VarioCookingCenter®

Designer manual

Dear Sir or Madam,

A whole new era in cooking starts with the world's first VarioCookingCenter®.
The 2nd revolution in the professional kitchens of the world following the triumph of the combi-steamer in the 20th century.

Boiling, frying, deep-frying...
All in one appliance, up to four times faster and 40 % less electricity consumption*

To make your day-to-day work easier too, we have created this "planner manual" for you with all the important technical information presented in a clear format.
We would be happy to send you your free RATIONAL Planner library in electronic format or in print format.
Simply visit us on the internet at **portal.rational-online.com** and with just one click (on "Planner Portal"), you will find the **RATIONAL Portal.** There you will find all the data relevant to planners in a compact, structured and clear format.
Should you have any other questions, please do not hesitate to contact us.

Planner hotline:

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Website	portal.rational-online.com

Yours
RATIONAL AG

We reserve the right to make technical changes in the interest of progress!
* See page 19

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1.1 Benefits of the VarioCookingCenter® for our customers

Where a new kitchen is being designed and built or where appliances are being replaced in a kitchen, our joint objective is to offer the people working in these kitchens maximum possible benefits.
The requirements placed on kitchen operators and staff are demanding.
Producing top-quality meals under cost and time pressures while at the same time taking into account sustainability for the environment often represents a conflict of objectives. In order to be able to establish an economical production facility and to create a pleasant and ergonomic environment for the people working there, this requires a design that can resolve this conflict of objectives.

RATIONAL products can play a key role in achieving this objective. The VarioCookingCenter® is innovative, multifunctional and stands for performance, quality and durability.
We take a holistic approach to these characteristics, and consider them in harmony with our environment and always make sure that we create a pleasant working environment for the people who use our units, while still focusing on efficiency, work safety, ergonomics and user-friendliness.
This can greatly motivate the people working in kitchens and create an economical production facility.

What better reference for you than satisfied investors and enthusiastic users of the kitchens you have planned?

For decades, the RATIONAL brand has stood for sophisticated cooking appliance technology in commercial kitchens. Our objective is to meet requirements in hot food preparation with unprecedented efficiency.
The VarioCookingCenter® gives cooking quality and performance in both the hospitality industry and industry catering a new name:

VarioCookingCenter®

VarioCookingCenter® is best cooking results

Your customers benefit from uniform temperature distribution, pinpoint heat control, the fastest heating and cooling times and valuable reserve capacity.

VarioCookingCenter® is incredible flexibility

We have combined the functions of conventional cooking appliances such as tilting pans, boilers, ranges and deep-fat fryers into a single, highly efficient and multifunctional unit.

VarioCookingCenter® is easy to use

Your customers will at all times achieve optimal results with self-explanatory operation, built-in cooking intelligence, ergonomic and safe working and incredibly easy cleaning.

VarioCookingCenter® is maximum productivity

Your customers cook up to four times faster, save 10% in food, 30% in space, 40% in energy and gain lots of time.*

VarioCookingCenter® is 100 % environmental benefits

From product development, manufacturing, transportation, installation, years of use right through to disposal – resources are used carefully and sparingly across the entire product life cycle.

VarioCookingCenter® is lifetime service

Your customers have access to free advice on applications, software updates and local service specialists nationwide.

* See page 20

1.2 The right solution for every kitchen

Whether you run an à la carte restaurant or in corporate catering, prepare 30 individual portions or thousands of meals, cook overnight, under pressure or à la minute, the VarioCookingCenter® always offers the right solution for the individual requirements in your planned kitchen.

This applies to new designs and for kitchen renovations, as well as for the replacement of existing appliances.

Perfect for the restaurant

À la carte – guests expect fish cooked to perfection, crisp vegetables and succulent meat.
Fresh products must be prepared gently and must be served quickly and to a consistently high quality. With the VarioCookingCenter®, RATIONAL is offering the kitchen technology needed to meet these challenges perfectly. With the VarioCookingCenter® you can boil, pan-fry and deep-fry in just a single unit and up to four times as fast*. The production takes care of itself and the service runs without stress.

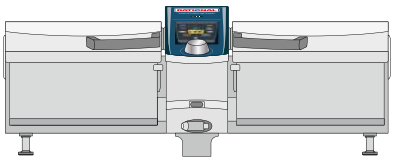
Unbeatable in industry catering

Boiling, pan-frying, deep-frying, pressure cooking or low temperature cooking – it is all possible in a single VarioCookingCenter®. It reduces the space needed in your kitchen by at least 30 %. The powerful VarioBoost® allows you to sear batches twice the size compared to conventional tilting pans, without drawing out juices. It is extremely simple to use, the VarioCookingControl® cooking intelligence ensures optimal configuration of the cooking process at all times, and it quickly changes between the different applications.

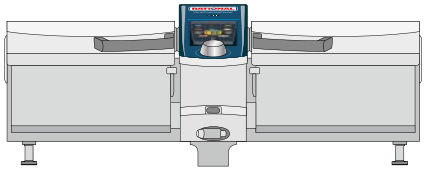
Kitchens equipped with VarioCookingCenter® units can adapt to all working methods. No matter what's on the menu and what's to be cooked, the right appliance has been planned in the kitchen.

* See page 19

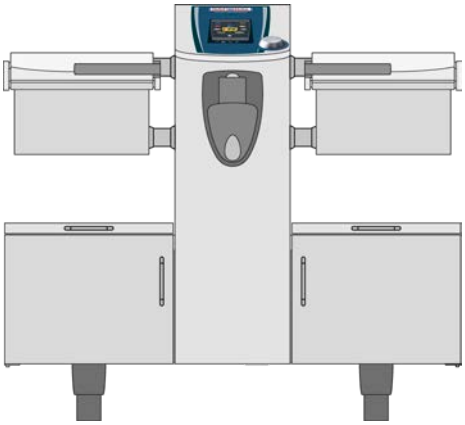
1.3 Product family



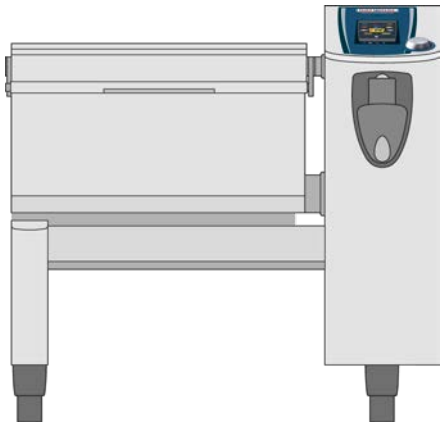
VarioCookingCenter® 112T



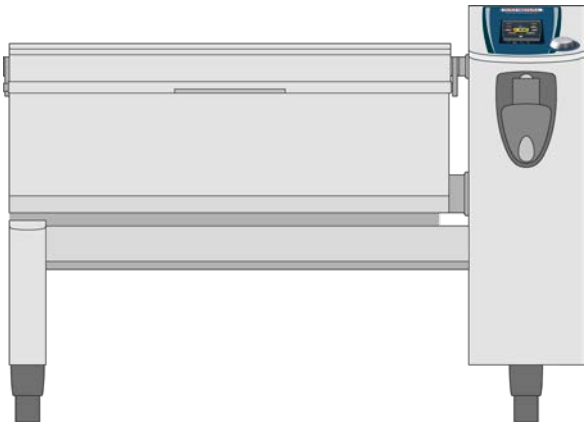
VarioCookingCenter® 112L



VarioCookingCenter® 112+



VarioCookingCenter® 211



VarioCookingCenter® 311

VarioCookingCenter®	112T	112+	112L	211	311
Meals/service	from 30	from 30	50–100	100–300	100–500
Usage capacity	2 × 14 l	2 × 14 l	2 × 25 l	100 l	150 l
Usable area	2 × 12 dm²	2 × 12 dm²	2 × 19 dm²	42 dm²	65 dm²
Pan inner dimensions (W × D × H)	2 × 275 × 445 × 130 mm	2 × 275 × 445 × 130 mm	2 × 344 × 557 × 130 mm	687 × 620 × 280 mm	1,066 × 620 × 280 mm
Power* (Dynamic option)	17 kW (13 kW)	17 kW (13 kW)	28 kW (21 kW)	28 kW (22 kW)	45 kW (35 kW)
Output* with VitroCeran (option) (Dynamic option)	–	19 kW (15 kW)	–	31 kW (24 kW)	47 kW (37 kW)
Base unit	–	Option	–	–	–
VitroCeran	–	Option	–	Option	Option
Pressure	–	Option	–	Option	Option

* 3NAC 400V·See chapter 3.5 for additional voltages

1.4 Appliance options

Overview:

VarioCookingCenter®	112T	112	112L	211	311
unit options:					
Dynamic	■	■	■	■	■
Pressure cooking	□	■	□	■	■
VitroCeran with frame/bracket for GN container	□	■	□	■	■
Side cabinet with door and pull-out side table	□	■	□	□	□
Capability to connect to an energy optimisation system	■	■	■	■	■
Dry contact	■	■	■	■	■
Blocked deep-frying mode	■	■	■	■	■
SOLAS wiring	□	■	□	■	■
Hot water connection	□	■	□	■	■
Stainless steel feet	□	■	□	■	■

■ Optional □ Not available

Description:

Dynamic option
The Dynamic option offers a reduced connected load, which requires a smaller fuse and a smaller cable cross-section. This option has all the standard possible applications of a VarioCookingCenter® and the usual flexibility and multi-functionality.

Pressure cooking option
The pressure option enables faster and yet still gentle cooking of a wide range of different dishes. A uniform and optimal pressure level is guaranteed and the cell structure of the food is preserved. This is a reliable and low maintenance system. Maximum overpressure: 150 mbar.

VitroCeran option with frame/bracket for GN container
VitroCeran provides an additional heated area for cooking smaller amounts of food or keeping food warm as with a BainMarie, using our BainMarie accessories, for example.

Side cabinet option with door and pull-out side table
The side cabinet with door and pull-out side table are ideal for emptying the food from the pan. This can be used to place GN containers on the side table, which makes it much more practical for tipping food into the container. The side cabinet can also be used to store all kinds of accessories for the VarioCookingCenter® within arm's reach.

Energy optimisation system connection option
The appliance can be connected to an energy optimisation system (e.g. Sicotronic, RSW). The relevant connection terminals are in this case pre-installed inside the appliance.

Dry contact option
The appliance has an dry auxiliary contact pre-installed on its inside.

1.4 Appliance options

Blocked deep-frying mode option
This is a version of the unit whereby the “Deep-fry” mode is not available. This option can be used to save on installation costs for any fire extinguishing equipment, which is required when limits are exceeded (according to local regulations).

SOLAS wiring option
The appliance has an additional safety temperature limiter and can be connected to an external signalling device 230 V (max. 8 A, not included). The relevant connection terminals are in this case pre-installed inside the appliance.

Hot water connection option
This option allows the VarioCookingCenter® to be connected to both a cold and hot water inlet. Using the hot water supply shortens heating up times for boiling.

Stainless steel feet option
The stainless steel feet allow the appliance to be attached to the floor.

Hose option
The integrated hose spray means there is no need to carry water. Deglazing and cleaning are child's play thanks to the exemplary hygienic integration.
WRAS has classed the VarioCookingCenter® with the integrated hose in category 5. This means that any VarioCookingCenter® unit with an integrated hose must be connected to a free outlet ⁄ break tank, to prevent water from flowing out of the VarioCookingCenter® and back into the mains water supply.

1.5 Comparison of concepts for a production kitchen

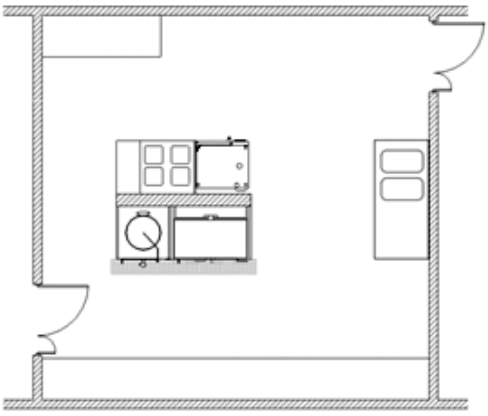
Example production kitchen with 200 meals – a comparison

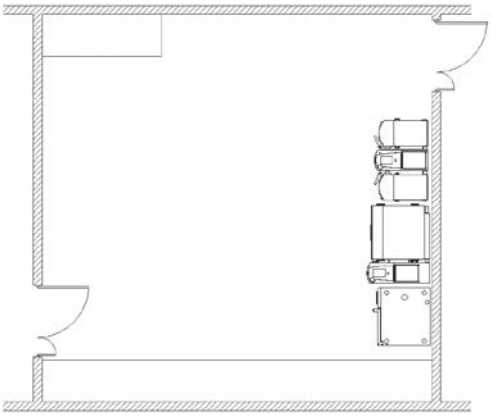
The appliance requirements for a commercial kitchen depend on multiple factors. The catering system chosen, such as Cook & Chill, play a major role in this. The appliances required for the large-scale kitchen are determined on the basis of the catering system. The appliance capacities and the number of appliances required are selected based on the catering load, which means the number of portions to be produced.
The higher flexibility of appliance technology means fewer appliances can be used. A comparison between a conventional kitchen and a VarioCookingCenter® kitchen with only multifunctional appliances illustrates this.

Comparison of appliance requirements – conventional and modern appliances for 200 catering customers

Conventional appliance requirements*	Appliance requirements with a VarioCookingCenter®
1 combi-steamer (10 × 1/1 GN)	1 SelfCookingCenter® 101 (10 × 1/1 GN)
1 range (4 stoves)	1 VarioCookingCenter® 112/112T (2 × 14 l)
1 fast boiling pan (80 l)	1 VarioCookingCenter® 211 (100 l)
1 pressure braising pans (80 l)	
1 BainMarie	

Picture of conventionally equipped kitchen (left) and a kitchen equipped with a VarioCookingCenter® (right).





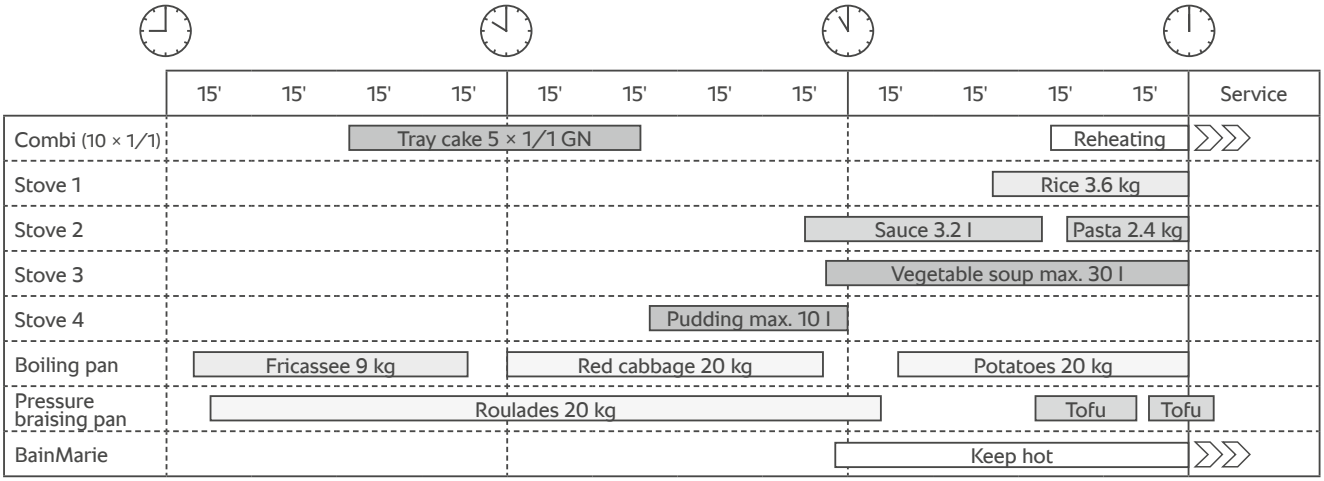
* aid and DGE e. V. (2011). Catering systems in industry catering Bonn.

1.5 Comparison of concepts for a production kitchen

In order to be able to better compare the appliance requirements, a sample production plan is shown for these kitchens.
As such, the following menus and associated quantities are produced in both kitchens

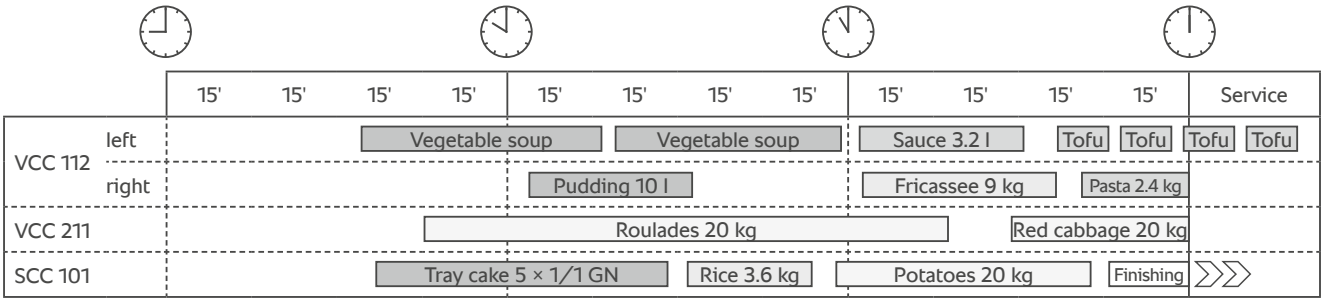
Menu 1 (100 portions)		**Menu 2** (40 portions)		**Menu 3** (60 portions)		**Additional production**
Beef roulade	20 kg	Tofu vegetable skewers	80 x	Chicken ragout	9 kg	Vegetable soup
Potatoes	20 kg	Pasta	2.4 kg	Rice	3.6 kg	Tray cake
Red cabbage with apple	20 kg	Tomato sauce	3.2 l			Pudding

Production plan for conventionally equipped kitchen



Production plan for kitchen equipped with a VarioCookingCenter®

Menu 1 (100 portions)		**Menu 2** (40 portions)		**Menu 3** (60 portions)		**Additional production**
Beef roulade	20 kg	Tofu vegetable skewers	80 x	Chicken ragout	9 kg	Vegetable soup
Potatoes	20 kg	Pasta	2.4 kg	Rice	3.6 kg	Tray cake
Red cabbage with apple	20 kg	Tomato sauce	3.2 l			Pudding



This shows that the appliances in the VarioCookingCenter® kitchen are much better utilised. This is enabled by the multifunctional application, as well as the significantly higher cooking speed with the VarioCookingCenter®.

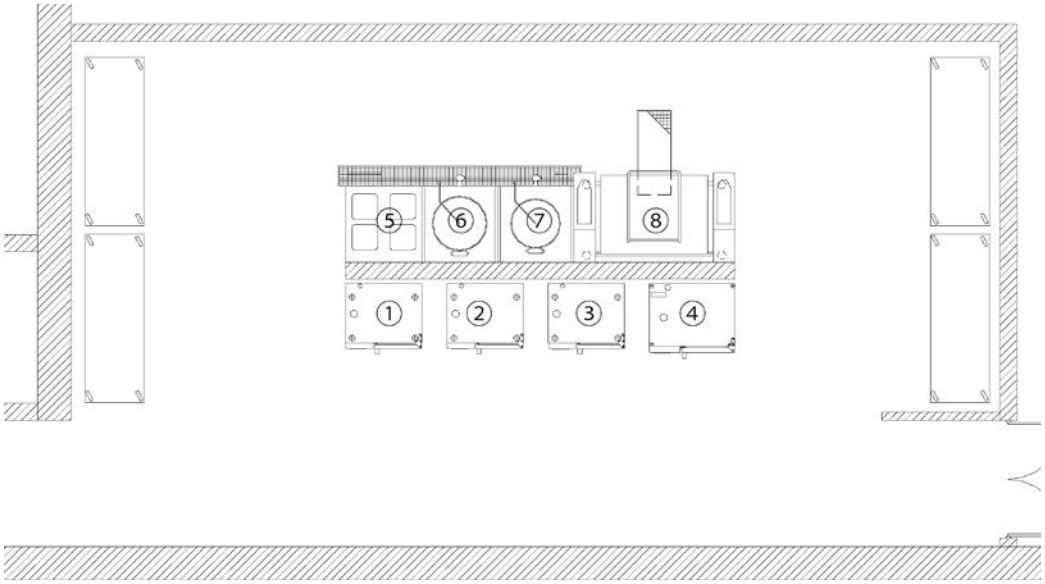
The SolutionLIVE program allows you to make a quick and simple comparison of concepts. Simply enter the catering type, number of meals and menus and SolutionLive will suggest an appliance for you including a production plan. You can also test the plan in terms of energy consumption, connected load and payback period in comparison with a concept with conventional appliances.
Please contact your RATIONAL contact person to receive the program.

1.6 Kitchen examples

1.6.1 Expansion of St. Anna retirement home

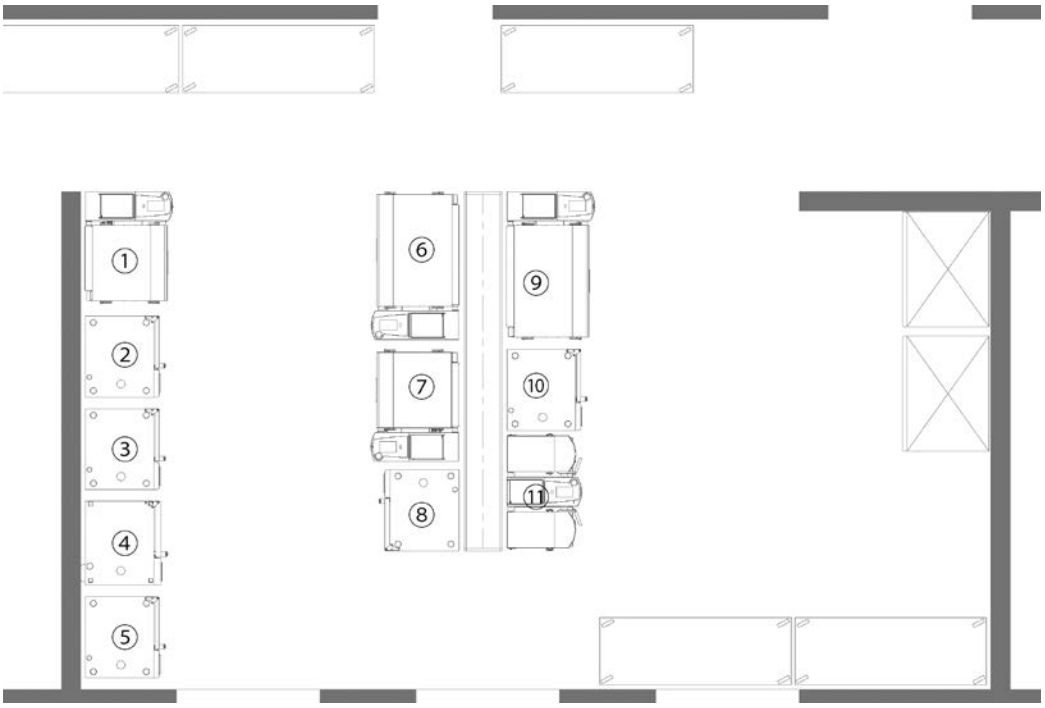
Before conversion, the St. Anna retirement home in Dorsten produced 3 different dishes and 400 meals. Following the renovation, production was expanded to 1,500 meals and 4 dishes. Further expansion of capacity to up to 2000 meals is planned.
Production: All the dishes are served hot at the same time, including deliveries to schools and nurseries.

St. Anna residential home – before expansion



1	Combi-steamer
2	Combi-steamer
3	Combi-steamer
4	Combi-steamer
5	4 hobs
6	Boiling pan 60 l
7	Boiling pan 100 l
8	ThermoJet 200

St. Anna residential home – after expansion



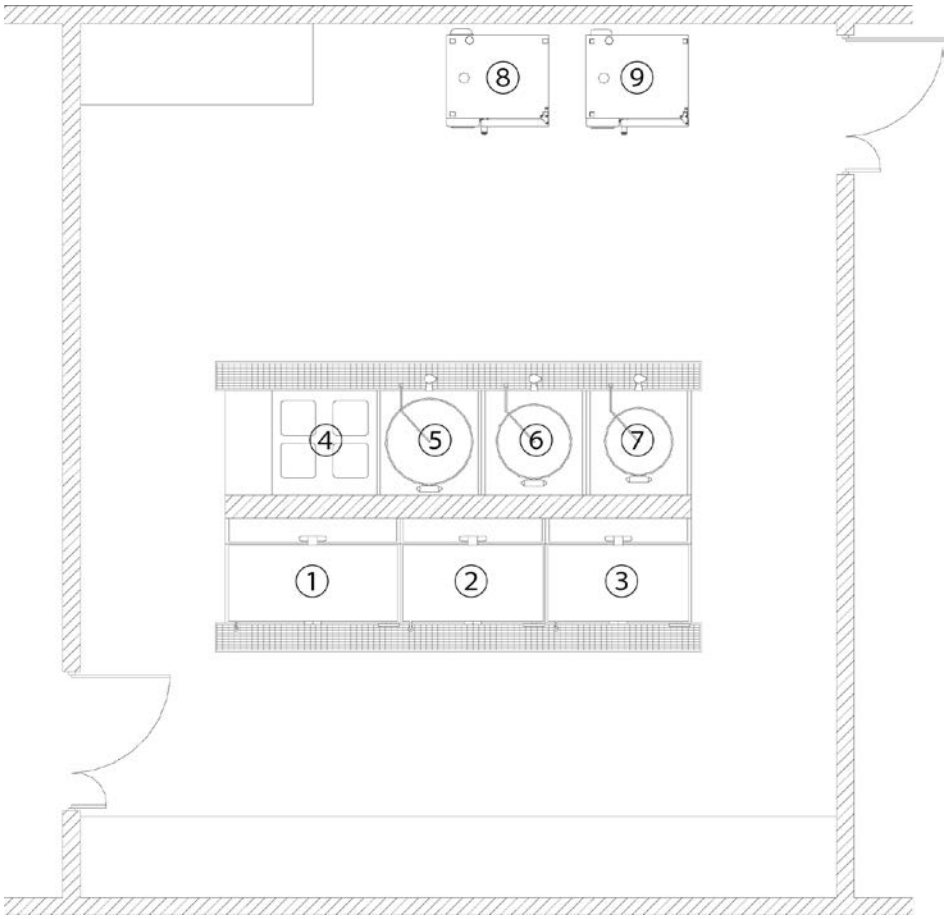
1	VarioCookingCenter® 211
2	SelfCookingCenter® 101
3	SelfCookingCenter® 101
4	SelfCookingCenter® 201
5	SelfCookingCenter® 101
6	VarioCookingCenter® 311
7	VarioCookingCenter® 211
8	SelfCookingCenter® 101
9	VarioCookingCenter® 311
10	SelfCookingCenter® 101
11	VarioCookingCenter® 112

1.6 Kitchen examples

1.6.2 Conversion at the Marriott Hotel, Zurich

The Marriott Hotel produces between 200 and 3,000 meals per day. Up to 50 hot dishes and 60 different hot snacks are served. Following the kitchen renovation, the Head Chef says that the kitchen has become much more productive, chefs no longer work overtime and the potential for the generation of new business is there.

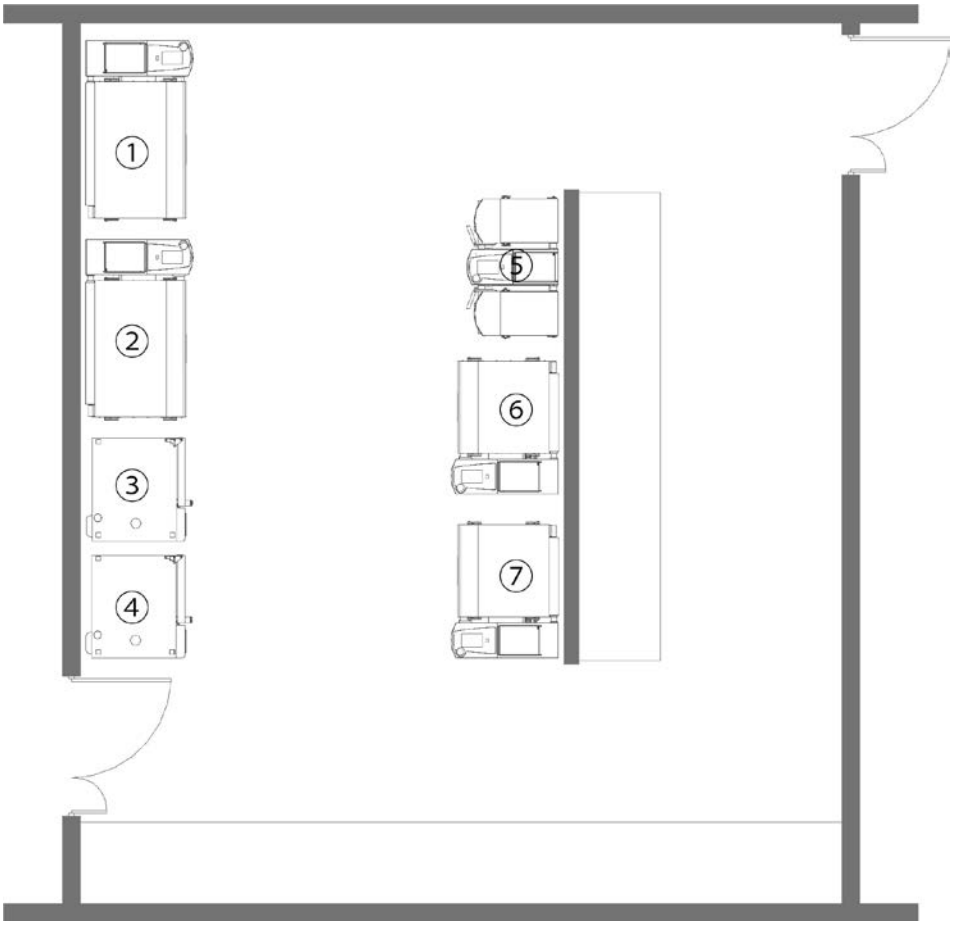
Marriott Hotel Zurich – before conversion



1	Tilting pan 150 l	6	Boiling pan 150 l
2	Tilting pan 100 l	7	Boiling pan 80 l
3	Tilting pan 100 l	8	Combi-steamer
4	4 hobs	9	Combi-steamer
5	Boiling pan 200 l		

1.6 Kitchen examples

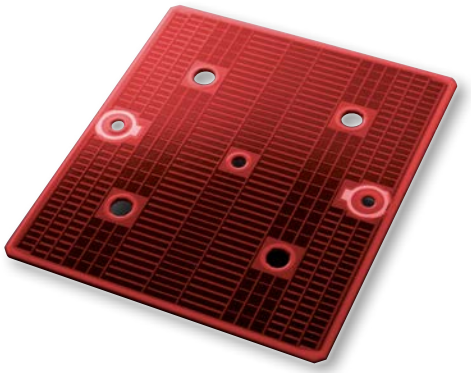
Marriott Hotel Zurich – after conversion



1	VarioCookingCenter® 311
2	VarioCookingCenter® 311
3	SelfCookingCenter® 201
4	SelfCookingCenter® 201
5	VarioCookingCenter® 112L
6	VarioCookingCenter® 211
7	VarioCookingCenter® 211

1.7 Innovative technology

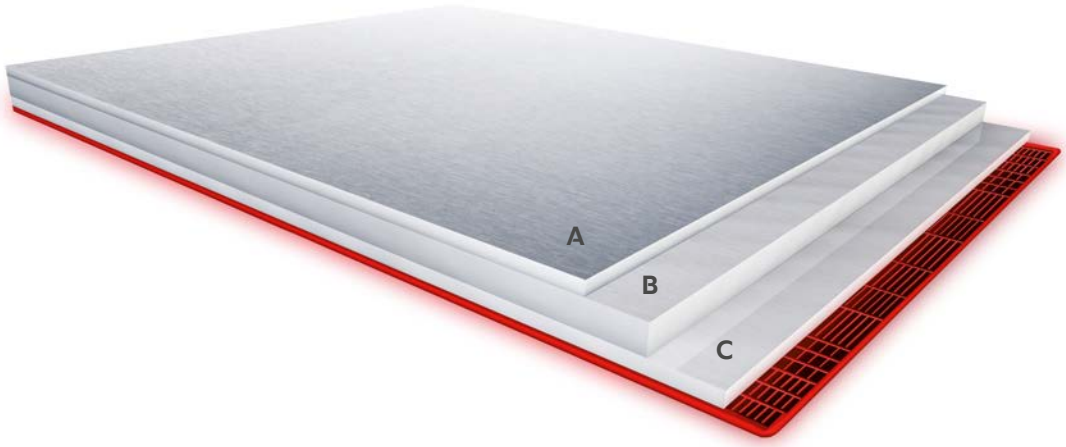
The VarioBoost® heating system



The patented VarioBoost® heating system will really speed up your cooking. The pan reaches 200 °C in just 2 minutes* and even retains the heat when it is filled with a lot of cold food to be cooked. The reserve capacity is so generous that the energy can be topped up in seconds and the required temperature maintained. You cook up to four times** as fast without long waiting times, batch for batch. The highly compact, network-like VarioBoost® heating structure evenly distributes the heat over the pan base and thus prevents sticking. Thanks to the patented pan base TrimaTherm, the VarioCookingCenter® is ready to use in minimal time. Heat up, cool down ... VarioBoost® responds immediately and allows you to cook dynamically.
VarioBoost® only heats the pan base: The energy is transferred directly to the food – burning on the hot pan edges and expensive energy wastage from heating the pan walls are now things of the past.
* Model 112/112T/112L, 2.5 minutes for model 211 and 311. ** See 2.2 output examples

TrimaTherm – the hardest and most efficient pan base

The TrimaTherm base consists of three inseparable steel layers. The steel design is dimensioned in such a way to allow the pan base to withstand large and very quick temperature fluctuations.
The VarioCookingCenter® offers the hardest pan base in general, the best heat transfer properties and maximum precision in cooking.



TrimaTherm is made of:
A I a hard, wear-resistant and corrosion-resistant contact layer
B I the central layer consisting of a tough, temperature-stable and extremely thermally-conductive steel, and
C I a dimensionally-stable supporting layer.

* See page 19

1.8 Amortisation

Example for a company canteen

Information on production:	
Number of meals/day:	250
Number of services/day:	1
Number of working days/year:	260

Overheads:	
Energy costs (€/kWh):	€ 0.16
Hourly rate*:	€ 20
Water costs (€/m3 [1000 l]):	€ 1.90

Recommended appliances:
1 × VarioCookingCenter® 112, 1 × VarioCookingCenter® 211

Potential savings/calculation per year					Annual savings
Raw materials purchased meat					
Purchasing/year 17,196 lbs (7,800 kg)	Costs/kg € 5.50	Costs/year € 42,900	You save 10 %	Cost of raw materials with RATIONAL € 38,610	**€ 4,290**
Energy					
Save 14 kWh (Model 112) per service, 26 kWh (Model 211) or 38 kWh (Model 311) per day compared to conventional tilting pans, kettles, ranges or deep-fat fryers. 1 × 14 kW × 1 Service + 1 × 26 kWh + 0 × 38 kWh = 40 kWh/day× 260 days/ year× € 0.16 /kWh =					**€ 1,664**
Time saving					
Saving of 60 minutes per day per VarioCookingCenter® 2 × VarioCookingCenter® × 1 hour × 260 days/year × hourly rate * × € 20 =					**€ 10,400**
Water					
Saving of 90 l (model 112) per service, 200 l (model 211) or 400 l (model 311) water per day**. 1 × 90 l × 1 service + 1 × 200 l = 290 l/day× 260 days/year× 1.9/€1,000 =					**€ 143**

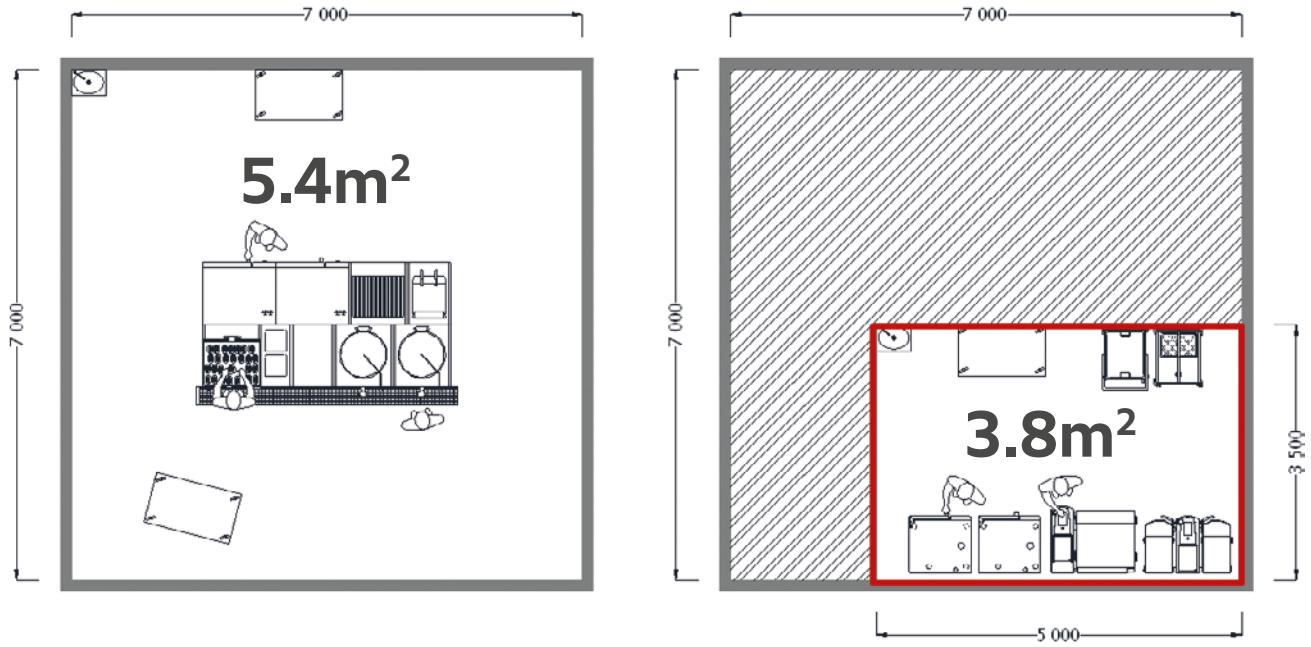
* Compound calculation based on an hourly rate for chef/cleaning staff. ** Compared to conventional cooking appliances.

Your reduced costs

Per year		**€ 16,497**
Per month		**€ 1,374**
VarioCookingCenter® investment		**€ 31,700**
Payback in		**22 months**
Monthly savings:	**€ 1,374**	
Monthly depreciation (5 years):	**€ 528**	
Monthly profit:	**€ 846**	**× 12 months = € 10,152 per year**

1.8 Amortisation

The investment and operating costs as well as energy consumption for the supply of fresh air are also reduced, and the kitchen temperatures are much lower during cooking. Of course these advantages (indirect reduction of power consumption) will have to be investigated individually for every kitchen. In a kitchen producing 250 meals per day with a choice of three menus, the effects on the building and installations can be characterized as follows:
> 30 % of net installation surface (3.8 m² instead of 5.4 m²)
> 50 % fewer appliances (4 instead of 8)
> 22 % lower connected load (87 KW instead of 112 KW)
Reduction of installation volume with VarioCookingCenter® units compared to conventionally equipped kitchen.



The SolutionLIVE program allows you to make a quick and simple comparison of concepts. Simply enter the catering type, number of meals and menus and SolutionLive will suggest an appliance for you including a production plan. You can also test the plan in terms of energy consumption, connected load and payback period in comparison with a concept with conventional appliances.
Please contact your RATIONAL contact person to receive the program.

1.9 Numerous benefits and advantages for you with VarioCookingCenter®!

Installation

For the installation of the VarioCookingCenter®, **no floor drain** (similar to combi-steamer) is required. This allows you more **flexibility in your appliance layout** and in designing working processes If appliances need replacing or repositioning in the kitchen, **no major building work** is necessary for new drain systems. This means lower investment costs for your customers and **also makes your planning competitive**. The result is a pleasant, safe and **hygienic workplace** for your customers. Slippery surfaces and walking on grilles are a thing of the past.

Modularity

The appliances have a modular design, allowing them to be complemented by other appliance types or allowing the simple **rearrangement of appliances** without having to carry out any building work.

Multifunctionality

Difficulties in planning and **selecting suitable appliance types** often result from the vague specifications of production depth (convenience level), type of production (cook & chill, cook & serve) or from a change in operator or kitchen manager at a later date.
The VarioCookingCenter® can cover most cooking methods in the kitchen thanks to its **multifunctionality**. This includes boiling, frying, deep-frying, pressure cooking and low temperature cooking. Individual conventional appliances are still being used in kitchens, which restrict menu design significantly.
Kitchens equipped with VarioCookingCenter® units **adapt to working methods** and to changes in menu design, production depths or production methods in the kitchen. No matter what's on the menu and what's to be cooked, **the right appliance has been planned in the kitchen**.

Productivity:

Thanks to the high **productivity** and multifunctionality of the VarioCookingCenter®, the number of appliances to be installed can be reduced or **more can be produced in the same space**. This reduces space requirements, investment costs and makes a **kitchen competitive**. At the same time, this gives you **references for highly innovative kitchen solutions**, with state of the art machines.

Sustainable kitchen planning

With the VarioCookingCenter®, you plan **sustainable kitchens.** RATIONAL continues to support the kitchen team after the installation of appliances with on-site training, user seminars, software updates and many other services. This one-year service package in combination with the VarioCookingCenter® guarantees **highly satisfied users**. Investors and kitchen operators also benefit from **energy-efficient, low-resource and highly productive appliances.** The VarioCookingCenter® is a leader in the efficient use of energy with an efficiency rate of 96%. Operating costs will reduce noticeably. At the same time, the environment is preserved despite the high power.

Space for more appliances

Thanks to the high productivity and small footprint, the customer can install additional appliances, such as blast chillers. This will give them a modern kitchen, which in addition to high productivity, also offers the possibility to prepare high quality food.

2.1 Overview of technical specifications

VarioCookingCenter®	112T	112	112L	211	311
Capacity without pressure					
Volumes***	2 × 14 l	2 × 14 l	2 × 25 l	100 l	150 l
Surface area	2 × 12 dm²	2 × 12 dm²	2 × 19 dm²	42 dm²	65 dm²
Capacity with pressure					
Volumes***	–	2 × 14 l	–	80 l	100 l
Surface area	–	2 × 12 dm²	–	42 dm²	65 dm²
Appliance dimensions					
Width	962 mm	1,200 mm	1,102 mm	1,164 mm	1,542 mm
Depth	800 mm	777 mm	908 mm	914 mm	914 mm
Height	400 mm	1,100 mm	428 mm	1,100 mm	1,100 mm
Weight without pressure					
Gross weight	802 lbs (126 kg)	802 lbs (205 kg)	802 lbs (184 kg)	802 lbs (230 kg)	802 lbs (290 kg)
Net weight	802 lbs (99 kg)	802 lbs (168 kg)	802 lbs (132 kg)	802 lbs (195 kg)	802 lbs (251 kg)
Weight with pressure					
Gross weight	–	802 lbs (210 kg)	–	802 lbs (255 kg)	802 lbs (300 kg)
Net weight	–	802 lbs (186 kg)	–	802 lbs (223 kg)	802 lbs (279 kg)
Electrical ratings					
Connected load* (Dynamic option)	17 kW (13 kW)	17 kW (13 kW)	28 kW (21 kW)	28 kW (22 kW)	45 kW (35 kW)
with VitroCeran (Option Dynamic)	– –	19 kW (15 kW)	– –	31 kW (24 kW)	47 kW (37 kW)
Water connection					
connection	3/4"	3/4"	3/4"	3/4"	3/4"
Pressure hose	1/2"	1/2"	1/2"	1/2"	1/2"
Flow pressure	1.5–6 bar	1.5–6 bar	1.5–6 bar	1.5–6 bar	1.5–6 bar
Waste water connection					
Waste water connection	DN 40	DN 40	DN 40	DN 50	DN 50
Thermal load**					
Latent (Dynamic option)	285 W/kW 4,845 W (3,705 W)	285 W/kW 4,845 W (3,705 W)	276 W/kW 7,728 W (6,072 W)	276 W/kW 7,728 W (6,072 W)	253 W/kW 11,385 W (8,855 W)
Sensitive (Dynamic option)	57 W/kW 972 W (741 W)	57 W/kW 972 W (741 W)	34.5 W/kW 966 W (759 W)	34.5 W/kW 966 W (759 W)	31.5 W/kW 1,417 W (1,102 W)
Specific steam output	454 g/(h kW)	454 g/(h kW)	404 g/(h kW)	404 g/(h kW)	402 g/(h kW)
Max. oil fill quantity					
Volumes	2 x 9 l	2 x 9 l	2 x 14 l	35 l	49 l

* 3NAC 400 V (See chapter 3.5 for additional voltages, fuses and connection cables)

** See chapter 5.2 for extraction requirements

*** Maximum load sizes differ for deep-frying

2.2 Examples

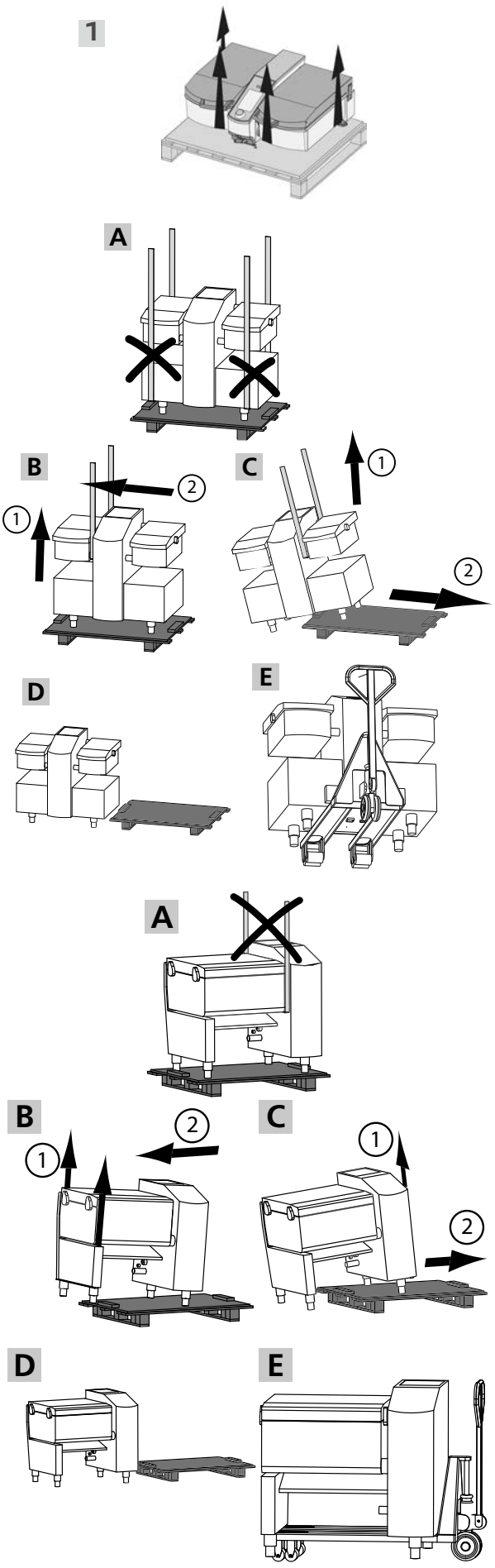
VarioCookingCenter®	112T/112	112L	211	311
Omelette	80 port./pan/hr	120 port./pan/hr	300 port./hr	450 port./hr
Hamburgers	60 units/pan/hr	100 units/hr	240 units/hr	360 units/hr
Goulash, searing	3 kg/batch/pan	4 kg/batch/pan	12 kg/batch	20 kg/batch
Goulash, (pressure) cooking	6 kg/pan	12 kg/pan	802 lbs (45 kg)	802 lbs (70 kg)
Lentils (dried)	3 kg/batch/pan	5 kg/batch/pan	20 kg/batch	30 kg/batch
Rice (dried)	3 kg/batch/pan	5 kg/batch/pan	20 kg/batch	30 kg/batch
Tagliatelle (dried)	6 kg/pan/hr	10 kg/pan/hr	36 kg/hr	45 kg/h
Pudding	10 l/batch/pan	15 l/batch/pan	60 l/batch	100 l/batch
French fries	12 kg/pan/hr	18 kg/pan/hr	50 kg/hr	70 kg/h
Fish fingers (frozen)	400 units/pan/hr	700 units/pan/hr	1800 units/hr	2700 units/hr
Smoked loin of pork	5 kg/pan	14 kg/pan	802 lbs (45 kg)	802 lbs (70 kg)

Comparative table

Energy and time	Multifunctional cooking appliance 2 GN, 17.5 kW	Braising pan 2 GN, 15 kW	VarioCookingCenter® 211	Difference
Deep-frying*				
Energy per kg French fries [kWh/kg]	1.457.		0.919. (0.959)	36.9 % less (34.2 % less)
French fries per hour [kg/h]	7.4.		26.75. (26.75)	3,6 times faster (3.6 times faster)
Frying**				
Energy for preheating [kWh/dm²)	0.067***	0.047.	0.026*** (0.027)	44–61 % less (43–60 % less)
Preheating (Time until steady-state) [min]	26.5***	9.5.	6*** (6.5)	1.6–4.4 times faster (1.5–4.1 times faster)
Frying minced meat: Energy per kg minced meat [kWh/kg]	0.57***	0.48.	0.43*** (0.45)	10–25 % less (6–21 % less)
Boiling**				
Preheating of water [kWh/kg]	0.094***	0.099.	0.089***	5–10 % less (4–9 % less)
Preheating of water [min]	100 l/35.25***	70 l/27.41	100 l/20.75***	1.3–1.7 times faster) (1.2–1.5 times faster)

* according to DIN 18873-3:2011-12/** according to DIN 18873-5:2011-02/*** established by an independent testing institute

3.1 Appliance transportation



Attention!
Take into account the weight of the units. Use carrying aids and appropriate transportation protection.

In order to prevent damage to the appliance, the procedure shown in pictures **A to E** must be followed.

Placement of pallet model 112T/112L **Fig. 1**
Lift the appliance as shown to remove the legs from the recesses. You will find further details in the "Handling the unpacked appliance" chapter on the following page. To prevent damage to the appliance, it may only be moved or lifted with closed lids.

Model 112 must not be raised by the base units. **Fig. A**
Model 211 and 311 must not be raised by the pan or the lid axis. **Pict. A**

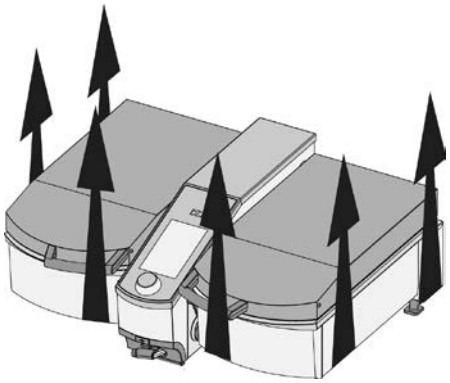
Procedure:
> Raise the appliance on one side using the carrying aids and pull sideways from the pallet **Fig. B**
> Place the appliance down **Fig. C**
> Raise the appliance on the other side using the carrying aids and pull out the pallet **Fig. C**
> Place the appliance down **Fig. D**
> Use a pallet jack to transport the appliances **Fig. E**

The VarioCookingCenter® 211 and 311 without shipping pallets can be raised from below on the cross bars. Use two wood bars with a minimum length of the unit and put them on the pallet jack. Run pallet jack in lengthways underneath the unit. Thus the weight of the unit is evenly distributed to the cross bars.

Note the centre of gravity of the appliance. Risk of tipping!

3.1 Appliance transportation

1

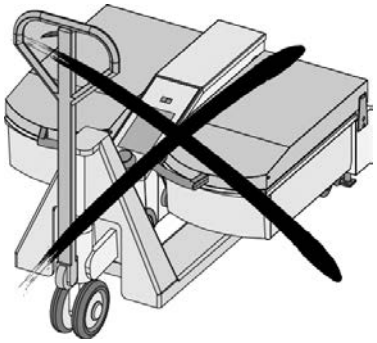


Model 112T/112L, handling by hand or using carrying aids

Handle the appliance as shown in image. **Fig. 1**

To prevent damage to the appliance, it may e moved or lifted with closed lids.

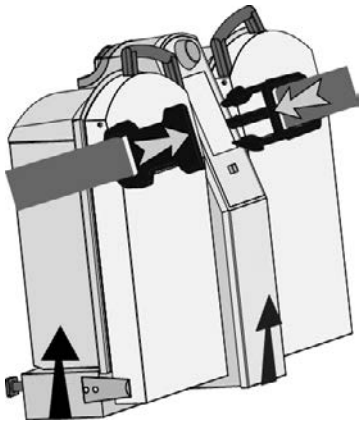
2



Model 112T/112L, handling using a forklift truck or equivalent

Attention!
To avoid damaging the appliance, it is not recommended to handle it without its packaging using a forklift truck, pallet truck or equivalent. **Fig. 2**

3



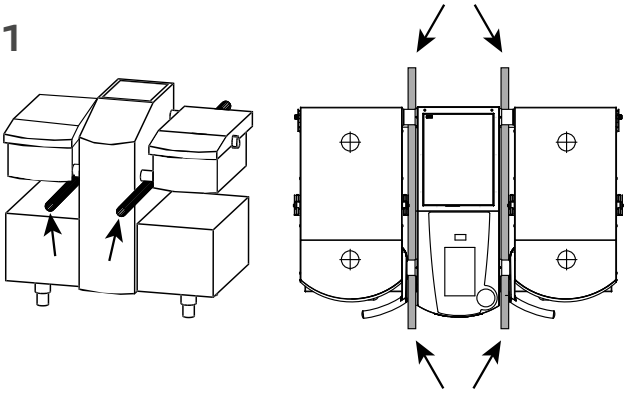
Difficult situations
Vertical handling

The appliance can selectively be transported vertically to pass through doors or other narrow points. To do this, the pan and cover should be strapped together. **Fig. 3**

The appliance should never be transported in this position for long distances, for example in a car.

3.1 Appliance transportation

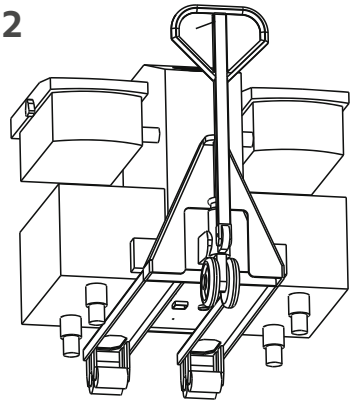
1



Model 112, handling by hand or using carrying aids

We recommend you handle the unit from the axis of the pan and from the rear gully under the lid. **Fig. 1**

2

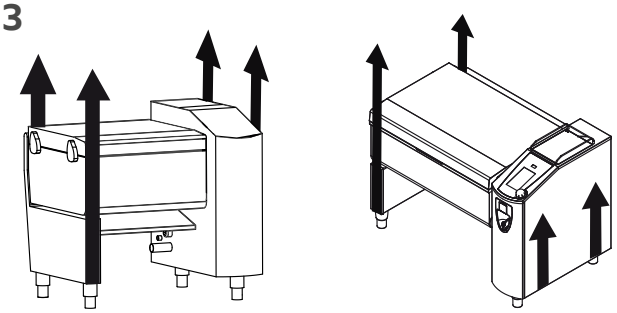


Model 112, handling with pallet jack

In order to transport the appliance with a pallet jack, make sure that you raise the appliance wither from the front or from the back. Not from the side!

Fig. 2

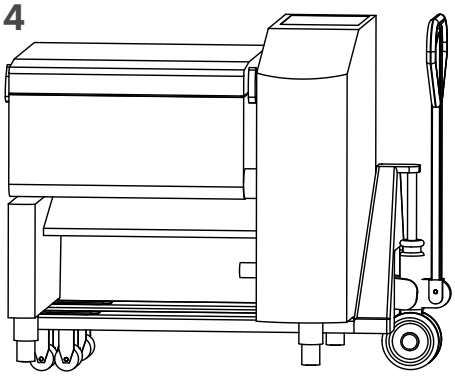
3



Models 211 and 311, handling by hand

Handle unit from the pan edge and on the right chassis. **Fig. 3**

4



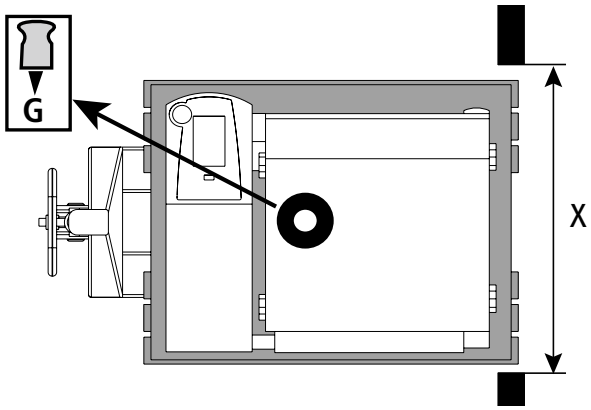
Models 211 and 311, handling with pallet jack

In order to transport the appliance with a pallet jack, make sure that you raise the appliance wither from the left or from the right side.

If you want to raise the appliance on the load bar, use two wooden beams to take the weight. **Fig. 4**

3.2 Appliance dimensions

1

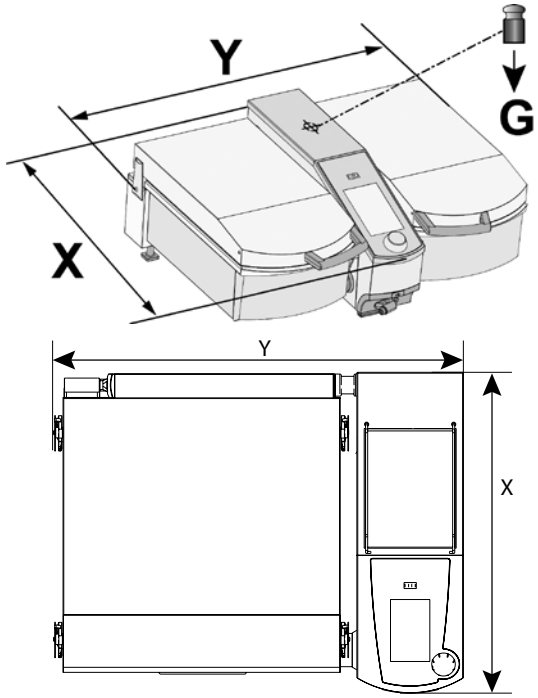


We highly recommend you transport the unit as far as you can on the original pallet.

Centre of gravity **Fig. 1**

Required clearance for pallets:
Models 112/112T/211/311 1,000 mm/40"

2

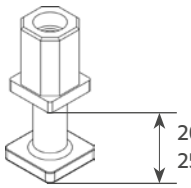


Max. dimensions of our units: **Fig. 2**

	X	Y	H*
112T	800 mm 31 1/2"	962 mm 37 7/8"	400 mm 13 3/4"
112L	908 mm 35 1/2"	1102 mm 43 3/8"	428 mm 16 7/8"
112+	780 mm 30 3/4"	1,220 mm 48 1/8"	1,100 mm 43 3/8"
211+	920 mm 36 1/4"	1,164 mm 45 7/8"	1,100 mm 43 3/8"
311+	920 mm 36 1/4"	1,542 mm 60 3/4"	1,100 mm 43 3/8"

*** Height with standard feet**

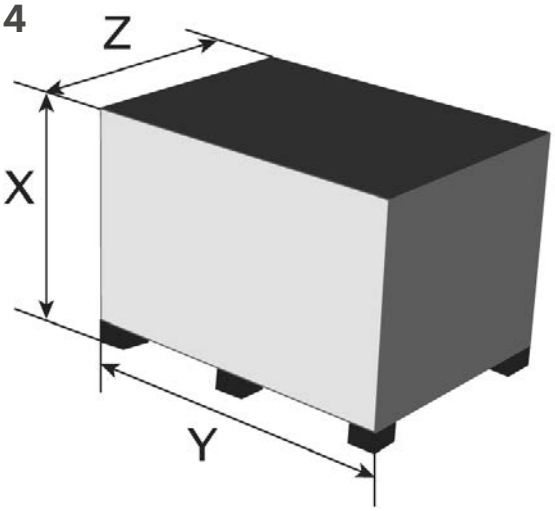
3



Height of feet model 112T/112L **Fig. 3**

The legs can be adjusted between 15 to 60 mm. You should firstly choose the front central leg which best suits your equipment (20 or 60 mm).

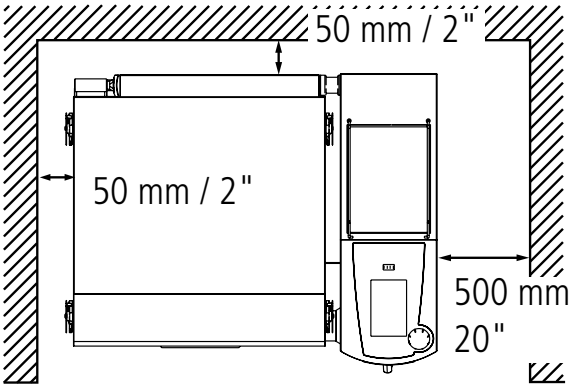
4



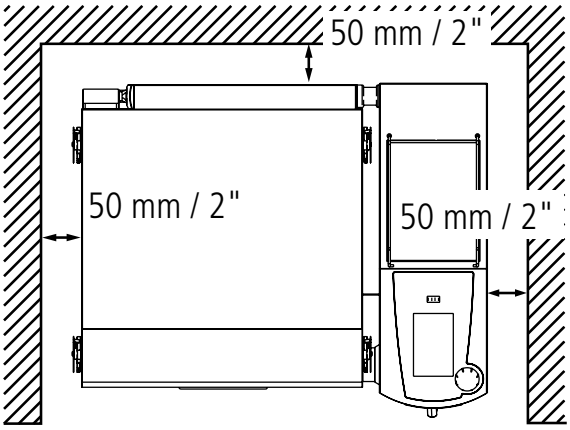
Dimensions and weight with packaging **Fig. 3**

	X	Y	Z	P
112T	600 mm 23 2/4"	1,100 mm 43 1/4"	900 mm 35 3/8"	802 lbs (126 kg)
112L	600 mm 23 2/4"	1240 mm 48 4/5"	1030 mm 40 1/2"	802 lbs (184 kg)
112	1,325 mm 52 1/4"	1,300 mm 51 1/4"	1,000 mm 39 1/2"	802 lbs (205 kg)
112+				802 lbs (210 kg)
211				802 lbs (230 kg)
211+				802 lbs (255 kg)
311		1,700 mm 67"		802 lbs (290 kg)
311+				802 lbs (300 kg)

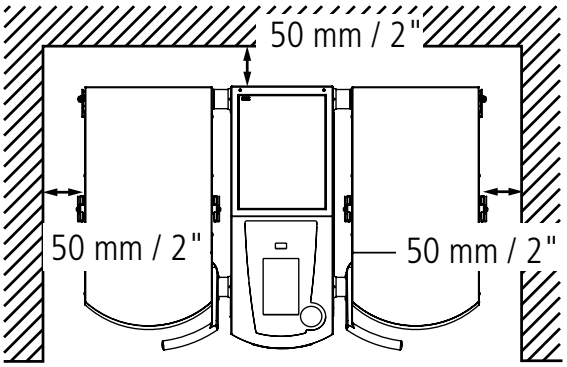
3.3 Recommended minimum clearance



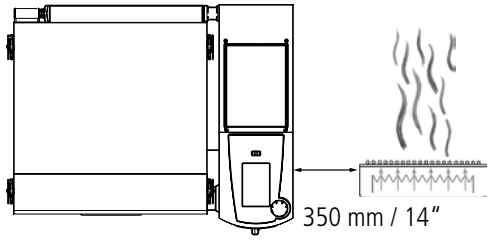
Technician access for model 211/311
We recommend that a work area of 500 mm be provided for on the right side of the appliance in order to be able to carry out maintenance work.



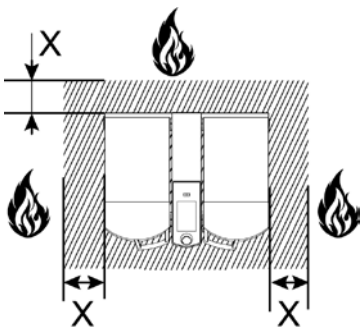
Minimal clearance for model 211/311
Right/left/back keep 50 mm



Minimal clearance for model 112/112T/112L
Right/left/back keep 50 mm



Temperature protection
Minimum distance in case of heat sources on the right side: 350 mm



Naked flames
Right/left/back × = 500 mm

3.4 Electrical connections

Regulations

> Only connect the appliance in accordance with the installation instructions and information on the type plate (see following pages)
> Equipment must be connected to an electrical supply line with standards in your country.
> You must comply with your local electricity supplier regulations.
> We recommend the use of an earth leakage circuit breaker (30 mA) in the electric cabinet supplied on site.
> On-site installation: accessible all-pole disconnection device with at least a 3 mm contact gap.
> Applicable standards: EN60335, IEC335

Supply cable

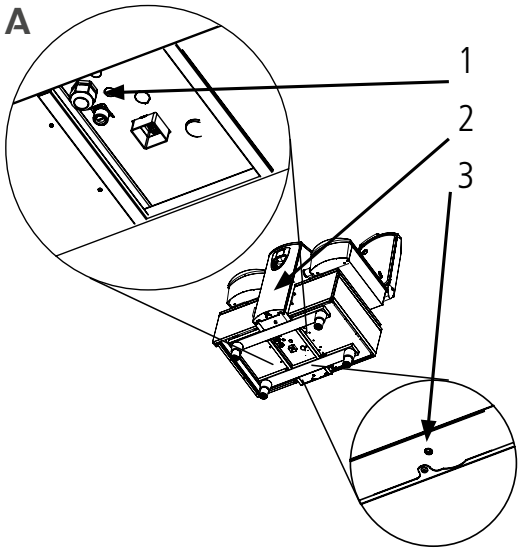
> Units can be connected directly or through a suitable connector.
> Before connecting or disconnecting the mains be sure the unit is switched off.
> Use at least a cable quality like H07RN-F if flexible, V1000R02V if rigid. Connect and tighten PG gland (mains lead cleat).
> The cross-section of the power cables must be based on the current consumption and on local regulations.

Circuit diagram

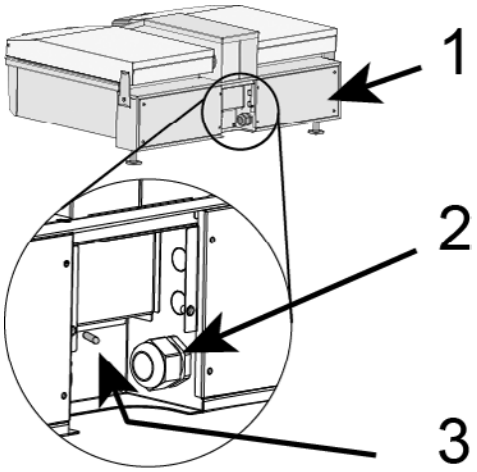
> The wiring diagram can be found inside a plastic bag in the technical compartment, after removing the side panel.

3.4 Electrical connections

A



B



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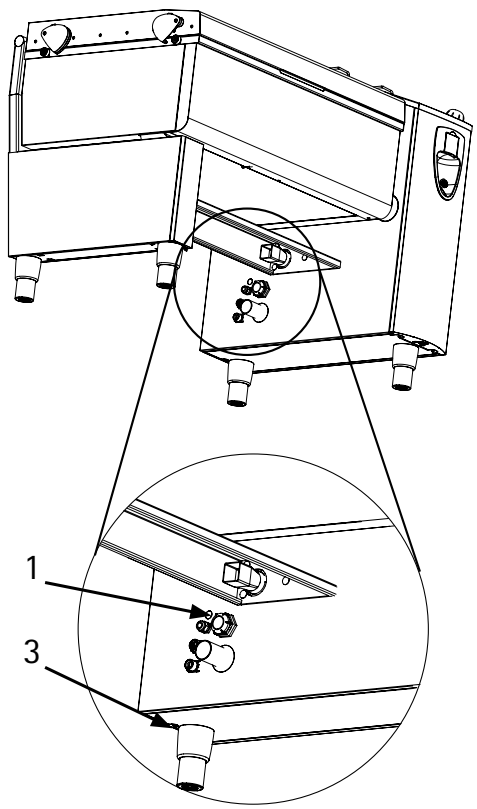


Danger!
When connecting the unit check the power supply voltage matches the one the unit was built for. See also the type plate for this.

Note the cable colours. A wrong connection may cause damage to the appliance (e.g. electronics board).

Connection for model 112 **Fig. A**
The connection terminals are located behind the front cladding (2) in the electrical installation space.
(1) Screw fitting for cable connection
(2) Front cladding
(3) Connection of equipotential bonding system

Connecting model 112T/112L **Fig. B**
The connection terminals are located behind the rear face, in the electrical compartment.
(1) Rear appliance cover, professional electrician
(2) Screw fitting for cable connection
(3) Connection of equipotential bonding system

Connecting model 211/311 **Fig. B**
The connection terminals are located behind the side cladding to the right in the electrical installation space.
(1) Screw fitting for cable connection
(3) Connection of equipotential bonding system

Connect the supply as follows:
Yellow/green terminals: Protective conductor
Blue terminal: Neutral conductor (only 3N AC)
Grey terminal: L1,L2,L3
(non-phase-sequence-dependent)

The connection for the equipotential bonding system is on the bottom of the appliance (3). Connect this with the on site equipotential bonding system.

3.5 Connected loads and voltages

3NAC 400 V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	17	17	19	28	28	31	45	47
Current consumption (A)	23	23	34	40	47	47	70	70
Fuse (A)	25	25	40	40	50	50	80	80
Cross section recommended (mm^2)	2.5.	2.5.	6	6	10	10	16	16

3NAC 400V Dynamic

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	13	13	15	21	22	24	35	37
Current consumption (A)	19	19	29	30	37	37	56	57
Fuse (A)	20	20	32	32	40	40	63	63
Cross section recommended (mm^2)	2.5.	2.5.	4	4	6	6	10	10

3NAC 415 V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	18	18	20	30	30	32	47	50
Current consumption (A)	25	25	35	42	49	49	74	74
Fuse (A)	25	25	40	50	50	50	80	80
Cross section recommended (mm^2)	2.5.	2.5.	6	10	10	10	16	16

3NAC 415V Dynamic

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	14	14	17	23	23	26	37	40
Current consumption (A)	19	19	30	31	39	39	58	59
Fuse (A)	20	20	32	32	40	40	63	63
Cross section recommended (mm^2)	2.5.	2.5.	4	4	6	6	10	10

3AC 220 V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	15	15	17	25	25	27	40	42
Current consumption (A)	39	39	49	66	78	78	117	117
Fuse (A)	40	40	50	80	80	80	125	125
Cross section recommended (mm^2)	6	6	10	16	16	16	35	35

* Does not include the power of any consumers connected to the socket.

3.5 Connected loads and voltages

3AC 440V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	–	16	–	–	26	–	42	–
Current consumption (A)	–	21	–	–	41	–	61	–
Fuse (A)	–	25	–	–	50	–	63	–
Cross section recommended (mm^2)	–	2.5.	–	–	10	–	10	–

3AC 400V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	–	13	–	–	22	–	35	–
Current consumption (A)	–	19	–	–	37	–	56	–
Fuse (A)	–	20	–	–	40	–	63	–
Cross section recommended (mm^2)	–	2.5.	–	–	6	–	10	–

3AC 200V

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	17	17	19	28	28	30	45	47
Current consumption (A)	49	49	58	79	98	98	146	146
Fuse (A)	50	50	63	80	100	100	160	160
Cross section recommended (mm^2)	10	10	10	16	25	25	50	50

3AC 200V Dynamic

VarioCookingCenter®	112T	112	112 m. Vitro	112L	211	211 m. Vitro	311	311 m. Vitro
Max. appliance power (kW)*	–	–	–	21	–	–	–	–
Current consumption (A)	–	–	–	59	–	–	–	–
Fuse (A)	–	–	–	63	–	–	–	–
Cross section recommended (mm^2)	–	–	–	10	–	–	–	–

* Does not include the power of any consumers connected to the socket.
– configuration not available.

3.5 Connected loads and voltages

Cable cross-sections
The power consumption, cable cross-section and fuse values stated are dependent on:
> Local conditions
> Cable length and quality
> Quality of the power supply network
These must be adjusted to local conditions.

The values shown are for a maximum cable length of 2 m. Adjust these values according to the length of cable which will be in use.

Connection voltage
The maximum allowable tolerance of the supply voltage (supply voltage see type plate) is in the range of –10 % up to 10 %.

Maximum diameter of power supply cable

Maximum diameter
(transition from PG gland)

Model 112/112T	Ø max. 25 mm
Model 112L/211/311	Ø max. 32 mm

Maximum cross section (cable connection): Units 3NAC400V, 3NAC415V, 3AC400V, 3AC440V

All models	Max. 25 mm²

For 3AC220V appliances

Model 112/112T/112L	Max. 25 mm²
Model 211/311	Max. 35 mm²

Integrated socket:
Fuse and max. available power

Model 112

Country	Fuse	Available power
All	10 A	2.3 kW

Model 211/311

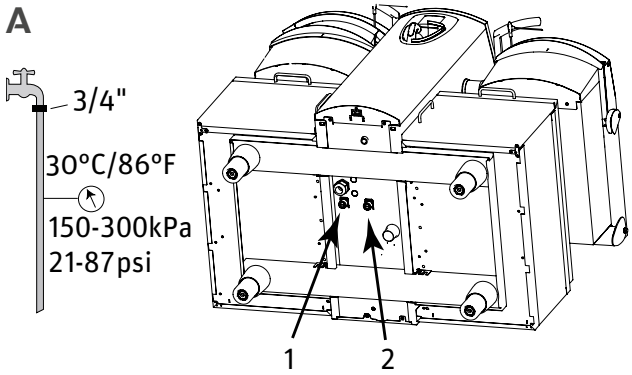
Country*	Fuse	Available power
D, F	16 A	3.6 kW
CH, I	10 A	2.3 kW
GB , DK	13 A	2.9 kW

* Other countries on request.

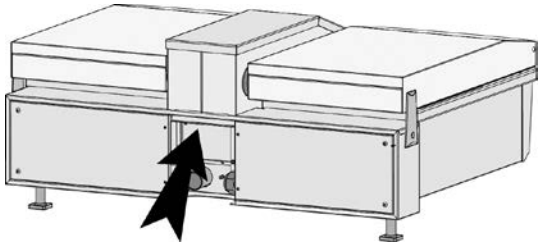
3.6 Water connection

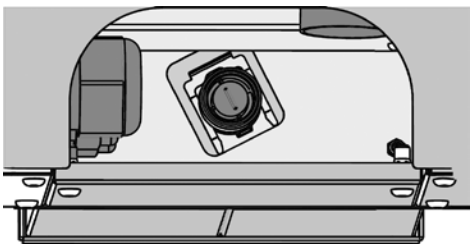
General information
Our appliances meet the standards NF EN 1717: 2001-05 approved and issued by SVGW and DVGW

A

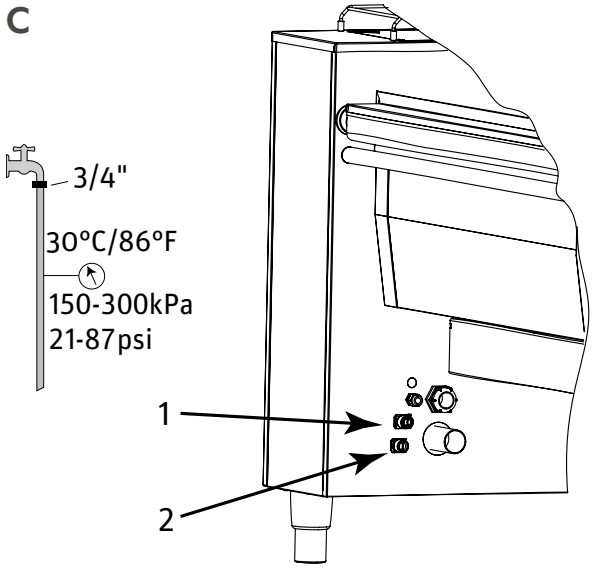


B





C



A soft water connection is not necessary. If regardless the unit shall be connected to soft water make sure that the remaining water hardness is set to **4°dH** minimum.

The appliance must be connected to a drinking water connection hose pursuant to EN 61770 or IEC 61770 or of an equivalent quality. The drinking water connection hose must meet the hygiene requirements of the relevant country in relation to drinking water hoses.

We recommend you install an individual shut-off valve for each appliance. Before installing the water connection, rinse the mains water supply pipe. Specific cases are not covered here. Installers are responsible for taking into account local regulations.

Water connection
(1) Cold water supply (3/4“)
Fill deglazing box or pan
(2) Hot water supply* (3/4“)
Fill pan only
* Hot water is an option. The appliances are not equipped with this as standard.
There is no hot water option for the VarioCookingCenter® 112T/112L.

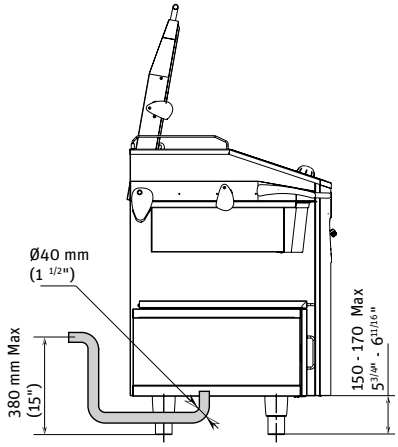
Model 112	**Fig. A**
Model 112T/112L	**Fig. B**
Model 211/311	**Fig. C**

Pressure & flow
Water pressure has to be in the range between 150 kPa and 600 kPa. But we still recommend a minimum pressure of 300 kPa.

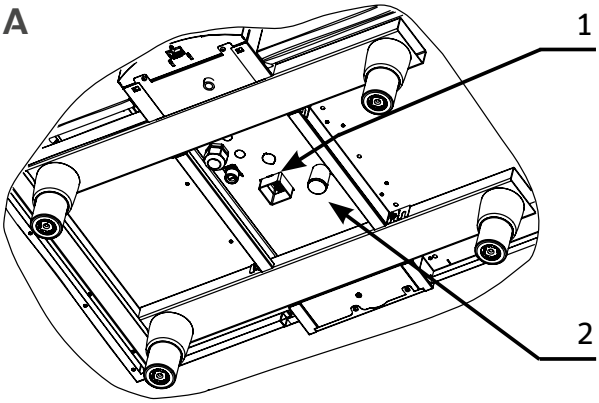
Nominal flow: 30 to 42 l/min

Water flow speed approx. 10 l/min

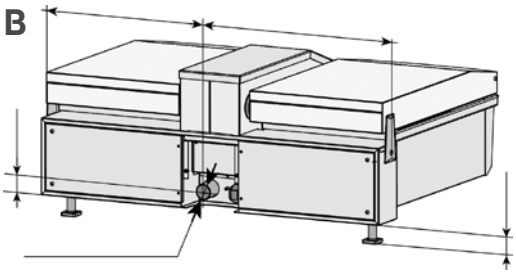
3.7 Drain connection

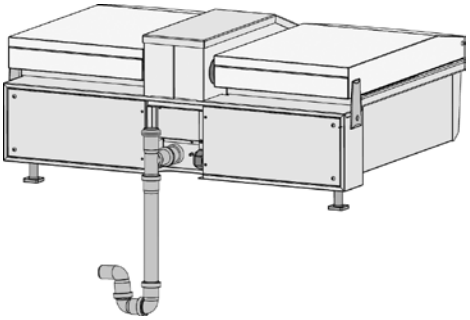


A

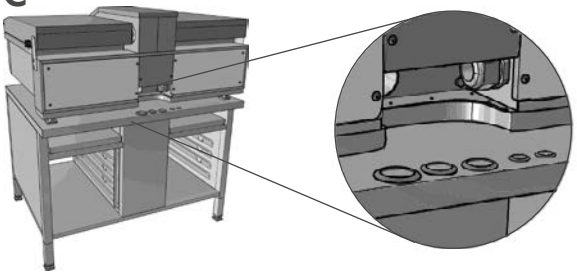


B





C



Special features of the VarioCookingCenter®
Fixed connection with odour lock is permissible thanks to a ventilated drain line which is integrated in our units. Not valid for model 112T/112L.

can be emptied with hot water.
> Drain pipe must be capable of withstanding steam temperature.
> Drain water temperature <100°C

Requirements
> Welding of drain pipe to the unit drain is not permissible (may damage unit).
> Drain pipe may be equipped with an odour lock. Not valid for model 112T/112L.
> The appliance is equipped with a ventilated outlet section (emergency overflow). These must not be sealed, covered, connected or reshaped. Not valid for model 112T/112L.
> Drain pipe must have the same diameter as the drain pipe of the unit, the diameter must not be reduced!
> The drain pipe must have a constant slope of at least 3%.

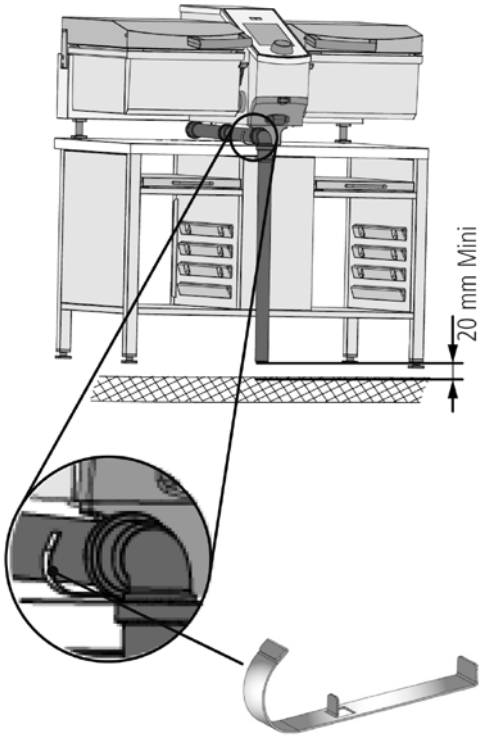
Model 112
The ID 40 mm drain pipe runs underneath the installation space. **Fig. A**

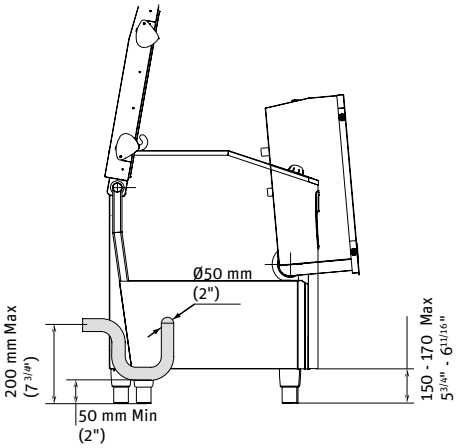
Model 112T/112L
To avoid odour reflux, the drainage pipe should have a U-bend. Our appliance does not have one. **Fig. B**

The stand is pre-perforated to allow technical components to pass through it. (Drainage, water supply, electricity supply, options). **Fig. C**

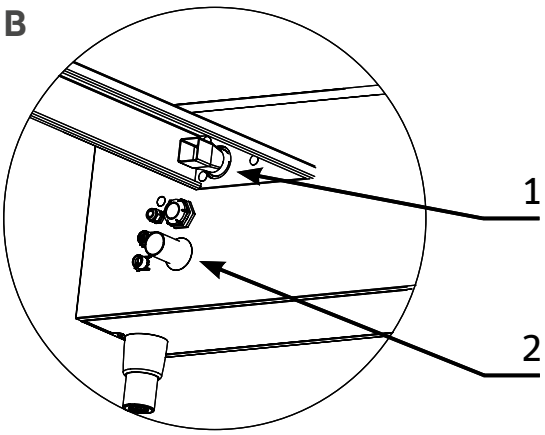
3.7 Drain connection

A





B



Drainage towards the front of the appliance **Fig. A**
If the unit is installed with the 60 mm high front feet, the drain connection can be placed on the front of the appliance. The drainage pipe can be attached to the front on the middle foot with the clamps shown in Fig. A. The clamp can be rotated and can be used on both sides of the middle foot.

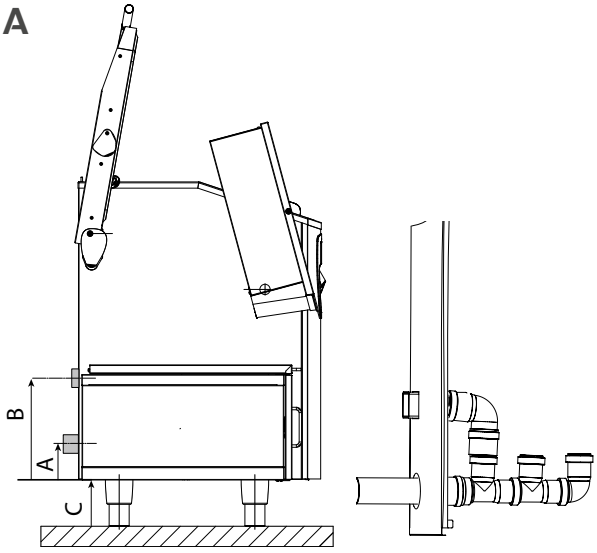
Model 211/311
The ID 50 mm drain pipe is installed as described. **Fig. B**
(1) Overflow
(2) Drain connection

Water drain speeds (depending on the fill height in the pan)

VarioCookingCenter® 112	~18 l/min
VarioCookingCenter® 211/311	~40 l/min

3.7 Drain connection

A



Drain pipe to rear option

(for model 112 and 112+ only)

The VarioCookingCenter® 112 only can be delivered with the drain outlet at the rear side of the unit, in case the standard output position of the drain is too low. (However, for transportation reasons, this is not installed by us). **Fig. A**

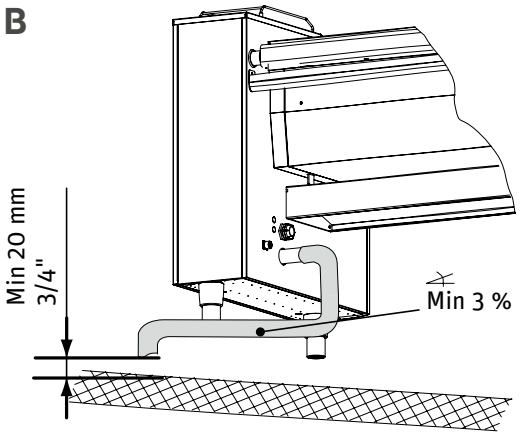
This option can also be retrofitted.

Add-on kit	No.: 60.71.915

Dimensions

A	85 mm 3 3/8"
B	250 mm 9 7/8"
C	150–170 mm 6" (depending on setting)

B



Comments **Fig. B**

Our units do not require drain channel installation. Should a drain channel still be used, please note the following information:

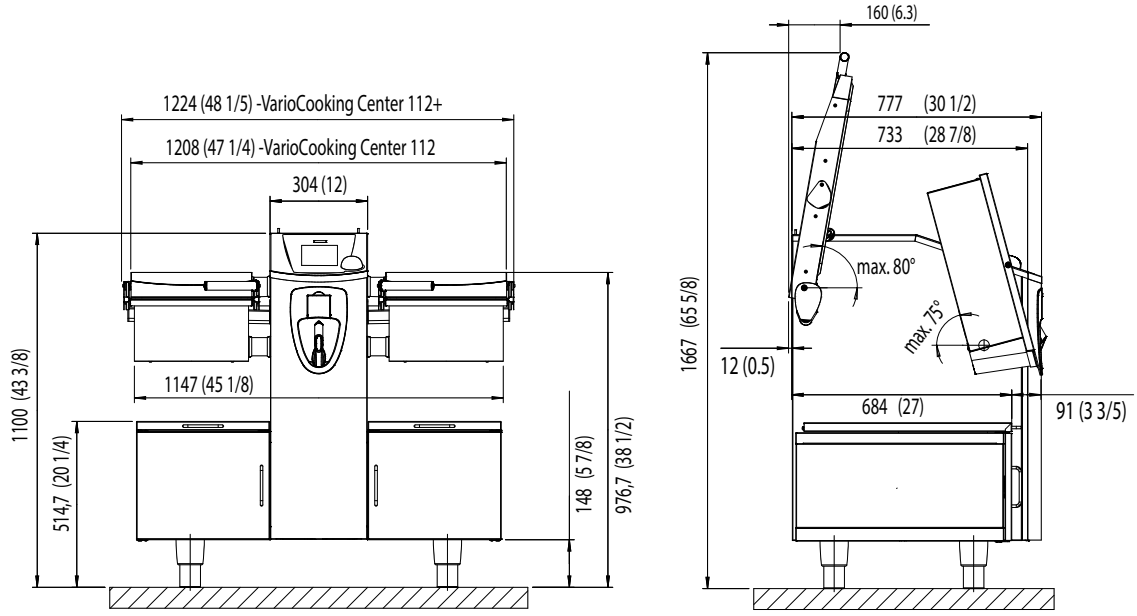
Requirements

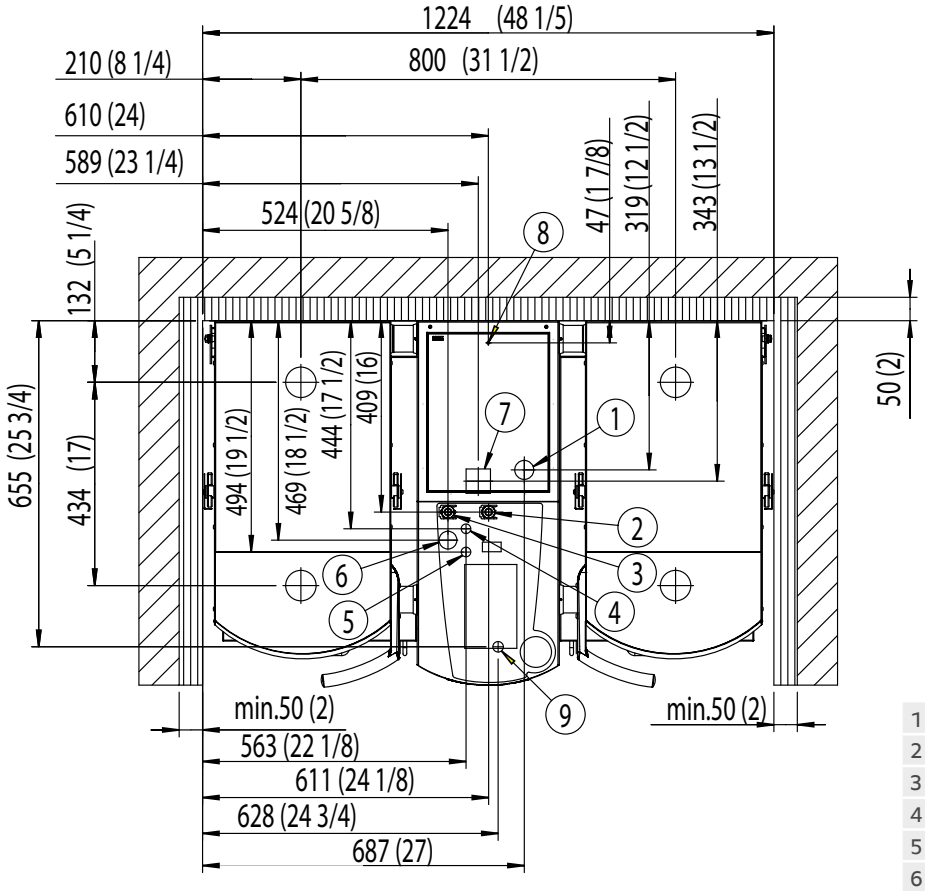
> Drain pipe must have the same diameter as the drain pipe of the unit, the diameter must not be reduced!
> The drain pipe must have a constant slope of at least 3%.
> A clear outflow must be provided between the drain pipe and the drain channel grille.
This is **a minimum of 20 mm.** Although we recommend 50 mm (2") distance in order to facilitate cleaning.

Note

If the waste water is drained into a drain channel, it must be ensured that neither spraying or steam can get to or into the installation area.

4.1 VarioCookingCenter® 112

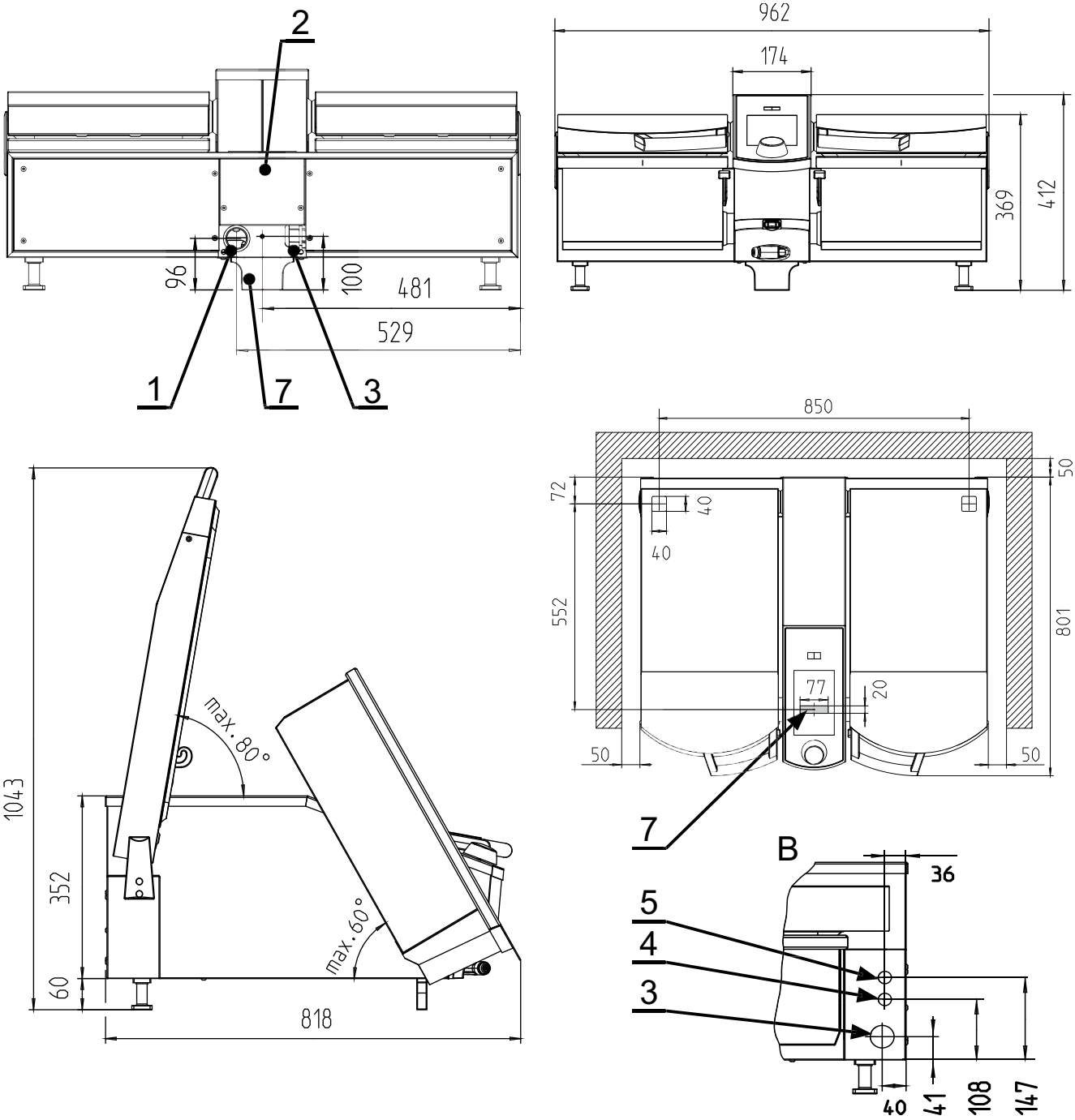




1	DN 40 water drain
2	Water connection hot G ¾“ (Option)
3	Water connection cold G ¾“
4	Sicotronic (Option)
5	Ethernet
6	Electrical connection
7	Overflow
8	Equipotential bonding system M 6 × 10
9	Overflow hose reel
⊕	Feet
⫼	Minimum clearance

Dimensions in mm [inch]

4.2 VarioCookingCenter® 112T



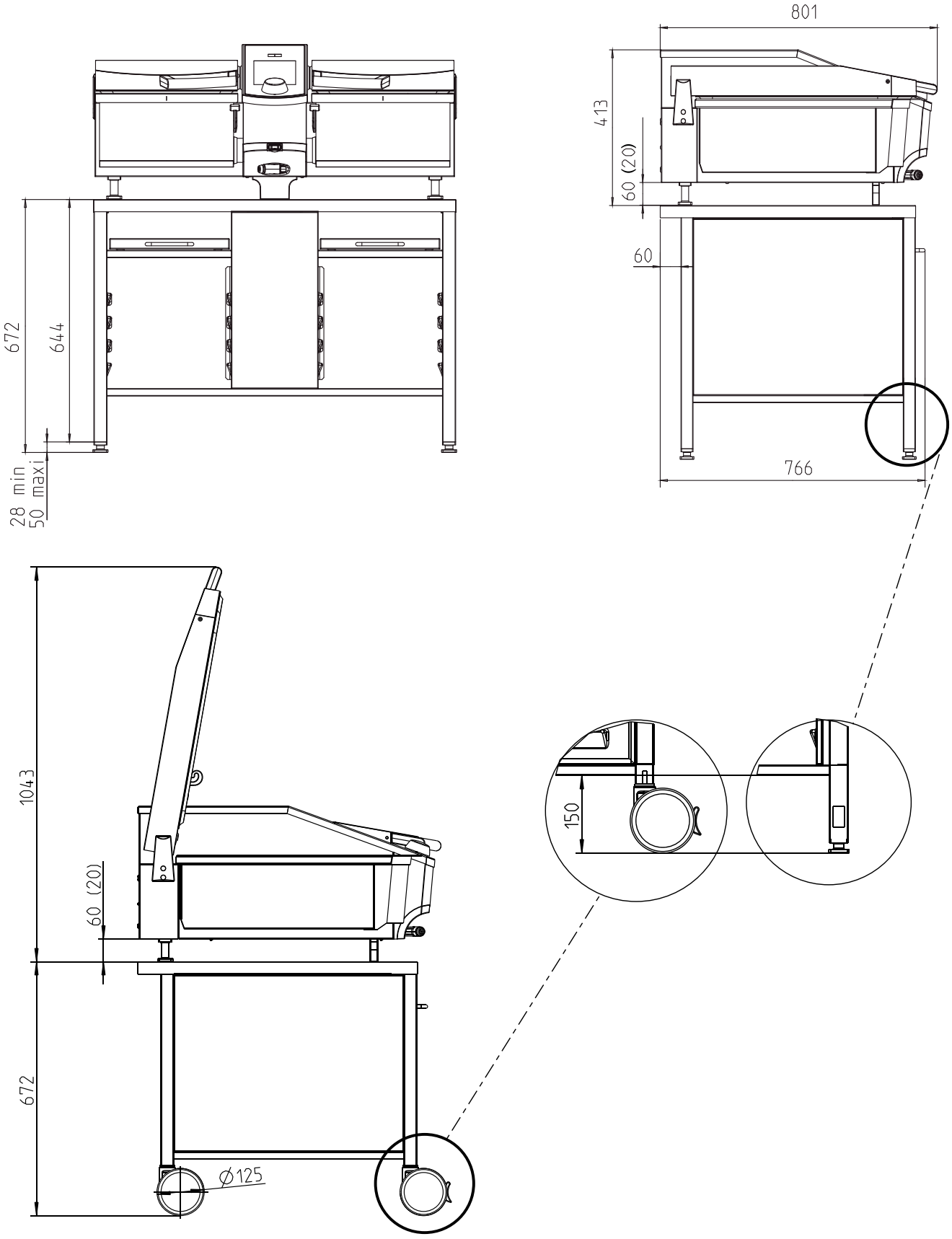
1	DN 40 water drain
2	Water connection cold G ¾“
3	Electrical connection
4	Energy optimisation (option)
5	Ethernet
6	Equipotential bonding system M 6 × 10
7	Exchangeable foot (20/60 mm)
	Minimum clearance

Dimensions in mm [inch]

Tip:
The appliance can be installed with a foot 20 or 60 mm high.
The drawings show the max. height with the 60 mm foot.

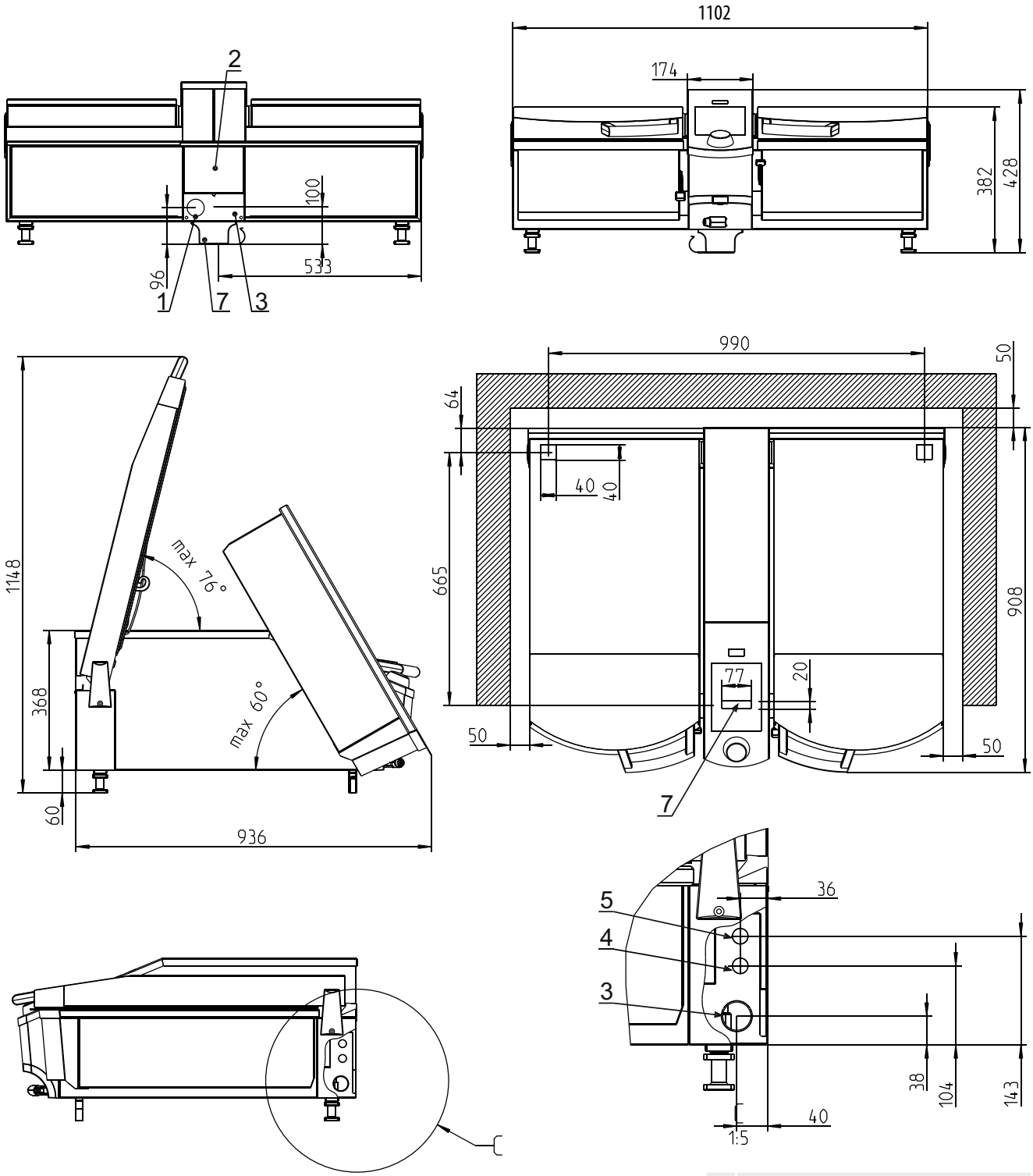
4.2 VarioCookingCenter® 112T on stand

Stand Standard: N° 60.30.925,
mobile: N° 60.30.926



Tip:
The appliance can be installed with a foot 20 or 60 mm high.
The drawings show the max. height with the 60 mm foot.

4.2 VarioCookingCenter® 112L



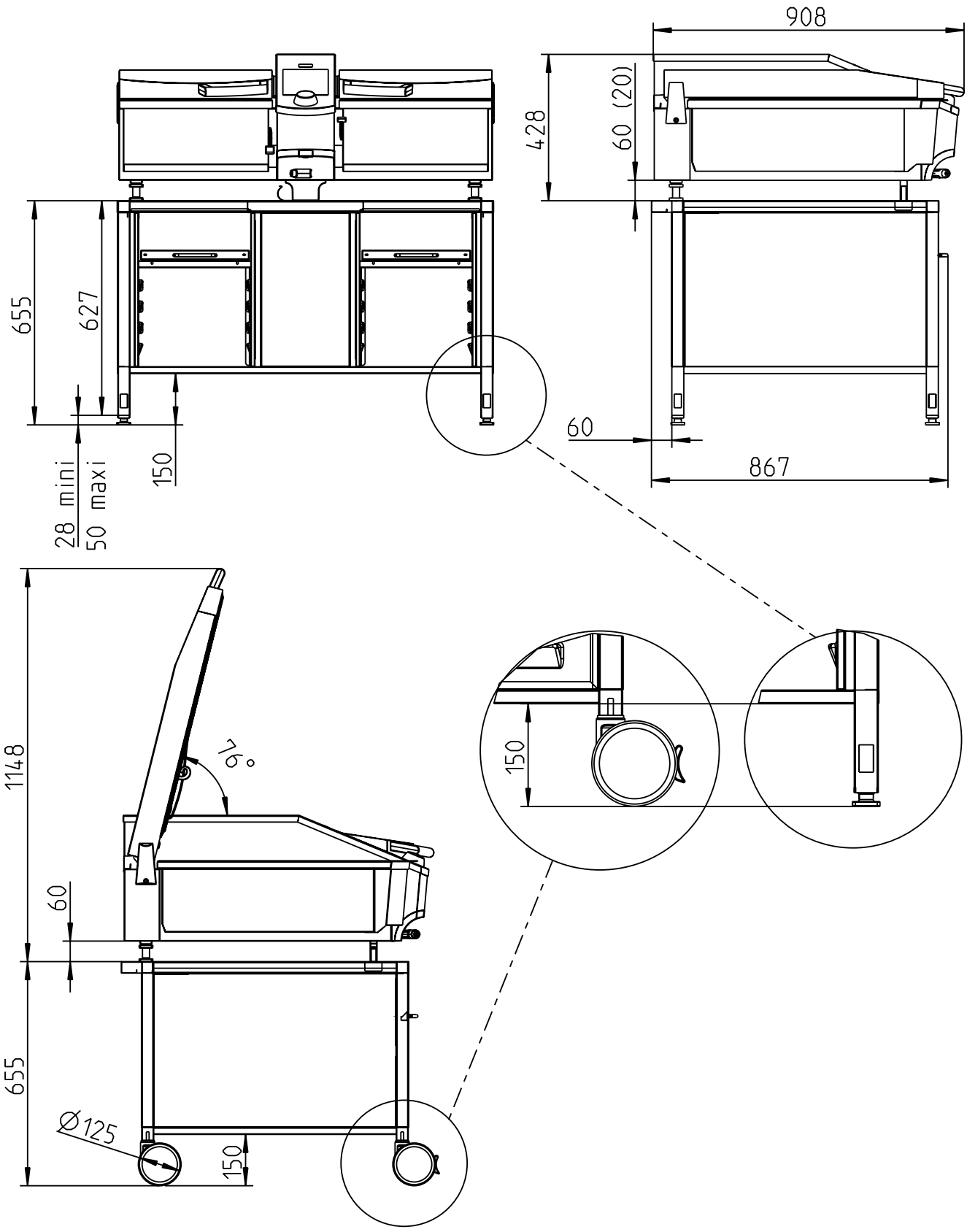
1	DN 40 water drain
2	Water connection cold G ¾“
3	Electrical connection
4	Energy optimisation (option)
5	Ethernet
6	Equipotential bonding system M 6 × 10
7	Exchangeable foot (20/60 mm)
	Minimum clearance

Dimensions in mm [inch]

Tip:
The appliance can be installed with a foot 20 or 60 mm high.
The drawings show the max. height with the 60 mm foot.

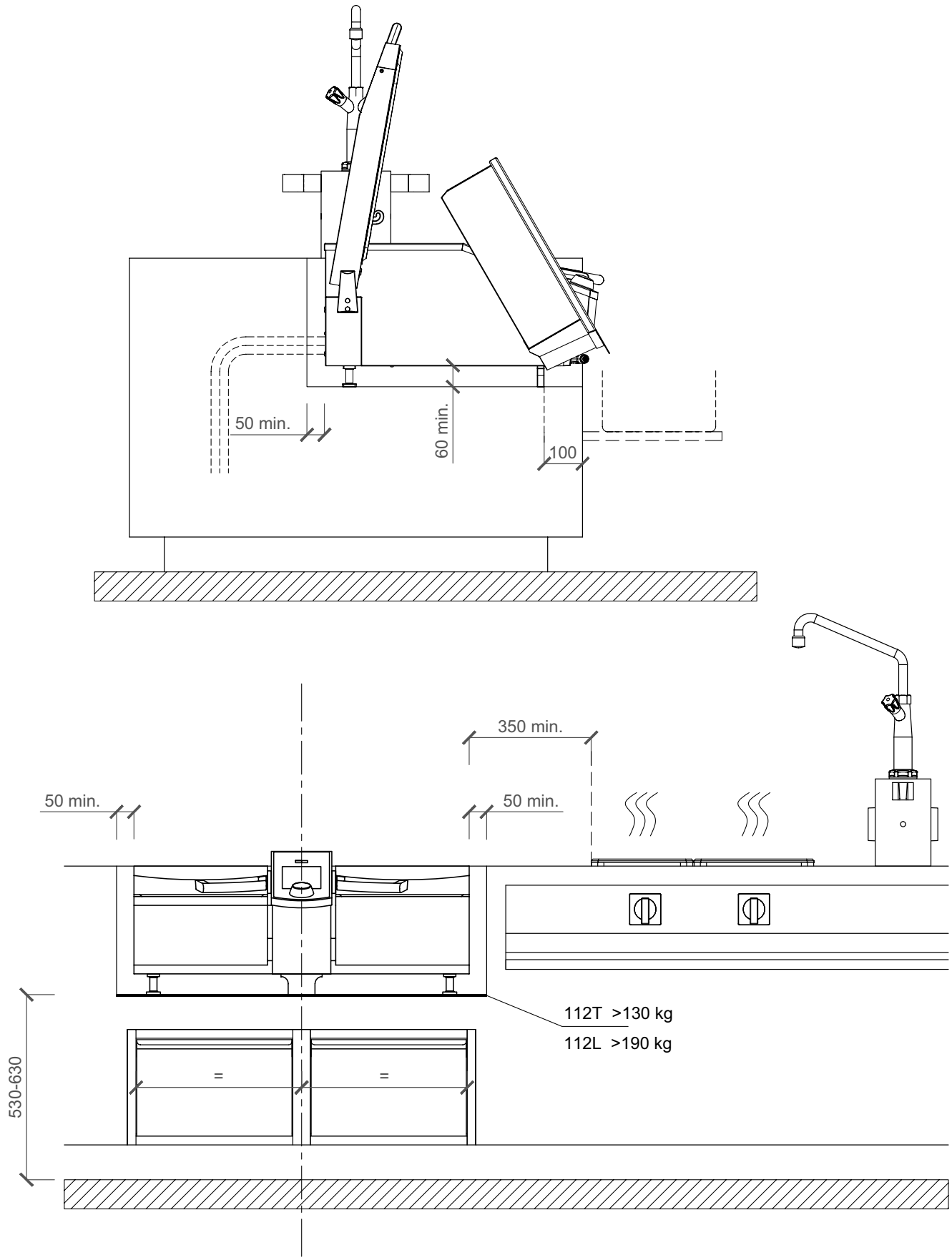
4.2 VarioCookingCenter® 112L on stand

Stand Standard: N° 60.30.940,
mobile: N° 60.30.941



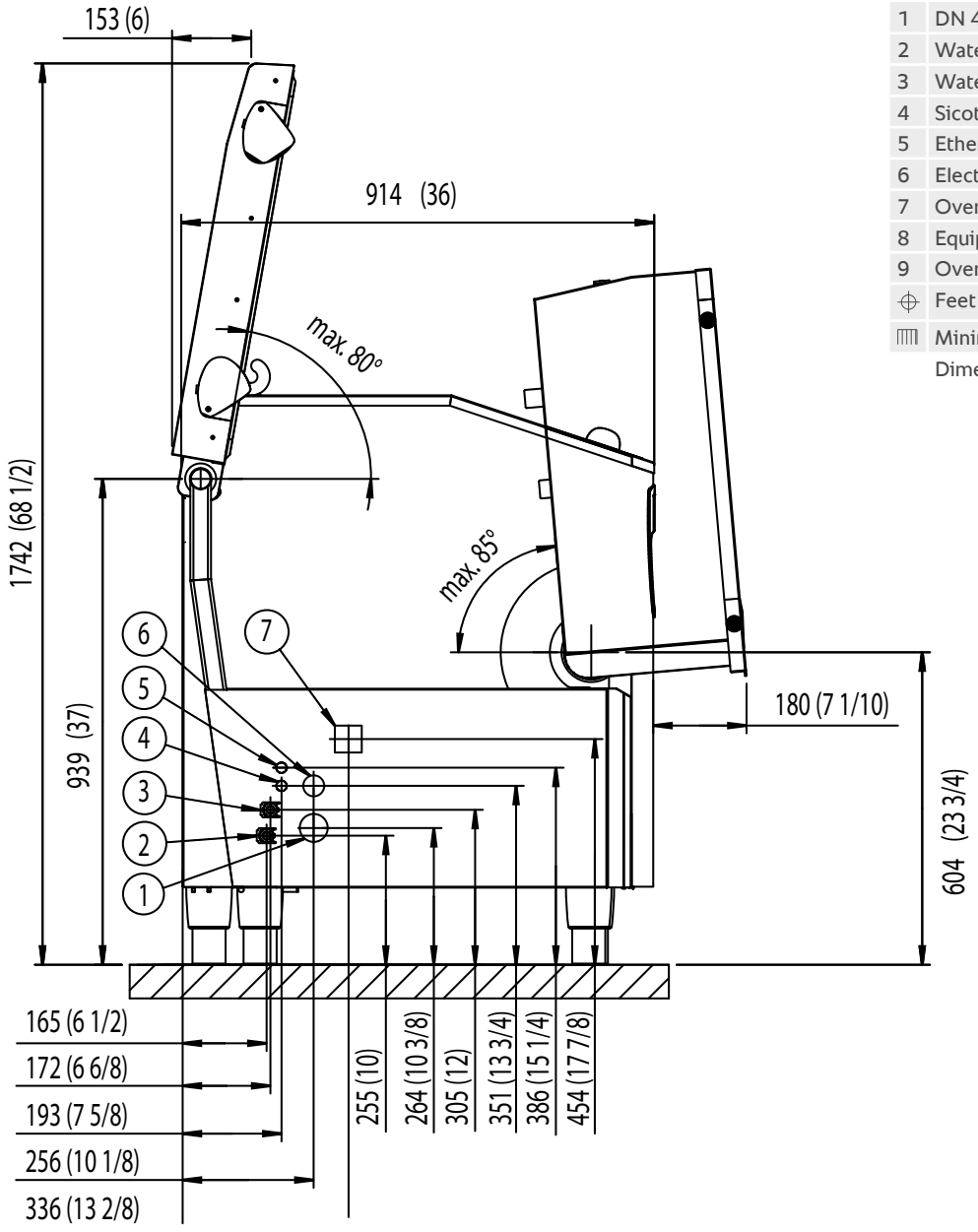
Tip:
The appliance can be installed with a foot 20 or 60 mm high.
The drawings show the max. height with the 60 mm foot.

4.3 VarioCookingCenter® 112T/112L on a range block



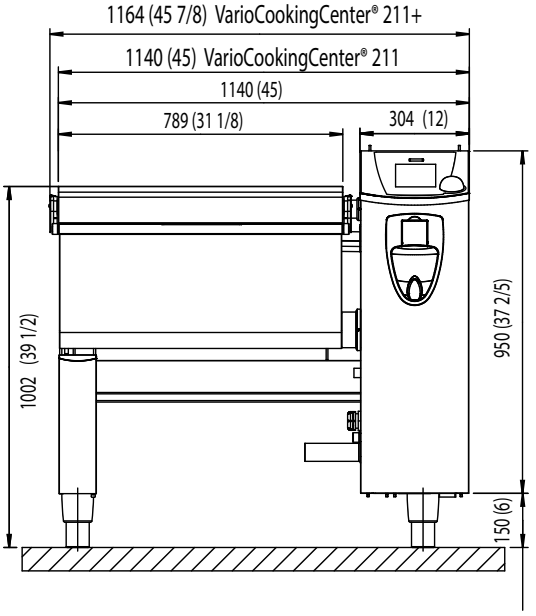
> Appliance feet are fixed to the suite – with RATIONAL accessory no. 60.73.501 or own solution.
> The plate carrying the appliance is reinforced in the middle (middle axis of the appliance). Maximum load on the frontal foot: Model 112T approx. 40–50 kg, model 112L approx. 70 kg.

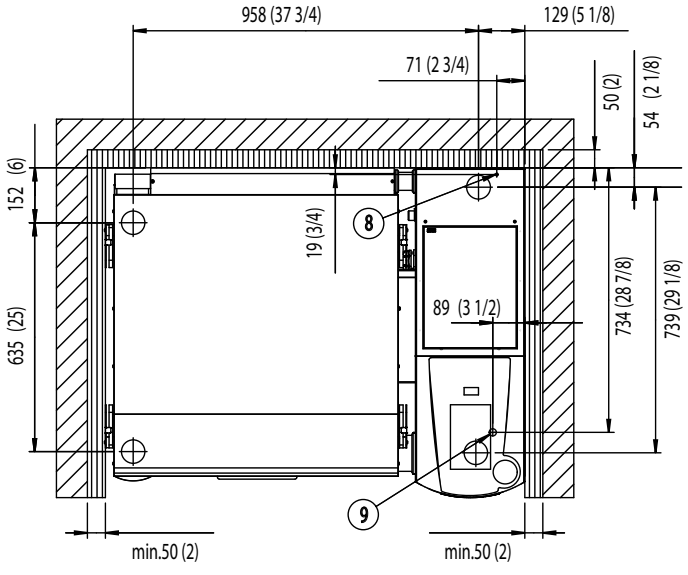
4.4 VarioCookingCenter® 211



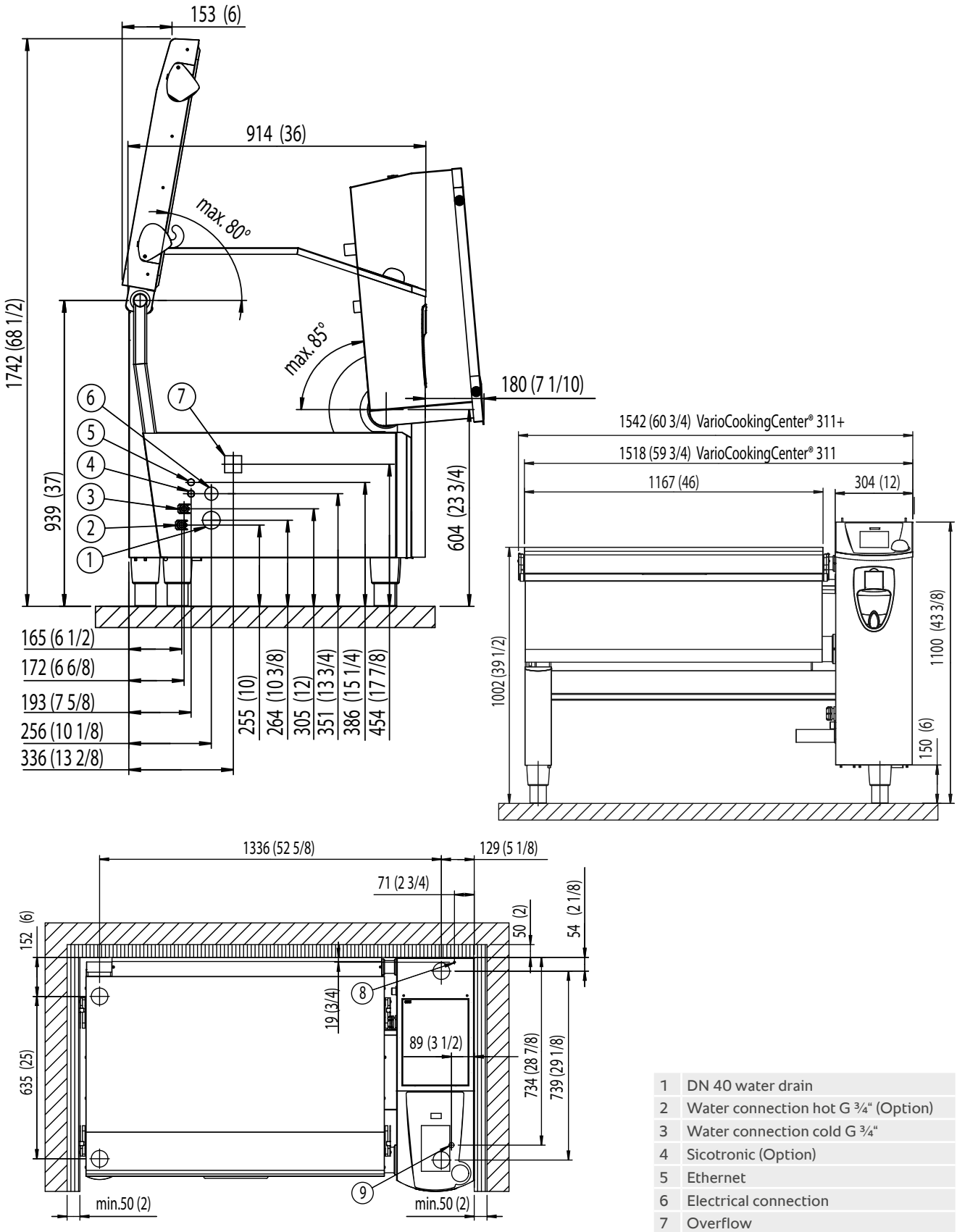
1	DN 40 water drain
2	Water connection hot G ¾“ (Option)
3	Water connection cold G ¾“
4	Sicotronic (Option)
5	Ethernet
6	Electrical connection
7	Overflow
8	Equipotential bonding system M 6 × 10
9	Overflow hose reel
⌖	Feet
⫼	Minimum clearance

Dimensions in mm [inch]





4.5 VarioCookingCenter® 311



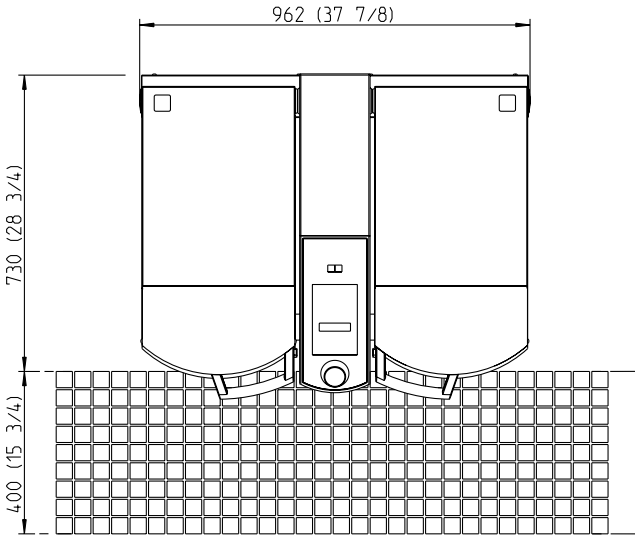
1	DN 40 water drain
2	Water connection hot G ¾“ (Option)
3	Water connection cold G ¾“
4	Sicotronic (Option)
5	Ethernet
6	Electrical connection
7	Overflow
8	Equipotential bonding system M 6 × 10
9	Overflow hose reel
⌖	Feet
⫼	Minimum clearance

Dimensions in mm [inch]

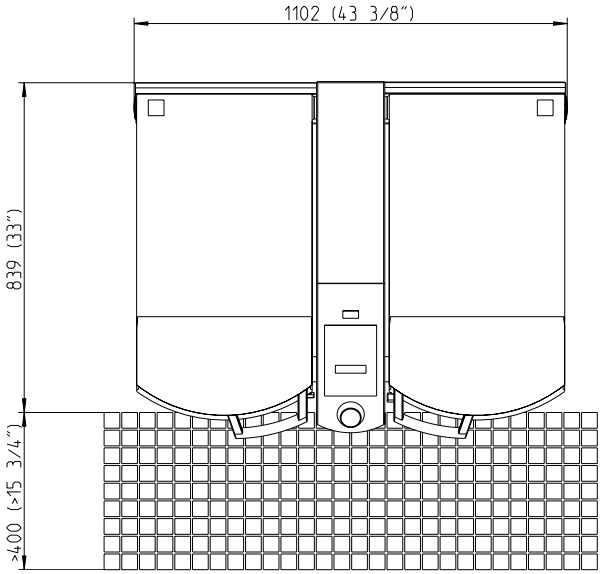
4.6 Dimensioning drain channel model 112/112T/112L

Thanks to the integrated pan drain, no increased occurrence of liquid is to be anticipated on the floor at the front of the VarioCookingCenter®. This means there is no need for a drain channel directly by the appliance. Cooking water and cleaning water can be drained through the integrated pan valve and does not need to be tipped out. In order to increase work safety when removing food, we recommend our accessories for the safe emptying of the pan, such as the VarioMobil® and the oil cart.
Should a drain channel still be required on the appliance directly, we recommend the following versions.

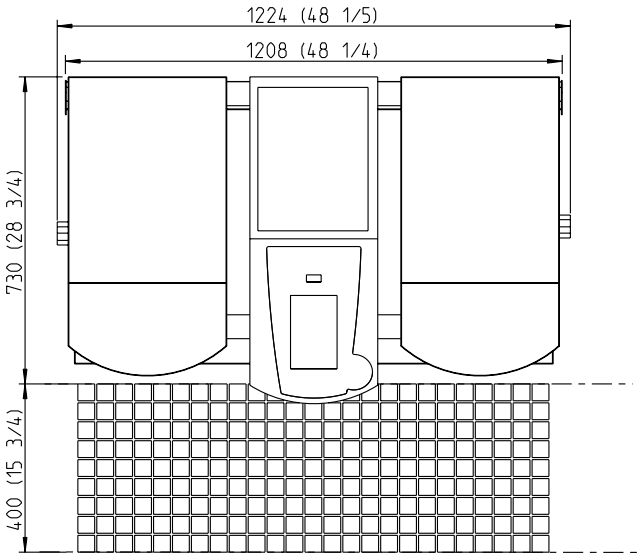
Model 112T

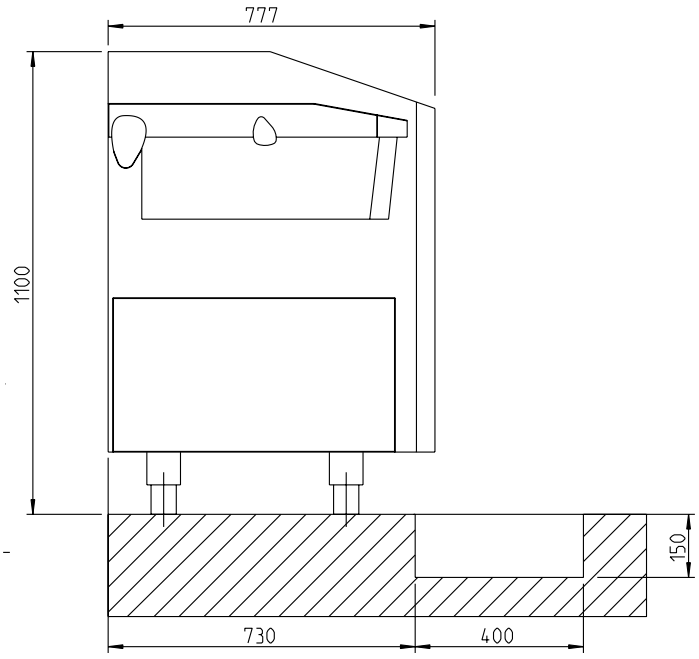


Model 112L



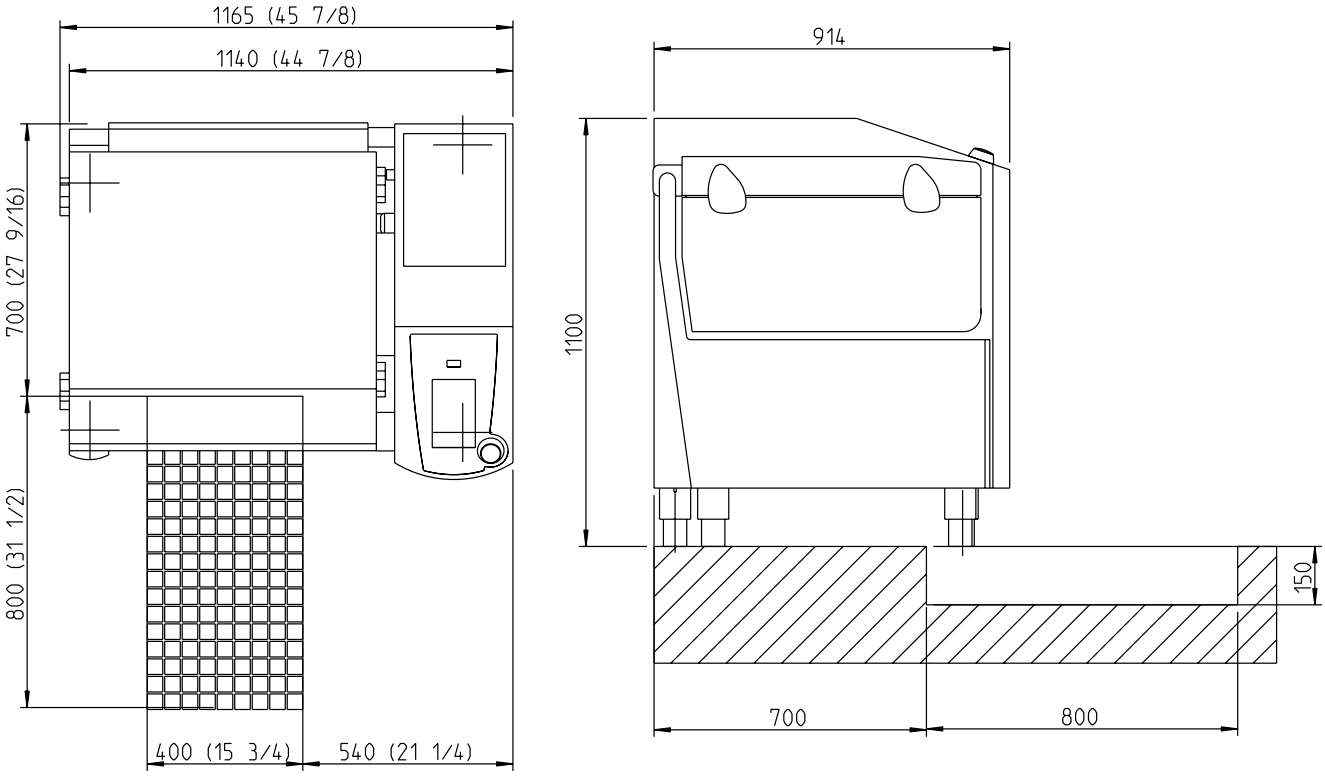
Model 112



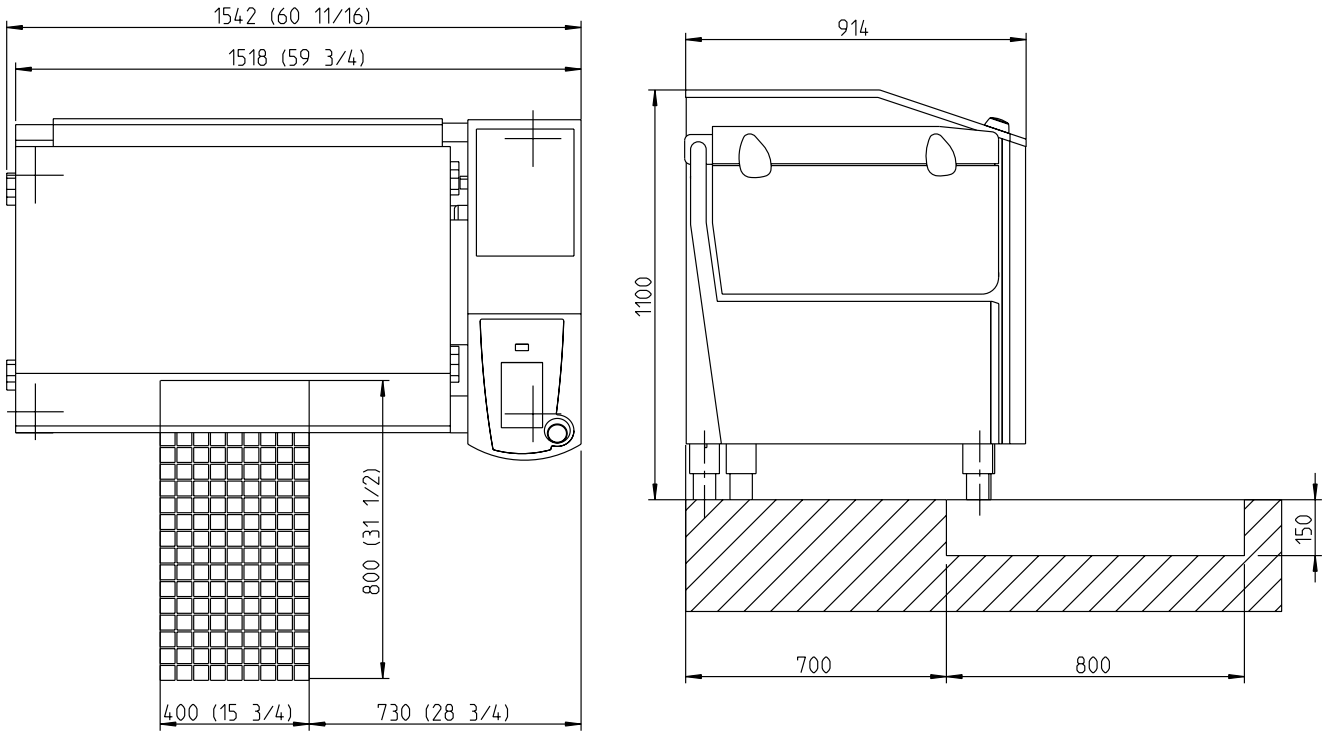


4.6 Dimensioning drain channel model 211/311

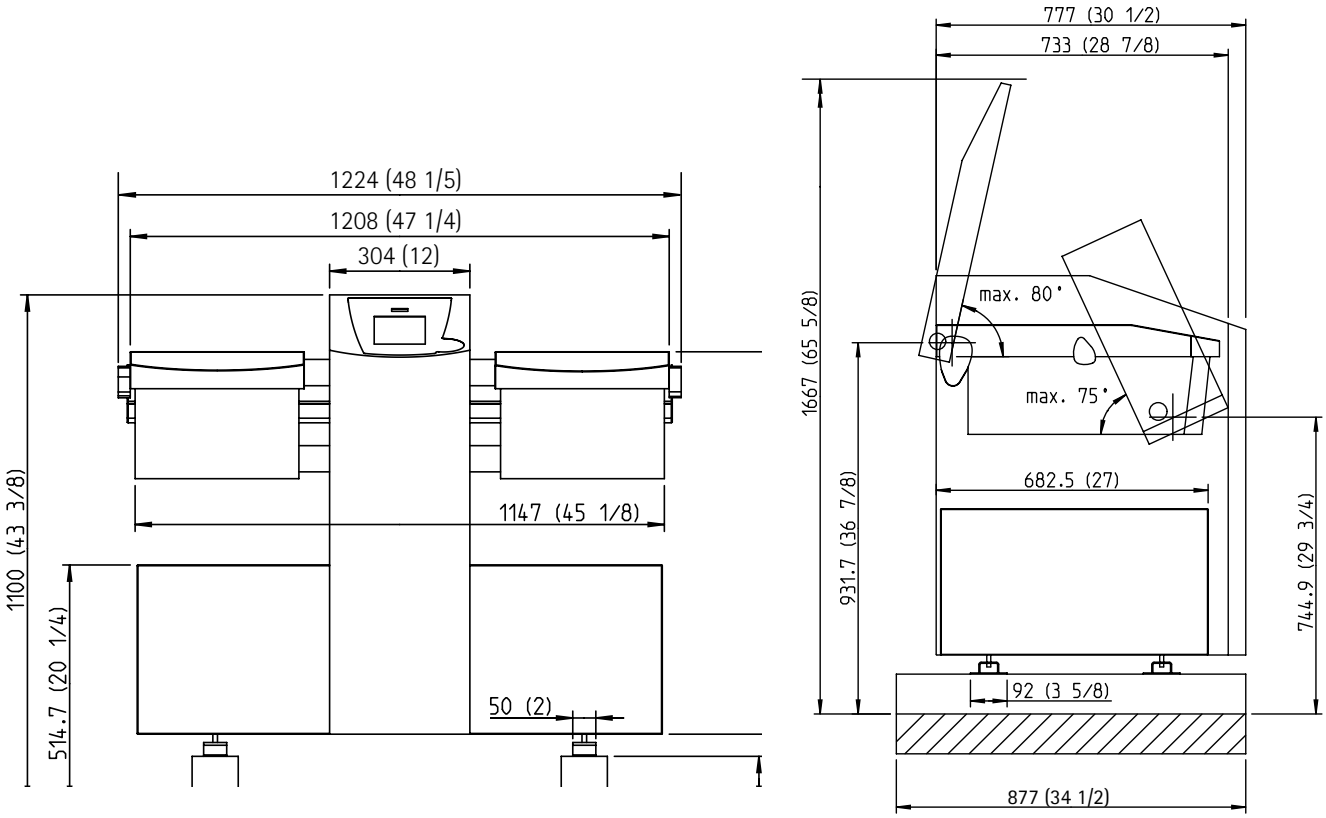
Model 211

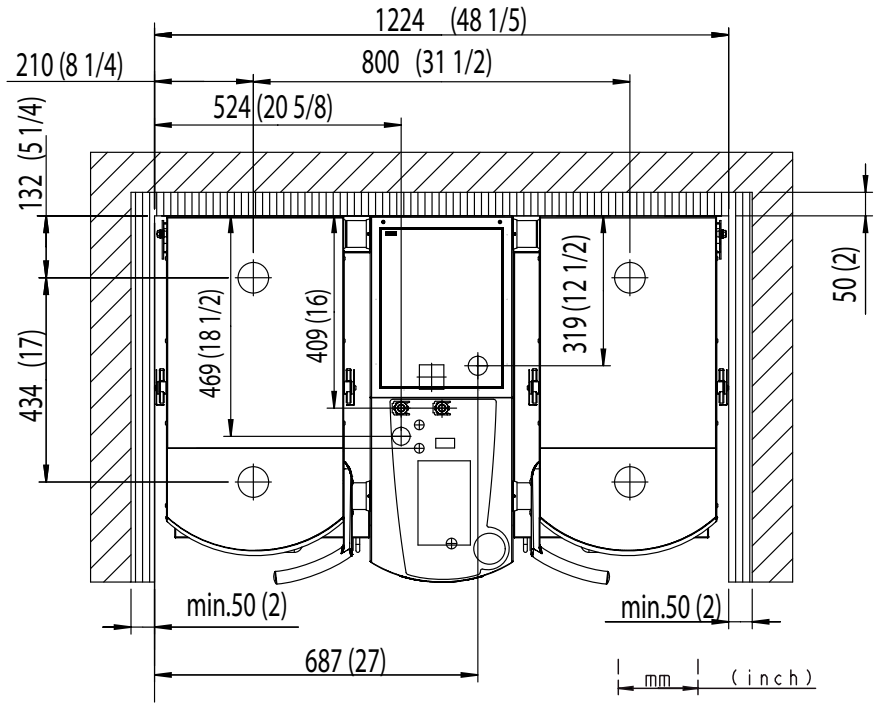


Model 311



4.7 Base frame set-up model 112





Feet

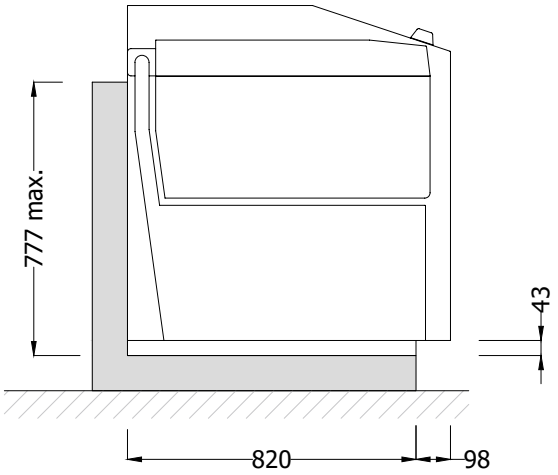
Dimensions in mm [inch]

The minimum base frame depth is 700 mm.
The maximum base frame depth should be 750 mm.
The recommended base frame height is 100 mm and should not exceed 150 mm.
Please follow the mounting instructions for the base frame kit when installing.
The masking shield is not included with the base frame kit and must be manufactured individually.

4.8 Base frame set-up model 211/311

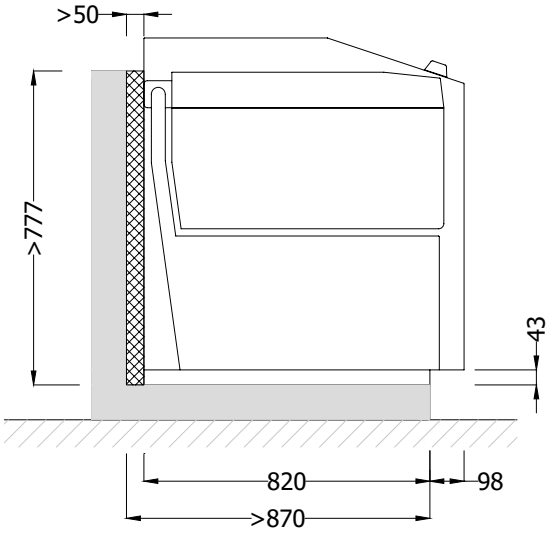
The base frame kit for model 211 and model 311 allows the optimal installation of the VarioCookingCenter®on a base. This replaces the standard feet supplied with the appliance and hygiene panelling hygienically completes the panelling. This kit is available in two versions:

Version 1 for an installation wall with a height up to 777 mm
(Stated height = from upper edge of finished floor (OKFFB) above base).
The recommended base frame height is 100 mm and should not exceed 150 mm.
We recommend that the VarioCookingCenter® be installed flush to the front side of the base.



Version 1 – installation variant 1
The minimum base frame depth is 820 mm, where the height of an installation wall is no more than 777 mm.

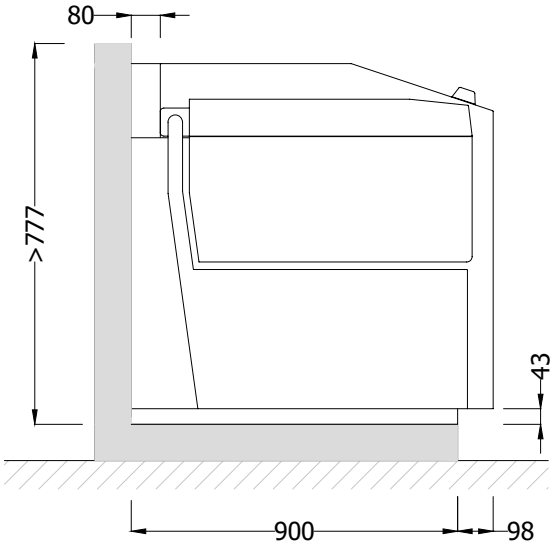
Version 1 – installation variant 2
Where the height of an installation wall is more than 777 mm, the minimum base frame depth is 870 mm in order to ensure the clearance to the rear panel of at least 50 mm.
We also recommend the installation of a piece of panelling between the installation wall and the appliance.
The materials required for this are not included.



Article numbers for base frame kit
(Including panelling)

Model 211	No.: 60.74.934
Model 311	No.: 60.74.935

Version 2 for an installation wall with a height above 777 mm, incl. panelling 80 mm to the rear
(Stated height = from upper edge of finished floor (OKFFB) above base).
The recommended base frame height is 100 mm and should not exceed 150 mm.
For optimal installation, the base frame depth is 900 mm.



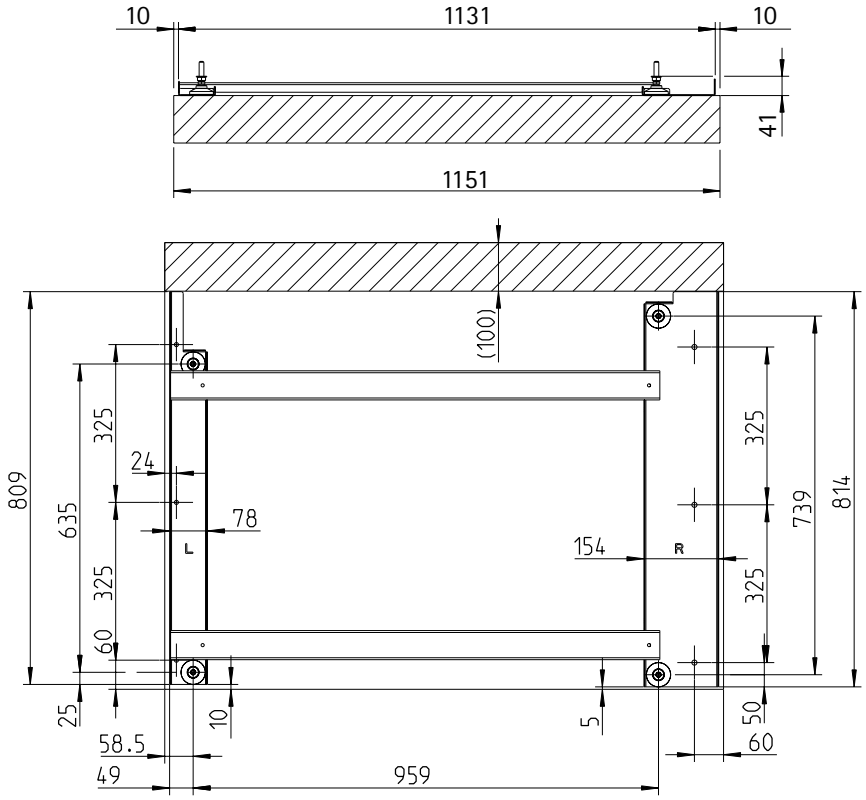
Article numbers for base frame kit
(Including panelling and rear 80 mm panelling)

Model 211	No.: 60.31.039
Model 311	No.: 60.74.693

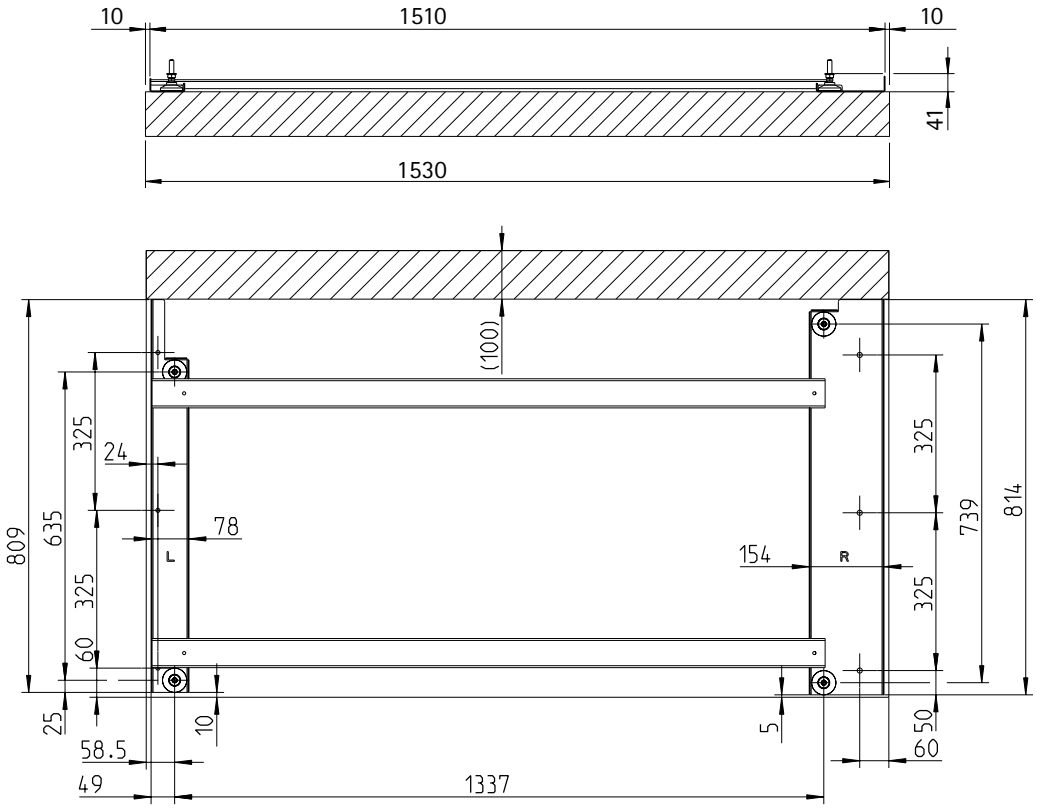
4.8 Base frame set-up Model 211/311

Front and top view version 1 – installation variant 1

Model 211



Model 311



You can find more information and drawings on the base frame kit on our business customer portal: **portal.rational-online.com**

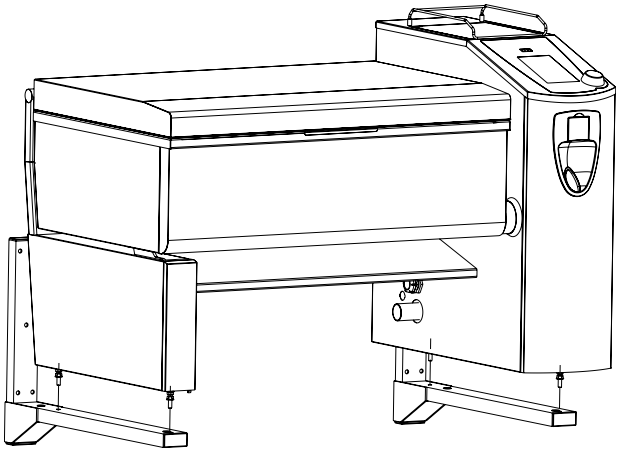
4.9 Wall mounting of model 211/311

The wall brackets must be affixed to a concrete wall or to a reinforced concrete wall. This will require 10 MM8 screws (of at least strength class 8.8, 5 per bracket) and a metal anchor or injection system anchor.

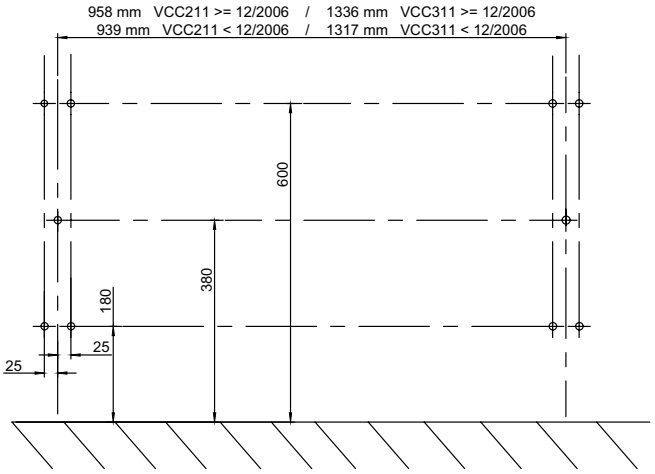
Max. weight of the appliance including food:
approx. 500 kg

The weight is distributed evenly on the two frames.

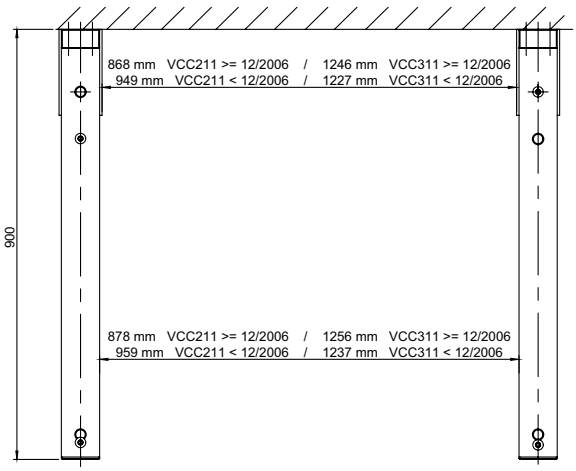
The 2 screws at the bottom work by shearing and must carry around 150 kg of radial force per screw (for information, the recommended screws can carry 550 kg by shearing with a safety coefficient of 2).
The 2 screws at the top work by separation and must carry around 200 kg of axial force per screw (for information, the recommended screws can carry 1,100 kg by separation with a safety coefficient of 2).
The screw in the middle is for securing.



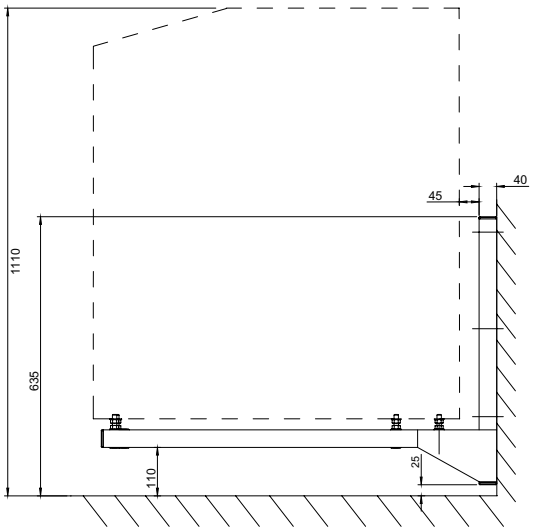
Drill plan



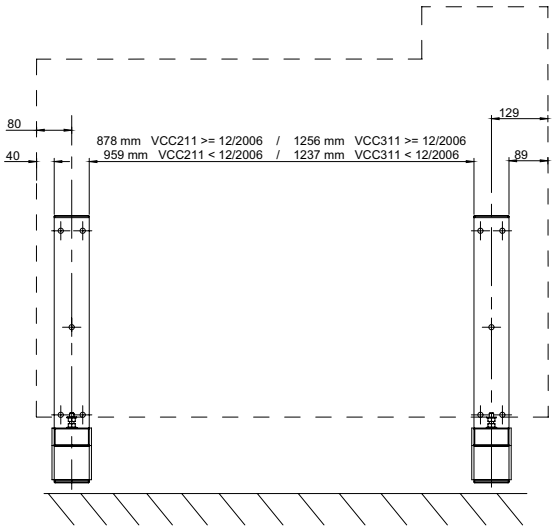
Top view



Side view (with appliance)



Front view (with appliance)



5.1 Thermal load

Please note the technical guidelines (e.g. VDI 2052) and the local provisions for ventilation technology in commercial kitchens.
Sensitive heat load:
Sensitive, or perceptible heat, is released from the thermal output of hot appliances.
Latent heat:
Latent heat is contained in the vapours and steam which are produced when cooking. The exhaust system for the production areas in the kitchen must be designed so that the latent heat is quickly and effectively extracted, so that the persons working in the room are only subjected to low amounts of heat.

VarioCookingCenter®	112T	112	112L	211	311
Latent	285 W/kW 4,845 W	285 W/kW 4,845 W	276 W/kW 7,728 W	276 W/kW 7,728 W	253 W/kW 11,385 W
(Dynamic option)	(3,705 W)	(3,705 W)	(6,072 W)	(6,072 W)	(8,855 W)
Sensitive	57 W/kW 972 W	57 W/kW 972 W	34.5 W/kW 966 W	34.5 W/kW 966 W	31.5 W/kW 1,417 W
(Dynamic option)	(741 W)	(741 W)	(759 W)	(759 W)	(1,102 W)
Specific steam output	454 g/(h kW)	454 g/(h kW)	404 g/(h kW)	404 g/(h kW)	402 g/(h kW)

Specific steam extraction are average values for the design of ventilation systems, according to VDI 2052 under normal operating conditions (application mix 60 % boiling, 38% frying, 2% deep-frying). Consult RATIONAL prior to designing the ventilation system in case of different operating conditions Heavy-duty operation, for example, is frequent boiling of pasta or deep-frying of frozen products.

The simultaneity factor Φ (= electrical power consumed by kitchen appliances/entire connected load of kitchen appliances) to calculate the extraction requirement is between 0.6 and 0.9 for a VarioCookingCenter®, depending on usage.

Air requirement coefficient [m^3/(s m^2)] according to DW/172 Kitchen Ventilation Systems for normal operation (Appliance free-standing in the space (100%))

Type/Option	Coefficient [m^3/(s m^2)]
Standard	1.15
Dynamic	0.90

5.2 Extraction requirement

Calculation of extraction requirement for VarioCookingCenter®
According to VDI 2052, a tilting frying pan generates an average of 588 g of water per hour and Kilowatt of connected load (588 g/h × kW). The specific steam output of the VarioCookingCenter® can be seen in the table in chapter 5.1. The steam output of a VarioCookingCenter® 112 is 454 g/h × kW. The increase of the water content in the air should not be more than 6 g/kg of dry air.

Example of air requirement for the VarioCookingCenter® 112/112T:
Connected load 17 kW
Specific weight of dry air 1.29 kg/m³

Water output: 17 kW × 454 g/(h × kW) = 7,718 g/h
7,718 g/h/(6 g/kg × 1.29 kg/m³) = 997 m³/h

The extraction requirement is 997 m³/h.

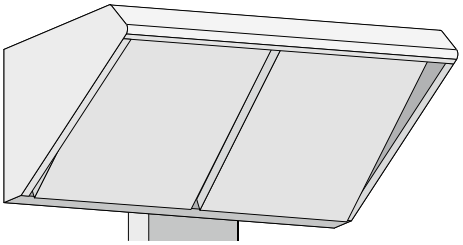
Tip: in consideration of unfavourable flow conditions or an unsafe thermal lift (mixed airflow), it is recommended that the air requirement be increased to 125 %.
This means the extraction requirement is 997 m³/h × 1.25 = 1,247 m³/h.

The value is reduced to 63% if one side of the appliance is against a wall (see table below).

Air requirement in normal operation and different installation variants

VarioCookingCenter®	112/112T	112L/211	311
Appliance free-standing in the space (125 % due to mixed airflow)			
Standard	1,246 m³/h	2,053 m³/h	3,299 m³/h
Dynamic	953 m³/h	1,613 m³/h	2,566 m³/h
Appliance free-standing in the space (100%)			
Standard	997 m³/h	1,642 m³/h	2,640 m³/h
Dynamic	763 m³/h	1,290 m³/h	2,053 m³/h
Appliance standing with one side against a wall (63 %)			
Standard	628 m³/h	1,035 m³/h	1,663 m³/h
Dynamic	480 m³/h	813 m³/h	1,293 m³/h

5.3 UltraVent condensation hood



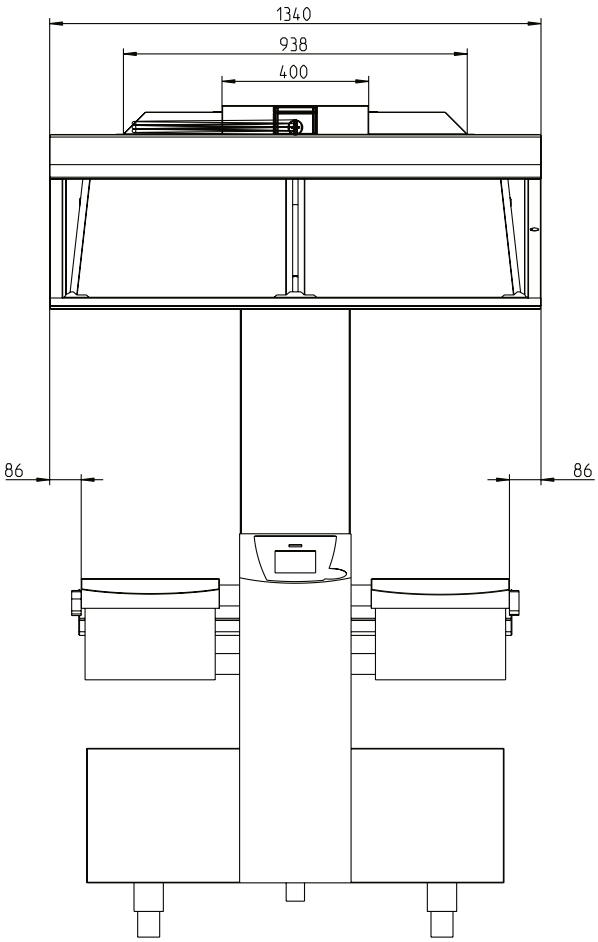
RATIONAL offers the UltraVent condensation hood as an accessory. These condensation hoods extract humid air and condense steam in the hood chamber. Dry air is fed back into the room
An external exhaust vent is completely unnecessary, which means UltraVent condensation hoods are not connected to channels with a ventilation system. UltraVent condensation hoods are therefore also not a part of a ventilation system and do not fall under the provisions of VDI 2052.
The condensation effect of the UltraVent can reduce the extraction requirements of a ventilation system (by around 30m³/hour per Kilowatt of nominal extraction of the cooking appliance).
The output temperature of the UltraVent is less than 45 °C.
The relative output humidity is reduced to below ambient humidity. This means that due to the lower humidity and somewhat higher temperature of the air output, the UltraVent dries the ambient air.
Smoke and odours, such as those produced when frying and grilling are only extracted to a minimum extent.
UltraVent condensation hoods filter out large grease droplets with metal mesh filters located in front of the fans.
UltraVent can easily be retrofitted to any VarioCookingCenter®.

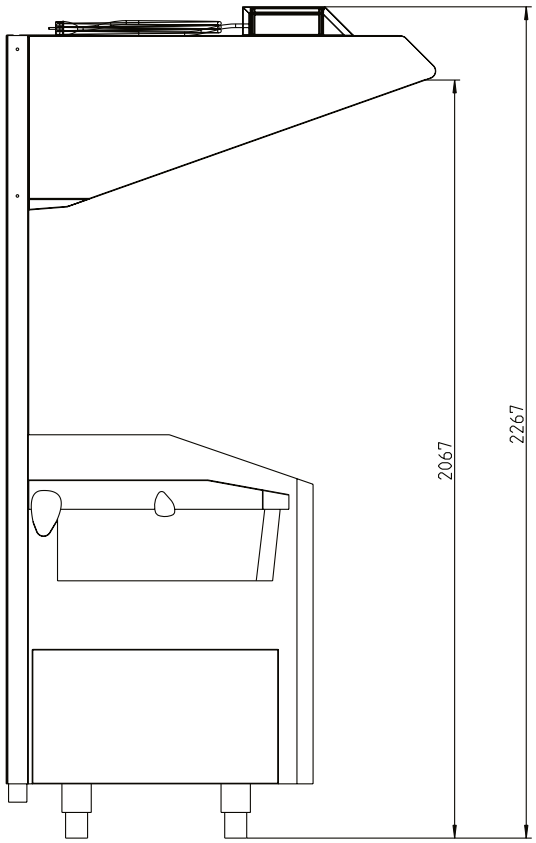
UltraVent	Model 112	Model 211	Model 311
Dimensions			
Width	1,340 mm	1,340 mm	1,740 mm
Depth	1,172 mm	1,172 mm	1,172 mm
Max. height	2,267 mm	2,319 mm	2,319 mm
Weight	802 lbs (145 kg)	802 lbs (153 kg)	802 lbs (246 kg)
Voltage	1N AC 230V	1N AC 230V	1N AC 230V
Connected load	900 W	900 W	1,350 W
Max. extraction power	1,500 m³/h	1,500 m³/h	2,250 m³/h

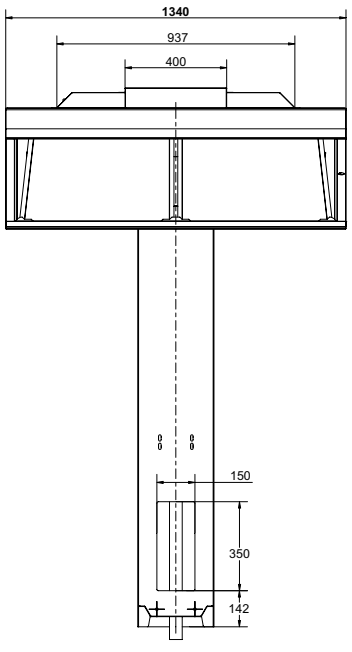
> Noise level of the UltraVent
  During normal operation, the noise level of the stand is below 70 dB(A).

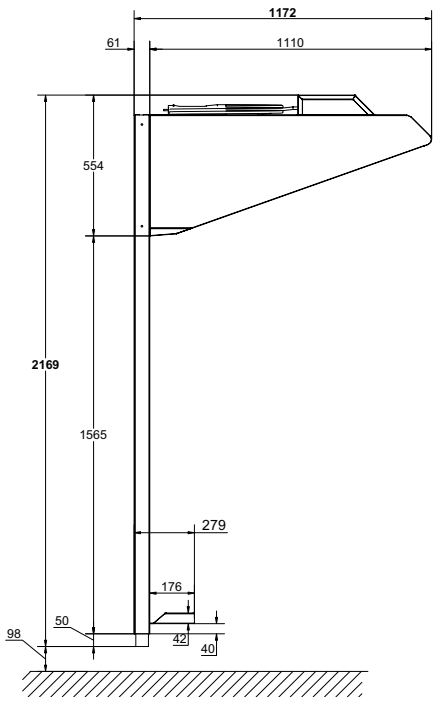
The power ratings of UltraVent condensation hoods are coordinated with the extraction requirements of the VarioCookingCenter®. UltraVent condensation hoods are used in front cooking areas, or in cases where the structural conditions of the installation does not allow ventilation systems to be used.
UltraVent condensation hoods cannot be regarded as a general substitute for a ventilation system.
The UltraVent is easy the clean. The air baffle plates can easily be removed without tools, and should be cleaned regularly depending on the application soiling.
The local standards and regulations for ventilation systems must be adhered to.

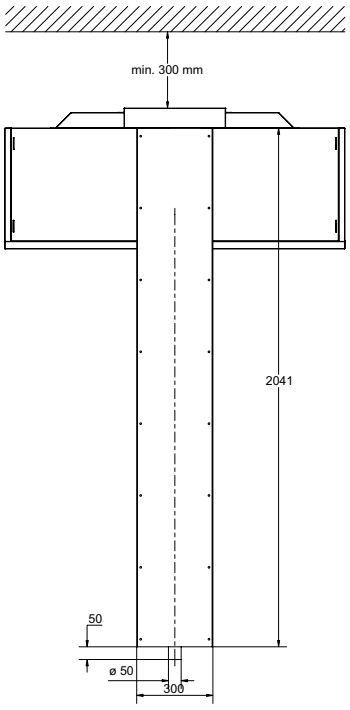
5.4 UltraVent 112



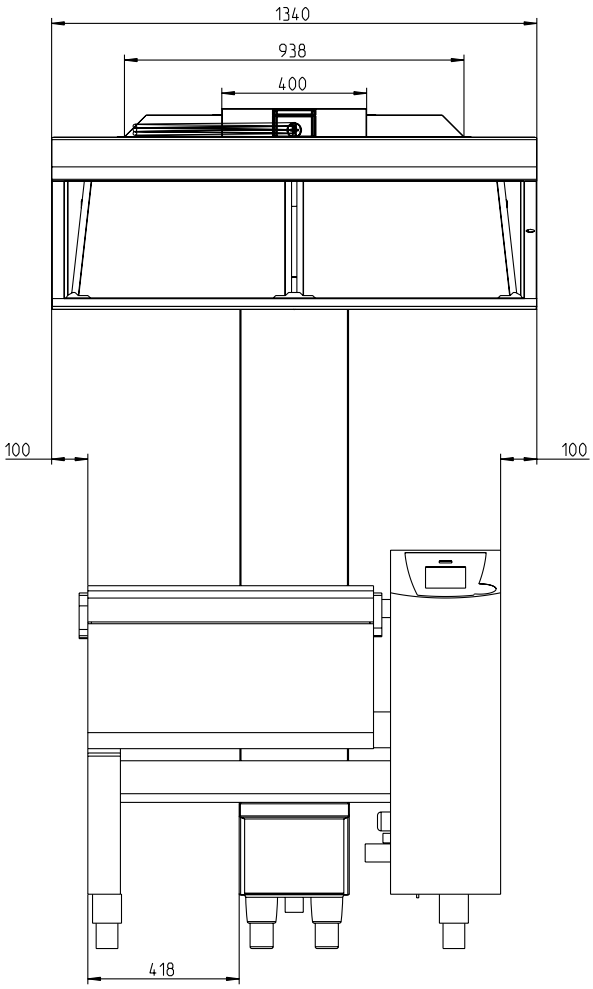


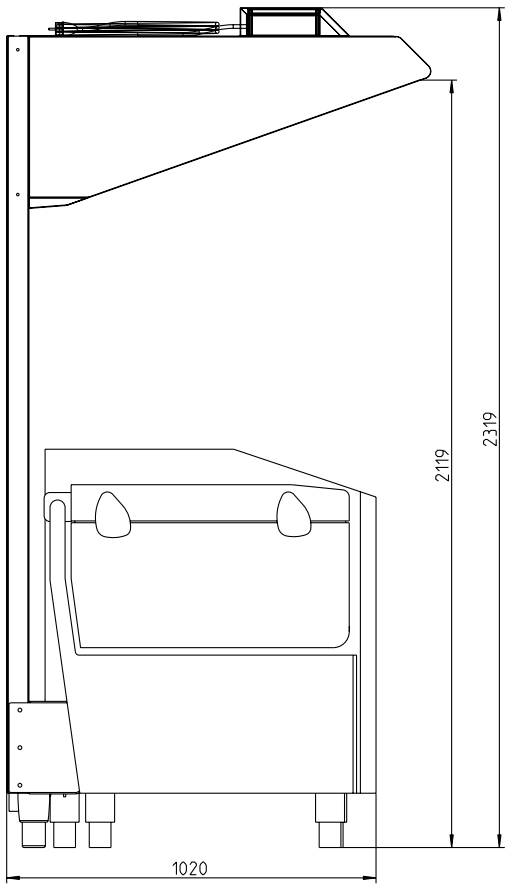


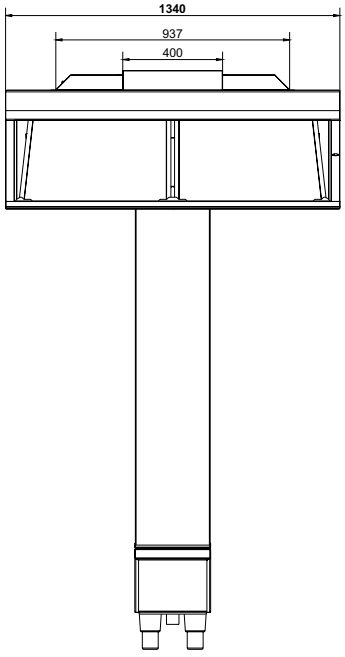


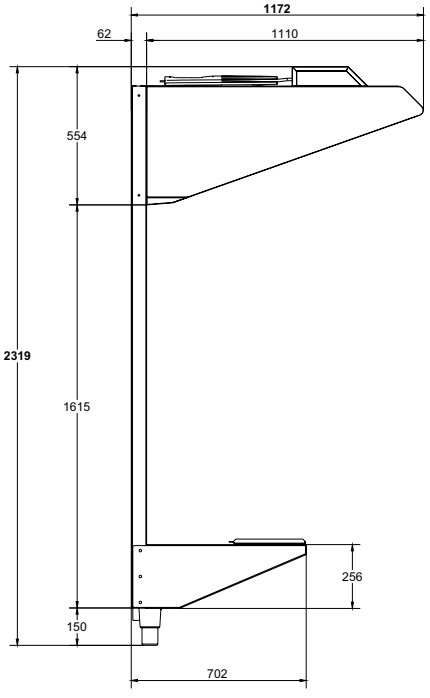


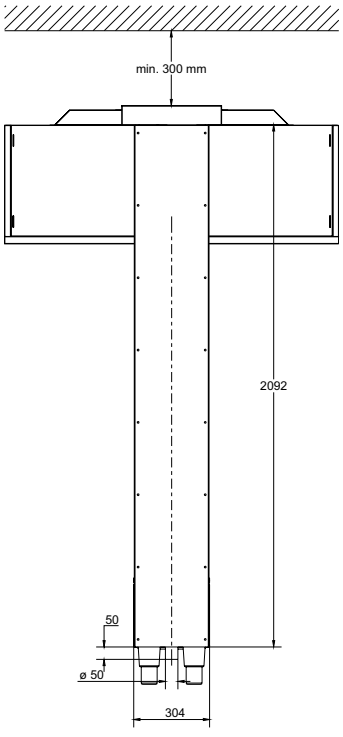
5.4 UltraVent 211



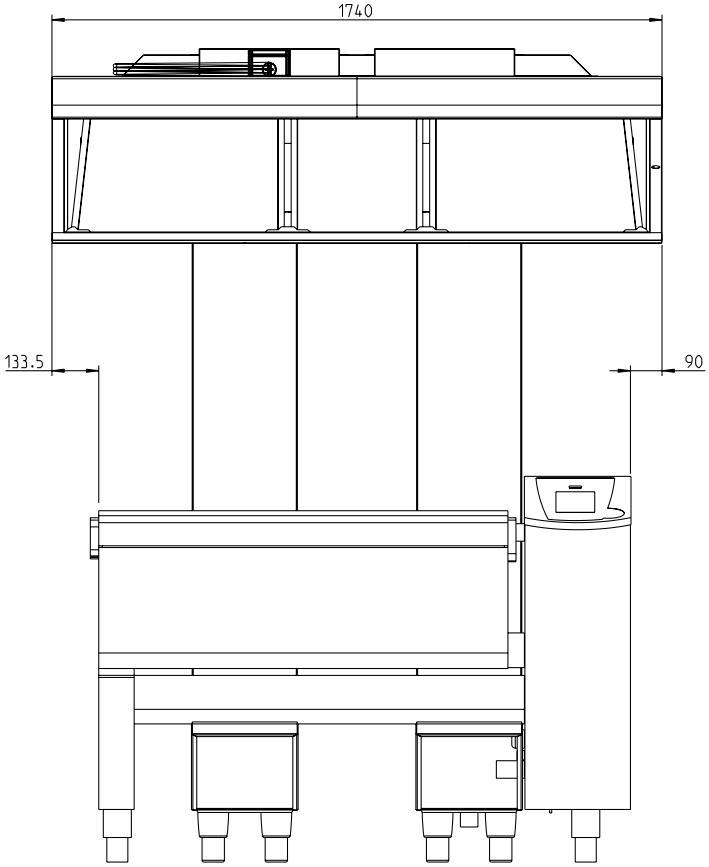


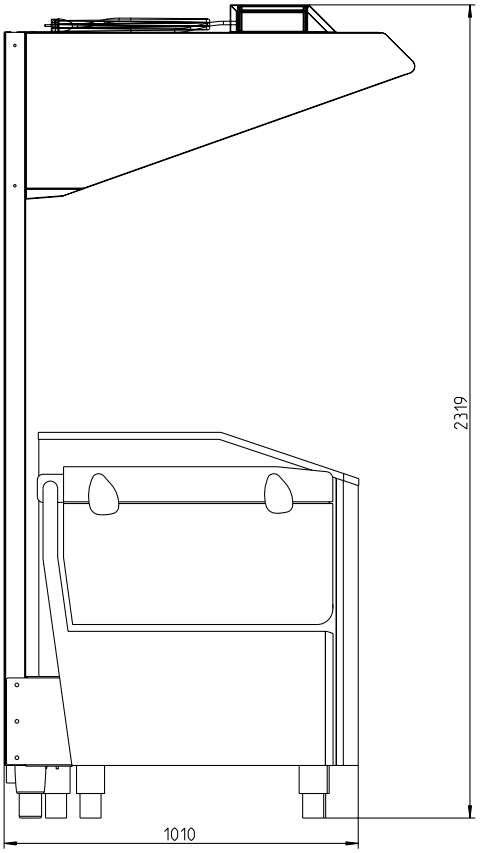


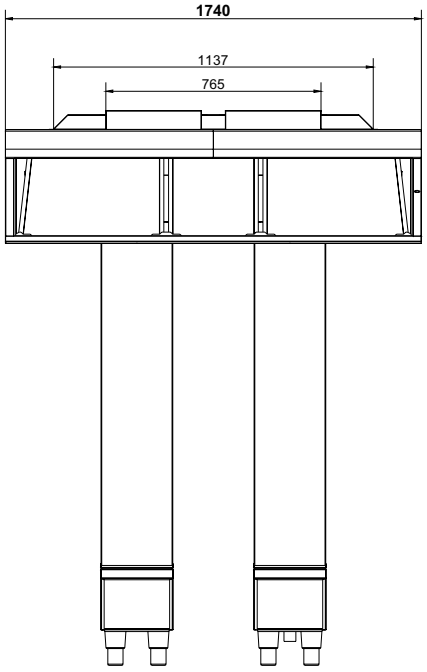


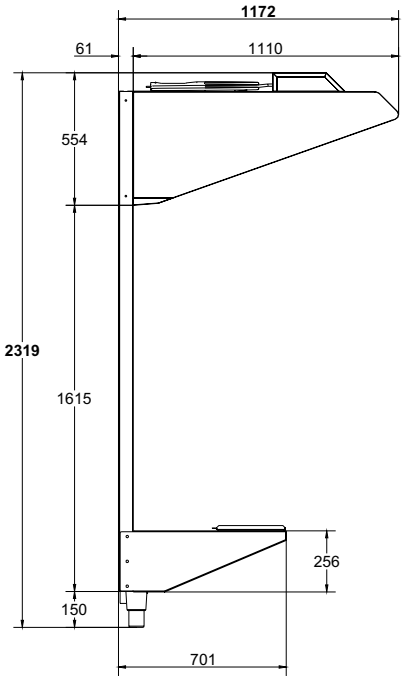


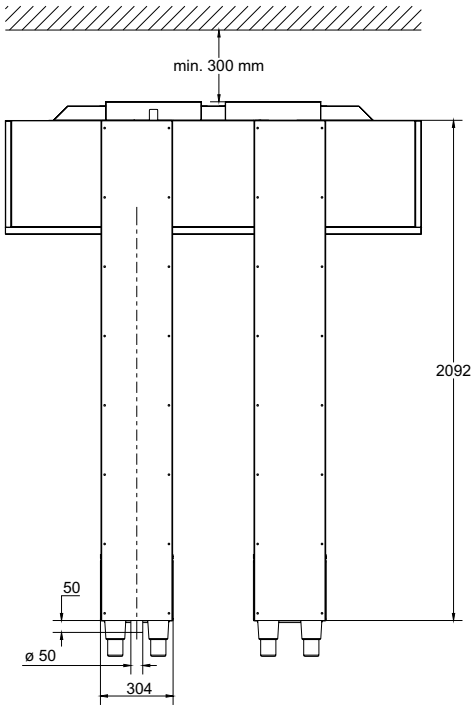
5.4 UltraVent 311











6. Appliance approvals/Fire extinguishing system

All appliances have been tested and approved by authorised testing institutes.

> CE test marks
> GS test marks
> SVGW approval
> IECEE CB certificate
> GOST approval (countries of the Russian Federation)
> Germanischer Lloyd type inspection (shipping approval)
> EMV approval

Note on fire extinguishing system:
Please comply with requirements specific to your country.

For specific installation cases, a VarioCookingCenter® can be ordered "without the deep-frying function" as an option.

Max. oil fill quantity – VarioCookingCenter®

Model 112T/112	Model 112L	Model 211	Model 311
2 × 9 l	2 × 14 l	35 l	49 l

7. ConnectedCooking

ConnectedCooking is a cloud-based networking solution and application for mobile end devices for the automatic documentation of HACCP data, the creation of cooking programs and cooking program management, and for automatic software updates. ConnectedCooking follows the motto: “Comfort. Safety. Inspiration.” and offers completely new and convenient application options.
As a cloud platform (internet connection required), all functions can be used directly. For iPhones, iPads and Android tablets and Android smart phones, the ConnectedCooking app is available for download in the relevant app stores.

Register at **www.connectedcooking.com**.

ConnectedCooking is free to use.

So convenient:

Push notifications
Receive notifications on everything that is happening on and in your units.
Whether it’s a load, ready or service notification, all information will be conveniently sent to you in real time, exactly where you want it.

Software updates
Quickly and reliably bring your units up-to-date with the latest technology: Updates are always provided to you free and automatically. Just start the update process – the unit will take care of the rest.
If you acquire additional units, you can quickly transfer your personal appliance settings to the new unit. This ensures that the settings on all your units are always what you want them to be.
ConnectedCooking even changes summer time to winter time automatically.

Transfer and manage cooking programmes
Distributing cooking programmes will then become child’s play. You select which cooking programme you want to send to which unit, and that’s it.

Safety is automatically assured:

Automatic HACCP documentation
Log and document all important HACCP data fully automatically. All relevant data from all connected units is logged, clearly presented and saved. Of course, you can export all data in table format or PDF format at the click of a mouse, this data can be saved separately or printed.

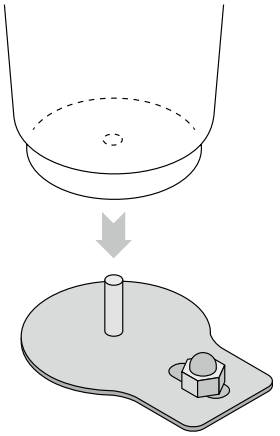
Manage user profiles
You can manage any user profile so that a ConnectedCooking user can only do what he is authorised to do. Every user will then only see their functions and this ensures that application errors are reduced to a minimum.

Backup unit settings
Automatic backups of data and settings provide data security at all times.

Latest encryption technology
To ensure that all data transmissions are protected from abuse, the information is exchanged with the latest encryption technology. This means only the right recipient processes and views the data – which means the data is always secure.

8. Installation options

A



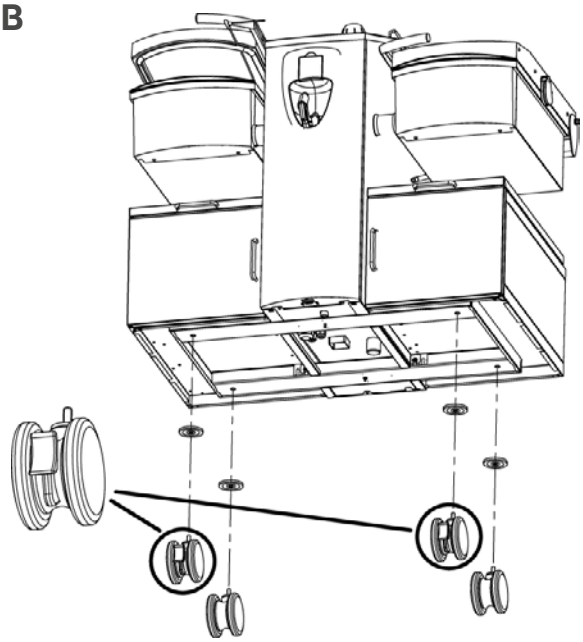
Kit for floor fixing

It is possible to fix units to the floor using a fixing kit. **Fig. A**

Floor attachment kit for model 112/211/311	No.: 60.72.905

If models 211+/311+ (with the pressure cooking option) are installed with standard feet, we recommend that these are fixed. This ensures that the appliance remains balanced and that the lid fits properly onto the pan.

B



Kit for mounting on castors

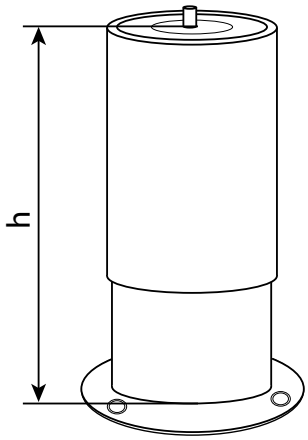
Appliances are supplied with standard feet. The castors will be mounted upon installation. Ensure that the castors with brakes are installed at the front of the unit. **Fig. B**

Mounting instructions are supplied with the castors.

Castor kit for model 112/211/311	No.: 60.71.267

The height of the unit on castors is 150 mm (5 7/8").

C

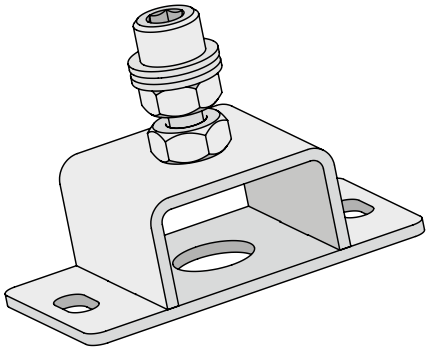


Adjustable stainless steel feet option

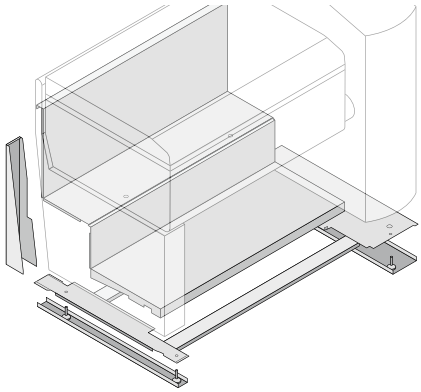
The VarioCookingCenter® models 112/211/311 can be supplied with stainless steel feet. These feet are used to fix the appliance on the ground. **Fig. C**
h min 105 mm (4 1/8")
h max 170 mm (6 6/8")

8. Installation options

A



B



Kit for mounting on a base

Appliances are supplied with standard feet. The base frame kit will be mounted upon installation.
Model 112 **Fig. A**
Model 211, 311 **Fig. B**

Mounting instructions are supplied with the base frame kit.

Model 112	No.: 12.00.706

Installation wall height < 777 mm incl. panelling:

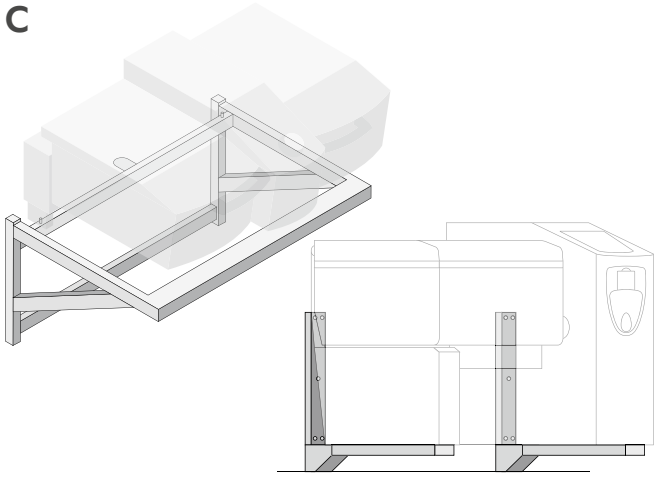
Model 211	No.: 60.74.934
Model 311	N°: 60.74.935

Installation wall height > 777 mm incl. rear panelling:

Model 211	No.: 60.31.039
Model 311	N°: 60.74.693

For information on base frame mounting, see pages 45–47.

C

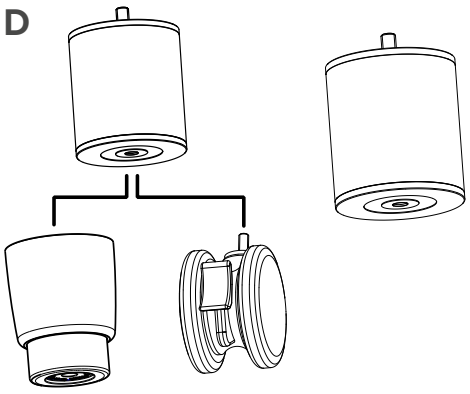


Wall mounting kit

The wall mounting kit will be mounted upon installation. **Fig. C**
Mounting instructions are supplied with the wall mounting set. For information on the wall mounting kit 211/311, see page 48.

Wall mounting kit (Model 211/311)	No.: 12.00.751
Wall mounting kit model 112T	N°: 60.73.930

D



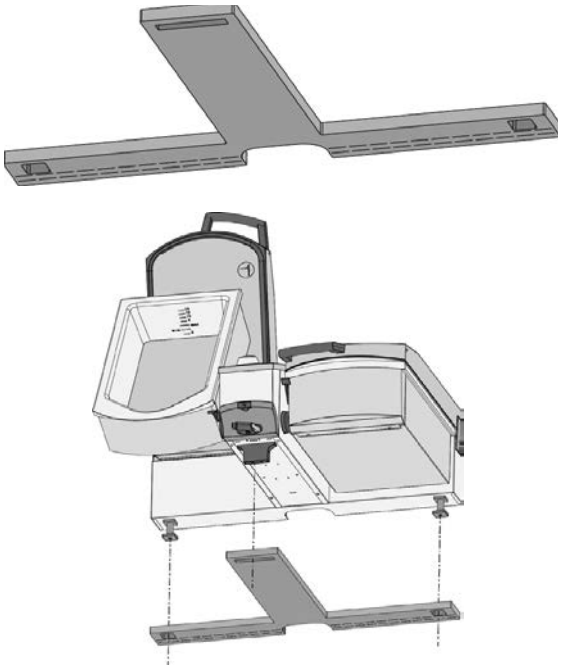
Stainless steel heightening kit 100 mm Feet/castors

This elevation is added between the chassis and the foot. It must be mounted during appliance installation. **Fig. D**

Elevation kit for model 112/211/311 (one kit contains 4 elevations)	No.: 60.72.341

8. Installation options

A

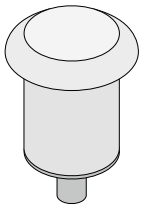


Plinth seal
Only use with 20 mm feet!

When installing the appliance with the 20 mm foot, we recommend that you close the gap underneath for hygiene reasons. A foam plinth seal was developed specially for our appliance. **Fig. A**
The purpose of this foam support is to seal this narrow gap, preventing food waste from getting stuck between the appliance and the surface on which it is placed. It is included in the standard supply.

Plinth seal model 112T	No.: 12.01.291
Plinth seal model 112L	N°: 60.73.713

B

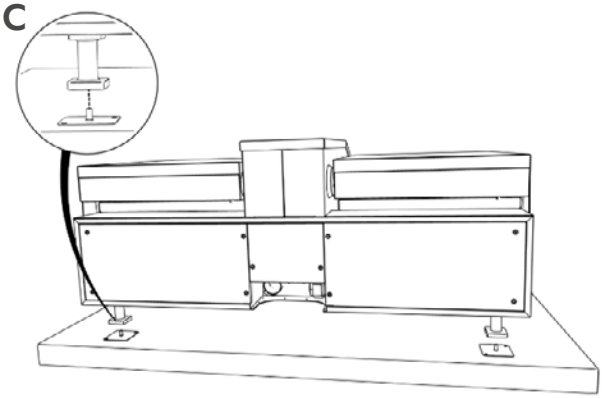


Pan drain blocking kit for model 112T/112L

For customers who do not have a drain connection near the appliance, the internal drainage system can be closed. This accessory is not attached in the factory, it must be built in during installation. The kit includes instructions.

Pan drain blocking kit	No.: 60.73.433

C

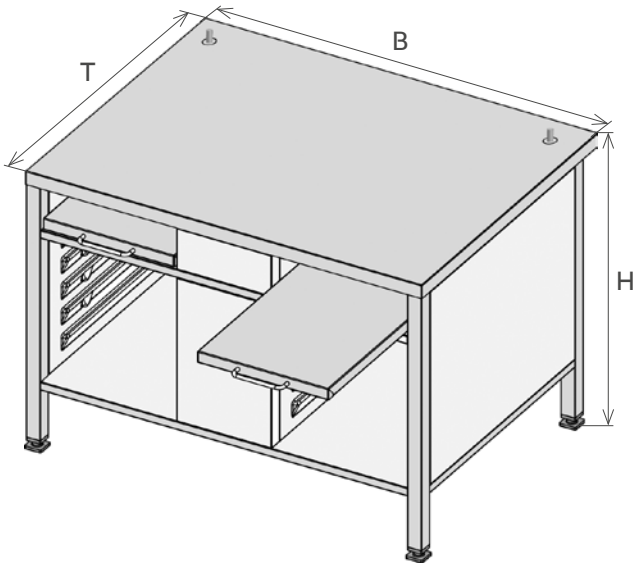


Feet fixing for model 112T/112L

To increase working safety, there is the option of fixing the table-top unit placed on an existing work surface or a table using the foot fixing kit. **Fig. C**

Foot lock kit Model 112T/112L	No.: 60.73.501

8. Installation options



Stand

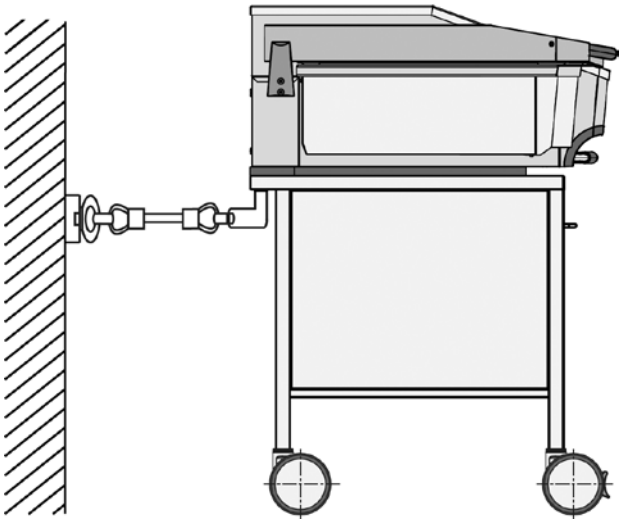
This stand is available in two versions:
UG12 for model 112T (H 672 | B 965 | D 765 mm)

With standard feet	No.: 60.30.925
With castors	N°: 60.30.926

UG12L for model 112L (H 655 | B 1,110 | D 867 mm)

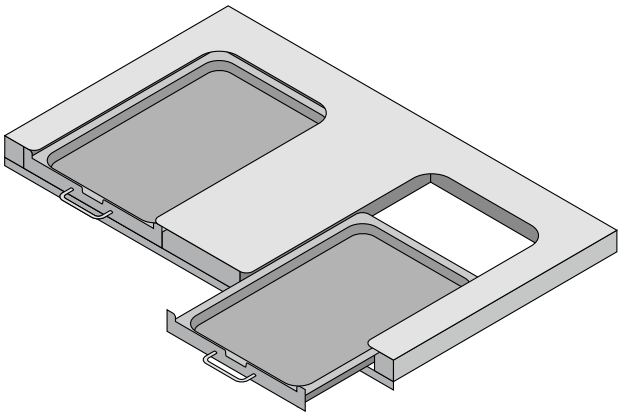
With standard feet	No.: 60.30.940
With castors	N°: 60.30.941

The stand is equipped with pins. The feet of our appliances have an opening to allow them to interlock with these pins.



If the appliance is mounted on a mobile unit, this unit must be secured in order to avoid damage to the cables and supply pipes of the VarioCookingCenter®. Stands 60.30.926 and 60.30.941 (mobile) are equipped with an anchoring point for this purpose. The wall mounting cable is not included. It must always be shorter than the supply lines to the appliance.

8. Installation options



112T frame

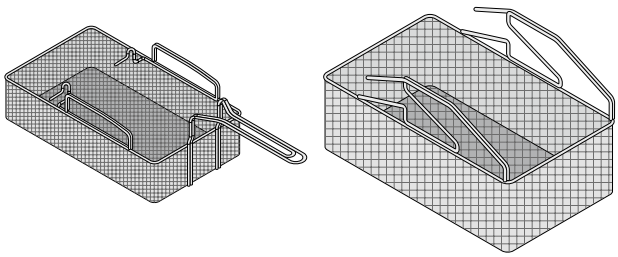
To benefit from the usual ergonomy of the VarioCookingCenter®, this can be installed on an existing worktop or a table. To do so, it is positioned on a frame and thus offers you optimum protection from any movement of the unit and the ability to empty your food directly into a GN container thanks to two integrated shelves.
At the same time, the frame provides a perfectly hygienic solution. Condensation or food waste found under the pan is collected directly in a GN container included with the appliance. This can then be put in the dishwasher for easy cleaning.
The cables and hoses for the power supply and water inlet and outlet are channelled through the frame base, also offering a perfectly hygienic and easy-to-clean solution.
Combined with the plinth seal, this ensures easy cleaning all around (H 92 | W 962 | D 705 mm).

Model 112T	No.: 60.30.935

9. Accessories for VarioCookingCenter®

Deep-frying basket

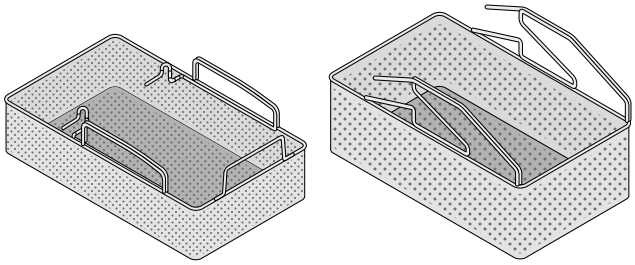
For deep-fat frying in baskets with AutoLift.



Model 112/112T	No.: 24.00.972
Model 112L	No.: 60.73.684
Model 211/311	No.: 60.70.716

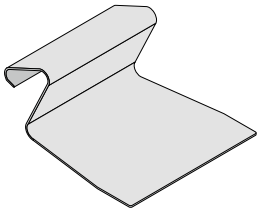
Boiling basket

For boiling in baskets with AutoLift.



Model 112/112T	No.: 60.70.752
Model 112L	No.: 60.73.680
Model 211/311	No.: 60.70.725

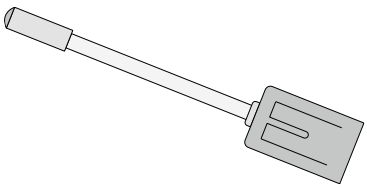
Spatula



Spatula	No.: 60.71.643

Mixing spatula

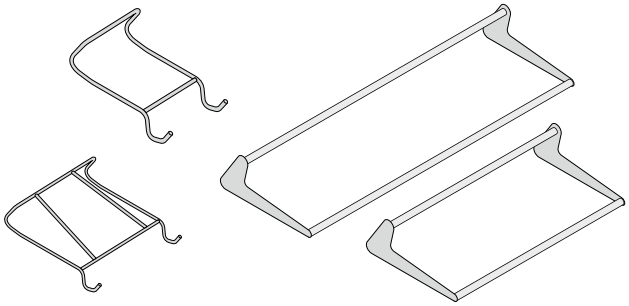
To mix or combine ingredients together in the VarioCookingCenter®.



Model 211/311	No.: 60.72.131

Arm for automatic raising/ lowering mechanism

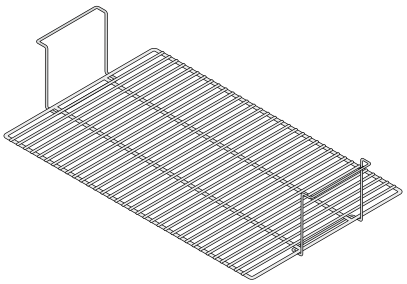
For boiling in baskets with AutoLift.



Model 112/112T	No.: 24.00.973
Model 112L	No.: 60.73.795
Model 211	No.: 24.01.008
Model 311	No.: 24.00.948

Insert for basket

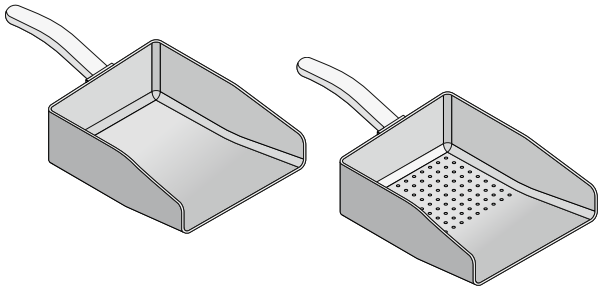
Serves as an additional level for boiling or frying in baskets with AutoLift.



Model 211/311	No.: 60.70.733

Scoop

For safe and easy emptying of large quantities of food. It consists of a plastic compound developed especially for RATIONAL which makes it noticeably lighter and easier to handle than similar utensils.

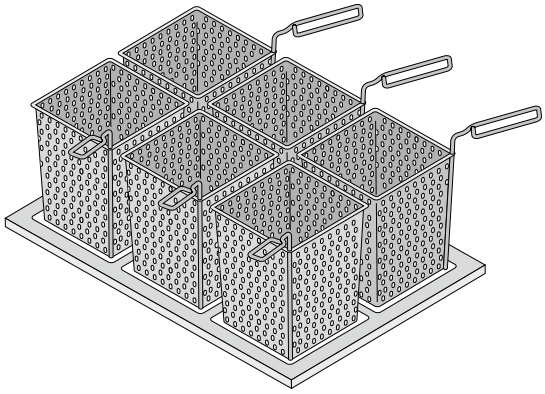


Scoop	No.: 60.73.348
Perforated scoop	No.: 60.73.586

9. Accessories for VarioCookingCenter®

Portion baskets with frame

Kit of 6 perforated portion baskets and frame.



6 Portion baskets, perforated, with frame

Model 112/112T	No.: 60.71.919
Model 112L	No.: 60.73.707

Portion baskets with handle, perforated

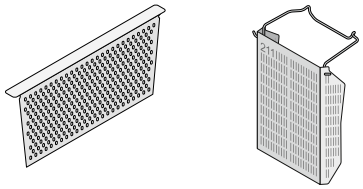
Set of 2	No.: 60.72.067

Portion baskets, unperforated with handle, and lids

Set of 2	No.: 60.72.066

Sieve

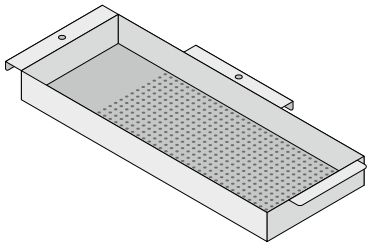
Holds back loose boiled products when draining.



Model 112/112T	No.: 60.71.327
Model 112L	No.: 60.73.706
Model 211	No.: 60.71.761
Model 311	No.: 60.72.034

Pasta sieve

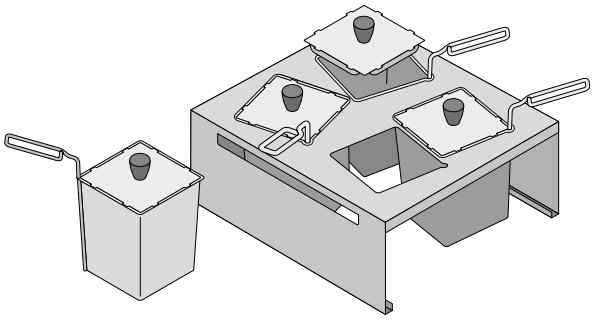
Pan insert for optimal and ergonomic production of noodles.



Model 211/311	No.: 60.73.747

BainMarie for VitroCeran

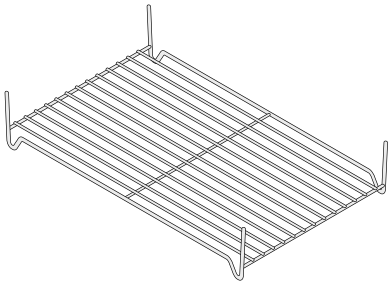
Attachment with 4 portion containers with handle, lid and one 2/3 GN container



Model 112/211/311 (for appliances with VitroCeran option)	No.: 60.71.918

Pan base grid

To avoid contact between roasts and the pan base.

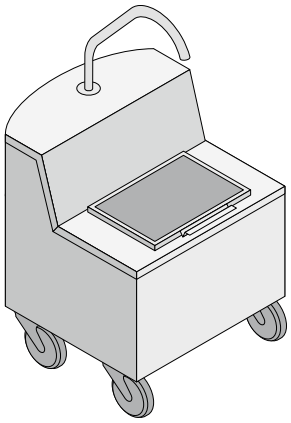


Model 112/112T		No.: 60.70.787
Model 112L		No.: 60.73.702
Model 211	per 2 ×	No.: 60.71.968
Model 311	per 3 ×	No.: 60.71.968

9. Accessories for VarioCookingCenter®

Oil cart

For filling the cooking pan and for storing and filtering the oil. With preheating to melt cooking fat or break down cooled oil. Draining of hot fat possible. Capacity: 49 l.

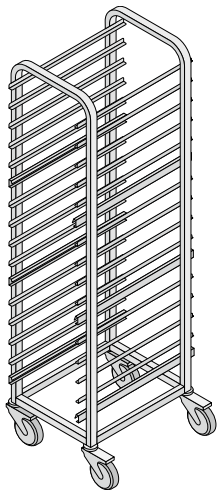


Model 211/311	No.: 60.74.941

Basket cart

To store, transport and drain deep-frying and boiling baskets.

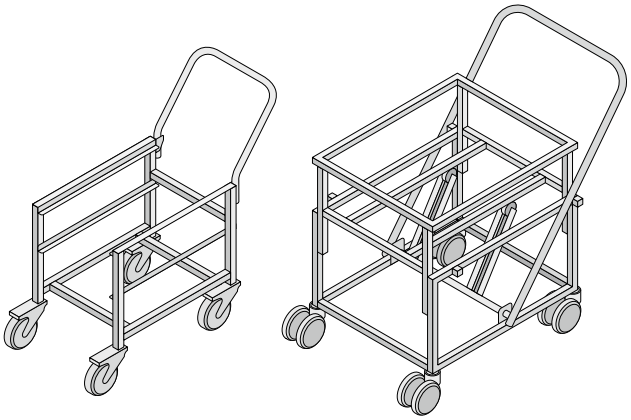
Capacity:
Max. 3 baskets (model 112L or 211/311) or max. 16 1/1 GN trays.
1 arm for the raising and lowering mechanism (model 211 or 311)



Model 112L/211/311	No.: 60.73.612

VarioMobil®

For effortless and safe emptying and transporting of cooked food in GN containers (GN containers not included).



Model 1/1 GN	No.: 60.73.349
Model 2/1 GN	No.: 60.70.107

10. Recommendation for basic configuration of individual VarioCookingCenter® units with accessories

Basic configuration VarioCookingCenter® 112 and 112T N°: 60.73.305

2 × Arm for raising and lowering mechanism	No.: 24.00.973
1 × Boiling basket 112	No.: 60.70.752
1 × Deep-frying basket 112	No.: 24.00.972
1 × Spatula	No.: 60.71.643
2 × Pan base rack	No.: 60.70.787
1 × Sieve	No.: 60.71.327

Basic configuration VarioCookingCenter® 112L N°: 60.73.863

2 × Arms for raising and lowering mechanism	No.: 60.73.795
1 × Boiling basket 112	No.: 60.73.680
1 × Deep-frying basket 112	No.: 60.73.684
1 × Spatula	No.: 60.71.643
2 × Pan base rack	No.: 60.73.702
1 × Sieve model 112L	No.: 60.73.706

Basic configuration VarioCookingCenter® 211 N°: 60.73.306

1 × Arm for raising and lowering mechanism	No.: 24.01.008
2 × Boiling basket 211/311	No.: 60.70.725
1 × Spatula	No.: 60.71.643
2 × Pan base rack	No.: 60.71.968
1 × Sieve model 211	No.: 60.71.761

Basic configuration VarioCookingCenter® 311 N°: 60.73.307

1 × Arm for raising and lowering mechanism	No.: 24.00.948
3 × Boiling basket 211/311	No.: 60.70.725
1 × Spatula	No.: 60.71.643
3 × Pan base rack	No.: 60.71.968
1 × Sieve model 311	No.: 60.72.034

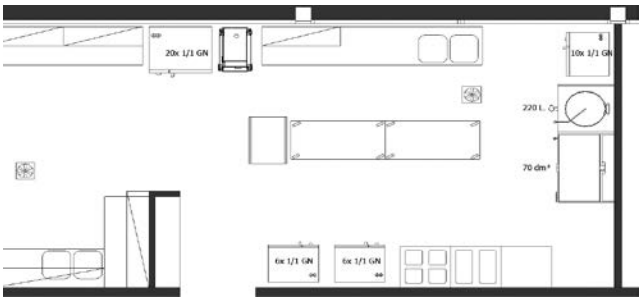
11. Practical study by Zurich Uni: proven energy and resource savings

Research project by Zurich University provides evidence of significant savings in resources by using multifunctional cooking appliances in kitchen practices.

Requirements in terms of more efficient use of resources in day-to-day kitchen routines are continually increasing. From the perspective of sustainability, kitchen processes also need to become more efficient. This also means that space requirements, water and energy consumption as well as the use of raw materials need to be reduced. In parallel, cost pressure and the demands of guests are increasing. To overcome these challenges, businesses need more innovative kitchen technology that minimises the use of resources such as water, energy, raw materials and time on the one hand, while offering maximum flexibility and performance and meeting high demands in food quality.

Until now, the standard for energy efficiency (DIN 18873, http://grosskuechen.cert.hki-online.de/de) has been the only decision aid for buyers of thermal kitchen appliances, except for manufacturer information. The specific savings in resources in day-to-day kitchen routines by upgrading to new kitchen technology are therefore unclear to many customers. For this reason, RATIONAL AG as the market leader in multifunctional cooking technology has decided to set up a practical project together with the Zurich University for Applied Sciences under the supervision of Prof. Dr.-Ing. Heinzelmann and SV Schweiz (Swiss catering and hotel management corporation). The aim of the project was to record the resource efficiency of multifunctional cooking technology under real conditions based on a before and after comparison using measurement devices.

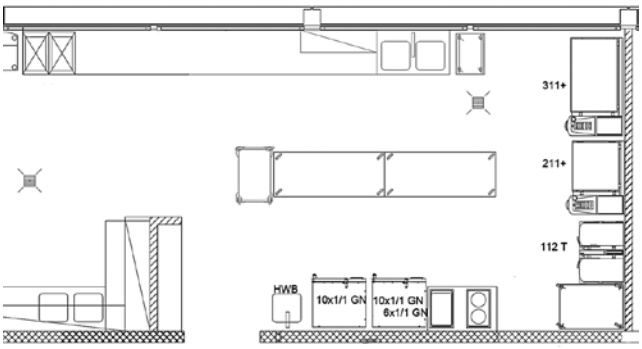
The staff restaurant of ABB Schweiz AG (manufacturer of energy and automation technology) in Dättwil-Baden operated by SV Schweiz was selected as the research project. In spring 2014, around 380 lunches were produced in the cook-and-hold method. The daily menu consisted of four different dishes from which the guests could choose. At the start of the project in April 2014, conventional technology was still being used and measurements of energy and water consumption were taken over a period of eight weeks. The number of main meals, the menu, food waste and over-production were also logged. The measurements showed the following requirement per main meal served: 0.58 kWh of electricity and 2.72 litres of water. (dish-washing requirements were not considered in this study.)



Kitchen with conventional cooking technology before the renovation in 2014 (for approx. 450 meals)

11. Practical study by Zurich Uni: proven energy and resource savings

The kitchen renovation and equipment with the modern cooking technology of RATIONAL AG began in the summer of 2014. Measurements of energy and water consumption were then taken again, in order to enable a before and after comparison. The measurements showed a significant reduction in consumption per main meal.
With regard to energy, 34 % less and therefore only 0.38 kWh per main meal were now only required. This corresponds to a reduction of annual CO_2 emissions of 1.8 tons. For water, consumption was only 1.28 litres per main meal, which was 53 % less than before.



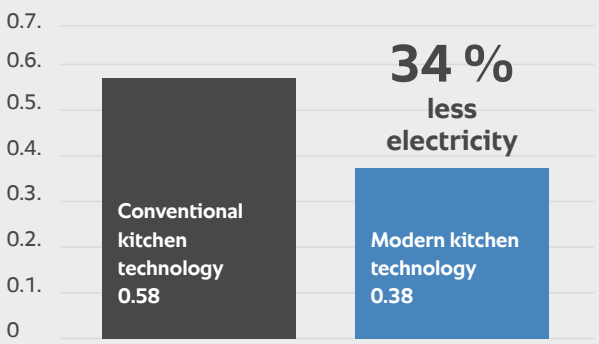
Kitchen with **modern** cooking technology after the renovation in 2015 (for approx. **700 meals**)

Resource consumption per main meal

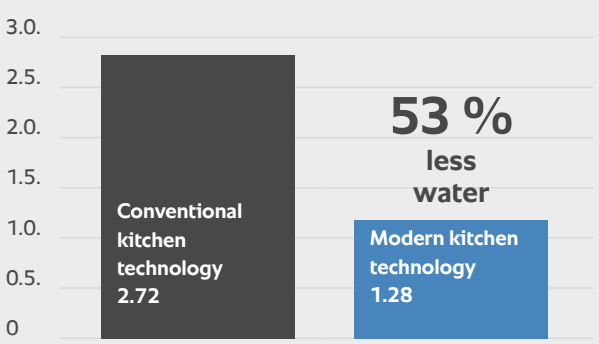
The objective of resource optimisation in terms of energy and water savings was demonstrably achieved thanks to modern kitchen technology along with a greater culinary range.

"On the basis of the anticipated cost savings in water and electricity, we were able to realise an attractive front cooking concept with a pizza oven and a pasta machine and boiler within the defined total budget for the renovation and operation of our new staff restaurant," explains Anton Bucher, Project Manager Planning & Construction SV Schweiz. "This creates a culinary experience and an attractive atmosphere, not only for our guests but also for the restaurant staff themselves."

Energy consumption [kWh/main meal]



Water consumption [l/main meal]



You can find more information on the environment and sustainability in our business customer portal: **portal.rational-online.com**

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