SelfCookingCenter®/CombiMaster® Plus

Designers Manual

Ladies and Gentlemen

The new SelfCookingCenter® shines in terms of cooking quality and performance. The patented HiDensityControl® itself ensures maximum **uniformity 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.

Designer Hotline

	UK	**Germany**
Telefon	+44 1582 480388	+49 8191 327 134
Fax	+44 1582 485001	+49 8191 327 407
E-Mail	rational@rational-uk.co.uk	g.kramer@rational-online.de
Internet	www.rational-uk.com	www.rational-ag.com

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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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	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1GN	Typ 202 20x2/1 GN
Unit dimensions SelfCookingCenter®							
Width (mm)	655	847	1.069	847	1.069	879	1.084
Depth (mm)	555	776	976	776	976	791	996
Height (mm)	567	782	782	1.042	1.042	1.782	1.782
Unit dimensions CombiMaster® Plus							
Width (mm)	–	847	1.069	847	1.069	879	1.084
Depth (mm)	–	776	976	776	976	791	996
Height (mm)	–	782	782	1.042	1.042	1.782	1.782
Weight: SelfCookingCenter®							
Weight gross (kg)	90	128	180	154	218	312	404
Weight net (kg)	72	110	151	135	185	268	351
Weight: CombiMaster® Plus							
Weight gross (kg)	–	120,5	161,0	144,5	186,0	281,5	364,5
Weight net (kg)	–	105,5	141,5	125,5	166,0	259,0	338,0
Electrical values							
Connected load (kW)	5,7	11,0	22,3	18,6	36,7	37,0	65,5
Power hot air (kW)	5,4	10,3	21,8	18,0	36,0	36,0	64,2
Power Steam gen. (kW)	5,4	9,0	18,0	18,0	36,0	36,0	54,0
Fuses (400 V) A	3 x 10	3 x 16	3 x 32	3 x 32	3 x 63	3 x 63	3 x 100
*Connection cable (mm^2)	5 x 1,5	5 x 2,5	5 x 4	5 x 4	5 x 10	5 x 10	5 x 25
Water connection	3/4"	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"	1/2"
Flow pressure (bar)	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0
Wastewater connection	DN 40	DN 50	DN 50	DN 50	DN 50	DN 50	DN 50
Thermal load SelfCookingCenter®							
Latent (kJ/h)	1.020	2.050	3.450	3.450	6.350	6.850	10.900
(W)	283	569	958	958	1.764	1.902	3.020
Sensitive (kJ/h)	1.350	2.450	4.450	4.450	7.750	8.850	14.000
(W)	375	681	1.236	1.236	2.152	2.375	3.888
Thermal load CombiMaster® Plus							
Latent (kJ/h)	–	2.143	4.167	3.529	6.667	7.200	12.500
(W)		595	1.158	980	1.852	2.000	3.472
Sensitive (kJ/h)	–	2.727	5.000	4.615	9.474	9.000	14.286
(W)		758	1.389	1.282	2.632	2.500	3.968

*Cable length max. 2.5 m.

1.2 Technical data overview – gas units

	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Unit dimensions SelfCookingCenter®						
Width (mm)	847	1.069	847	1.069	879	1.084
Depth (mm)	776	976	776	976	791	996
Height (mm)	782	782	1.042	1.042	1.782	1.782
Unit dimensions CombiMaster® Plus						
Width (mm)	847	1.069	847	1.069	879	1.084
Depth (mm)	771	971	771	971	791	996
Height (mm)	782	782	1.042	1.042	1.782	1.782
Weight: SelfCookingCenter®						
Weight gross (kg)	142	197	172	237	343	434
Weight net (kg)	123	168	152	204	299	381
Weight: CombiMaster® Plus						
Weight gross (kg)	136,0	183,0	162,0	217,5	310,5	391,0
Weight net (kg)	121,0	163,5	143,5	197,5	288,0	364,5
Electrical values						
Connected load (kW)	0,4	0,77	0,5	0,8	0,95	1,6
Fuses (230 V) A	1 x 16	1 x 16	1 x 16	1 x 16	1 x 16	1 x 16
Connection cable (mm^2)	3 x 2,5	3 x 2,5	3 x 2,5	3 x 2,5	3 x 2,5	3 x 2,5
Power Natural gas H or L						
Rated load (kW)	13,0	28,0	22,0	45,0	44,0	90,0
Hot air (kW)	13,0	28,0	22,0	45,0	44,0	90,0
Steam generator (kW)	12,0	21,0	20,0	40,0	38,0	51,0
Power Liquid gas 3 B/P						
Rated load (kW)	14,0	31,0	24,0	50,0	48,0	100,0
Hot air (kW)	14,0	31,0	24,0	50,0	48,0	100,0
Steam generator (kW)	13,0	23,0	22,0	44,0	40,0	56,0
Power Liquid gas 3 P						
Rated load (kW)	13,0	28,0	22,0	45,0	44,0	90,0
Hot air (kW)	13,0	28,0	22,0	45,0	44,0	90,0
Steam generator (kW)	12,0	21,0	20,0	40,0	38,0	51,0
Gas connection	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Exhaust gas control	A3, B13, B13BS	A3, B13, B13BS	A3, B13, B13BS	A3, B13, B13BS	A3, B13, B13BS	A3, B13, B13BS

1.2 Technical data overview – gas units

		Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
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 (bar)		1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0	1,5–6,0
Wastewater connection		DN 50	DN 50	DN 50	DN 50	DN 50	DN 50
Thermal load SelfCookingCenter®							
Latent	(kJ/h)	2.050	3.450	3.450	6.350	6.850	10.900
	(W)	569	958	958	1.764	1.902	3.020
Sensitive	(kJ/h)	2.450	4.450	4.450	7.750	8.850	14.000
	(W)	681	1.236	1.236	2.152	2.375	3.888
Thermal load CombiMaster® Plus							
Latent	(kJ/h)	2.143	4.167	3.529	6.667	7.200	11.583
	(W)	595	1.158	980	1.852	2.000	3.218
Sensitive	(kJ/h)	2.571	5.000	4.286	9.231	8.780	13.636
	(W)	714	1.389	1.191	2.564	2.439	3.788

1.3 Connected load, noise values

Electric units	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Total (kW)	5,7	11,0	22,3	18,6	36,7	37,0	65,5
Hot air (kW)	5,4	10,3	21,8	18,0	36,0	36,0	64,2
Steam (kW)	5,4	9,0	18,0	18,0	36,0	36,0	54,0

Gas units	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Natural gas H							
Total (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Hot air (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Steam (kW)	–	12,0	21,0	20,0	40,0	38,0	51,0
Natural gas L							
Total (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Hot air (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Steam (kW)	–	12,0	21,0	20,0	40,0	38,0	51,0
Liquid gas 3 B/P							
Total (kW)	–	14,0	31,0	24,0	50,0	48,0	100,0
Hot air (kW)	–	14,0	31,0	24,0	50,0	48,0	100,0
Steam (kW)	–	13,0	23,0	22,0	44,0	40,0	56,0
Liquid gas 3 P							
Total (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Hot air (kW)	–	13,0	28,0	22,0	45,0	44,0	90,0
Steam (kW)	–	12,0	21,0	20,0	40,0	38,0	51,0

Noise values for electric units

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
65 dBA	65 dBA	65 dBA	65 dBA	65 dBA	65 dBA	65 dBA

Noise values for gas units

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
–	70 dBA	70 dBA	70 dBA	70 dBA	70 dBA	70 dBA

1.4 Consumption

Average water consumption without CleanJet® (automatic cleaning without consumption)

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
3,8 l/h	8,1 l/h	15,2 l/h	14,4 l/h	25,7 l/h	27,9 l/h	39,8 l/h

Average water consumption of steam generator

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
2,0 l/h	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

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
2,4 kWh	4,2 kWh	6,0 kWh	5,8 kWh	8,8 kWh	8,8 kWh	15,6 kWh

Average energy consumption gas units

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
–	6,3 kWh	10,5 kWh	9,5 kWh	14,7 kWh	14,7 kWh	21,9 kWh

Average energy consumption gas units (Liquid gas)

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
–	0,50 kg/h	0,83 kg/h	0,8 kg/h	1,17 kg/h	1,17 kg/h	1,75 kg/h

Average energy consumption gas units (Natural gas)

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
–	0,6 m^3/h	1,0 m^3/h	0,96 m^3/h	1,41 m^3/h	1,41 m^3/h	2,11 m^3/h

Maximum load sizes

XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
20 kg	30 kg	60 kg	45 kg	90 kg	90 kg	180 kg

1.5 Dimensions and weights

Unit dimensions SelfCookingCenter® electric/gas

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Width (mm)	655	847	1.069	847	1.069	879	1.084
Depth (mm)	555	776	976	776	976	791	996
Height (mm)	567	782	782	1.042	1.042	1.782	1.782

Unit dimensions CombiMaster® Plus electric/gas

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Width (mm)	-	847	1.069	847	1.069	879	1.084
Depth (mm)	–	771	971	771	971	791	996
Height (mm)	–	782	782	1.042	1.042	1.782	1.782

Weights SelfCookingCenter® electric

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Weight gross (kg)	90	128	180	154	218	312	404
Weight net (kg)	72	110	151	135	185	268	351

Weights SelfCookingCenter® gas

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Weight gross (kg)	–	142	197	172	237	343	434
Weight net (kg)	–	123	168	152	204	299	381

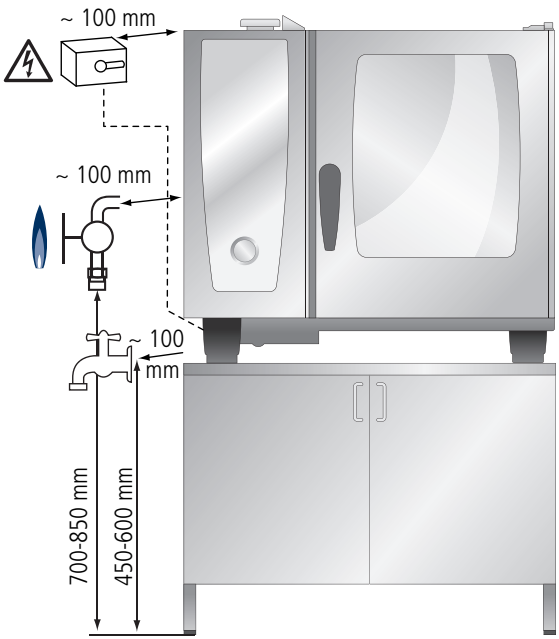
Weights CombiMaster® Plus electric

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Weight gross (kg)	–	120,5	161,0	144,5	186,0	281,5	364,5
Weight net (kg)	–	105,5	141,5	125,5	166,0	259,0	338,0

Weights CombiMaster® Plus gas

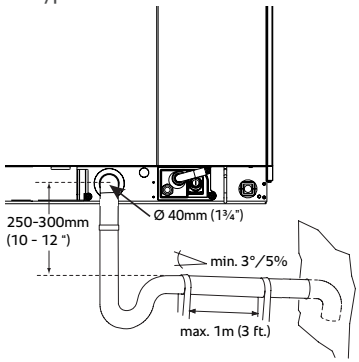
	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Weight gross (kg)	–	136,0	183,0	162,0	217,5	310,5	391,0
Weight net (kg)	–	121,0	163,5	143,5	197,5	288,0	364,5

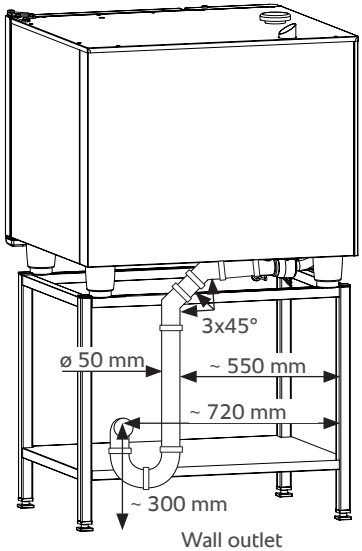
2.1 Connections provided by customer type 61, 101, 62, 102



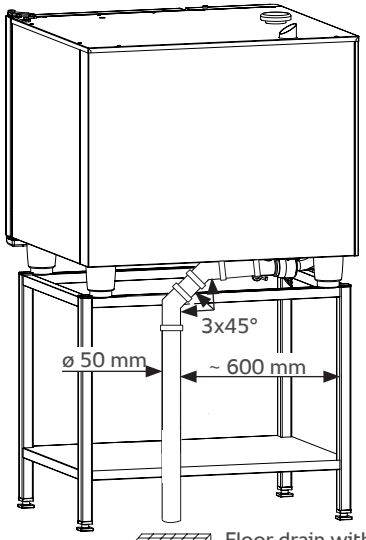
Connection kit, consisting of
water hose and drain pipes
Article no.: 60.70.464

XS type 6 ⅔



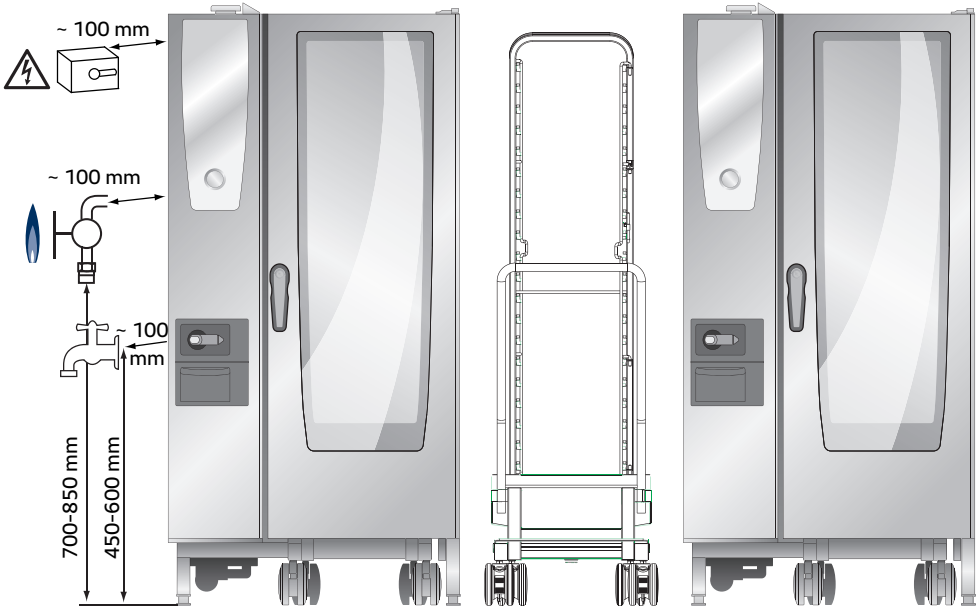


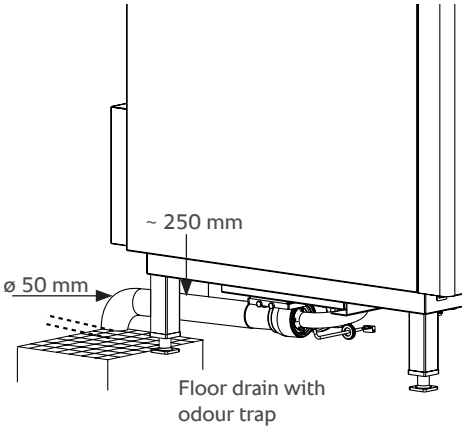
Wall outlet



Floor drain with
odour trap

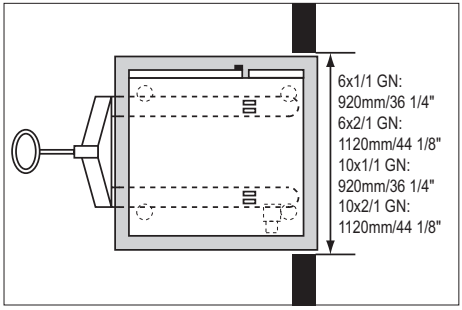
2.1 Connections provided by customer type 201 202

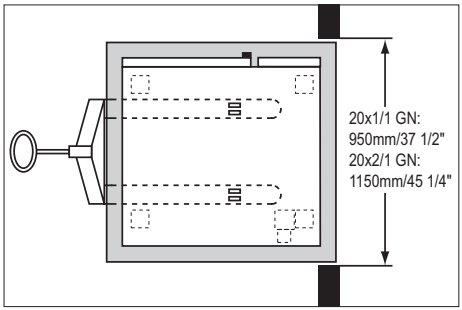


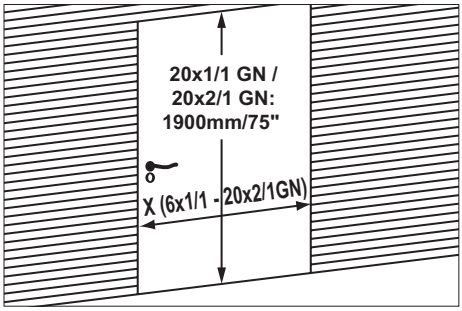


Connection kit, consisting of water hose and drain pipes Article no.: 60.70.464

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.

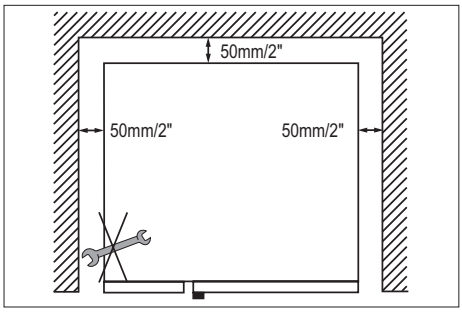
Type 6 x2/3	900 mm	(35 1/2")
Type 6 x1/1	920 mm	(36 1/4")
Type 6 x2/1	1.120 mm	(44 1/8")
Type 10 x1/1	920 mm	(36 1/4")
Type 10 x2/1	1.120 mm	(44 1/8")
Type 20 x1/1	950 mm	(37 1/2")
Type 20 x2/1	1.150 mm	(45 1/4")

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

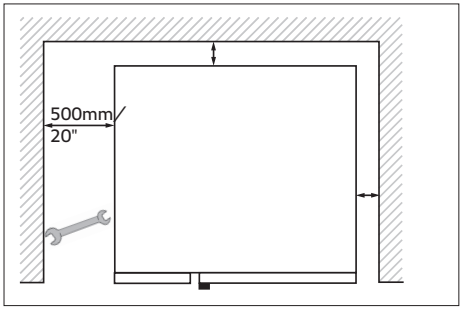
Minimum door width for transportation without pallet:

Type 6 x2/3	625 mm	(24 5/8")
Type 6 x1/1	840 mm	(33 1/8")
Type 6 x2/1	1.040 mm	(41 1/8")
Type 10 x1/1	840 mm	(33 1/8")
Type 10 x2/1	1.040 mm	(41 1/8")
Type 20 x1/1	920 mm	(36 1/4")
Type 20 x2/1	1.140 mm	(45 1/8")

2.3 Unit installation

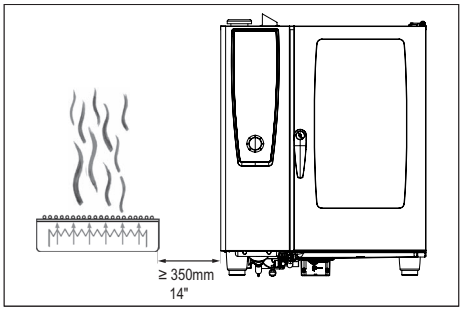


If there are no external heat sources acting on the unit, there should be a minimum gap of 50 mm to the left, the right and at the back.
On model 6x2/3 GN, the minimum distance can be reduced to 10 mm.



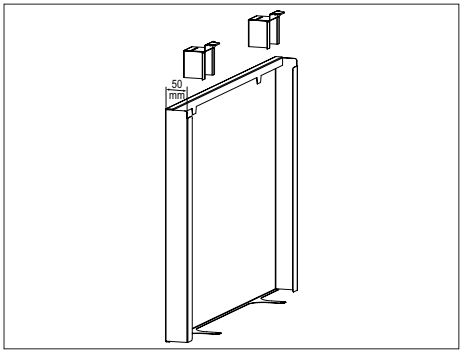
To facilitate servicing we recommend leaving a 500 mm gap on the left hand side of the unit.

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).

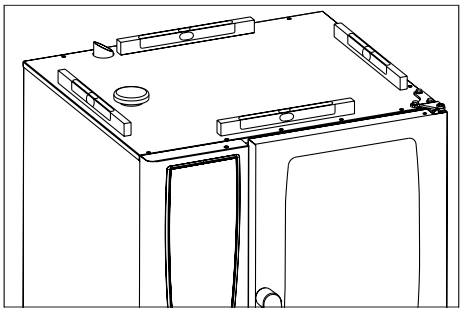


Heat shield accessories:

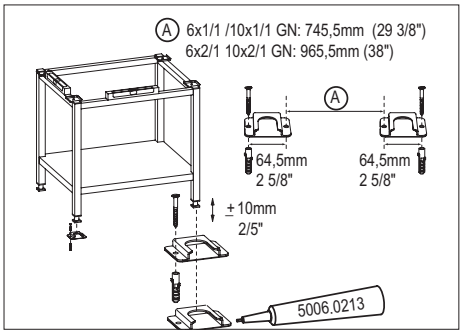
Type 61 left	N°: 60.70.390
Type 61 right	N°: 60.70.736
Type 62 left	N°: 60.70.392
Type 101 left	N°: 60.70.391
Type 101 right	N°: 60.70.743
Type 102 left	N°: 60.70.393
Type 201 left	N°: 60.70.394
Type 202 left	N°: 60.70.395

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

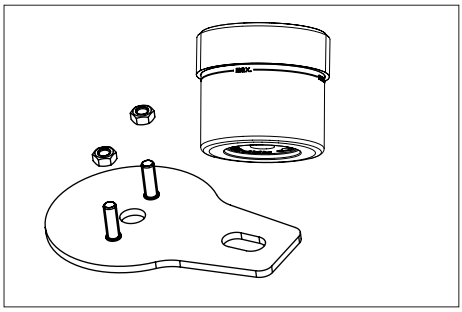
2.3 Unit installation



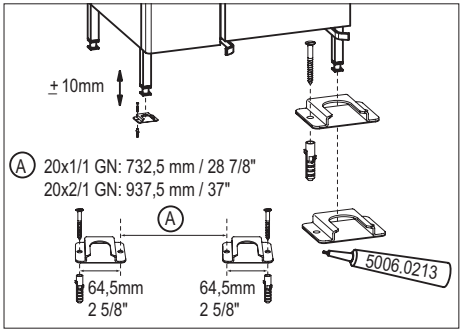
For horizontal mounting, the appliance models 6x1/1, 6x2/1, 10x1/1, 10x2/1, 20x1/1 and 20x2/1 GN are supplied with height-adjustable feet (0–20 mm).
The compact appliance model 6x2/3 is installed on a horizontal worktop. If the appliance



Installation of tabletop appliance 6 x2/3 GN
These appliances do not have height-adjustable feet; instead, they are set up directly on the installation surface.
The installation surface must be level, clean and free of grease. Unevenness across the width of the appliance must be no greater than 1 mm. A sealant band is affixed to the underside of the appliance to seal the appliance. When moving the appliance, take care not to damage this seal.
To save on space, the appliance can also be installed with the wall mounting article no. 60.30.968.

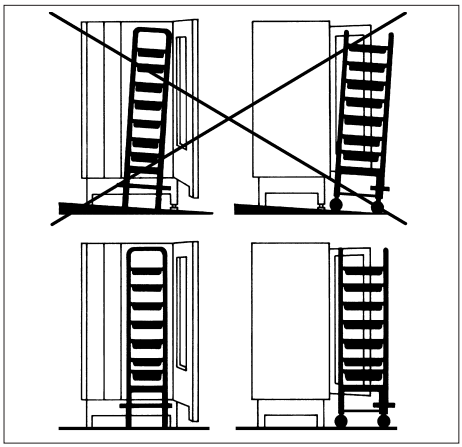


Installing table-top units
6 x1/1, 6 x2/1, 10 x1/1, 10 x2/1 GN
If the unit is placed on an original stand or base cabinet, the stand or base cabinet should be fixed to the kitchen floor with fixing kit Art. no. 8700.0317 (optional). This is mandatory for gas units.
If the unit is placed on a work table or worktop it should be secured with additional retaining plates Art. no. 60.70.463 (optional). This is mandatory for gas units.

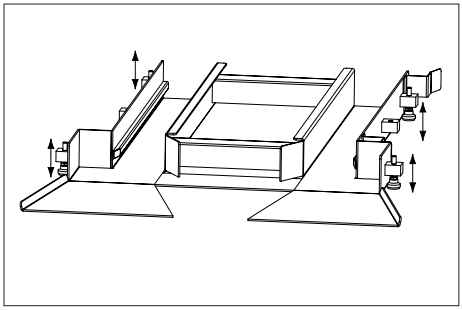


Installing floor units 20 x1/1, 20 x2/1 GN
A floor unit fixing kit is included in the scope of delivery.

2.3 Unit installation

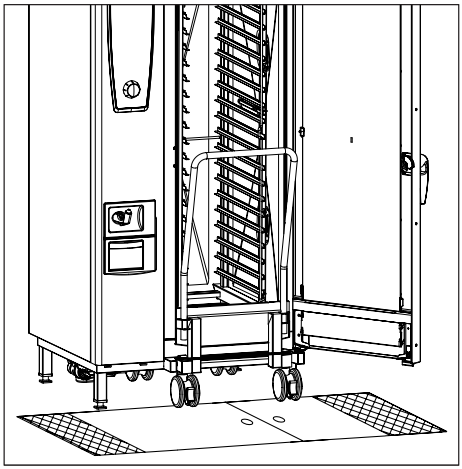


Please make sure that the mobile oven rack is standing horizontally in the cooking cabinet.



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 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.
> Units must be connected to an earth leakage circuit breaker (30 mA).
> 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 x2/3, 6 x1/1, 6 x2/1, 10 x1/1 and 10 x2/1 GN are supplied with a 2.5 m connecting cable (without plug).
> Floor units 20 x1/1, 20 x2/1 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 x1/1, 6 x2/1, 10 x1/1, 10 x2/1, 20 x1/1, 20 x2/1 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 x1/1 or 20 x2/1 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						
Type	**6x2/3**	**6x1/1**	**6x2/1**	**10x1/1**	**10x2/1**	**20x1/1**	**20x2/1**
3 AC 200V	5,3	10,1	20,7	17,2	34	34,3	62,3
3 AC 230V	5,7	11,2	22,3	18,6	36,7	37	67,3
3 NAC 400V	5,7	11	22,3	18,6	36,7	37	65,5
3 AC 400V		11	22,3	18,6	36,7	37	65,5
3 NAC 415V	6,2	11,2	24,2	20,2	39,9	39,9	70,7
3 AC 440V		11,2	22,3	18,6	36,7	37	67,3
3 AC 480V		11,2	22,3	18,6	36,7	37	67,3
1 NAC 230V	5,3	11,2					
1 NAC 240V	5,7	12					
2 AC 230V	5,3	11,2					
2 AC 240V	5,7	11,2					

	Electricity consumption A						
Type	**6x2/3**	**6x1/1**	**6x2/1**	**10x1/1**	**10x2/1**	**20x1/1**	**20x2/1**
3 AC 200V	15,5	29,8	59,1	49,5	97,6	99	182
3 AC 230V	14,5	27,9	55,5	46,5	91,6	92,9	168
3 NAC 400V	8,5	16	32,2	26,7	52,7	53,4	95,5
3 AC 400V		16	32,2	26,7	52,7	53,4	95,5
3 NAC 415V	8,7	16,7	33,3	28	55,1	55,1	99,4
3 AC 440V		14,6	29	24,3	47,9	48,5	88,3
3 AC 480V		13,4	26,7	22,3	44	44,7	96,7
1 NAC 230V	22,9	48,3					
1 NAC 240V	24	50					
2 AC 230V	22,9	48,3					
2 AC 240V	24	47					

	Fuse protection = A						
Type	**6x2/3**	**6x1/1**	**6x2/1**	**10x1/1**	**10x2/1**	**20x1/1**	**20x2/1**
3 AC 200V	16	35	63	63	100	100	200
3 AC 230V	16	32	63	63	100	100	200
3 NAC 400V	10	16	32	32	63	63	100
3 AC 400V		16	32	32	63	63	100
3 NAC 415V	10	16	32	32	63	63	100
3 AC 440V		16	32	32	63	63	100
3 AC 480V		15	32	25	50	50	110
1 NAC 230V	25	50					
1 NAC 240V	25	50					
2 AC 230V	25	50					
2 AC 240V	25	50					

2.4 Electrical connection

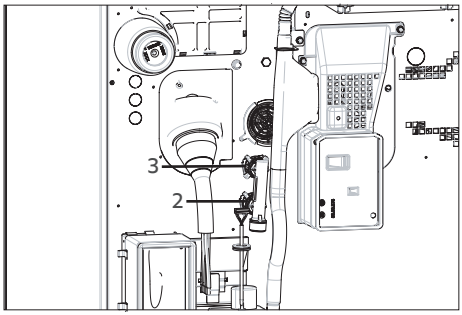
Gas units:

	Power kW					
Typ	**6x1/1**	**6x2/1**	**10x1/1**	**10x2/1**	**20x1/1**	**20x2/1**
1NAC 100V	0,4	-	0,5	-	0,95	-
1NAC 110V	0,4	-	0,5	-	0,95	-
1NAC 120V	0,4	-	0,5	-	0,95	-
1NAC 127V	0,4	-	0,5	-	0,95	-
1NAC 220V	0,4	0,77	0,5	0,8	0,95	1,6
1NAC 230V	0,4	0,77	0,5	0,8	0,95	1,6
1NAC 240V	0,4	0,77	0,5	0,8	0,95	1,6
2 AC 200V	0,4	0,77	0,5	0,8	0,95	1,6

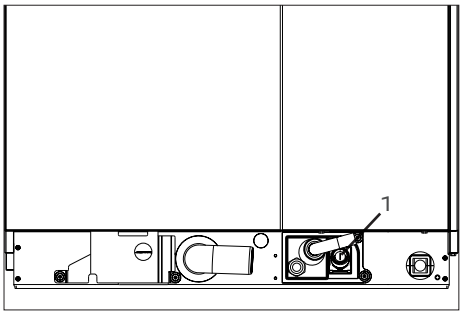
	Electricity consumption A					
Typ	**6x1/1**	**6x2/1**	**10x1/1**	**10x2/1**	**20x1/1**	**20x2/1**
1NAC 100V	4	-	5	-	9,5	-
1NAC 110V	3,7	-	4,5	-	8,7	-
1NAC 120V	3,4	-	4,2	-	7,9	-
1NAC 127V	3,2	-	4	-	7,5	-
1NAC 220V	1,8	3,5	2,3	3,7	4,3	7,3
1NAC 230V	1,74	3,35	2,17	3,48	4,13	6,96
1NAC 240V	1,66	3,21	2,1	3,33	3,96	6,66
2 AC 200V	2	3,85	2,5	4	4,75	8

2.5 Water connection

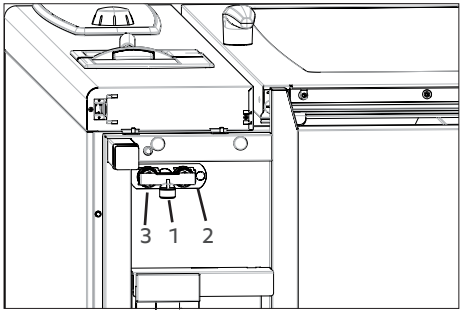
Water inlet for type 61, 62, 101,102



Water inlet for type XS type 6x ⅔



Water inlet for type 201,202



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 (not with XS model 6x ⅔).

Water connection XS type 6 ⅔, type 61, 62, 101, 102, 201 and 202:

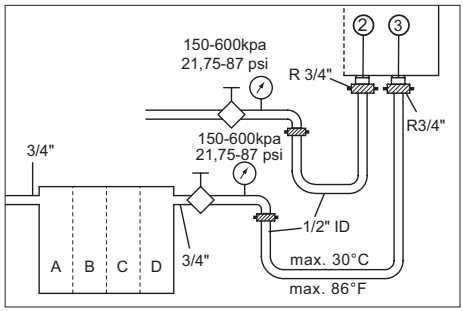
1 = Common water supply 3/4”
cold water 30°C/86°F
In case of split water connection
2 = Cold water supply 3/4”
(for quenching and hand shower 30°C/86°F).
3 = Treated water connection 3/4”
(steam generator, moistening, cleaning, max. 30°C/86°F).

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. Install any necessary safety precautions on the water tap, such as backflow preventers.

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).

2.5 Water connection

> 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® 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:



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 80 mg/l (80 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.

2.5 Water connection

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.

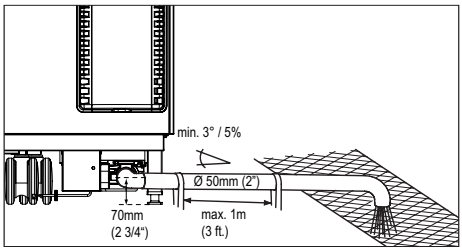
Maximum flow rates

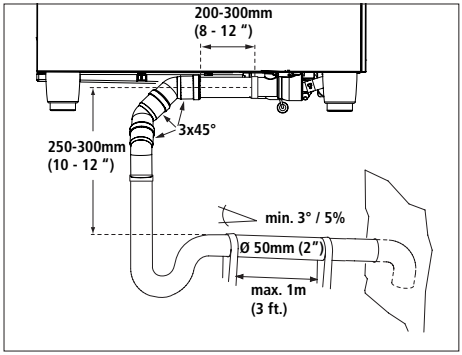
XS type 6 ⅔	15,0 l/min	Type 61	20.0 l/min
Type 62	25.0 l/min	Type 101	20.0 l/min
Type 102	25.0 l/min	Type 201	25.0 l/min
Type 202	25.0 l/min		

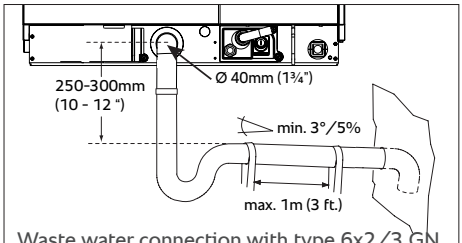
Treated water with a water hardness less than 6 ° e may not be supplied, because such water can react aggressive and corrosive which can reduce the life cycle of the unit.
As a phosphate dosing system can have negative influence to the water system it must also not be used.

National and regional regulations concerning connections of water and waste, especially regarding installation of water intake points should be respected.

2.6 Wastewater connection

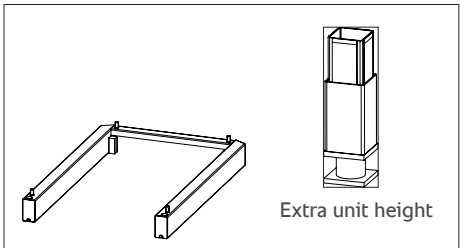






Waste water connection with type 6x2/3 GN

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 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	Type 62	Type 101	Type 102	Type 201	Type 202
Natural gas H G20	1.4 m³/h	3.0 m³/h	2.4 m³/h	4.9 m³/h	4.8 m³/h	9.8 m³/h
Natural gas L G25	1.6 m³/h	3.6 m³/h	2.8 m³/h	5.7 m³/h	5.6 m³/h	11.4 m³/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.

2.7 Gas connection

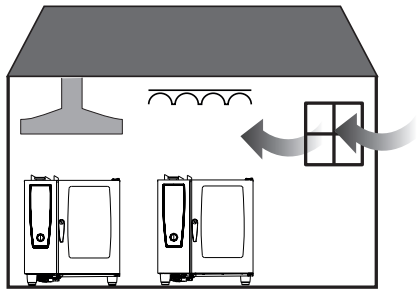
Flue gas- and room volume (values are valid for single units)

	Type 61	Type 62	Type 101	Type 102	Type 201	Type 202
Room size free ventilation	52 m^3	112 m^3	88 m^3	180 m^3	176 m^3	360 m^3
Room size permanent ventilation	26 m^3	56 m^3	44 m^3	90 m^3	88 m^3	180 m^3
Combustion air supply	19 m^3/h	45 m^3/h	35 m^3/h	72 m^3/h	70 m^3/h	144 m^3/h
Flue gas volume	38 m^3/h	108 m^3/h	78 m^3/h	180 m^3/h	150 m^3/h	350 m^3/h
Flue gas temperature (max.)	350 °C	520 °C	470 °C	590 °C	430 °C	520 °C

Free ventilation = Combustion air supply through windows and doors
Permanent ventilation = Combustion air supply by two openings to the outside with a free cross section of 150 cm^2 (one opening near the ceiling, the other opening near the floor)
Attention: Data are calculated under German standards

2.8 Exhaust gas discharge

1



Vented hood

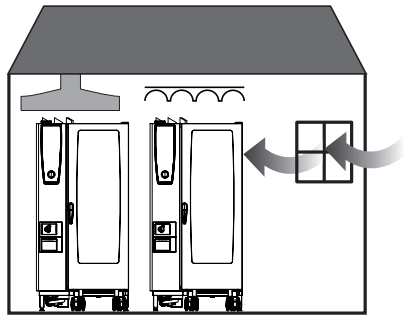
Vented ceiling

Type A3, B13, B13BS gas unit
Comply with local gas authority regulations!

A3 – Type 61
Room air-dependent gas appliance with blower before burners, without draft 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.
An up draft system is not required.
When installing gas appliances type A with a total nominal heat load up to 14 kW it is sufficient, if
> the room volume of the installation site is above 2 m^3/kW, or
> a door or window to the outside which can be opened is available, or
> a kitchen ventilation system with a minimum discharge volume of 15 m^3/h per kW total nominal heat load is used and suitable openings for fresh air are installed.

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.

2



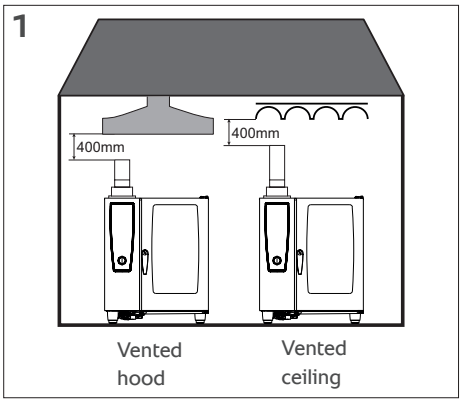
Vented hood

Vented ceiling

A3 – Type 62, 101,102, 201, 202
Room air-dependent gas appliance with blower before burners, without draft diverter and rated thermal load > 14 kW.
An up draft system is not required.
Flue gases must be lead to the outside using a kitchen venting system. Thereby flue gases of type A gas appliances are blown into the kitchen air and immediate sucked out by the kitchen venting system.
By monitoring the flue gas evacuation it must be made sure, that the gas supply of the burner is only enabled in case the ventilation is ensured.

Required room volume see page 26

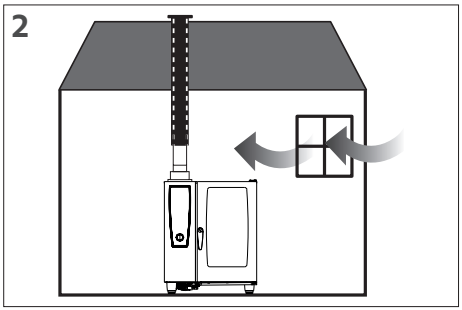
2.8 Exhaust gas discharge



B13 – Type 61, 62, 101,102, 201, 202
Ambient-air-dependent gas-powered cooking range with fan assisted burners with exhaust collector.
The type B13 installation must only be done using the below mentioned original exhaust collector. The exhaust collector is not shipped with the unit, but can be ordered under the following part numbers:

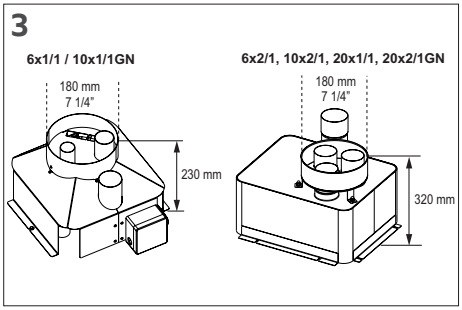
Type	N°:	Type	N°:
61	70.00.737	101	70.00.757
62	70.00.768	102	70.00.769
201	70.00.770	202	70.00.771

For installation please follow the installation instruction sheet of the exhaust collector.
Observe that in case of B13 installation an up draft system must be provided.
Up draft system shall end 400 mm below the fat filter. The unit must be installed underneath a vented hood/ceiling.
By monitoring the flue gas evacuation it must be made sure, that the gas supply of the burner is only enabled in case the ventilation is ensured.
Required room volume see page 22



B13BS
Fixed connection to chimney is permissible.
For calculating the necessary supply and exhaust air contact your local gas or responsible authority.

Gas exhaust system
> Check that gas exhaust pipes are leak proof, in accordance with local regulations
> Waste gas pipes of aluminium or other materials which are not resistant to temperatures up to 400°C should not be used because of the high waste gas temperatures!



Draft diverter needed for B13 and **B13(BS)**

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

Thermal load SelfCookingCenter®

		XS 6 ⅔	Type 61	Type 62	Type 101	Type 102	Type 201	Type 202
		6x2/3 GN	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Latent	(kJ/h)	1.020	2.050	3.450	3.450	6.350	6.850	10.900
	(W)	283	569	958	958	1.764	1.902	3.020
Sensitive	(kJ/h)	1.350	2.450	4.450	4.450	7.750	8.850	14.000
	(W)	375	681	1.236	1.236	2.152	2.375	3.888
Thermal load CombiMaster® Plus								
Latent	(kJ/h)	–	2.143	4.167	3.529	6.667	7.200	12.500
	(W)		595	1.158	980	1.852	2.000	3.472
Sensitive	(kJ/h)	–	2.727	5.000	4.615	9.474	9.000	14.286
	(W)		758	1.389	1.282	2.632	2.500	3.968

Gas units

Thermal load SelfCookingCenter®

		Type 61	Type 62	Type 101	Type 102	Type 201	Type 202
		6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Latent	(kJ/h)	2.050	3.450	3.450	6.350	6.850	10.900
	(W)	569	958	958	1.764	1.902	3.020
Sensitive	(kJ/h)	2.450	4.450	4.450	7.750	8.850	14.000
	(W)	681	1.236	1.236	2.152	2.375	3.888
Thermal load CombiMaster® Plus							
Latent	(kJ/h)	2.143	4.167	3.529	6.667	7.200	11.583
	(W)	595	1.158	980	1.852	2.000	3.218
Sensitive	(kJ/h)	2.571	5.000	4.286	9.231	8.780	13.636
	(W)	714	1.389	1.191	2.564	2.439	3.788

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 377 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.

Airflow requirement – unit freestanding in room (100 %)

XS 6 ⅔ 6x2/3 GN	Type 61 6 x1/1 GN	Type 62 6 x2/1 GN	Type 101 10 x1/1 GN	Type 102 10 x2/1 GN	Type 201 20 x1/1 GN	Type 202 20 x2/1 GN
195 m³/h	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 %)

XS 6 ⅔ 6x2/3 GN	Type 61 6 x1/1 GN	Type 62 6 x2/1 GN	Type 101 10 x1/1 GN	Type 102 10 x2/1 GN	Type 201 20 x1/1 GN	Type 202 20 x2/1 GN
123 m³/h	238 m³/h	481 m³/h	401 m³/h	792 m³/h	798 m³/h	1413 m³/h

Prescribed minimum volume of incoming air for gas units

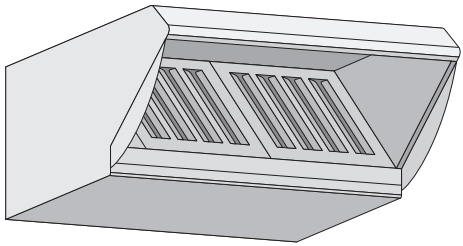
XS 6 ⅔ 6x2/3 GN	Type 61 6 x1/1 GN	Type 62 6 x2/1 GN	Type 101 10 x1/1 GN	Type 102 10 x2/1 GN	Type 201 20 x1/1 GN	Type 202 20 x2/1 GN
–	21 m³/h	47 m³/h	36 m³/h	75 m³/h	72 m³/h	150 m³/h

Maximum exhaust gas volumes

XS 6 ⅔ 6x2/3 GN	Type 61 6 x1/1 GN	Type 62 6 x2/1 GN	Type 101 10 x1/1 GN	Type 102 10 x2/1 GN	Type 201 20 x1/1 GN	Type 202 20 x2/1 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 shop-front areas.

> Easy to install and retrofit.
> 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.
> 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

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Electric	X	X	X	X	X	X	X
Gas	–	X	–	X	–	–	–
Combi-Duo Electric	X	X	–	X	–	–	–

UltraVent® Plus appliance sizes

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 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.

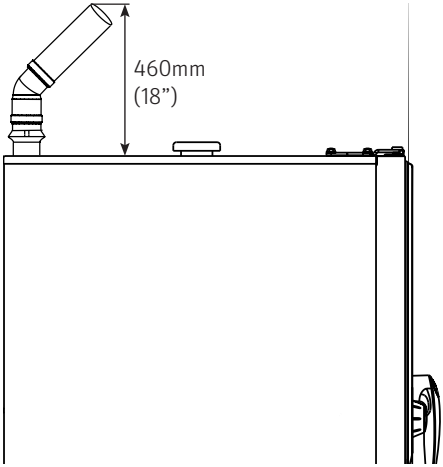
Exhaust hood appliance sizes

	XS 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 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.

3.4 Condensation breaker



By installing the condensation breaker together with the enclosed pipes it is possible to guide the steam to an uncritical area or to the suction area of a suction system (e.g.vent ceiling)

The kits contain the following:
Condensation breaker (depends on unit size)
Elbow DN75 with 45° angle (stainless steel)
Pipe DN75, 250 mm long (stainless steel)

XS 6 ⅔ 6x2/3 GN			N°: 60.74.037
Typ 61 6x1/1 GN	**Typ 101** 10x1/1 GN	**Typ 62** 6x2/1 GN	N°: 60.72.591
Typ 102 10x2/1 GN			N°: 60.72.592
Typ 201 20x1/1 GN	**Typ 202** 20x2/1 GN		N°: 60.72.593

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 hose-proof: 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:**

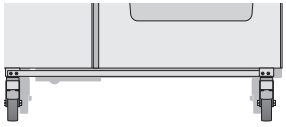
Standard with rollers
In this variant a floor drain is absolutely essential or the unit drain will be lower than, for instance, a wall outlet.
> Distance from floor to centre drainpipe: 44 mm (1 5/8“).
> Drainpipe diameter: DN 50 mm (2“).

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	Standard	60.71.925	1.34 m (4' 5")	60.71.925	1,34 m (4' 5")
Electric	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	Standard	60.71.925	1.60 m (5' 3")	60.71.925	1,60 m (5' 3")
Electric	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	Standard			60.71.928	1.54 m (5')
Gas	Feet 150 mm			60.71.929	1.60 m (5' 3")
	Mobile			60.71.930	1.64 m (5' 5")
Type 101	Standard			60.71.928	1.78 m (5' 10")
Gas	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	Standard	60.71.931	1.34 m (4' 5")	60.71.931	1.34 m (4' 5")
Electric	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	Standard	60.71.931	1.60 m (5' 3")	60.71.931	1.60 m (5' 3")
Electric	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	Standard			60.71.934	1.54 m (5')
Gas	Feet 150 mm			60.71.935	1.60 m (5' 3")
	Mobile			60.71.936	1.64 m (5' 5")
Type 102	Standard			60.71.934	1.78 m (5' 10")
Gas	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.

5.2 Combi-Duo XS Typ 6 ⅔

The Combi-Duo XS/XS is designed for installation on a Combi-Duo stand (N: 60.31.020) or on a level worktop.
The worktop must be positioned at a height which enables a waste water connection as described in Section 2.6. The 1.60 m height of the top rack must be observed.
> Diameter of drain pipe: DN 40 mm (1 3/4")

Combi-Duo XS on XS kit: N°: 80.73.768

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:

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

7.1 Table-top units XS type 2/3

SelfCookingCenter®
> Left-hinged unit door
> Ethernet interface
> Security door lock
> Can be connected to power optimisation system (Sicotronic)
> Switching signal for internal ventilation system

7.2 Table-top units Type 61 and Type 101

SelfCookingCenter®
> 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
> 3 Externally-attached core temperature probe
> Externally-attached core temperature probe
> 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
> 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
> 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

7.3 Table-top units Type 62 and Type 102

SelfCookingCenter®
- 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
- 3 Externally-attached 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
- Mobile oven rack package
- Marine version
- Integrated fat drain
- 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

7.4 Floor units Type 201 and Type 202

SelfCookingCenter®
- Marine version
- Integrated fat drain
- Lockable control panel
- Security/prison version
- Security door lock
- Can be connected to energy optimisation system (Sicotronic)
- Sous-Vide core temperature probe
- 3 Externally-attached 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
- Integrated fat drain
- 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)

7.5 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® 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.

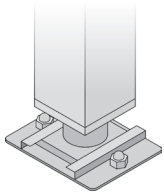
Combi-Duo variants
Model 61 on model 61
Model 61 on model 101
Model 62 on model 62
Model 62 on model 102

7.6 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.

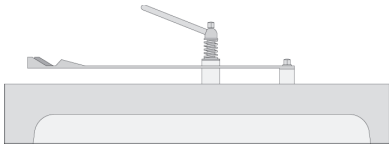
The marine version is available as an option for all SelfCookingCenter® and CombiMaster® Plus Duo units (electric version).

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.

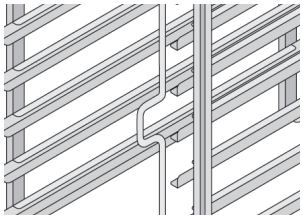


Protection against tipping (model 201/202)
The stainless steel feet can be welded directly to the ship's floor or fixed to prevent slipping or tipping using special fixing plates. A wall fixing with 2 retaining brackets is also provided.

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



Special hinging rack
Special hinging rack with locking device prevent Gastronorm accessories 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.

7.7 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.

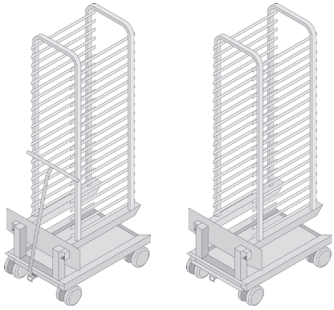
The safety versions are available as an option for all SelfCookingCenter® and CombiMaster® Plus units.

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.

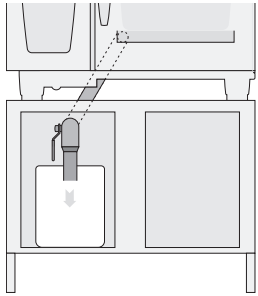
Protective door grille
The outer glass of the cooking cabinet door is protected against damage by a stainless steel grille. This makes it possible to look inside the cooking cabinet even when the door is closed.

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.



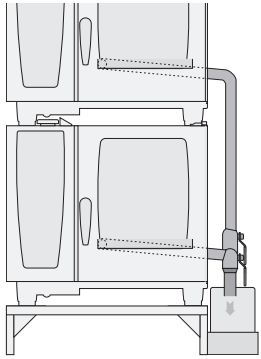
7.8 Integrated fat drain

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 SelfCookingCenter® and CombiMaster® Plus units. To be operated safely, the SelfCookingCenter®/CombiMaster® Plus model 61/101/62/102 must be installed on a stand 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.



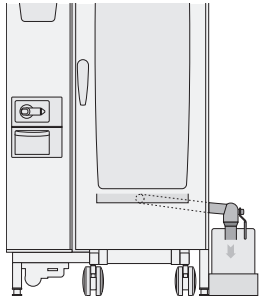
Integrated fat drain for Combi-Duo
The fat is diverted into a drip container to the right of the SelfCookingCenter®/CombiMaster® Plus. A special assembly kit is available for this purpose.

Integrated fat drain kit for feet and mobile variants

1/1 GN:	60.73.303
2/1 GN:	60.73.304

Integrated fat drain kit for 61E/61E and 62E/62E on stand UG I 210 mm

1/1 GN:	60.73.301
2/1 GN:	60.73.302



Integrated fat drain for model 201/202
The fat is diverted into a drip container to the right of the SelfCookingCenter®/CombiMaster® Plus.
The grease drip container is placed in the mobile oven rack. This collects any drips of grease and diverts them out of the cooking cabinet.

7.9 Sous-Vide core temperature probe

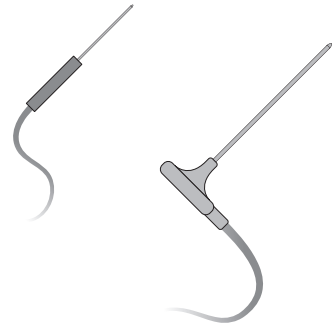
The Sous-Vide option from RATIONAL is designed specifically to meet the requirements of vacuum cooking. The gentle rise in temperature, being held at that temperature accurately with the maximum possible steam saturation in the cooking cabinet are the decisive factors in ensuring excellent food quality. 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® 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 a sealing cap that is attached to the unit to prevent lose.

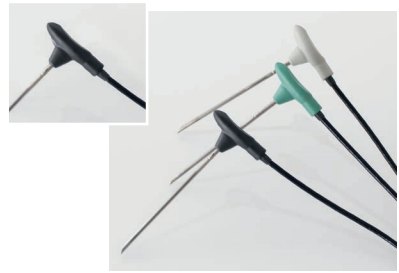
7.10 3 Externally-attached core temperature probe

With iLevelControl, you can prepare different foods at the same time in your SelfCookingCenter®. In this way you make the most of your appliance and reduce your stress, even when there's a big rush.
So you can now monitor the core temperature and the quality of your products even better, there is the "3 core temperature probe" option. Thanks to accurate core temperature monitoring to the degree, you don't need to calibrate your goods anymore.
Monitor up to 3 different products at the same time. Regardless of whether you load the unit once or successively, you will always cook your food to the point.

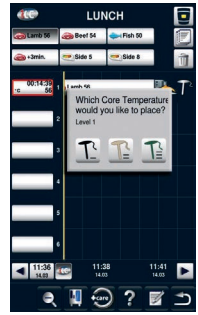
The option is available for all SelfCookingCenter®.

> **Standard core temperature probe:**
For use in all cooking modes

> **Set with 3 core temperature probes:**
For use in iLevelControl



> **Interactive display:**
Simply place the core temperature probe desired, select in the display and assign to the relevant rack – done. The probes are marked and also have different colours so that anyone can easily with them.



> **Connection socket**
Either connect the standard core temperature probe or the set of 3 core temperature probes.

> **Holding box**
When you are not using the core temperature probes, keep them safe in a holding box on the side of the unit which you can remove for cleaning and then re-attach.

8 Sample applications

Unit	XS Typ 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Baking							
Tray bakes	4x 2/3 GN	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN
Apple strudel	2x 1 St.	3x 2 pc.	3x 4 pc.	5x 2 pc.	5x 4 pc.	10x 2 pc.	10x 4 pc.
Sponge cake	4x 2/3 GN	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Sponge cake ring	3x 1 St.	3x 2 pc.	3x 4 pc.	5x 2 pc.	5x 4 pc.	10x 2 pc.	10x 4 pc.
Flaky pastry, vol-au-vents, fleurons	4x 10 St.	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Choux pastry (cream puffs)	3x 3 kg	6x 15 pc.	6x 30 pc.	10x 15 pc.	10x 30 pc.	20x 15 pc.	20x 30 pc.
Stewed fruit	2x 2/3 GN	3x 5 kg	3x 10 kg	5x 5 kg	5x 10 kg	10x 5 kg	10x 10 kg
Cabinet pudding	4x 8 St.	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN
Creme Caramel (glasses)	4x 2/3 GN	6x 12 pc.	6x 24 pc.	10x 12 pc.	10x 24 pc.	20x 12 pc.	20x 24 pc.
Yeast pastry	2x 1 St.	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN
Yeast plait	2x 2/3 GN	3x 2 pc.	3x 4 pc.	5x 2 pc.	5x 4 pc.	10x 2 pc.	10x 4 pc.
Cheesecake (shortpastry base)	4x 2/3 GN	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN
Shortpastry base	3x 1 St.	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Marble cake	4x 16 St.	3x 2 pc.	3x 4 pc.	5x 2 pc.	5x 4 pc.	10x 2 pc.	10x 4 pc.
Shortpastry and piped biscuits	4x 2/3 GN	6x 24 pc.	6x 48 pc.	10x 24 pc.	10x 48 pc.	20x 24 pc.	20x 48 pc.
Crumble	4x 5 St.	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN
Eggs							
Eggs (hard-boiled)	4x 30 St.	6x 45 pc.	6x 90 pc.	10x 45 pc.	10x 90 pc.	20x 45 pc.	20x 90 pc.
Eggs in the pan (poached egg)	4x 12 St.	3x 12 pc.	3x 24 pc.	5x 12 pc.	5x 24 pc.	10x 12 pc.	10x 24 pc.
Egg garnish/custard	4x 1,5 l	6x 2 l	6x 4 l	10x 2 l	10x 4 l	20x 2 l	20x 4 l
Scrambled egg	3x 2 l	3x 3 l	3x 6 l	5x 3 l	5x 6 l	10x 3 l	10x 6 l
Fish							
Salmon (whole pieces)	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Salmon trout filet, turbot filet, halibut, rolled sole	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Salmon steak	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Trout, blue	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Mussels	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Giant prawns	3x 1 kg	4x 1 kg	4x 2 kg	6x 1 kg	6x 2 kg	12x 1 kg	12x 2 kg

8 Sample applications

Unit	XS Typ 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Vegetables and side dishes							
Broccoli, beans	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Brussels sprouts, turnips, carrots,mushrooms	4x 1,5 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Spinach, savoy cabbage (blanching)	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Cauliflower	4x 1,5 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Baby peas	4x 1,5 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Asparagus	4x 1,5 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Tomatoes	4x 1,5 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Gratinated cauliflower	3x 1,5 kg	3x 3 kg	3x 6 kg	5x 3 kg	5x 6 kg	10x 3 kg	10x 6 kg
Vegetable flan	4x 2/3 GN	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Stuffed cabbage	4x 10 St.	6x 15 pc.	6x 30 pc.	10x 15 pc.	10x 30 pc.	20x 15 pc.	20x 30 pc.
Fried mushrooms	4x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Potatoes and side dishes							
Boiled potatoes	4x 1,5 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Potatoes boiled in their jacket	4x 1,5 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Dumplings	3x 18 St.	3x 28 pc.	3x 56 pc.	5x 28 pc.	5x 56 pc.	10x 28 pc.	10x 56 pc.
Fried potatoes, pre-cooked	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Potatoes in foil	3x 18 St.	3x 28 pc.	3x 56 pc.	5x 28 pc.	5x 56 pc.	10x 28 pc.	10x 56 pc.
Pommes Macaire	4x 0,65 kg	6x 1 kg	6x 2 kg	10x 1 kg	10x 2 kg	20x 1 kg	20x 2 kg
Rice	3x 1 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Wild rice	3x 1 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
Rice pudding	3x 1 kg	6x 3 kg	6x 6 kg	10x 3 kg	10x 6 kg	20x 3 kg	20x 6 kg
French fries, frozen	4x 0,65 kg	6x 1 kg	6x 2 kg	10x 1 kg	10x 2 kg	20x 1 kg	20x 2 kg
Frozen convenience foods							
Poularden breast Florentin	4x 2/3 GN	5x1/1 GN	5x2/1 GN	8x1/1 GN	8x2/1 GN	16x1/1 GN	16x2/1 GN
Breast of guinea fowl, filled	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Pork fillet	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Frozen pizza	4x 1 St.	6x 2 pc.	6x 4 pc.	10x 2 pc.	10x 4 pc.	20x 2 pc.	20x 4 pc.
Frozen apple strudel	2x 1 St.	3x 2 pc.	3x 4 pc.	5x 2 pc.	5x 4 pc.	10x 2 pc.	10x 4 pc.
Hot fruit, frozen goods	3x 2,5 kg	3x 5 kg	3x 10 kg	5x 5 kg	5x 10 kg	10x 5 kg	10x 10 kg

8 Sample applications

Unit	XS Typ 6 ⅔ 6x2/3 GN	Typ 61 6x1/1 GN	Typ 62 6x2/1 GN	Typ 101 10x1/1 GN	Typ 102 10x2/1 GN	Typ 201 20x1/1 GN	Typ 202 20x2/1 GN
Beef and veal							
Fillet steaks 200g, veal fillet, veal cutlet, beef fillet 180g	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Roast beef, braised beef, beef roulades 180g	2x 4 kg	3x 6 kg	3x 12 kg	5x 6 kg	5x 12 kg	10x 6 kg	10x 12 kg
Calf's liver	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Escalope of veal, breaded	4x 4 St.	6x 6 pc.	6x 12 pc.	10x 6 pc.	10x 12 pc.	20x 6 pc.	20x 12 pc.
Calf bone for sauce	4x 2 kg	6x 4 kg	6x 8 kg	10x 4 kg	10x 8 kg	20x 4 kg	20x 8 kg
Pork and lamb							
Saddle of lamb, breaded	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Lamb chop	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Spare ribs	3x 1 kg	6x 2 kg	6x 4 kg	10x 2 kg	10x 4 kg	20x 2 kg	20x 4 kg
Medaillons of pork	4x 1,2 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Pork chop, breaded	4x 4 St.	6x 6 pc.	6x 12 pc.	10x 6 pc.	10x 12 pc.	20x 6 pc.	20x 12 pc.
Rissoles, meat loaf	3x 6 St.	5x 8 pc.	5x 16 pc.	8x 8 pc.	8x 16 pc.	16x 8 pc.	16x 16 pc.
Bacon	6x2/3 GN	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Game and poultry							
Saddle of hare	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Pheasant	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Wild duck 1,300g	–	2x 8 pc.	4x 8 pc.	3x 8 pc.	6x 8 pc.	6x 8 pc.	12x 8 pc.
Turkey	2x 4 kg	3x 6 kg	3x 12 kg	5x 6 kg	5x 12 kg	10x 6 kg	10x 12 kg
Goose	2x 3,5 kg	3x 6 kg	3x 12 kg	5x 6 kg	5x 12 kg	10x 6 kg	10x 12 kg
Chicken 950g	1x 4 St.	2x 10 pc.	4x 10 pc.	3x 10 pc.	6x 10 pc.	6x 10 pc.	12x 10 pc.
Duck 2,200g	2x 1 St.	1x 8 pc.	2x 8 pc.	2x 8 pc.	4x 8 pc.	4x 8 pc.	8x 8 pc.
Sausages, terrines or soufflés							
Infuse Bavarian veal sausage, regenerate sausages	6x 20 St.	6x1/1 GN	6x2/1 GN	10x1/1 GN	10x2/1 GN	20x1/1 GN	20x2/1 GN
Lasagne, canneloni, potato gratin, vegetable gratin, moussaka	3x 2 kg	3x 3 kg	3x 6 kg	5x 3 kg	5x 6 kg	10x 3 kg	10x 6 kg
Grilled sausages	3x 1 kg	5x 1.5 kg	5x 3 kg	8x 1.5 kg	8x 3 kg	16x 1.5 kg	16x 3 kg
Terrine	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Vol-au-vent	4x 1 kg	6x 1.5 kg	6x 3 kg	10x 1.5 kg	10x 3 kg	20x 1.5 kg	20x 3 kg
Quiche Lorraine	3x2/3 GN	3x1/1 GN	3x2/1 GN	5x1/1 GN	5x2/1 GN	10x1/1 GN	10x2/1 GN

9 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

9 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

9 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

9 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		

9 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 kWh = 0.8 kg Liquid gas

1 kWh = 0.96 m^3 Natural gas

RATIONAL International AG
Heinrich-Wild-Straße 202
9435 Heerbrugg
Switzerland

Tel. +41 (0)71 727 9090
Fax +41 (0)71 727 9080

info@rational-international.com
rational-international.com

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