettering)
1	Canister containing ConvoCare rinse aid (ready-to-use solution in defined mixing ratio)	green (label)
2	Suction tube for rinse-aid suction nozzle	green (tube)
3	Canister containing ConvoClean new or ConvoClean forte	red (label)
4	Suction tube for cleaning agent suction nozzle	red (tube)
5	D10 wire clip	-
6	Box for cleaning-fluid canisters (optional accessory)	-

Box for cleaning-fluid canisters (optional accessory)

The box for the cleaning-fluid canisters (6) is an optional accessory for the combi oven and is available from the manufacturer.

The box can alternatively be screwed to a wall using the holes in the rear wall of the box. It is best to fit the box at a nominal distance above the floor to make it easier to clean the kitchen floor. When you fit the box, follow the requirements in 'Installation location for the cleaning agent and rinse aid canisters'.

Installation location for the cleaning agent and rinse aid canisters

Install the canisters as follows:

- The canisters should be located for easy access beside the appliance on a flat surface.
- The surface on which the canister sits must not lie above the level at which the appliance feet meet the appliance case.
- The surface on which the canister sits must not lie more than 1 metre below this level.

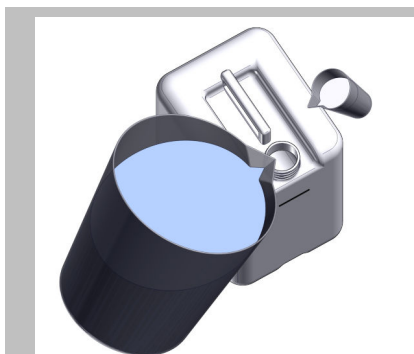
6.4.2 Connecting the fully automatic oven cleaning system

Requirements

- Cold water supply connected as specified in the chapter 'Water supply' on page 50
- Drain connected as specified in the chapter 'Drain connection' on page 55
- Technical figures comply with requirements given in the 'Technical data' on page 66 section

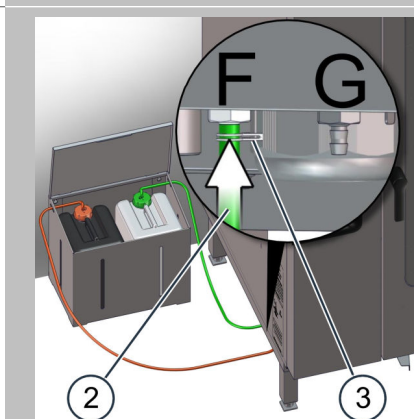
Connecting the fully automatic oven cleaning system to canisters

1.



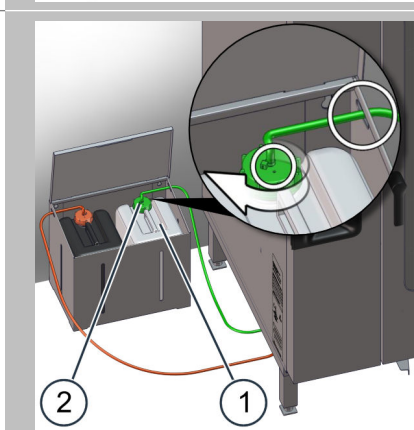
Mix the ConvoCare K concentrate with soft water in the empty canister for ConvoCare rinse aid. Follow the instructions in the user manual on mixing the ConvoCare rinse aid in the canister.

2.



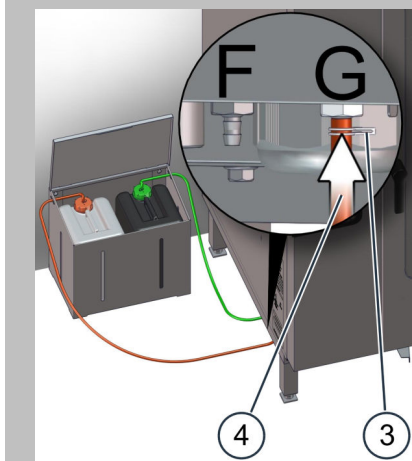
Plug the green suction tube (2) for the ConvoCare rinse aid onto the connector nipple of the rear tube fitting (F) and secure the tube in place with the wire clip (3) (see adhesive label for rinse-aid connection on the left-hand side of the appliance).

3.



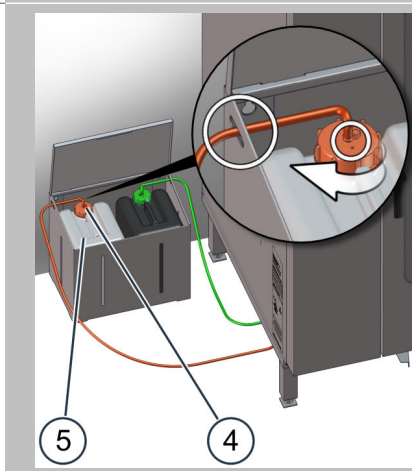
Insert the suction nozzle on the green suction tube (2) into the rinse aid canister (1). There must be no kinks in the tube and the vent hole in the canister must be open and unblocked.

4.



Plug the red suction tube (4) for the ConvoClean forte or ConvoClean new cleaning agent onto the connector nipple of the front tube fitting (G) and secure the tube in place with the wire clip (3) (see adhesive label for cleaning-agent connection on the left-hand side of the appliance).

5.



Insert the suction nozzle on the red suction tube (4) into the cleaning-fluid canister (5). There must be no kinks in the tube and the vent hole in the canister must be open and unblocked.

7 Putting into service

7.1 Safe working when putting the appliance into service

For your safety when using the combi oven

Before putting the combi oven into service, it is essential that you familiarize yourself with the rules and warning signs listed in the chapter 'For your safety on page 12' in the User manual, and follow the instructions given there. Follow the instructions in the relevant sections of the User manual when testing cooking operations and cleaning operations.

Basic rules for safe operation

If it is known or evident that the combi oven has been moved after installation without authorization (whether intentionally or unintentionally), the appliance must not be put back into service until all the following requirements have been met:

- The appliance and fittings or accessories being used show no signs of damage.
- The installed electrical power cables, water supply pipes and pipes for wastewater and cleaning agents show no signs of damage, are fixed securely, are not leaking at any point and appear safe and in working order on visual inspection.
- The 'Requirements relating to the operating condition of the combi oven' on page 13 are met.
- The 'Requirements relating to the operating environment of the combi oven' on page 13 are met.
- All warning signs are in their designated position.

Rules for safe operation of the appliance

To avoid hazards, the following rules must be observed during operation:

- The air vent and the ventilation port on the top of the appliance, the ventilation slots in the wiring compartment on the rear of the appliance must not be covered, obstructed or blocked.
- The racks must be attached securely.
- The food containers must be inserted correctly as indicated in 'Positioning the food containers' in the user manual in the Product Info Portal.
- The food containers must be inserted correctly; see 'Loading and Removing Food' in the user manual.
- The suction panel must be secured properly in place.

7.2 Procedure for putting the appliance into service

Checks prior to putting the appliance into service

Before preparing the combi oven for first-time use, check that the following requirements are met:

- The appliance has no signs of damage.
- The appliance has been set up so that it cannot slide about or tip over; the requirements for the set-up location and the area around the appliance have been met (see section 'Setting up the appliance' on page 28).
- Protective films, cardboard packaging and transport securing devices etc. have been removed completely.
- The cooking chamber contains no stored items or food nor any equipment other than necessary cooking accessories (e. g. food containers).
- The appliance is installed in accordance with the requirements in the chapter 'Installation' on page 36.
- The installed electrical power cables, water supply pipes and pipes for wastewater and cleaning agents show no signs of damage, are fixed securely, are not leaking at any point and appear safe and in working order on visual inspection.
- The appliance was subjected to an individual electrical test (see below).
- All safety devices are in their designated position and are working correctly.
- All warning signs are in their designated position.
- The appliance and any accessories and fitting used have been cleaned properly.

The appliance must not be put into operation until all the specified requirements are met.

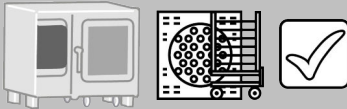
Individual electrical test

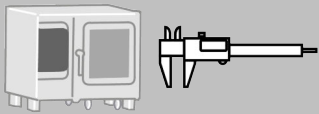
The individual electrical test comprises the following three steps:

- Observation: Visual inspection for damage or improper use
- Measurement: Carry out prescribed measurements in accordance with accepted engineering standards (protective earth resistance, insulating resistance, protective earth current / leakage current)
- Testing: Functional test

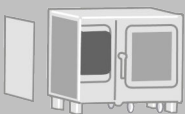
The individual electrical test must be repeated regularly in accordance with the legal regulations.

Preparing the appliance for first-time use

1.		Bring the ambient temperature to the permitted operating temperature.
2.		Switch on the circuit breaker.
3.		Open the water supply.
4.		Check that the following are seated properly and in the correct position: ▪ Suction panel ▪ Loading trolley

5.		Measure the door gap at the front of the appliance, as specified in 'Measuring appliance gaps' on page 63: If any measured values lie outside the tolerance range, or the top edge of the appliance door is not flush with the top edge of the appliance case, the appliance door must be adjusted. Adjust the gap as described in the servicing documentation or contact the manufacturer.
6.		Switch on the combi oven.
7.		Make the following settings: ▪ Date ▪ Time ▪ Language

Putting the appliance into use

1.		Start the cooking operation using the following cooking data: ▪ 'Combi-steam' cooking mode ▪ 150 °C ▪ 10 minutes
2.		Check the following points: ▪ Is the oven light illuminated? ▪ Is the fan running? ▪ Are there any leaks in the water supply and wastewater systems? ▪ Does the temperature rise inside the cooking chamber?
3.		Start the cooking operation using the following cooking data: ▪ 'Steam' cooking mode ▪ 100 °C ▪ 10 minutes
4.		Check whether steam is being generated in the cooking chamber (Open the appliance door carefully).
5.		Only for injection appliances: Use the pressure regulator to adjust the pressure to give the correct reading at the pressure gauge in the steam generation water supply: [kPa] 150 (1.5 bar)
6.		Start fully automatic oven cleaning using the cleaning profile for light soiling.
7.		Check that the cleaning process runs without an error message.

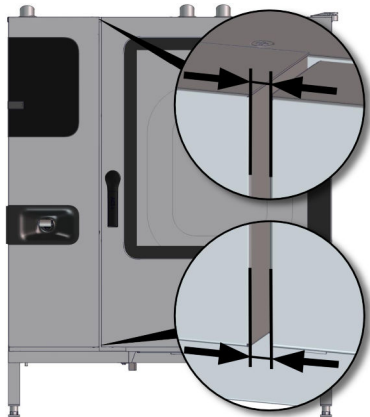
Customer guidance and instruction

Instruct the user in all safety-related functions and devices. Instruct the user in how to operate the appliance, and complete the checklist supplied with the appliance.

7.3 Measuring appliance gaps

Measuring appliance gaps

The measured widths of the appliance gaps must lie within the following tolerance ranges:



Name	Measurement condition	Tolerance range
Door gap at the front of the appliance	The appliance door is closed.	$10 \pm 1 \text{ mm}$

If the door gap does not lie within tolerance, please contact Customer service.

7.4 Warranty information

Activate warranty by registering

Follow the link below to open the installation checklist. Fill in all the required information completely so that the device can be clearly assigned and the warranty can be registered correctly:

'Installation check list'

Once the checklist has been successfully submitted, you can use the following links to register your appliance for the warranty or to check the current warranty status of your appliance. There you will find an overview of the registered warranty and the corresponding expiry date:

'Register warranty' 'Warranty status'

Warranty information

To be able to make a warranty claim for the combi oven, the appliance must be installed by a qualified service engineer from an authorized service company in accordance with the Convotherm installation instructions. The manufacturer must be in receipt of a fully completed checklist before a warranty claim can be dealt with.

The warranty does not cover damage resulting from improper setup, installation, use, cleaning, use of cleaning agents, servicing, repair or descaling.

Further information on the warranty conditions can be found at www.convotherm.com or in the Product Info Portal at www.productinfo.convotherm.com

8 Removal from service and disposal

8.1 Removal from service and disposal

Rules for safe and responsible working when removing the appliance from service

Avoid any risks to yourself and others by following the rules below:

- The kitchen floor must always be kept dry to reduce the risk of accidents.
- The appliance door to the combi oven must be closed and the door handle removed before disposing of the appliance.
- Before starting any work, the appliance must be disconnected from the power supply, protected against being switched on again, and checked to verify that it is actually de-energized.
- Always lift the appliance carefully and secure it against tipping over.
- Be aware of the centre of gravity to keep the appliance balanced.
- The cleaning chemicals must be disposed of in accordance with the instructions on the canisters in order to avoid environmental damage.

Requirements

Before removing the appliance from service, check the following points:

- The appliance is de-energized.
- The water supply is shut off.

Removal from service

To remove your appliance from service, follow the steps for setting up and installing your appliance in the reverse order (see the chapters 'Installation' on page 36, 'Moving the appliance' on page 26 and 'Setting up the appliance' on page 28).

Do not move the appliance until you have disconnected all the connections.

The following tasks must be performed correctly to remove the appliance from service:

- Disconnecting the water connection from the appliance
- Removing the drain connection from the appliance
- Disconnecting or isolating the electrical supply
- Removing the door catch
- Disconnecting the cleaning agent and rinse aid connections
- Proper disposal of the cleaning chemicals in accordance with the information on the cleaning chemicals containers and any country-specific and local regulations.

Disposal

Contact the manufacturer for guidance on the environmentally safe disposal of your appliance. The manufacturer is certified to the DIN EN ISO 14001 environmental management standard and will dispose of your old appliance in accordance with valid environmental protection regulations.

9 Technical data

9.1 Dimensions and weights

Dimensions and weights (injection appliance)

		20.10	20.20
Width			
Including packaging	[mm]	1170	1415
Excluding packaging	[mm]	890	1135
Depth			
Including packaging	[mm]	970	1150
Excluding packaging	[mm]	820	1020
Height			
Including packaging	[mm]	2150	2150
Excluding packaging	[mm]	1934	1934
Weight			
Including packaging	[kg]	288	375
Excluding packaging	[kg]	259	340
Safety clearances			
Rear	[mm]	50	50
Right	[mm]	50	50
Left	[mm]	50	50
Top (for ventilation)	[mm]	500	500

Dimensions and weights (boiler appliance)

		20.10	20.20
Width			
Including packaging	[mm]	1170	1415
Excluding packaging	[mm]	890	1135
Depth			
Including packaging	[mm]	970	1150
Excluding packaging	[mm]	820	1020
Height			
Including packaging	[mm]	2150	2150
Excluding packaging	[mm]	1934	1934
Weight			
Including packaging	[kg]	304	388
Excluding packaging	[kg]	276	354
Safety clearances			
Rear	[mm]	50	50
Right	[mm]	50	50
Left	[mm]	50	50
Top (for ventilation)	[mm]	500	500

9.2 Maximum permissible loading weight

Maximum permissible loading weight

The total weight of items placed on the shelf levels must not exceed the maximum permissible loading weight of the combi oven (for further data on the food capacity; see the User manual):

		20.10	20.20
Maximum load			
Per combi oven	[kg]	100	180
Per shelf	[kg]	15	15

9.3 Electrical supply

Electrical connected load ratings

		20.10	20.20
3N~ 400V 50/60Hz*			
Rated power consumption	[kW]	38.9	67.3
Convection power	[kW]	37.8	66
Steam power (boiler appliance only)	[kW]	27	39.9
Motor power	[kW]	0.7	0.7
Rated current	[A]	56.2	97.3
Fuse rating	[A]	63	100
Recommended conductor cross-section for wires laid uncovered in air up to 5 m in length	[mm ²]	5G16	5G35
Residual-current device		Type A or type B	Type A or type B

* Connection to energy optimization system included as standard.

Electrical connection values (China)

		20.10	20.20
3N~ 380 V 50 Hz			
Rated power consumption	[kW]	35.1	60.7
Convection power	[kW]	34.4	60.1
Steam power (boiler appliance only)	[kW]	24.6	36.3
Motor power	[kW]	0.7	0.7
Rated current	[A]	53.3	92.2
Fuse rating	[A]	63	100
Recommended conductor cross-section for wires laid uncovered in air up to 5 m in length	[mm ²]	5G16	5G35
Residual-current device		Type A or type B	Type A or type B

Electrical connection values (Korea)

		20.10	20.20
3~ 220 V 60 Hz			
Rated power consumption	[kW]	35	60.8
Convection power	[kW]	34.4	60.1
Steam power (boiler appliance only)	[kW]	24.6	36.3
Motor power	[kW]	0.7	0.7
Rated current	[A]	91.7	159
Fuse rating	[A]	100	160
Recommended conductor cross-section for wires laid uncovered in air up to 5 m in length	[mm ²]	4G35	4G70
Residual-current device		Type A or type B	Type A or type B
3N~ 380 V 60 Hz			
Rated power consumption	[kW]	35.1	60.7

9 Technical data

Convection power	[kW]	34.4	60.1
Steam power (boiler appliance only)	[kW]	24.6	36.3
Motor power	[kW]	0.7	0.7
Rated current	[A]	53.3	92.2
Fuse rating	[A]	63	100
Recommended conductor cross-section for wires laid uncovered in air up to 5 m in length	[mm ²]	5G16	5G35
Residual-current device		Type A or type B	Type A or type B

Electrical connection values (Japan)

		20.10	20.20
3~ 200 V 50/60 Hz*			
Rated power consumption	[kW]	38.2	66.4
Convection power	[kW]	37.8	66
Steam power (boiler appliance only)	[kW]	27	39.9
Motor power	[kW]	0.7	0.7
Rated current	[A]	110	192
Fuse rating	[A]	125	200
Recommended conductor cross-section for wires laid uncovered in air up to 5 m in length	[mm ²]	4G50	4G95
Residual-current device		Type A or type B	Type A or type B

* Connection to energy optimization system included as standard.

9.4 Dissipated heat

Dissipated heat

		20.10	20.20
Dissipated heat*			
Latent heat	[kJ/h]	6900	11000
	[kW]	1.92	3.06
Sensible heat	[kJ/h]	8900	14100
	[kW]	2.47	3.92

* The dissipated heat values were measured in accordance with DIN 18873-1 "Methods for determining the energy consumption of commercial kitchen appliances – Part 1". The type and frequency of appliance utilisation is decisive for the design of an air ventilation system. These values may be higher than the specified dissipated heat values. Recommended values can be found in the technical literature, e.g. in VDI 2052. Please contact your specialist planner for the design of an air ventilation system.

9.5 Water connection

Water connection

Water supply (cold only)		
Safety device		For UK: With double check valve (type CA) and dirt filter
Water connection		Fitted with customer-supplied on-site stopcock
Water supply		
Connection		2 x G 3/4" fixed connection, optionally including connecting pipe (min. DN13 / 1/2")
Flow pressure	[kPa]	150 - 600 kPa (1.5 - 6 bar)
Water drain		
Model		Fixed connection (recommended) or open tank or channel/gully. Due to possible vapours, open drains or ducts must be located at least 60 cm outside the footprint of the appliance.
Type	[DN]	50

9.6 Water quality

Water quality (injection appliance)

Water injection		
Water injection water quality		Untreated water, typically soft water (install water treatment system if necessary)
German degrees of hardness (general hardness: GH)	[°dH]	4 - 7
French degrees of hardness	[°fH]	7 - 13
English degrees of hardness	[°e]	5 - 9
International	[ppm]	70 - 125
Chemical	[mmol/l]	0.7 - 1.3
Cleaning, recoil hand shower		
Water quality cleaning, recoil hand shower		Drinking water, typically hard water
German degrees of hardness (general hardness: GH)	[°dH]	4 - 20
French degrees of hardness	[°fH]	7 - 35
English degrees of hardness	[°e]	5 - 25
International	[ppm]	70 - 360
Chemical	[mmol/l]	0.7 - 3.6
Properties		
Temperature	[°C]	max. 40
Electrical conductivity	[µS/cm]	min. 20
pH value		6.5 - 8.5
Cl ⁻ (chloride)	[mg/l]	max. 60
Cl ₂ (free chlorine)	[mg/l]	max. 0.2
SO ₄ ²⁻ (sulphate)	[mg/l]	max. 150
Fe (iron)	[mg/l]	max. 0.1
SiO ₂ (silicate)	[mg/l]	max. 13
NH ₂ Cl (monochloramine)	[mg/l]	max. 0.2
Carbonate hardness (KH)	[°dH]	Low GH

Water quality (boiler appliance)

Water quality		
Cleaning, recoil hand shower and boiler		Drinking water, typically hard water
German degrees of hardness (general hardness: GH)	[°dH]	4 - 20
French degrees of hardness	[°fH]	7 - 35
English degrees of hardness	[°e]	5 - 25
International	[ppm]	70 - 360
Chemical	[mmol/l]	0.7 - 3.6
Properties		
Temperature	[°C]	max. 40

Water quality

Electrical conductivity	[μS/cm]	min. 20
pH value		6.5 - 8.5
Cl ⁻ (chloride)	[mg/l]	max. 60
Cl ₂ (free chlorine)	[mg/l]	max. 0.2
SO ₄ ²⁻ (sulphate)	[mg/l]	max. 150
Fe (iron)	[mg/l]	max. 0.1
SiO ₂ (silicate)	[mg/l]	max. 13
NH ₂ Cl (monochloramine)	[mg/l]	max. 0.2
Carbonate hardness (KH)	[°dH]	Low GH

Despite compliance with the general hardness limits, non-hardness deposits may occur in certain cases. Measures must be coordinated with the technical service.

9.7 Water consumption

Water consumption for cooking (injection appliance)

Water consumption, cooking and cleaning		20.10	20.20
Average water consumption	[l/h]	15.9	21.4
Peak consumption	[l/min]	15	15

Water consumption for cooking and cleaning (boiler appliance)

Water consumption, cooking and cleaning		20.10	20.20
Average water consumption	[l/h]	13.7	17.1
Peak consumption	[l/min]	15	15

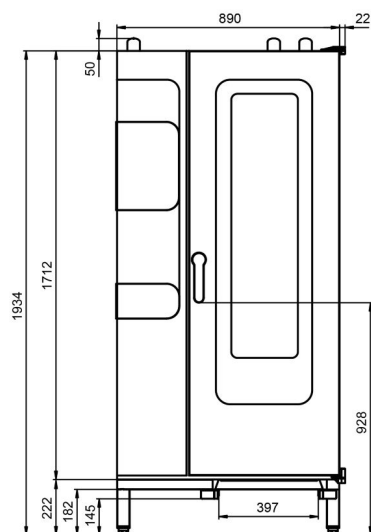
9.8 Approval information

Appliance technical standards

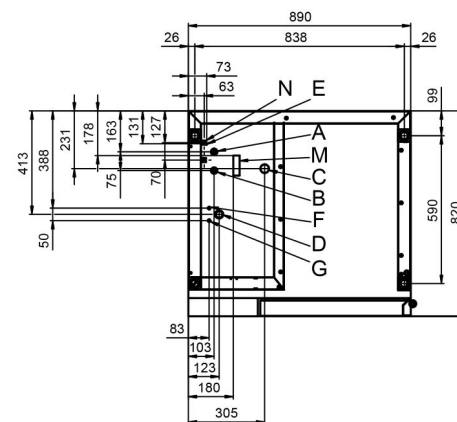
Appliance technical standards		
Degree of protection		IPX5
Approval mark IEC or EN as basis		CE
Noise emission		
Max. operating noise	[dBA]	70

Dimensions and connection points of the maxx 20.10 ES (right-hinged appliance door)

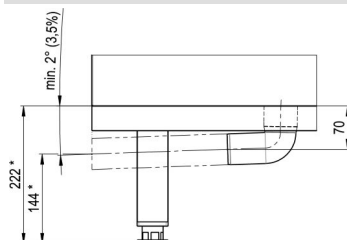
Front view



Connection points in appliance floor

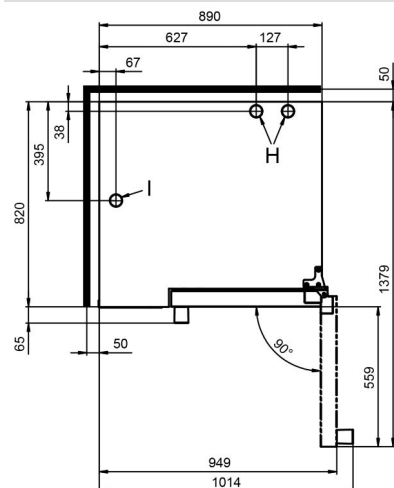


Detailed view of drain connection



* Distance depends on how far the appliance feet are extended (max. +25 mm)

View from above with wall clearances

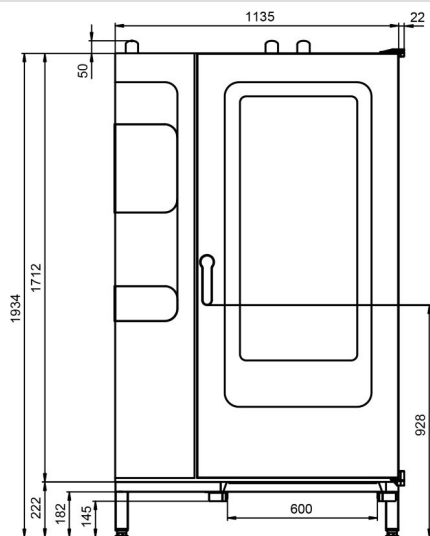


Meaning of labelled elements

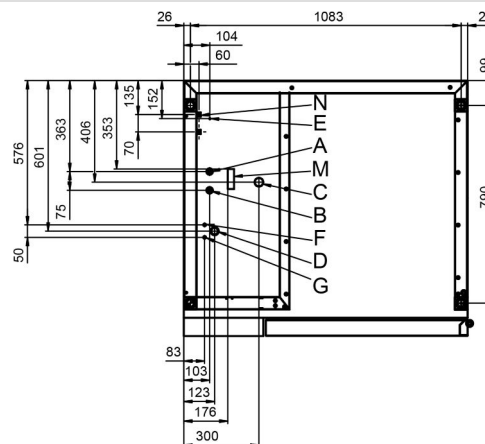
- A Soft-water connection G 3/4"
- B Hard-water connection G 3/4"
- C Drain connection DN50
- D Electrical connection
- E Protective equipotential bonding system
- F Rinse-aid connection
- G Cleaning-agent connection
- H Air vent (Ø 50 mm)
- I Ventilation port (Ø 50 mm)
- M Safety overflow (80 x 25 mm)
- N Ethernet connection RJ45

Dimensions and connection points of the maxx 20.10 EB (right-hinged appliance door)

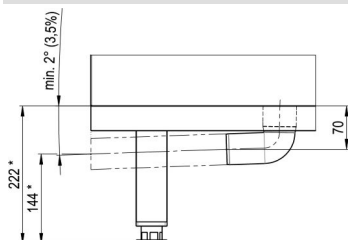
Front view



Connection points in appliance floor

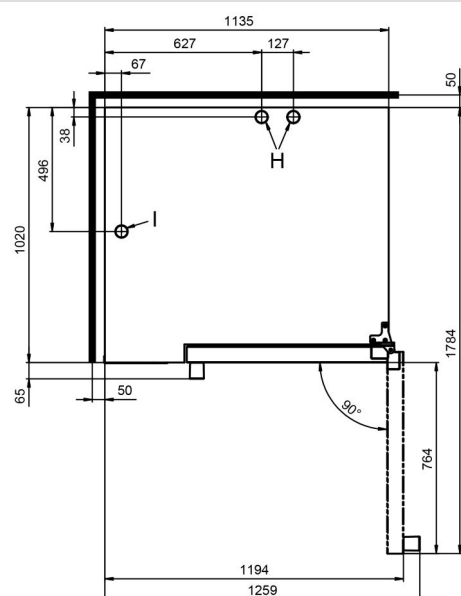


Detailed view of drain connection



* Distance depends on how far the appliance feet are extended (max. +25 mm)

View from above with wall clearances

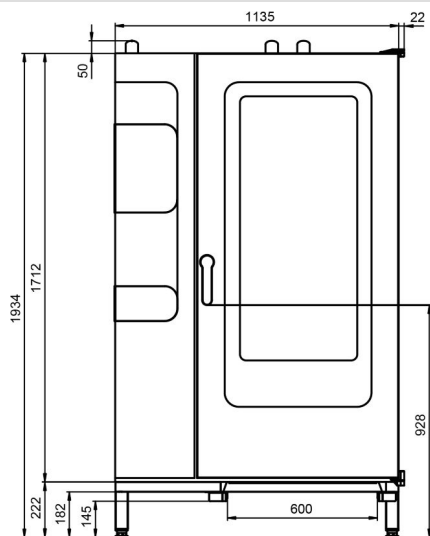


Meaning of labelled elements

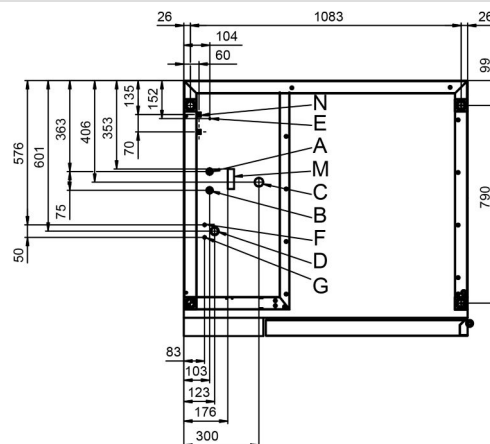
- A Soft-water connection G 3/4"
- B Hard-water connection G 3/4"
- C Drain connection DN50
- D Electrical connection
- E Protective equipotential bonding system
- F Rinse-aid connection
- G Cleaning-agent connection
- H Air vent (Ø 50 mm)
- I Ventilation port (Ø 50 mm)
- M Safety overflow (80 x 25 mm)
- N Ethernet connection RJ45

Dimensions and connection points of the maxx 20.10 ES (right-hinged appliance door)

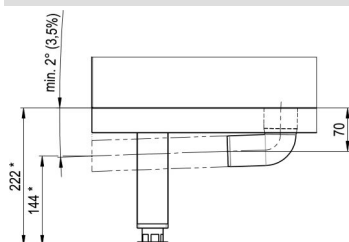
Front view



Connection points in appliance floor

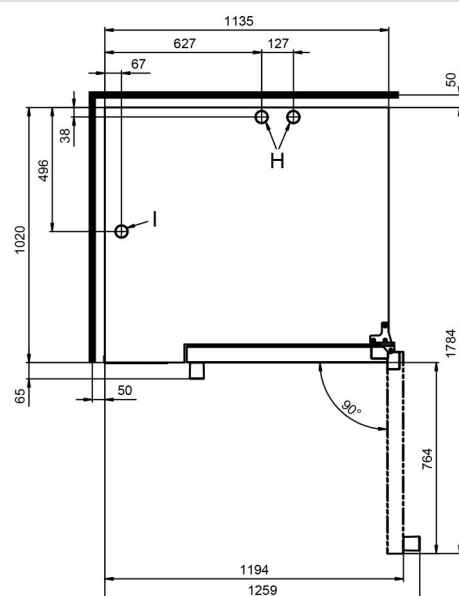


Detailed view of drain connection



* Distance depends on how far the appliance feet are extended (max. +25 mm)

View from above with wall clearances



Meaning of labelled elements

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Engineered in Germany

Combi oven
Convotherm maxx
maxx 20.10 ES/EB, maxx 20.20 ES/EB

Serial no.

Item no.

Order no.

Additional technical documentation can be found in the download center
www.convotherm.com