Designers Manual

SelfCookingCenter® whitefficiency® and CombiMaster® Plus

Ladies and Gentlemen

The new SelfCookingCenter® whitefficiency® shines in terms of cooking quality and performance. The patented HiDensityControl® itself ensures maximum ***uniforwithy every time.*** It offers a powerful steam generator, dynamic air mixing and heat build-up and extremely effective dehumidification. It incorporates the ***necessary reserve power*** needed to perfectly coordinate the precise interaction between power, air humidity and air flow. This is the basis for consistence peak performance in every area, ***rack after rack,*** from front to back – particularly in large quantities.

To make everyday work easier for you as well, we have compiled this „Designers Manual“ with all the important technical information in easy-to-read form.
We will also be happy to send you a free copy of the RATIONAL Designers Library in DVD or hard copy.

Why not visit us on the Internet at ***portal.rational-online.com***. When you are there, simply click on „Designer Portal“ to access the new ***RATIONAL Portal.*** This contains a whole wealth of designer-specific information, in a compact format, well structured and clearly laid out.

Please do not hesitate to contact us if you have any further queries.

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Country-specific and local standards and regulations relating to the installation and operation of commercial cooking appliances must be followed.

Right of new developments and technical modifications reserved.

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Contents

1.1 Technical data overview – electric units

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Unit dimensions						
Width	847 mm	1,069 mm	847 mm	1,069 mm	879 mm	1,084 mm
Depth	771 mm	971 mm	771 mm	971 mm	791 mm	996 mm
Height	782 mm	782 mm	1,042 mm	1,042 mm	1,782 mm	1,782 mm
Weight: SelfCookingCenter® whitefficiency®						
Weight gross (kg)	117.0 kg	152.0 kg	144.0 kg	194.0 kg	271.0 kg	347.5 kg
Weight net (kg)	110.0 kg	142.5 kg	135.5 kg	182.0 kg	258.0 kg	332.0 kg
Weight: CombiMaster® Plus						
Weight gross (kg)	106.0 kg	142.5 kg	133.0 kg	186.5 kg	264.0 kg	342.0 kg
Weight net (kg)	99.0 kg	133.0 kg	124.5 kg	175.5 kg	251.5 kg	326.0 kg
Electrical values						
Connected load	11.0 kW	22.3 kW	18.6 kW	36.7 kW	37.0 kW	65.5 kW
Power hot air	10.3 kW	21.8 kW	18.0 kW	36.0 kW	36.0 kW	64.2 kW
Power Steam generator	9.0 kW	18.0 kW	18.0 kW	36.0 kW	36.0 kW	54.0 kW
Fuses (400 V)	3 x 16 A	3 x 32 A	3 x 32 A	3 x 63 A	3 x 63 A	3 x 100 A
*Connection cable	5 x 2,5 mm²	5 x 4 mm²	5 x 4 mm²	5 x 10 mm²	5 x 10 mm²	5 x 25 mm²
Water connection	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Pressure hose	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Flow pressure	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar
Wastewater connection	DN 50	DN 50	DN 50	DN 50	DN 50	DN 50
Thermal load						
Latent	2,143 kJ/h	4,167 kJ/h	3,529 kJ/h	6,667 kJ/h	7,200 kJ/h	12,500 kJ/h
Sensitive	2,727 kJ/h	5,000 kJ/h	4,615 kJ/h	9,474 kJ/h	9,000 kJ/h	14,286 kJ/h

*Cable length max. 2.5 m.

1.2 Technical data overview – gas units

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Unit dimensions						
Width	847 mm	1,069 mm	847 mm	1,069 mm	879 mm	1,084 mm
Depth	771 mm	971 mm	771 mm	971 mm	791 mm	996 mm
Height	782 mm	782 mm	1,042 mm	1,042 mm	1,782 mm	1,782 mm
Weight: SelfCookingCenter® whitefficiency®						
Weight gross (kg)	133.0 kg	177.5 kg	163.0 kg	209.0 kg	298.5 kg	384.5 kg
Weight net (kg)	126.0 kg	168.0 kg	154.5 kg	198.0 kg	286.0 kg	369.5 kg
Weight: CombiMaster® Plus						
Weight gross (kg)	129.0 kg	168.0 kg	157.0 kg	200.5 kg	273.5 kg	386.0 kg
Weight net (kg)	121.0 kg	158.5 kg	148.0 kg	189.5 kg	261.0 kg	370.5 kg
Electrical values						
Connected load	0.4 kW	0.77 kW	0.5 kW	0.8 kW	0.95 kW	1.6 kW
Fuses (230 V)	1 x 16 A	1 x 16 A	1 x 16 A	1 x 16 A	1 x 16 A	1 x 16 A
Connection cable	3 x 2.5 mm^2	3 x 2.5 mm^2	3 x 2.5 mm^2	3 x 2.5 mm^2	3 x 2.5 mm^2	3 x 2.5 mm^2
Power Natural gas H or L						
Rated load	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Hot air	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Steam generator	12.0 kW	21.0 kW	20.0 kW	40.0 kW	38.0 kW	51.0 kW
Power Liquid gas 3 B/P						
Rated load	14.0 kW	31.0 kW	24.0 kW	50.0 kW	48.0 kW	100.0 kW
Hot air	14.0 kW	31.0 kW	24.0 kW	50.0 kW	48.0 kW	100.0 kW
Steam generator	13.0 kW	23.0 kW	22.0 kW	44.0 kW	40.0 kW	56.0 kW
Power Liquid gas 3 P						
Rated load	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Hot air	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Steam generator	12.0 kW	21.0 kW	20.0 kW	40.0 kW	38.0 kW	51.0 kW
Gas connection	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Exhaust gas control	A3, B13, B23	B13, B23	B13, B23	B13, B23	B13, B23	B13, B23
Water connection	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Pressure hose	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Flow pressure	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar	1.5–6.0 bar
Wastewater connection	DN 50	DN 50	DN 50	DN 50	DN 50	DN 50
Thermal load						
Latent	2,143 kJ/h	4,167 kJ/h	3,529 kJ/h	6,667 kJ/h	7,200 kJ/h	11,583 kJ/h
Sensitive	2,571 kJ/h	5,000 kJ/h	4,286 kJ/h	9,231 kJ/h	8,780 kJ/h	13,636 kJ/h

1.3 Connected load, noise values

Electric units	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Total	11.0 kW	22.3 kW	18.6 kW	36.7 kW	37.0 kW	65.5 kW
Hot air	10.3 kW	21.8 kW	18.0 kW	36.0 kW	36.0 kW	64.2 kW
Steam	9.0 kW	18.0 kW	18.0 kW	36.0 kW	36.0 kW	54.0 kW

Gas units	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Natural gas H						
Total	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Hot air	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Steam	12.0 kW	21.0 kW	20.0 kW	40.0 kW	38.0 kW	51.0 kW
Natural gas L						
Total	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Hot air	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Steam	12.0 kW	21.0 kW	20.0 kW	40.0 kW	38.0 kW	51.0 kW
Liquid gas 3 B/P						
Total	14.0 kW	31.0 kW	24.0 kW	50.0 kW	48.0 kW	100.0 kW
Hot air	14.0 kW	31.0 kW	24.0 kW	50.0 kW	48.0 kW	100.0 kW
Steam	13.0 kW	23.0 kW	22.0 kW	44.0 kW	40.0 kW	56.0 kW
Liquid gas 3 P						
Total	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Hot air	13.0 kW	28.0 kW	22.0 kW	45.0 kW	44.0 kW	90.0 kW
Steam	12.0 kW	21.0 kW	20.0 kW	40.0 kW	38.0 kW	51.0 kW

Noise values for electric and gas units

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
70 dBA	70 dBA	70 dBA	70 dBA	70 dBA	70 dBA

1.4 Consumption

Average water consumption without CleanJet®

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
10.2 l/h	25.6 l/h	18.3 l/h	33 l/h	39.9 l/h	49 l/h

Average water consumption of steam generator

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
3.0 l/h	8.0 l/h	6.3 l/h	10.4 l/h	12.5 l/h	15.0 l/h

Average energy consumption electric units

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
4.6 kW/h	6.6 kW/h	6.4 kW/h	9.8 kW/h	9.8 kW/h	17.3 kW/h

Average energy consumption gas units

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
6.3 kW/h	10.5 kW/h	9.5 kW/h	14.7 kW/h	14.7 kW/h	21.9 kW/h

Average energy consumption gas units (Liquid gas)

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
0.50 kg	0.83 kg	0.8 kg	1.17 kg	1.17 kg	1.75 kg

Average energy consumption gas units (Natural gas)

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
0.6 m^3	1.0 m^3	0.96 m^3	1.41 m^3	1.41 m^3	2.11 m^3

1.5 Dimensions and weights

Unit dimensions Electric/gas	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Width	847 mm	1,069 mm	847 mm	1,069 mm	879 mm	1,084 mm
Depth	771 mm	971 mm	771 mm	971 mm	791 mm	996 mm
Height	782 mm	782 mm	1,042 mm	1,042 mm	1,782 mm	1,782 mm

Weights SelfCooking Center® electric

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Weight gross (kg)	117.0 kg	152.0 kg	144.0 kg	194.0 kg	271.0 kg	347.5 kg
Weight net (kg)	110.0 kg	142.5 kg	135.5 kg	182.0 kg	258.0 kg	332.0 kg

Weights SelfCookingCenter® whitefficiency® gas

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Weight gross	133.0 kg	177.5 kg	163.0 kg	209.0 kg	298.5 kg	384.5 kg
Weight net	126.0 kg	168.0 kg	154.5 kg	198.0 kg	286.0 kg	369.5 kg

Weights CombiMaster® Plus electric

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Weight gross (kg)	106.0 kg	142.5 kg	133.0 kg	186.5 kg	264.0 kg	342.0 kg
Weight net (kg)	99.0 kg	133.0 kg	124.5 kg	175.5 kg	251.5 kg	326.0 kg

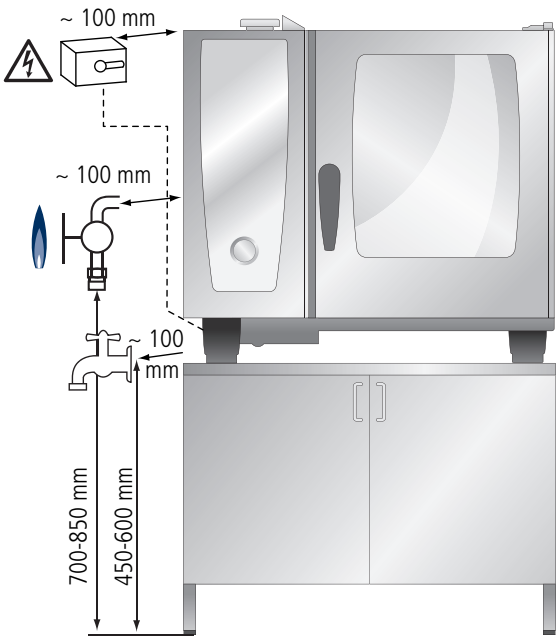
Weights CombiMaster® Plus gas

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Weight gross	129.0 kg	168.0 kg	157.0 kg	200.5 kg	273.5 kg	386.0 kg
Weight net	121.0 kg	158.5 kg	148.0 kg	189.5 kg	261.0 kg	370.5 kg

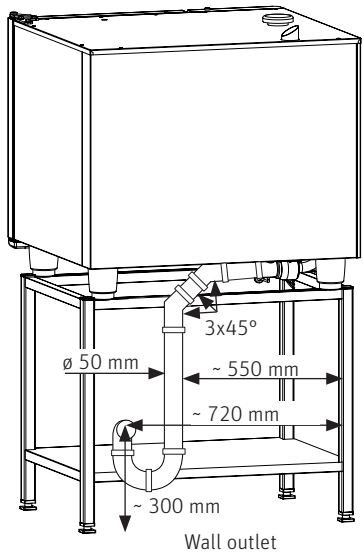
Maximum load sizes

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
30 kg	60 kg	45 kg	90 kg	90 kg	180 kg

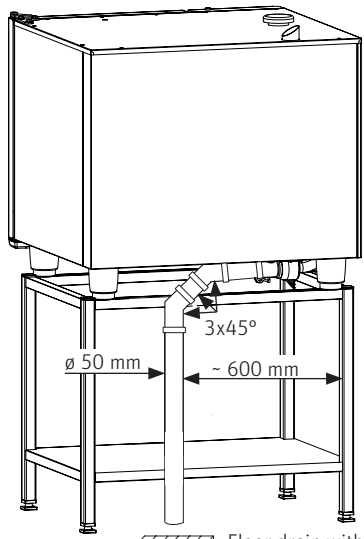
2.1 Connections provided by customer type 61, 101, 62, 102



Connection kit, consisting of
water hose and drain pipes
Article no.: 60.70.464

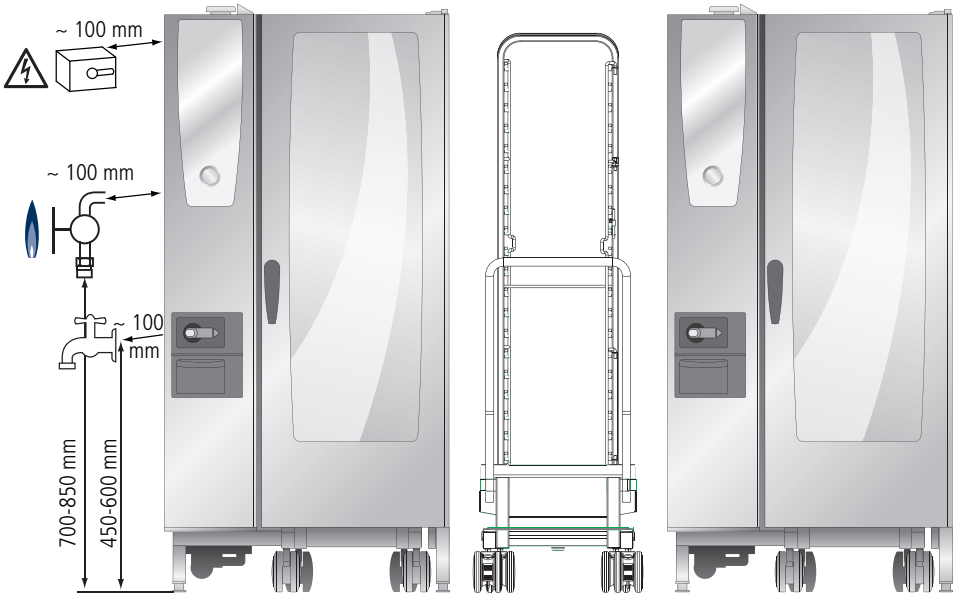


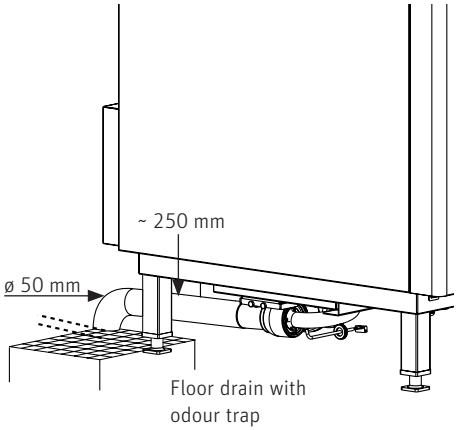
Wall outlet



Floor drain with
odour trap

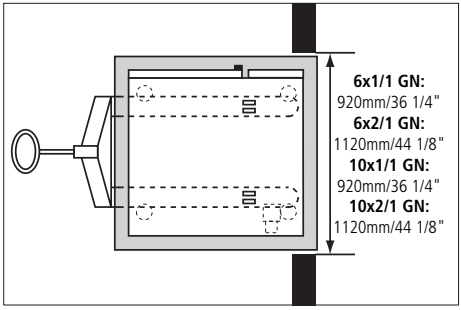
2.1 Connections provided by customer type 201 202

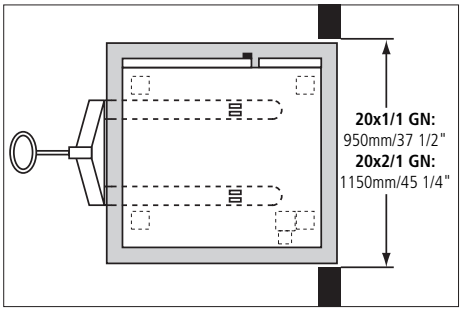


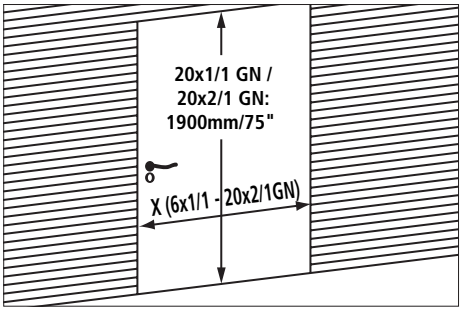


Connection kit, consisting of water hose and drain pipes Article no.: 60.70.464

2.2 Unit transportation







To avoid damage, units should if possible only be transported on a pallet in the original packing.

Please note minimum dimensions of building doors: Minimum door width for pallet transportation.

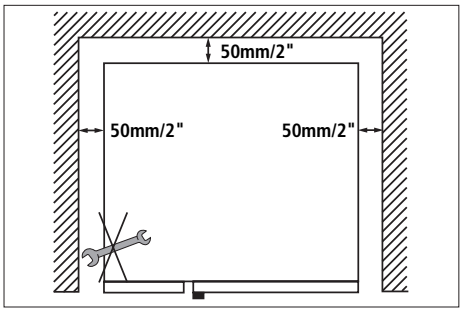
Type 6 x 1/1	920 mm	(36 1/4")
Type 6 x 2/1	1,120 mm	(44 1/8")
Type 10 x 1/1	920 mm	(36 1/4")
Type 10 x 2/1	1,120 mm	(44 1/8")
Type 20 x 1/1	950 mm	(37 1/2")
Type 20 x 2/1	1,150 mm	(45 1/4")

NB: Floor units may be transported for short distances without a pallet to bring them into their final installation position.

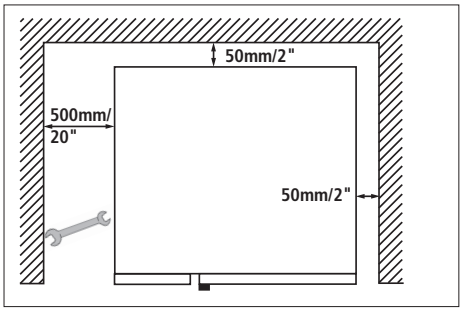
Minimum door width for transportation without pallet:

Type 6 x 1/1	840 mm	(33 1/8")
Type 6 x 2/1	1,040 mm	(41 1/8")
Type 10 x 1/1	840 mm	(33 1/8")
Type 10 x 2/1	1,040 mm	(41 1/8")
Type 20 x 1/1	920 mm	(36 1/4")
Type 20 x 2/1	1,140 mm	(45 1/8")

2.3 Unit installation

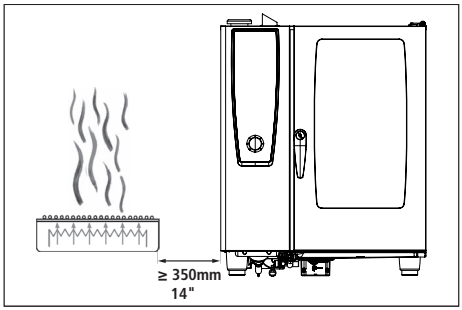


If there are no external heat sources acting on the unit, there should be a minimum gap of 50 mm to the left, the right and at the back.



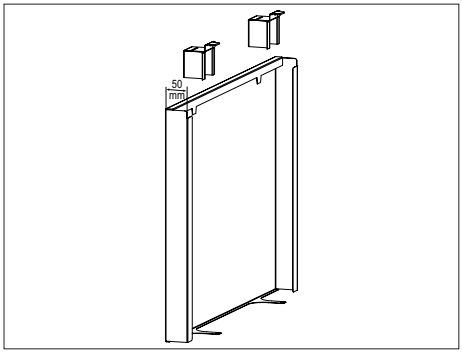
To facilitate servicing we recommend leaving a 500 mm gap on the left hand side of the unit.

Warning:
No deep-fat fryers must be installed at the back of the units.



The left-hand gap must be a minimum of 350 mm if heat sources are acting on the left side of the unit.

This gap may be reduced to 50 mm by using a heat shield (optional extra – Art. no. see below).

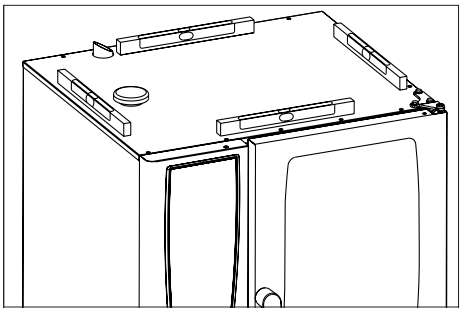


Heat shield accessories:

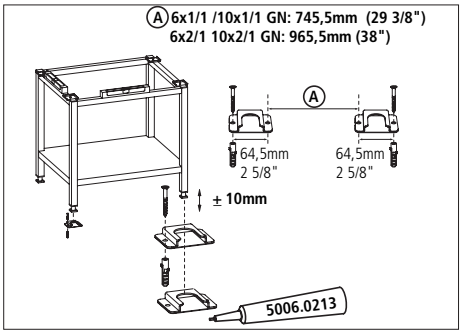
Type 61 left	N°: 60.70.390
Type 61 right	N°: 60.70.736
Type 62 left	N°: 60.70.392
Type 101 left	N°: 60.70.391
Type 101 right	N°: 60.70.743
Type 102 left	N°: 60.70.393
Type 201 left	N°: 60.70.394
Type 202 left	N°: 60.70.395

NB: Units must only be installed in frost-proof areas.

2.3 Unit installation

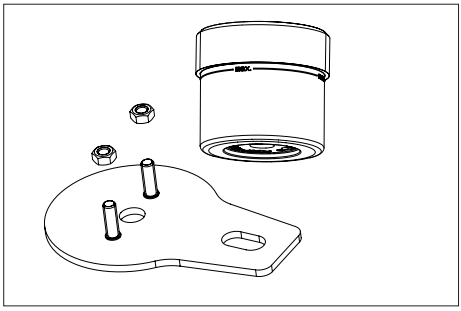


All units are supplied with height adjustable feet (0–20 mm) for horizontal alignment.

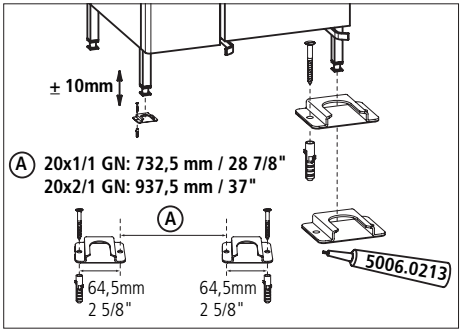


Installing table-top units
6 x 1/1, 6 x 2/1, 10 x 1/1, 10 x 2/1 GN

If the unit is placed on an original stand or base cabinet, the stand or base cabinet should be fixed to the kitchen floor with fixing kit Art. no. 8700.0317 (optional). This is mandatory for gas units.

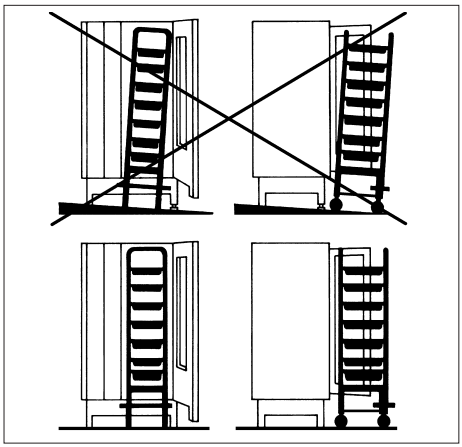


If the unit is placed on a work table or worktop it should be secured with additional retaining plates Art. no. 60.70.463 (optional). This is mandatory for gas units.

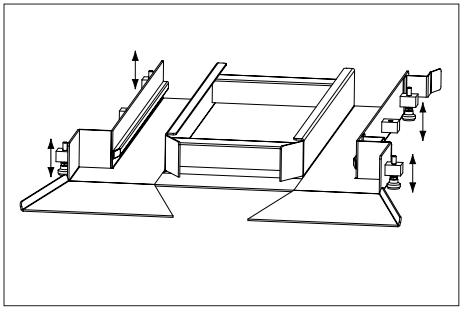


Installing floor units 20 x 1/1, 20 x 2/1 GN

A floor unit fixing kit is included in the scope of delivery.

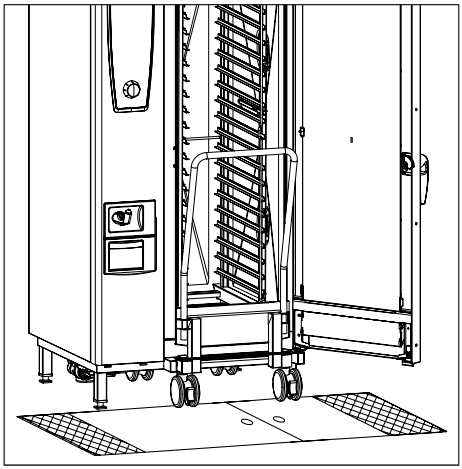


Please make sure that the mobile oven rack is standing horizontally in the cooking cabinet.



NB: Slopes of up to 3 % in the kitchen floor can be levelled out with the run-in ramp for floor units (optional).

Type 201	N°: 60.21.080
Type 202	N°: 60.22.181



If there is a drain in front of floor unit Type 201/202, a crossing aid should be fitted in the mobile oven rack run-in area.

2.4 Electrical connection

- *Local energy delivery company regulations must be complied with.*
- *Either a permanent connection or a plugin connection may be used to connect the units to the power supply.*
- *Units must only be connected to a standardised delivery network.*
- *We recommencd that an earth leakage circuit breaker (30 mA) is used for each appliance.*
- *Each unit must have its own fused delivery lead.*
- *The owner must provide an accessible. all-pole isolating device. Contact clearance must be at least 3 mm.*
- *Connecting lead cross-sections are subject to unit size. voltage and local conditions.*

Gas- and Electric units:

The stud of the equipotential bonding is located on the bottom side. underneath the control panel. Connect the wire of the equipotential bonding to this stud.

Electric unit connection:

- Table-top units 6 x 1/1. 6 x 2/1. 10 x 1/1 and 10 x 2/1 GN are supplied with a 2.5 m connecting cable (without plug).
- Floor units 20 x 1/1. 20 x 2/1 GN are supplied without a connecting cable.
- If a longer cable is used it must be at least „H07RN-F".

Connecting electric units to an energy optimisation system (optional):

- Units can be supplied with a connection to an energy optimisation system.
- Connecting cable required 5 x 1.5 mm^2
- The power disconnect time should be as short as possible. and no more than 20 seconds before the power is supplied once more for at least 2 minutes.

Gas unit connection:

- All 6 x 1/1. 6 x 2/1. 10 x 1/1. 10 x 2/1. 20 x 1/1. 20 x 2/1 GN units are supplied with a 2.5 m connecting cable (without plug).
- If a longer cable is used it must be at least „H07RN-F".
- If gas units Type 20 x 1/1 or 20 x 2/1 GN are fused by way of a power switch. this must be least Type „C" or equivalent.

2.4 Electrical connection

The units are available in all standard voltage variants.

Electric units:

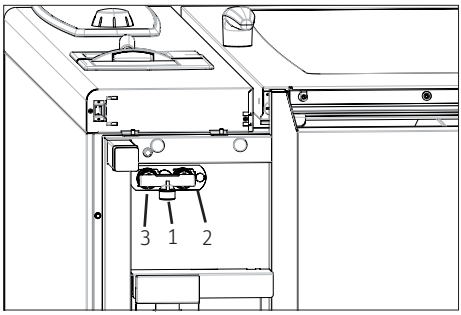
	Power kW						*Electricity consumption A*					
Type	*6x1/1*	*6x2/1*	*10x1/1*	*10x2/1*	*20x1/1*	*20x2/1*	*6x1/1*	*6x2/1*	*10x1/1*	*10x2/1*	*20x1/1*	*20x2/1*
3 AC 200V	10.1	20.7	17.2	34	34.3	62.3	29.2	59	49.5	97.5	99	182
3 AC 230V	11.2	22.3	18.6	36.7	37	67.3	27.9	50.5	46.4	91.6	92.9	168
3 NAC 400V	11	22.3	18.6	36.7	37	65.5	15.9	32.2	26.9	52.7	53.4	95.5
3 AC 400V	11	22.3	18.6	36.7	37	65.5	15.9	32.2	26.9	52.7	53.4	95.5
3 NAC 415V	11.2	24.2	20.2	39.9	40.2	70.7	16	33.3	28	55	55	99.4
3 AC 440V	11.2	22.3	18.6	36.7	37	67.3	14.6	29	24.3	47.9	48.6	88.2
3 AC 480V	11.2	22.3	18.6	36.7	37	67.3	13.5	26.9	22.4	44.2	44.5	81
1 NAC 230V	11.2						48.3					
1 NAC 240V	12						50					
2 AC 230V	11.2						48.3					
2 AC 240V	11.2						47					

	Fuse protection = A					
Type	*6x1/1*	*6x2/1*	*10x1/1*	*10x2/1*	*20x1/1*	*20x2/1*
3 AC 200V	35	63	63	100	100	200
3 AC 230V	35	63	63	100	100	200
3 NAC 400V	16	32	32	63	63	100
3 AC 400V	16	32	32	63	63	100
3 NAC 415V	16	32	32	63	63	100
3 AC 440V	16	32	32	63	63	100
3 AC 480V	16	32	32	63	63	100
1 NAC 230V	50					
1 NAC 240V	50					
2 AC 230V	50					
2 AC 240V	50					

Gas units:

	Power kW						*Electricity consumption A*					
Type	*6x1/1*	*6x2/1*	*10x1/1*	*10x2/1*	*20x1/1*	*20x2/1*	*6x1/1*	*6x2/1*	*10x1/1*	*10x2/1*	*20x1/1*	*20x2/1*
1NAC 100V	0.4	-	0.5	-	0.95	-	4	-	5	-	9.5	-
1NAC 110V	0.4	-	0.5	-	0.95	-	3.64	-	4.55	-	8.64	-
1NAC 120V	0.4	-	0.5	-	0.95	-	3.33	-	4.17	-	7.92	-
1NAC 127V	0.4	-	0.5	-	0.95	-	3.15	-	3.94	-	7.48	-
1NAC 220V	0.4	0.77	0.5	0.8	0.95	1.6		33.3	28	55	55	99.4
1NAC 230V	0.4	0.77	0.5	0.8	0.95	1.6	1.74	3.35	2.17	3.48	4.13	6.96
1NAC 240V	0.4	0.77	0.5	0.8	0.95	1.6	1.67	3.21	2.08	3.33	3.96	6.67
2 AC 200V	0.4	0.77	0.5	0.8	0.95	1.6	2	3.85	2.50	4	4.75	8

2.5 Water connection



The unit can either be connected using a common 3/4“ water delivery or separately using a 3/4“ standard drinking water and 3/4“ soft or hot water line.

Water inlet for table-top units 61-102:
1 = Common water supply 3/4”
cold water 30°C/86°F
In case of split water connection
2 = Cold water supply 3/4”
(for quenching and hand shower 30°C/86°F).
3 = Treated water connection 3/4”
(steam generator, moistening, cleaning, max. 30°C/86°F).

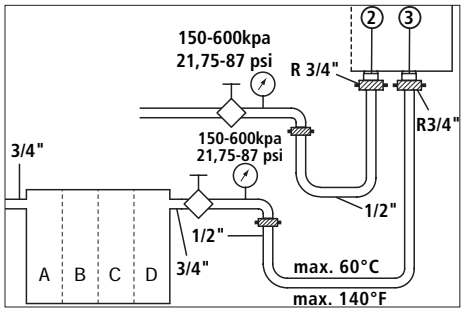
Water inlet for floor units 201/202:
1 = Common water supply 3/4”
cold water max. 30°C/86°F
In case of split water connection
2 = Cold water, max 30°C/86°F, connection 3/4”
(quenching)
3 = Treated water connection 3/4”
(steam generator, moistening, hand shower, max 30°C/86°F)

The appliance has to be connected to the facility water supply with a water supply hose that conforms to EN 61770 resp. IEC 61770 or similar quality.

The water supply hose must fulfil the local or standard hygiene requirements for hoses in drinking water systems.
A water supply hose conform to EN 61770 with DVGW drinking water approval can be ordered at RATIONAL (Art. no. 2067.0709).

- The unit must only be connected to drinking water.
- The line cross-section should be at least 1/2“.
- Each unit should be provided by the owner with its own water tap.
- Units are supplied without a water connection hose. A unit connection set (Art. no. 60.70.464) comprising a water hose and drainage pipes is available as an optional extra.
- The water pressure (flow pressure) must be between 150 kPa (1.5 bar) and 600 kPa (6 bar). Recommended flow pressure 300 kPa (3 bar). Exceeding or undershooting the recommended water pressure can lead to faults.
- ***SelfCookingCenter® whitefficiency® with CareControl*** prevents limescale developing in the first place. ***It is not necessary to connect to a water softener.***
- ***CombiMaster only:*** In most cases a water connection is possible without additional filters and water treatment. The integral steam generator automatic SelfClean system (SC-Automatic) rinses and drains the steam generator automatically, subject to use.
- Before connecting the unit, check water hardness and mineral content with the local water delivery company.
- The following measures are recommended, subject to water hardness and water quality:

2.5 Water connection



A.) Fine filter: 5–15 µm
When the water is contaminated by sand, iron particles or suspended matter.

B.) Active carbon filter
If the water is heavily chlorinated (Cl2) above 0.2 mg/l (0.2 ppm), an active carbon filter must be fitted to prevent corrosion.

C.) Reverse osmosis unit
A reverse osmosis unit must be provided to prevent corrosion only if the chloride Cl concentration exceeds 100 mg/l (100 ppm) ***NB:*** Please ensure that when a reverse osmosis unit is connected the minimum water conductance is at least 50 µS/cm (micro Siemens).

D.) Water softening / decarbonisation
CombiMaster only: A water treatment system should be connected upstream for water with a high limescale content (> 15 dH) that is used for more than 3 hours / day in Moist Heat or Combination cooking mode. Hydrogen ion exchange (H+ ion exchange) systems should be used.

Note: Sodium ion exchangers of the type often used in dishwashers can lead to corrosion if the unit is set incorrectly or a fault occurs, so they should not be used.

If a combination of filters is installed, the A-B-C-D filter sequence must be observed in the direction of flow.

The filter and water treatment system should be designed for the following average soft water consumption

Type 61	3.0 l/h	Type 62	8.0 l/h
Type 101	6.3 l/h	Type 102	10.4 l/h
Type 201	12.5 l/h	Type 202	15.0 l/h

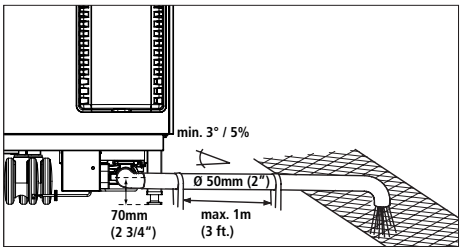
NB: Filtration and soft water systems are supplied by Britta, Cuno and Everpure.

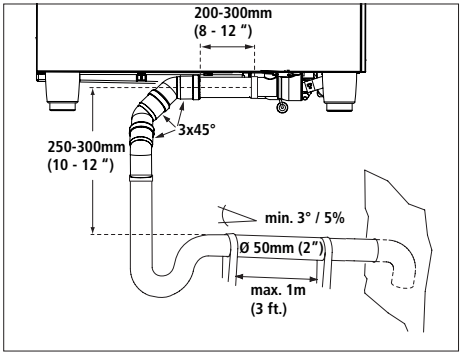
Maximum flow rates

Type 61	20.0 l/min	Type 62	25.0 l/min
Type 101	20.0 l/min	Type 102	25.0 l/min
Type 201	25.0 l/min	Type 202	25.0 l/min

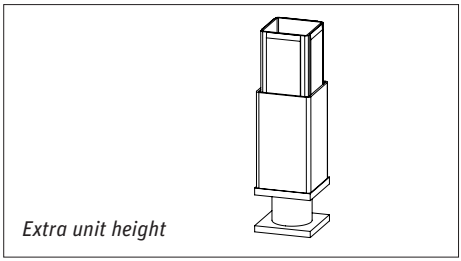
Treated water with a water hardness less than 6 ° e may not be supplied, because such water can react aggressive and corrosive which can reduce the life cycle of the unit.

2.6 Wastewater connection

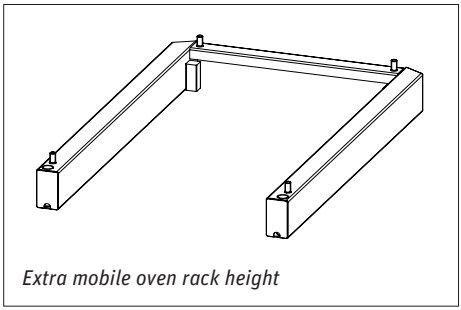




NB: We recommend a separate waste water connection for each unit.



Extra unit height



Extra mobile oven rack height

> Units have a DN 50 mm discharge pipe.
> Units are supplied without drainpipes. A unit connection set (Art. no. 60.70.464) comprising a water hose and drainpipe is available as an optional extra.
> A fixed connection complying with DVGW, SVGW, KIWA, WRAS with a drain trap is permissible. The vented discharge section is an integral part of the units.
> If an existing floor drain has no trap, there must be a free discharge section of 20 mm.
> The drainage system must be dimensioned so that it can take a short-term volume of 0.7 l/sec pumped from the steam generator.
> Drainpipes must be laid with a constant fall of min. 5 % (3°).
> The mean wastewater temperature is 65 °C.

Grease separation
All food processing businesses – including commercial kitchens – are obliged to install a grease separator to pretreat greasy wastewater before it is discharged into the public drains.
The size of the grease separator will depend on the daily number of meal portions.

NB: The mean height of the wastewater connection is 70 mm for floor units. It is 44 mm for the standard Combi-Duo version (on rollers).

The floor clearance of floor units can be increased to 140 mm using „extra unit height" and „extra mobile oven rack height".

Extra unit height:
Type 201/202 N°: 60.70.407

Extra mobile oven rack height:
Type 201 N°: 60.21.184
Type 202 N°: 60.22.184

2.7 Gas connection

> Local gas delivery company regulations must be complied with.
> Units must only be installed in adequately ventilated areas.
> Each unit must have its own mains tap.
> Gas connection 3/4“ internal thread.
> Connection may be made to a gas socket.
> All gas connection components provided by the owner must meet current gas engineering delivery standards.
> Gas units must be secured against slippage. RATIONAL supplies fixing kits for this purpose.
Fixing for table-top units on a worktop Art. no. 60.70.463 (optional).
Floor fixing for base cabinets Art. no. 8700.0317 (optional).
Floor fixing for floor units is included in gas unit scope of delivery.
> Units must only be installed by a locally approved gas installer.

Gas flow pressure must always be in the region of the figures specified.

Gas type	*Connection flow pressure*	*Wobeindex Wi* (15 °C – 1013 mbar)	*Wobeindex Ws* (15 °C – 1013 mbar)
Natural gas H G20	18-25 mbar	45.67 MJ/m3	50.72 MJ/m3
Natural gas L G25	20-30 mbar	37.38 MJ/m3	41.52 MJ/m3
Liquid gas G30	25-57.5 mbar	80.58 MJ/m3	87.33 MJ/m3
Liquid gas G31	25-57.5 mbar	74.75 MJ/m3	81.19 MJ/m3

Maximum consumption at rated thermal load

Gas type	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Natural gas H G20	1.4 m^3/h	3.0 m^3/h	2.4 m^3/h	4.9 m^3/h	4.8 m^3/h	9.8 m^3/h
Natural gas L G25	1.6 m^3/h	3.6 m^3/h	2.8 m^3/h	5.7 m^3/h	5.6 m^3/h	11.4 m^3/h
Liquid gas G30	1.18 kg/h	2.6 kg/h	2.0 kg/h	4.2 kg/h	4.0 kg/h	8.4 kg/h
Liquid gas G31	1.24 kg/h	2.66 kg/h	2.09 kg/h	4.27 kg/h	4.18 kg/h	8.55 kg/h

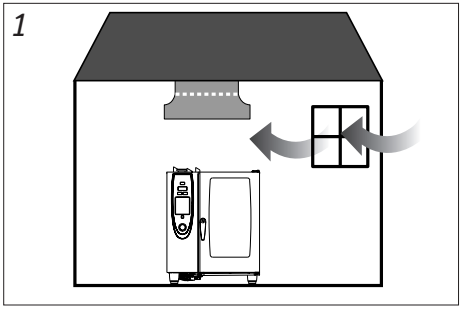
Please note that when a gas cylinder is used (ambient temperature 20 °C) only 0.8 kg/h can be drawn from a cylinder with 11 kg nominal weight and 1.8 kg/h from a cylinder with 33 kg nominal weight.

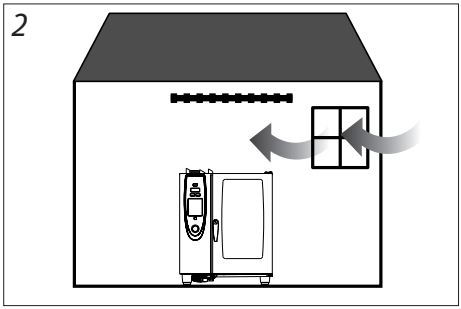
Space required (2 m^3 per kW output) with constant ventilation (ventilation slot, not forced ventilation):

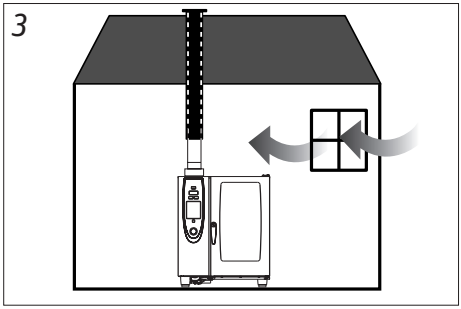
Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
28 m^3	62 m^3	48 m^3	100 m^3	96 m^3	*

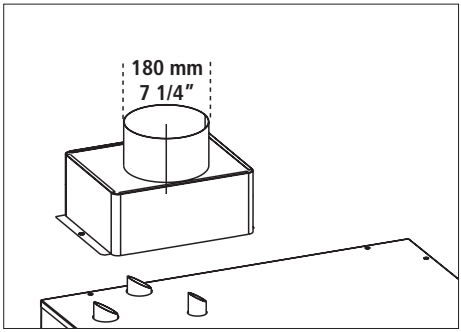
*An HVAC system must be installed in kitchens with a total heat load of more than 50 kW.

2.8 Exhaust gas discharge









A3 – Type 61
Room air-dependent gas appliance with blower before burners, without gas diverter and rated thermal load < 14 kW. It is not mandatory for the gas delivery to be released to the burners only when the exhaust system is operative.
For UK market can be used when replacing similar equipment in kitchens where installation of the air inlet/extraction was prior to September 2001 & providing there is a documented risk assessment to ensure that there will always be sufficient make-air and extraction available when running the equipment. Please observe Current Gas Regulations.

B 13 – Type 61, 62, 101,102, 201, 202
Room air-dependent gas appliance with blower before burners. A draft diverter is imperative if exhaust gas is discharged via an exhaust system with a natural draft (e.g. flue).

B 23 – Type 61, 62, 101,102, 201, 202
Room air-dependent gas appliance with blower before burners, without gas diverter. The exhaust gas is discharged via an exhaust system at overpressure (e.g. exhaust hood or ventilation cover).

Exhaust gas discharge
If installed without a draft diverter, there must be a gap of at least 200 mm at the top.
1. into exhaust hood
2. into ventilation cover
3. into flue (with draft diverter)

Draft diverter
The draft diverter (e.g. connection to the chimney) is not supplied with the unit.
Due to the exhaust gas temperature, exhaust gas pipes should not be made from aluminium or materials which cannot withstand temperatures up to 200 °C.

Draft diverter:

Type	N°:	Type	N°:
61	70.00.737	101	70.00.757

Draft diverter with silencer:

Type	N°:	Type	N°:
62	70.00.768	102	70.00.769
201	70.00.770	202	70.00.771

3.1 Thermal load

Please comply with technical regulations (e.g. VDI 2052) and with local regulations governing ventilation in commercial kitchens.

Sensitive heat
Sensitive heat – heat which can be felt – is released by heat emission from thermal units.

Latent heat
Latent heat is contained in the vapour and steam given off during cooking. The exhaust air system for a production area on kitchen premises must be designed so that latent heat is quickly and effectively led away, causing the least nuisance to those working in the area.

Electric units	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Latent	2,143 kJ/h 595 W	4,167 kJ/h 1,158 W	3,529 kJ/h 980 W	6,667 kJ/h 1,852 W	7,200 kJ/h 2,000 W	12,500 kJ/h 3,472 W
Sensibel	2,727 kJ/h 758 W	5,000 kJ/h 1,389 W	4,615 kJ/h 1,282 W	9,474 kJ/h 2,632 W	9,000 kJ/h 2,500 W	14,286 kJ/h 3,968 W

Gas units	*Type 61* 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Latent	2,143 kJ/h 595 W	4,167 kJ/h 1,158 W	3,529 kJ/h 980 W	6,667 kJ/h 1,852 W	7,200 kJ/h 2,000 W	11,583 kJ/h 3,218 W
Sensibel	2,571 kJ/h 714 W	5,000 kJ/h 1,389 W	4,286 kJ/h 1,191 W	9,231 kJ/h 2,564 W	8,780 kJ/h 2,439 W	13,636 kJ/h 3,788 W

3.2 Exhaust air requirement

Exhaust air requirement calculation for hot air steamers
A hot air steamer gives off an average 265 g water per hour and kilowatt of connected load (265/hxkW) as standard. The increased water content in the air should not exceed 6 g/kg dry air.

Example of SelfCooking Center® 61 airflow requirement:
Connected load 11 kW
Specific dry air weight 1.29 kg/m³

Water release: 11 kW x 265 g/(h x kW) = 2,915 g/h
2,915 g/h / (6 g/kg x 1.29 kg/m³) = 377 m³/h
The exhaust air requirement is 342 m³/h.

NB: To allow for unfavourable flow conditions or unreliable thermal draft (combined flow) it is advisable to increase the air requirement by 25 %.
In other words, the exhaust air requirement is 377 m³/h x 1.25 = 471 m³/h.
The figure goes down to 63 % if one side of the unit is against a wall. If two sides of the unit are against a wall the figure reduces to 40 %.

Airflow requirement – unit freestanding in room (100 %)

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
377 m³/h	763 m³/h	637 m³/h	1257 m³/h	1267 m³/h	2243 m³/h

Airflow requirement – one side of unit against a wall (63 %)

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
238 m³/h	481 m³/h	401 m³/h	792 m³/h	798 m³/h	1413 m³/h

Airflow requirement – two sides of unit against a wall (40 %)

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
151 m³/h	305 m³/h	255 m³/h	502 m³/h	507 m³/h	897 m³/h

Prescribed minimum volume of incoming air for gas units

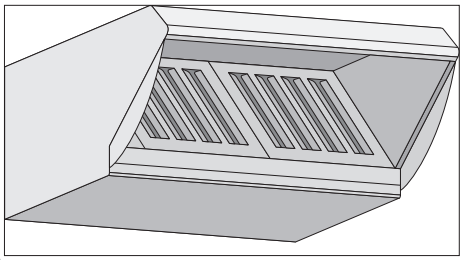
Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
21 m³/h	47 m³/h	36 m³/h	75 m³/h	72 m³/h	150 m³/h

Maximum exhaust gas volumes

Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
52 m³/h	114 m³/h	88 m³/h	183 m³/h	176 m³/h	367 m³/h

3.3 RATIONAL exhaust hoods

As optional extras RATIONAL supplies unit hoods without external exhaust air (UltraVent®) and with external exhaust air (exhaust hood).



UltraVent® exhaust hood with condensation system
The condensation technology in UltraVent® absorbs and dissipates steam. There is no need for complicated and expensive installations to remove exhaust air. Installation is simple and it can be retrofitted at any time. There is no need for a connection to the outside.

UltraVent® Plus condensation hood with smoke filter
In addition to the UltraVent® condensation technology there is also UltraVent® Plus, which is equipped with special filters. This prevents both vapours and the lingering smoke that builds up while grilling and roasting. RATIONAL units can be installed even in critical locations, such as front shop-front areas.

> Easy to install and retrofit.
> The internal diameter of the water delivery must be at least 1/2“. The connection thread is 3/4“.
> Electrical connection: 1 NAC 230 V.
> Power rating 450 W.
> Extraction rating max. 900 m^3/h.
> Noise level: Stage 1: 65 dBA, stage 2: 70 dBA
> UltraVent® is not ducted to a ventilation and air conditioning system. As UltraVent® does not form part of the ventilation system, it is not covered by the provisions of VDI 2052.
> Due to the condensation effect of UltraVent® the exhaust air requirement can be reduced by 27 m^3/h per kilowatt of rated consumption.
> The exhaust temperature of the hood is reduced from 100 °C to between 33 and 37 °C.
> Relative exhaust humidity is reduced to between 37 % RH and 40 % RH, hence it is below ambient humidity. This means that UltraVent® dries the ambient air due to the lower humidity and the somewhat higher exhaust temperature.
> The UltraVent® exhaust hood with condensation system should only be used on units with right-hinging doors. It may be used on left-hinging units, but this restricts the extraction function.

Warning:
Gas units: The waste combustion gases must be routed into a chimney or a separate ventilation hood.
The local norms and specifications for air conditioning systems must be observed.

3.3 RATIONAL exhaust hoods

UltraVent® appliance sizes

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Electric	X	X	X	X	X	
Gas	X		X			
Combi-Duo Electric	X		X			

UltraVent® Plus appliance sizes

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Electric	X	X	X	X	X	
Combi-Duo Electric	X		X			

UltraVent® and UltraVent® Plus connection diagrams – see connection diagrams.

Exhaust hood

> Vapour is drawn off and led outside or to an exhaust air system via a vent pipe.
> Easy to install and retrofit.
> Electrical connection: 1 NAC 230 V.
> Power rating 450 W.
> Extraction rating max. 1000 m^3/h.
> Noise level: Stage 1: 65 dBA, Stage 2: 70 dBA
> Blowing out pressure level 1 approx. 80 Pascal, level 2 approx. 300 Pascal
> The exhaust hood should only be used on units with right-hinging doors. It may be used on left-hinging units, but this restricts the extraction function.

Exhaust hood appliance sizes

	Type 61 6 x 1/1 GN	*Type 62* 6 x 2/1 GN	*Type 101* 10 x 1/1 GN	*Type 102* 10 x 2/1 GN	*Type 201* 20 x 1/1 GN	*Type 202* 20 x 2/1 GN
Electric	X	X	X	X		
Gas	X		X			
Combi-Duo Electric	X		X			

Exhaust hood connection diagrams - see connection diagrams.

Warning:
Gas units: The waste combustion gases must be routed into a chimney or a separate ventilation hood.
The local norms and specifications for air conditioning systems must be observed.

4 Unit approvals

All units have been tested and approved by authorised Test Centres.

Declaration of conformity: CE

Electrical safety: VDE, CE, UL, CUL, KEMA, GOST

Electromagnetic compatibility: VDE/EMV

Gas approval: GASTEC QA, AGA, DVGW, CSA, JIA, PCT

Drinking water protection: DVGW, SVGW, KIWA, WRSA

Hygiene: NSF

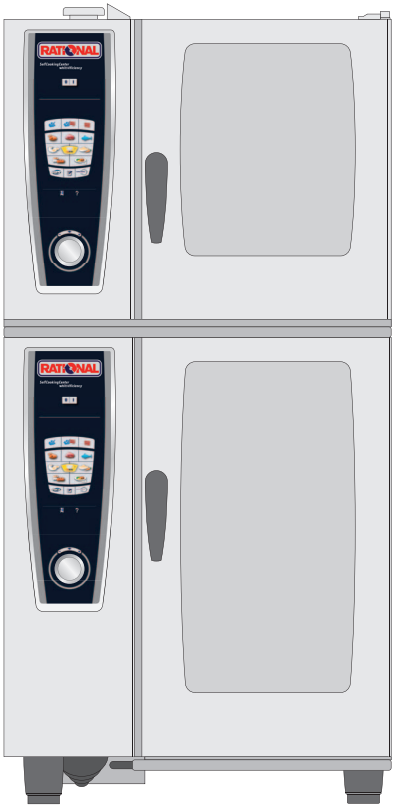
Mechanical safety – accident prevention: VDE, Geprüfte Sicherheit (GS)

Splash- and hoseproofness: IPX 5

Marine version: Germanischer Lloyd

NB: All units are VDE-approved for unsupervised operation (night cooking, overnight cleaning).

5 Combi-Duo

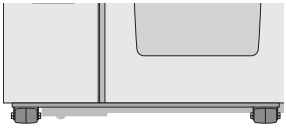


There is a Combi-Duo for all table-top units in *3 installation variants:*

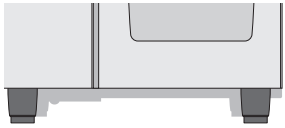
Standard with rollers
In this variant a floor drain is absolutely essential or the unit drain will be lower than, for instance, a wall outlet.
› Distance from floor to centre drainpipe: 44 mm (1 5/8“).
› Drainpipe diameter: DN 50 mm (2“).

150 mm (6“) unit feet
This variant is recommended if there is no floor drain, or if an uneven floor makes a height adjustment necessary.
› Distance from floor to centre drainpipe: 116 mm (4 5/8“).
› Drainpipe diameter: DN 50 mm (2“).

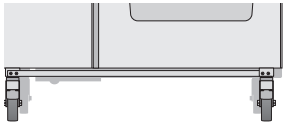
Mobile with casters
2 of 4 casters are steerable and have a parking brake.
› Distance from floor to centre drainpipe: 163 mm (6 3/8“).
› Drainpipe diameter: DN 50 mm (2“).



Standard with rollers



150 mm (6”) unit feet



Mobile with casters

5.1 Combi-Duo-Variants

Combi-Duo 61 on 61/101

bottom unit \ top unit		*Type 61 Electric* Art. no.:	*Top rack level*	*Type 61 Gas* Art. no.:	*Top rack level*
Type 61 Electric	Standard	60.71.925	1.34 m (4' 5")	60.71.925	1,34 m (4' 5")
	Feet 150 mm	60.71.926	1.41 m (4' 7")	60.71.926	1,41 m (4' 7")
	Mobile	60.71.927	1.46 m (4' 10")	60.71.927	1,46 m (4' 10")
Type 101 Electric	Standard	60.71.925	1.60 m (5' 3")	60.71.925	1,60 m (5' 3")
	Feet 150 mm	60.71.926	1.68 m (5' 6")	60.71.926	1,68 m (5' 6")
	Mobile	60.71.927	1.72 m (5' 8")	60.71.927	1.72 m (5' 8")
Type 61 Gas	Standard			60.71.928	1.54 m (5')
	Feet 150 mm			60.71.929	1.60 m (5' 3")
	Mobile			60.71.930	1.64 m (5' 5")
Type 101 Gas	Standard			60.71.928	1.78 m (5' 10")
	Feet 150 mm			60.71.929	1.86 m (6' 1")
	Mobile			60.71.930	1.90 m (6' 3")

Combi-Duo 62 on 62/102

bottom unit \ top unit		*Type 62 Electric* Art. no.:	*Top rack level*	*Type 62 Gas* Art. no.:	*Top rack level*
Type 62 Electric	Standard	60.71.931	1.34 m (4' 5")	60.71.931	1.34 m (4' 5")
	Feet 150 mm	60.71.932	1.41 m (4' 7")	60.71.932	1.41 m (4' 7")
	Mobile	60.71.933	1.46 m (4' 10")	60.71.933	1.46 m (4' 10")
Type 102 Electric	Standard	60.71.931	1.60 m (5' 3")	60.71.931	1.60 m (5' 3")
	Feet 150 mm	60.71.932	1.68 m (5' 6")	60.71.932	1.68 m (5' 6")
	Mobile	60.71.933	1.72 m (5' 8")	60.71.933	1.72 m (5' 8")
Type 62 Gas	Standard			60.71.934	1.54 m (5')
	Feet 150 mm			60.71.935	1.60 m (5' 3")
	Mobile			60.71.936	1.64 m (5' 5")
Type 102 Gas	Standard			60.71.934	1.78 m (5' 10")
	Feet 150 mm			60.71.935	1.86 m (6' 1")
	Mobile			60.71.936	1.90 m (6' 3")

NB:
Please note that the top unit must always be a SelfCooking Center® or CombiMaster built in or after 04/2004.

6. KitchenManagement System

RATIONAL KitchenManagement System is computer software specially developed for the professional kitchen.

The new KitchenManagement System allows you to automatically record all important HACCP data from any number of RATIONAL units over a network. In just a few seconds you will create your own cooking programs and administer them clearly in the library. At the click of the mouse you can send cooking programs or new updates to all connected RATIONAL units. The KitchenManagement System also gives you free access to the vast array of cooking programs in ClubRATIONAL.

Prerequisites:

> SelfCooking Center® with Ethernet option.
> A network socket is needed to connect the SelfCookingCenter® whitefficiency®. This should be located near the SelfCookingCenter® whitefficiency® and provided by the owner.
> The SelfCookingCenter® whitefficiency® is connected to the network by a network/patch cable (KAT5). The network cable should be provided by the owner.
> The SelfCookingCenter® whitefficiency® is linked into the Ethernet network in the same way as a PC.
> The IP address in the SelfCookingCenter® whitefficiency® is freely configurable and permanently filed in the SelfCookingCenter® whitefficiency® (no DHCP).

7.1 Table-top units Type 61 and Type 101

SelfCookingCenter® whitefficiency®

- Left-hinged unit door
- Mobile oven rack package
- Marine version
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to power optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Integrated fat drain
- Ethernet interface
- Unit with standard baking size hinging rack (400 x 600 mm)
- Unit with standard baking size mobile oven rack (400 x 600 mm)
- Unit with hinging rack for 400 x 600 mm meat trays (butchers)
- Unit with hinging rack 85 mm rail distance
- Unit with mobile oven rack 80 mm rail distance
- Unit with chicken grilling hinging rack, 400 x 600 mm
- Unit with chicken grilling mobile oven rack

CombiMaster® Plus

- Left hinged unit door
- Hand shower with automatic retracting system
- Mobile oven rack package
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to power optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Unit with standard baking size hinging rack (400 x 600 mm)
- Unit with standard baking size mobile oven rack (400 x 600 mm)
- Unit with hinging rack for 400 x 600 mm meat trays (butchers)
- Unit with hinging rack 85 mm rail distance
- Unit with mobile oven rack 80 mm rail distance
- Unit with chicken grilling hinging rack, 400 x 600 mm
- Unit with chicken grilling mobile oven rack

7.1 Table-top units Type 62 and Type 102

SelfCookingCenter® whitefficiency®
- Left hinged unit door
- Mobile oven rack package
- Marine version
- Integrated fat drain
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to power optimisation system (Sicotronic))
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Ethernet interface
- Unit with hinging rack 85 mm rail distance
- Unit with mobile oven rack 80 mm rail distance

CombiMaster® Plus
- Left hinged unit door
- Hand shower with automatic retracting system
- Mobile oven rack package
- Marine version
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to energy optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Unit with hinging rack 85 mm rail distance
- Unit with hinging rack 80 mm rail distance

7.3 Floor units Type 201 and Type 202

SelfCookingCenter® whitefficiency®
- Marine version
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to energy optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Ethernet interface
- Unit with mobile oven rack 84 mm rail distance
- Unit with standard baking size mobile oven rack 400 x 600 mm (Type 201 only)
- Mobile with casters (4 casters with locking brakes)

CombiMaster® Plus
- Marine version
- Hand shower with automatic retracting system
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to energy optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- Externally-attached core temperature probe
- Unit with mobile oven rack 84 mm rail distance
- Unit with standard baking size mobile oven rack 400 x 600 mm (Type 201 only)
- Mobile with casters (4 casters with locking brakes)

7.4 Mobile floor unit

The mobile version offers maximum flexibility and mobility, making it ideal for caterers, party service or marquee operations and banquet organisers. The units are easily transported to the place of use on a specially-designed pallet. They can also be moved easily on the rugged stainless steel castors. The units are very quick to connect.
The mobile version is a great benefit, even for conventional kitchens. The excellent mobility makes it easy to clean the kitchen thoroughly, and it is no longer necessary to maintain distances between the units for servicing. This greatly reduces the space required in the kitchen.
The mobile version is available for all SelfCookingCenter® whitefficiency® and CombiMaster® Plus models. Plus and Combi-Duo available as an option.

Mobile version (Model 201/202)
The RATIONAL units can be moved effortlessly on the 4 robust stainless steel castors using the handle on the mobile oven rack. A specially-designed pallet with access ramp means that the units can be quickly loaded and unloaded and transported to the place of use.

Model 61/101/62/102 on mobile stands/base cabinets
Mobile versions of the stands/base cabinets are available in all variants for the different unit types. Special fixings joining the unit to the base cabinet mean that it can be moved safely at any time.

Mobile version for Combi-Duo
Mobile Combi-Duo units are available for all combinations. They can be moved simply and safely on rugged stainless steel castors.

Combi-Duo variants
Model 61 on model 61
Model 61 on model 101
Model 62 on model 62
Model 62 on model 102

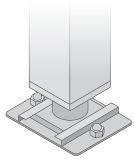
7.5 Marine version

The marine version is suitable both for passenger ships and for harsh marine environments.
The emphasis is placed on the safety of the operators, in particular, and on ensuring that all important functions can be used even on rough seas. The RATIONAL marine version is certified by Germanischer Lloyd, which is recognised all around the world, and conforms to the most stringent USPHS hygiene requirements.

The marine version is available as an option for all SelfCookingCenter® whitefficiency® and CombiMaster® Plus Duo units (electric version).

Protection against tipping (61/101/62/102 models)

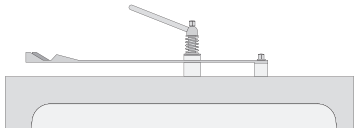
Special floor fixings prevent the stand slipping or tipping over.
The unit is securely fixed to the stand using a plate.



Protection against tipping (model 201/202)

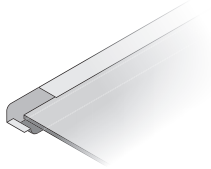
The stainless steel feet can be welded directly to the ship's floor
or
fixed to prevent slipping or tipping using special fixing plates.
A wall fixing with 2 retaining brackets is also provided.

Door immobiliser
The flexible and adjustable door immobiliser fixes the open cooking cabinet door, even during rough sea crossings.

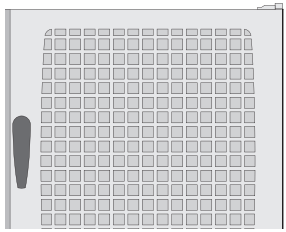


Rack rails

Special rack rails secure the Gastronorm accessories and prevent them slipping out.



Protective door grille (available as an option on request)
The outer glass of the cooking cabinet door is protected against damage by a stainless steel grille. This makes it possible to look inside the cooking cabinet even when the door is closed.



7.6 Security/prison version

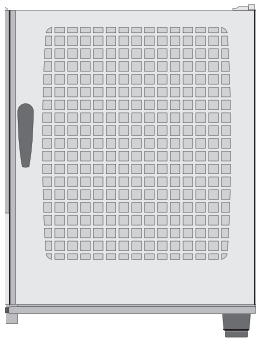
The RATIONAL safety versions can be individually customised to suit your specific safety needs. They are used in prisons, for example, to prevent deliberate damage or to prevent them being misused to perpetrate violence against other people. Features range from the lockable control panel and cooking cabinet doors, a protective door grille and secured retractable handles on the mobile oven rack handles.

The safety versions are available as an option for all SelfCookingCenter® whitefficiency® and CombiMaster® Plus units.

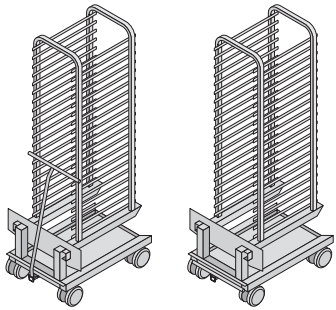
Lockable control panel
The control panel is protected against deliberate damage by a swivelling and lockable cover.
It is rugged and fitted with practically unbreakable plastic glass (Lexan®). This means that the control panel is visible, even if the cover is closed.

Lockable cooking cabinet doors (201/202 model only)
The cooking cabinet door is simple to lock. This means that the units can only be loaded and unloaded by authorised persons. It also prevents misuse of the core temperature probe. The ability to open the cooking cabinet door from the inside is also available as an option.

Protective door grille
The outer glass of the cooking cabinet door is protected against damage by a stainless steel grille. This makes it possible to look inside the cooking cabinet even when the door is closed.



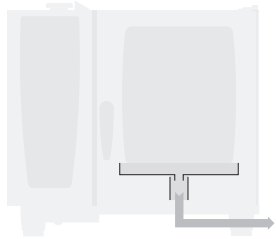
Mobile oven rack with retractable handle (floor units only)
The handle for the mobile oven rack is fixed and can be lowered beneath the rack after it is pushed into the cooking cabinet.
It is thus impossible to misuse the handle.



7.7 Integrated fat drain

The integrated fat drain is ideal for preparing particularly fatty foods, such as poultry or knuckle of pork, as it prevents the build-up of grease deposits in the drain system.
Any drops of grease are caught in the cooking cabinet and diverted to special grease drip containers. An integral shut-off valve allows the full drip container to be replaced safely, even while cooking is in progress. The collected grease can be disposed of in a safe and environmentally-friendly manner. Time-consuming and expensive maintenance of grease traps and the costs of disposing of grease and oil are reduced to a minimum. The integrated fat drain is available as an option for all SelfCooking Center® whitefficiency model 61/101/62/102 units. To be operated safely, the SelfCookingCenter® whitefficiency® must be installed on a stand UG I, UG II or base cabinet US IV.

Grease drip container
The grease drip container is placed in the special bottom rack provided for this purpose in the cooking cabinet.
This collects any drips of grease and diverts them out of the cooking cabinet.



Shut-off valve with grease drip container
The shut-off valve allows the grease drip container to be replaced safely and easily during operation.

Integrated fat drain for Combi-Duo
The fat is diverted into a drip container to the right of the SelfCooking Center® whitefficiency®. A special assembly kit is available for this purpose.

Integrated fat drain assembly kit

1/1 GN:	N°: 60.72.667
2/1 GN:	N°: 60.72.668

7.8 Sous-Vide core temperature probe

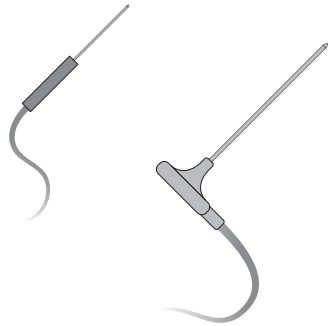
The Sous-Vide option from RATIONAL is designed specifically to meet the requirements of vacuum cooking. The gentle rise in temperature, being held at that temperature accurately with the maximum possible steam saturation in the cooking cabinet are the decisive factors in ensuring excellent food quality. The special, very thin Sous-Vide probe makes sure that the product reaches the correct core temperature accurately without affecting the vacuum in the bag.

The Sous-Vide option is available for all SelfCookingCenter® whitefficiency® and CombiMaster® Plus models.

Core temperature probe (Sous-Vide and standard)
The Sous-Vide option is equipped with 2 core temperature probes; the standard and the special Sous-Vide core temperature probe that can be attached to the outside of the unit, if required.

A. Sous-Vide
The extremely thin and flexible Sous-Vide core temperature probe can be inserted easily without affecting the vacuum.

B. Standard
The standard core temperature probe has 6 measuring points and is used for all other cooking methods.



Connecting socket
The connecting socket allows the core temperature probe to be inserted and replaced easily. If there is no probe inserted, the socket can be protected against water jets with an unlosable sealing cap.

8 Conversion table Celsius – Fahrenheit

	Fahrenheit										
Celsius	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
0	32	34	36	37	39	41	43	45	46	48	50
10	50	52	54	55	57	59	61	63	64	66	68
20	68	70	72	73	75	77	79	81	82	84	86
30	86	88	90	91	93	95	97	99	100	102	104
40	104	106	108	109	111	113	115	117	118	120	122
50	122	124	126	127	129	131	133	135	136	138	140
60	140	142	144	145	147	149	151	153	154	156	158
70	158	160	162	163	165	167	169	171	172	174	176
80	176	178	180	181	183	185	187	189	190	192	194
90	194	196	198	199	201	203	205	207	208	210	212
100	212	214	216	217	219	221	223	225	226	228	230
110	230	232	234	235	237	239	241	243	244	246	248
120	248	250	252	253	255	257	259	261	262	264	266
130	266	268	270	271	273	275	277	279	280	282	284
140	284	286	288	289	291	293	295	297	298	300	302
150	302	304	306	307	309	311	313	315	316	318	320
160	320	322	324	325	327	329	331	333	334	336	338
170	338	340	342	343	345	347	349	351	352	354	356
180	356	358	360	361	363	365	367	369	370	372	374
190	374	376	378	379	381	383	385	387	388	390	392
200	392	394	396	397	399	401	403	405	406	408	410
210	410	412	414	415	417	419	421	423	424	426	428
220	428	430	432	433	435	437	439	441	442	444	446
230	446	448	450	451	453	455	457	459	460	462	464
240	464	466	468	469	471	473	475	477	478	480	482
250	482	484	486	487	489	491	493	495	496	498	500
260	500	502	504	505	507	509	511	513	514	516	518
270	518	520	522	523	525	527	529	531	532	534	536
280	536	538	540	541	543	545	547	549	550	552	554
290	554	556	558	559	561	563	565	567	568	570	572
300	572	574	576	577	579	581	583	585	586	588	590

8 Conversion table Fahrenheit - Celsius

	Celsius										
Fahrenheit	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
10	-12	-12	-11	-11	-10	-9	-9	-8	-8	-7	-7
20	-7	-6	-6	-5	-4	-4	-3	-3	-2	-2	-1
30	-1	-1	0	1	1	2	2	3	3	4	4
40	4	5	6	6	7	7	8	8	9	9	10
50	10	11	11	12	12	13	13	14	14	15	16
60	16	16	17	17	18	18	19	19	20	21	21
70	21	22	22	23	23	24	24	25	26	26	27
80	27	27	28	28	29	29	30	31	31	32	32
90	32	33	33	34	34	35	36	36	37	37	38
100	38	38	39	39	40	41	41	42	42	43	43
110	43	44	44	45	46	46	47	47	48	48	49
120	49	49	50	51	51	52	52	53	53	54	54
130	54	55	56	56	57	57	58	58	59	59	60
140	60	61	61	62	62	63	63	64	64	65	66
150	66	66	67	67	68	68	69	69	70	71	71
160	71	72	72	73	73	74	74	75	76	76	77
170	77	77	78	78	79	79	80	81	81	82	82
180	82	83	83	84	84	85	86	86	87	87	88
190	88	88	89	89	90	91	91	92	92	93	93
200	93	94	94	95	96	96	97	97	98	98	99
210	99	99	100	101	101	102	102	103	103	104	104
220	104	105	106	106	107	107	108	108	109	109	110
230	110	111	111	112	112	113	113	114	114	115	116
240	116	116	117	117	118	118	119	119	120	121	121
250	121	122	122	123	123	124	124	125	126	126	127
260	127	127	128	128	129	129	130	131	131	132	132
270	132	133	133	134	134	135	136	136	137	137	138
280	138	138	139	139	140	141	141	142	142	143	143
290	143	144	144	145	146	146	147	147	148	148	149
300	149	149	150	151	151	152	152	153	153	154	154

8 Conversion table Fahrenheit - Celsius

	Celsius										
Fahrenheit	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
310	154	155	156	156	157	157	158	158	159	159	160
320	160	161	161	162	162	163	163	164	164	165	166
330	166	166	167	167	168	168	169	169	170	171	171
340	171	172	172	173	173	174	174	175	176	176	177
350	177	177	178	178	179	179	180	181	181	182	182
360	182	183	183	184	184	185	186	186	187	187	188
370	188	188	189	189	190	191	191	192	192	193	193
380	193	194	194	195	196	196	197	197	198	198	199
390	199	199	200	201	201	202	202	203	203	204	204
400	204	205	206	206	207	207	208	208	209	209	210
410	210	211	211	212	212	213	213	214	214	215	216
420	216	216	217	217	218	218	219	219	220	221	221
430	221	222	222	223	223	224	224	225	226	226	227
440	227	227	228	228	229	229	230	231	231	232	232
450	232	233	233	234	234	235	236	236	237	237	238
460	238	238	239	239	240	241	241	242	242	243	243
470	243	244	244	245	246	246	247	247	248	248	249
480	249	249	250	251	251	252	252	253	253	254	254
490	254	255	256	256	257	257	258	258	259	259	260
500	260	261	261	262	262	263	263	264	264	265	266
510	266	266	267	267	268	268	269	269	270	271	271
520	271	272	272	273	273	274	274	275	276	276	277
530	277	277	278	278	279	279	280	281	281	282	282
540	282	283	283	284	284	285	286	286	287	287	288
550	288	288	289	289	290	291	291	292	292	293	293
560	293	294	294	295	296	296	297	297	298	298	299
570	299	299	300	301	301	302	302	303	303	304	304

8 Conversion table

	°dH	*°f*	*°e*	*ppm*	*mmol/l*	*gr/gal(US)*	*mval/kg*
1 °dH	1	1.79	1.25	17.9	0.1783	1.044	0.357
1 °f	0.56	1	0.70	10.0	0.1	0.584	0.2
1 °e	0.8	1.43	1	14.32	0.14	0.84	0.286
1 ppm	0.056	0.1	0.07	1	0.01	0.0584	0.02
1 mmol/l	5.6	0.001	0.0007	100	1	0.00058	2
1 gr/gal (US)	0.96	1.71	1.20	17.1	0.171	1	0.342
1 mval/kg	2.8	5.0	3.5	50	0.5	2.922	1

1 °dH:	10.00 mg CaO/kg	*1 ppm :*	0.56 mg CaO/kg	*1 gr/gal :*	9.60 mg CaO/kg
(Germany)	17.86 mg CaCO3/kg	(USA)	1.0 mg CaCO3/kg	(USA)	64.8 mg CaCO3/gal
	7.14 mg Ca2+/kg		0.40 mg Ca2+/kg		17.11 mg CaCO3/kg
1 °f :	5.60 mg CaO/kg	*1 mmol/l :*	56.00 mg CaO/kg		6.85 mg Ca2+/kg
(France)	10.0 mg CaCO3/kg	(chem. conz.)	100.0 mg CaCO3/kg		
	4.00 mg Ca2+/kg		39.98 mg Ca2+/kg		
1 °e :	8.01 mg CaO/kg	*1 mval/kg :*	28.00 mg CaO/kg		
(GB)	14.3 mg CaCO3/kg	(Milliäquivalent)	50.0 mg CaCO3/kg		
	5.72 mg Ca2+/kg		19.99 mg Ca2+/kg		

8 Conversion table

kPa	*mbar*	*psi*	*inch/wc*	*kPa*	*mbar*	*psi*	*inch/wc*
0.1	1	0.0147	0.4014	4	40	0.588	16.0560
0.2	2	0.0294	0.8028	4.5	45	0.6615	18.0630
0.3	3	0.0441	1.2042	5	50	0.735	20.0700
0.4	4	0.0588	1.6056	5.5	55	0.8085	22.0770
0.5	5	0.0735	2.0070	6	60	0.882	24.0840
0.6	6	0.0882	2.4084	6.5	65	0.9555	26.0910
0.7	7	0.1029	2.8098	7	70	1.029	28.0980
0.8	8	0.1176	3.2112	7.5	75	1.1025	30.1050
0.9	9	0.1323	3.6126	8	80	1.176	32.1120
1	10	0.147	4.0140	8.5	85	1.2495	34.1190
1.2	12	0.1764	4.8168	9	90	1.323	36.1260
1.4	14	0.2058	5.6196	9.5	95	1.3965	38.1330
1.6	16	0.2352	6.4224	10	100	1.47	40.1400
1.8	18	0.2646	7.2252	20	200	2.94	80.2800
2	20	0.294	8.0280	30	300	4.41	120.4200
2.5	25	0.3675	10.0350	40	400	5.88	160.5600
3	30	0.441	12.0420	50	500	7.35	200.7000
3.5	35	0.5145	14.0490	100	1000	14.7	401.4000

1 kW = 3,413 Btu
100.00 Btu = 1 Therm
1 Therm = 29.3 kW
1 kW = 1 kJ/s
1 kW = 3,600 kJ/h
1 Btu = 1.055 kJ
1 kW/h = 0.08 kg Liquid gas
1 kW/h = 0.096 m^3 Natural gas

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