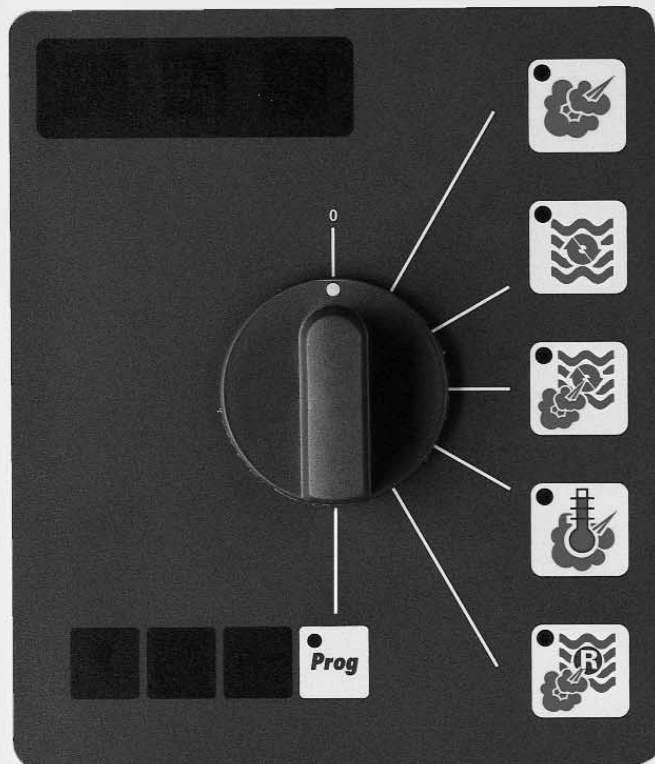


CM

Combi-Dämpfer



Manual  
Examples  
Installation instructions

Combi-Steamer CM  
Electric and Gas  
Combi-Steamer CD



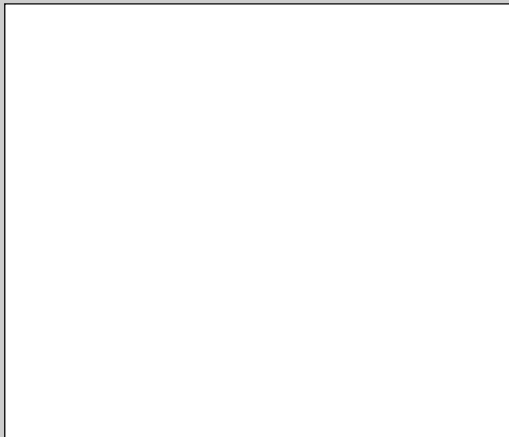
... because details make the difference

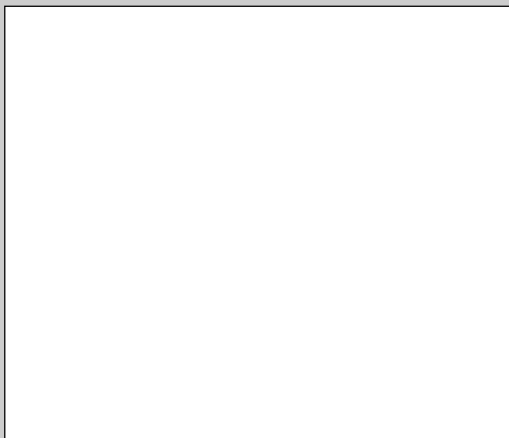
## Your customer service

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We grant a 12 month guarantee which is valid from the date of invoice, exempted are damages to glass, light bulbs and gaskets.

All rights are reserved for technical changes.

	<b>For inquiries please indicate the following:</b>
	<b>Type of unit:</b>
	<input type="text" value="RATIONAL Combi-Steamer CM"/>
	<b>Unit serial number:</b>
	<input type="text"/>
	<b>You unit was checked by:</b>
	<input type="text"/>

	<b>For inquiries please indicate the following:</b>
	<b>Type of unit:</b>
	<input type="text" value="RATIONAL Combi-Steamer CD"/>
	<b>Unit serial number:</b>
	<input type="text"/>
	<b>You unit was checked by:</b>
	<input type="text"/>

In case you may need further assistance, please do not hesitate to call us Telephone: Germany 0049-8191-3270.

For operational problems call our "Hot Line": Telephone: Germany 0049-88191-327300.

Your RATIONAL U.K. Team: (01582) 480388.

**Please retain this manual for future reference!**

# Contents

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## Dear Customer,

---

we congratulate you on your wise choice to buy a Combi-Steamer.

With this Combi-Steamer you possess the best unit amongst those which are available on the market. The Combi-Steamer's further development is a result of close contact with our customers – an innovation for the demanding chef, a unit with almost unlimited possibilities.

We have specialised in solid workmanship, high functional safety and precise control systems and most of all simple, practical operation.

However we still recommend you to study this manual for the Combi-Steamer carefully. This way you will profit from the many possibilities and advantages the Combi-Steamer can offer.

Keep this manual safe and within easy reach.

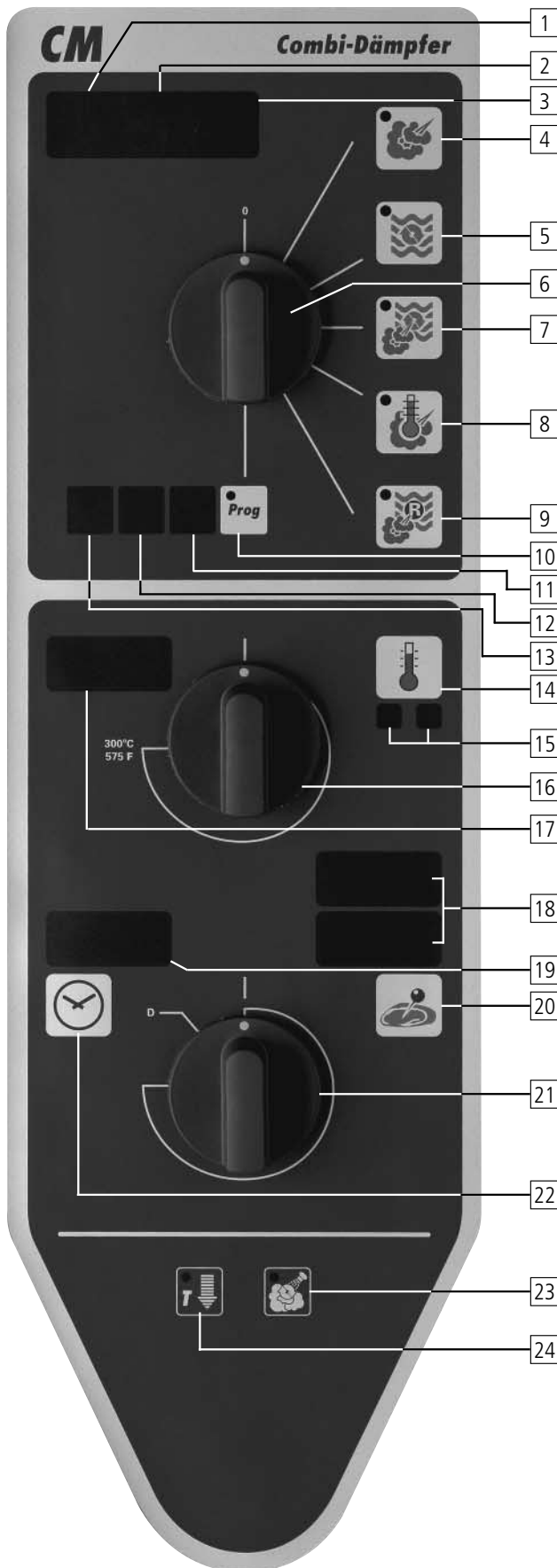
Please let us know about your practical experiences, your suggestions and ideas so we can share them with our other customers.

And now enjoy your new Combi-Steamer.

Your

**RATIONAL Großküchentechnik GmbH**

# Control panel CM Electric



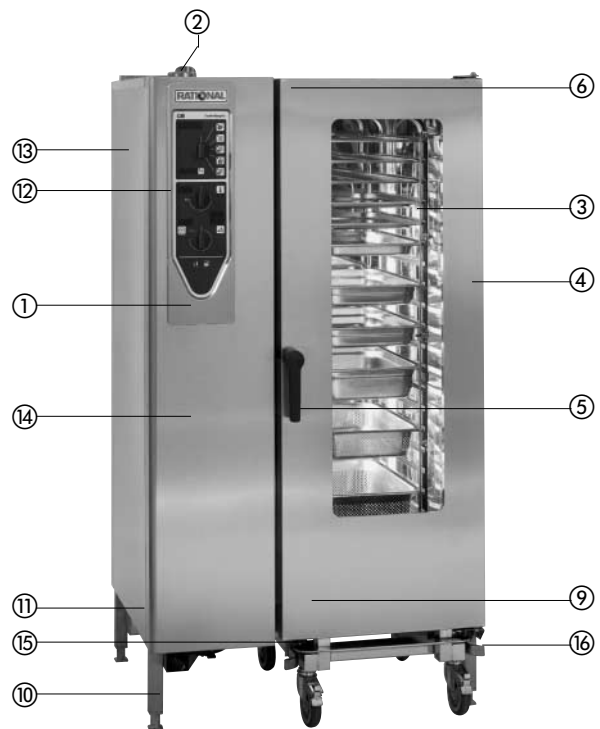
- 1 Display: Thermostat symbol
- 2 Display: Low water alarm
- 3 Status display: green on indicator
- 4 Steaming (100°C)
- 5 Hot air (30°C to 300°C)
- 6 Operating mode selector
- 7 Combi-steaming (30°C to 300°C)
- 8 Vario-steaming (30°C to 99°C)
- 9 Reheating (30°C to 300°C)
- 10 Program symbol
- 11 Program start button
- 12 Program number display
- 13 Button for program selection
- 14 Button for actual cooking cabinet temperature
- 15 Indication of temperature standard
- 16 Dial for cooking temperature
- 17 Cooking cabinet temperature display
- 18 Core temperature display
- 19 Time display
- 20 Button for core temperature (20°C to 99°C)
- 21 Dial for timer or core temperature
- 22 Button for timer
- 23 "Humidifying"
- 24 Cool down

# Features CM Electric

- ① **Unit serial number** (bottom of inside of installation door).
- ② **Clima ducting with safety valve counteraction (protection) against over and under pressure. The safety valve is protected against accidental blockage by a clip.**
- ③ **Interior light** (heat and shock-resistant cerane flat glass and halogen lighting).
- ④ **Unit door with double glass.**
- ⑤ **Door handle** (Table models: one-hand-operation with slam function. Floor models: one-hand-operation).
- ⑥ **Unlocking device for opening the double glass.**
- ⑦ **Integrated self-emptying door drip collector.**
- ⑧ **Unit drip collector connected to the main drainage.**
- ⑨ **Contactless door contact switch.**
- ⑩ **Legs** (adjustable).
- ⑪ **Unit data plate** (with all important data such as power input, voltage, number of phases and frequency as well as unit model and serial number).
- ⑫ **Control panel** (see page 5).
- ⑬ **Protection cover of the electrical installation area.**
- ⑭ **Service door** (can be opened for servicing and checking).
- ⑮ **Handshower** (with automatic rewind).
- ⑯ **Run-in guide**

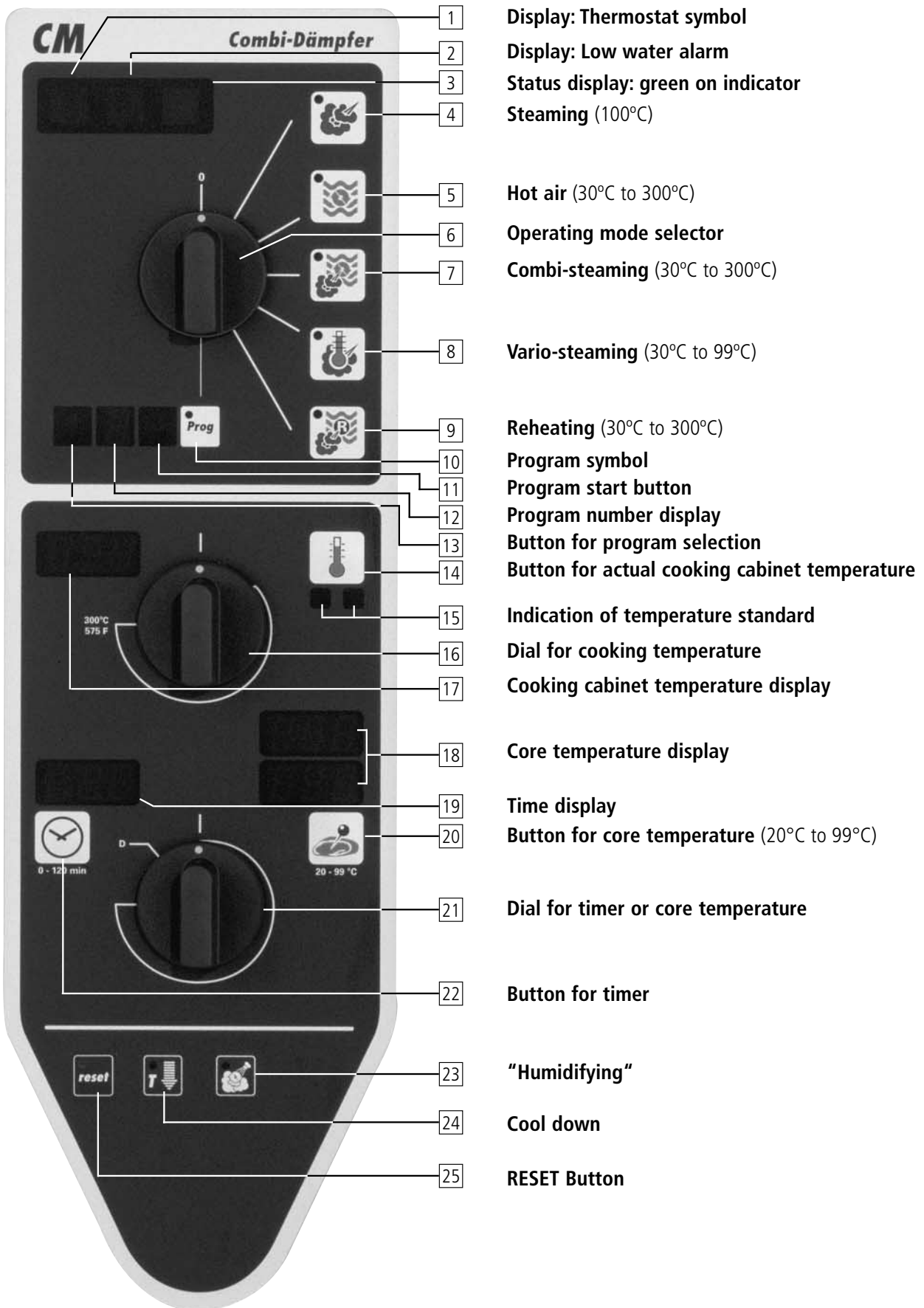


Combi-Steamer 6x1/1, 10x1/1 and 10x2/1 identical.



Combi-Steamer 20x1/1, 20x2/1 identical.

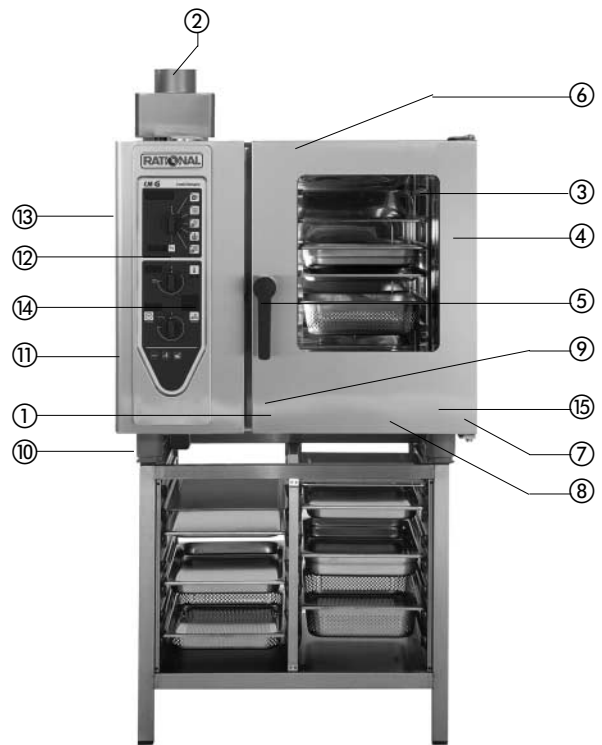
# Control panel CM Gas



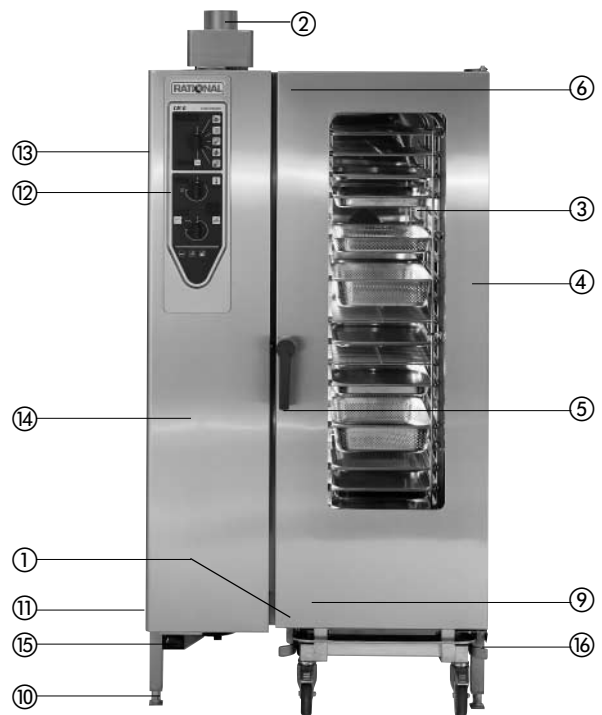
- 1 Display: Thermostat symbol
- 2 Display: Low water alarm
- 3 Status display: green on indicator
- 4 Steaming (100°C)
- 5 Hot air (30°C to 300°C)
- 6 Operating mode selector
- 7 Combi-steaming (30°C to 300°C)
- 8 Vario-steaming (30°C to 99°C)
- 9 Reheating (30°C to 300°C)
- 10 Program symbol
- 11 Program start button
- 12 Program number display
- 13 Button for program selection
- 14 Button for actual cooking cabinet temperature
- 15 Indication of temperature standard
- 16 Dial for cooking temperature
- 17 Cooking cabinet temperature display
- 18 Core temperature display
- 19 Time display
- 20 Button for core temperature (20°C to 99°C)
- 21 Dial for timer or core temperature
- 22 Button for timer
- 23 "Humidifying"
- 24 Cool down
- 25 RESET Button

# Features CM Gas

- ① **Unit serial number** (bottom of inside of installation door).
- ② **Draft diverter.**
- ③ **Interior light**  
(heat and shock-resistant cerane flat glass and halogen lighting).
- ④ **Unit door with double glass.**
- ⑤ **Door handle**  
(Table models: one-hand-operation with slam function.  
Floor models: one-hand-operation).
- ⑥ **Unlocking device for opening the double glass.**
- ⑦ **Integrated self-emptying door drip collector.**
- ⑧ **Unit drip collector connected to the main drainage.**
- ⑨ **Contactless door contact switch.**
- ⑩ **Legs**  
(adjustable).
- ⑪ **Unit data plate**  
(with all important data such as power input, voltage, number of phases and frequency as well as unit model and serial number).
- ⑫ **Control panel**  
(see page 5).
- ⑬ **Protection cover of the electrical installation area.**
- ⑭ **Service door**  
(can be opened for servicing and checking).
- ⑮ **Handshower**  
(with automatic rewind).
- ⑯ **Run-in guide**



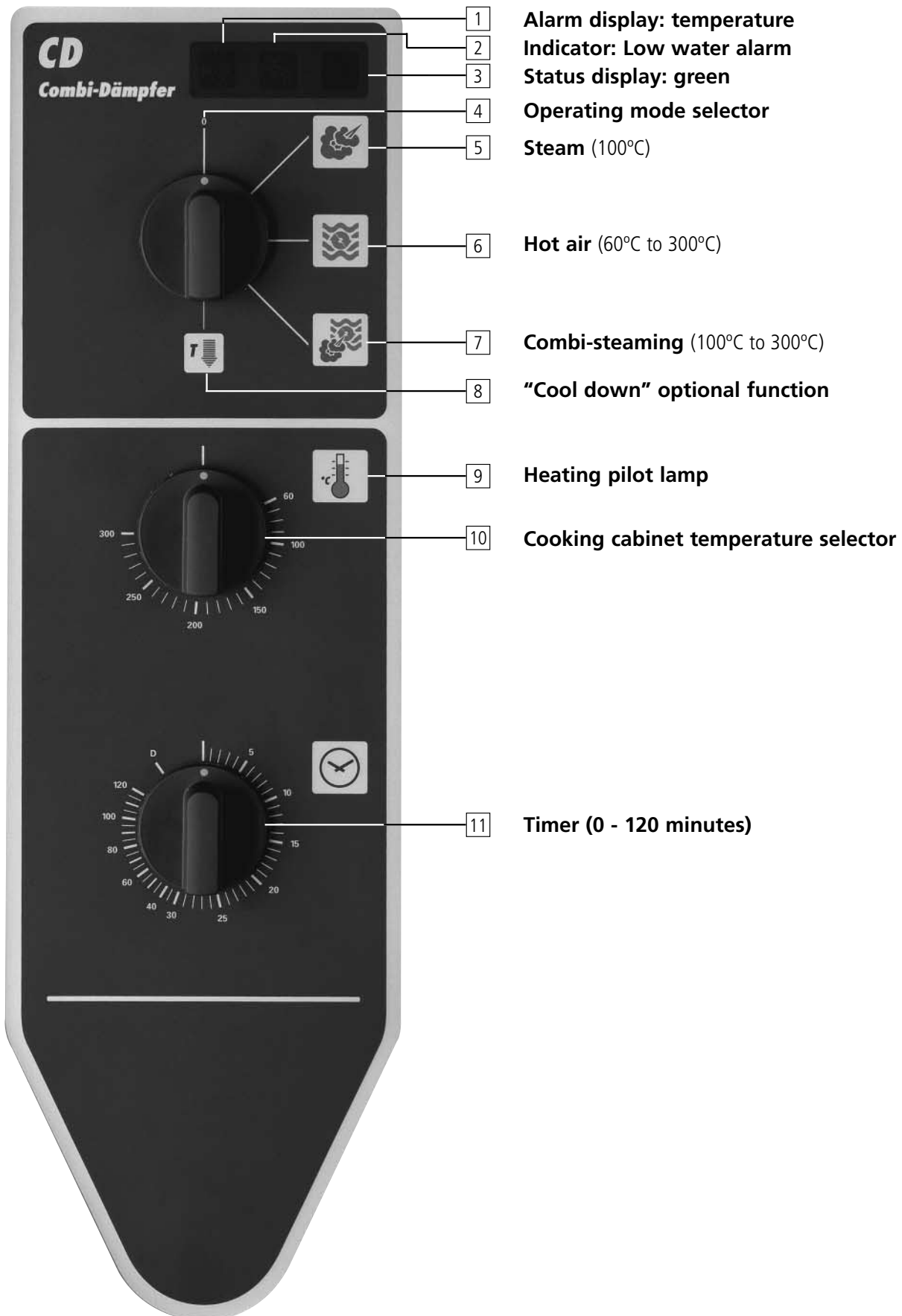
Combi-Steamer 6x1/1 GN, 10x1/1 GN and 10x2/1 GN identical.



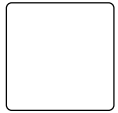
Combi-Steamer 20x1/1 GN, 20x2/1 GN identical.



# Control panel CD



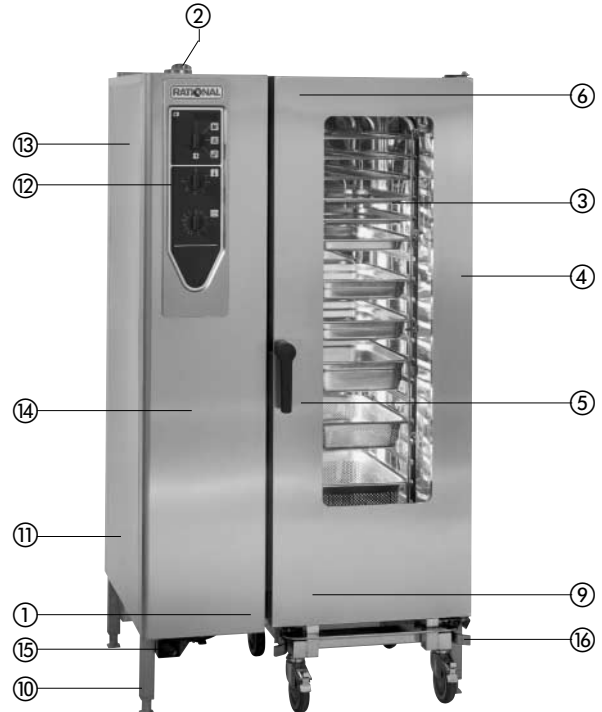
# Features CD



- ① **Unit serial number** (bottom of inside of installation door).
- ② **Clima ducting with safety valve counteraction (protection) against over and under pressure.**
- ③ **Interior light** (shock-resistant cerane flat glass and halogen lighting).
- ④ **Unit door with double glass.**
- ⑤ **Door handle** (Table models: one-hand-operation with slam function. Floor models: one-hand-operation).
- ⑥ **Unlocking device for opening the double glass.**
- ⑦ **Integrated self-emptying door drip collector.**
- ⑧ **Unit drip collector connected to the main drainage.**
- ⑨ **Contactless door contact switch.**
- ⑩ **Legs** (adjustable).
- ⑪ **Unit data plate** (with all important data such as power input, voltage, number of phases and frequency as well as unit model and serial number).
- ⑫ **Control panel** (see page 5).
- ⑬ **Protection cover of the electrical installation area.**
- ⑭ **Service door** (can be opened for servicing and checking).
- ⑮ **Handshower** (option) (with automatic rewind).
- ⑯ **Run-in guide**



Combi-Steamer 6x1/1, 10x1/1 and 10x2/1 identical.



Combi-Steamer 20x1/1, 20x2/1 identical.

## General hints / for your safety

### Checks before switching on each day

- Ensure the insertable rack or mobile oven rack are properly locked in place in the cooking cabinet
- When starting the "Steaming" or "Combi-steaming" mode, the "Water Low" indicator may light up red. This means the steam generator has not yet been filled with water. Once this has been done, the indicator lamp will automatically go out.
- If the low water alarm indicator is still on, check whether the water valve is open and ensure that the strainer on the water supply is not blocked.
- If the ambient temperature is below +5°C, note that the cooking cabinet is heated up to room temperature before starting to operate.
- Lock the air baffle at the top and bottom.

For table-top units using a standard stand or base cabinet the maximum working height on the top shelf is 1708.5 mm.

**WARNING – If containers are filled with liquid or with cooking matter which liquefies during the cooking process, no higher shelves may be used than would allow the user to see into the container (DIN: IEC 60335-2-42).** A warning sticker is affixed to the unit – see operating instructions.

**Take care when removing containers from this height. Be careful of containers with hot liquids in them.**

**Take great care not to scald yourself with the hot steam! The containers are hot!**

### Loading/Unloading

Open the door slowly.

When the door is opened the unit automatically switches itself off. The fan will continue to rotate for a while.

Only slide in GN containers or grids if the grid shelf is properly fixed or the mobile oven rack has been pushed in as far as it will go.

The maximum permitted load weight per insertion is 15 kg for 1/1 GN appliances and 30 kg for 2/1 GN appliances

### Caution!

On all 10x2/1, 20x1/1 and 20x2/1 GN units, ensure that the GN containers on the mobile oven rack are properly secured on both sides!

### Using mobile oven racks

Use the handle supplied to pull the mobile oven rack out of the unit.

### Fixing and swivelling the grid shelf (6x1/1, 10x1/1, 10x2/1 GN)

#### Removing

Push the grid shelf upwards and lift it out of the mountings. Reverse the procedure to replace the rack.

#### Swivelling

Gently raise the grid shelf, lift it out of the front locking device and swivel it.



### Using mobile oven racks and transport trolleys with table-top units (optional)

- Remove the grid shelf.
- Place the rail on the floor of the unit and engage it.
- Push the oven rack in.



Guide frame

### Gas units\*

#### "RESET" BUTTON

If there is a fault in the incinerator, the (rES) will also light up next to the clock symbol.

After 15 seconds you will hear an acoustic signal. Press RESET to re-start the automatic ignition procedure. If the RESET indicator does not light up again after about 15 sec., the flame is burning and the equipment is ready for operation. If the indicator is lit in spite of pressing the button several times, please call customer service.

## General hints / for your safety



Mobile oven rack in the unit

- Push the mobile oven rack in as far as it will go and lock it in place.

### Working with the transport trolley

- The transport trolley must be properly secured in the unit with the retainers.
- Use the handle supplied to pull the mobile oven rack out of the unit.
- When transporting the mobile oven rack on the transport trolley, the transport safety catch must always be engaged. In addition, containers with liquids must always be covered and secured in such a way that there is no danger of scalding from the liquid spilling over.

### Working with core temperatures

- The core temperature probe may be hot.
- Always place the probe in the holder when it is not in use.
- Never allow the probe to hang loose outside the cooking cabinet.
- Before removing a load, take the probe out of the food.

### Cool down

- Caution! During the "Cool down" phase the fan impeller is running when the door is open!
- Only activate the "Cool down" function if the air baffle system is properly locked.
- Never use the hand shower to cool the cooking cabinet down, as this can put excessive strain on the materials. Never use cold water to cool the unit down.

### Cleaning

- Do not clean the unit with high-pressure cleaner.
- Do not use acids or let acid fumes come into contact with the protective layer of nickel chromium steel, as otherwise it will be damaged and could cause discolouring.
- Follow the instructions on the cleaner canister.
- The cleaning routine is described in the chapter on "Cleaning".

### SC automatic function / descaling

- Don't forget that the steam generator has to be descaled at regular intervals (see the chapter on "SC-Automatic").

### Servicing

- Inspection work to be carried out by qualified electricians: Caution! Disconnect the Combi-Steamer at the mains before opening the service door and working with live parts!

### Maintenance

- To guarantee, that your Combi-Steamer is in a perfect technical condition, a basic maintenance should be carried out by an authorised service partner at least once a year.

### General

- The temperature of the glass door may increase by more than 60°C.
- If there are long breaks between operation the built-in water stop valve should be closed.
- If the low water alarm flashes, check the water supply.

#### Note:

It is absolutely essential to train staff regularly on safety procedures.

In order to prevent the risk of accident or damage to the appliance, we recommend that you carry out regular training briefings with your staff.



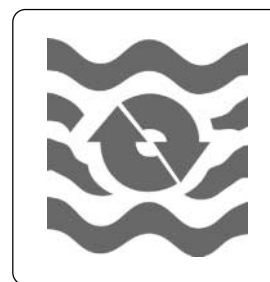
The Combi-Steamer CM/CD is equipped with two cooking energies

## moist heat



## steam

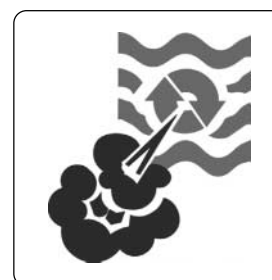
## dry heat



## hot air

These two cooking methods can be used either

- **singly**
- **in sequence**
- **or combined**



The Combi-Steamer offers the possibility to operate almost all cooking methods of the traditional cuisine in only **one** unit.



## Five modes are at your disposal



### **“Steaming” mode = moist heat**

The high capacity steam generator produces hygienic steam. This is let, pressureless, into the interior cabinet and is circulated at high speed by the fan. The patented control system regulates the input of steam; only as much steam is let in as the food is able to absorb. The cooking temperature is fixed at **100 °C**.



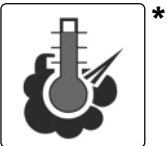
### **“Hot Air” mode = dry heat**

High capacity heating elements heat the dry air. The fan circulates this hot air equally inside the interior cabinet. The temperature can be selected between **30 °C to 300 °C**.



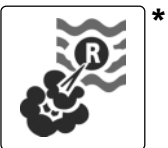
### **“Combi-Steaming” mode = moist heat + dry heat**

The two cooking modes “Steaming” (moist heat) and “Hot Air” (dry heat) are combined by a control system. This combination creates a hot-humid climate for a specially intensive cooking. The temperature can be selected between **30 °C to 300 °C**. The interior cabinet continuously contains the optimal humidity, which will prevent the food from drying out .



### **“Vario-Steaming” mode\* =\* moist heat from 30 °C to 99 °C**

The electronic automatic control system with the built-in temperature sensor guarantees that the pre-selected temperature is kept constant in the cooking cabinet. The control technology provides a cooking climate which meets the needs of the food being prepared. The temperature can be set to vary between **30 °C to 99 °C**. The Temperature tolerance is +/- 1 °C.



### **“Reheating” mode\* moist heat + dry heat**

When both cooking modes steaming and hot air are combined by this special control system, an ideal environment is created for the process of reheating. This ideal climate prevents the food from drying out and stops unnecessary water marks. The temperature ranges between **30 °C and 300 °C**.

**According to the preparation desired, you can choose or combine the equivalent modes either singly, in sequence or combined.**



## Steaming mode moist heat with 100 °C

### Advantages

- Extremely short preheating periods.
- Excellent food consistency.
- Conservation of vitamins.
- Colour preservation.
- Less fat.
- No overcooking of products.
- Different products can be cooked simultaneously.
- No taste transfer.
- Unloading of partial amounts are possible at any time.  
eg. à la carte/à la minute.

### Cooking examples

#### • Mise en Place

tomates concassées, garnish (vegetables, fruit), mushrooms, blanching of Julienne and Brunoise, blanching of vegetables for stuffing, roulade etc., peeling onions and chestnuts, grain soaking.

#### • Starters

scrambled, poached egg in a form, hard boiled egg, steamed vegetable salad, asparagus, vegetable flans, stuffed vegetables (onion, leek, celery etc.), cannelloni.

#### • Soup Garnishings

Liver dumplings, ravioli, vegetable royal.

#### • Main courses

cooked beef, cured ham, tongue, turkey legs, steamed fish.

#### • Side Dishes

rice, dumplings (bread), noodles (spaghetti), fresh and frozen vegetables, potatoes boiled/in the skin.

#### • Desserts

fruit fresh or frozen (eg. hot raspberries), stewed fruit, rice pudding.

### Cooking methods

Steaming, stewing, blanching, poaching, simmering, soaking, thawing, reconstituting (reheating), preserving.



No taste transfer when cooking with different products.



# Steaming mode moist heat with 100 °C

## Operation

- Set the "Steaming" mode.



- Preheat until the warm up control light goes out. The temperature is fixed at 100 °C.



/



## Load ...

... the insertable rack or the mobile oven rack and place it in the unit.

- Set timer/permanent operation or core temperature.\*



/



or



## Setting

Change the set values when necessary.



## Remove ...

... the containers when the food has reached its required firmness resp. softness. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.

## Control ...

... of the food is always possible by:

- Reading the display controls\*.
- Self control (finger, needle, prodding).
- Inserting the automatic core probe\*.

## Safety hints

- **Caution! Steam! (Danger scalding!)**
- **Caution! Hot containers!**
- **Caution! Scalding!**
- **Please observe the correct locking of the mobile oven rack.**



## Hints

- Check and consider which types of food can be cooked together each day using the mode steaming in order to achieve an optimal performance. Bear in mind that fish, meat, vegetables, fruit etc. can be cooked together.
- **Potatoes** should always be cooked in perforated containers. Due to the perforations, steam can circulate and cooking is quicker.
- **Vegetable stock** can be collected by inserting a container in the bottom of the mobile rack. It is better to use two shallow containers rather than one high one in order to avoid bruising the food.
- **Dumplings** should be placed in shallow containers (not too close together).
- **Rice and cereals** is the only type of food where water must be added (1 part rice: 1.5–2 parts water).
- **Tomatoes** can be skinned easily: steam for 30–60 sec. chill with cold water.





## Hot Air mode dry heat up to 300 °C

### Advantages

- 300 °C back-up capacity – especially when fully loaded.
- Short warm-up time.
- Excellent food quality.
- Cooking on different levels possible at the same time.
- Simultaneous browning on different levels without turning the food.
- Less fat.
- Cooking on all levels possible.
- Less cooking time needed in respect to traditional methods.
- Unloading of partial amounts are possible at any time. eg. à la carte/à la minute.

### Cooking examples

#### • Mise en Place

rice, bone roasting (for sauces).

#### • Starters

meatballs, meat pudding, gratinated vegetables, roast beef, chicken wings, fast food, quiches, tartlets, breast of duck etc.

#### • Soup Garnish

cheese croûtons.

#### • Roasts/Main course

steak, rump, t-bone, porterhouse steak, liver, beef burgers, chicken legs and breasts, half or whole chickens, turkey, saddle of hare or venison, meat in bread crumbs, pizza etc.

#### • Side dishes

potato pancakes, fried potatoes, baked potatoes, potato-souffle, duchesse potatoes etc.

#### • Desserts

sponge cake, marble cake, sand cake, fruit loaf, puff pastry, bread, buns, fleurons, frozen apple puffs etc.



Even browning on all sides without turning the food.

### Cooking methods

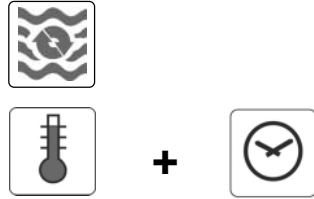
Roasting, grilling, baking, gratinating ...



# Hot Air mode dry heat up to 300 °C

## Operating

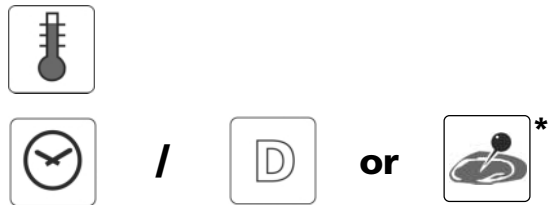
- Set the "Hot Air" mode.
- Preheat: until the set temperature is reached (at least until the control light goes out)
- grilling
- frozen products } 300 °C
- gratinating



## Load ...

... the insertable rack or the mobile oven rack and place it in the unit.

- Set cooking temperature.
- Select cooking time/continuous duty or core temperature.\*



## Note:

Before opening the door wait until the fan wheel stops rotating (heat accumulation).

## Setting

Change the set values when necessary.



## Remove ...

... the containers when the food has reached its required cooking consistency. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.


## Control ...

... of the food is always possible by:

- Reading the display controls\*.
- Self control (finger, needle, prodding).
- Inserting the automatic core probe\*.

**Safety hints**

- **Caution! Steam!**
- **Caution! Hot containers!**
- **Caution! Danger scalding!**
- **Please observe the correct locking of the mobile oven rack.**





## Hot Air mode dry heat up to 300 °C

### Hints

#### • Cooking times

The cooking time depends on the quality, weight and size of the product.

Do not overload grids or containers in order to ensure even air circulation.

#### • General hints for grilled products

- Preheat up to 300 °C in order to have enough heat stored as a buffer.
- Do not open the door of the unit before the fan stops rotating so that as little heat as possible escapes from the interior cooking cabinet.
- Fill the unit quickly in order to avoid a drop of temperature within the cooking cabinet.
- Use ClimaPlus while cooking in order to let the surplus of humidity escape.
- When cooking products which release a lot of humidity (e.g. chicken legs) we recommend to reduce the batch size to 75% or even 50% of the usual theoretically recommended „max possible loading capacity“.

#### • Breaded products

Generally every conventional type of bread crumbs can be used. The quality of some dishes can be improved by oiling the surface with either oil or paprika oil mixture. Press breading firmly to the meat, cover with oil and do not overload.

**General rules:** every one cm meat cut needs approx. 8 to 10 minutes cooking time.

**Preheating:** Always preheat the unit to 300 °C (at least until the control light goes out).

**Ideal cuts:** 1,5–2 cm thickness.

Do not beat or flatten the meat (or toss in flour).

**Containers:** Grids have the advantage, that the top and bottom sides of roasts etc. will show an even browning. Take care that the same thickness and the cuts of similar sizes are placed on the same grids.

#### • Gratinating:

of soups, light and dark meat dishes, fish, mussels, asparagus, broccoli, tomatoes toast etc.

**Preheating:** preheat to 300 °C (at least until the control light goes out). After loading set to the desired temperature.

**Containers:** Use grids or containers (20 mm 1/1 GN) to gratinate toast, steaks and soups. To reduce humidity inside the interior cabinet, switch on “ClimaPlus”.

#### • Preparation of fish

Do not cover in flour.

When preparing a large whole fish (pike, perch-pike), wrap the tail in aluminium foil and support it from underneath with raw potatoes.

**Containers:** Use granite enamelled containers previously preheated.

#### • Baking

**Preheat:** to the baking temperature. When doing a complete loading, you might preheat to a higher temperature.

Baking temperature: is 20 ° to 25 °C (70 ° to 80 °F) lower than for traditional ovens.

When baking bread and rolls only use every second rail.

Baking tins should not be higher than 70 mm.

For ideal heat transmission use granite enamelled containers and inserts.

When baking frozen convenience products, preheat to 575 °F (300 °C) – do not defrost.

Defrost frozen bread dough and let it rise for a short time (insert: baking paper).

**Keep in mind the special “moistening”.**



For fish preparation use granite-enamelled sheets.



Place quick fried food on grids.



## Combi-Steam mode moist heat and dry heat up to 300 °C

### 1. "Combi-Steam" up to 300 °C

#### Advantages

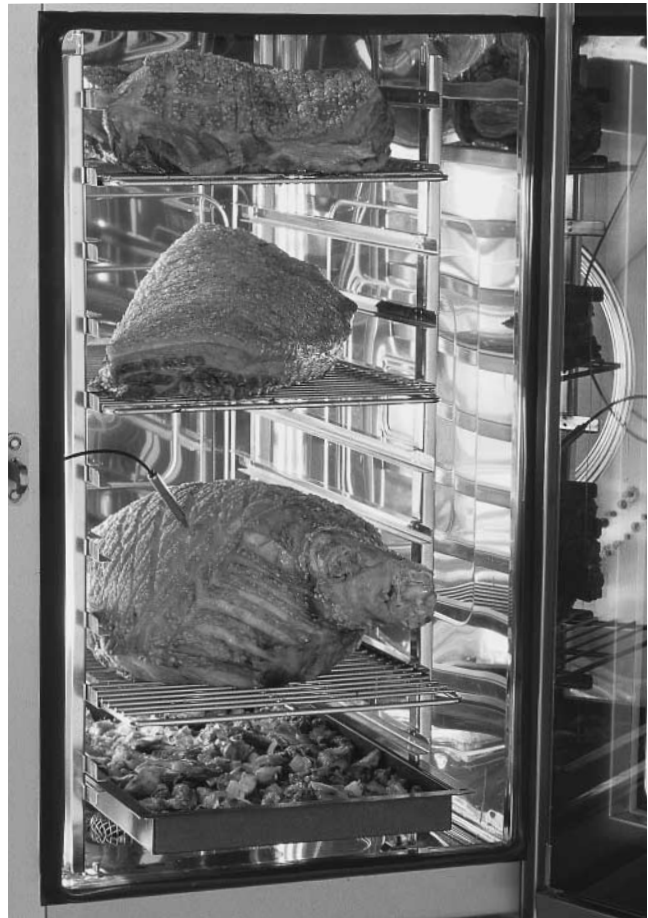
- Quick preheating.
- Excellent food quality.
- No dehydration and on the top side crusts and crackling.
- Automatic basting – reduction of weight loss.
- Roasts retain nutrients and juices.
- Intensive, gentle preparation.
- Even cooking of large joints of meat.
- Less fat.
- Less cooking time needed in respect to traditional methods.
- Unloading of partial amounts are possible at any time.  
eg. à la carte/à la minute.

#### Cooking examples

- **Mise en Place**  
roasting bones for sauces.
- **Starters**  
Quiche lorraine, flans, moussaka, lasagne, cannelloni, paella etc.
- **Roasts/Main dishes**  
roast (beef, veal, pork, lamb, poultry, game),  
stuffed vegetables (peppers onions, cabbage etc),  
gratinated vegetables (cauliflower), turkey legs,  
ham noodles, leg of pork, belly pork and various omelettes.
- **Side dishes**  
gratinated potatoes, baked potatoes.
- **Desserts**  
yeast doughs, choux pastry.
- **Miscellaneous**  
bread, rolls (frozen dough).

#### Cooking methods

Combi-Steam, combi-roasting, combi-baking, glazing, gratinating, basting.



Even cooking of large joints of meat.



# Combi-Steam mode moist heat and dry heat up to 300 °C

## “Combi-Steaming” 30 °C – 300 °C

### Operating

- Set the “Combi-Steaming” mode.



- Preheat: until the set temperature is reached (at least until the control light goes out).



+



### Load ...

... the insertable rack or the mobile oven rack and place it in the unit.

- Set the temperature.



- Select cooking time/continuous duty or core temperature.\*



/



or



### Setting

Change the set values when necessary.



### Remove ...

... the containers when the food has reached its required firmness resp. softness. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.

### Control ...

... of the food is always possible by:

- Reading the display controls.\*
- Inserting the automatic core probe.\*
- Self control (finger, needle, prodding).

## Safety

- **Caution! Steam!**
- **Caution! Hot containers!**
- **Caution! Danger scalding!**
- **Please observe the correct locking of the mobile oven rack.**



Roasts are juicier and have an ideal consistency.

\*only for CM units



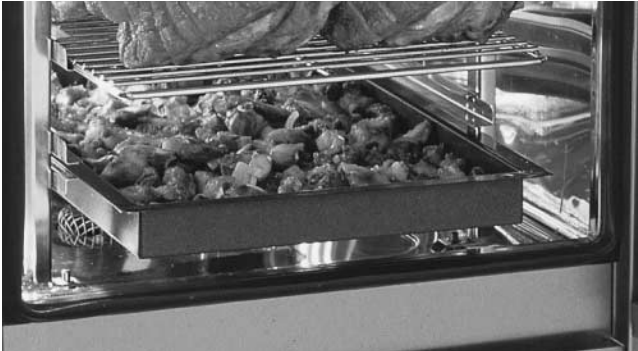
# Combi-Steam mode moist heat and dry heat up to 300 °C

## “Combi-Steaming” up to 300 °C

### Hints

- Do not place roasts too close together in order to ensure even cooking.
- Meat fibres must be placed parallel to the air circulation, this will enable a better heat absorption and shorten the cooking time.
- Steam roasts with crusts or large pieces of meat for approx. 1/3 of the cooking time.
- Catch the condensation in a container on the auxiliary shelf and add it to the lightly roasted bones for the sauce.
- **Preparation of sauces**
  - Place a high-sided container on the auxiliary shelf.
  - Add bones, spices, vegetables etc. and let them roast.
  - Add the collected stock.
  - Leave under for the duration of the cooking process.
  - Result is a concentrated sauce.
- **Baking**

Yeast doughs, puff pastry, choux pastry should be prepared on granite enamelled containers.



Preparing sauces in granite-enamelled containers.

## Notes

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# Combi-Steam mode moist heat and dry heat up to 300 °C

## 2. Cooking method "Forced Steaming" 101 °C – 130 °C

### Advantage

- Cooking is intensified.
- Cooking times are shorter.
- Bear in mind the advantages of the steam mode too.

### Cooking examples

- potatoes, carrots, celery.

### Operating

- Set the "Combi-Steaming" mode.



- Preheat: until the set temperature is reached (at least until the control light goes out).



+



### Load ...

... the insertable rack or the mobile oven rack and place it in the unit.

- Set the cooking temperature.



- Select cooking time/continuous duty or core temperature.\*



/



or



### Setting

Change the set values when necessary.



### Remove ...

... the containers when the food has reached its required firmness resp. softness. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.



# Combi-Steam mode moist heat and dry heat up to 300 °C

## Cooking method

### "Forced Steaming" 101 °C – 130 °C

#### Control ...

... of the food is always possible by:

- Reading the display controls.\*
- Inserting the automatic core probe.\*
- Self control (finger, needle, prodding).

## Hints

**Combi-Steam mode temperatures**

**"Forced Steaming":**

celery	110 °C
potatoes	115 °C
frozen kohlrabi/turnip	120 °C

## Safety hints

- **Caution! Steam! (Danger scalding!)**
- **Caution! Hot containers and grids!**
- **Please observe the correct locking of the mobile oven rack.**



## Notes

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## Vario-Steaming mode\* moist heat 30 °C – 99 °C

### Advantages

- Quick preheating.

### Gentle cooking:

- Excellent food quality.
- Taste preservation.
- Excellent consistency and elasticity for different sorts of meat and fish dishes.  
Better handling during service.
- Prevents curdling and crumbling.
- No blistering = flat surface.
- Large joints and pieces for exhibition purposes (bufetts) are cooked gently, resulting in less weight loss which means less shrinking.
- Less fat.
- Less cooking time needed in respect to traditional methods.
- Unloading of partial amounts is possible at any time.  
eg. à la carte/à la minute.

### Cooking examples

#### • Mise en Place

blanching bacon and ham, soups, sauces, stocks, fish garnishings.

#### • Starters

liver, galantine, pike fish cakes, vacuum cooking, egg royal, patés etc.

#### • Soup Garnishings

dumplings, stuffings.

#### • Main courses

fish (salmon, sole), poultry, diet food, vacuum cooking (chicken breasts, tongue, liver), turkey filets, chicken breasts, filet of beef, sausages etc.

#### • Side dishes

flans, vegetable caserroles.

#### • Desserts

fruit, crème caramel, semolina pudding etc.

### Cooking methods

Scalding, simmering, soaking, poaching, blanching, vacuum cooking, thawing, reheating, preserving, pasteurisation.



Delicate products turn out well every time without much effort and no risk.



## Vario-Steaming mode\* moist heat 30 °C – 99 °C

### Operating

- Set the "Vario-Steaming" mode.



- Preheat at least until the minimum temperature is reached and the control light goes out.



+



### Load ...

... the insertable rack or the mobile oven rack and place it in the unit.



- Set the temperature.



/



or



- Cooking time/continuous duty or core temperature.



### Setting

Change the set values when necessary.

### Remove ...

... the containers when the food has reached its required firmness resp. softness. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.

### Control ...

... of the food is always possible by:

- Reading the display controls.
- Self control (finger, needle, prodding).
- Inserting the automatic core probe.

### Safety hints

- **Caution! Steam (danger scalding).**
- **Caution! Hot containers and grids!**
- **The fan wheel works in certain intervals so to cook the food slowly.**
- **Please observe the correct locking of the mobile oven rack.**
- **Never use cold water to cool the cooking cabinet down.**





## Vario-Steamer mode\* moist heat 30 °C – 99 °C

### Hints

#### • Cooking time

The same principles apply like those for the “Steaming” mode.

**Generally** the lower the cooking temperature the longer the cooking time.

#### Examples : Approx cooking temperatures

##### “vario steaming”:

Soup garnishings:	75 ° to 90 °C
Fish and shell fish:	65 ° to 90 °C
Pale meat:	72 ° to 75 °C
White meat:	75 ° to 85 °C
Dark meat:	80 ° to 90 °C
Poultry:	80 °C
Desserts:	65 ° to 90 °C

#### • Seasoning

Season lightly. Due to the low cooking temperature the typical own taste is intensified.

Do not over dose alcohol, essences, reducing agents, etc.

#### • Preserving

In accordance to the firmness of the raw product and the desired consistency cover the item with either hot or cold water. The diameter of the glass jars should not exceed 100–120 mm. The cooking temperature depends on the product (ripeness, cutting).

**Temperature guide: 74 °–99 °C.**

#### • Scalding

The process is very gentle, no weight loss.

#### Advantages compared with cooking in cauldrons/ large pans:

- Firm structure.
- Intensified aroma and taste of products.
- The weight loss is low, especially with fatty foods.
- Bursts can be avoided especially when using skins with damaged surfaces.

**Recommended temperature: 71 °–80 °C.**

#### • Cooking on plates is possible, e.g. fish.

### Vacuum cooking

• The development of cooking in a vacuum was based on the method of vacuum preserving. The most important requirement for cooking is that the raw material must be 100% vacuum packed. The raw material should be sealed in either special sealing or vacuum bags. After cooking in a vacuum the products are cooled down very quickly to 2 °C.

• The cooking times can be based on those from the steam mode chart.

#### Practical experiences:

• The higher the standard of vacuuming, the shorter the cooking time.

#### Application methods:

- Fish, meat, poultry, vegetables, side dishes, fruit, can be prepared in the conventional way. Different garnishings and stuffings can be prepared with special care.
- Place goods to be vacuumed cooked on grids.

#### Vacuum cooking...

Fish, goose livers:	70 °C
Pale meat:	80 °C
Vegetables, mushrooms, fruits:	90 °C
Dark meat, side dishes:	99 °C

#### Hint:

Apply for our special manual on vacuum cooking!



## Operating mode Reheating\* moist heat and dry heat 30 °C – 300 °C

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### **Advantages**

- Different food products can be reheated without being covered.
- There is no time limit between cooking and reheating/serving.
- Allows more time for decorating, garnishing and preparing the dishes and trays. Quality is improved.
- Staff work more efficiently.
- Catering for banquets, large functions, travel groups, à la carte meals, free flow convenient loading.
- Applicable everywhere, either in canteens, large industrial kitchens or the catering trade.

### **Examples**

#### • **Starters**

spaghetti, lasagne, cannelloni, vegetable dishes, cheese noodles, quiche lorraine, spring rolls, onion flan, etc.

#### • **Soup garnishings**

liver dumplings, pancakes, noodles, bacon balls, etc.

#### • **Main course**

roasts, casseroles, frozen meat and fish, leg of pork, leg of veal, roasts with crackling, stuffed vegetables, ready to serve meals etc.

#### • **Side dishes**

rice, potatoe pancakes, noodles, vegetables, potatoes (mashed, french fries, gratinated, baked) etc.

#### • **Desserts**

apple pie, cheese cake, hot fruit, stewed fruit, etc.

### **Time saving**

No more warming-up and keeping warm. Reheating of pre-cooked food possible (cook and chill method).

Reheating of the food is possible either direct on plates, dishes or in containers.



## Operating mode Reheating\* moist heat and dry heat 30 °C – 300 °C

### Operating

- Set the "Reheating" mode .



- Preheat to the set temperature or at least until the control light goes out.



+



### Load ...

... the insertable rack or the mobile oven rack and place it in the unit.

- Set the temperature.  
For best results the average temperature lies between 120 °C–140 °C, however the temperature will vary according to the different products.



- Set cooking time/continuous duty or core temperature. The reheating time depends on the product, product temperature, number of plates, fullness, and the desired result, but as a general rule set between approx. 5–8 minutes.



/



or



### Setting

Change the set values when necessary.



### Unload ...

... the containers when they have reached the required temperature. When the door is opened the unit switches off automatically. The fan continues to rotate until it becomes stationary.

### Control ...

... is possible any time.

- **Ideal serving temperature:** 75 °C – possible to control by using the automatic core temperature.
- When desired change the set values.



## Operating mode Reheating\* moist heat and dry heat 30 °C – 300 °C

### Hints

- **Reheating utensils**  
Porcelain plates, clay, glass, silver plates, copper pans, brass beakers, aluminium, stainless steel, chrome.
- **For banquets, large functions**  
Reheat on plates, use the special plate mobile oven rack
  - Large quantities – time saving.
  - Quick heat transfer.
  - Shorter serving times therefore more economical, more customers, more turnover.
- Heat retaining hood: for bridging short periods or transporting.
- Heat on serving utensils: Acts as a heat accumulator when the serving distances are long and during peak periods.
- Arrange/spread the food evenly on the plates etc. and do not place too close together.
- Mise en Place: season and lightly oil first, saves brushing with oil later, before serving.
- **Sauces:**  
Generally pour over the product before reheating or place a small amount on the plates afterwards.
- Larger components need more time for reheating.
- Reoccurring procedures can be individually programmed.
- **Variable reheating**  
Possible in every cooking mode, choose the reheating programme to meet the individual requirements of the products.



Reheating on plates using the special transport trolley. Available for table and floor models.



Heat retaining hood for the plate mobile oven rack. Available for table and floor models.

### Safety hints

- **Caution! Steam! (Danger scalding).**
- **Caution! Hot containers and grids!**
- **Please observe the correct locking of the mobile oven rack.**



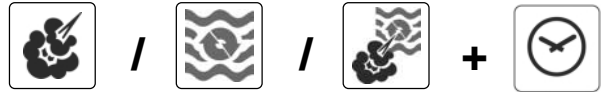


## Variable Reheating

Individual reheating is possible in any of the 3 operating modes ("Steam", "Hot Air" and "Combi-Steam").

### Operation

- Preheat to the selected mode temperature.



- Set mode.



- Set the cooking temperature.



- Set the cooking time.



### Reheating temperature

On average, the best temperatures are between 120 °C – 140 °C.

### Reheating time

Set approx. between 5 to 8 minutes – the reheating time varies depending on the product, product temperature, plates/number of plates inserted and the desired cooked results for serving.

### Control ...

... is possible any time.

- **Ideal serving temperature:** 70-75 °C
- If desired change the set values.



# Cooking with core temperature\*

### Advantages

- Perfect cooking.
- Less weight loss.
- Prevents over cooking.
- Easier and precise cooking control – digital display.
- Constant personal care not necessary.
- Guarantees high, constant quality standards as opposes to traditional methods such as needle, finger, lip, fork and cut test.

### Function

To measure the core temperature of food thus enabling a perfect cooking process. No risks.

### Cooking method

Possible in all modes.

### Operation

Introduce the clean, cold tip of the core probe into the thickest part of the food item.



Using the core temperature cooking method you "can cook exact". Insert the sensor into the thickest part of the meat.

- Set the mode switch.
- Set the cooking temperature.
- Set the desired core temperature – the preselected temperature is displayed.
- The timer does not operate.
- A buzzer is sounded when the preselected core temperature is reached and the unit switches automatically off.







# Cooking with core temperature\*

## Simultaneous use of core temperature and timer

### 1. When you are working with core temperature you may

a. checking the duration of the core temperature controlled cooking process



press, and the passed time is shown in the display of the timer



b. checking the remaining cooking time

If the timer is set before using the automatic core temperature control the clock runs simultaneously but does not control the cooking process, the remaining time can be checked during the use of the core temperature.



press and keep pressed



press simultaneously



the timer display shows the remaining cooking time

### 2. When you are working with the timer

The core temperature of the meat may be checked as follows:



press and keep pressed



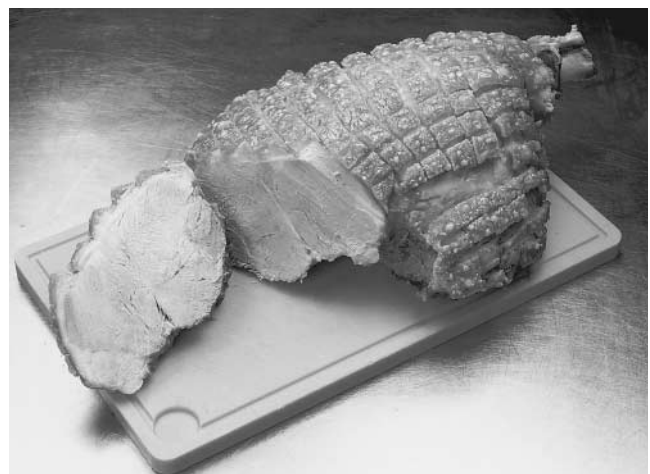
the display shows the actual core temperature

## Hints

- When roasting meat for slices, the core temperature should be set approx 5 °C lower than usual, because the roast continues to cook during the cool down phase. Example: "Roasting", ratio core temperature – cooking time.
  - Fully cooked – 80°C core temperature desired.
  - 60 °C core temperature is reached after 60 minutes.
  - For the last 20 °C core temperature the remaining cooking time should be half the time again, in this case 30 minutes.
  - As desired increase the core temperature (10 °C, 20 °C, 30 °C more).
  - When increasing the roasting time bear in mind: 20% more compares to (approx. 1/5), 50% more (1/2), 80% more (4/5) cooking time.
- In order to avoid holes (protein coagulation) cool the core probe before inserting.
- The set temperature and cooking mode can be changed any time.
- Core temperature measurement: ensures the ideal serving temperature when reheating.
- The core temperature is programmable.

## Safety hints

- The core probe can be very hot.
- When not in use always place it in the holder provided.
- Do not let the core probe hang loose outside the cooking cabinet.
- Remove the core probe from the food before unloading it.



Even cooking "cook exact" and reduce the weight losses. Roasts are juicier.





## Cooking with core temperature\*

### Core temperature values

	State	Core temperature
<b>Beef</b>		
Filet of beef	medium	55–58 °C
Roast beef	medium	55–60 °C
Beef rose	well done	85–90 °C
Roast beef joint	well done	80–85 °C
Aitchbone	well done	90 °C

### Pork

Leg	well done	75 °C
Leg	under done	65–68 °C
Saddle	slightly light pink	65–70 °C
Shoulder	well done	75 °C
Belly/stuffed	well done	70–75 °C
Belly	well done	80–85 °C
Knuckle, roasted	well done	80–85 °C
Knuckle, cured	well done	80–85 °C
Ham	juicy	64–68 °C
Smoked pork chops (Buffet slices)		65–70 °C 55–60 °C
Knuckle pickled	well done	75–80 °C
Ham in bread crust	well done	65–70 °C
Tongue	well cooked	85–90 °C
Pig's head		75–82 °C

### Veal

Saddle	light pink	65–70 °C
Leg, Top-side, Fricandeau	well done	78 °C
Kidney	well done	75–80 °C
Shoulder	well done	75–78 °C
Breast (often stuffed or boned)	well done	75–78 °C

### Core temperature values

	State	Core temperature
<b>Mutton</b>		
Saddle	light pink	70–75 °C
Saddle	well done	80 °C
Leg	light pink	75–78 °C
Leg	well done	82–85 °C

### Lamb

When the meat is well done, the core temperature varies between 79 °C and 85 °C. The colour of the meat core is grey, slightly pale pink. The meat juice is clear.

### Poultry

Chicken	well done	85 °C
Goose	pink	75–80 °C
Goose	well done	90–92 °C
Turkey, Duck	well done	80–85 °C

### Pies, Pates etc.

Pies	72–74 °C
Terrinies	60–70 °C
Galatines	65 °C
Ballotines	65 °C
Fois gras	45 °C
Salmon	60 °C
Pike	63 °C
Fish mousse	65 °C

## Additional function “Moistening”\*



### Advantages

- Doughs rise exceptionally well due to the quick addition of moisture.
- Pastries shine slightly.
- Sudden addition of moisture.

### Function

Sudden addition of moisture.

### Cooking examples

- **Mise en Place**  
Blind baking, (tartlettes etc.).
- **Starters**  
Vol-au-vents, baguette, fleurons, flûtes etc.
- **Soup garnishings**  
Profiteroles.
- **Roasts/Main course**  
Ham in bread dough, filet of beef in yeast dough etc.
- **Desserts**  
Eclair, choux pastry, puff pastries, croissantes, poppy seed cake, nut strudel etc.

### Cooking mode

Hot Air

### Temperature range

120 °C – 250 °C cooking temperature.

### Operating

- Press “Moisture” key.



- **Moisture time span:** The moisture is produced for as long as the key is depressed, e.g. restricted to four sec. (when activated a red digital display lights up).



Perforated aluminium sheets conduct the heat quicker and evenly to the underside of the product.

### Programming

- Programme as usual.
- Bear in mind the capital on programming.

Where moistening has been programmed, it will be injected at intervals of 120 seconds for a period of 4 seconds at a time.

The green LED only lights up when the temperature inside the cooking cabinet is between 120 °C - 250 °C and the moistening is in operation.

### Hints

- Moisten pastries shortly after the cooking has begun.



## Additional function “Cool down” CM units

### Advantages

- The cooking cabinet temperature cools down quickly.
- Automatic – no manpower required.

### Function

Quick cooling down of the cooking cabinet.

### Cooking method

Possible in all modes.

### Operation

- Close the door.

- Set the cooking mode.

- Set to “Cool down”.

- Open the door.
  - A red digital light indicates that the function is in operation, the real interior cabinet temperature is displayed, the temperature blinks.

### Safety hints

- **Caution!**  
During the “cool down” the fan wheel is not switched off when the door is opened.
- **Only choose the “Cool down” function when the air baffle is closed.**  
**Caution! Before setting the “Cool down” function – close the door!**  
“Cool down” is not programmable.



## Additional function „Cool down“ CD units

### Advantages

- The cooking cabinet temperature cools down quickly.
- Automatic – no manpower required.

### Function

Quick cooling down of the cooking cabinet.

### Cooking method

Possible in all modes.

### Operation

- Set to “Cool down”.

### Safety hints

- **Caution!**
- **During the cool down period the fan wheel is not switched off when the door is opened.**
- **Only choose the “Cool down” function when the air baffle is closed.**
- **Caution! Before setting the “Cool down” function – close the door!**
- **Never use cold water to cool the cooking cabinet down.**



# Programming\*

## Nine 3-step programs

...to choose from.

### The benefits

- Saves time, because the programs are available all the time.
- Staff are free to get on with other work while the food is being cooked
- The cooking program is fully automatic.
- Quality is assured for calibrated and convenience products.
- Standard cooking processes can be used even by untrained staff, completely in line with your settings.

### Programming

- Set the mode selector to "Prog".  
You can now start programming.
- Select the program number (1-9) with the arrow keys (program number with point).
- Enter the cooking steps by choosing:  
one of the modes

the cooking temperature

the cooking time or core temperature

any additional functions

The number display shows the steps "Display step number without point" (step number without point).

Enter all steps (max. 3).

- Save the program by turning the mode selector.

### Check

the program by pressing the start button several times.  
The steps are displayed in sequence. Once this is completed the display shows the program number.



## Programming\*

### Working with a stored program

- Set the mode selector to
- Select the desired program number
- Press the start button



The cooking steps are executed automatically one after another. When the program is complete a buzzer sounds and the oven automatically switches itself off.

### Changing the settings entered

The following settings can be changed while a program is running:

- Cooking temperature
- Cooking time / core temperature
- Additional function

If the settings are to be entered into the program **permanently**:

press both these keys simultaneously



### Programming lock

The programming lock stops unauthorized programs being entered or programs being overwritten. This means only certain people are authorized to enter programs. When the program lock is activated the following operations are not possible:

- Changing programs
- Checking the programs via the start button
- Only stored program numbers are displayed and can be started.

#### Tips

- You can also carry out all nine steps of a program with the same mode and different temperatures.
- Programming during continuous operation is not possible.
- Copy the programming aids on the following pages, and use for your own individual programs.
- If the program number flashes, this means the program has not been allocated yet.

Cleaning program "C". The "C" program has been preset in the factory with a cleaning program for daily cleaning.

# Programming\*

## Locking programming

- Set the mode selector to
- Set the timer to 110 minutes
- Press the start button



The function display shows:

## Removing the program lock

- Set the mode selector to
- Set the timer to 110 minutes
- Press the start button



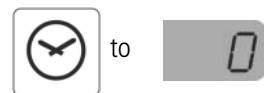
The function display shows:

## Deleting a program setting

- Activate program mode
- Select the appropriate program number
- Select cooking mode, as long as the LED flashes
- Set the time
- Store  
Set mode selector to "Prog".



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








**Program number**






**Product:**

**Roast pork**

	1st step	2nd step	3rd step
 Mode	<i>Steam</i>	<i>Combi- Steam</i>	<i>Hot air</i>
	<i>100 C</i>	<i>160 C</i>	<i>220 C</i>
 	<i>30 min.</i>	<i>78 C</i>	<i>12 min.</i>
			
	<i>Setting protein</i>	<i>Main cooking</i>	<i>Crisping</i>

**Program number:**

**Product:**

	1st step	2nd step	3rd step
 Mode			
			
 			
			



















# Examples fish, shell fish

Food	Hints	Proper container/grid	Amounts per container				
			6 x ½	10 x ½	10 x ¾ 20 x ½	20 x ¾	20 x ¾ 40 x ½
Salmon	bend out belly bones, use core temp. prop with potatoes	20 mm unperf. or 40 mm	2 x ½	3 x ½	3 x ¾	6 x ¾	6 x ¾
Salmon filets	place in serving dishes, add wine	grid or 20 mm unperf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Salmon soufflée	timbales, dariolen, observe heat conductivity	grid	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Turbot	possibly add vegetable, Julienne-bouillon	40 mm unperf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Halibut	salt, pepper, white wine, chopped herbs	40 mm unperf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Sole filets rolled	season	40 mm unperf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Sole	season, preheat 300 °C	20 mm granite	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Fried trout	season, oil lightly, preheat 300 °C	20 mm granite	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Trout au bleu	bend out belly bones, season lightly	20 mm or 40 mm unperf.	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Perch	Julienne-bouillon	40 mm unperf.	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Mussels	wine, grated vegetables	40 or 65 mm perf./unperf.	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Fish balls	form well, cover with foil	40 mm unperf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Fish terrine*	level off well, cover	grid	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Salmon mousseline	cover with flat container	grid	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Shrimps-Dariol	use flat container, cover	grid	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
Lobster ballotine	fill evenly	20 mm unperf.	3 x ½	5 x ½	5 x ¾	10 x ¾	10 x ¾
<b>Vacuum cooking:</b>							
Sole	vacuum cooking	grid	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Scampi	vacuum cooking	grid	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
<b>Frozen foods:</b>							
Fish portions gratin in alu. foil	preheat 200 °C	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Fish in bread, crumbs	preheat 200 °C	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Gratinated fish portions	preheat 200 °C	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾
Cod filets pre-cooked	preheat 200 °C	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ¾	20 x ¾	20 x ¾

CT = core temperature.

Remember that the capacities given always relate to a full load. In some cases reducing the size of the load can improve the quality of the food. Food is a natural product. The temperatures and times given are therefore for guidance only, and may need to be individually adapted.



Load per container		Cooking process		Approx. loading capacity				Additional information Personal notes		
¼	½	1st Step for CD units	2nd Step	3rd Step	6x1/1	10x1/1	10x2/1 / 20x1/1		20x2/1	
1 pcs.	2 pcs.	100 °	75 °			2 pcs.	3 pcs.	6 pcs.	12 pcs.	Cooking time: you will need to try this out yourself!
20 pcs. 15 pcs.	40 pcs. 30 pcs.	100 ° 8 min.	75 ° 6-8 min. 80 ° 8-10 min.			120 pcs. 90 pcs.	200 pcs. 150 pcs.	400 pcs. 300 pcs.	800 pcs. 600 pcs.	
15-20 pcs.	30-40 pcs.	100 ° 10 min.	70 ° 15 min.			60 pcs.	100 pcs.	200 pcs.	400 pcs.	
1 pcs.	2 pcs.	100 ° 20 min.	80 ° 25 min.			6 pcs.	10 pcs.	20 pcs.	40 pcs.	
15 port.	30 port.	100 ° 10 min.	75 ° 12 min.			90 Port.	150 Port.	300 Port.	600 Port.	
30 pcs.	60 pcs.	100 ° 10 min.	75 ° 12 min.			180 pcs.	300 pcs.	600 pcs.	1200 pcs.	
4-5 pcs.	8-10 pcs.		250 ° 15 min.			30 pcs.	50 pcs.	100 pcs.	200 pcs.	
8-10 pcs.	16-20 pcs.		250 ° 15 min.			30 pcs.	50 pcs.	100 pcs.	200 pcs.	
8-10 pcs.	16-20 pcs.		100 ° 10-15 min.			30 pcs.	50 pcs.	100 pcs.	200 pcs.	
10-12 pcs.	20-24 pcs.	100 ° 10 min.	95 ° 12 min.			36 pcs.	60 pcs.	120 pcs.	240 pcs.	
1-2 kg	2-4 kg	100 ° 10 min.	78 ° 10-15 min.			6 kg	10 kg	20 kg	40 kg	
50 pcs.	100 pcs.	100 ° 8 min.	75 ° 8-10 min.			300 pcs.	500 pcs.	1000 pcs.	2000 pcs.	
3 pcs.	6 pcs.		72 ° CT 62 °			9 pcs.	15 pcs.	30 pcs.	60 pcs.	
20 pcs.	40 pcs.	100 ° 10 min.	70 ° 15 min.			60 pcs.	100 pcs.	200 pcs.	400 pcs.	
25 pcs.	50 pcs.	100 ° 30 min.	70 ° 35 min.			75 pcs.	125 pcs.	250 pcs.	500 pcs.	
20 pcs.	40 pcs.	100 ° 10 min.	72 ° CT 62 °			60 pcs.	100 pcs.	200 pcs.	400 pcs.	
6-8 pcs.	12-16 pcs.	100 ° 10 min.	72 ° 15 min.			48 pcs.	80 pcs.	160 pcs.	320 pcs.	
80 pcs.	160 pcs.	100 ° 10 min.	76 ° 12 min.			480 pcs.	800 pcs.	1600 pcs.	3200 pcs.	
12 pcs.	24 pcs.		180 ° 30 min.			72 pcs.	120 pcs.	240 pcs.	480 pcs.	
15 pcs.	30 pcs.		160 ° 20 min.			90 pcs.	150 pcs.	300 pcs.	600 pcs.	
18 pcs.	36 pcs.		180 ° 25 min.			108 pcs.	180 pcs.	360 pcs.	720 pcs.	
18 pcs.	36 pcs.		175 ° 20 min.			108 pcs.	180 pcs.	360 pcs.	720 pcs.	

\*only for CM units

## Examples vegetables, canned foods

Food	Hints	Proper container/grid	Amounts per container				
			6 x ½	10 x ½	10 x ½ 20 x ½	20 x ½	20 x ½ 40 x ½
Broccoli	frozen (perf. container rinse in cold water)	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Cauliflower	quartered, remove stalks	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Brussels sprout	frozen, season, add butter before serving	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Spinach	fresh	65 mm perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Kohlrabi	frozen, slice	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Parisienne carrots	season while frozen, add butter	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Peas	season while frozen	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Asparagus	bundle, when desired cook in meat juices	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Tomatoes	blanch for tomatoes concassées, salt	20 or 40 mm 65 mm perf.	5 x ½ 20/40 3 x ½ 65 mm	10 x ½ 20/40 5 x ½ 65 mm	10 x ½ 20/40 5 x ½ 65 mm	20 x ½ 20/40 10 x ½ 65 mm	20 x ½ 20/40 10 x ½ 65 mm
Beans	frozen, whole or cut fresh blanch, cold water	65 mm unperf. or perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Mushrooms	sprinkle with lemon, white wine	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Cabbage	remove stalk	65 mm perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Stuffed peppers	place the opening upright	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Cauliflower cheese	every second rail, preheat	grid or 20 mm	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Vegetables dishes	pre-cooked, add butter before serving	grid or 20 mm	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Canned vegetables	bear in mind the size of cans	grid or 20 mm	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Vegetable casseroles	distribute out evenly	40 mm or 65 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	20 x ½
Vegetable flan	grease form well, load with foil or cover with GN-containers	grid or 20 mm	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Cabbage rolls	blanch cabbage leaves, preheat	65 mm perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
Farmers omelette	distribute the mixture evenly approx. 1 – 2 cm under the rim	40 mm or 65 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	20 x ½
Soaked grain	prepare cold, leave to soak, shortens cooking time	40 mm or 65 mm granite	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
Whole food casseroles	bear in mind the various soaking times	40 mm or 65 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	20 x ½
Moussaka	fill till approx. 2 cm under the rim	40 mm or 65 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	20 x ½
Vacuum cooking carrots, fennel	sliced, one or more portion bags	grid	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½

Perforated containers shorten the cooking time.



## Examples eggs, side dishes

Food	Hints	Proper container/grid	Amounts per container				
			6 x ½	10 x ½	10 x ½ 20 x ½	20 x ½	20 x ½ 40 x ½
<b>Eggs</b> (hard boiled)	set timer when the window is misty	65 mm perf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Egg in cocotte</b> (poached eggs)	eventually cover with foil of GN-containers	grid	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Royal egg</b>	baking tins or gastronorm container	grid 65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Egg souffles</b>	heat milk, add beaten eggs, cover with foil	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Scrambled egg</b>	break eggs, whisk add either milk or cream, cover	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Swedish Pancakes</b>	grease container, preheat	40 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Quiche</b>	pre-cook, bacon, onions, cheese, vegetables, egg mixture, preheat	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Boiled potatoes</b>	quartered, add salt, toss well	100–150 perf.	3 x 100 mm 2 x 150 mm	5 x 100 mm 3 x 150 mm	5 x 100 mm 3 x 150 mm	10 x 100 mm 6 x 150 mm	10 x 100 mm 6 x 150 mm
<b>Skin potatoes</b>	place on grids	100–150 perf.	3 x 100 mm 2 x 150 mm	5 x 100 mm 3 x 150 mm	5 x 100 mm 3 x 150 mm	10 x 100 mm 6 x 150 mm	10 x 100 mm 6 x 150 mm
<b>Potatoe dumplings</b>	add water, leave to soak	20 mm	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Fried potatoes</b>	scatter in container, preheat	20 mm or 40 mm granite	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Baked potatoes</b>	wrap in foil, when required steam first, preheat	grid or 20 mm	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Potatoe gratin</b>	even slices, preheat	40 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Pommes Macaire</b>	spread out evenly in containers, preheat	20 mm granite or alu. perf.	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Vaccumed potatoes</b>	quartered, tourniert	grid	6 x ½	10 x ½	10 x ½	20 x ½	20 x ½
<b>Rice</b>	add water, stock, leave to soak for a short time	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Long grain rice</b>	leave to soak (3 parts : 1)	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Rice pudding</b>	sugar, cinnamon, milk	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Noodles</b>		65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Canneloni</b>	cover with sauce	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Lasagne</b>	fill till approx. 2 cm under the rim	65 mm unperf.	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½
<b>Noodle gratin</b>	mix the egg mixture well	40 mm or 65 mm granite	3 x ½	5 x ½	5 x ½	10 x ½	10 x ½



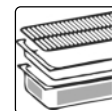












# Standard Catering Containers and Grids

## Stainless steel:

- Rust free
- More stable through double flanging design!
- Better handling quality
- Long lasting

## Perforated stainless steel:

- Perforated sides and corners – allows better steam circulation
- Large perforation diameter – better cooking quality
- Perforation even on the side walls

## Perforated aluminium:

- Better heat conductivity • Better crusts, crackling
- Teflon coating

## Granite enamelled containers:

- Better heat conductivity • No sticking
- Better baking quality – no greasy base
- Better raising • Minimum fat consumption
- No loss in portioning – edges well formed

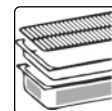
## High gloss nickel plated grids:

- For roasting, grilling and baking

## CNS frying basket:

- Fat-free preparation of fried food
- Three times greater filling depth than preparation on baking trays
- Even browning without darker contact areas

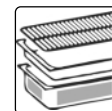
Size	Item (Depth)	Art.-No.	Illustration	Example	Example for Equipment				
					6x1/1	10x1/1	10x2/1	20x1/1	20x2/1
1/3 GN 325 x 175 mm	Container CNS 20mm	6013.1302		for fried potatoes, hamburgers, potatoe dumplings, thawing, vegetables, poaching fish, side dishes	3	6			
	40mm	6013.1304		for vegetables, meat loaf, vegetable casseroles, steamed and poached fish, hamburgers	3	6			
	65mm	6013.1306		for stuffed peppers, stews, different fruit, egg royal, vegetables, rice	3	6			
1/2 GN 325 x 265 mm	Container CNS 20mm	6013.1202		for fried potatoes, hamburgers, potatoe dumplings, thawing, vegetables, poaching fish side dishes	2	4			
	40mm	6013.1204		for vegetables, meat loaf, vegetable casseroles, steamed and poached fish, hamburgers	2	6			
	65mm	6013.1206		for stuffed peppers, stews, different fruit, egg royal, vegetables, rice	2	4			
	Container perforated CNS 55mm	6015.1216		for vegetables without juice, side dishes, dumplings etc.	1	2			
	90mm	6015.1295		for vegetables, eggs, blanching		1	2		
	140mm	6015.1215		for potatoes		1	2		
	Container granite enamelled 20mm	6014.1202		preparation of pan-fried cuts, roasting of nuts and bones ect.	2	2			
	40mm	6014.1204			2	2			
	65mm	6014.1206			1	1			
	Frying basket CNS	6019.1215		for chips, wedges, calamari, prawns	2	4			



# Standard Catering Containers and Grids

Size	Item (Depth)	Art.-No.	Illustration	Example	Example for Equipment				
					6x1/1	10x1/1	10x2/1	20x1/1	20x2/1
1/1 GN 530 x 325mm	Container CNS 20mm	6013.1102		for roast potatoes, gratinating different dishes, saddle of hare, thawing etc.	6	10	5	20	10
	40mm	6013.1104		for vegetables, meat loaf, steamed and poached fish, pastry, duck, goose etc.	3	5		10	
	65mm	6013.1106		for stuffed peppers, rice, noodles, vegetables, different fruits, stews etc.	4	5	5	10	10
	100mm	6013.1110		for collecting stock, boiled ham, preparation of sauces etc.		1	2	2	4
	Container perforated CNS 55mm	6015.1165		for vegetables without stock, different side dishes, dumplings etc.	3	5	6	10	10
	90mm	6015.1195		for vegetables, eggs, potatoes, blanching etc.	3	5	3	5	6
	140mm	6015.1115		for potatoes	2	3	6	5	12
	Container granite- enamelled 20mm	6014.1102		for baking plain cake, biscuits, sponges, roasting, braising, gratinating etc.	6	10	6	20	10
	40mm	6014.1104			3	5	6	10	10
	65mm	6014.1106			3	5	4	10	10
Container aluminium perf. Teflon coating	6015.1103		for different pastries	6	10		20		
Grids CNS high gloss nickel plated	6010.1101		for large roasts, grilled meats, toasts, thawing, gratinating, chicken, duck, goose, preserving etc.	6	10	6	20	10	
	6010.1100								
1/1 GN	Chicken grilling grid H 8 - 1/1	6035.1006		for cooking 8 chickens, each weighing between 1000 g and 1500 g	2	3	6	6	12
	Chicken grilling grid H 10 - 1/1	6035.1010		for cooking 10 chickens, each weighing up to 1000 g	-	-	6	6	12
	Duck grilling grid	6035.1009		for cooking 8 ducks, each weighing between 1600 g and 2200 g	1	2	4	5	10
	Frying basket CNS	6019.1115		for chips, wedges, calamari, prawns	2	4	6	10	10
530x 373mm	Chicken grilling grid H 12 - S	6035.1011		for cooking 12 chickens, each weighing up to 1000 g. The grill mobile oven rack is required	2	3	-	-	-

\*only for CM units



# Standard Catering Containers and Grids

## Stainless steel:

- Rust free
- More stable through double flanging design!
- Better handling quality
- Long lasting

## Perforated stainless steel:

- Perforated sides and corners – allows better steam circulation
- Large perforation diameter – better cooking quality
- Perforation even on the side walls

## Perforated aluminium:

- Better heat conductivity
- Better crusts, crackling
- Teflon coating

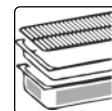
## Granite enamelled containers:

- Better heat conductivity
- No sticking
- Better baking quality – no greasy base
- Better raising
- Minimum fat consumption
- No loss in portioning – edges well formed

## High gloss nickel plated grids:

- For roasting, grilling and baking

Size	Item (Depth)	Art.-No.	Illustration	Example	Example for Equipment					
					6x1/1	10x1/1	10x2/1	20x1/1	20x2/1	
2/1 GN 650 x 530mm	Container CNS 20mm	6013.2102		for roast potatoes, saddle of hare, gratinating, thawing, vegetables, dumplings, hamburgers etc.			10		20	
	40mm	6013.2104		for vegetables, meat loaf, hamburgers, steamed or poached fish, duck, goose, vegetable casseroles, pastries etc.			5		10	
	65mm	6013.2106		for stuffed peppers, rice, vegetables, noodles, stews etc.			2		5	
	100mm	6013.2110		for collecting stock, boiled ham, preparation of sauces etc.			1		1	
	Container perforated CNS 55mm	6015.2165		for vegetables without stock, dumplings etc.			2		5	
	90mm	6015.2195		for vegetables, eggs, potatoes etc.			1		2	
	Container granite- enamelled 90mm	6014.2102		for baking plain cake, sponge rolls, pastries, biscuits, gratinating, braising, roasting etc.			5		10	
	40mm	6014.2104					2		5	
	65mm	6014.2106					5		10	
	Container aluminium perforated 20mm	6015.2103		for various pastries			10		20	
	Grids CNS	high gloss nickel plated	6010.2101		for large roasts (eg. pork, beef etc.), grilled meats, toasts, chicken, duck, goose, gratinating, thawing, baking in moulds etc.			7		15
			6010.2100							
	400 x 600 mm	Grids CNS	6010.0103							
		Aluminium trays, Teflon coating	6015.1000		for various pastries			-		-



## Stand

The high operational performance of the unit is complemented by an efficiently coordinated accessory line of accessories. Therefore, the unit can be easily adjusted to meet individual requirements.

The stands and cabinets are made out of stainless steel and they guarantee a stable, practical installation of the unit.



### Stand UG I

Frame completely out of stainless steel with shelf and adjustable feet.



### Cabinet US III

Frame complete with shelf base, adjustable feet, and sides; also features 14 pairs of rails for 1/1 GN containers.



### Stand UG II

Frame complete with shelf base and adjustable feet; also features 14 pairs of rails to take grids and GN containers.



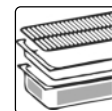
### Cabinet US IV

Frame complete with shelf base and adjustable feet; also features 14 pairs of rails closed on all sides, with two duplex swing doors.

### Size of stands:

Model	Article-No.	Size mm		
		depth	width	height
6x1/1 and 10x1/1GN				
UG I	6201.1020	638	788	720
UG I-low	6201.1024	638	788	460
UG II	6201.2020	638	788	720
UG II-low	6201.2024	638	788	460
UG II-baking quantity 400x600mm	6201.2014	638	788	460
US III	6201.3020	640	904	720
US IV	6201.4020	688	904	720

Model	Article-No.	Size mm		
		depth	width	height
10x2/1GN				
UG I	6201.1022	707	1220	720
UG II	6201.2022	707	1220	720
UG I-low	6201.1023	707	1220	340
UG I for Combi-Duo (Only CPC/CM/CD 61 on CPC/CM/CD 61)	6201.1029	638	788	260
Rack raiser CPC/CM/CD 61 see page 9 Exhaust hood	6201.1030	638	788	160



## Mobile oven racks

Completely made of nickel chromium steel

All rails feature

- tilt-resistant U profiles, to prevent GN containers tilting in the mobile oven rack
- notched recesses, for fast loading and unloading
- Optional rail configuration on request

Extra mobile oven racks and transport trolleys increase the cooking capacity, make work more efficient and enable loads to be exchanged more quickly.

### Table-top units

With:

- locking devices to prevent anything sliding out by accident
- tilt security

### Floor models

With:

- GN container locks at the front and back, for loading and unloading from both sides
- four smooth-running castors (two with brakes)
- drip pan with drain valve

### Size of Mobile oven racks:

Model	Article-No.:	Size mm		
		depth	width	height
6x1/1 GN	6020.1020	565	431	480
10x1/1 GN	6030.1020	565	431	740
10x2/1 GN	6030.1021	687	620	740
20x1/1 GN	6040.1020	835	540	1790
20x2/1 GN	6050.1020	978	730	1790
Grill rack 6x1/1 GN	6020.1022	565	431	480
Baking rack 6x1/1 GN	6020.1024	565	431	480
Grill rack 10x1/1 GN	6030.1024	565	431	740
Baking rack 10x1/1 GN	6030.1026	565	431	740



6 x 1/1 GN

10 x 1/1 GN

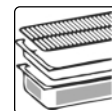
10 x 2/1 GN



20 x 1/1 GN

20 x 2/1 GN





## Mobile plate racks

For reheating precooked food on plates, e.g. for banquets. The plates, which can be up to **310 mm** in **diameter**, are **positioned exactly** on support rings. The plate rack is completely made of high-grade nickel chromium steel.

The plate racks for 6x1/1 GN, 10x1/1 GN and 10x2/1 GN should only be used in conjunction with the transport trolley.

### Sizes of Mobile Plate Racks:

Model	Article-No.	No. of plates	Max. plate height (mm)	Size mm		
				depth	width	height
6x1/1 GN	6007.1020	19	25	630	402	479
10x1/1 GN	6007.1021	31	25	630	402	740
10x1/1 GN*	6007.1023	25	32	630	402	740
10x2/1 GN	6007.1022	50	32	805	620	740
20x1/1 GN	6007.5020	62	25	835	540	1790
20x1/1 GN*	6007.5022	50	32	835	540	1790
20x2/1 GN*	6007.5021	100	32	981	730	1790
20x2/1 GN	6007.5023	120	25	981	730	1790

\* for plates covered with cloches, the max. total height of plate and cloches is limited to 72 mm



Example: 10 x 1/1 GN



Example: 20 x 2/1 GN

## Transport trolley for table models

Enables easy transport and quick load changes. Made completely of stainless steel. They can be locked into the unit, includes 4 revolving casters (two with brakes). Locks secure mobile oven rack to transport trolley, while U-profiles prevent containers from tilting.

### Size of Transport trolley

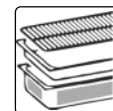
Model	Article-No.	Size mm		
		depth	width	height
6x1/1 GN, 10x1/1 GN	6003.1020	901	541	1000
6x1/1 GN, 10x1/1 GN-low	6003.1023	901	541	620
6x1/1 GN, 10x1/1 GN Bake standard	6003.1025	901	541	1000
10x2/1 GN	6003.1021	1030	790	1000
10x2/1 GN-low	6003.1022	1030	790	620



6 x 1/1 GN and 10 x 1/1 GN



10 x 2/1 GN



## Heat retaining hood

RATIONAL heat retaining hoods mean food can be kept warm for 15-20 minutes between reheating and serving.

RATIONAL heat retaining hoods are available for all sizes of unit.

Model	Article-No.:
6x1/1 GN	6004.1007
10x1/1 GN	6004.1009
10x2/1 GN	6004.1014
20x1/1 GN	6004.1011
20x2/1 GN	6004.1012



Example: 10 x 1/1 GN



Example: 20 x 1/1 GN

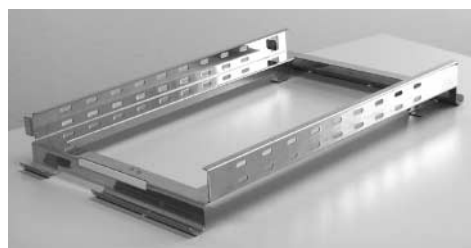
## Ran-in rail for mobile oven rack

### Run-in rail type 6x1/1 GN and 10x1/1 GN

Article-No.: 6021.1306

### Run-in rail type 10x2/1 GN

Article-No.: 6021.1307



## Hinging racks

### Hinging rack for baking trays (400x600mm)

**Type 61** Article-No.: 6020.1023

5 L-shaped guides (88 mm apart)

**Type 101** Article-No.: 6030.1025

8 L-shaped guides (88 mm apart)

### Hinging rack for meat trays (150x350mm)

**Type 61** Article-No.: 6020.1029

6 L-shaped guides 400x600 mm (88 mm apart)

**Type 101** Article-No.: 6020.1031

10 L-shaped guides 400x600 mm (88 mm apart)

### Hinging rack for chicken grilling grids H 12-S

**Type 61** Article-No.: 6020.1036

2 guides for grill trays, H 12

3 U-guides for 400 x 600 mm grill trays

**Type 101** Article-No.: 6030.1039

3 guides for grill trays, H 12

5 U-guides for 400 x 600 mm grill trays

## Containers with lids and grease drainage facilities

For collecting grease that drips down during grilling, and for disposing of it safely.

### Grease drip container 1/1 GN

Height 40mm: Article-No.: 8710.1135

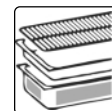
Height 65mm\*: Article-No.: 8710.1136

\*not for grill or mobile oven rack

66 \*only for CM units



# Combi-Duo



## Combi-Duo

lower unit \ upper unit	CPC/CM/CD 61 Electric	CPC/CM 61 Gas
CPC/CM/CD 61 Electric	Art.-Nr.: 6008.1300	Art.-Nr.: 6008.1300
CPC/CM/CD 101 Electric	Art.-Nr.: 6008.1300	Art.-Nr.: 6008.1300
CPC/CM/CD 102 Electric	Art.-Nr.: 6008.1301	Art.-Nr.: 6008.1301
CPC/CM 61 Gas		Art.-Nr.: 6008.1309
CPC/CM 102 Gas		Art.-Nr.: 6008.1307

## CleanJet® complementary kit Combi-Duo

lower unit \ upper unit	CPC/CM/CD 61 Electric	CPC/CM 61 Gas
CPC/CM/CD 61 Electric	Art.-Nr.: 6008.1313	Art.-Nr.: 6008.1313
CPC/CM/CD 101 Electric	Art.-Nr.: 6008.1313	Art.-Nr.: 6008.1313
CPC/CM/CD 102 Electric	Art.-Nr.: 6008.1314	Art.-Nr.: 6008.1314
CPC/CM 61 Gas		Art.-Nr.: 6008.1315
CPC/CM 102 Gas		Art.-Nr.: 6008.1316

In the case of CPC units must be used with CleanJet®!

## UltraVent® condensation extraction hood



Whether up front or at outside catering events, **UltraVent®** ensures a pleasant working environment, anytime, anywhere. The perfectly co-ordinated **UltraVent®** condensation extraction hood opens up unlimited

application possibilities.

The patented condensation technology of the **UltraVent®** condensation extraction hood draws in steam completely and conducts it to the integrated waste gas extraction system. Unpleasant cooking smells are substantially reduced. Complicated and expensive measures for waste gas extraction installations are now a thing of the past. The ClimaPlus Combi® can be incorporated at any time into existing systems without structural alterations. The integrated heat recirculation system optimises energy consumption and reduces water consumption by up to 50%.

Article-No.:	Type
6100.2010	CD/CM/CPC 61/101 Electric
6100.2013	Combi-Duo Electric
6100.2011	CM/CPC 61/101 Gas

For use with Combi-Duo 61/61 Electric the UG I for Combi-Duo is recommended. When installing in Type 61 appliances, a rack raiser is recommended.

## Exhaust hood



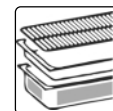
Keeps the air in the kitchen fresh by removing steam and hot vapours. For 6 x 1/1 GN and 10 x 1/1 GN units. Ideal for small kitchens, counter sales or party services.

Article-No.:	Type
6100.2000	CD/CM/CPC 61/101 Electric
6100.2001	Combi-Duo Electric
6100.2004	CM/CPC 61/101 Gas

For use with Combi-Duo 61/61 Electric the UG I for Combi-Duo is recommended. When installing in Type 61 appliances, a rack raiser is recommended.

## Lamb and pork roasting spit

Lamb and pork roasting spit  
 Type 201 Article-No.: 6035.1003  
 Type 202 Article-No.: 6035.1002



## Trolley for special cleaners

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Trolley to hold the canisters for cleaners and rinse aid agents; additional space for up to 4 cleaning arms possible.

Article-No.: 6003.1030



## RATIONAL cleaner and rinse-aid for CleanJet®

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Only original RATIONAL products have been developed, coordinated and authorized especially for optimum cleaning success with CleanJet®. Needless to say, RATIONAL cleaner gives excellent cleaning results even when combi-steamers are cleaned in the traditional way by hand.

Special cleaning agent, 10 litres Article-No.: 9006.0137

Rinse aid, 10 litres Article-No.: 9006.0137

Descaler, 10 litres Article-No.: 6006.0110



## Hand pressure spray gun

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The practical cleaning aid.

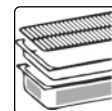
Robust pressurized container with pump handle.

Fitted as standard with two different spray nozzles and separate extension.

Holds 1.5 litres.

Hand pressure spray gun Article-No.: 6004.0100





## Picture selector switch for CPC/CM\*

Start your most important programs with this simple, easy-to-recognise pictorial symbol switch. Individual cooking sequences can be input into 12 symbol switches. Ideal for snacks and fast food, supermarkets, butchers, and for large-scale catering systems.

Picture selector switch for CPC Article-no.: 8720.1392  
Picture selector switch for CM Article-no.: 8720.1390



## PC-program\*

The RATIONAL PC-program helps you with programming, with managing programs and with monitoring cooking processes. It also lets you manage one or more units via a cable or modem link, so that even RATIONAL ClimaPlus Combis® situated some distance away (e.g. in branches) can be managed with ease.

Do you work in industrial catering or operate as a chain operator, do you have multiple outlets or are you interested in keeping full evidence in line with the HACCP/LMHV guidelines? The RATIONAL PC-program can answer all your needs.

Incidentally, the software also supports our CM range in conjunction with the serial port.





# Cleaning

## Cleaning process


For hygiene reasons and to avoid interruptions to operation, it is essential that the Combi-Steamer is cleaned every day at the end of operations.

- Let the cooking cabinet **cool down (to below 60 °C)**.
- Switch the appliance off
- Spray the cooking cabinet and inside of the door, the door gasket, **the space behind the swivel air baffle** and both sides of the air baffle with special cleaner.



Spray the interior cabinet with the special cleaning detergent.

**IMPORTANT:**  
Follow the safety instructions on the RATIONAL spray bottle and the cleaner container.



- Close the cooking cabinet door and leave the cleaner to **work** for about 20 minutes.
- Set the cooking mode / mode selector to **“Moist Heat”** (steam).
- Set the timer to **15 minutes**.
- Shut the cooking cabinet door.
- After 15 minutes, rinse the appliance thoroughly **(including the space behind the air baffle)** with the integrated hand shower.
- Wipe the cooking cabinet and door gasket with a damp cloth, and if necessary open the inner glass out and wipe it too.
- Dry the cooking cabinet for 10 minutes with **“dry heat”** (hot air) at 150 °C.
- After cleaning, do not close the door of the cooking cabinet, but leave it slightly ajar.



Rinse thoroughly using the hand shower.



To clean between the double glass door panel, press the release bar and pull open (open the door).

### Alternatively:\*

- Spray on the cleaner
- Start Program “C” (takes 40 minutes)



- When the program is completed, rinse everything thoroughly with the hand shower and dry the cooking cabinet
- The best way of cleaning the outside of the Combi-Steamer is with a soft, damp cloth.



## Tips

- If the cabinet is heavily soiled, apply steam to the residue for ten minutes before cleaning to soften it up, and if necessary repeat the cleaning routine.
- Even if the Combi-Steamer is only used in Steaming mode, it must be cleaned daily.
- The cooking cabinet, oven rack and floor of the cooking cabinet must be thoroughly rinsed out with water, so that all residues are removed.
- Then dry the cabinet as described above.
- Remove the air baffle from time to time for cleaning.
- Leave the oven rack, grids and containers in the cooking cabinet during cleaning.
- Residues on grids and containers which have first been softened up but are not removed by rinsing can be cleaned by placing in the dish-washer.
- Never use acidic or corrosive liquids on the aluminium sheets as this could cause damage to the material and discolouring.

## Safety hints

- Do not use a high pressure cleaner.
- Do not use acids or let acid fumes come into contact with the protective layer of the units nickel chromium steel otherwise it will be damaged and could cause discolouring.
- Observe the handling instructions on the cleaning detergent container.



## 1. Materials

### Hand pressure spray gun

(always use the original RATIONAL spray pistol!)

The practical cleaning aid.

Robust pressurized container with pump handle.

Fitted as standard with two different spray nozzles and separate extension.

Holds 1.5 litres.



### Special cleaner

Dissolves dirt without scrubbing, even if encrusted. Easy to use, gentle to surfaces and biologically degradable. 11 kg container.

### Follow the safety instructions on the cleaner container.

An EC safety data sheet is available on request.

### Handling the spray bottle

Fill the spray bottle

- Fill the bottle with liquid no higher than the "max" level.
- Put the pump in place, screw it on and tighten it so that the pressure needed for spraying can be built up.
- Pump air into the container using the pump lever.
- Depress the pump lever while pointing the spray nozzle into the unit.

## Safety hints

- Wear the proper protection: protective glasses and gloves.
- Never leave the container unused and under pressure for any length of time. Slowly unscrew the pump head so that the compressed air can escape.
- Rinse the nozzle, nozzle extension and nozzle tips after each use.
- Clean and rinse the cleaning bottle with warm water two or three times a week.
- If the pump piston becomes stiff, apply 2 or 3 drops of oil.



# Descaling/Maintenance CM units



## Steam generator with SC automatic function

### SC - Self clean

The SC-Automatic reduces significantly the need for regular descaling of the steam generator.

We recommend the following intervals between descaling, based on 8 hours a day in steaming mode:

- up to 18° dH\* (up to 3.2 mmol/litre) at least once a year
  - up to 24° dH\* (up to 4.3 mmol/litre) at least twice a year
  - over 24° dH\* (over 4.3 mmol/litre) at least three times a year
- \* German scale of hardness for water

The recommended intervals between descaling may vary from the above guidelines, depending on the hardness of the water. We recommend that the steam generator is thoroughly cleaned by trained customer support personnel.








### Important note

If there is a fault in the SC automatic cleaning function, the "Water Low" display will start to flash. Check whether the water valve is open or the strainer at the entrance to the solenoid valve is blocked. As soon as these problems are cleared, the unit will automatically restart. If it does not do so within 3 minutes, call your local service department.



## Hints

For long periods of intermission (holidays etc.) drain the steam generator as follows:

- Close the door. 
- Set the "Hotair" media. 
- Set the temperature to 32 °C. 
- Open the door 
- Set the "Steam" media. 
- The steam generator will be emptied. 
- Finish setting the key to another operation mode. 

## Changing of quenching temperature\*

Vapor quenching is not necessary for correct functioning of the Combi-Steamer also works without quenching.

For every operating mode, the precise quenching temperature can be set.

## Setting method



Set programming mode



press simultaneously for approx. 10 sec., the program number display lights up



Both core temperature displays show the previous value. After turning the switch to 0, the new value for the selected operation mode can be set in the upper display.

On releasing the buttons, the new quenching temperature (for the selected operation mode) is automatically stored.





## Descaling CD units

### Steam generator with SC automatic function

#### SC - Self clean

The SC-Automatic reduces significantly the need for regular descaling of the steam generator.

We recommend the following intervals between descaling, based on 8 hours a day in steaming mode:

up to 18° dH\* (up to 3.2 mmol/litre) at least once a year  
up to 24° dH\* (up to 4.3 mmol/litre) at least twice a year  
over 24° dH\* (over 4.3 mmol/litre) at least three times a year

\* German scale of hardness for water

The recommended intervals between descaling may vary from the above guidelines, depending on the hardness of the water. We recommend that the steam generator is thoroughly cleaned by trained customer support personnel.

#### Note for appliances in continuous use:

If the active heating periods of the steam generator exceed 60 minutes, and if the door of the cooking cabinet is open for longer than a minute, the generator is automatically rinsed.

The recommended intervals between descaling should nevertheless still be adhered to.

#### Important note

If there is a fault in the SC automatic cleaning function, the "Water Low" display will start to flash.

Check whether the water valve is open or the strainer at the entrance to the solenoid valve is blocked.

As soon as these problems are cleared, the unit will automatically restart. If it does not do so within 3 minutes, call your local service department.



#### Tips

If the steam generator is not going to be used for a while (over the holiday period, for instance), it should be drained as follows:

- Set the magnet to the "cool down" icon.
- Select any operating mode.
- The steam generator will now be emptied.
- Note: the temperature in the steam generator must be less than 75 °C.



# Maintenance

**Service work is to be carried out by electricians:**

**Caution! Disconnect the combi-steamer at the mains before opening the service door and working on live parts.**

### 1. Changing the interior lighting

When the interior lighting fails to work change the halogen bulb.  
First, switch off the unit.  
Cover the outlet inside the unit with a cloth and remove the lamp glass by loosening the 4 nuts with an 8 mm spanner. Remove the frame, the glass and gasket.  
Replace the bulb with a 12 volt, 10 W, 300°C heat resistant one (ET-Nr. 3024.0201).

Also replace both the gaskets.  
External gasket frame: Spare Parts No. 5110.1022  
Internal gasket frame: Spare Parts No. 5110.1023

Do not come into contact with the hot bulb.  
Replace the gasket and glass, secure into place.

### 2. Replacing the door gasket "Damaged door seals must be replaced!"

The door gasket consists of a vulcanized frame which slots into a guide on the cooking cabinet. If a gasket needs to be changed, pull the old gasket out of the guide. Clean the guide rails to remove any soiling. When fitting the gasket, ensure that the rectangular part of the gasket is placed into the frame correctly. It is recommended that the lips are dampened with soapy water during assembly.

- |                             |                                  |
|-----------------------------|----------------------------------|
| <b>Door gasket type 61</b>  | <b>Spare Parts No. 5105.1020</b> |
| <b>Door gasket type 101</b> | <b>Spare Parts No. 5105.1021</b> |
| <b>Door gasket type 102</b> | <b>Spare Parts No. 5105.1022</b> |
| <b>Door gasket type 201</b> | <b>Spare Parts No. 5105.1023</b> |
| <b>Door gasket type 202</b> | <b>Spare Parts No. 5105.1024</b> |



Interior lighting compl./screws, frame, glass gasket, gasket, reflector bulb).



Insert the halogen bulb.



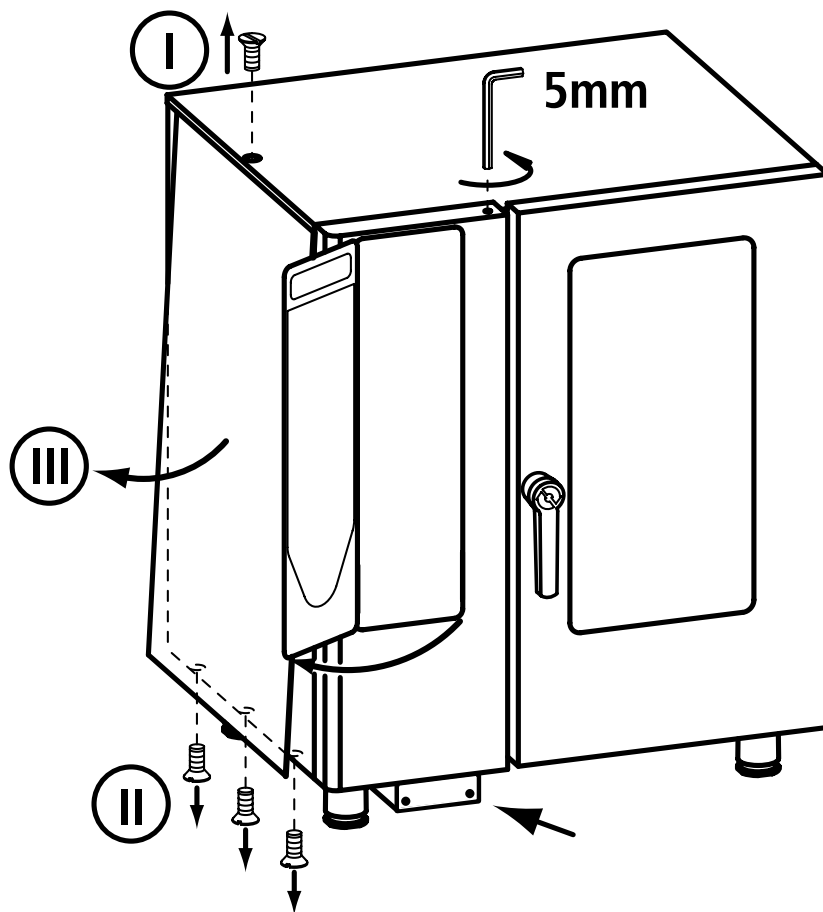
Door gasket guide.

**Note:**  
When disposing of the PC board or the unit, the battery of the control PC board must be disposed of separately.





# INSTALLATION- MANUAL





# Installation-Manua

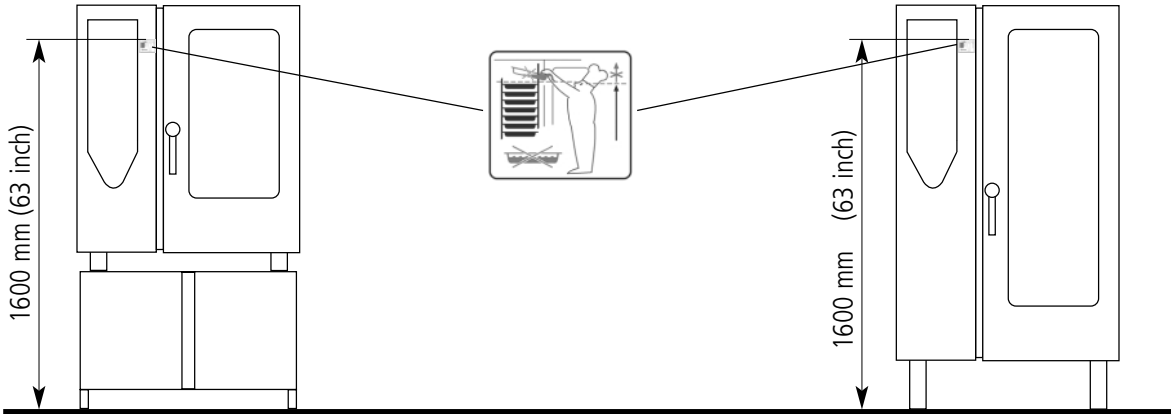
**Attention:**

The named standards are valid for Germany. In all other countries follow the local standards and valid instructions. Damages based on installation not complying with the directives given hereunder are not covered by warranty terms.

**Check for any transport damage.**

Should there be any signs of transport damage, inform your dealer/freight forwarder **immediately!**

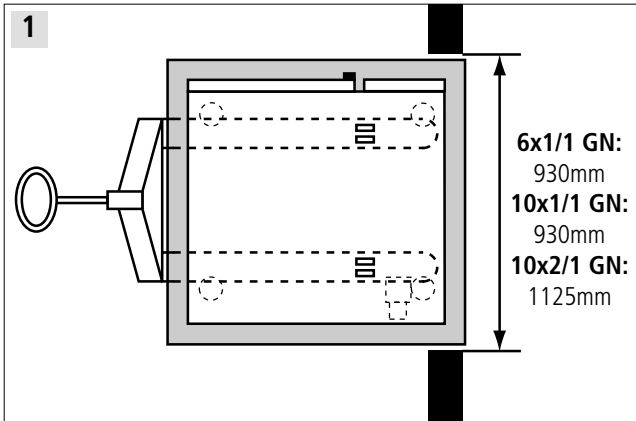
**Remove all cartons, packing materials, documents, etc. from the interior cabinet.**



Safety label "Max. placement height for vessels containing liquid" are affixed in the oven.



# Transport of units



Transport of units using a pallet

pic. 1,2

Transport of units without a pallet, 20x1/1 GN and 20x2/1 GN units only

pic. 3

Remove all containers/mobile oven racks from the cabinet.

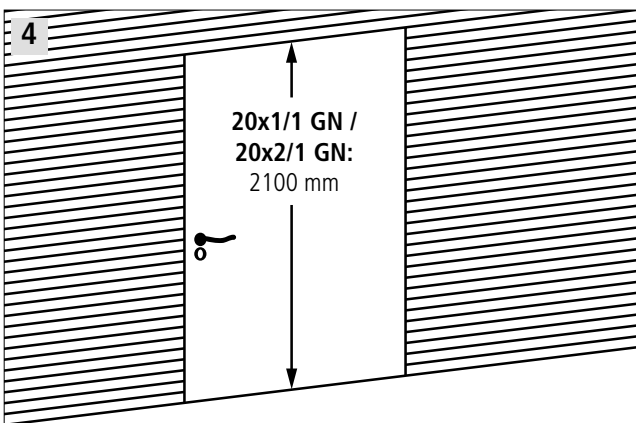
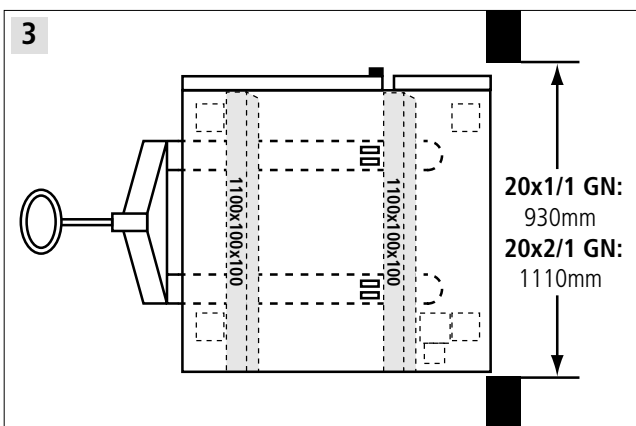
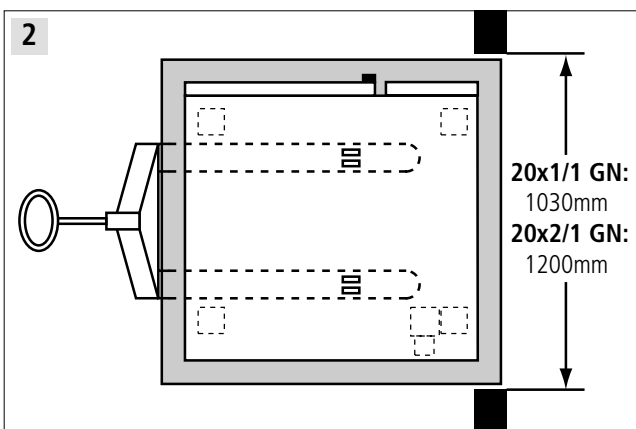
For floor model, remove corner mountings from the pallet.

Take unit off the pallet. Note: The weights of the units are:

6 x 1/1 GN: 123 kg	10 x 1/1 GN: 152 kg
10 x 2/1 GN: 220 kg	20 x 1/1 GN: 312 kg
20 x 2/1 GN: 387 kg	

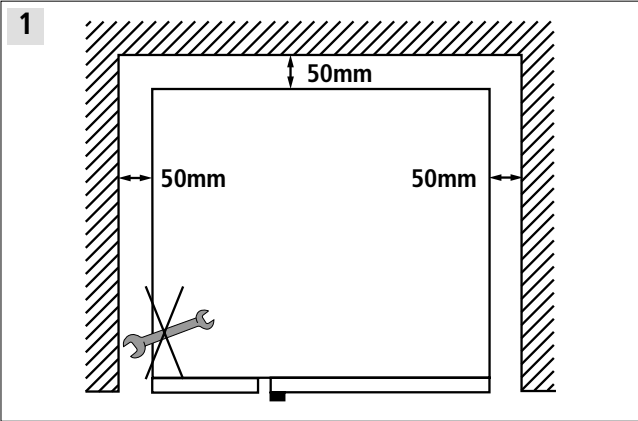
The height of the door is:

pic. 4





# Minimum clearance



Minimum clearance left / right / behind 50 mm. pic. 1

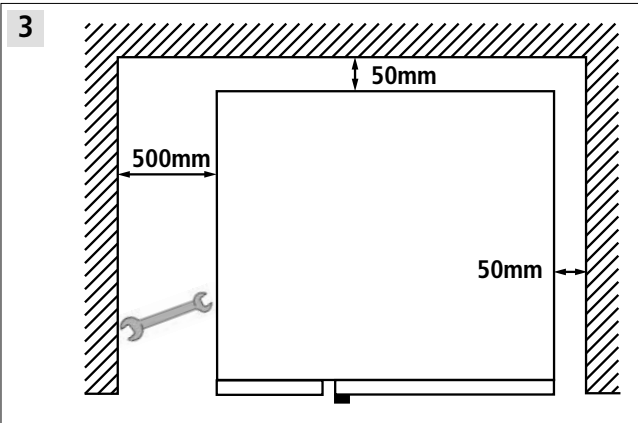
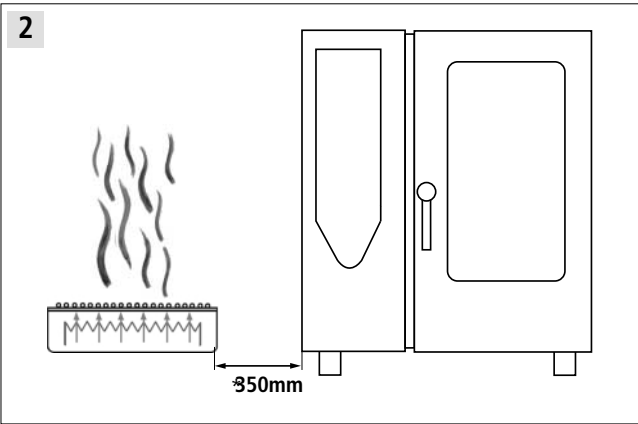
Minimum clearance when there are sources of heat on the left-hand side 350 mm. pic. 2

We recommend a clearance of 500 mm to the left of the unit to allow servicing work to be carried out pic. 3

**Please note:**

Ensure sufficient space is provided for the cleaning arm wall bracket on units fitted with CleanJet®. The wall bracket of the CleanJet® cleaning arm must not be affixed to the unit.

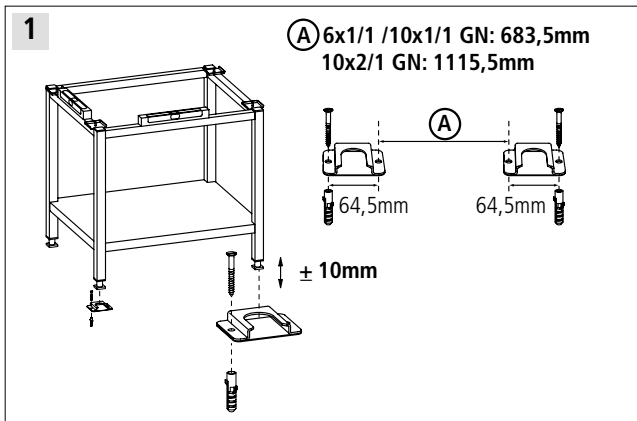
**Warning:** The units must only be installed in frost-free rooms.







# Installation type 6x1/1 GN, 10x1/1 GN, 10x2/1 GN

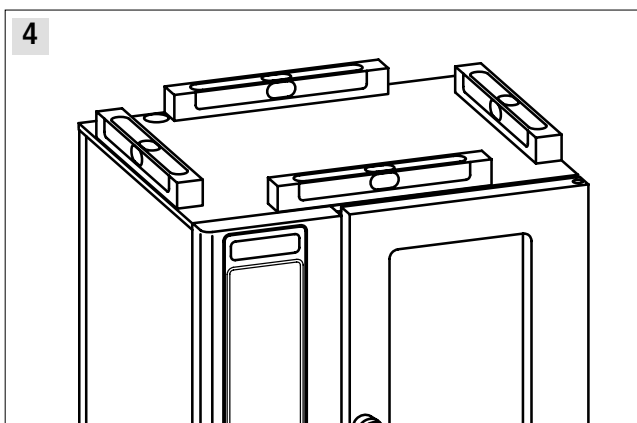
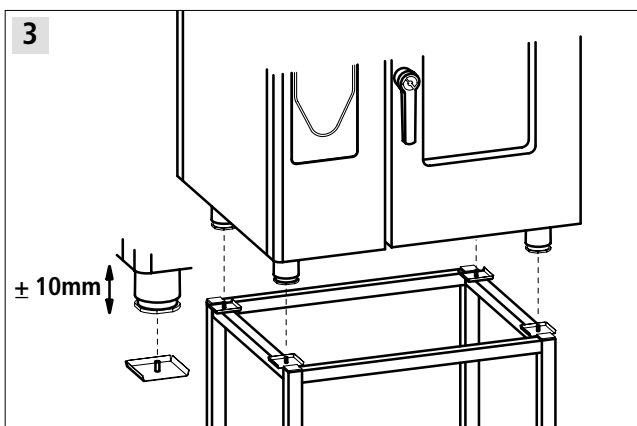
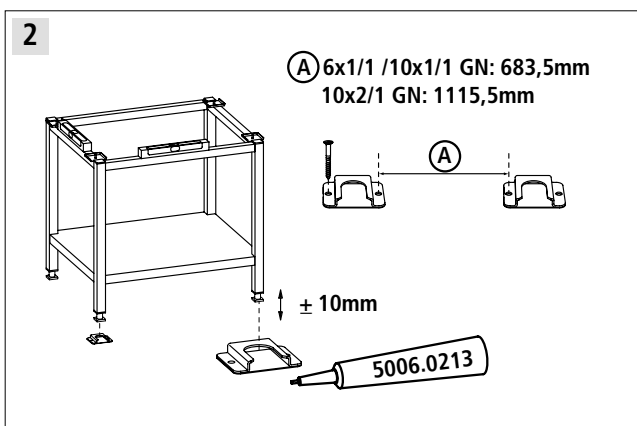


**Gas appliances must** be fixed to the floor using the fixing set supplied for the lower frame, either with screws and dowels, or with the special adhesive supplied. pic. 1.2

**Electrical appliances:** Fixing set is not included in the scope of supply, but may be ordered under ref no.: 8700.0317. pic. 1.2

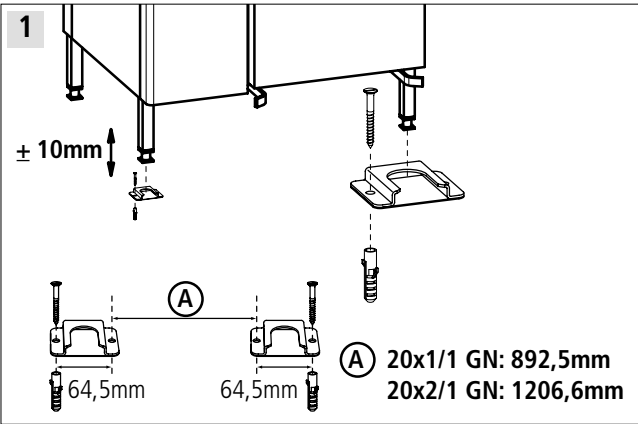
Place the unit on the stand. The feet of the unit must be secured by means of its locating pins pic. 3

Ensure that the unit is level pic. 4

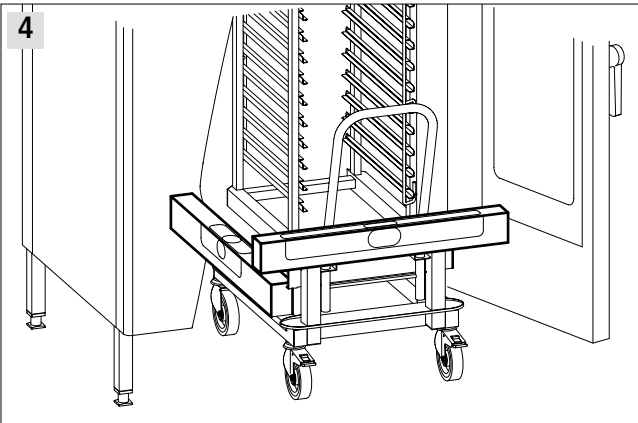
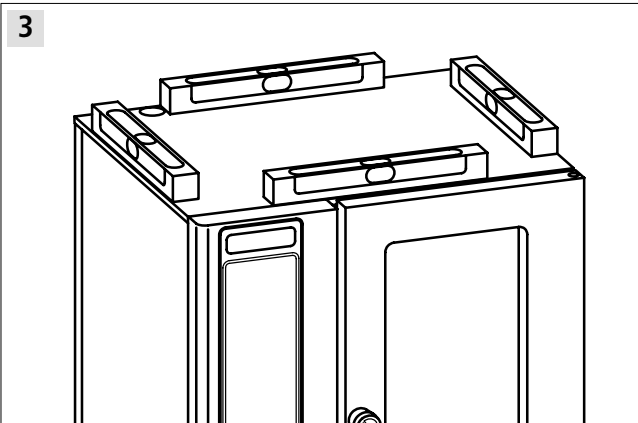
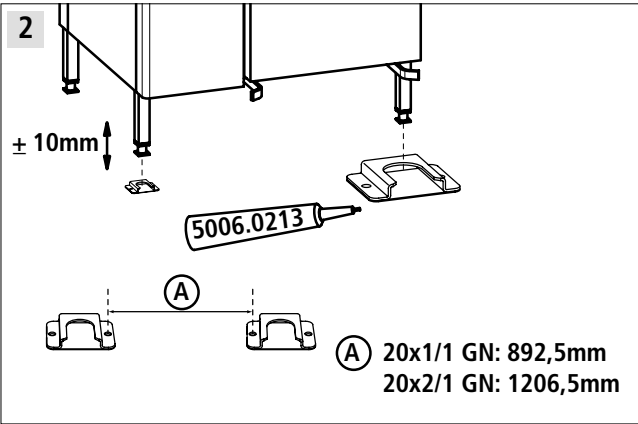




# Installation type 20x1/1 GN, 20x2/1 GN

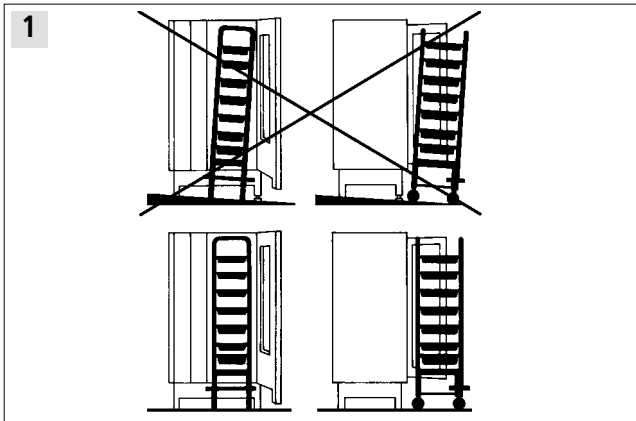


Fix the floor locks to the floor with either screws and pins or with the special adhesive supplied. pic. 1,2  
Next slide the stand into the floor locks pic. 1,2  
Ensure that the unit is level pic. 3  
The mobile oven rack must be level when standing inside the unit pic. 4



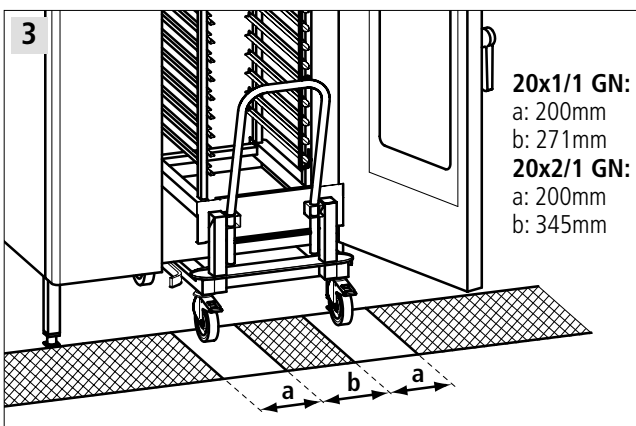
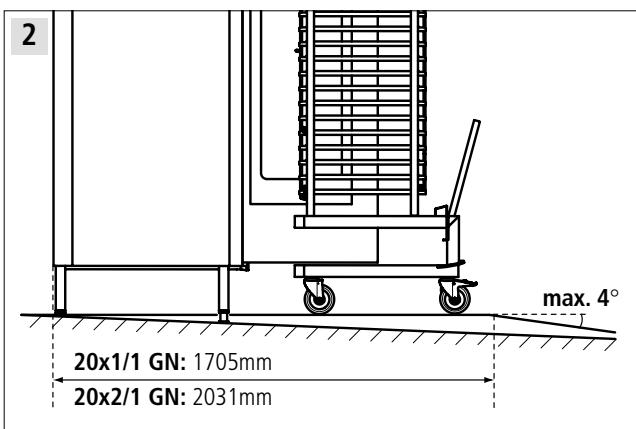


## Position of mobile oven racks 20x1/1 GN and 20x2/1 GN



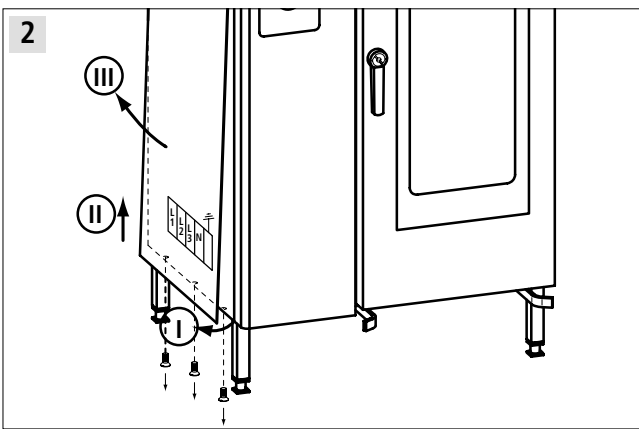
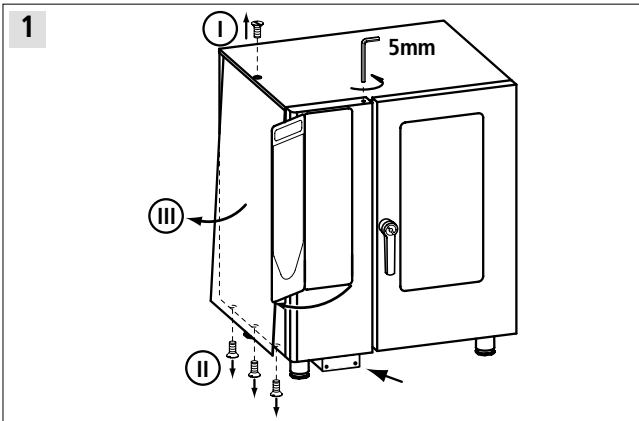
If the floor is not level, an access ramp (not supplied) will be required. The incline must not exceed 4°. pic. 1,2

If there is a drain grill in front of the floor-standing unit, a ramp should be placed over it to enable the mobile oven rack to be used. pic. 3





# Electrical connection



- Follow the installation instructions and the information on the rating plate when connecting the unit
- Comply with all local regulations and standards!
- Each appliance requires an independent fused power supply line
- We recommend you use an earth leakage circuit breaker
- On-site installation: provide accessible all-pole disconnection device with a minimum of a 3 mm contact gap.
- Connect appliance to earth bonding.
- For electrical connection data, see page 91:
- The cross-section of the connecting cables must be based on the current consumption and on local regulations.
- Applicable standards: EN 60335, IEC 335
- Type 6x1/1 GN: This appliance is suitable for operation with a power supply system with an impedance at the service connection point of less than 0.32 Ohms. If necessary the local power supplier can provide details of the mains supply impedance.

### Type 6x1/1 GN, 10x1/1 GN

- Power supply terminal box with the corresponding terminals is located on the bottom side underneath the control panel. The terminals can be accessed by the removeable cap.

pic. 1

### Type 10x2/1 GN, 20x1/1 GN, 20x2/1 GN

- Remove left-hand side panel
- The supply terminals are located behind the removable left-hand side panel.

pic. 2

or appliance connections, precise dimensions and connection points, see pages 91 to 102.

For legend, see pages 93 to 102:

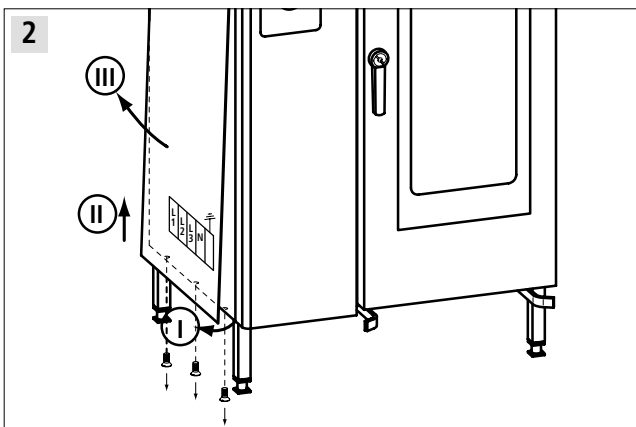
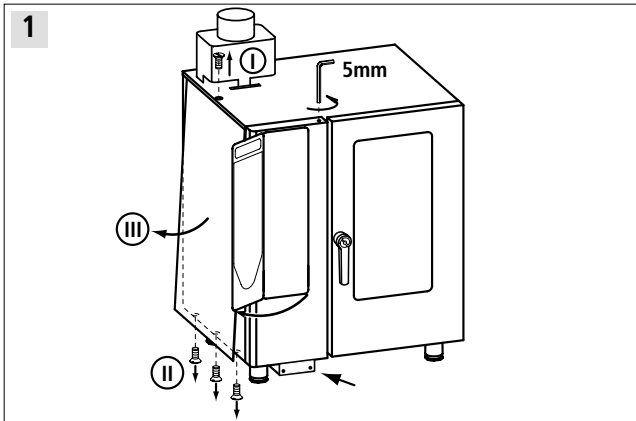
- 1 = Shared water supply (cold water)
- 2 = Water supply, cold water
- 3 = Water supply, soft and warm water
- 4 = Drain
- 5 = Electrical connection
- 6 = Earth bonding
- 7 = Gas connection

### Connection of mains:

- Connect an H07RN-F supply cable (minimum) and secure the PG screws (strain relief) tight
- Connect the supply as follows:  
Grey terminal: L1, L2, L3 (non-phase-sequence-dependent)  
Blue terminal: Neutral (3N AC only)  
Yellow-green terminal: Earth
- The circuit diagram is located behind the control panel.
- Other voltages available on request.



# Electrical connection for gas appliances



- Follow the installation instructions and the information on the rating plate when connecting the unit
- Comply with all local regulations and standards!
- Each appliance requires an independent fused power supply line
- We recommend you use an earth leakage circuit breaker
- On-site installation: provide accessible all-pole disconnection device with a minimum of a 3 mm contact gap.
- Connect appliance to earth bonding.
- For electrical connection data, see page 91:
- Other voltages are available on request
- The cross-section of the connecting cables must be based on the current consumption and on local regulations.
- Applicable standards: EN 60335, IEC 335

### Type 6x1/1 GN, 10x1/1 GN

- Power supply terminal box with the corresponding terminals is located on the bottom side underneath the control panel. The terminals can be accessed by the removeable cap.

pic. 1

### Type 10x2/1 GN, 20x1/1 GN, 20x2/1 GN

- The appliance is supplied with a power cable approximately 2 m long (plug not included).

pic. 2

### Connection of mains:

- Observe the polarity of the electrical connection!
- Colour coding of wires:  
 Yellow/green = Earth, blue = Neutral  
 Brown or black = Phase L1 (L2,L3)

### Warning!

#### If the polarity is wrong, the burners will not operate!

If a fault occurs with the burner function, "rES" lights up in the display panel by the clock symbol.

A buzzer sounds after 15 seconds. Pressing the RESET button restarts the automatic ignition sequence.

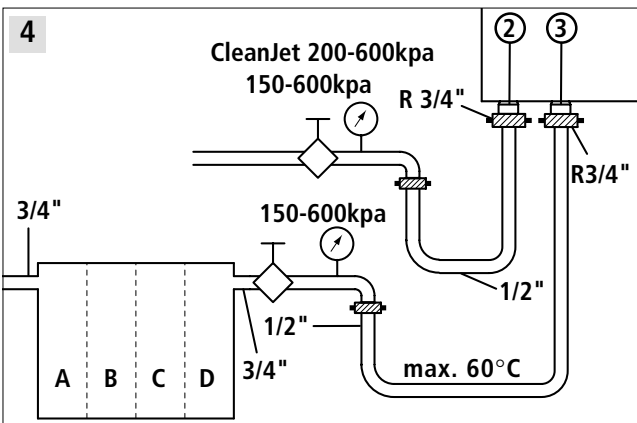
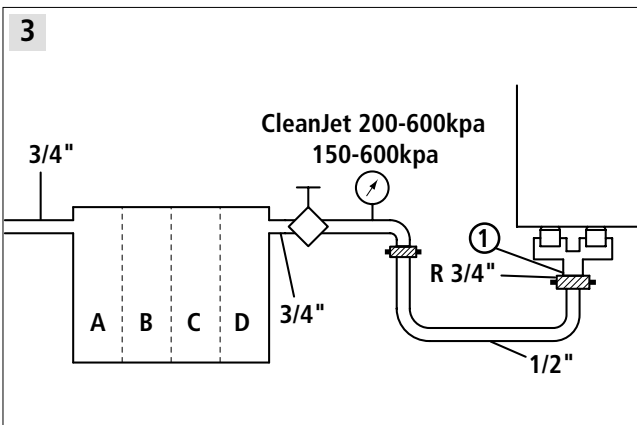
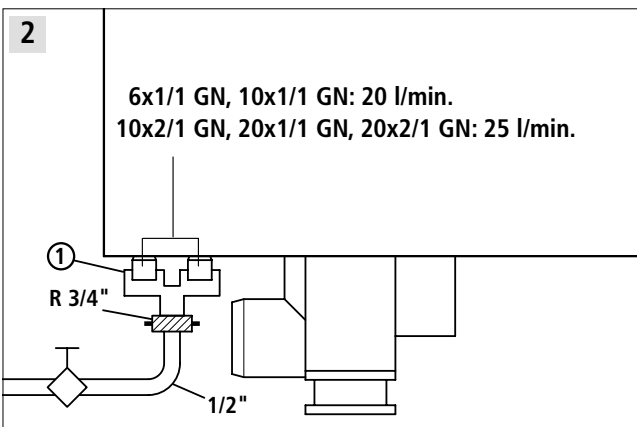
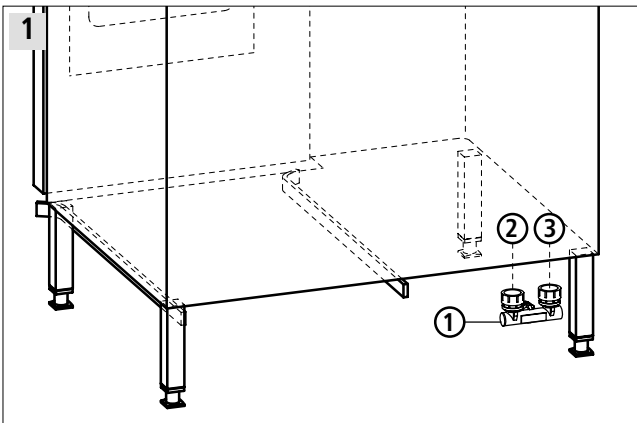
For appliance connections, precise dimensions and connection points, see pages 91 to 102.

For legend, see pages 93 to 102:

- 1 = Shared water supply (cold water)
- 2 = Water supply, cold water
- 3 = Water supply, soft and warm water
- 4 = Drain
- 5 = Electrical connection
- 6 = Earth bonding
- 7 = Gas connection



# Water connection



- The unit conforms to the relevant regulations (DVGW, SVGW, KIWA, WRC)
- The unit can be connected to cold water and to soft water of drinking-water quality. pic. 1,2,3,4
- Rinse the water line before connecting the water supply to the unit!
- On units fitted with CleanJet®, the dynamic water pressure must be min. 200 kPa or minimum flow volume 12l/min.
- On units not fitted with CleanJet®, water pressure 150 kPa - 600 kPa, recommended 300 kPa
- Water cock stop for each appliance (fitted by customer)
- Water conductivity: 50 – 2000 µS/cm. Lower conductivity on request.
- Maximum chloride concentration (Cl<sup>-</sup>): less than 150 mg/litre
- Chlorine concentration (Cl<sub>2</sub>): less than 0.2 mg/litre (△ppm)
- For the water supply connection we recommend using hoses with internal Ø 13 mm (Spare part no.: 2067.0709).

### Optional soft water connection:

pic. 4

Please note that the units have already been prepared at the factory for connection to a soft water supply. One connection for steam generator, hand shower and moistener, one connection for quenching and CleanJet®. After removing the T distributor, connect soft/hot water up to a max. 60 °C to connection "3". Connect normal / cold water supply to connection "2".

In most cases it is not necessary to install a filter or water treatment appliance into the water supply line.

The unit's steam generator is equipped with SC-Automatic. Depending on how much the unit is used, the SC-Automatic regularly rinses the steam generator out and refills it with fresh water. This means that the generator does not need to be descaled so often.

Under extreme water conditions, filters and/or water treatment appliances should be installed in order to ensure that the unit functions reliably in the long term and to avoid corrosion. Depending on the results of the water quality analysis, the filters can be installed individually or one behind the other.

### A) Particle filter

pic. 3,4

When the water contains sand, iron particles or suspended matter, we recommend you install a 5-15 µm particle filter:



## Water connection

### B) Active carbon filter

pic. 3,4

When the level of chlorine (Cl<sub>2</sub>) in the water exceeds 0.2 mg/l (= ppm) (information available from the water company), an active carbon filter must be installed.

### C) Reverse osmosis system

pic. 3,4

When the water has a chloride concentration Cl<sup>-</sup> above 150 mg/l (= ppm) (information available from the water company), a reverse osmosis system must be installed to avoid corrosion. Note that the water has a minimum conductivity of 50 µS/cm.

### D) Water softener:

pic. 3,4

A water softener is recommended when a high level of scale (not containing chloride) is experienced. Systems recommended: H<sup>+</sup> Ion Exchanger or Kleensteam. Sodium ion exchangers (as used in dishwashers) must not be used because of sodium deposits and delays in boiling caused by a high salt content.

Filter systems (A,B,C,D) from the following manufacturers are recommended:

Schuhmacher, Grünbeck, Culligan, Cuno, Everpure, Britta Christ, Seral.

### When selecting a filter, bear the following flow rates in mind:

Average soft water consumption for steam generator/humidifying (excluding handshower)

6x1/1GN	10x1/1GN	10x2/1GN	20x1/1GN	20x2/1GN
3,0 l/h	6,3 l/h	10,4 l/h	12,5 l/h	15,0 l/h

Maximum flow rate (necessary for selecting the right size of filter connection)

6x1/1GN	10x1/1GN	10x2/1GN	20x1/1GN	20x2/1GN
10 l/min	10 l/min	10 l/min	10 l/min	10 l/min

Total average water consumption for steam generator, humidifying and quenching (excluding handshower)

6x1/1GN	10x1/1GN	10x2/1GN	20x1/1GN	20x2/1GN
12.0 l/h	25.2 l/h	41.4 l/h	49.8 l/h	60.0 l/h

Maximum flow rate (necessary for selecting the right size of filter connection)

6x1/1GN	10x1/1GN	10x2/1GN	20x1/1GN	20x2/1GN
20 l/min	20 l/min	25 l/min	25 l/min	25 l/min

The recommendations are constantly updated on the basis of test results. Addresses are available from the after-sales service department.

For dimension drawings, see pages 93 - 102

- 1 = Shared water supply (cold water)
- 2 = Water supply, cold water
- 3 = Water supply, soft or cold water
- 4 = Drain
- 5 = Electrical connection
- 6 = Earth bonding

### Ventilation:

An exhaust fan is not essential. If one is fitted, bear the following points in mind:

- Comply with all local regulations and standards;
- The fan should project 300-500 mm in front of the appliance;
- Install a grease filter in the projecting part of the fan;
- An exhaust fan is available as an option for 6x1/1 GN and 10x1/1 GN units. This can also be retrofitted;

### Technical data

Noise emission level: <70dBA

Hoseproofness: IPX5

### Heat emission:

	6x1/1 GN	10x1/1 GN	10x2/1 GN
Latent:	2,300 kJ/h	3,800 kJ/h	6,000 kJ/h
Sensible:	2,930 kJ/h	5,000 kJ/h	8,500 kJ/h
	20x1/1 GN	20x2/1 GN	
Latent:	7,670 kJ/h	13,350 kJ/h	
Sensible:	9,600 kJ/h	15,340 kJ/h	

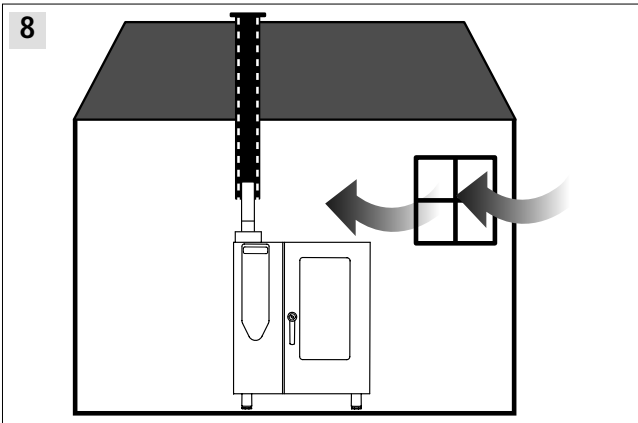
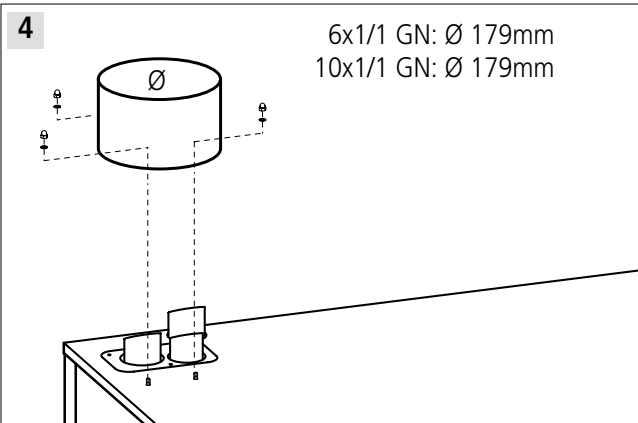
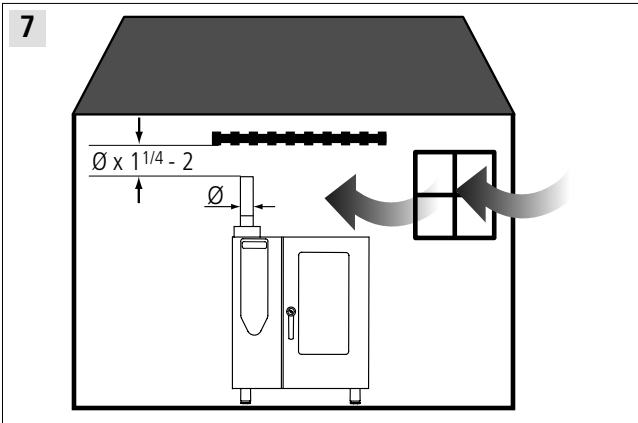
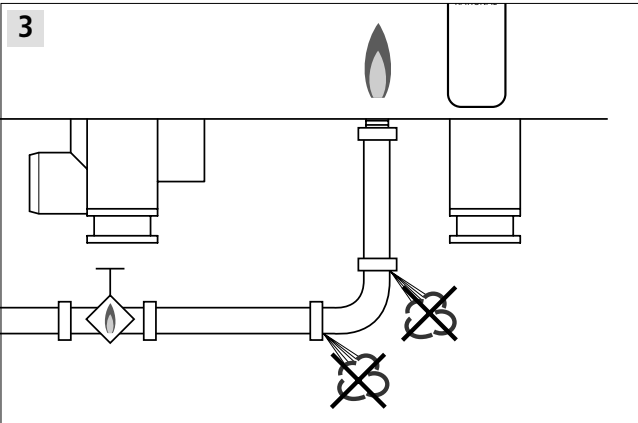
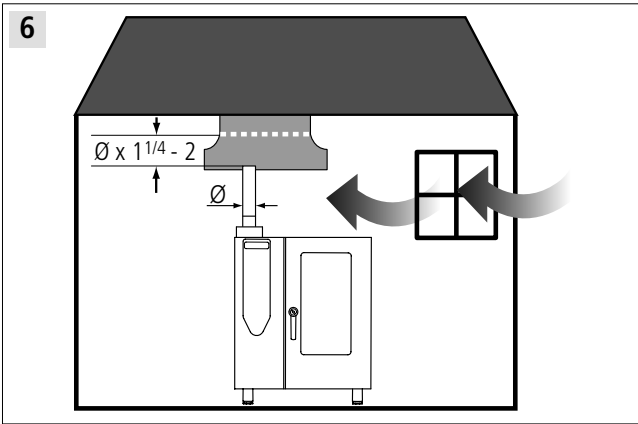
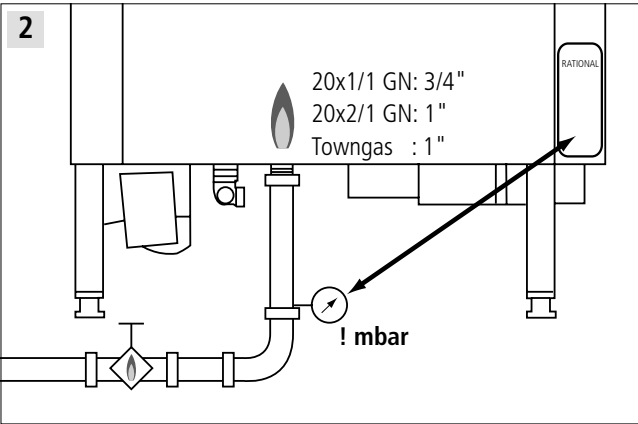
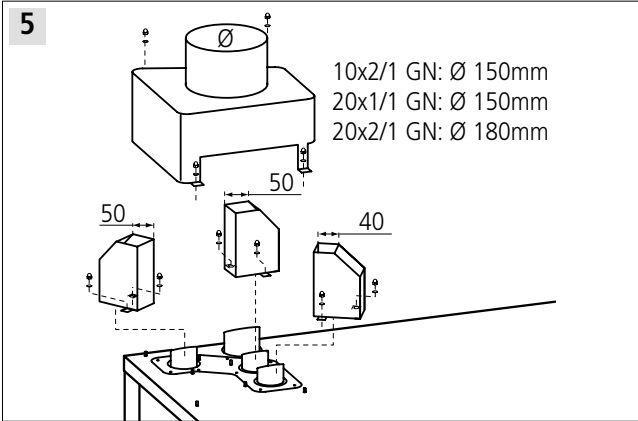
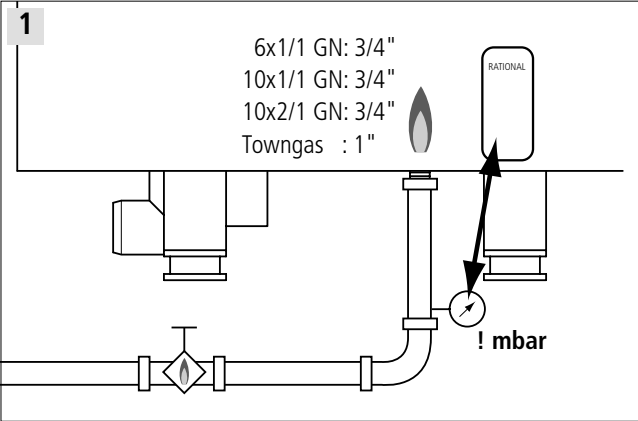
### Heat emission for gas appliances:

	6x1/1 GN	10x1/1 GN	
Latent:	2,300 kJ/h	3,800 kJ/h	
Sensible:	2,760 kJ/h	4,560 kJ/h	
	10x2/1 GN	20x1/1 GN	20x2/1 GN
Latent:	6,000 kJ/h	7,670 kJ/h	12270 kJ/h
Sensible:	8,220 kJ/h	9,430 kJ/h	14730 kJ/h

Right of technical modifications reserved.



# Gas connecting







## Gas connecting

### Important!

To ensure that the burner settings made at the factory conform with the actual installation conditions, the waste gas (CO, CO<sub>2</sub>) from the steam and hot-air burners must be analysed during commissioning. The corresponding values must be documented inside the unit. If the undiluted CO values are above 1000 ppm, the burner settings must be checked and if necessary adjusted by engineers trained and certified by the company.

Gas type	Required flow pressure mbar	Wobbe index (15°C, 1013mbar)		max. consumption at nominal heat load				
		Wi MJ/m <sup>3</sup>	Ws MJ/m <sup>3</sup>	6x1/1 GN 25 kW	10x1/1 GN 38,4 kW	10x2/1 GN 66 kW	20x1/1 GN 73,4 kW	20x2/1 GN 120 kW
Natural gas H G20	18-25	45,67	50,72	2,6 m <sup>3</sup> /h	4 m <sup>3</sup> /h	7 m <sup>3</sup> /h	7,8 m <sup>3</sup> /h	13,2 m <sup>3</sup> /h
Natural gas L G25	20-30	37,38	41,52	3,1 m <sup>3</sup> /h	4,7 m <sup>3</sup> /h	8,1 m <sup>3</sup> /h	9,5 m <sup>3</sup> /h	15,2 m <sup>3</sup> /h
Liquid gas G30	25-57,5	80,58	87,33	2 kg/h	3 kg/h	5,3 kg/h	5,9 kg/h	10,0 kg/h

Comply with local gas authority regulations!

Follow installation instructions!

- Check that the gas type supplied is suitable for the unit.
- The diameter of the pipe must comply with local regulations (DVGW-TRGI '86 or TRF 1988).
- External thread of gas connection: pic. 1,2
- Gas stop valve supplied for each unit.
- Gas connection with gas outlet socket only possible on 6x1/1 GN units.
- All gas supply connectors must comply with local regulations (DIN-DVGW).
- The unit must be secured against movement.
- Check the gas supply line for leakage. pic. 3

**The unit is only to be connected to the gas supply by a locally approved gas installer. It is vital to ensure that the gas connection pipes as well as the connection pipes for the associated gas metering systems match the stipulated pipe widths.**

### Warning!

If the flow pressure deviates from the specified flow pressure (see table), inform the gas authorities. If the flow pressure of natural gas exceeds 30 mbar, the unit must not be switched on and the gas supply must be disconnected.

### Type B13 and A3 gas unit

(A3 not applicable for Germany)

- Ambient-air-dependent gas-powered cooking range with fan assisted burners and draft diverter
- Automatic direct ignition with ignition monitor.
- Total nominal heat load gas
 

6x1/1 GN 25 KW	10x1/1 GN 38.4 KW
10x2/1 GN 66 KW	20x1/1 GN 73.4 KW
20x2/1 GN 120 KW	

### Gas exhaust system 6x1/1 GN Gas and 10x1/1 GN Gas

pic. 4

### Gas exhaust system 10x2/1 GN Gas 20x1/1 GN Gas and 20x2/1 GN Gas

pic. 5

### Gas exhaust system downstream of draft diverter

- Check that gas exhaust pipes are leakproof, in accordance with local regulations (DVGW-TRGI '86 or TRF 1988).
- Waste gas pipes of aluminium or other materials which are not resistant to temperatures up to 200°C should not be used because of the high waste gas temperatures!

Gas exhaust system can be connected to the following in compliance with DVGW Instruction Sheet G634:

1. Extractor hood pic. 6
2. Fan roof pic. 7
3. Directly to the flue pic. 8

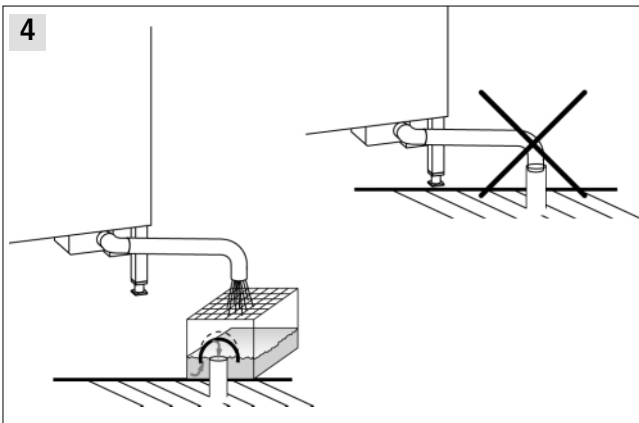
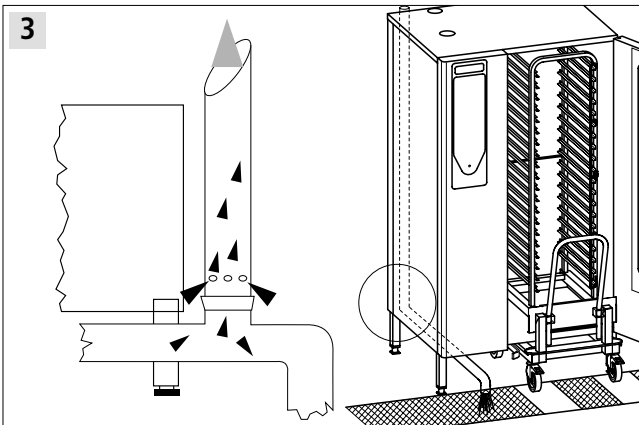
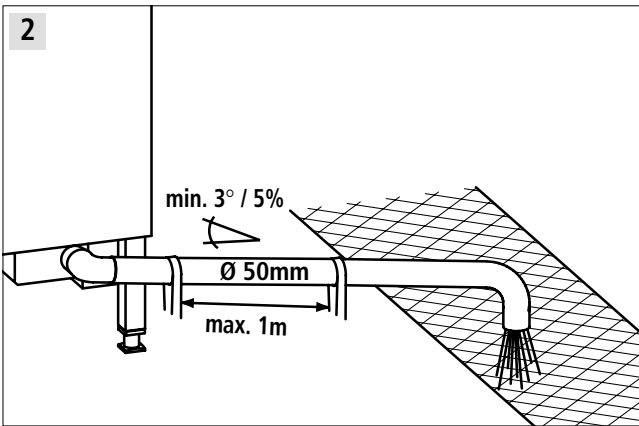
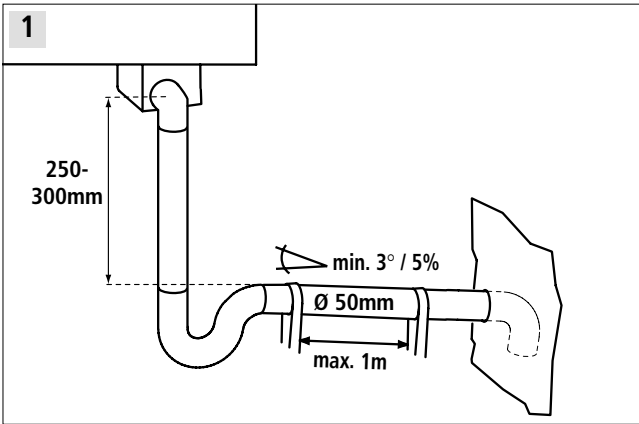
### Room ventilation

The rooms in which these appliances are installed must be well ventilated, in order to prevent an unacceptable build-up of harmful combustion products.

**We recommend that your gas installation is serviced once a year in accordance with the specified standards.**



# Drain connection

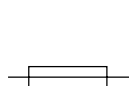


- The appliance complies with the relevant regulations (DVGW, SVGW, KIWA, WRC)
- **Pipe capable of withstanding steam temperature - no hoses**
- **DN 50 pipe** with constant gradient (min. 5% or 3°); do not reduce the diameter of the pipe.
- Fixed connection with odour lock permissible; a ventilated drain line is integral to the appliance pic. 1,2
- An additional ascending pipe helps to reduce excessive outlet of steam at the appliance drain. pic. 3
- Note drainage dimensions: short-term pumped discharge volume of steam generator 0.7 l/sec
- Average waste water temperature: 65°C
- Applicable standard: DIN 1986, Part 1
- Where there is an existing floor drain without air trap, a clear outflow of 2 cm must be provided. pic. 4



## Connecting values

	P = kW					I = A				
	6x1/1	10x1/1	10x2/1	20x1/1	20x2/1	6x1/1	10x1/1	10x2/1	20x1/1	20x2/1
<b>2 AC 208V</b>	10kW	-	-	-	-	48A	-	-	-	-
<b>2 AC 240V</b>	10kW	-	-	-	-	42A	-	-	-	-
<b>3 AC 200V</b>	10kW	19kW	31,5kW	38kW	63kW	29A	55A	91A	110A	182A
<b>3 AC 208V</b>	10kW	19kW	31,5kW	38kW	63kW	28A	53A	87,5A	106A	175A
<b>3 AC 230V (220V)</b>	10kW	19kW	31,5kW	38kW	63kW	25A	48A	79A	96A	158A
<b>3 AC 240V</b>	10kW	19kW	31,5kW	38kW	63kW	24A	46A	76A	92A	152A
<b>3 NAC 400V (380V)</b>	10kW	19kW	31,5kW	38kW	63kW	15A	28A	45,5A	56A	90A
<b>3 AC 400V</b>	10kW	19kW	31,5kW	38kW	63kW	15A	28A	45,5A	56A	90A
<b>3 NAC 415V</b>	10kW	19kW	31,5kW	38kW	63kW	14A	26,5A	44A	53A	88A
<b>3 AC 440V</b>	10kW	19kW	31,5kW	38kW	63kW	13A	25A	41,5A	50A	83A
<b>3 AC 480V</b>	10kW	19kW	31,5kW	38kW	63kW	12A	23A	38A	46A	76A



						mm <sup>2</sup>				
	6x1/1	10x1/1	10x2/1	20x1/1	20x2/1	6x1/1	10x1/1	10x2/1	20x1/1	20x2/1
<b>2 AC 208V</b>	50A	-	-	-	-	10mm <sup>2</sup>	-	-	-	-
<b>2 AC 240V</b>	50A	-	-	-	-	10mm <sup>2</sup>	-	-	-	-
<b>3 AC 200V</b>	35A	63A	100A	125A	200A	4mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>	35mm <sup>2</sup>	95mm <sup>2</sup>
<b>3 AC 208V</b>	35A	63A	100A	125A	200A	4mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>	35mm <sup>2</sup>	95mm <sup>2</sup>
<b>3 AC 230V (220V)</b>	35A	50A	80A	100A	160A	4mm <sup>2</sup>	10mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	50mm <sup>2</sup>
<b>3 AC 240V</b>	35A	50A	80A	100A	160A	4mm <sup>2</sup>	6mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	50mm <sup>2</sup>
<b>3 NAC 400V (380V)</b>	16A	35A	50A	63A	100A	2,5mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>
<b>3 AC 400V</b>	16A	35A	50A	63A	100A	2,5mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>
<b>3 NAC 415V</b>	16A	35A	50A	63A	100A	2,5mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>
<b>3 AC 440V</b>	16A	35A	50A	63A	100A	2,5mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	25mm <sup>2</sup>
<b>3 AC 480V</b>	16A	25A	50A	50A	80A	2,5mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	6mm <sup>2</sup>	16mm <sup>2</sup>



						mm <sup>2</sup>
	6x1/1 G	10x1/1 G	10x2/1 G	20x1/1 G	20x2/1 G	6x1/1 G -20x2/1 G
<b>1 N AC 230V</b>	4,4A	4,4A	4,6A	8,2A	8,5	2,5mm <sup>2</sup>
<b>1 N AC 240V</b>	4,2A	4,2A	4,4A	8,0A	8,0A	2,5mm <sup>2</sup>
<b>1 N AC 100V</b>	10A	10A	-	-	-	2,5mm <sup>2</sup>
<b>2 AC 200V</b>	5A	5A	5,5A	9,5A	9,5A	2,5mm <sup>2</sup>

\*only for CM units



## Connecting values

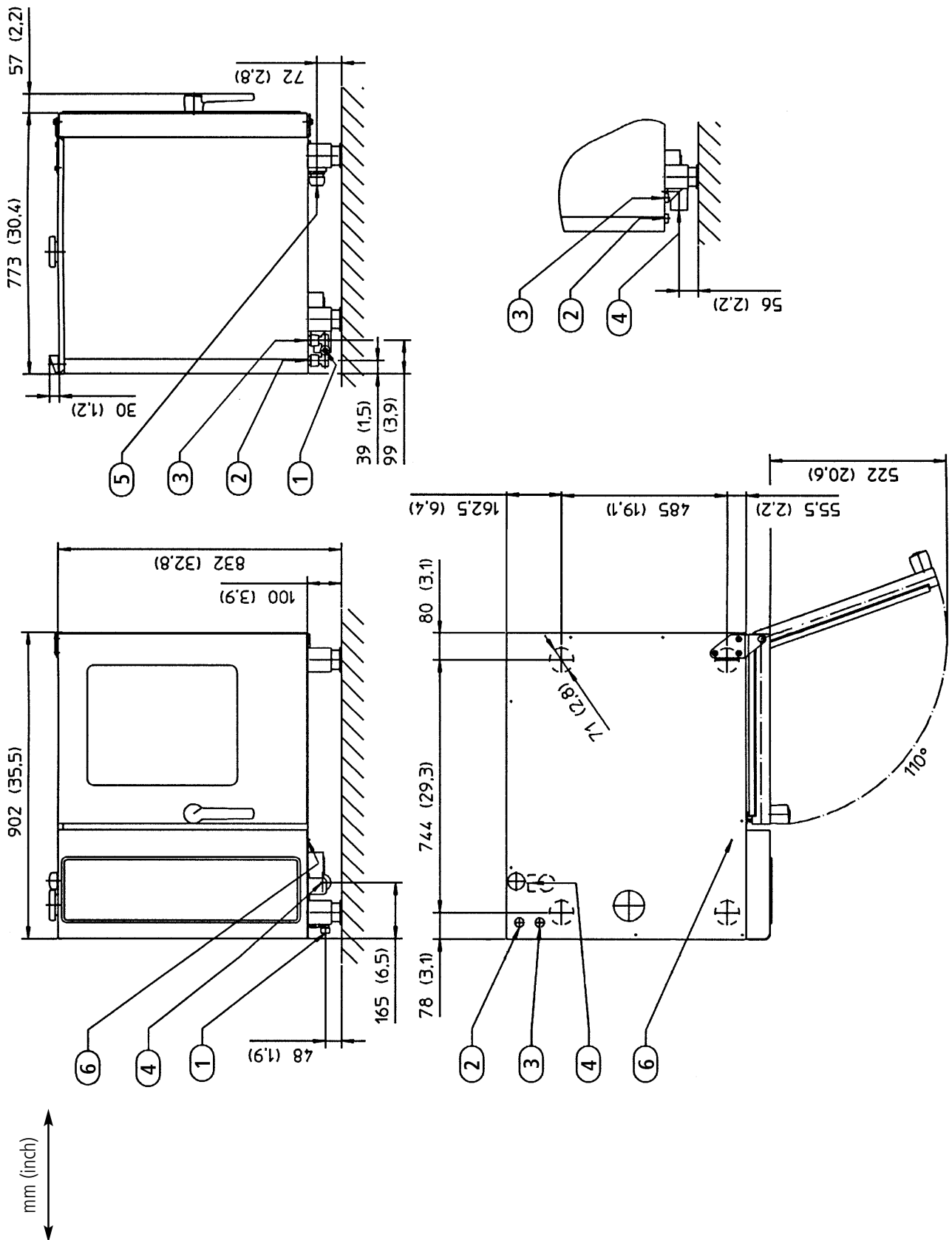


	°dH	°f	°e	ppm	mmol/l	gr/gal(US)	mval/kg
<b>1 °dH</b>	1	1,79	1,25	17,9	0,1783	1,044	0,357
<b>1 °f</b>	0,56	1	0,70	10,0	0,1	0,584	0,2
<b>1 °e</b>	0,8	1,43	1	14,32	0,14	0,84	0,286
<b>1 ppm</b>	0,056	0,1	0,07	1	0,01	0,0584	0,02
<b>1 mmol/l</b>	0,00056	0,001	0,0007	100	1	0,00058	2
<b>1 gr/gal (US)</b>	0,96	1,71	1,20	17,1	0,171	1	0,342
<b>1 mval/kg</b>	2,8	5,0	3,5	50	0,5	2,922	1

<b>1 °dH:</b>	10,00 mg CaO/kg	<b>1 ppm :</b>	0,56 mg CaO/kg	<b>1 gr/gal :</b>	9,60 mg CaO/kg
(Germany)	17,86 mg CaCO <sub>3</sub> /kg	(USA)	1,0 mg CaCO <sub>3</sub> /kg	(USA)	64,8 mg CaCO <sub>3</sub> /gal
	7,14 mg Ca <sup>2+</sup> /kg		0,40 mg Ca <sup>2+</sup> /kg		17,11 mg CaCO <sub>3</sub> /kg
<b>1 °f :</b>	5,60 mg CaO/kg	<b>1 mmol/l :</b>	56,00 mg CaO/kg		6,85 mg Ca <sup>2+</sup> /kg
(France)	10,0 mg CaCO <sub>3</sub> /kg	(chem. konz.)	100,0 mg CaCO <sub>3</sub> /kg		
	4,00 mg Ca <sup>2+</sup> /kg		39,98 mg Ca <sup>2+</sup> /kg		
<b>1 °e :</b>	8,01 mg CaO/kg	<b>1 mval/kg :</b>	28,00 mg CaO/kg		
(GB)	14,3 mg CaCO <sub>3</sub> /kg	(Milliäquivalent)	50,0 mg CaCO <sub>3</sub> /kg		
	5,72 mg Ca <sup>2+</sup> /kg		19,99 mg Ca <sup>2+</sup> /kg		

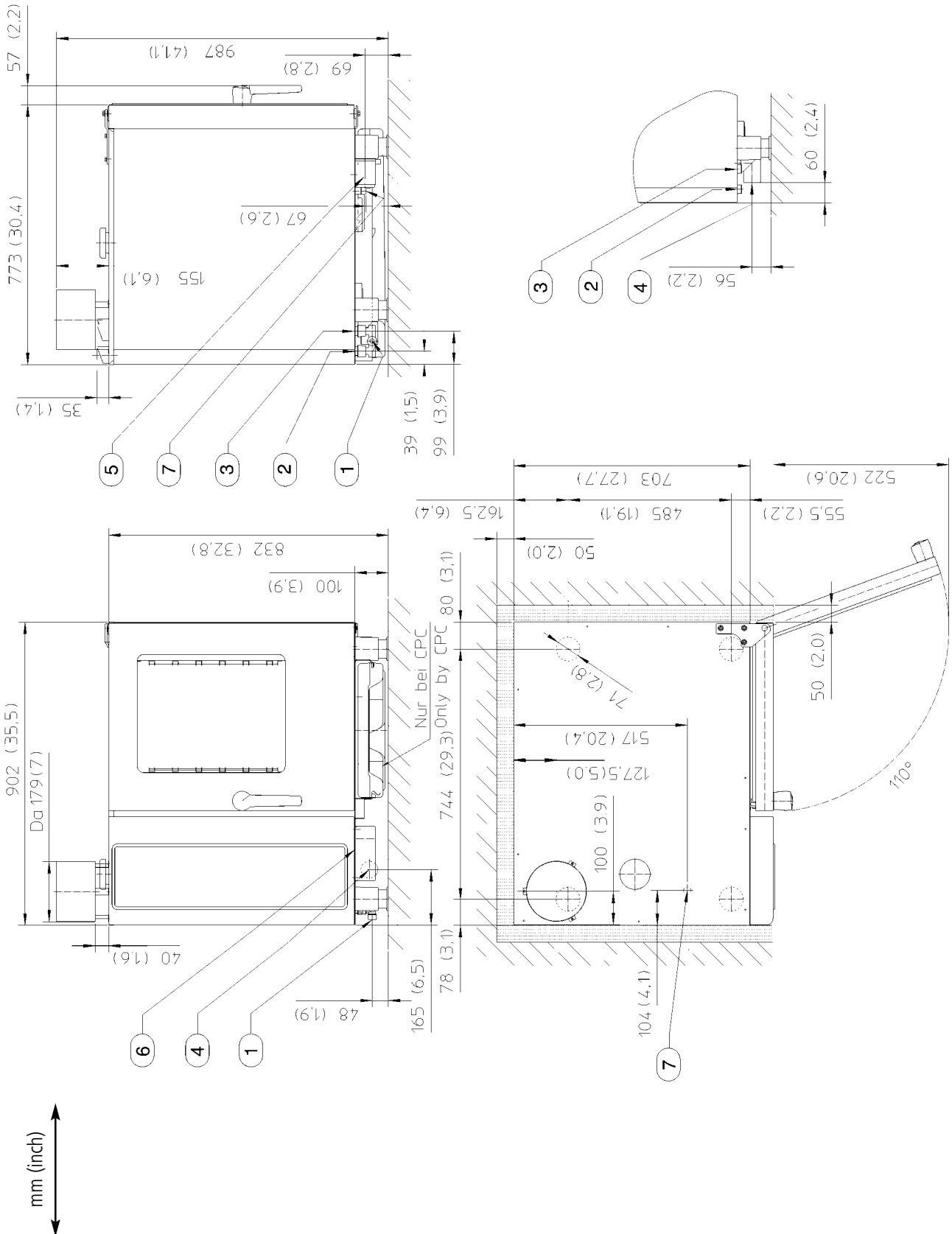
kPa	mbar	psi	in H <sub>2</sub> O	kPa	mbar	psi	in H <sub>2</sub> O
0,1	1	0,0147	0,4014	4	40	0,588	16,0560
0,2	2	0,0294	0,8028	4,5	45	0,6615	18,0630
0,3	3	0,0441	1,2042	5	50	0,735	20,0700
0,4	4	0,0588	1,6056	5,5	55	0,8085	22,0770
0,5	5	0,0735	2,0070	6	60	0,882	24,0840
0,6	6	0,0882	2,4084	6,5	65	0,9555	26,0910
0,7	7	0,1029	2,8098	7	70	1,029	28,0980
0,8	8	0,1176	3,2112	7,5	75	1,1025	30,1050
0,9	9	0,1323	3,6126	8	80	1,176	32,1120
1	10	0,147	4,0140	8,5	85	1,2495	34,1190
1,2	12	0,1764	4,8168	9	90	1,323	36,1260
1,4	14	0,2058	5,6196	9,5	95	1,3965	38,1330
1,6	16	0,2352	6,4224	10	100	1,47	40,1400
1,8	18	0,2646	7,2252	20	200	2,94	80,2800
2	20	0,294	8,0280	30	300	4,41	120,4200
2,5	25	0,3675	10,0350	40	400	5,88	160,5600
3	30	0,441	12,0420	50	500	7,35	200,7000
3,5	35	0,5145	14,0490	100	1000	14,7	401,4000

# Connecting diagram 6x1/1 GN



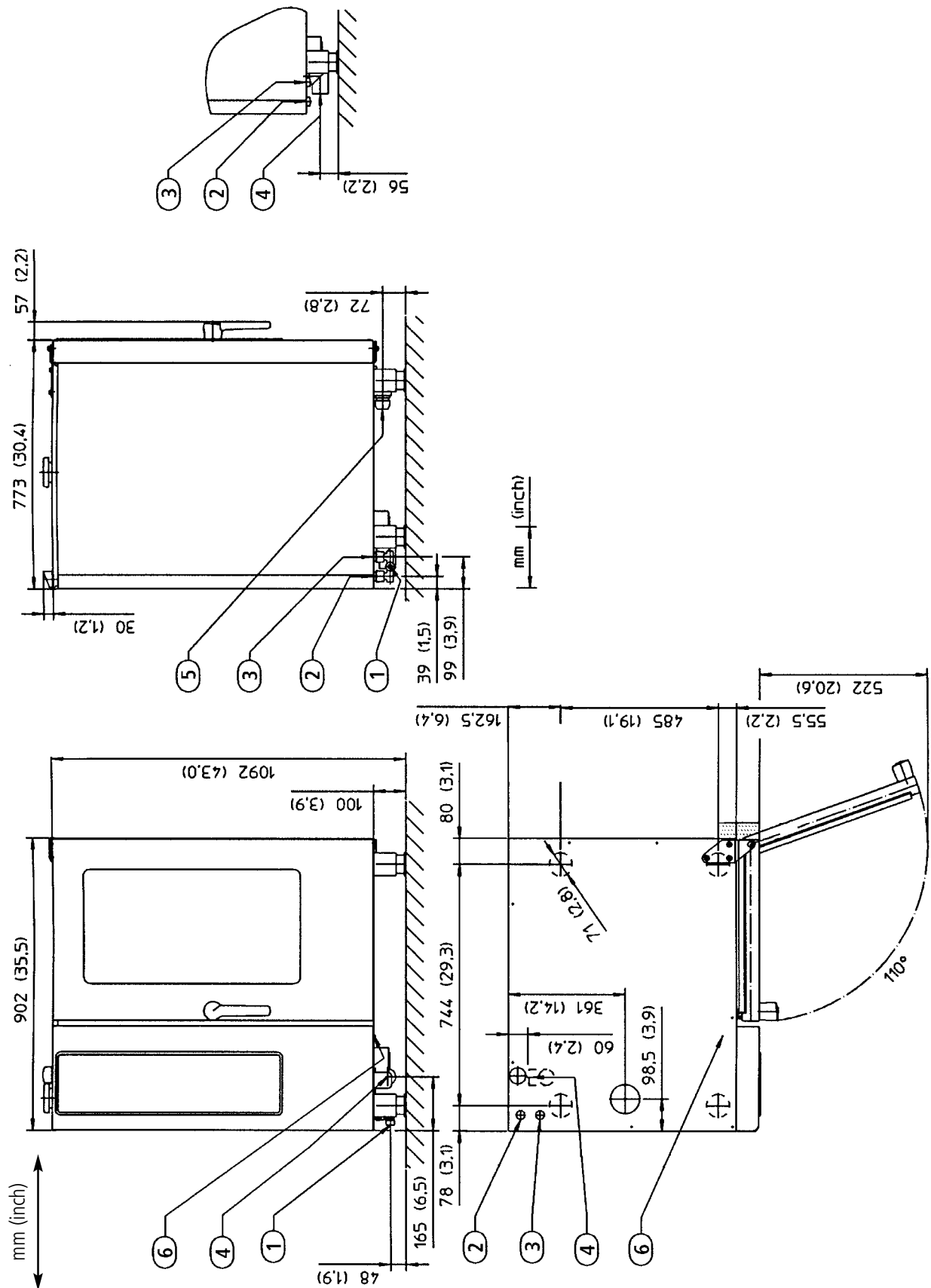


# Connecting diagram 6x1/1 GN Gas





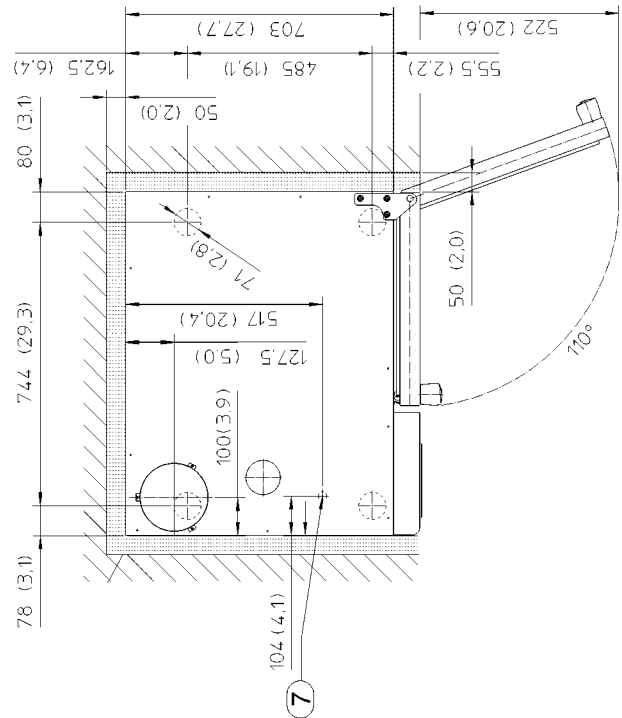
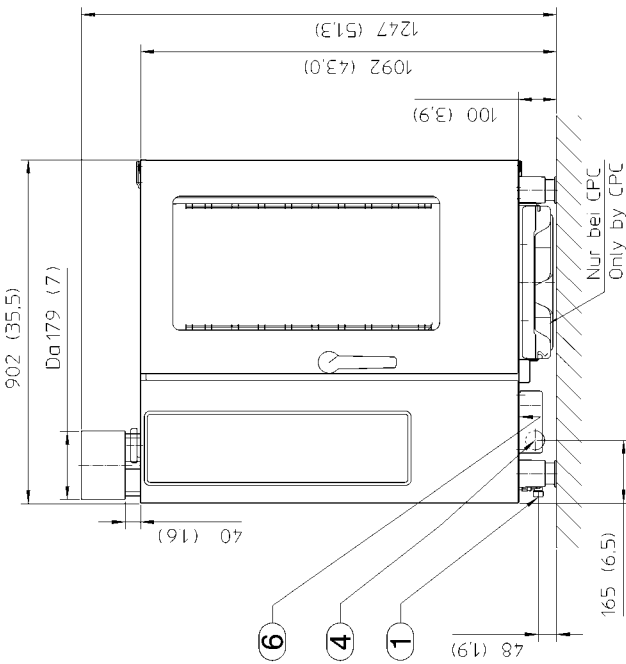
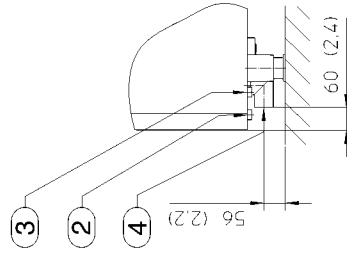
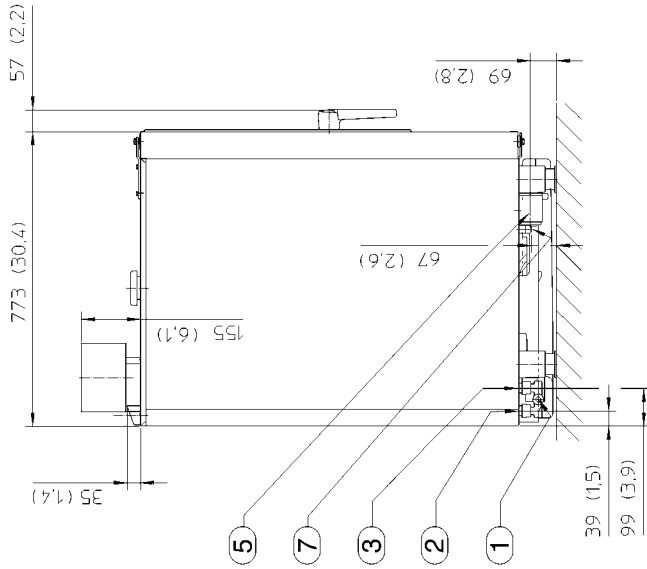
# Connecting diagram 10x1/1 GN



\*only for CM units



# Connecting diagram 10x1/1 GN Gas



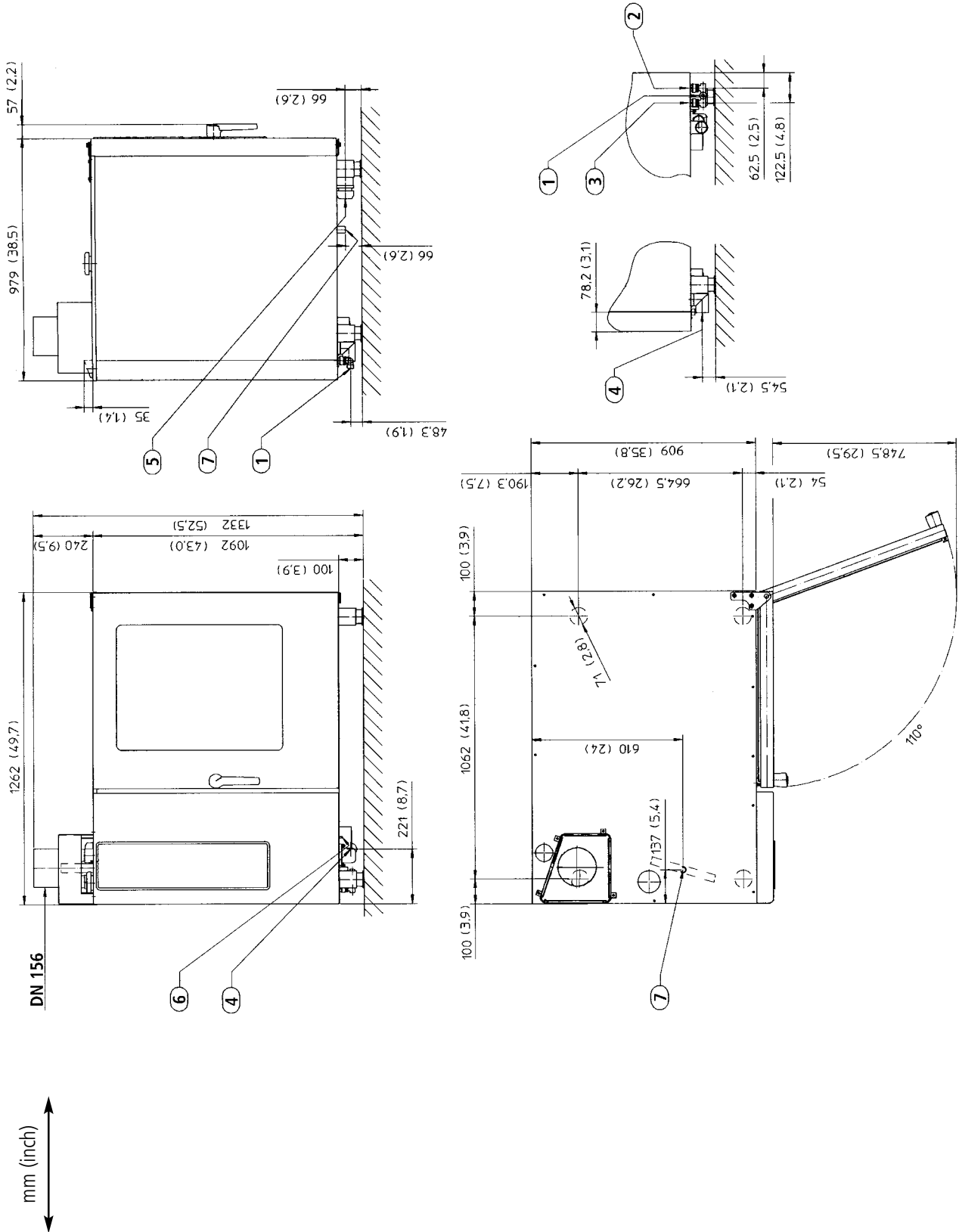
mm (inch)





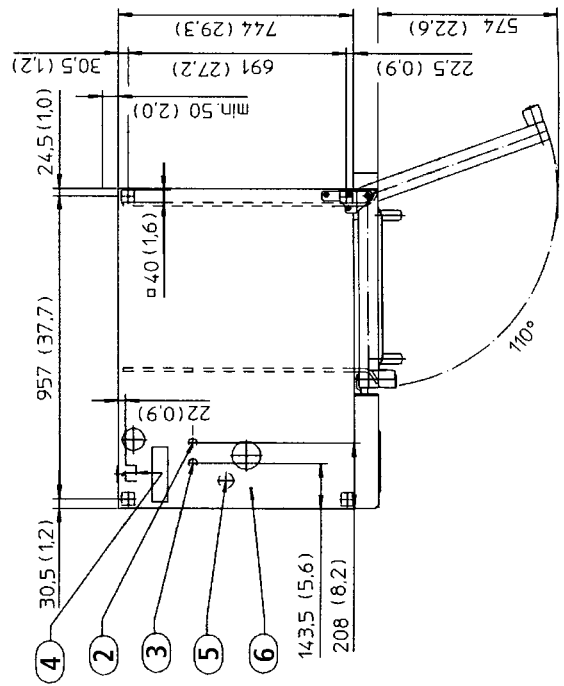
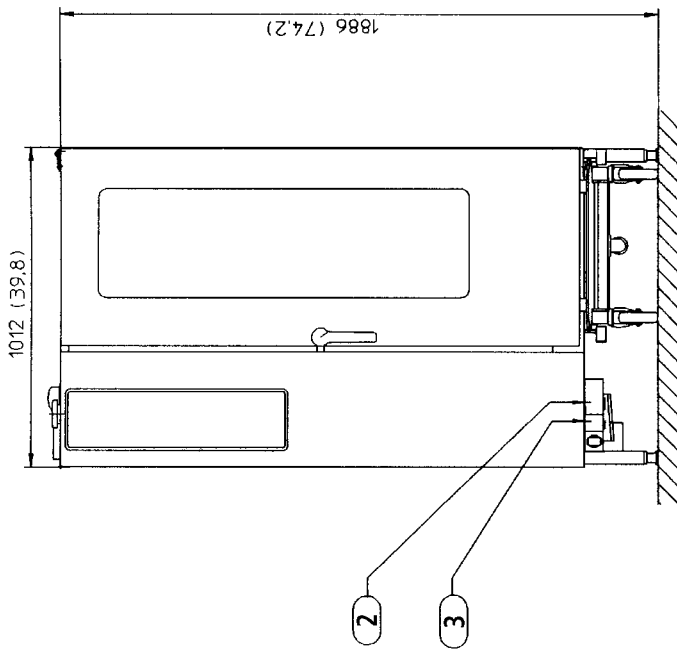
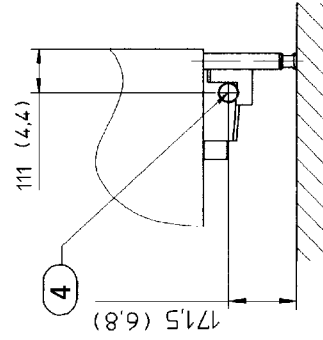
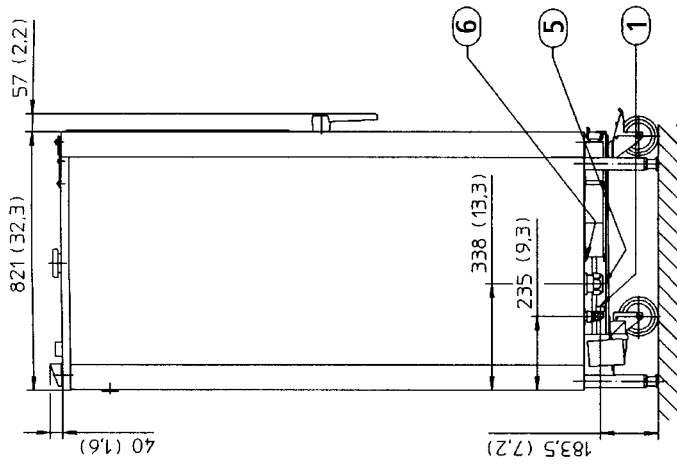


# Connecting diagram 10x2/1 GN Gas





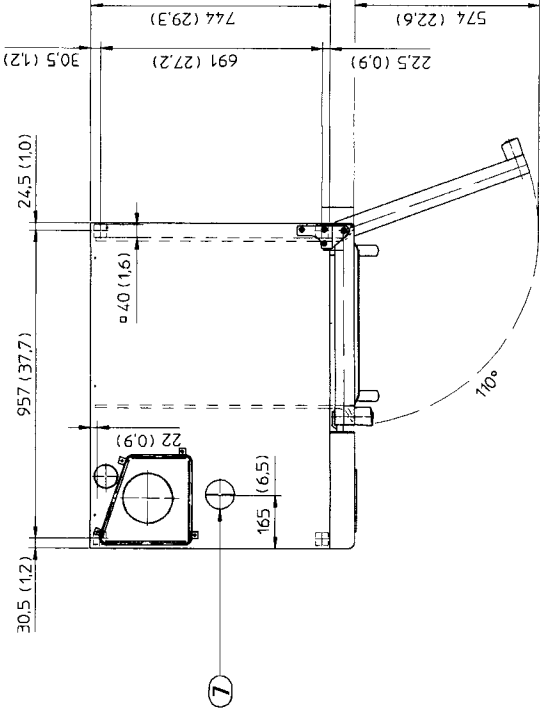
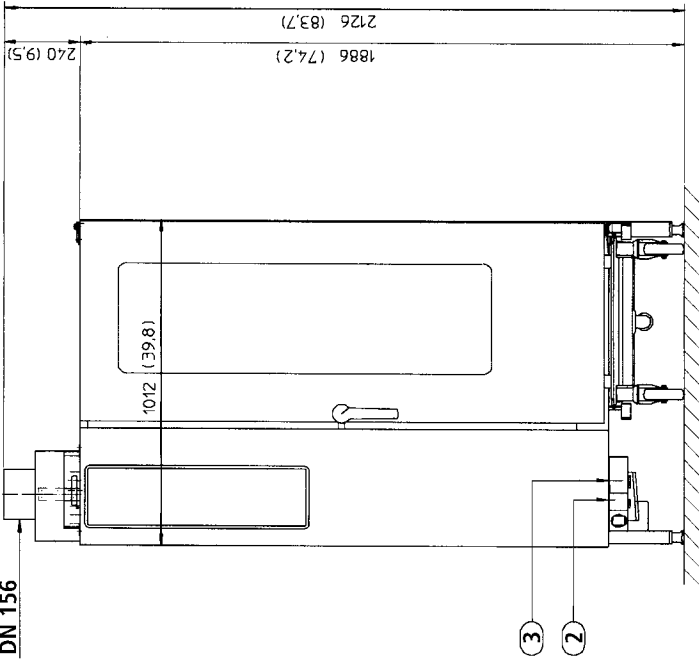
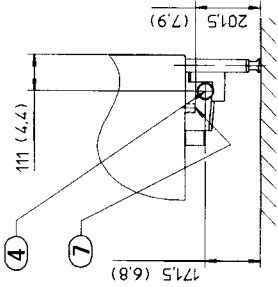
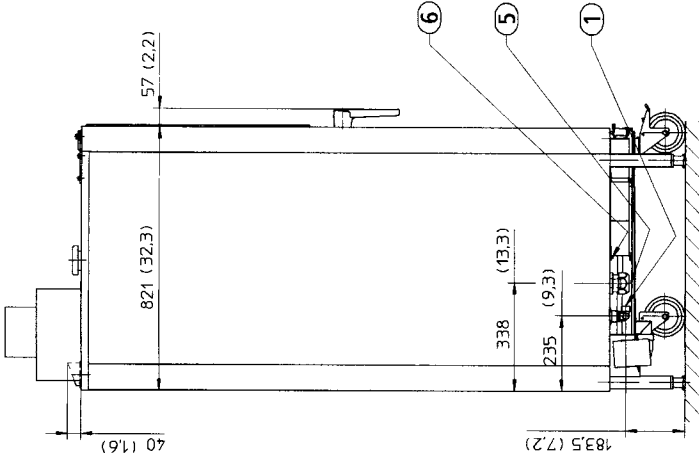
# Connecting diagram 20x1/1 GN



mm (inch)



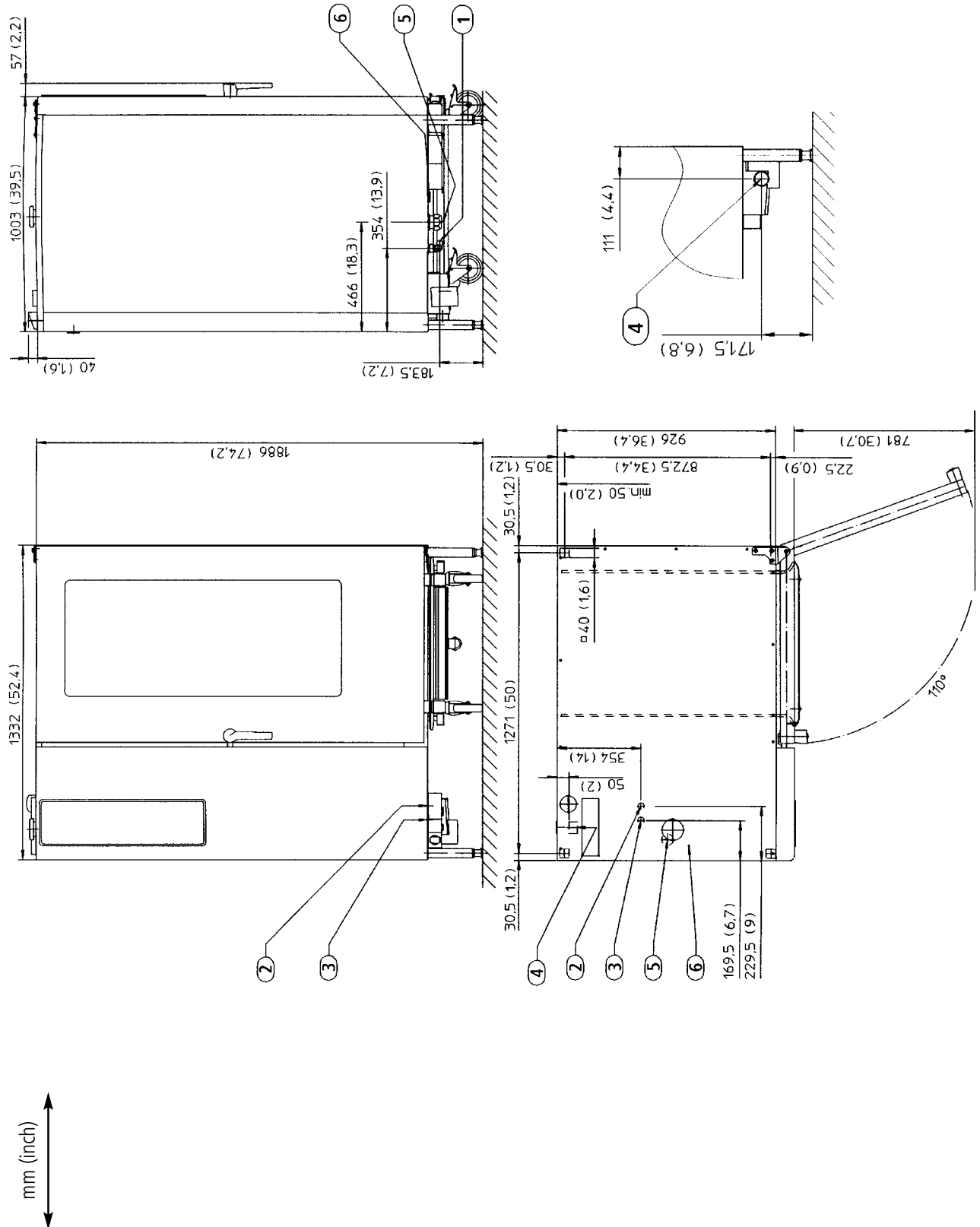
# Connecting diagram 20x1/1 GN Gas



mm (inch)



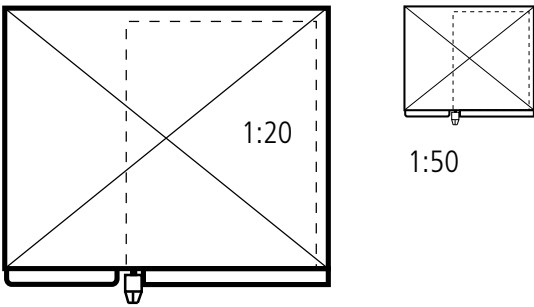
# Connecting diagram 20x2/1 GN



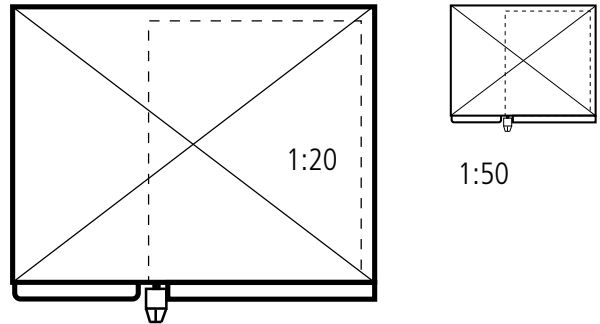




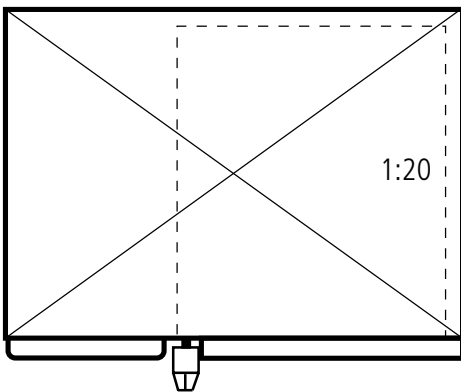
**Type 6x1/1 GN, 10x1/1 GN**



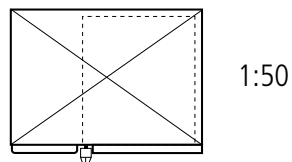
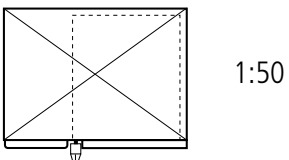
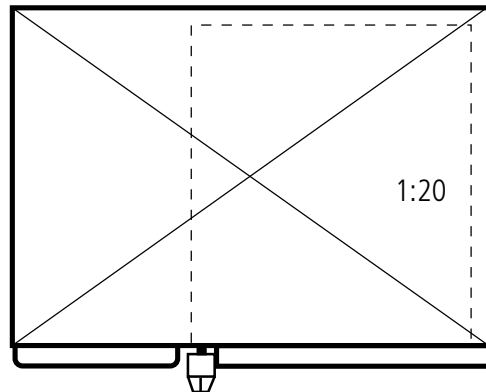
**Type 20x1/1 GN**



**Type 10x2/1 GN**



**Type 20x2/1 GN**



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